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CALIFORNIA
ENERGY COMMISSION

February 27, 2023

Curt Hilderbrand
Hydrostor, Inc.
400 Capitol Mall, Suite 3000
Sacramento, CA 95814-4497

Data Requests Set 4 for Willow Rock Energy Storage Center (21-AFC-02)

Dear Curt:

Pursuant to Title 20, California Code of Regulations, section 1716, California Energy Commission (CEC) staff is asking for the information specified in the enclosed Data Requests Set 4, which is necessary for a complete staff analysis of the Willow Rock Energy Storage Center (WRESC) under the Warren-Alquist Act and California Environmental Quality Act (CEQA).

Responses to the data requests are due to staff within 30 days. If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send written notice to me and the Committee within 20 days of receipt of this letter. Such written notification must contain the reasons for not providing the information, the need for additional time, or the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please email me at leonidas.payne@energy.ca.gov.

/S/

Leonidas Payne
Project Manager

Enclosure: Data Requests Set 4

WILLOW ROCK ENERGY STORAGE CENTER
DATA REQUESTS SET 4

BIOLOGICAL RESOURCES

BACKGROUND: Mohave Ground Squirrel, a Species Listed as Threatened Under the California Endangered Species Act

CEC staff filed Data Requests Set 1 (TN 244203) on July 26, 2022. On August 15, 2022, applicant filed objections (TN 245050) to staff's Data Request (DR) 44 requesting Mohave ground squirrel (MGS) surveys, and DR45 requesting the applicant consult with staff and California Department of Fish and Wildlife (CDFW) on the hybrid (camera/live trapping) methodology of the surveys. Staff held a workshop on October 11, 2022, to discuss applicant's objections and try to reach an agreement. For some items such as the MGS, applicant was to provide follow-up information. In a meeting on November 18, 2022, as a follow up to the workshop, the applicant presented information on a habitat assessment report on MGS. Staff and CDFW received the Mohave Ground Squirrel Habitat Assessment and associated documents on December 1, 2022, but this species was not discussed during a follow-up meeting on December 2, 2022; instead, Crotch bumble bee, desert tortoise, and burrowing owl were discussed. Staff and CDFW provide this follow-up to our review of the MGS habitat assessment.

The habitat assessment concluded it is unlikely that MGS are present within the project area based on 1) the mapped range of MGS, 2) lack of connectivity to core populations, and 3) generally low population densities in the southern portion of the MGS range. Staff and CDFW do not concur with these conclusions.

"Unlikely to be present" does not mean the species would not be present. The primary reason to conduct surveys is to determine whether a species occurs. Surveys are conducted in suitable habitat, which can be of low, moderate, or high quality. The quality of habitat is what dictates the mitigation ratio to determine how much compensation land is required.

The applicant's habitat assessment concluded that, based on the mapped range of MGS, it is unlikely to be present in the project area and therefore they would not conduct surveys or assume presence. However, Mohave ground squirrel has been found outside of this mapped range. For example, there is a CNDDB occurrence in Weldon near Kelso Creek in 2007. Other detections outside of the range include a 2005 detection south of Barstow and a 2000 detection in Panamint Valley from CNDDB. A Mohave ground squirrel was observed west of the range boundary in Cane Canyon in 2007 and a detection east of the range boundary in southern Lucerne Valley (CDFW 2019). There are some newer occurrences in 2021 from CNDDB just north of Edwards Air Force Base about 16 miles northeast of the project site and one in 2020 from iNaturalist just south of Edwards near Lancaster about 14 miles southeast of the site.

The project survey area is also within the historical range of MGS. DataBasin (databasin.org) has a map of the modeled predicted occupied MGS habitat which covers the project survey area. In addition, Inman et al. (2013) "developed a model predicting

the current and future distribution of the MGS relative to physiographic and current and anticipated disturbances, including climate change" as shown in Figure 3 of *A Conservation Strategy for the Mohave Ground Squirrel Xerospermophilus mohavensis* (CDFW 2019). The project survey area is within the moderate suitability area shown in Figure 3.

The second reason provided in the habitat assessment for why MGS are unlikely to occur is a lack of connectivity to core populations. The habitat assessment states Highway 14 is a significant barrier to dispersing individuals from the closest core population at Edwards Air Force Base. While highways, in general, do provide an obstacle to movement for wildlife, it does not prevent them from crossing. U.S. Highway 395 runs north/south roughly in the center of the MGS mapped range. Highways 58 (southern portion) and 178 (northern portion) also traverse the MGS range and these major roads travel through core areas as well as linkage areas in-between. There is evidence of gene flow (Bell and Batocq, 2011) between populations throughout the MGS range which suggests existing roads do not present a movement barrier for genetic exchange (USFWS 2011).

The habitat assessment also states there are only small and highly fragmented patches of habitat in the survey area, and the survey area is surrounded by disturbance and development, which provides little connectivity to core populations. However, there are patches of habitat between the areas of disturbance that allow for movement. The presence of disturbed and developed areas may reduce suitability and access in some areas but does not prevent MGS from using suitable habitat or remaining extant.

The third and last reason provided in the habitat assessment as to why MGS are unlikely to occur is due to low population densities in the southern portion of its range. However, areas such as the southern portion of the range, where populations may be sparsely occupied by small, isolated populations, "would be especially important from a conservation perspective because populations on the periphery of a species range may have genetic, behavioral, or physiological adaptations than core populations" (CDFW 2019).

The Mohave Ground Squirrel Survey Guidelines (CDFW 2010) state that surveys for MGS are required if the following circumstances apply:

- If the proposed site has potential habitat for MGS,
- If the presence of the species on the project site is unknown, and
- If there is suitable habitat present (i.e., desert shrub vegetation), and this habitat is within or adjacent to the geographic range of the species.

The project survey area does include suitable MGS habitat. The MGS has been found to occur in all Mojave Desert scrub communities—Gustafson (1993) as described in *A California Flora* by Munz and Keck (1959) and *Terrestrial Vegetation of California* by

Vasek and Barbour (1988) and in *Preliminary descriptions of the terrestrial natural communities of California* by Holland (1986). These communities include alkali sink, creosote bush scrub, shadscale scrub, sagebrush scrub, Joshua tree woodland, saltbush scrub, blackbush scrub, desert saltbush scrub, and Mojave mixed woody scrub. In addition, the project survey area contains suitable substrate for burrowing and numerous burrows appropriate for MGS (AFC Attachment DA52-1 Biological Technical Report, TN 242779, Table 7).

The project survey area also contains known food plants used by MGS such as winterfat (*Krascheninnikovia lanata*), spiny hopsage (*Grayia spinosa*), Cooper's boxthorn (*Lycium cooperi*), Joshua tree (*Yucca brevifolia*), creosote bush (*Larrea tridentata*), and saltbush (*Atriplex* spp.). Since the timing of the survey for the habitat assessment was conducted in the winter it was not possible to determine if there are any annuals/forbs associated with MGS in the survey area.

In addition, staff and CDFW are concerned about the amount of time (less than one day) spent assessing the habitat within the approximately 4,460-acre project survey area, especially since suitable low to moderate quality habitat (TN 248931) exists in the area.

Further, CEC staff and CDFW reviewed the two Memorandum of Understanding (MOU) documents (agreement between named individual and CDFW to allow handling of MGS) provided by the applicant and would like to see a valid MOU for surveyor Karla Flores, since hers has expired.

When conducting surveys, the methodology must include camera use in addition to live trapping. Mohave ground squirrels are difficult to trap and have been observed approaching traps but not entering them. An example is a trapping survey where only one MGS was trapped but a video system recorded 9 MGS (Delaney and Leitner 2009).

If the applicant will be conducting surveys, note that the authorization from CDFW allowing surveyor Karla Flores to handle MGS has expired and will need to be renewed. If the applicant objects to performing the MGS surveys, staff will assume presence, and in consultation with CDFW, will include appropriate mitigation in the Preliminary Staff Assessment.

In conclusion CEC staff and CDFW do not concur that surveys are not warranted or with the conclusions of the habitat assessment. Suitable MGS habitat is present in the survey area and without conducting surveys to demonstrate absence or assuming presence, the project could still result in take of MGS, which would be a violation of Fish and Game Code section 2080.

DATA REQUESTS:

157. Please conduct MGS protocol surveys following the CDFG 2003, 2010 *Mohave Ground Squirrel Survey* Guidelines, in the areas identified as suitable habitat (per the MGS Habitat Assessment TN 248931) for MGS, and provide the results of the surveys. (DR 44)

158. If surveys will be conducted, please provide CDFW and CEC with a hybrid (camera/live trapping) survey methodology for review and approval prior to conducting surveys for concurrence of survey methods. (DR 45)

159. Please provide valid MGS handling authorization from CDFW for any surveyor retained by the applicant to perform surveys.

