

Appendix H
DDW System-Specific Minimum Sizing Standards



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF DRINKING WATER
Marie E. Owens, P.E.
Director

June 18, 2020

Travis Martin
West Jordan City Water System
7960 South 4000 West
West Jordan, Utah 84088

Subject: **System-Specific Minimum Sizing Standards**
West Jordan City Water System, System #18020, File #11579

Dear Mr. Martin:

Based on the water use data submitted to the Division of Water Rights (DWRi), the following system-specific minimum sizing standards have been set for West Jordan City Water System:

Peak Day Source Demand (gal/day/ERC) – 1,764 gal/day/ERC
Average Annual Demand (gal/year/ERC) – 236,972 gal/year/ERC
Equalization Storage (gal/ERC) – 650 gal/ERC
Fire Storage (gal) – 6,200,000 gal

These standards are effective as of the date of this letter. A summary of the water use data and calculations used to set the minimum sizing standards is attached for your reference. The Division plans to evaluate these standards every 3 years, or upon request.

Water System Background

West Jordan City is a community water system which provides culinary water for both indoor and outdoor use to population of approximately 113,699 people.

Minimum Sizing Standard Background

Per Utah Code 19-4-114, the information needed for the Division of Drinking Water (the Division) to set system-specific minimum sizing standards may be based on water use data submitted to the DWRi, or alternatively, a community water system can submit an engineering study to the Division if the water system's water use data is not representative of future use or the water system does not yet have actual water use data.

Actual water use data was available through DWRi and an engineering study was not submitted to the Division for review. Therefore, the Division analyzed the submitted DWRi water use data and sent a draft summary of the resulting system-specific minimum sizing standards to you on March 5, 2020. The Division allowed for 30 days for your water system to review the draft system-specific minimum sizing. You replied on March 27, 2020 to inform the Division that you intended to update the water use data with DWRi. The Division sent an updated draft summary to you on May 29, 2020 and you verified that the draft sizing standards are representative; therefore, the Division is setting system-specific minimum sizing standard for West Jordan Water System.

Water Use Data Definitions

Peak Day Source Demand is the total flow into a public water system to meet the demand of the water system on the day of highest water consumption in a calendar year.

Average Annual Demand is the total quantity of drinking water flowing into a public water system within a calendar year.

Total Equivalent Residential Connections (ERCs) term represents the number of residential service connections and the number of equivalent residential connections for non-residential connections (commercial, industrial, institutional connections).

Minimum Equalization Storage requirement is a volume that is equivalent to the amount of water needed to meet the average day culinary demand for public water systems. Equalized storage per ERC is calculated by dividing the Average Annual Demand per ERC data by the number of operational days in a year.

Fire Storage was set based on information provided to the Division from West Jordan City's Fire Marshal, Paul Brockbank, on May 7, 2020.

Storage Capacity

Based on your system's storage facilities and the storage minimum sizing requirement established in this letter, your system is compliant with the minimum storage capacity requirements.

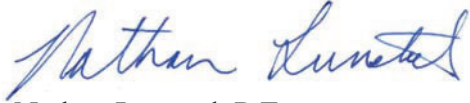
Source Capacity

The Division has documentation of established safe yields for all of your system sources. Using total system wide safe yields and the source minimum sizing requirement established in this letter indicates your water system is compliant with minimum source capacity requirements.

Travis Martin
Page 3
June 18, 2020

If you have any questions regarding this letter, please contact Julie Cobleigh, of this office, at (385) 214-9770, or Nathan Lunstad, Engineering Manager, at (385) 239-5974.

Sincerely,

A handwritten signature in blue ink that reads "Nathan Lunstad". The signature is written in a cursive style.

