

Exhibit 0

Water Requirements

**Yellow Rosebush Energy Center
August 2024**

**Prepared for
Yellow Rosebush Energy Center, LLC**

Prepared by



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Acronyms and Abbreviations

Applicant	Yellow Rosebush Energy Center, LLC
EFSC	Oregon's Energy Facility Siting Council
Facility	Yellow Rosebush Energy Center
Mgal	million gallons
MW	megawatt
OAR	Oregon Administrative Rules
O&M	operations and maintenance
ORS	Oregon Revised Statute

1.0 Introduction

Yellow Rosebush Energy Center, LLC (Applicant) seeks to develop the Yellow Rosebush Energy Center (Facility), a solar energy generation facility, battery energy storage system, and related or supporting facilities in Wasco and Sherman counties, Oregon. This Exhibit O was prepared to meet the submittal requirements in Oregon Administrative Rules (OAR) 345-021-0010(1)(o).

2.0 Description of Water Use – OAR 345-021-0010(1)(o)(A)

OAR 345-021-0010(1)(o) Information about anticipated water use during construction and operation of the proposed facility. The applicant must include:

OAR 345-021-0010(1)(o)(A) A description of the use of water during construction and operation of the proposed facility;

2.1 Construction

Construction water use is estimated at a maximum of approximately 36.4 million gallons (Mgal; up to 62,917 gallons [gal] per day) over the phased construction of the Facility and under annual average conditions. As described in Exhibit B, construction will occur in phases. This analysis accounts for the conservative estimate of construction water use for full build-out of the Facility. Water during construction will be used for site dust control, road compaction, concrete mixing for foundations, and on-site worker drinking water and sanitation (Table O-1).

- **Site dust control.** The primary use of water during construction will be for dust control on access roads.¹ The analysis in Table O-1 assumes that Facility access roads within the site boundary will be watered multiple times each day during construction. Water use for dust control assumes 100,000 gal per day, 6 days per week, during construction. Actual water use for dust control will vary, depending on the timing of construction and the season, precipitation, soil conditions, temperature, and frequency of repeat disturbance. These factors are not controlled or easily estimated by the contractor.

Worst-case water use amounts may result from construction in particularly dry weather conditions with high temperatures, which are estimated to increase water use for dust control by approximately 50 percent over average conditions. Based on this assumption, a worst-case water estimate could increase the total construction water use total to approximately 54.5 Mgal for full build-out of the Facility. Therefore, the worst-case average monthly water demand for construction

¹ Note that other dust suppressants besides water may be used as necessary during extreme drought conditions (synthetic polymer emulsions, chemical suppressants, organic glues, and wood fiber materials) depending on site conditions (to be applied by trained and certified vendors familiar with applicable environmental regulations including the federal Endangered Species Act, the Clean Water Act, the Salmon Recovery Act, and state and local regulations).

and dust control will become approximately 1.51 Mgal, and the average daily water demand (6-day work week) will increase to approximately 62,917 gal.

- **Road compaction.** Water for road construction assumes 25 gal per lineal foot of road. Exhibit B identifies approximately 27 miles of roads (24.8 miles of new permanent service roads and approximately 2.1 miles of improvements to existing roads). Approximately 148,500 gal of water per month will be used for Facility service road construction, existing road improvements, and earthwork compaction.

Note, water for both dust control and road compaction will be applied via tanker truck in a manner that avoids erosion and sediment discharge and is consistent with the best management practices that will be implemented by the 1200-C Construction Stormwater National Pollutant Discharge Elimination System Permit described in Exhibit I.

- **Concrete mixing.** Concrete mixing for foundations will use a standard assumption of 39 gal of water per cubic yard of concrete. Exhibit G identifies 38,211 cubic yards of concrete needed for foundations and the associated water use is listed for each foundation type in Table O-1. For the construction of foundations, the Applicant anticipates buying concrete directly from licensed suppliers in the Facility area. Thus, the water used for concrete mixing will be provided by the concrete suppliers under their existing permits. However, water for concrete production is included in this analysis to represent the maximum anticipated water needs for Facility construction.
- **Drinking water and sanitation.** For drinking and sanitation needs, it is assumed that approximately 3 gal per day (6-day work week) per person will be used for construction workers (162 average on-site workers) over the phased construction period.

