



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

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

December 13, 2016

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

Dear Mr. Surrage:

Subject: **Feasibility Evaluation**, Drinking Water Service to Taylor Vista Subdivision from Taylor-West Weber Water District, System #29019, File #10649

The Division of Drinking Water (the Division) received your request concerning the capacity of the Taylor-West Weber Water District (the District) to provide drinking water service to the Taylor Vista Subdivision on November 28, 2016. This feasibility evaluation is solely based on the information we received from the District and the existing records available in the Division's database. The Division's estimate is based on:

- The present number of equivalent residential connections (ERC's) the water system is obligated to serve — The District indicated in the attached Project Notification Form (PNF), which we received on November 28, 2016, that the District currently is obligated to serve 2,468 ERC's, and that the proposed Taylor Vista Subdivision will add 47 new residential connections (47 ERC's). Therefore, our estimate is based on 2,515 ERC's (i.e. 2,468 plus 47 new ERC's);
- Irrigatable acreage, which was provided by the District in the last sanitary survey; and
- Fire flow required by local fire code officials.

This evaluation is courtesy technical assistance, and is not meant to be a detailed or accurate engineering analysis. The Division does not track or verify the number of obligated connections or the status of the obligated connections. It is the responsibility of the Taylor-West Weber Water District and Weber County to verify all information for planning purposes.

Per Utah Administrative Rule *R309-510* Minimum Sizing Requirements, the number of allowable connections to be served by a public water system is affected by:

- Source water capacity;
- Storage capacity; and
- Available water rights.

Among these three components, the one with the least capacity determines the allowable number of connections for the water system.

The requirements related to indoor water use for these components are:

- A water system must be able to provide **800 gallons per day (gpm) per (ERC) from its water source(s)**;
- A water system must be able to provide **400 gallons per ERC of storage**;
- A water system must have **0.45 acre-feet per ERC of water rights**.

Furthermore:

- If a water system provides water for irrigation use, additional source capacity, storage capacity and water rights are required.
- If a water system provides water for fire suppression, additional storage capacity is required.

Source Capacity

Based on the Division records and the information provided by the Taylor-West Weber Water District, the District has the following approved drinking water sources and safe yields:

Source Number	Water Source Name	Safe Yield (gpm)
WS001	Big Well	900
WS002	Small Well	Inactive
WS003	Weber Basin WCD Wholesale Contract	2,000
WS004	900 South Well	1,000
WS005	Shop Well	Proposed
	Total	3,900

From the table above, the Division estimates the District's water source capacity to be 3,900 gpm.

The attached capacity calculation work sheet estimates the minimum source capacity required for the District is 2,816.9 gpm. This estimate includes:

- 1,397.2 gpm for indoor water use; and
- 1419.7 gpm for irrigation use.

It appears that **the Taylor-West Weber Water District** has 1,083.1 gpm excess source capacity and **has adequate source capacity to serve the Taylor Vista Subdivision**.

Storage Capacity

Based on the Division records and the information provided by the District, 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

From the table above, the Division estimates the District's water storage capacity to be 3,250,000 gallons.

The attached capacity calculation work sheet estimates the minimum storage capacity required for this water system is 2,147,008 gallons. This estimate includes:

- 1,006,000 gallons for indoor water use; and
- 1,021,008 gpm for irrigation use.

It appears that **the Taylor-West Weber Water District** has 1,102,992 gallons excess storage capacity and **has adequate storage capacity to serve the Taylor Vista Subdivision.**

Water Rights

The attached capacity calculation worksheet estimates that 1,802.15 acre-feet of water rights would be needed for the indoor and outdoor uses in the District.

The Division of Water Rights (not the Division of Drinking Water) is the authority for water rights related regulations. Please **consult with Division of Water Rights directly for verification and interpretation regarding water rights.**

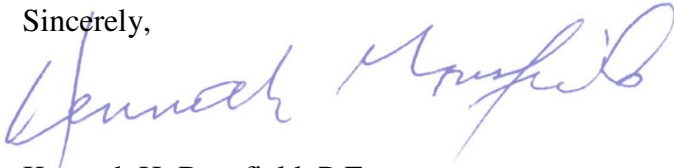
Summary

Based on information made available to the Division, it appears that at the present time Taylor-West Weber Water District has sufficient source and storage capacities to provide drinking water service to the proposed Taylor Vista Subdivision.

