Respondent No: 2
Responded At:
May 13, 2025 22:09:01 pm

Last Seen:
May 13, 2025 22:09:01 pm

IP Address:
n/a

Q1. Name
Patrick D. Grengs II

Q2. Email address
pixelate@mathsavers.com

No

Q3. Are you part of an Agency or Organization?

## Q4. Share any comment

Hello EFSEC Staff - While Reviewing the EFSEC "Environmental Review and Staff Recommendation for State Environmental Policy Act (SEPA) Review for Horse Heaven Wind Farm Project Site Certification Agreement Water Supply [Link: https://www.efsec.wa.gov/sites/default/files/210011/feis/20250505\_HH\_WaterSource\_StaffMemo.pdf ] • Source" During the construction phase, there is a request for 220,000 gallons / day from the Gould Well. o 300 days per year (in context of construction) = 66,000,000 gallons per year. o 325,851 gallons per acre / foot. o Requesting 184 Acre feet + 12 = 196 \* 325,851 63,866,796 gallons / year. • There is no information presented regarding the water necessary for the removal of the turbines, concrete bases and solar panels. o Clearly, water will be required during the decommissioning / removal of all the hardware. o Why is this not addressed? • Reading from page 8 of 11 3. WATER g. "Ecology conducted an analysis and determined there would be no impacts to the aquifer." o This has a footnote of 9. Internal memorandum from Washington Department of Ecology to Breean Zimmerman, Permitting Unit from Mike Herbert, Technical Unit dated 9/5/2024. o How, on earth, can you remove 66 million gallons of water, per year, from an aquafer and have no impact? o What is the confirmed and calculated annual inflow to the aquafer? Would this be answered in the "Internal memorandum" referenced in Note 9? o That amount of water would be able to irrigate, per working example: Google tells me that a 1-acre cherry orchard in West Richland, Washington would likely need 2500 gallons of water per week (during peak growing season). Given a growing season from April 1 - October 30, we have ~30 weeks. 2500 gallons per week \* 30 weeks = 75,000 gallons per acre per growing season (year). 66,000,000 gallons of water per year / 75,000 gallons per acre per growing season (year) = 880 Acres of Cherries. Again, how can the depletion necessary to irrigate 880 acres have no impact on the aquafer? I assert that the claim is physically impossible. Regards, Patrick Grengs / Owner of 40 acres of mixed-use land (currently under alfalfa cultivation) in West Richland, Washington

Q5.	Upload your document (optional)	not answered
Q6.	Upload a picture (optional)	not answered
Q7.	Did you also share a video?	No

•	Respondent No: 3 Login: Anonymous Email: n/a	Responded At: Last Seen: IP Address:	May 17, 2025 14:04:29 pm May 17, 2025 14:04:29 pm n/a
Q1. Name		Patrick D. Grengs II	
Q2. Email address		pixelate@mathsavers.com	
Q3. Are yo	ou part of an Agency or Organization?	No	