While water quantities have been conservatively estimated for purposes of analysis, due to the cost and time involved in transporting water by tank truck to the proposed Facility, water used for dust suppression and road compaction will be applied at the minimum rate necessary to perform its function. Water used for concrete mixing will also be applied at the minimum mixing rate needed to make concrete. Actual Facility construction will be phased and there will be a focused effort to maximize efficiency and limit water use to the extend practical. Overall, daily water use will vary depending on site conditions and construction activities. Weather in the area each day could affect the amount of water needed for dust control and for specific construction activities. Water use for construction is estimated at approximately 36.4 Mgal under average annual conditions and a maximum of approximately 54.5 Mgal under worst-case dry weather conditions described above. Total water demand is estimated over the course of phased construction using a conservative 6-day work week.

Fire prevention represents a minor water use; this will involve stationing a water truck at the job site to keep the ground and vegetation moist at work areas during extreme fire risk conditions.

Table O-1. Water Use During Construction

Construction Use	Quantity
Site dust control	31.2 million gallons (Mgal; average annual conditions)
	46.8 Mgal (worst-case conditions)
Road compaction	3.56 Mgal
Concrete mixing	-
<ul style="list-style-type: none"> Solar array tracker piles^{1/} 	311,715 gal
<ul style="list-style-type: none"> Transmission line support structure foundations 	78,000 gal
<ul style="list-style-type: none"> Inverter/transformer pad foundations 	283,530 gal
<ul style="list-style-type: none"> Battery pad foundations 	653,250 gal
<ul style="list-style-type: none"> Collector substation foundation 	62,400 gal
<ul style="list-style-type: none"> O&M building foundation 	7,800 gal
Total water for concrete mixing	1.397 Mgal
Drinking water/sanitation	280,000 gal
Total Construction	36.4 Mgal (average) to 54.5 Mgal (worst-case)
Notes:	
1/ In some soil conditions, concrete backfill may be needed for pile installation. For the purposes of analysis in this ASC approximately 10 percent of piles are estimated to use concrete foundations. Pile foundations are estimated to use approximately 0.3 cubic yards of concrete per foundation, if needed.	

2.2 Operation

Water use during operation of the Facility will be limited. The two primary water uses during Facility operations are at the O&M building and for periodic solar panel washing, as needed.

- O&M building water use.** Water will be used during operation of the Facility at the O&M building for drinking, kitchen use, showers, and toilets. The battery energy storage system will not use water during operations. Total water consumption at the O&M building for up to 15 full-time equivalent staff is anticipated to be approximately 50 gal per day, for a total of up to 12,500 gal per year.
- Solar panel washing.** Although the need to conduct solar panel washing is not anticipated, this analysis incorporates water use in Facility operations for periodic solar panel washing, if needed. The potential for solar panel washing will be dependent on weather conditions. For example, during drought conditions when there is more dust, the panels may need washing. However, the panels will not all be cleaned at the same time, but rather in segments, or targeted to underperforming panels to minimize the need for large quantities

of water at one time. For the purpose of this analysis, it is conservatively assumed that the solar array panels will be washed once a year. At an estimated 0.26 gal (1 liter) per panel for a total of 2,037,360 panels will use approximately 521,000 gal per year. The use of 521,000 gal per year for this purpose will result in an average daily consumption during operations of approximately 1,427 gal. Advancements in robotic and waterless panel cleaning techniques have the potential to dramatically reduce or avoid the water needs for solar panel washing. Therefore, the Applicant's estimate of 521,000 gal per wash annually likely overestimates the amount of water that will actually be used.

3.0 Water Sources – OAR 345-021-0010(1)(o)(B) & (C)

OAR 345-021-0010(1)(o)(B) A description of each source of water and the applicant's estimate of the amount of water the facility will need during construction and during operation from each source under annual average and worst-case conditions;

The Applicant or the Applicant's third-party construction contractor will obtain construction water from an existing municipal water source with existing water rights, most likely from the City of Maupin (City), and truck the water to the site. During construction of the Facility, approximately 62,917 gal of water are anticipated to be used each day for a variety of activities with 36.4 to 54.5 Mgal used during the phased construction process (Table O-1).

The Applicant may construct either an exempt well, allowed under ORS 537.545, or obtain bulk water from a municipal water source with existing water rights for the O&M building. Generally, water used during operation of the Facility at the O&M building is anticipated to be less than 5,000 gal per day and 60,000 gal annually. During operation the annual panel washing may use approximately 521,000 gal of water each year. The Applicant intends to obtain this water from the City using a bulk water agreement. The City has confirmed that they sell bulk water (Attachment O-1).

