

**DIVIDER PAGE**

**MINUTES AND FINANCIALS**

## RAINBOW WATER DISTRICT BOARD MEETING

Date: January 10, 2024

Time: 6:18 PM

Place: Rainbow Water District Office/Virtual

BOARD MEMBERS PRESENT IN PERSON:	Marla Casley, Doug Keeler, Lou Allocco, and Mindy Kephart
BUDGET COMMITTEE MEMBERS PRESENT:	James Burrington and Ian Kimball
STAFF PRESENT:	Jamie Porter, Jodi Sanders, Eric Carlson, and Brian Scott

Doug Keeler opened the Board Meeting at 6:18 pm.

### **AGENDA REVIEW**

No new items.

### **REVIEW ITEMS**

1. The minutes from December 13, 2023, were presented for approval. Marla Casley moved to approve the minutes. Mindy Kephart seconded the motion. Motion passed 4-0.
2. The financial reports for December 2023 were presented for approval. Doug Keeler moved to accept the financial reports and pay the bills. Lou Allocco seconded the motion. Motion passed 4-0.
3. December 2023 Financial Report Review: Doug Keeler reviewed 3 transactions and approved the December 2023 audit trail report. The missing checks report for December 2023 was reviewed and approved, check numbers are 17222 – 17283 and there were no breaks in sequence. There was one new vendor, Summit Water Resources, for consulting services.

### **BUSINESS FROM THE AUDIENCE**

None

### **BUSINESS FROM THE BOARD**

Doug Keeler noted that he is developing a written review process for the Superintendent and is planning on that being completed before the next scheduled review.

### **BUSINESS FROM THE SUPERINTENDENT**

1. The ion exchange PFAS pilot study has been running, water samples will be taken for evaluation and tested for effectiveness.
2. The Granulated Activated Carbon pilot study has been completed and Calgon estimates that we will have a two-year filter life instead of the one year that was originally estimated.
3. The system wide leak detection survey has been completed by SUB. Brian and the crew have done investigation on the suspected leaks and are completing repairs.

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4. Jamie gave a presentation reviewing historic floods and operational responses needed after flooding events. The McKenzie River has level gauges in key spots that are used to monitor current river levels and can be used to estimate how fast the river levels will rise. This is a tool the district can use to prepare for floods.
5. Jamie reviewed the 42<sup>nd</sup> Street Levee Project and how levees work to protect infrastructure. The City of Springfield is in the process of evaluating the 42<sup>nd</sup> Street levee and planning for the 42<sup>nd</sup> Street redesign project.

The next meeting will be the SUB/RWD joint meeting on January 11, 2024.

The next regular board meeting will be February 14, 2024.

Doug Keeler adjourned the meeting at 6:55 pm.

RAINBOW WATER DISTRICT			
January 31, 2024			
VENDOR	PURPOSE	Water & Fire Fund	PAID/ACH
Amazon	Cable and adapter for MWD	48.10	*
Amazon	Electrical supplies for kit	246.94	
AnSer	Answering service	90.00	
AT&T	Service for on call hot spots	43.23	*
Batteries Plus	Power inverter and UPS batteries	114.00	
Bluefin	Civic pay card processing fees	1,360.02	*
Calhoun and DeJong	Filters for Chase	4,570.08	
Carson	Fuel	28.44	
Century Link	Fax line	78.16	*
Cimco-GC Systems	Chase 3 clavalve supplies	634.66	
City of Springfield	Fuel facility expenses -January 2024	4,387.15	
Coburg Road Quarry	Rock for service and main repairs	1,185.54	
Comcast Business	Cable, internet and phone service	516.68	*
Conсор	Communications consultants	2,345.00	
Core and Main	DPD Dispensers, data log flashlight and DCWA supplies	956.52	
Edge Analytical	Water testing	363.40	
Eurofins	PFAS Testing	1,528.10	
EWEB	I5 pump power	10,543.64	
Ferguson	Supplies for service, mains and tools	1,612.57	
Heymans	Multi lock	26.00	
Internal Revenue Service	Payroll withholding and expense - January 2024	18,607.98	*
JCI Jones	Chlorine	1,541.69	
Jerry's	Supplies for reservoirs, wells and maint	243.19	
Jessica Matthews	Refund final bill	76.18	*
Justin Aherns	Refund final bill	47.10	*
Kelly Create	Copier contract	20.33	
Key Bank	Mastercard charges	2,275.97	
Key Bank	Mastercard charges	2,275.97	
Lane County Public Works	Service for #9 exhaust problems	1,864.47	
Lane Forest Products	Landscaping for materials and projects	277.25	
Les Schwab	Chains for truck #4 and trailer	499.97	
Motion and Flow	Chase 5	240.64	
MW Coffee	Coffee for office	21.50	
NAPA	Supplies for trucks, generators and Shangri-La	168.29	
Nash Janitorial	Office cleaning	320.00	
Northcoast	Tube relay for Chase	77.60	
Olsson Industrial	SCADA support	1,069.50	
Oregon Department of Revenue	Payroll withholding and taxes - January 2024	5,007.20	*
PacificSource Administrators	FSA Contributions and fees	805.00	*
PacificSource Administrators	HRA Claim activity - December 2023	1,762.71	*
Paramount Supply	Pressure gauges for Moe, DCWA and SDOAH	113.41	
PERS	Employee voluntary contributions - December 2023	481.39	*
PERS	Employee withholding and expense - January 2024	22,855.20	
Peterson CAT	Generator rental for SLA	353.60	
Platt	Chase 3 panel repair and extension cords	676.76	
Pollardwater	Service line materials	78.95	
Quill	Office supplies	131.69	
RH2 Engineering	PFAS Feasibility study	1,630.78	
Roseburg Forest Products	Reimburse for fence damage at sample point	197.00	*
Sanipac	Garbage service	111.48	
SDIS	Employee insurance - February 2024	10,874.79	*
Springbrook	Civic pay processing fees for December and January	2,543.20	
Springbrook - ttech settle	Civic pay card processing fees	311.23	
Springfield Utility Board	Pump power and fiber optic	9,959.79	
Streamline	Website hosting	260.00	
SUB	Street lights	475.13	*
USPS	Permit 99 annual fee	320.00	
Verizon	Service for on call paging system	30.08	*
VOYA - ING	Deferred comp withholding and expense - January 2024	4,605.44	*
		123,890.69	
Approved by		2/14/2024	

RAINBOW WATER DISTRICT

KEY BANK CHARGES

BILLING CYCLE:

