UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

September 7, 2018

Melvin D. Murphy
Authorized Representative
Panoche Energy Center
43883 West Panoche Road
Firebaugh, California 93622

RE: Underground Injection Control (UIC) Permit Renewal Application
Class 1 Non-Hazardous (NH) Permit No. R9UIC-CA1-FY17-2R
Response to PEC (Panoche Energy Center) Questions

Dear Mr. Murphy,

We reviewed your Summary of Responses and Questions dated 7-12-2018. For easier reference, our responses in the Enclosure follow the previous exchanges that are also copied.

Please provide hard copies of the requested information for us to insert into our three hard copies of your original application, and submit on CD an electronic version of the revised application that is complete and updated. We also request that you share copies of the updated replacement CD with the agencies copied on this letter.

If you have any questions or need to discuss this further, please do not hesitate to call George Robin of my staff at 415-972-3532 or me at 415-972-3971.

Sincerely,

David Albright, Manager
Drinking Water Protection Section

Enclosure

cc: Alan Walker, CA DOGGR
Bill Bartling, CA DOGGR, Inland District
Clay Rodgers, Central Valley Regional Water Quality Control Board

ENCLOSURE

Attachment B – Comment 1: The application provided information on water supply wells located within 1-mile of the facility in table B-1, and not throughout the 2.75-mile AOR, as required at 40 CFR 146.14(a)(2). All of the wells shown in Table B-1 were active, although the table indicates that information such as screened interval, total well depth, groundwater basin were not available for many of these wells.

- Include this information on all water supply wells within the AOR, per 40 CFR 146.14(a)(2)

- *It appears that PEC has provided this information on Figure B-1. PEC needs further clarification from the USEPA regarding this comment and the requirement to provide tabulated information for water wells that do not penetrate the injection zone (see 40 CFR 146.14(a)(3) for clarification).*

EPA's Response: We concur. No further information is necessary.

Attachment H – Comment 1: In Table H-1 of the application, average and maximum injection rate, daily volume, and injection pressure data were presented for the last four quarters during which the EWS was in operation, and there was a significant decrease in wastewater injection. Also, on page 7-1, fourth full paragraph, the application provided the maximum historic recorded daily injection volume for each of the four wells and indicated that injection wells can operate "at least at these daily injection volumes." So, it is not clear if the injection rate and volume could exceed these values or if the application limits the injection rate and volume to those values.

- Provide the proposed average and maximum injection rate, daily volume, and pressure for each well; providing this information in a table is preferred to facilitate our review.

- *PEC needs to discuss this comment in the context of the current permit, which appears to be pressure-limited, and not rate and/or volume-limited.*

EPA's Response: Part II.C.4. "Injection Volume (Rate) Limitation" of the current permit includes conditions pertaining to the maximum rate, even though this value is initially established by observation at the maximum pressure that is measured based on the Step-Rate Test(s). The permit also requires reporting of injection rate and volume data.

Attachment I – Comment 1: The application indicated that numerous dual (we understand to mean "decay") temperature profiles have been conducted as part of external mechanical integrity tests (MITs) and cited the USEPA reports for summary of the figures.

- Provide copies of the most recent, representative log results.

- *PEC will provide the requested logs in the revised permit renewal application. Please note that providing logs, reports, and other documentation would be made more efficient if a single computer disk could be added to the permit renewal application as a supplemental appendix that includes digital copies (in PDF file format) of all requested information.*

EPA's Response: Submittal of all requested logs (and other requested reports/documentation) on a single computer disk is acceptable. However, we do require submittal of one hard copy of these materials.

Attachment Q – Comment 1:

- Please note we will require in lieu of cement plugs separated by formulated plugging mud, that the entire hole be filled with cement extending from the injection zone to surface. Additionally, the plugging procedures for Well IW2 must include cementing the uncemented portion outside of the 7-5/8 inch casing above the plugged DV tool at 4, 826 ft. and performing cement bond evaluation logging.

- *PEC needs additional clarification on this request. CFR §146.10 does not state that this is required. Additionally, in the previous application by URS (2006) this approach was acceptable. Also, discreet plugs are acceptable in other USEPA regions.*

EPA's Response: Although 40 CFR 146.10 does not specifically require a full column of cement for plugging of Class I UIC wells, it does require that wells are plugged with cement in a manner which will not allow the movement of fluids either into or between USDWs. Some evidence has shown that "floating" cement plugs do not have a performance history to provide an acceptable degree of confidence in their permanence. Especially in a situation where there is an abnormally pressured injection zone, we strongly encourage plugging with a full column of cement instead of using cement plugs. If increased costs are the principal concern, you may wish to do a comparison between the costs of installing a continuous cement column and installing cement plugs, including the specially formulated plugging mud separating the cement plugs. Other considerations would be the time and type of rig (for instance using a conventional rig versus a coiled tubing unit for key tasks), the handling and disposal of excess mud and other materials, etc.