Nathan Lunstad, P.E.
Engineering Manager

JJC/nl/mdb

Enclosures

1. Utah Department of Environmental Quality Division of Drinking Water Minimum Sizing Standards Summary Report

cc: Jorge Mendez, Salt Lake County Health Department, JMendez@slco.org
Travis Martin, West Jordan City, travis.martin@westjordan.utah.gov
Julie Cobleigh, Division of Drinking Water, jrcobleigh@utah.gov
Paul Brockbank,, West Jordan Fire Marshal, paul.brockbank@westjordan.utah.gov
Coy Porter, Office of the State Fire Marshal, coyporter@utah.gov

DDW-2020-012572



Utah Department of Environmental Quality

Division of Drinking Water

Minimum Sizing Standards

WEST JORDAN CITY WATER SYSTEM	PWS ID: UTAH18020
--------------------------------------	--------------------------

<p>MARTIN, TRAVIS BRETT 7960 South 4000 West WEST JORDAN, UT 84088 Phone: 801-301-6948 Emergency Phone: 801-633-8961 travis.martin@westjordan.utah.gov</p>	<p>System Type: Community Population: 113,699</p>
---	--

MINIMUM SIZING STANDARD

Date Standard Effective: 05/29/2020
Peak Day Source Demand Per ERC (gal/day): 1,764
Average Annual Demand Per ERC (gal/year): 236,972
Equalization Storage Per ERC (gal/day): 650

MINIMUM SIZING STANDARD CALCULATIONS Variability Factor

Data from these reporting years: 2016 to 2018			
Max Peak Day Source Demand Per ERC (gal/day):	1,434	x 23%	= 1,764
Max Average Annual Demand Per ERC (gal/day):	209,710	x 13%	= 236,972
Max Equalization Storage Per ERC (gal/day):	575	x 13%	= 650

DWRi WATER USE DATA REPORTED

Data Year	Peak Day Source Demand (gal/day)	Average Annual Demand (gallons)	ERCs	Peak Demand per ERC (gal/day)	Avg Annual Demand per ERC (gal/year)	Equalization Storage per ERC (gal/day)	Op Days
2018	53,272,000	7,514,692,969	40,488	1,316	185,603	509	365
2017	43,566,000	7,233,839,907	37,415	1,164	193,341	530	365
2016	50,275,551	7,353,262,451	35,064	1,434	209,710	575	365
Variability			15%	23%	13%		

Data Year	Peak Month Average (gal/day)	Peak Month Average per ERC (gal/day)	Ratio of PD/ERC to Peak Month Avg/ERC
2018	45,242,800	1,117	1.2
2017	42,892,188	1,146	1.0
2016	44,519,920	1,270	1.1

CAPACITY CALCULATIONS FOR STORAGE

STORAGE CALCULATION	
Equalization Storage per ERC (gal):	650
Existing Storage (gal):	37,500,000
ERCs:	40,488
Required Storage w/o Fire Flow (gal):	26,317,200
Required Fire Storage (gal)	6,200,000
Required Storage w/Fire (gal)	32,517,200
Storage Deficiency:	0 0.0%
No Storage Deficiency	

SYSTEM STORAGE AND SOURCE INVENTORY

SYSTEM STORAGE DETAILS				SYSTEM SOURCE DETAILS		
ST009	AIRPORT EAST STORAGE	4,000,000	GAL	WS001	WELL #3	1,400 GPM
ST002	AIRPORT WEST STORAGE	2,000,000	GAL	WS005	FIRE STATION WELL #4	2,800 GPM
ST007	BARNEY'S SOUTH STORAGE	3,000,000	GAL	WS006	BARNEY CREEK WELL #5	710 GPM
ST004	CEMETARY TANK	2,500,000	GAL	WS008	WELL #6	2,300 GPM
ST005	BARNEY'S NORTH STORAGE	3,000,000	GAL	WS002	UTAH18027 JVWCD	0 GPM
ST006	TERMINAL TANK	3,000,000	GAL	Source Totals:		7,210 GPM
ST003	OLD BINGHAM TANK	2,000,000	GAL			
ST008	GRIZZLY STORAGE	4,000,000	GAL			
ST010	JORDAN HILLS TANK	4,000,000	GAL			
ST011	BENCH TANK	3,000,000	GAL			
ST012	JUNCTION RESERVOIR	3,000,000	GAL			
ST013	GRIZZLY 4 MG TANK (TANK 2 - SO	4,000,000	GAL			
Storage Totals:		37,500,000	GAL			