

Confidential Report of Procedures and Findings From the Cleaning & Inspection of the

Primary Tank Riverbend-Riverbank Water District West Linn, OR



By Midco Diving & Marine Services, Inc.

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August 5, 2025

Riverbend-Riverbank Water District 461 SW Hebb Park Rd West Linn, OR 97068

Attention: John Carnathan

(971) 207-5147

carnathan5353@gmail.com

RE: 2025 Tank Maintenance Project

Dear John,

The following is a summary of a visual and video inspection of the Primary Tank for Riverbend-Riverbank Water District in West Linn, OR. This inspection was undertaken on July 26, 2025 by Midco Diving & Marine Services, Inc., of Rapid City, SD. The findings of this inspection report are a supplement to the inspection video.

The reservoir was inspected by a surface supplied commercial air diver. The diver was equipped with real-time high-definition color video and a LED lighting system as well as live voice communication between the inspecting diver and the surface team.

All procedures were carried out in accordance with Midco's *Standards and Procedures*. Prior to entering your reservoir, the diver and all equipment were disinfected with a 200 parts per million chlorine solution per ANSI/AWWA C652-19 standards, as well as the appropriate guidelines and regulations of: the Association of Diving Contractors International (ADCI), U.S. Army Corps of Engineers (USACE), Bureau of Reclamation (BOR), U.S. Coast Guard and Occupational Safety and Health Administration (OSHA). These guidelines are strictly adhered to and in many cases, exceeded by Midco Diving.

If you have any questions about this report or if you would like an additional estimate for any repair work noted below, please feel free to contact the following:

Alec Horan

<u>a.horan@midcodiving.com</u>

Regional Account Manager

Jessica Brown
j.brown@midcodiving.com
Business Development Manager

Anika Tater <u>anika.t@midcodiving.com</u> Records & Reports Manager

Sincerely,

Bailey Juhl

Bailey Juhl Records & Reports Coordinator

PRIMARY TANK FINDINGS

EXTERIOR FINDINGS

Upon visual inspection of the exterior of the structure, the overall condition of the reservoir appears to be in fair condition, with the following findings noted:

- 1. Weather stripping deterioration noted on access hatch.
- 2. The roof vent screen is blocked with biological growth.
- 3. The overflow does not discharge 12"-24" above a splash plate or rip rap.
- 4. No engineered splash plate or riprap noted.
- 5. Settling cracks noted on the exterior reservoir.
- 6. Evidence of water migration noted.
- 7. Biological growth noted on the exterior reservoir.
- 8. Non-functioning telemetry system noted.
- 9. Corrosion noted on the access hatch.



DISCLAIMER

Midco Diving & Marine Services, Inc. does not provide consulting engineering services, nor do we employ licensed Professional Engineers. The findings contained herein were neither prepared or reviewed by a licensed engineer, but are based on the visual examination, experience, and training of the inspecting diver and dive support crew.

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PRIMARY TANK FINDINGS

INTERIOR FINDINGS

Upon visual inspection of the structure above and below the water line, the overall condition of the reservoir appears to be in good condition, with the following findings noted:

- 1. Up to 10" of sediment noted.
- 2. Settling cracks with effloresence noted.
- 3. Spalling noted.
- 4. Non-functioning telemetry system noted.
- 5. Exposed rebar with corrosion noted.
- 6. Corrosion noted on the plumbing & ladder.



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PROJECT INFORMATION

Job Number: P2025184
Date Completed: July 26, 2025

Coordinates: 45°17'60.0"N 122°40'43.4"W

DIVE TEAM

Dive Supervisor: T. Way
Diver/Tender: J. Hopson
Diver/Tender: S. Miranda

RESERVOIR INFORMATION

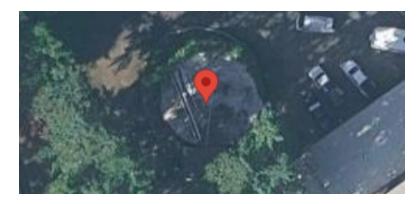
Reservoir Name: Primary Tank
Gallons: 70,000
Diameter: 40'
Height: 8'
Water Depth: 6'
Tank Type: On Grade

Tank Type: On Grade Construction: Concrete Date Built: 1975

Last Inspection: February 8, 2024 by Midco Diving & Marine Services, Inc. Last Cleaning: February 8, 2024 by Midco Diving & Marine Services, Inc.