## Q4. Share any comment

Below is an update to a comment posted by Patrick D. Grengs II on Tue 5/13/2025 10:09 PM Hello EFSEC Staff - While Reviewing the EFSEC "Environmental Review and Staff Recommendation for State Environmental Policy Act (SEPA) Review for Horse Heaven Wind Farm Project Site Certification Agreement Water Supply Source" [Link: https://www.efsec.wa.gov/sites/default/files/210011/feis/20250505\_HH\_WaterSource\_StaffMemo.pdf ] • During the construction phase, there is a request for 220,000 gallons / day from the Gould Well. o 300 days per year (in context of construction) = 66,000,000 gallons per year. o 325,851 gallons per acre / foot. o Requesting 184 Acre feet + 12 = 196 \* 325,851 63,866,796 gallons / year. • There is no information presented regarding the water necessary for the removal of the turbines, concrete bases and solar panels. o Clearly, water will be required during the decommissioning / removal of all the hardware. o Why is this not addressed? • Reading from page 8 of 11 3. WATER g. "Ecology conducted an analysis and determined there would be no impacts to the aquifer." o This has a footnote of 9. Internal memorandum from Washington Department of Ecology to Breean Zimmerman, Permitting Unit from Mike Herbert, Technical Unit dated 9/5/2024. o How, on earth, can you remove 66 million gallons of water, per year, from an aquafer and have no impact? o What is the confirmed and calculated annual inflow to the aquafer? Would this be answered in the "Internal memorandum" referenced in Note 9? • I consulted several Online AI tools to determine the amount of water necessary for practical crop irrigation by asking the question: "How much irrigation water is needed for a 1-acre cherry orchard in West Richland Washington?" o Google AI: A 1-acre cherry orchard in West Richland, Washington typically requires 42 inches of water per season. This is equivalent to approximately 1,300 m<sup>3</sup> per hectare (520 m<sup>3</sup> per acre) or 27,154 gallons of water. The specific amount of water needed can vary depending on factors like soil type, rainfall, and the tree's age and expected yield. However - the math being done by the AI is questionable. When I Run the Numbers from Google AI: • 43,560 (ft2 / acre) \* 3.5' (42") = 190,960 ft3 \* 7.48 gallons /ft3 = 1,428,380 gallons / acre per season. • But if we go with 520 m3 per acre: 520m3 \* 264 gallons / m3 = 137,280 gallons / acre per season. • The Google AI has a full order of magnitude difference in these two values. o Microsoft Bing: For a 1acre cherry orchard in West Richland, Washington, the average annual irrigation rate is around 1,300 m<sup>3</sup> per hectare (520 m<sup>3</sup> per acre). Established cherry trees in the ground need around 40 gallons of water a week by natural rainfall, and in areas affected by drought, this water needs to be replaced by manual watering. m3 = 1000 liters, 3.785 liters per gallon, 264 gallons (per m3) \* 520 m3/acre = 137,384 gallons per acre per season. 43,560 (ft2 / acre), with each tree occupying 18' \* 18' (324 ft2), 43,560 / 324 = 134 trees / acre. 134 trees per acre \* 40 gallons per tree per week \* 30 weeks per season = 160,800 gallons per acre per season. o Chat GPT: Annual Irrigation Rates: In low-density cherry orchards, the average annual irrigation rate is around 1,300 cubic meters per hectare (520 cubic meters per acre). This answer is similar to Bing: 137,384 gallons per acre per season. o X / Grok 3: A 1-acre cherry orchard in West Richland, Washington, requires approximately 650,000-700,000 gallons of water per year (1.7-2.0 acre-feet, adjusted for 85% drip irrigation efficiency) for mature trees, with peak weekly demand in July of about 73,800 gallons (2.31 acre-inches) during warm weather. Water needs vary by season, with critical periods in May-June (pre-harvest) and July-August (post-harvest). Use the WSU Irrigation Scheduler and soil testing to refine your schedule and verify water availability with the Columbia Irrigation District. o AI Summary: The values range from 137k to 1,428k gallons per acre; a median value of 750k gallons per acre is just north of 2.0 acre-feet per season. We can also consider annual natural precipitation of 7 inches per year for West Richland, Washington. o The HHH Project (Gould Well) water usage compared to Productive Irrigation water usage: The annual water necessary for the HHH Project from the Gould Well is 66,000,000 gallons. 66,000,000 gallons per year for HHH / 750,000 gallons per year per acre = 88 acres of cherries. How can the depletion necessary to productively irrigate 88 acres of cherries have no impact on the aquafer? I assert that the claim is physically impossible and insist that the Washington Department of Ecology defend the claim. Regards, Patrick Grengs / Owner of 40 acres of mixed-use land (currently under alfalfa cultivation) in West Richland, Washington.

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Q7.	Did you also share a video?	No