1/31/2024

Employee	Date	Vendor	Purpose	Amount	GL No.	Receipt
Jamie Porter	1/2/2024	Microsoft	Office software	62.50	5300	X
	1/4/2024	Tonalli Latin Kitchen	Engineers meeting meal	18.00	5300	X
	1/5/2024	Crashplan	Office software	9.99	5300	X
	1/8/2024	Adobe	Office software	29.99	5300	X
	1/10/2024	Amazon	Jamie keyboard and mouse	49.99	5300	X
	1/16/2024	Zoom	Office software	15.99	5300	X
	1/22/2024	Albertsons	Crew meals	31.16	5300	X
	1/26/2024	USPS	Mailed calendars to consultants	4.22	5300	X
	1/29/2024	NAPA	Antifreeze for truck #8	29.98	5240	X
				Sub Total	251.82	
Eric Carlson						
				No New Charges		
				Sub Total	-	
Brian Scott						
	1/16/2024	Les Schwab	Chains for vehicles	411.98	5240	X
	1/16/2024	Wilco	Ice melt	22.99	5280	X
	12/22/2023	T-Mobile	Mobile modem rental (returned)	35.00	5220	X
				Sub Total	469.97	
Wyatt Sayles						
	1/3/2024	Chefstore	Vinegar for Chase WTP	18.19	5245	X
	1/16/2024	Harbor Freight	Socket set	33.99	5280	X
	1/22/2024	ARCO	Fuel for #6	50.00	5240	X
				Sub Total	102.18	
Charles Petersen						
	1/30/2024	Wilco	Replacment diesel tank for office generator	290.95	5280	X
				Sub Total	290.95	
Jodi Sanders						
	1/8/2024	Albertsons	Board meeting meal	30.85	5300	X
	1/11/2024	Albertsons	Board meeting meal	71.60	5300	X
	1/12/2024	Dari Mart	Board meeting meal	8.97	5300	X
	1/12/2024	Fred Meyer	Board meeting meal	18.37	5300	X
	1/16/2024	Office Depot	Office supplies for joint board meeting	24.98	5300	X
	1/16/2024	Olive Garden	Joint board meeting meal	666.28	5300	X
	1/23/2024	USPS	Stamps	340.00	5290	X
				1,161.05		
				Grand Total	2,275.97	

## Rainbow Water District Profit & Loss Budget vs Actual-YTD January 2024

	Jan 24	Budget	% of Budget	Jul '23 - Jan 24	YTD Budget	% of Budget	Annual Budget
<b>Ordinary Income/Expense</b>							
<b>Income</b>							
4010 · Water Sales - District	86,530	74,750	116%	724,822	678,500	107%	1,169,964
4015 · Water Sales-SUB	64,042	57,000	112%	559,442	510,000	110%	792,770
4020 · Service Connection Charges	0	0	0%	0	0	0%	800
4030 · DRC's	0	0	0%	0	0	0%	2,400
4040 · Interest Income-Water	2,186	300	729%	8,005	2,100	381%	3,600
4050 · Reimbursed Labor	0	0	0%	7,511	2,000	376%	2,000
4060 · Account Processing Fees	240	250	96%	1,620	1,750	93%	3,050
4065 · Late Fees	430	0	100%	3,010	0	100%	0
4070 · Reconnection Charges	0	0	0%	725	0	100%	0
4080 · Gain/Loss on Sale of Assets	0	0	0%	0	4,000	0%	4,000
4085 · Water Fund - Transfers In	0	0	0%	148,216	448,216	33%	448,216
4090 · Miscellaneous Income	0	0	0%	17,216	0	100%	19,500
4095 · Fire Hydrant Maintenance	0	0	0%	0	0	0%	4,700
4100 · Bad Debts Recovered	0	0	0%	602	0	100%	0
4120 · Marcola Contract Income	2,840	1,250	227%	16,699	11,750	142%	18,000
4140 · Shangri La Contract Income	2,087	500	417%	4,515	3,500	129%	6,000
4160 · DCWA Contract Income	2,570	1,000	257%	14,440	7,000	206%	12,000
4180 · Shenandoah Income	3,573	500	715%	9,839	3,500	281%	6,000
4190 · Blue River Contract Income	761	500	152%	4,812	3,500	137%	7,000
<b>Total Income</b>	<b>165,260</b>	<b>136,050</b>	<b>121%</b>	<b>1,521,474</b>	<b>1,675,816</b>	<b>91%</b>	<b>2,500,000</b>
<b>Gross Profit</b>	<b>165,260</b>	<b>136,050</b>	<b>121%</b>	<b>1,521,474</b>	<b>1,675,816</b>	<b>91%</b>	<b>2,500,000</b>
<b>Expense</b>							
<b>5000 · Personal Services</b>							
<b>5001 · Staff Wages</b>							
5002 · Salary - Operations	4,829	0	100%	30,785	0	100%	0
5004 · Salary - Admin	26,848	0	100%	182,792	0	100%	0
5006 · Hourly - Operations	21,167	0	100%	128,731	0	100%	0
5008 · Hourly - Admin	3,266	0	100%	24,149	0	100%	0
5001 · Staff Wages - Other	0	58,030	0%	0	403,824	0%	695,465
<b>Total 5001 · Staff Wages</b>	<b>56,111</b>	<b>58,030</b>	<b>97%</b>	<b>366,457</b>	<b>403,824</b>	<b>91%</b>	<b>695,465</b>
5010 · Deferred Comp Company Expense	1,610	1,450	111%	10,867	10,150	107%	17,400
5016 · Extra Value Bonus	0	0	0%	21,208	18,000	118%	18,000
5050 · Part Time & Emergency Pay	14,503	2,500	580%	27,720	17,500	158%	30,000
5055 · Vacation Pay Expense	2,610	0	100%	30,034	0	100%	0
5056 · Sick Pay Expense	144	0	100%	6,450	0	100%	0
5057 · Sick Leave Buy Back	0	0	0%	0	0	0%	17,500
5060 · Social Security Expense	4,526	3,900	116%	26,287	27,300	96%	46,800
5065 · Medicare Expense	1,059	875	121%	6,509	6,375	102%	10,750
5070 · Workers Compensation Expense	0	0	0%	1,262	5,000	25%	7,500
5080 · Employee Insurance Expense	9,177	12,000	76%	64,236	107,411	60%	167,411
5081 · Employee Life Insurance Expense	433	0	100%	3,029	0	100%	0
5082 · FSA Fees	80	0	100%	860	0	100%	0
5083 · OR-WBF Assessment Expense	14	0	100%	87	0	100%	0
5100 · PERS Expense	18,453	14,750	125%	115,125	103,250	112%	177,000
5110 · Unemployment Expense	0	0	0%	0	0	0%	0
5120 · Payroll Advance	-600	0	100%	0	0	0%	0
<b>Total 5000 · Personal Services</b>	<b>108,119</b>	<b>93,505</b>	<b>116%</b>	<b>680,131</b>	<b>698,810</b>	<b>97%</b>	<b>1,187,826</b>
<b>5200 · Materials &amp; Services</b>							
5210 · Purification Expense	5,503	10,000	55%	21,874	70,000	31%	120,000
5215 · Purification Exp-Source	314	0	100%	2,592	2,750	94%	5,500
5220 · Telephone & Telemetry	2,514	2,000	126%	11,619	14,000	83%	24,500
5230 · Pump Power & Electric	21,797	20,000	109%	130,597	140,000	93%	240,000
5240 · Maintenance-Vehicles	1,508	3,000	50%	13,735	21,000	65%	36,000
5245 · Maintenance - CWTP	17,966	1,000	1,797%	28,439	7,000	406%	12,000
5247 · Maintenance - WCCP	0	1,000	0%	6,833	7,000	98%	12,000
5250 · Maintenance-Pumps/Wells	214	500	43%	3,843	3,500	110%	6,000
5260 · Maintenance-Mains	402	500	80%	2,678	3,500	77%	6,000
5270 · Maintenance-Meters & Services	1,250	500	250%	9,209	3,500	263%	6,000
5275 · Maintenance - Land	0	0	0%	1,500	6,000	25%	9,000
5280 · Maintenance - Other	1,856	500	371%	11,857	3,500	339%	6,000
5285 · Maintenance-Reservoirs	0	0	0%	6,639	0	100%	3,000
5290 · Customer Postage	2,029	1,250	162%	7,942	8,750	91%	15,000
5295 · Utility Billing Program Expense	0	0	0%	0	0	0%	0
5300 · General Office Expense	1,274	1,500	85%	12,461	12,000	104%	25,500
5305 · Transaction Fee Processing	1,279	2,500	51%	14,754	17,500	84%	30,000
5310 · Special District Expense	0	0	0%	0	2,000	0%	2,000
5320 · Bad Debt Expense	0	125	0%	309	875	35%	1,500
5325 · Contract Workers	0	0	0%	0	0	0%	10,000
5330 · Budget & Election Expense	0	0	0%	2,736	0	100%	2,000
5340 · Community Outreach	0	125	0%	8,533	875	975%	1,500
5360 · Dues, School & Convention Exp	708	0	100%	7,636	8,000	95%	20,000
5365 · Emergency Preparedness	0	0	0%	950	0	100%	0
5380 · Street Light Expense	475	600	79%	2,395	4,200	57%	7,200
5200 · Materials & Services - Other	0	0	0%	0	0	0%	0
<b>Total 5200 · Materials &amp; Services</b>	<b>59,089</b>	<b>45,100</b>	<b>131%</b>	<b>309,132</b>	<b>335,950</b>	<b>92%</b>	<b>600,700</b>
5205 · PFAS/PFOS Expenses	0	0	0%	3,292	0	0%	0
5350 · CWTP - Loan / Interest Exp	0	0	0%	148,216	148,216	100%	148,216

