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Date: March 14, 2023

Subject: Badger Mountain Solar Energy Project: Response to Washington Department of Ecology Letter

This memorandum provides responses to Washington Department of Ecology’s (Ecology) July 14, 2022 letter to the Washington Energy Facility Site Evaluation Council (EFSEC) regarding the Badger Mountain Solar Energy Project (Project). The responses below follow the organization of Ecology’s letter.

The Project is a 200-megawatt solar photovoltaic generation facility with an optional 200-megawatt battery energy storage system and associated 3.7-mile-long, 230-kilovolt overhead generation-tie transmission line corridor in unincorporated Douglas County, Washington. Wetland and other water surveys were conducted in April 19 to 22, 2021, and June 23 and 24, 2021, within the 2,390-acre Survey Area. Surveys results were provided in the Applicant’s Wetland Delineation Report, which was submitted to EFSEC for review on October 7, 2021 in Attachment I to the Application for Site Certification.

RESPONSE TO WASHINGTON DEPARTMENT OF ECOLOGY LETTER

Review of Wetlands Datasheets

Wetlands in the Arid West are required to meet at least two of the three hydric criteria (hydrology, vegetation, and soils), a single indicator such as hydrophytic vegetation without hydric soils and hydrology will not meet wetland criteria (USACE 2008). Site 227 only had reed canarygrass (*Phalaris arundinacea*), which is designated as Facultative Wetland (FACW) vegetation, not Obligate Wetland (OBL) vegetation in the Arid West; soils and hydrology did not meet wetland criteria even under the difficult situations criteria (USACE 2020):

“If indicators of either hydric soil or wetland hydrology are absent, the area is likely non-wetland unless soil and/or hydrology are also disturbed or problematic.” (USACE 2008:86).

Site 227 is within a homestead area that has not been lived in for several decades and therefore was considered undisturbed. It appears that the reed canarygrass was planted as a lawn grass in the past as it is bordered by a hedgerow of upland roses and located on the sunny side of an abandoned house. Several soil pits were dug at least 16 inches deep across Site 227 and down the gradient slope to determine if there were hydric soils present. An excerpt from Section I – Procedures for Digging a Soil Pit and Examining for Hydric Soil

Indicators in the 1987 *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) is provided below to verify the use of 16-inch pit depth:

Apply the following procedure: Circumscribe a 1-ft-diam area, preferably with a tile spade (sharpshooter). Extend the blade vertically downward, cut all roots to the depth of the blade, and lift the soil from the hole. This should provide approximately 16 inches of the soil profile for examination. NOTE: Observations are usually made immediately below the A-horizon or 10 in. (whichever is shallower). In many cases, a soil auger or probe can be used instead of a spade. If so, remove successive cores until 16 inches of the soil profile have been removed. Place successive cores in the same sequence as removed from the hole. NOTE: An auger or probe cannot be effectively used when the soil profile is loose, rocky, or contains a large volume of water (e.g., peraquic moisture regime).

No soils meeting hydric conditions were found. In addition, no signs of hydrology were observed despite recent snow melt on site. The site is not in a landscape position that is likely to concentrate water, it slopes towards the southeast at a 3 percent angle. It does not meet landscape position for difficult wetland situations in the Arid West.

Tetra Tech has included the sample site data sheet for WT-332 as an attachment to this memorandum (Attachment A). It was not included with Attachment I to the Application for Site Certification originally because while hydric vegetation was present, the area was not shown on the NWI and also did not meet hydric soils or hydrology criteria.

Ecology's letter states that a number of rare plant species were noted for their presence on site. This statement is incorrect and clarification is provided below. Tetra Tech conducted rare plant surveys within the Survey Area May 3 to May 7, 2021. As identified in Attachment F to the Application for Site Certification, no rare plant species were identified during the surveys. Although habitat for sticky phacelia (*Phacelia viscida*) was present within the Survey Area and surveys were conducted during the recommended survey period, no individuals of this species were observed. Habitat for later-blooming rare plant species with **potential** (emphasis added) to occur in the Survey Area (i.e., those listed with a low, moderate, or high likelihood of occurrence in Appendix A whose recommended survey period occurs later than May) includes vernal pools, moist meadows, wet openings in in hardwood or coniferous forests, bogs, springs, seeps, riparian areas, and dry rocky washes. No suitable habitat for later blooming rare species with potential to occur in the Survey Area, including Wenatchee larkspur (*Delphinium viridescens*), was observed during surveys.

No wetlands were found within the Survey Area; therefore, no Wetland of High Conservation Value or wetland-specific Element Occurrences occur within this Survey Area.

Tetra Tech is available to give a tour of any site that Ecology would like to see in the field. No ponded water was observed during the three site visits where snow was not on the ground. Additionally, no wetland vegetation was observed in low lying areas in the landscape. The wetland curve data values of 80-89 align with the Hydrologic Soils Group D in the shallow soils at the cliff edge and in two of the drainages (ST-260 and ST-249) that were delineated. Photos of these areas are included in the photolog in Attachment I to the Application for Site Certification (Appendix C of the Wetland Delineation Report) as photopoints 139, 140, 147, 160, 161, 162, 213, 214, 215, 249, 250, 251, 260, and 356.

Prior to survey efforts, a call with Ecology was made on March 26, 2022, to inform Ecology of the delineations that would occur and determine if anything out of the ordinary would be required at this site. Lori White agreed that the timing of our field surveys would accurately capture potential vernal pools on site. Site visits and surveys were made in March, April, May, and June of 2021. When surveyors arrived in March there was 6 inches of snow on the ground making wetland delineations impossible. Surveyors revisited the site two weeks after the snow melt in April to capture any vernal pools that might be present. No vernal pools (or any areas of standing water that might develop vernal pool vegetation) were observed in the shallow soils or in the larger Survey Area. Plant surveys were completed in early May and botanists surveyed for any vernal pool or wetland vegetation at that time. No wetland or vernal pool vegetation was found in May. Subsequent visits in June were made to observe vegetation after it had matured and recovered from late spring snowfall. No wetland or vernal pool vegetation was observed in likely locations at that time either.