RECOMMENDATIONS

- 1. Replace deteriorating weather stripping on the access hatch.
- 2. Replace blocked roof vent screen.
- 3. Correct the overflow to discharge 12"-24" above a splash plate or riprap.
- 4. Install an engineered splash plate or riprap.
- 5. Monitor/repair settling cracks with efflorescence noted.
- 6. Monitor/repair interior spalling noted.
- 7. Investigate & repair evidence of water migration noted.
- 8. Monitor/remove biological growth noted on the exterior reservoir.
- 9. Repair/replace the non-functioning telemetry system.
- 10. Monitor/repair exposed rebar with corrosion noted.
- 11. Monitor/repair interior & exterior corrosion noted.
- 12. Consider having Midco Diving & Marine Services, Inc., install a Midco provided mixer.
- 13. Have Midco Diving & Marine Services, Inc. clean & inspect every 3 years or less.





N/A - Not applicable

Excellent (Ex) - Like new condition, no maintenance needed.

Good - Cosmetic only problems, maintenance if wanted.
Fair - Minor problems, maintenance needed, not immediate.

Poor - Major problems, structural or like, immediate maintenance needed.

Component	Condition NA Ex. Good Fair				Poor	Comments
Site Security	IVA	LAI	X			
Gate			X			
Fence			X			
Locks			X			
Alarm	X					
Reservoir Exterior				X		Settling Cracks & Biological Growth Noted
Coating	X					
Cleanliness				X		
Seams/Joints			X			
Foundation	X					
Exterior Roof				X		Settling Cracks; Biological Growth; Evidence of Water Migration Noted
Coating	X					
Cleanliness				X		
Seams/Joints			X			
Exterior Ladder			X			Width: 14 1/2"
Coating	Х					
Caged	X					
Safety Climb	X					
Roof Vent			X			Biological Growth Noted
Coating	X					
Screen				X		Blockage Noted
Side Vent	X					
Coating	X					
Screen	X					
Exterior Telemetry					X	Not Functioning
Coating					X	
Functioning					X	

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Component	NA	Co Ex.	onditi Good	on Fair	Poor	Comments
Manual Level Indicator	X					
Tag	X					
Cable	X					
Indicator	X					
Pulleys	X					
Base	X					
Exterior Man Entry	X					
Coating	X					
Gasket	X					
Exterior Inlet				X		Evidence of Water Migration Noted
Coating	X					
Valve			Х			
Exterior Outlet	X					
Coating	X					
Valve	X					
Exterior Drain/Scour	X					
Coating	X					
Valve/Screen	X					
Exterior Water Tap	X					
Coating	X					
Valve	X					
Exterior Overflow				X		Size: 5" Height: Approx. 1"
Coating	X					
Stand-offs			X			
Screen			X			Type: Flapper Valve
Access Hatch			X			Size: 24" x 24" Height: 14" Corrosion Noted
Weather Stripping				X		Deterioration Noted
Coating	X					
Hinges			X			
Lock			X			
Safety Rail/Catwalk	X					

Component	NA	Co Ex.	onditi Good	on Fair	Poor	Comments	
Interior Ladder			X			Width: 18" – Corrosion Noted	
Coating	Х						
Safety Climb	Х						
Telemetry Sensor					X	Not Functioning	
Functioning					X		
Float	Х						
Guide Wires	Х						
Interior Floor			X			Settling Cracks with Efflorescence & Spalling Noted	
Coating	X						
Seams/Joints			X				
Sediment				X		Depth: Up to 10" of Sediment Noted	
Interior Walls			X			Settling Cracks & Spalling Noted	
Coating	Х						
Seams/Joints			X				
Interior Ceiling				X		Settling Cracks; Spalling; Exposed Rebar with Corrosion Noted	
Coating	X						
Seams/Joints			X				
Rafters	X						
Interior Man Entry	X						
Coating	X						
Gasket	Х						
Support Column			X			# of Columns: 9	
Coating	X						
Base			X				
Тор			X				
Cathodic Protection	Х						
Anodes	Х						
Wires	х						
Sacrificial Anodes	Х						

