



State of Utah

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Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

April 16, 2015

Val Surrage
Taylor-West Weber WID
2815 W 3300 S
West Haven, UT 84401-9791

Dear Mr. Surrage:

Subject: **Feasibility Evaluation**, Drinking Water Service from Taylor-West Weber WID for the Jacquelyn Estates Subdivision, System #29019, File#9663

The Division of Drinking Water (the Division) received your request concerning the capacity of the Taylor-West Weber WID (District) to provide drinking water service to the Jacquelyn Estates Subdivision in the District. Per the Division's database, the District presently has 1860 residential connections, 7 commercial connections, and 12 agricultural connections. The Jacquelyn Estates Subdivision will add 19 new residential connections, in addition to the 9 new residential connections with the Blue Acres Subdivision Phase 4 and 74 new connections with the Winslow Farr Jr. Farm Subdivision. The number of connections that may be served is based on (1) source water capacity, (2) storage capacity, and (3) available water rights. The Drinking Water Rule, R-109-510 Minimum Sizing Requirements, requires a water system to be able to provide 800 gallons per day per equivalent residential connection (ERC) from its sources to meet peak day indoor demand, to be able to provide 400 gallons per ERC of storage for indoor use, and to be able to provide average yearly indoor demand which is 0.45 acre-feet per ERC based on water rights. Additional source capacity, storage, and water rights are required if the system provides water for outdoor use. The water system component with the least capacity determines the allowable number of connections.

SOURCE CAPACITY

The District has the following approved drinking water sources and approved safe yields:

Source Number	Source Name	Safe Yield gpm
WS001	Big Well	900
WS002	Small Well	500
WS003	Weber Basin WCD Consecutive Connection	2000
	Total	3400

In addition, the District provides outside irrigation water for some of their connections. The attached capacity calculation worksheet estimates the required source capacity is 1,111.1 gpm for indoor used and 1419.7 gpm for outdoor use. Based on source capacity, the District has 869 gpm excess source capacity which is adequate to serve the Jacquelyn Estates Subdivision.

STORAGE CAPACITY

The District has the following approved storage tanks in service:

Storage Tank Number	Source Name	Volume gallons
ST001	Million Gallon Tank	1,000,000
ST002	2 Million Gallon Tank	2,000,000
ST003	250 K Gallon Tank	250,000
	Total	3,250,000

The attached capacity calculation worksheet estimates the required storage capacity is 1,941,008 gallons. This is based on a reserve of 120,000 gallons of water storage for fire suppression, and the balance of the storage being used for indoor and outdoor use storage. Based on storage capacity, the District has over 1.3 million gallons of excess storage capacity which is adequate to serve the Jacquelyn Estates Subdivision.

WATER RIGHTS

The District has the following water rights for their sources:

Water Right Number	Amount (acre-feet)
35-1613	788.45
35-11723	930.77
Weber Basin WCD	465.3
Total	2184.52

The attached capacity calculation worksheet estimates the required water rights of 1,570.40 acre-feet for indoor and outdoor use. Based on water rights, the District has over 614 acre-feet of excess water rights which are adequate to serve the Jacquelyn Estates Subdivision.

SUMMARY

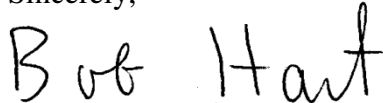
There is no limiting component at present, which would prevent the District from providing adequate drinking water service to the Jacquelyn Estates Subdivision.

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The District submitted a project notification form on May 7, 2014 and was granted a Plan Review Waiver by the Division on June 9, 2014, which allows the construction of this subdivision to proceed once approval is granted by Weber County.

If you have any questions regarding this letter, you can contact me either by phone at (801) 536-0054 or e-mail bhart@utah.gov.

Sincerely,

A handwritten signature in black ink that reads "Bob Hart". The letters are cursive and somewhat slanted to the right.

Bob Hart, P.E.
Environmental Engineer III

Enclosure - Taylor-West Weber WID Capacity Calculation – April 16, 2015

cc: Louis Cooper, Env. Director, Weber-Morgan Health Department, lcooper@co.weber.ut.us
Sean Wilkinson, Weber County Planner, swilkinson@co.weber.ut.us
Jared Andersen, P.E., Weber County Engineer, jandersen@co.weber.ut.us
Ying-Ying Macauley, Division of Drinking Water, ymaculey@utah.gov
Camron Harry, P.E., Division of Drinking Water, caharry@utah.gov
Bob Hart, P.E., Division of Drinking Water, bhart@utah.gov
Dan White, P.E., Gardner Engineering, dan@gardnerengineering.net
Val Surrage, Taylor-West Weber Water, taylorwestweberwater@msn.com

Division of Drinking Water Water System Capacity Calculation Sheet (revised June 23, 2011)

Enter the green cells only.

System Name: Taylor-West Weber WID April 16, 2015

System Number: 29019

1. Indoor Water Use

Convert "Number of other connections" (Cell E9) to ERCs here. (ERCs of other connection = peak day demand of other connections / 800 gal per day)

Number of residential connections ----- 1,981

Number of other connections --- 19

ERCs of other connections 19.0

(Example: water use of 2 factory is equivalent to 30 homes.)

Enter number of non-residential connections (e.g., 2 factory connections).

Total Equivalent Residential Connections (ERCs) 2,000

MINIMUM REQUIREMENTS FOR INDOOR WATER USE					
Source		Storage		Water Rights	
Per ERC (gpd/ERC)	Total (gpm)	Per ERC (gallons/ERC)	Total (gallons)	Per ERC (ac-ft/yr)	Total (ac-ft/yr)
800	1,111.1	400	800,000	0.45	900.00

2. Outdoor Water Use

Enter estimated irrigated acre

Is the drinking water used for outdoor irrigation? Yes No

Residential ERCs using drinking water for irrigation ----- >>> 470

Percentage of Residential ERCs using DW for irrigation ----- >>> 24%

Average irrigated acreage per residential connection ----- >>> 0.75

Total irrigated acreage of other connections. ----- >>> 6.00

Irrigation zone 4

Based on information from Water System Manager during 2013 Sanitary Survey

Enter total irrigated acres of other connections here.

Select Irrigated Zone # from the list (see "Irrigation Demands & Map" tab on the bottom of the screen).

MINIMUM REQUIREMENTS FOR OUTDOOR WATER USE					
Source		Storage		Water Rights	
Per ERC (gpd/ERC)	Total (gpm)	Per ERC (gallons/ERC)	Total (gallons)	Per ERC (ac-ft/yr)	Total (ac-ft/yr)
4,277	1,419.7	2,136	1,021,008	1.40	670.40

3. Fire Flow Requirement

Enter fire flow in gpm.

Does the water system provide fire protection? Yes No

Maximum fire suppression demand for water system or pressure zone (gpm) ----- >>> 1,000

Maximum fire suppression duration for water system or pressure zone (hours) ----- >>> 2

Required Fire Suppression Storage (gallons) ----- >>> 120,000

Enter duration in hours.

Weber Fire District has adopted Appendix B of the Fire Code which requires a minimum of 1000 gpm for two hours for fire flow.

Total Water System Requirements (= indoor use + outdoor use + fire flow demand)

MINIMUM REQUIREMENTS FOR WATER SYSTEM					
Source		Storage		Water Rights	
Per ERC (gpd/ERC)	Total (gpm)	Per ERC (gallons/ERC)	Total (gallons)	Per ERC (ac-ft/yr)	Total (ac-ft/yr)
5,077	2,530.8	2,536	1,941,008	1.85	1,570.40

Does this system have adequate source capacity per R309-510-7?

IPS points may be assessed for lacking adequate source capacity to meet peak day and/or average yearly flow requirements.

Existing Sources:	3,400.0	gpm	Linked to Cell I99 below.
Required Source Capacity:	2,530.8	gpm	Linked to Cell C51 above.
% of Req'd Capacity:	134.3%		
Difference:	869	gpm	Negative number means (1) additional source capacity is needed, and (2) IPS points should be assessed.

Does this system have adequate storage capacity per R309-510-8?

IPS points may be assessed for lacking adequate storage capacity.

Existing Storage:	3,250,000	gal	Linked to Cell I118 below.
Required Storage Capacity:	1,941,008	gal	Linked to Cell E51 above.
% of Req'd Capacity:	167.4%		Negative number means (1) additional storage volume is needed, and (2) IPS points should be assessed.
Difference:	1,308,992	gal	

Non-Community Water Systems, ERCs for Indoor Water Use (*See R309-510, Tables 510-1, 2, and 4, for other facility type calc.)							
Facility Type	MINIMUM REQUIREMENTS FOR INDOOR USE				ERC/site or pad	# of Sites or pads	ERCs
	Source		Storage				
	GPD/person*	Calculated GPD/site or pad	GPD/person	Gallon/site or pad			
Modern Recreation Camp	60	240	30	120	0.30	8	2.4
Semi-Developed Camp w/ flush toilets	20	80	10	40	0.10	25	2.5
Semi-Developed Camp w/o flush toilets	5	20	2.5	10	0.03	20	0.5
RV Park	N/A	100	N/A	50	0.13	15	1.9
*Number of people per camp site	4	If applicable, enter number of people per camp site here.					
	Source (GPD/vehicle)	Storage (Gal./vehicle)	ERC/1000 vehicles served	# of Vehicles served	ERCs		
Roadway Rest Stop w/ flushometer valves	7	3.5	8.75	800	7.00		

Taylor-West Weber WID April 16, 2015

Equivalent Residential Connection Calc.	
Existing Residential Connections	1,981
Number of Obligated Future ERCs	102
Blue Acres Subdivision	9
Winslow Farr Jr Farm Subdivision	74
Jacquelyn Estates	19
Total Projected Number of ERCs	2,083

Linked to Cell I8 above.

Source (in gallons per minute)		
WS001	Big Well	900
WS002	Small Well	500
WS003	Weber Basin WCD CC	2000
Total Source Capacity		3400
Max. ERC allowed (for indoor use only)		6120

Storage (in gallons)		
ST001	Million Gallon Tank	1,000,000
ST002	2 Million Gallon Tank	2,000,000
ST003	250 K Gallon Tank	250,000
Total Storage Capacity		3,250,000

If you need to calculate projected future demand (including existing & future connections), insert this number to Cell I8 "Number of residential connection."

Per the Division of Drinking Water's database, Taylor-West Weber WID has 1860 existing residential connections, 7 commercial connections, and 12 agricultural connections. There are 102 new connections in three new subdivisions.

Diaphragm or air pressure tanks shall not be considered effective storage volume for community systems or NTNC with significant demand.