	Jan 24	Budget	% of Budget	Jul '23 - Jan 24	YTD Budget	% of Budget	Annual Budget
5400 · Contractual							
5410 · Insurance Expense	57,031	52,000	110%	56,799	52,000	109%	52,000
5420 · Legal Expense	1,094	1,500	73%	8,951	10,500	85%	18,000
5425 · Network - IT	2,320	500	464%	2,320	7,500	31%	10,000
5427 · IT - Subscriptions	-155	750	-21%	2,414	5,250	46%	9,000
5430 · Audit & Accounting Expense	0	0	0%	0	0	0%	15,660
5440 · Engineering Studies - PFAS	0	1,500	0%	16,356	19,500	84%	54,500
5470 · Financial Advisor	0	0	0%	6,977	6,000	116%	6,000
5480 · Engineering Studies	464	5,000	9%	464	18,000	3%	23,000
Total 5400 · Contractual	60,754	61,250	99%	94,281	118,750	79%	188,160
5500 · Capital Outlay							
5510 · Mains	0			0	90,000	0%	90,000
5520 · Service Lines	0	0	0%	0	3,000	0%	5,000
5530 · Meters	0	0	0%	0	3,000	0%	5,000
5540 · Hydrants	0	0	0%	0	15,000	0%	20,000
5550 · Tools, Vehicles & Equipment	0	1,000	0%	0	7,000	0%	16,200
5560 · Office Furniture & Equipment	0	0	0%	0	0	0%	0
5570 · Well Rehabs	0	0	0%	0	0	0%	0
5580 · Wells and Wellfield	0	0	0%	15,650	0	100%	0
5585 · Telemetry & Control System	0	0	0%	0	0	0%	5,000
5590 · Purification Equipment	0	0	0%	0	0	0%	0
5595 · Streetlight Replacement	0	0	0%	0	0	0%	0
5600 · Reservoirs	0	0	0%	0	25,000	0%	25,000
5610 · Chase Wellfield Development	0	0	0%	0	225,000	0%	225,000
5620 · Building & Additions	0	5,000	0%	0	10,000	0%	15,000
5640 · Weyerhaeuser Corrosion Control	0	0	0%	0	0	0%	0
Total 5500 · Capital Outlay	0	6,000	0%	15,650	378,000	4%	406,200
7035 · Capital Res Capital - Vehicles	0	0	0%	0	0	0%	0
Total Expense	227,961	205,855	111%	1,250,701	1,679,726	74%	2,531,102
Net Ordinary Income	-62,701	-69,805	90%	270,772	-3,910	-6,926%	-31,102
Other Income/Expense							
Other Income							
70000 · CAPITAL RESERVE FUND							
7010 · Capital Reserve - Interest	2,386	1,500	159%	15,446	7,500	206%	15,000
7020 · Capital Reserve - Transfers In	0	0	0%	0	500,000	0%	500,000
Total 70000 · CAPITAL RESERVE FUND	2,386	1,500	159%	15,446	507,500	3%	515,000
70500 · RESILIENCE FUND							
7100 · Resilience Fund - Transfers In	0	0	0%	0	0	0%	200,000
7110 · Resilience Fund - Interest	2,035	500	407%	13,178	3,500	377%	7,000
Total 70500 · RESILIENCE FUND	2,035	500	407%	13,178	3,500	377%	207,000
8000 · Fire Protection-Income							
8010 · Fire Protection - Tax Income	15,612	20,000	78%	1,567,589	1,600,000	98%	1,715,000
8030 · Fire Protection - Interest	5,652	2,500	226%	22,544	7,000	322%	15,000
Total 8000 · Fire Protection-Income	21,264	22,500	95%	1,590,133	1,607,000	99%	1,730,000
Total Other Income	25,685	24,500	105%	1,618,757	2,118,000	76%	2,452,000
Other Expense							
6550 · Water Fund - Transfers Out	0	0	0%	0	0	0%	200,000
7030 · Capital Reserve - Transfers Out	0	0	0%	0	300,000	0%	300,000
8500 · Fire Protection-Expense							
8510 · Fire Protection-Contract Exp	619,416	619,416	100%	547,411	619,416	88%	1,238,831
8545 · Fire Fund - Transfers Out	0	0	0%	148,216	648,216	23%	648,216
Total 8500 · Fire Protection-Expense	619,416	619,416	100%	695,627	1,267,632	55%	1,887,047
Total Other Expense	619,416	619,416	100%	695,627	1,567,632	44%	2,387,047
Net Other Income	-593,730	-594,916	100%	923,130	550,369	168%	64,953
Net Income	-656,431	-664,720	99%	1,193,903	546,459	218%	33,851