Component			onditi	_		Comments	
	NA	Ex.	Good	Fair	Poor		
Interior Overflow			X			Size: 7" – Corrosion Noted	
Coating	X						
Top/Cap			X				
Connections/Flange			X				
Interior Inlet			X			Size: Approx. 6" – Corrosion Noted	
Coating	X						
Riser			X			Measurement: 3' 4"	
Interior Outlet			X			Size: Approx. 7"	
Coating	X						
Riser/Sump	X					Flush	
Interior Drain/Scour	X						
Coating	X						
Riser/Sump	X						
Interior Water Tap	Х						
Coating	Х						
Valve	Х						
Water Mixer	х						
Hardware	X						
Functioning	х						
Manufacturer	Х						

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Cleaning Reservoir – Up to 10" of Sediment Noted



Cleaning Reservoir – Up to 10" of Sediment Noted



Typical Floor – Settling Cracks with Efflorescence Noted



Floor to Wall Seam – Settling Cracks & Spalling Noted



Typical Wall



Overflow Plumbing & Wall to Roof Seam – Spalling Noted



Wall to Roof Seam – Settling Cracks & Spalling Noted



Wall to Roof Seam



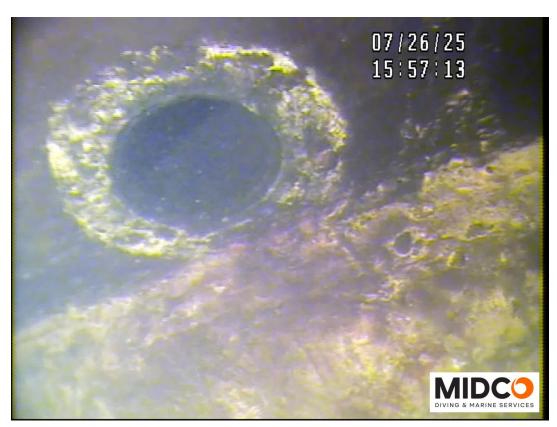
Typical Roof – Exposed Rebar with Corrosion Noted



Typical Roof – Exposed Rebar with Corrosion Noted



Inlet Plumbing – Corrosion & Settling Cracks Noted



Outlet Plumbing – Spalling Noted



Typical Support Column



Typical Support Column



Interior Telemetry – Not Functioning



Interior Ladder – Corrosion Noted



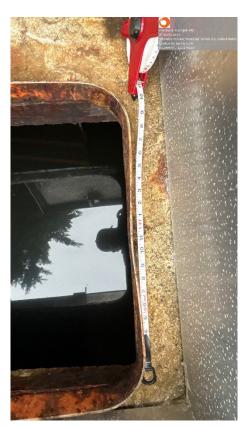
Access Hatch – Weather Stripping Deterioration Noted



Access Hatch – Corrosion Noted



Access Hatch – Settling Cracks & Corrosion Noted



Access Hatch – Corrosion Noted



Access Hatch – Corrosion Noted



Roof Vent – Biological Growth Noted



Roof Vent Screen – Biological Growth Noted



Roof Vent Screen – Blockage Noted



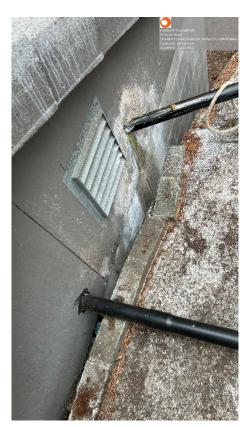
Exterior Roof – Evidence of Water Migration Noted