4.0 Wastewater and Water Loss – OAR 345-021-0010(1)(o)(C)

OAR 345-021-0010(1)(o)(C) A description of each avenue of water loss or output from the facility site for the uses described in (A), the applicant's estimate of the amount of water in each avenue under annual average and worst-case conditions and the final disposition of all wastewater;

4.1 Construction

Water use for concrete production and dust control will result in water loss primarily through evaporation from wetted road surfaces and from curing concrete. No water used on the site will be discharged into wetlands, streams, and other waterways. Due to the dry conditions at the proposed Facility and the relatively low rates of water use and application, it is expected that any excess

water used during construction will be lost within or near the proposed Facility site boundary, primarily through evaporation and infiltration.

Construction-related stormwater runoff will be managed according to an NPDES 1200-C permit and the Applicant will follow Oregon Department of Environmental Quality (ODEQ) rules governing construction stormwater runoff. Most of the area within the site boundary is vegetated, which will serve as a buffer to promote infiltration and minimize erosion. Likewise, the Applicant will follow ODEQ rules regarding the disposal of sanitary wastewater and use of portable toilets.

4.2 Operation

Minimal wastewater or water loss will be generated during operations. Wastewater from domestic and incidental uses at the O&M building will be discharged to a county-approved septic system located near the O&M building. During periodic washing of solar panels (approximately once per year), wash water will evaporate or infiltrate into the ground. Water from this activity will not be discharged into wetlands, streams, or waterways. As indicated above, battery storage will not generate wastewater during operations. Stormwater will also infiltrate into the ground.

5.0 Explanation of Lack of Need for Groundwater/Surface Water Permit or Water Right Transfer – OAR 345-021-0010(1)(o)(E)

OAR 345-021-0010(1)(o)(E) If the proposed facility would not need a groundwater permit, a surface water permit or a water right transfer, an explanation of why no such permit or transfer is required for the construction and operation of the proposed facility;

During construction, the proposed Facility will not need groundwater permits, water rights, or surface water Permits. Water for construction will be obtained from the City under an existing municipal water right. Water obtained from the City does not require a permit or transfer per OAR 690-300-0010(29), because the City's existing municipal water rights allow use for industrial purposes such as the Facility (OAR 690-300-0010(29)).

Daily use of water during operation will be minimal and qualify as exempt under ORS 537.545(1)(f), which allows certain industrial or commercial uses of up to 5,000 gal per day. Exempt industrial water uses include drinking, flushing toilets, using sinks, and other general industrial uses. For the O&M building water and annual solar panel washing during operations, the Applicant expects to rely on an exempt well allowed under ORS 537.545, or to obtain bulk water from a municipal water source with existing water rights such as the City that will be trucked to the Facility.

During operations, an anticipated 521,000 gal per year of water may be used to wash the solar panels and maintain the overall efficiency of the panels. Wash water for periodic solar panel washing will be obtained from the City or from an existing permitted source. If water is obtained

from either an existing or newly constructed well(s), the maximum daily withdrawal will be less than 5,000 gal per day. As necessary, the Applicant may purchase water from landowner(s) with an existing water right that meets the intended use pursuant to ORS 537.545.

6.0 Mitigation Measures – OAR 345-021-0010(1)(o)(G)

OAR 345-021-0010(1)(o)(G) A description of proposed actions to mitigate the adverse impacts of water use on affected resources.

No adverse impacts are expected to occur from proposed Facility water use during construction or operation. Solar energy facilities have minimal water requirements. Because construction and operation of the Facility will not create significant impacts on water resources, no mitigation measures are proposed.

7.0 Submittal Requirements and Approval Standards

7.1 Submittal Requirements

Table O-2. Submittal Requirements Matrix

Requirement	Location
OAR 345-021-0010(1)(o) Information about anticipated water use during construction and operation of the proposed facility. The applicant must include:	-
(A) A description of the use of water during construction and operation of the proposed facility;	Section 2.0
(B) A description of each source of water and the applicant’s estimate of the amount of water the facility will need during construction and during operation from each source under annual average and worst-case conditions;	Section 3.0
(C) A description of each avenue of water loss or output from the facility site for the uses described in (A), the applicant’s estimate of the amount of water in each avenue under annual average and worst-case conditions and the final disposition of all wastewater;	Section 4.0
(D) For thermal power plants, a water balance diagram, including the source of cooling water and the estimated consumptive use of cooling water during operation, based on annual average conditions;	N/A
(E) If the proposed facility would not need a groundwater permit, a surface water permit or a water right transfer, an explanation of why no such permit or transfer is required for the construction and operation of the proposed facility;	Section 5.0
(F) If the proposed facility would need a groundwater permit, a surface water permit or a water right transfer, information to support a determination by the Council that the Water Resources Department should issue the permit or transfer of a water use, including information in the form required by the Water Resources Department under OAR Chapter 690, Divisions 310 and 380; and	N/A
(G) A description of proposed actions to mitigate the adverse impacts of water use on affected resources.	Section 6.0

7.2 Approval Standards

OAR 345 Division 22 does not provide an approval standard specific to Exhibit O.