References:

Bell, K.C. and M.D. Matocq. 2011. Regional genetic subdivision in the Mohave ground squirrel: evidence of historical isolation and ongoing connectivity in a Mojave Desert endemic. Animal Conservation 14:371-381.

California Department of Fish and Wildlife (CDFW) 2019. A Conservation Strategy for the Mohave Ground Squirrel Xerospermophilus mohavensis. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83975&inline

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Delaney, D., and P.A. Leitner. 2009. Testing alternative methods for the detection of Mohave ground squirrels at the western expansion area of the National training Center and Fort Irwin, California: Part I audio and video surveys. U.S. Army CERL, Champaign, Illinois. 23 pp.

Gustasfon, J.R. 1993. A status review of the Mohave ground squirrel (*Spermophilus mohavensis*). A report to the California Fish and Game Commission, Non-game Bird and Mammal Section Report 93-9.

Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Game, Sacramento, Nongame Heritage Program report, 156 pp.

Inman, R.D., T.C. Esque, K.E. Nussear, P. Leitner, M.D. Matocq, P.J. Weisberg, T.E. Dilts, and A.G. Vandergast. 2013. Is there room for all of us? Renewable energy and Xerospermophilus mohavensis. Endangered Species Research 20:1-18. DOI 10.3354/esr00487. www.int-res.com/articles/feature/n020p001.pdf.

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U.S Fish and Wildlife Service. 2011. Endangered and threatened wildlife and plants; 12-month finding on a petition to list the Mohave ground squirrel as endangered or

threatened. Federal Register, Vol. 76:62214-62258: http://www.gpo.gov/fdsys/pkg/FR-2011-10-06/pdf/2011-25473.pdf

Vasek, F.C. and M.G. Barbour. 1988. Mojave Desert scrub vegetation, In: Terrestrial vegetation of California, expanded edition, M.G. Barbour and J. Major, Eds. California Native Plant Society. Special Publication No. 9.

BACKGROUND: Noise and Vibration

The applicant provided Attachment 2-1 Controlled Detonation of Explosive Information Summary (TN 247494, Attachment 2-1) as a response to a question on blasting and vibration asked by CDFW during the October 11, 2022, workshop between the CEC staff, CDFW, and the applicant. In this document, it states there will be two detonations per day of explosives at a depth of 2,000 feet, with the shaft predicted to muffle the sound. However, no noise level value is provided that includes the attenuation of noise from the shaft at the surface. It also states, the noise level would be approximately 74 dBA at the closest above ground receptor (at 1,300 feet), but it does not provide which receptor it is referring to. This document also reports that the controlled detonations may result in a perceptible sound and vibration at the nearest residences and the sound is expected to be similar to a firecracker and would be considered minor and infrequent. Again, no noise level value is provided.

According to this document, the vibration and noise traveling up through the shaft will generate both an audible noise and pressure that could be perceptible at the nearest receptors. It is estimated that the maximum air-overpressure level would be less than 120 linear decibels (dBL) at approximately 1,300 feet away. The document states this is similar to a 20 mile per hour wind and is well below any threshold causing impacts. However, the document does not provide noise levels in dBA, a definition of the threshold value used to determine impacts to special-status wildlife, or the sound level value for a 20 mile per hour wind.

Fossorial species (e.g., desert kit fox, American badger, desert tortoise, Mohave ground squirrel) live in underground burrows, some down to approximately 3 feet belowground. Wildlife relies on sounds for communication, navigation, avoiding danger, and finding food. Noise can interfere with these.

DATA REQUESTS:

160. Please describe what the expected vibration level would be on the surface of the shaft and its dB level. Please provide all decibel level values in dBA.

161. Please explain what the vibration level is expected to be at an approximate distance of 3 feet below ground at the fence line on all sides of the project site.

162. Please define the threshold value used to determine whether a significant impact has occurred to special-status wildlife species.

163. Please provide the decibel value for 20 mile per hour wind.

164. Please explain what the expected noise attenuation level of the 2,000-foot shaft would be at the ground surface of the shaft and at the fence line on all sides of the project.

165. Please explain which receptor is the closest above ground receptor and what it is closest to. Is it closest to the loudest expected construction noise or closest to the boundary of the project site?