Val Surrage
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December 13, 2016

If you have any questions regarding this letter, you can contact Kelly Casteel at (801) 536-4265 or, Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,



Kenneth H. Bousfield, P.E.
Director

Enclosure — 1. Taylor-West Weber Water District Capacity Calculation – December 2016
2. Project Notification Form Received on November 28, 2016

KDC/ym/ssh/hb

cc: Louis Cooper, Environmental Health Director, Weber-Morgan Health Dept, 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
Dan White, Gardner Engineering, dan@gecivil.com
Kelly Casteel, Division of Drinking Water, kcasteel@utah.gov
Ross Hansen, Regional Engineer, Division of Water Rights, rosshansen@utah.gov

DDW-2016-020384.docx

PROJECT NOTIFICATION FORM (PNF)

Please provide the following information for all **Drinking Water Projects** by existing PWS's

Use with Plan Submittal [R309-500-6(1)] or when requesting Waiving of Plan Submittal [R309-500-6(3)]

If this is a new PWS, please complete the Supplemental PNF available on our website: drinkingwater.utah.gov/blank_forms.htm

Upon completion, Submit by Email, fax or mail to:

State of Utah - Dept of Environmental Quality - Division of Drinking Water
P.O. Box 144830 - Salt Lake City, Utah - 84114-4830 (801) 536-4200 fax (801) 536-4211

File No: 10649

Date Rec'd: 11/28/2016

1 Name of PWS [owner of system as recorded with DDW]

System Name: Taylor West Weber Water District

System Number: 29019

Address: 2815 W 3300 S

City, State, Zip: West Haven, Utah 84401

Present No. of ERC's system is obligated to serve: 2,468

Present No. of ERC's physically connected to system: 2087

Population Served: 7304

No. of ERC's this project will add to system: 47

2 Addressee for Official Correspondence [Mayor, Public Works Director, etc...]

Name: Val Surrage

Title: Manager

Address: Same

City, State, Zip: _____

Phone No: _____

E-Mail Address: _____

3 PE designated as Direct Responsible Engineer for Entire System (if applicable)

Company Name: Gardner Engineering

Name: Dan White

Address: 5150 South 375 East

City, State, Zip: Ogden Utah, 84415

Phone No: 801.476.0202

E-Mail Address: dan@gecivil.com

4 PE responsible for design of this Project [if not same as item 3]

Name: Jim Flint

Address: 538 N Main St

City, State, Zip: Brigham City, Utah 84302

Phone No: 435.723.3491

Fax No: _____

E-Mail Address: jimf@haies.net

5 Name of Construction Inspector(s) and frequency of inspection

Name: Clay Penman

Full Time: _____ Part Time: X

6 Description of Project [in sufficient detail for DDW to identify]

Taylor Vista Subdivision - SW corner of 4700 W and 2550 South in Weber County: Approx. 5,000 feet of 8" and 10" C900 DR14 PVC waterline (bell and spigot); FHs per Weber Fire marshal (estimated 8, review not complete yet), mainline valves, and services to 47 lots. Plans provide for, and inspector will ensure, minimum separation standards from sewer lines as set forth in R309-550-7. A feasibility analysis from the DDW, similar to File #10602, is requested.

7 Anticipated Construction Schedule:

Advertise for Bids: Unknown, 2017 likely

Bid Opening: Unknown, 2017 likely

Begin Construction: Unknown, 2017 likely

Complete Construction: Unknown, 2017 likely

8 Is this PNF for plan review waiver 3a? [see R309 500-6(3a) to verify]

Yes No

If Yes, you must have a previously approved Master Plan and Construction Standards.

Is this PNF for plan review waiver 3b? [see R309 500-6(3b) to verify]

Yes No

If Yes, you must have a designated PE responsible for the system and previously approved Construction Standards.