Exterior Roof – Evidence of Water Migration Noted



Exterior Roof & Telemetry - Not Functioning



Inlet Plumbing – Evidence of Water Migration Noted



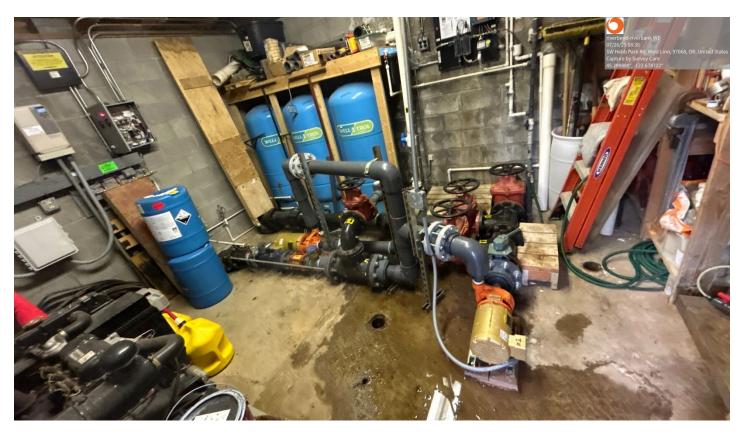
Inlet Plumbing



Inlet Plumbing



Inlet Plumbing – Biological Growth Noted



Inlet Plumbing – Evidence of Water Migration Noted



Exterior Ladder



Exterior Ladder



Overflow Plumbing



Overflow Plumbing – Settling Cracks Noted



Overflow Plumbing



Exterior Reservoir – Settling Cracks Noted



Exterior Reservoir – Settling Cracks & Biological Growth Noted



Exterior Reservoir

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Fill out o		hed Water Storage Tan	Drinking Water Unit k Inspection/ Cleaning labeled photos of each tank cor		s form				
			PWS ID:						
Tank Name: Prim	ary Tan	nk 7	Tank ID:						
Proposed Inspect	ion Dat	e: July 26, 2025	Actual Inspection Date: July 26,	2025					
Name of Person F	illing O	ut Form: Bailey Juhl	Title of Person Filling Out Form: Records & Reports Coordinator						
I certify that this	informa	ntion is complete and accurate: \	Yes; Bailey Juhl Date: August 5, 2025						
Inspector Qu	ualific	ations (answer to all ques	stions must be "yes" if ent	ering a confi	ned space)				
Name and contac	t inform	nation of inspector or inspection	company: Midco Diving & Ma	rine Services,	Inc.				
⊠ Yes □ No	Has th	ne inspector completed confined	space training?						
⊠ Yes □ No	Did th	e inspector have a confined spa	ce entry permit?						
		Overall T	ank Condition						
5	Signific	cant Deficiency	Required Correction	Proposed Completion Date	Actual Completion Date				
⊠ Yes □ No	Does to	he tank appear to be structurally	If no, what repairs are suggested by the tank inspector?						
⊠ Yes □ No	tank (b	ere any unprotected openings in the oreaches, leaks, daylight coming h tank in spots, etc.)?	If yes, indicate type of breach and how it should be repaired: Investigate & repair evidence of water migration noted.						
		A	ir Vent						
9	Signific	cant Deficiency	Required Correction	Proposed Completion Date	Actual Completion Date				
⊠ Yes □ No □] NA	Does the tank have a vent separa from the overflow?	te If no, indicate proposed correction:						
	Abo	ove Ground Tanks (Ground	d Level or Elevated) 🗌 Cl	neck if NA					
☐ Yes ☐ No ☐] NA	<u>Downturned vent:</u> Is the vent at least 24" or 3 pipe diameters about the roof? <u>Unable to evaluate</u>	If no reconfigure vent to provide proper air gap.						
☐ Yes ☐ No ▷	☑ NA	Non-downturned vent: Is there a solid cover down to the bottom of the vent screen?	If no, indicate deficiency and proposed correction:						
☐ Yes ☐ No ▷	☑ NA	Non-downturned vent: Is the screen at least 8" above the roof surface? What is the height of the start of the screening above the tank?	If no, indicate deficiency and proposed correction:						

☐ Yes ☐ N	0	Is the vent covered with #24 mesh corrosion resistant screening (some exceptions apply)? Mesh Size: screen blockage noted	If no, indicate deficiency and proposed correction: Replace blocked roof vent screen.		
		Buried or Partially Bur	ied Tanks 🛛 Check if NA	1	1
☐ Yes ☐ N	lo	Is the vent covered with #24 mesh corrosion resistant screening?	If no, install proper #24 mesh corrosion resistant screening.		
☐ Yes ☐ N	lo	Does the air vent terminate downward?	If no, re-configure the vent so that it terminates downward.		
☐ Yes ☐ N	lo	Is the air vent at least 24" above the tank roof or ground surface (whichever is higher)? What is the height of the vent above the roof or ground surface?	If no, raise air vent to provide for an appropriate air gap.		
		Access	s Hatch		
	Signific	cant Deficiency	Required Correction	Proposed Completion Date	Actual Completion Date
⊠ Yes □ No	roof (f at leas ground partial of the	hatch raised at least 4" above the or ground level or elevated tanks) or t 24 inches above the roof or d, whichever is higher (for buried or ly buried tanks)? What is the height access hatch above the roof or d surface? 14"	If no, the hatch should be raised to the appropriate height above the tank roof or ground.		
⊠ Yes □ No		he hatch have a shoe box lid?	If no, a properly designed shoe box type lid should be installed.		
☐ Yes ⊠ No		lid watertight and sealed with a gasket? Deterioration noted	If no, the reason for the lack of a seal should be investigated and repaired.		
⊠ Yes □ No	Is the	hatch locked?	If no, the hatch should be equipped with a lock.		
		Overflow	Check if N/A		
	Signific	cant Deficiency	Required Correction	Proposed Completion Date	Actual Completion Date
⊠ Yes □ No □] NA	Does the tank have an overflow separate from the vent?	If no, indicate proposed correction:		
☐ Yes ☐ N	Discharge has #24 mesh corrosion resistant screen OR a duckbill valve OR a properly sealed flapper valve with a screen inside (EPA recommends #24 mesh screen)? Unable to evaluate		If no, indicate proposed correction:		
☐ Yes ⊠ N	0	Overflow terminates between 12 and 24 inches above the ground surface. At what height does the overflow discharge?	If no, modify overflow to provide for an appropriate air gap.		
☐ Yes ⊠ N	0	Overflow discharges over an inlet structure, splash plate, or engineered riprap?	If no, indicate proposed correction: Install an engineered splash plate or riprap.		

☐ Yes ☐ No ☐	☑ NA	Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewers?	If yes, indicate proposed correction:		
☐ Yes 🛭 N	0	Is there blockage in the overflow, an inadequately sized overflow, a malfunction of the level control system, or other issue that is causing the tank to overflow through the hatch or vent?	If yes, indicate what is causing the problem and how it should be repaired:		
⊠ Yes □ N	0	Is the overflow discharge point visible that the discharge point be moved to		Not Required	
		Drain 🛛	Check if NA		
9	Signifi	cant Deficiency	Required Correction	Proposed Completion Date	Actual Completion Date
☐ Yes ☐ No	more	the drainpipe have an air gap of 3 or pipe diameters above the entrance to orm or sanitary sewers?	If no, indicate proposed correction:		
☐ Yes ☐ No	duckb	the discharge have a #24 mesh corrosi ill valve OR a properly sealed flapper va ecommends that a #24 mesh screen be	alve with a screen inside? If no,	<u>Not Required</u>	
☐ Yes ☐ No	surfac recom	the drain terminate between 12 and 24 e and discharges over an inlet structure imended that the discharge point be me priate air gap.	e or splash plate? If no, it is		<u>equired</u>
		Cleaning and	d Other Items		
9	Signifi	cant Deficiency	Required Correction	Proposed Completion Date	Actual Completion Date
		oted by the inspector that have the nation of the finished drinking water:	What repairs are suggested to prevent or eliminate the source of contamination?		
How was the storage How was the storage	ge tank ge tank Ind insid	n the tank before cleaning (inches): Up cleaned? Diver with vacuum/hand nozz disinfected after cleaning? N/A de the tank during cleaning that may ha	de	o the water system	n (examples:
☐ Yes ☐ No ⊠] NA	If animal carcasses or other animal de	ebris were found, was EPA notifie	d immediately?	
☐ Yes ☐ No 🗵] NA	Was the entry point for the carcass or Describe:	debris eliminated?		
		drawings (if available) or a sketch of the all major components (i.e., access hatc		nsions including th	e location,