No hydric soils are indicated by Natural Resources Conservation Service soil surveys (NRCS 2021) or were observed in the field within the Project Survey Area.

Tetra Tech surveyors delineate ephemeral waterways at any location where water may drain off a site regardless of whether or not the bed or banks are defined for the entirety of the flow path. This is done to help projects avoid stormwater issues during construction as well as to meet Washington's Waters of the State criteria for defining ephemeral waterways. Ecology noted an interest in reviewing select drainages for presence of wetland characteristics, such as those in photopoints 508, 513, and 329a and 329b. Tetra Tech provides additional notes on these photopoints below:

- Photopoint 508 shows actively growing wheat. No bed or banks or wetland vegetation was observed.
- Vegetation in ST-513, which is shown in photopoint 513, is primarily downy brome (*Bromus tectorum*), wild oat (*Avena fatua*), and volunteer winter wheat (*Triticum aestivum*) from the neighboring crop field. No bed or banks or wetland vegetation was observed.
- Photopoint 329 shows a short segment of ST-329 before it loses all bed and banks in a wheat field downslope. No bed or banks or wetland vegetation was observed. In addition, Section 4.3.C.1 of the Application for Site Certification states that the segment of ST-329 within the Survey Area is disconnected from its downstream channel by active farming of the drainage and is unlikely to contain fish in this reach.

Tetra Tech is available as needed to give a tour of the locations that Ecology would like to see in the field.

Ecology stated that they typically require a jurisdictional determination (JD) from the U.S. Army Corps of Engineers (USACE) verifying that waters are non-federally jurisdictional before beginning their Administrative Order permitting process. Recent conversations with USACE concerning JDs has led Tetra Tech to understand that unless project impacts are beyond the threshold for Pre-Construction Notification that the USACE is reluctant to work through the administrative process necessary to issue a JD. Nonetheless, the Applicant submitted an Approved Jurisdictional Determination request to the USACE on July 12, 2022. Following a call with the USACE on December 9, 2022, and at the USACE's recommendation, the Applicant requested a Preliminary Jurisdictional Determination (PJD) for aquatic resources within the Survey Area. If streams cannot

be avoided at final design, the Applicant would submit a Joint Aquatic Resources Permit Application to EFSEC to obtain necessary permitting for jurisdictional streams, if needed. .

A site visit can be scheduled for early spring. The site is at higher elevation than Wenatchee and there was snow up on the plateau when it was warm and flowers were blooming down near the river. Please let us know if we can give you any more information up front to help expedite this review process.

SUMMARY

The Applicant provides this supplementary information to demonstrate that field surveys for wetlands and waters were complete. Four separate site visits were made during the growing season, although very little vegetation was visible in the March visit. No vernal pools or standing waters were observed within the Survey Area despite recent snow melt and spring rains. No wetland vegetation was found on site during any of the four site visits spanning from March through June.

REFERENCES

NRCS. 2021. Web Soil Survey. Available online at:

<http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed: March 2021.

USACE (U.S. Army Corps of Engineers). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. January 1987. Wetlands Research Program. U.S. Army Corps of Engineers, Waterways Experiment Station, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199.

USACE. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2). ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USACE. 2020. U.S. Army Corps of Engineers 2020. National Wetland Plant List, version 3.5. U.S. Army Corps of Engineers. Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. Available online at <http://wetland-plants.usace.army.mil/>

Attachment A: Sample Site Data Sheet

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Badger Mountain Solar City/County: Douglas County Sampling Date: 4/20/2021
 Applicant/Owner: Avangrid State: WA Sampling Point: WT-332
 Investigator(s): Jessica Taylor/Katie Pyne/Sara Frank Section, Township, Range: 23N, 21E, 34
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): LRR B Lat: 47.458279 Long: 120.197609 Datum: 10
 Soil Map Unit Name: 68: Broadax-Morrow-Spofford Complex, 3 to 8 percent slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>x</u> Hydric Soil Present? Yes _____ No <u>x</u> Wetland Hydrology Present? Yes _____ No <u>x</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>x</u>
Remarks: Low spot at the edge of the wheat field, near the project area boundary where the ground has not been tilled or planted. Soils are sandy/rocky. The soils are fairly damp due to recent snowmelt but not saturated and no pooling of water was observed.	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____					
2. _____					
3. _____					
4. _____					
_____ =Total Cover					
Sapling/Shrub Stratum	(Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>30</u> x 5 = <u>150</u> Column Totals: <u>30</u> (A) <u>150</u> (B) Prevalence Index = B/A = <u>5.00</u>
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
_____ =Total Cover					
Herb Stratum	(Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators: _____ Dominance Test is >50% _____ Prevalence Index is ≤3.0 ¹ _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Agropyron cristatum</u>		<u>25</u>	<u>Yes</u>	<u>UPL</u>	
2. <u>Brassica nigra</u>		<u>5</u>	<u>No</u>	<u>UPL</u>	
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
<u>30</u> =Total Cover					
Woody Vine Stratum	(Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____					
2. _____					
_____ =Total Cover					
% Bare Ground in Herb Stratum <u>70</u>		% Cover of Biotic Crust <u>0</u>			
Remarks:					

SOIL

Sampling Point: WT-332

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-22	10YR 3/2	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR D)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u> x </u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u> X </u> Depth (inches): _____ Water Table Present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation Present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u> X </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: