



State of Utah

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Department of
Environmental Quality

Alan Matheson
Executive Director

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

September 12, 2016

Val Surrage
Manager
Taylor-West Weber Water District
2815 West 3300 South
West Haven, Utah 84401

Dear Mr. Surrage:

Subject: **Feasibility**, Drinking Water Service from Taylor-West Weber Water District for the Gallop Bend Subdivision, System #29019, File# 10541

This is not Plan Approval.

The Division of Drinking Water (the Division) received your request concerning the capacity of the Taylor-West Weber Water District to provide drinking water service to the Gallop Bend Subdivision. Based on the information currently available in the Division's database, the Taylor-West Weber Water District presently is obligated to 2,405 residential connections, 7 commercial connections, and 12 agricultural connections. The Gallop Bend Subdivision will add 19 new residential connections. 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 Taylor-West Weber Water District has the following approved drinking water sources and approved safe yields in gallons per minute (gpm):

Source Number	Source Name	Safe Yield (gpm)
WS001	Big Well	900
WS002	Small Well	Inactive
WS003	Weber Basin WCD Consecutive Connection	2,000
WS004	900 South Well	Proposed
WS005	Shop Well	Proposed
	Total	2,900

In addition, the Taylor-West Weber Water District provides outside irrigation water for some of their connections. The attached capacity calculation worksheet estimates the required source capacity is 1,357.2 gpm for indoor used and 1,419.7 gpm for outdoor use. Therefore, the Taylor-West Weber Water District has 123.1 gpm excess source capacity, which is adequate to serve the proposed new connections in the Gallop Bend 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
ST004	Proposed	0
	Total	3,250,000

The attached capacity calculation worksheet estimates the required storage capacity is 2,118,208 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 Taylor-West Weber Water District has over 1,100,000 gallons of excess storage capacity which is adequate to serve the Gallop Bend subdivision.

WATER RIGHTS

The Taylor-West Weber Water 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	2,184.52

The attached capacity calculation worksheet estimates the required water rights of 1,769.75 acre-feet for indoor and outdoor use. It appears that the Taylor-West Weber Water District has over 400 acre-feet of excess water rights, which may be adequate to serve the Jacquelyn Estates Subdivision. However, please **consult with Division of Water Rights** for detailed interpretation and verification **concerning water rights issues**.

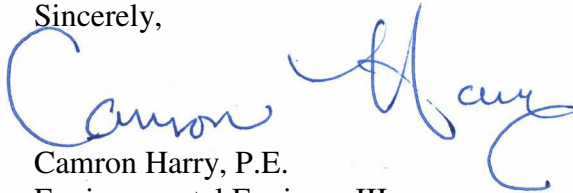
SUMMARY

There is no known limiting component at present, which would prevent the Taylor-West Weber Water District from providing adequate drinking water service to the Gallop Bend subdivision.

The Taylor-West Weber Water District submitted a project notification form on August 26, 2016 and received a plan review waiver from the Division on August 31, 2016, 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) 536-0087 or e-mail caharry@utah.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Camron Harry", is written over the typed name.

Camron Harry, P.E.
Environmental Engineer III

Enclosure – Taylor-West Weber Water District Capacity Calculation – September 2016

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
Val Surrage, Taylor-West Weber Water District, taylorwestweberwater@msn.com
Dan White, Gardner Engineering, dan@gecivil.com
Camron Harry, P.E., Division of Drinking Water, caharry@utah.gov

Division of Drinking Water — Water System Capacity Calculation Sheet (Last Update 2/12/2016)

Enter the green cells only

System Name **Taylor West Weber WID (September 2016)**

System Number **29019**

1.1 Indoor Water Use

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

Number of residential connections -----

2,405

Number of other connections - - -

19

ERCs of other connections

19.0

(Example: water use of 2 factories equals to water use of 55 homes.)

Enter number of non-residential connections, e.g., 2 industrial connections.

Total Equivalent Residential Connections (ERCs) **2,443.0**

MINIMUM REQUIREMENTS FOR INDOOR WATER USE					
Source		Storage		Water Rights	
gpd/ERC	Total (gpm)	Gallons/ERC	Total (gallons)	ac-ft/yr/ERC	Total (ac-ft/yr)
800	1,357.2	400	977,200	0.45	1099.35

1.2 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 ----- > > :

20%

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

0.75

Total irrigated acreage of other connections (park, school, etc.) ----- > >

6.00

(Enter notes here regarding whether and what % of irrigation water is supplied by PWS.)

Enter total irrigated acres of other connections here.

Irrigation zone

4

Select Irrigated Zone # from the pick list. See "Irrigation Demands & Map" tab on the bottom of the screen.

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

1.3 Fire Flow Water Use

Does the water system provide fire protection?

☒ Yes ☐ No

Maximum fire flow demand (in gpm) for water system or pressure zone

1,000

Maximum fire suppression duration (in hours) for water system or pressure zone

2

Required Fire Suppression Storage (in gallons) ----- > > :

120,000

(*Verify req'd fire flow and duration with local fire code officials.* Enter notes here, e.g. fire official contact info or comments.)

Enter duration in hours.

2. Summary of Water System Capacity Requirements

MINIMUM CAPACITY REQUIREMENTS FOR WATER SYSTEM					
Source (indoor + outdoor)		Storage (indoor + outdoor + fire)		Water Rights (indoor + outdoor)	
gpd/ERC	Total (gpm)	Gallons/ERC	Total (gallons)	ac-ft/yr/ERC	Total (ac-ft/yr)
5,077	2,776.9	2,536	2,118,208	1.85	1,769.75

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

This source capacity assessment is a general overall system calculation. It may not reflect the variations in individual areas or pressure zones.

Required Source Capacity 2,776.9 **gpm**

Existing Source Capacity 2,900.0 **gpm**

Source Capacity Deficit None **gpm**

Existing % of Total Req'd 104.4%

Autolink to 2 "Total Source" cell above.

Autolink to 4.2 "Total Existing Source Capacity" cell below.

Source deficit indicates that: (1) additional source capacity is needed, and (2) source deficiency should be assessed.

Less than 100% indicates: (1) additional source capacity is needed, and (2) source deficiency should be assessed.

This storage capacity assessment is a general overall system calculation. It may not reflect the variations in individual areas or pressure zones.

Total Required Storage	2,118,208	gal	Autolink to 2 "Total Storage" cell above.
Existing Storage Capacity	3,250,000	gal	Autolink to 4.3 "Total Existing Storage Capacity" cell below.
Storage Capacity Deficit	None	gal	Storage deficit indicates that: (1) additional storage volume is needed, and (2) storage deficiency should be assessed.
Required Fire Storage	120,000	gal	
Is storage deficiency <u>solely</u> due to fire storage?	Not Applicable		If NO, answer one of question set 2.01 to 2.05 in ESS. If YES, answer one of question set 2.06 to 2.10 in ESS.
Existing % of Total Req'd	153.4%		Less than 100% indicates: (1) additional storage capacity is needed, and (2) storage deficiency should be assessed.

		MINIMUM REQUIREMENTS FOR INDOOR USE						
		Source		Storage				
Facility Type	GPD/person*	GPD/site or pad	Gallons/person	Gallon/site or pad	ERC/site or pad	Total # of sites/pads	ERCs	
Modern Recreation Camp	60	0	30	0	0.00		0.0	
Semi-Developed Camp w/ flush toilets	20	0	10	0	0.00		0.0	
Semi-Developed Camp w/o flush toilets	5	0	2.5	0	0.00		0.0	
RV Park	N/A	100	N/A	50	0.13		0.0	
Number of people per camp site		If applicable, enter number of people per camp site here.						
	Source (GPD/vehicle)	Storage (Gal./vehicle)	ERC/1000 vehicles served	Vehicles served/day	ERCs	If applicable, use this number in cell I8 or cell I9 on Page 1.		
Roadway Rest Stop w/ flushometer valves	7	3.5	8.8		0.0			

4.1 Projected ERCs Calculation (optional)	
Total Projected ERCs	2,443
Existing Residential Connections	2,424
Obligated Future ERCs (enter below)	19
Gallop Bend Sub	19

4.2 Summary - Existing Sources <i>(enter in green cells below)</i>		
Total Existing Source Capacity (in gpm)		2,900
WS001	Big Well	900
WS002	Small Well	0
WS003	Weber Basin WCD CC	2000
Maximum ERCs (assuming indoor use only)		5220