**Rainbow Water District**  
**Profit & Loss Prev Year Comparison**  
**January 2024**

	Jan 24	Jan 23	\$ Change	% Change
<b>Ordinary Income/Expense</b>				
<b>Income</b>				
4010 · Water Sales - District	86,530	64,756	21,775	34%
4015 · Water Sales-SUB	64,042	54,866	9,177	17%
4040 · Interest Income-Water	2,186	657	1,529	233%
4050 · Reimbursed Labor	0	310	-310	-100%
4060 · Account Processing Fees	240	150	90	60%
4065 · Late Fees	430	430	0	0%
4070 · Reconnection Charges	0	25	-25	-100%
4090 · Miscellaneous Income	0	245	-245	-100%
4120 · Marcola Contract Income	2,840	1,756	1,084	62%
4140 · Shangri La Contract Income	2,087	249	1,838	739%
4160 · DCWA Contract Income	2,570	2,859	-289	-10%
4180 · Shenandoah Income	3,573	432	3,141	727%
4190 · Blue River Contract Income	761	770	-8	-1%
<b>Total Income</b>	<b>165,260</b>	<b>127,504</b>	<b>37,756</b>	<b>30%</b>
<b>Gross Profit</b>	<b>165,260</b>	<b>127,504</b>	<b>37,756</b>	<b>30%</b>
<b>Expense</b>				
5000 · Personal Services				
5001 · Staff Wages				
5002 · Salary - Operations	4,829	3,050	1,779	58%
5004 · Salary - Admin	26,848	24,882	1,967	8%
5006 · Hourly - Operations	21,167	14,181	6,987	49%
5008 · Hourly - Admin	3,266	7,313	-4,048	-55%
<b>Total 5001 · Staff Wages</b>	<b>56,111</b>	<b>49,426</b>	<b>6,685</b>	<b>14%</b>
5010 · Deferred Comp Company Expense	1,610	1,303	307	24%
5050 · Part Time & Emergency Pay	14,503	3,124	11,379	364%
5055 · Vacation Pay Expense	2,610	2,831	-221	-8%
5056 · Sick Pay Expense	144	947	-803	-85%
5057 · Sick Leave Buy Back	0	0	0	0%
5060 · Social Security Expense	4,526	3,420	1,106	32%
5065 · Medicare Expense	1,059	800	259	32%
5080 · Employee Insurance Expense	9,177	10,604	-1,428	-14%
5081 · Employee Life Insurance Expense	433	475	-43	-9%
5082 · FSA Fees	80	61	19	32%
5083 · OR-WBF Assessment Expense	14	13	1	10%
5100 · PERS Expense	18,453	13,464	4,989	37%
5110 · Unemployment Expense	0	0	0	0%
5120 · Payroll Advance	-600	0	-600	-100%
<b>Total 5000 · Personal Services</b>	<b>108,119</b>	<b>86,468</b>	<b>21,651</b>	<b>25%</b>
5200 · Materials & Services				
5210 · Purification Expense	5,503	6,753	-1,250	-19%
5215 · Purification Exp-Source	314	0	314	100%
5220 · Telephone & Telemetry	2,514	2,462	52	2%
5230 · Pump Power & Electric	21,797	20,136	1,661	8%
5240 · Maintenance-Vehicles	1,508	6,714	-5,206	-78%
5245 · Maintenance - CWTP	17,966	4,414	13,552	307%
5250 · Maintenance-Pumps/Wells	214	0	214	100%
5260 · Maintenance-Mains	402	1,192	-790	-66%
5270 · Maintenance-Meters & Services	1,250	199	1,051	528%
5280 · Maintenance - Other	1,856	1,456	400	27%
5285 · Maintenance-Reservoirs	0	130	-130	-100%
5290 · Customer Postage	2,029	234	1,795	766%
5295 · Utility Billing Program Expense	0	-149	149	100%
5300 · General Office Expense	1,274	841	433	52%
5305 · Transaction Fee Processing	1,279	1,015	264	26%
5320 · Bad Debt Expense	0	338	-338	-100%
5360 · Dues, School & Convention Exp	708	0	708	100%
5380 · Street Light Expense	475	481	-6	-1%
<b>Total 5200 · Materials &amp; Services</b>	<b>59,089</b>	<b>46,216</b>	<b>12,872</b>	<b>28%</b>



	Jan 24	Jan 23	\$ Change	% Change
<b>5400 · Contractual</b>				
5410 · Insurance Expense	57,031	49,141	7,890	16%
5420 · Legal Expense	1,094	156	938	601%
5425 · Network - IT	2,320	1,350	970	72%
5427 · IT - Subscriptions	-155	157	-313	-199%
5470 · Financial Advisor	0	8,074	-8,074	-100%
5480 · Engineering Studies	464	0	464	100%
<b>Total 5400 · Contractual</b>	<b>60,754</b>	<b>58,878</b>	<b>1,875</b>	<b>3%</b>
<b>5500 · Capital Outlay</b>				
5570 · Well Rehabs	0	9,889	-9,889	-100%
5580 · Wells and Wellfield	0	1,260	-1,260	-100%
5595 · Streetlight Replacement	0	1,257	-1,257	-100%
<b>Total 5500 · Capital Outlay</b>	<b>0</b>	<b>12,405</b>	<b>-12,405</b>	<b>-100%</b>
<b>Total Expense</b>	<b>227,961</b>	<b>203,967</b>	<b>23,994</b>	<b>12%</b>
<b>Net Ordinary Income</b>	<b>-62,701</b>	<b>-76,463</b>	<b>13,763</b>	<b>18%</b>
<b>Other Income/Expense</b>				
<b>Other Income</b>				
<b>70000 · CAPITAL RESERVE FUND</b>				
7010 · Capital Reserve - Interest	2,386	2,230	156	7%
<b>Total 70000 · CAPITAL RESERVE FUND</b>	<b>2,386</b>	<b>2,230</b>	<b>156</b>	<b>7%</b>
<b>70500 · RESILIENCE FUND</b>				
7110 · Resilience Fund - Interest	2,035	975	1,060	109%
<b>Total 70500 · RESILIENCE FUND</b>	<b>2,035</b>	<b>975</b>	<b>1,060</b>	<b>109%</b>
<b>8000 · Fire Protection-Income</b>				
8010 · Fire Protection - Tax Income	15,612	21,055	-5,443	-26%
8030 · Fire Protection - Interest	5,652	2,893	2,759	95%
<b>Total 8000 · Fire Protection-Income</b>	<b>21,264</b>	<b>23,948</b>	<b>-2,684</b>	<b>-11%</b>
<b>Total Other Income</b>	<b>25,685</b>	<b>27,153</b>	<b>-1,468</b>	<b>-5%</b>
<b>Other Expense</b>				
<b>8500 · Fire Protection-Expense</b>				
8510 · Fire Protection-Contract Exp	619,416	619,416	0	0%
<b>Total 8500 · Fire Protection-Expense</b>	<b>619,416</b>	<b>619,416</b>	<b>0</b>	<b>0%</b>
<b>Total Other Expense</b>	<b>619,416</b>	<b>619,416</b>	<b>0</b>	<b>0%</b>
<b>Net Other Income</b>	<b>-593,730</b>	<b>-592,263</b>	<b>-1,468</b>	<b>-0%</b>
<b>Net Income</b>	<b>-656,431</b>	<b>-668,726</b>	<b>12,295</b>	<b>2%</b>

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02/08/24

Accrual Basis

Rainbow Water District  
Profit & Loss  
January 2023 through January 2024

	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23	Jan 24	TOTAL
<b>Ordinary Income/Expense</b>														
<b>Income</b>														
4010 · Water Sales - District	64,756	66,546	66,013	68,625	72,258	191,718	104,468	159,869	126,450	92,338	78,761	76,407	86,530	1,254,739
4015 · Water Sales-SUB	54,866	52,136	57,740	58,520	70,844	85,907	114,703	118,180	79,660	64,756	58,511	59,590	64,042	939,454
4020 · Service Connection Charges	0	0	0	0	0	2,515	0	0	0	0	0	0	0	2,515
4040 · Interest Income-Water	657	348	302	387	652	507	226	178	580	1,798	1,484	1,553	2,186	10,858
4050 · Reimbursed Labor	310	0	0	597	0	2,771	0	760	4,080	1,226	1,292	152	0	11,188
4060 · Account Processing Fees	150	190	145	115	285	230	220	255	305	205	255	140	240	2,735
4065 · Late Fees	430	420	410	450	420	430	470	350	450	500	360	450	430	5,570
4070 · Reconnection Charges	25	50	95	200	150	150	200	125	50	150	50	150	0	1,395
4085 · Water Fund - Transfers In	0	0	0	0	128,740	0	0	0	0	148,216	0	0	0	276,956
4090 · Miscellaneous Income	245	-74	0	0	68	136	45	966	957	11,228	3,952	68	0	17,590
4095 · Fire Hydrant Maintenance	0	0	0	0	5,113	0	0	0	0	0	0	0	0	5,113
4100 · Bad Debts Recovered	0	0	0	115	0	0	558	0	0	0	0	44	0	716
4120 · Marcola Contract Income	1,756	1,008	1,879	3,212	2,783	7,303	1,479	3,486	2,229	1,528	2,688	2,450	2,840	34,640
4140 · Shangri La Contract Income	249	402	314	596	459	321	276	572	498	409	464	209	2,087	6,855
4160 · DCWA Contract Income	2,859	915	4,653	1,201	1,446	917	969	1,139	1,147	2,931	4,069	1,615	2,570	26,429
4180 · Shenandoah Income	432	408	499	1,012	482	447	630	2,211	855	1,313	518	740	3,573	13,119
4190 · Blue River Contract Income	770	1,317	543	706	3,559	901	635	617	1,153	617	599	431	761	12,608
<b>Total Income</b>	<b>127,504</b>	<b>123,665</b>	<b>132,591</b>	<b>135,735</b>	<b>287,258</b>	<b>294,253</b>	<b>224,877</b>	<b>288,708</b>	<b>218,413</b>	<b>327,215</b>	<b>153,003</b>	<b>143,997</b>	<b>165,260</b>	<b>2,622,480</b>
<b>Gross Profit</b>	<b>127,504</b>	<b>123,665</b>	<b>132,591</b>	<b>135,735</b>	<b>287,258</b>	<b>294,253</b>	<b>224,877</b>	<b>288,708</b>	<b>218,413</b>	<b>327,215</b>	<b>153,003</b>	<b>143,997</b>	<b>165,260</b>	<b>2,622,480</b>
<b>Expense</b>														
5000 · Personal Services	86,468	81,587	86,603	83,629	87,000	107,287	116,754	92,723	89,053	91,625	90,429	91,427	108,119	1,212,704
5200 · Materials & Services	46,216	45,982	45,368	48,422	40,757	106,744	1,932	65,082	53,971	46,909	30,895	51,255	59,089	642,621
5205 · PFAS/PFOS Expenses	0	0	0	0	0	0	0	0	0	0	761	2,531	0	3,292
5350 · CWTP - Loan / Interest Exp	0	0	0	0	0	-106,958	0	0	0	0	148,216	0	0	41,258
5400 · Contractual	58,878	141	9,424	3,498	10,921	21,749	-152	522	5,835	8,118	10,050	9,154	60,754	198,894
5500 · Capital Outlay	12,405	6,945	0	0	25,249	57,461	0	0	15,650	0	0	0	0	117,710
7035 · Capital Res Capital - Vehicles	0	0	0	0	0	116,798	0	0	0	0	0	0	0	116,798
<b>Total Expense</b>	<b>203,967</b>	<b>134,655</b>	<b>141,396</b>	<b>135,549</b>	<b>163,927</b>	<b>303,080</b>	<b>118,535</b>	<b>158,328</b>	<b>164,509</b>	<b>146,652</b>	<b>280,350</b>	<b>154,367</b>	<b>227,961</b>	<b>2,333,276</b>
<b>Net Ordinary Income</b>	<b>-76,463</b>	<b>-10,989</b>	<b>-8,805</b>	<b>186</b>	<b>123,331</b>	<b>-8,827</b>	<b>106,343</b>	<b>130,380</b>	<b>53,904</b>	<b>180,563</b>	<b>-127,347</b>	<b>-10,370</b>	<b>-62,701</b>	<b>289,204</b>
<b>Other Income/Expense</b>														
<b>Other Income</b>														
70000 · CAPITAL RESERVE FUND	2,230	2,236	2,495	2,423	2,324	2,047	1,915	2,067	2,103	2,309	2,290	2,376	2,386	29,201
70500 · RESILIENCE FUND	975	977	1,092	1,060	1,100	122,190	1,634	1,764	1,795	1,970	1,953	2,027	2,035	140,572
8000 · Fire Protection-Income	23,948	16,430	38,980	9,821	7,804	36,849	2,491	5,508	4,110	3,608	1,102,576	450,576	21,264	1,723,964
<b>Total Other Income</b>	<b>27,153</b>	<b>19,644</b>	<b>42,567</b>	<b>13,303</b>	<b>11,228</b>	<b>161,085</b>	<b>6,041</b>	<b>9,338</b>	<b>8,008</b>	<b>7,887</b>	<b>1,106,819</b>	<b>454,979</b>	<b>25,685</b>	<b>1,893,737</b>