Does this project meet any of the criteria to be exempt from the hydraulic modeling rule requirements? [see R309 511-4(1)(a)(i) through (iv) to verify]

Yes No

If Yes, specify rule reference here:

[for example, R309-511-4(1)(a)(ii)]

R309 511-4(1)(a)(iii)

9 Fire Suppression Authority [if system has fire hydrants]

Name: Weber Fire District

Address: 2023 W 1300 N

City, State, Zip: Ogden Utah 84404

Phone No: 801.782.3580

Fax No: _____

E-Mail Address: bthueson@weberfd.com

Req'd flow (gpm): 1000 Duration (hrs): 2

10 Funded by State or Federal Agency?

Drinking Water Board (SRF or FSRF) Loan #: _____

Community Impact Board

None

Other (Specify) _____

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

Enter the green cells only

System Name **Taylor West Weber (December 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 ----->>> **2,496**
 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) **2,515.0**

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	1,397.2	400	1,006,000	0.45	1131.75

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 ----->>> **19%**
 Average irrigated acreage per residential connection ----->>> **0.75**
 Total irrigated acreage of other connections (park, school, etc.) ----->>> **6.00**
 Irrigation zone **4**

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

Enter total irrigated acres of other connections here.

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

Enter fire flow in gpm.

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	2,816.9	2,536	2,147,008	1.85	1,802.15

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	2,816.9	gpm	Autolink to 2 "Total Source" cell above.
Existing Source Capacity	3,900.0	gpm	Autolink to 4.2 "Total Existing Source Capacity" cell below.
Source Capacity Deficit	None	gpm	Source deficit indicates that: (1) additional source capacity is needed, and (2) source deficiency should be assessed.
Existing % of Total Req'd	138.5%		Less than 100% indicates: (1) additional source capacity is needed, and (2) source deficiency should be assessed.

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

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	2,147,008	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 solely 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	151.4%		Less than 100% indicates: (1) additional storage capacity is needed, and (2) storage deficiency should be assessed.

3. Transient PWS Indoor Water Use – ERC Calculation (See R309-510, Tables 510-1, 2, & 4 for other facility types.)

Facility Type	MINIMUM REQUIREMENTS FOR INDOOR USE		Storage		ERC/site or pad	Total # of sites/pads	ERCs
	Source	Storage	Gallons/person	Gallon/site or pad			
Modern Recreation Camp	GPD/person*	GPD/site or pad	Gallons/person	Gallon/site or pad	ERC/site or pad		
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							
Roadway Rest Stop w/ flushometer valves	Source (GPD/vehicle)	Storage (Gal./vehicle)	ERC/1000 vehicles served	Vehicles served/day	ERCs		
Roadway Rest Stop w/ flushometer valves	7	3.5	8.8	700	6.1		

4. Data Input for Calculating ERCs, Source and Storage
Taylor West Weber (December 2016)

4.1 Projected ERCs Calculation (optional)	
Total Projected ERCs	2,515
Existing Residential Connections	2468
Obligated Future ERCs (enter below)	47
Taylor Vista Subdivision	47

Use this number in Cell I8 ("Number of residential connections") on Page 1 to calculate PROJECTED demand & req'ts (including both existing & future connections).

Diaphragm or air pressure tanks shall NOT be considered effective storage volume for (1) community systems, or (2) NTNC with significant demand UNLESS an exception has been granted.

Per the November 28, 2016 PNF the District is obligated to serve 2,468 connections with only 2,087 being currently physically connected. (The 2424 includes the 19 "other" connections; 12 agricultural and 9 commercial.)

4.2 Summary - Existing Sources (enter in green cells below)		
Total Existing Source Capacity (in gpm)		3,900
WS001	Big Well	900
WS002	Small Well - inactive	0
WS003	Weber Basin WCD CC	2000
WS004	900 South Well	1000
WS005	Shop Well - proposed	0
Maximum ERCs (assuming indoor use only)		7020

4.3 Summary - Existing Storage Tanks (enter below)		
Total Existing Storage Cap. (in gallons)		3,250,000
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