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Attachment O-1. Record of Correspondence with the City of Maupin

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From: [Bronte Dod](#)
To: [McLaneGodwin, Linsey](#)
Cc: [Jeff Watson](#); [asolsby](#); [Hicks, Paul](#); [Nick Smith](#)
Subject: RE: Yellow Rosebush Energy Center Water Supply Confirmation Request
Date: Thursday, March 14, 2024 9:25:52 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Linsey,

Yes, sorry for the delay. The City of Maupin can sell bulk water. Our permit number is 00510.

Thanks,

Bronte Dod

Administrative Assistant/Utility Billing Clerk

Office: 541-395-2698 | Cell: 541-777-7758

507 Grant Avenue | PO Box 308

Maupin, OR 97037

cityofmaupin.org

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From: McLaneGodwin, Linsey <LINSEY.MCLANEGODWIN@tetrattech.com>

Sent: Thursday, March 14, 2024 9:22 AM

To: Bronte Dod <bdod@cityofmaupin.org>

Cc: Jeff Watson <jwatson@savionenergy.com>; asolsby <asolsby@savionenergy.com>; Hicks, Paul <Paul.Hicks@tetrattech.com>

Subject: RE: Yellow Rosebush Energy Center Water Supply Confirmation Request

Hi Bronte,

Could you confirm receipt of my email below?

Thanks,

Linsey McLane-Godwin (she/her) | Environmental Planner | **Part-Time Remote: Hours 9AM to 3PM**

Office +1 (503) 721-7215 | Mobile +1 (541) 714-3060 | linsey.mclanegodwin@tetrattech.com

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From: McLaneGodwin, Linsey

Sent: Tuesday, March 12, 2024 2:05 PM

To: bdod@cityofmaupin.org

Cc: Jeff Watson <jwatson@savionenergy.com>; Anneke Solsby <asolsby@savionenergy.com>; Hicks, Paul <Paul.Hicks@tetrattech.com>

Subject: Yellow Rosebush Energy Center Water Supply Confirmation Request

Hi Bronte,

Thanks for your call today. As I mentioned on the phone, I am contacting you on behalf of the proposed Yellow Rosebush Energy Center (Yellow Rosebush). Yellow Rosebush is a proposed up to 800-megawatt solar photovoltaic power generation facility and an up to 800 MW battery energy storage system in Wasco County, Oregon owned by Savion, LLC (Savion). More information on Yellow Rosebush can be found here: <https://www.oregon.gov/energy/facilities-safety/facilities/Pages/YRB.aspx>

Our current, conservative, estimate of water anticipated for facility construction dispersed over a 12 to 18-month period is 155 – 230 million gallons (approximately 15,000 gallons a day). Once in operation the facility would need around one million gallons per year for panel washing. Savion would use trucks to bring the water to the facility. Tetra Tech is under contract to Savion through the Oregon Dept. of Energy's (ODOE) permitting process. To this end, we will provide to ODOE evidence of consultation with local municipalities that we have been in contact regarding obtaining water for the construction of Yellow Rosebush.

At this point in the process, Savion is not required to have entered into a contract with the Maupin Public Works for water supply, we just need to demonstrate to ODOE that we have been in consultation with the Maupin Public Works and that yes, you are licensed to supply water to Savion, how much you are able to provide, your water right permit number(s), and any seasonal constraints. Any letter from you to me on this subject does not constitute a contract and you are under no obligation to supply water for the facility, we just need to demonstrate to ODOE that you have water to sell and that we could use as a water supplier if we, at a later date, come to an agreement to do so.

If you could please provide a letter addressing Yellow Rosebush as soon as possible, that would be greatly appreciated. It can be a statement on your letterhead with your signature if you like, or even a reply to this email.

Thank you in advance and let me know if you have any questions!

Sincerely,

Linsey McLane-Godwin (she/her) | Environmental Planner | **Part-Time Remote: Hours 9AM to 3PM**
Office +1 (503) 721-7215 | Mobile +1 (541) 714-3060 | linsey.mclanegodwin@tetrattech.com

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