	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23	Jan 24	TOTAL
Other Expense														
5700 · Capital Outlay Offset	0	0	0	0	0	-349,139	0	0	0	0	0	0	0	-349,139
6540 · Depreciation Expense	0	0	0	0	0	240,118	0	0	0	0	0	0	0	240,118
6550 · Water Fund - Transfers Out	0	0	0	0	0	121,000	0	0	0	0	0	0	0	121,000
7030 · Capital Reserve - Transfers Out	0	0	0	0	128,740	0	0	0	0	0	0	0	0	128,740
8500 · Fire Protection-Expense	619,416	0	309,708	0	0	309,708	0	0	0	148,216	0	-72,005	619,416	1,934,458
Total Other Expense	619,416	0	309,708	0	128,740	321,686	0	0	0	148,216	0	-72,005	619,416	2,075,176
Net Other Income	-592,263	19,644	-267,141	13,303	-117,512	-160,601	6,041	9,338	8,008	-140,329	1,106,819	526,983	-593,730	-181,440
Net Income	-668,726	8,654	-275,945	13,488	5,819	-169,428	112,383	139,719	61,912	40,234	979,473	516,614	-656,431	107,765

Rainbow Water District  
Balance Sheet  
As of January 31, 2024

	Jan 31, 24
<b>ASSETS</b>	
Current Assets	
Checking/Savings	
1010 · Petty Cash	150
1030 · Key Bank Civic Pay	13,676
1040 · Key Bank Money Market	29,309
1052 · Key Bank General Checking	14,941
1055 · LGIP - Capital Reserve Fund	564,175
1060 · LGIP-Water Fund	327,573
1065 · LGIP-Fire Fund	1,340,566
1068 · LGIP - Resilience Fund	481,361
Total Checking/Savings	2,771,751
Accounts Receivable	
1310 · Accounts Receivable-Water	69,235
1312 · Accounts Receivable - Fees	225
1313 · Accounts Receivable - Late Fees	160
1315 · Accounts Receivable-CONTRACT	76,240
1320 · Accounts Receivable-OTHER	25
1322 · Accounts Receivable - DCWA	2,848
1324 · Accounts Receivable - BRWD	761
1330 · Return Checks - RWD	50
1331 · Return Checks - Other Dist.	31
1335 · Allowance for Doubtful Accounts	-1,200
1410 · Fire Fund Taxes Receivable	63,495
Total Accounts Receivable	211,871
Other Current Assets	
12001 · Civic Pay 98 Recon Account	993
1500 · Material & Supply Inventory	55,056
1510 · Pension Asset GASB68	-803,851
1520 · Net OPEB Asset (Liab)	-10,181
1600 · Prepaid Insurance	24,571
Total Other Current Assets	-733,413
Total Current Assets	2,250,209
Fixed Assets	
1810 · Land	174,292
1820 · Wells	1,192,778
1830 · Pumping Equipment	299,454
1835 · Telemetry & Control System	186,443
1840 · Purification Equipment	87,081
1850 · Reservoirs	1,958,342
1860 · Transmission Mains	389,778
1870 · Distribution Mains	1,468,360
1880 · Service Lines	165,953
1890 · Meters	460,567
1900 · Hydrants	64,779
1910 · Buildings & Bridges	180,839
1920 · Tools, Vehicles, and Equipment	378,865
1930 · Office Furniture & Equipment	68,369
1940 · Weyco Corrosion Control	69,505
1950 · Chase Wellfield Development	1,071,067
1960 · Emergency Center - Moe Security	13,665
1970 · Chase Water Treatment Plant	2,930,572
1980 · Streetlight Replacement	11,018
1990 · Accumulated Depreciation	-4,313,810
Total Fixed Assets	6,857,916
<b>TOTAL ASSETS</b>	<b>9,108,126</b>

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Jan 31, 24

LIABILITIES & EQUITY

Liabilities	
Current Liabilities	
Other Current Liabilities	
2210 · Customer Deposits	18,100
2212 · Customer Donations	19
2220 · Deferred Taxes-Fire Fund	-11,558
2350 · PERS Payable	22,855
2353 · PERS Employee Voluntary Cont.	481
2365 · Health Reimbursement Account	10,675
2370 · Deferred Budget Billing	-13,299
2420 · Accrued Vacation Pay	33,627
2500 · Deferred Outflows GASB68	-494,335
2510 · Deferred Inflows GASB68	612,048
2550 · Deferred Inflows GASB 75	1,861
2560 · Deferred Outflows GASB 75	-2,639
9150 · MWD - Invoices	427
9200 · DCWA - Customer Payments	46
9250 · DCWA - Invoices	218
9450 · Shenandoah Invoices	1
Total Other Current Liabilities	<u>178,527</u>
Total Current Liabilities	178,527
Long Term Liabilities	
2445 · Long Term Debt - CWTP	2,049,758
2447 · LTD CWTP - Interest Accrual	<u>23,564</u>
Total Long Term Liabilities	<u>2,073,323</u>
Total Liabilities	2,251,850
Equity	
32000 · Retained Earnings	2,277,485
3210 · Cont. in Aid of Construction	2,869,723
3230 · Retained Earnings - Fire	515,165
Net Income	<u>1,193,903</u>
Total Equity	<u>6,856,276</u>
TOTAL LIABILITIES & EQUITY	<u><u>9,108,126</u></u>

**DIVIDER PAGE**

**INFORMATION ONLY**

# Ice Storm 2024



## An unprecedented storm caused unprecedented damage

- Nearly half of Springfield homes and businesses lost power at some point during the ice storm. We estimate this included about 15,000 meters.
- The storm had a 4-day damage period. Recent major storms have had a damage period of 1 day or less.
- More than 80 poles were destroyed. This is the 4th major storm Springfield has experienced in the last decade. In the previous 3 storms, a total of 10 poles were destroyed.



# Ice Storm 2024 FAQs

## **Why weren't you more prepared?**

We understand this outage was frustrating. The size and scale of the storm, and the damage it caused, was unprecedented, and hit Springfield the hardest of any community. We learn something from every big storm, and hearing from our customers will help us know where to make improvements. We can always do better.

## **Why was restoration so slow? We were out of power for 11 days.**

We know that some people were without power for a very long time, and that is not the experience we want our customers to have. During this storm, restoration efforts were hampered by difficult conditions, from impassible roads to the large amount of damage to overhead services that were located in inaccessible areas. It was slow going, and our crews worked as quickly as possible to restore power.

## **Why doesn't SUB have an outage map or some way to report outages other than a phone call?**

Power outage maps are usually generated from data provided by smart meters, which SUB does not use. We ask customers to call in during an outage to report it. We use those reports, together with our knowledge of the large feeders that have lost power, to plan restoration.

## **Why were your early communications so vague?**

We know that customers want information as quickly as possible. The long 4-day active period of this storm made early restoration highly dynamic, with crews focused on fixing critical services and our basic power backbone. Once the conditions stabilized, we were able to deploy crews and share that information with more specificity.

## **Why couldn't you prioritize power restoration to people who were ill or vulnerable?**

This is always the hardest part of restoration, and we are immensely grateful to those neighbors who reached out to help those who needed assistance as we restored power. Utilities follow a standard, prescribed restoration order, which calls for crews to first ensure our community has power to critical services, like hospitals and water systems. Once these services were restored, we repaired the backbone of our system so that power could begin to move from our substations to broad areas of town. Then we repaired the distribution lines that took power to neighborhoods, and then we worked to restore power to individuals.

## **Why was I out of power when my power lines are underground?**

In SUB's system, underground power lines are served from overhead power lines at some point along the way. For those with underground power lines who experienced outages, their power was likely out due to an overhead outage in a different part of our system.

## **Why don't you bury your power lines?**

About 60 percent of SUB's system is overhead, and nearly all new residential construction for the past several decades uses underground power lines. Older areas have overhead lines in backyards, which are the most time consuming to repair, primarily because of the difficulty in viewing the damage and accessing the lines. Burying existing power lines is often possible, but there are significant barriers. That said, all solutions are being considered.

## **Why didn't you call the Red Cross in?**

We are very grateful to our community partners who helped provide shelter and resources during this storm. However, authorizing agencies like the Red Cross, National Guard or other relief resources is not within SUB's authority. We were able to redeploy meter readers to assist with wellness checks as soon as it was safe for them to travel.

## **Why is my January bill high when I didn't use power for half the month?**

We understand that it can be frustrating to receive any bill after an outage, especially one that doesn't seem to account for time when power isn't used. For this storm, SUB did not read meters for much of January. Instead, we estimated bills based on previous usage. Meter readers are now back on their routes and the next scheduled bills will be adjusted to reflect actual use.





## LESSONS LEARNED AND HOW TO BE BETTER PREPARED FOR WINTER EVENTS

January 24, 2024

We asked for feedback from our Facebook followers, and added some of our own observations. Here are some ideas that were shared, to help you prepare before the next winter event.

### HEAT

- Keep a supply of dry firewood if you are able to burn wood for heat. At least one cord of wood so you have enough to share with neighbors.
- Pellet stoves require a stockpile of pellets, and some electricity to run a fan or power the auger that feeds pellets into the stove. You likely need some form of backup power to allow this heat source to work in a power outage.
- If you have a generator that can provide part of your house, you may be able to turn off some devices and handle running one or more 1500 Watt space heaters. Be careful of the risk of fire from portable heaters and use of extension cords.
- Propane catalytic heaters like a Portable Buddy Heater are designed for camping and can be used indoors. As a safety precaution, you can get a battery-powered carbon monoxide detector. You will need multiple 1 lb disposal canisters, or you can buy an adapter hose that allows you to connect a 20 lb propane cylinder to the heater.  
<https://www.mrheater.com/portable-buddy-heater.html>

### BACKUP POWER

- Gas, diesel, propane or natural gas generators can be portable and plugged in to supply just a part of the house, or they can be larger to power the entire house.
- 20 lb propane gas cylinders hold 4.6 gallons when compressed as a liquid. We found that with icy roads, propane trucks were not able to resupply the first few days of the outage, and there were lines to get fuel when it was available. Consider larger containers and/or storing more fuel of whatever type you use.
- There are many types of portable power stations and car chargers that have USB ports to connect phones and rechargeable lights. A mixture of devices that can be recharged or take batteries can be helpful, depending on your ability to recharge.
- Lots of batteries! For about \$20 you can get a small suitcase like a "Battery Daddy" that stores batteries of different sizes and a tester, keeping an inventory available.

## WATER

- During an extended outage like we had, some of the public water supply wells were not able to operate and the large storage tanks were depleted to the point that some parts of the Springfield water system had low pressure. This could trigger a boil water advisory, which is hard to do if you are not able to heat water in your home. Everyone should consider storing some water for such an emergency.
- For drinking, you need at least 1 gallon per person or pet per day. This is easier if you are connected to a community water supply and able to get water from the tap. If your stored water has been sitting, or the public water system has been potentially contaminated, you need to bring water to a rolling boil for one minute then let cool.
- Beyond drinking, more water is needed when you think about food preparation, making baby formula, hand washing, and cleaning dishes.
- Whether on septic tank or city sewer, you can pour water into your toilet tank and get the toilet to flush if your water service is not working (e.g., freeze damage or well off).
- **The attached US EPA guide gives instructions for emergency disinfection of water.**

## LIGHTING

- Flashlights and solar or rechargeable lanterns. Extra batteries and power bricks to allow you to recharge. Headlamps allow you to move about with your hands free.
- Candles have some risk from the open flame, but unscented candles like a Bolsius White Pillar Candle found on Amazon, 2" diameter and 6" high, will burn for up to 36 hours and give off light and heat. \$54 for a box of 20 candles.
- Battery-powered fake candles can give some ambient light and work as nightlights to allow easier movement through the house. They can last for multiple days.

## COMMUNICATIONS

- Phone numbers for your friends, family and neighbors. When it is hard or dangerous to walk outside, you can still make wellness checks by phone.
- A hand-cranked or battery-powered radio (with extra batteries) to allow you to receive some news and information when phones and internet are not working.
- Monitor Facebook for updates. When times are good Rainbow does not always keep the content fresh, but are trying to improve. This is a key tool for us during a crisis.

## COOKING

- Barbecues allow you to cook food, but a propane or butane cook stove, even one burner, can provide more options to boil water, heat from a can, etc. You may have a barbecue and your neighbor has a cook stove. Work together!
- If you are able to run a generator and get some power, an electric hot pot allows you to heat water for coffee, tea, instant oatmeal, etc.
- When the microwave does not work, a homemade chafing dish allowed a Sterno can to warm food set in a pan.

## FOOD STORAGE

- One silver lining of a winter power outage is the cooler temperatures may help with food storage. When it was still cold and the ice was not melting, it worked to put food from the refrigerator in a cooler on the porch and save much of it. When the ice thawed and roads were open again, then it became necessary to buy ice or run the refrigerator and freezers from a generator.
- Many of us do not can and store as much food as previous generations did, but this event was a reminder that preparing food one day at a time or consistently using delivery services leaves you vulnerable. Everybody should have some storage of canned goods and a can opener, as well as easy to prepare food. Companies like Mountain House sell dehydrated food in a pouch. As long as you can boil water and pour it into the pouch you can have nutritious food.
- Remember morale boosters. Store some candy or chocolate. Keep some instant coffee and tea bags available. Crackers, nuts, trail mix can be easy to grab and go.

## ENTERTAINMENT

- When streaming does not work for videos and music, go “old school.” If you have a generator that can power up some outlets, keep a player and a stash of movies on DVD and Blu-Ray available.
- Put batteries in the boom box to provide music from the radio station, or other recorded media.
- Read a book by candlelight. It worked for Abraham Lincoln!

#### PRACTICAL

- A propane hand torch came in handy when ice coated car and camper doors, helping gently thaw the ice to allow access to the vehicle. The propane torch also helped melt ice off locks and fence gates, mailbox doors, etc.
- Warm clothing. Thermal underwear and thick socks helped when we were below freezing and only had partial heat working.
- Ice cleats to slip over your shoes and provide better traction for getting around.
- Are you one of those people that let the gas tank get below a quarter tank? If you always keep the tank at least half or three-quarters full you will be able to get around even if gas stations are out of power or having a tough time getting resupplied.

#### PETS

- Remember to store extra food and water for your pets (or livestock) also.

#### MEDICINE

- Hospital emergency rooms were swamped with people who did not have medicine or heat or power to run medical equipment. Store extra medicine if possible. Think ahead.

#### SAFETY KNOWLEDGE

- Always be willing to learn new things. Study what works and does not work.
- Do not run cars in enclosed spaces.
- Do not use open flame gas stoves without proper ventilation.
- Do not use propane stoves indoors.
- Watch for getting wood stoves and inserts too hot, or running portable heaters from extension cords and getting them too close to flammable items. Fire danger can increase in times like these, just when it is harder for the fire department to respond.
- You can get food poisoning from spoiled foods. If frozen foods thaw or refrigerated foods get too warm, toss the food if you have any doubts. Insurance can help cover food replacement, so it is better to be safe.
- Do not overexert yourself. Cleanup work like shoveling snow, scraping ice, and removing fallen branches can trigger medical emergencies like a heart attack. Pay attention to your body. Have a safety buddy when you are cutting wood or working near fallen trees and branches. Wear protective equipment and call for professional help if the job is too big.

# EMERGENCY DISINFECTION OF DRINKING WATER

In an emergency situation where regular water service has been interrupted – like a hurricane, flood, or water pipe breakage – local authorities may recommend using only bottled water, boiled water, or disinfected water until regular water service is restored. The instructions below show you how to boil and disinfect water to kill most disease-causing microorganisms that may be present in the water. However, boiling or disinfection will not destroy other contaminants, such as heavy metals, salts, and most other chemicals.

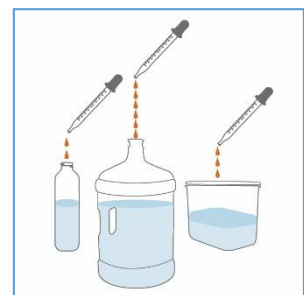
**ONLY USE WATER THAT HAS BEEN PROPERLY DISINFECTED FOR DRINKING, COOKING, MAKING ANY PREPARED DRINK, WASHING DISHES, AND FOR BRUSHING TEETH.**

- ❑ Use **bottled water** or water you have properly prepared and stored as an emergency water supply.
- ❑ **Boil water**, if you do not have bottled water. Boiling is sufficient to kill pathogenic bacteria, viruses and protozoa (WHO, 2015).

- If water is cloudy, let it settle and filter it through a clean cloth, paper towel, or coffee filter.
- Bring water to a rolling boil for at least one minute. At altitudes above 5,000 feet (1,000 meters), boil water for three minutes.
- Let water cool naturally and store it in clean containers with covers.
- To improve the flat taste of boiled water, add one pinch of salt to each quart or liter of water, or pour the water from one clean container to another several times.



- ❑ **Disinfect water using household bleach**, if you can't boil water. Only use regular, unscented chlorine bleach products that are suitable for disinfection and sanitization as indicated on the label. The label may say that the active ingredient contains 6 or 8.25% of sodium hypochlorite. Do not use scented, color safe, or bleaches with added cleaners.
- If water is cloudy, let it settle and filter it through a clean cloth, paper towel, or coffee filter.
- Locate a clean dropper from your medicine cabinet or emergency supply kit.
- Locate a fresh liquid chlorine bleach or liquid chlorine bleach that is stored at room temperatures for less than one year.
- Use the table on the next page as a guide to decide how much bleach you should add to the water, for example, add 8 drops of 6 % bleach or 6 drops of 8.25% bleach to each gallon of water. Double the amount of bleach if the water is cloudy, colored, or very cold.
- Stir and let stand for 30 minutes. The water should have a slight chlorine odor. If it doesn't, repeat the dosage and let stand for another 15 minutes before use.
- If the chlorine taste is too strong, pour the water from one clean container to another and let it stand for a few hours before use.



Volume of Water	Amount of 6% Bleach to Add†	Amount of 8.25% Bleach to Add†
1 quart/liter	2 drops	2 drops
1 gallon	8 drops	6 drops
2 gallons	16 drops (1/4 tsp)	12 drops (1/8 tsp)
4 gallons	1/3 tsp	1/4 tsp
8 gallons	2/3 tsp	1/2 tsp

† Bleach may contain 6 or 8.25% sodium hypochlorite

### ADDITIONAL WATER GUIDANCE FOR EMERGENCIES

**Prepare and store an emergency water supply.** Visit the Federal Emergency Management Agency (FEMA) website [www.ready.gov/managing-water](http://www.ready.gov/managing-water) for additional guidance on preparing and storing an emergency water supply.

**Look for other sources of water in and around your home.** Although bottled water is your best choice, you may be able to find other sources of water by melting ice cubes or draining your hot water tank or pipes.

You can also use river or lake water. It is generally better to use flowing water than still, stagnant water. However, do not use water with floating material in it or water that has a dark color or questionable odor.

Regardless of the source, treat the water by following the instructions on the previous page.

If you have a well on your property that has been flooded, make sure to disinfect and test the well water after the flood. Contact your state or local health department for advice or go to [water.epa.gov/drink/info/well/whatdo.cfm](http://water.epa.gov/drink/info/well/whatdo.cfm).

**Consider how the water looks and how to filter it if needed.** Disinfection does not work as well when



water is cloudy or colored. If water is cloudy, let it settle. Then filter the water through a clean cloth, paper towel, or coffee filter. Store the settled and filtered water in clean containers with covers.

### OTHER DISINFECTION METHODS

If you don't have liquid bleach, you can use one of the other disinfection methods described below.

- **Granular calcium hypochlorite.** The first step is to make a chlorine solution that you will use to disinfect your water. For your safety, do it in a ventilated area and wear eye protection. Add one heaping teaspoon (approximately ¼ ounce) of high-test granular calcium hypochlorite (HTH) to two gallons of water and stir until the particles have dissolved. The mixture will produce a chlorine solution of approximately 500 milligrams per liter. To disinfect water, add one part of the chlorine solution to each 100 parts of water you are treating. This is about the same as adding 1 pint (16 ounces) of the chlorine solution to 12.5 gallons of water. If the chlorine taste is too strong, pour the water from one clean container to another and let it stand for a few hours before use. CAUTION: HTH is a very powerful oxidant. Follow the instructions on the label for safe handling and storage of this chemical.
- **Common household iodine (or “tincture of iodine”).** You may have iodine in your medicine cabinet or first aid kit. Add five drops of 2% tincture of iodine to each quart or liter of water that you are disinfecting. If the water is cloudy or colored, add 10 drops of iodine. Stir and let the water stand for at least 30 minutes before use.
- **Water disinfection tablets.** You can disinfect water with tablets that contain chlorine, iodine, chlorine dioxide, or other disinfecting agents. These tablets are available online or at pharmacies and sporting goods stores. Follow the instructions on the product label as each product may have a different strength.

### MORE INFORMATION

World Health Organization (WHO), 2015. *Technical Briefing on Boil Water.*

Safe Drinking Water Hotline 1-800-426-4791  
[water.epa.gov/drink/hotline](http://water.epa.gov/drink/hotline)