

4 Embarcadero Center, Suite 3800  
 San Francisco, CA 94105  
 United States  
 www.jacobs.com

**Subject** Addendum to Work Plan for Historical Water Supply Well Reconnaissance – PGE-02, Topock Compressor Station, Needles, California

**Prepared For** Mr. Aaron Yue, Project Manager  
 Geological Services Branch  
 California Environmental Protection Agency, Department of Toxic Substances Control

**Prepared By** Jacobs Engineering Group (Jacobs) for Pacific Gas & Electric Company (PG&E)

**Date** 28 September, 2023

Pacific Gas and Electric Company (PG&E) reviewed the September 25, 2023 response from the Department of Toxic Substances Control (DTSC) regarding the September 7, 2023 document, *Work Plan for Historical Water Supply Well Reconnaissance – PGE-02, Topock Compressor Station, Needles, California* (Work Plan). DTSC’s comment letter is attached to this letter, which will serve as an addendum to the Work Plan. On behalf of PG&E, Jacobs Engineering Group (Jacobs) will incorporate the input from DTSC into the investigation as detailed in the following responses to DTSC’s comments.

### Response to Comments

	Comment <sup>i</sup>	Response to Comment
1	PG&E’s last two well reconnaissance documents (i.e. July 31, 2023 <i>Response to comments on the Well #1 – Area 1A Geophysical Investigation Technical Memorandum at PG&amp;E Topock Compressor Station, Needles, California</i> and this Work Plan have not been appropriately stamped and signed by a licensed professional as required by the Board for Professional Engineers, Land Surveyors, and Geologists, Geologist and Geophysicist Act (Business and Professions Code section 7800-7887). The authors of these two documents are also not stated. This practice needs to be corrected. PG&E’s May 3, 2023 <i>Well #1 – Area 1A Geophysical Investigation Technical Memorandum</i> is appropriately signed and stamped and should be used as a model to address this issue for other well reconnaissance documents.	The Work Plan has been signed and stamped by the project Professional Geophysicist (PGP).
2	The Work Plan states that the survey area for PGE-02 lies within the current AOC 14 Non-Time Critical Removal Action (NTCRA) boundary. It would appear advantageous, if needed, for geophysics to follow along the former 4-inch and 6-inch water lines (assumed to be ferrous in nature) leading to both former water supply wells PGE-01 and PGE-02 since these lines should ultimately lead to PGE-02 (See the excerpt on the following page from Drawing 482629).	Noted. This Work Plan excludes the area outside the NTCRA work area boundary. The NTCRA work area boundary marks the limits where PG&E is allowed to work for this scope.

	As much of the 6-inch water line and some of the 4-inch lines leading to PGE-01 appears to occur outside the AOC 14 NTCRA, conducting geophysics outside the AOC14 NTCRA boundary should also be undertaken if necessary. Imaging these types of lines with geophysics should be an important element in locating PGE-02 as learned from the geophysical investigation of historic well TCS-4.	
3	Another survey issue is related to searching for another lost well potentially in the area: Well #5. The Work Plan should acknowledge that both wells PGE-02 and Well #5 could potentially be located while implementing Work Plan activities. PG&E’s March 30, 2018 <i>Work Plan for Historical Water Supply Well Reconnaissance, Topock Compressor Station, Needles, California</i> proposed that three areas be examined using geophysics for Well #5 including Area 5B pictured on page 4 of this memorandum.	This comment is noted, and PG&E acknowledges that while information about the existence of Well #5 is speculative, it is possible that Well #5 could be located while implementing Work Plan activities within the NTCRA work area boundary.
4	The GSU recommends that both the proposed AOC14 boundary and Area 5B areas be included in the current geophysical investigation Work Plan due to the overlapping nature of the investigation areas and due to logistical, financial, and technical efficiencies including potential future access limitations.	The proposed survey area is based on the approved NTCRA work area, which may be expanded following the submittal of this Work Plan. PG&E will work to survey the full extents of the AOC 14 NTCRA work area boundary if expanded.
5	The Work Plan proposes that a Ground Penetrating Radar (GPR) survey be completed first, and the results evaluated to confirm if objectives are met. The Work Plan states, “ <i>Of the GPR, EM, and MAG methods the GPR method is likely best suited for differentiating anomalies</i> ”. The GSU is somewhat concerned that GPR was prioritized over the electromagnetic (EM) and magnetic (MAG) methods since the historic TCS-4 well was located using ME and MAG methods and GPR did not play a role in its discovery (see PG&E’s historic TCS-4 investigation EM and MAG figures below and on the next page). The GSU requests that EM and MAG be run if there is uncertainty regarding the location of PGE-02.	Noted. PG&E will use all of the methods as described in the Work Plan.
6	The Work Plan should discuss some PGE-02 and Well #5 details. For example, indicate that the PGE-02 location is well documented as it was one of the two original water supply wells for the compressor station in the 1950s. Basic construction information could be beneficial including well design information especially casing material and well diameter. For well PGE-02, the GSU recalls that its diameter has been reported as both a 14-inch well and also as a 10 ¾-inch diameter well. On the other hand, Well #5 has limited information and much greater uncertainty regarding its location. Unfortunately, that uncertainty will	Noted. PG&E agrees that the location of PGE-02 is considered well defined, while limited information is known regarding Well #5.

	likely require that the entire search area boundaries be investigated.	
7	The Work Plan does not emphasize the heavy gauge electrical line and conduit that was visible in the I-40 road cut. It is assumed that the observed electrical line leads to either PGE-02 and/or PGE-01. If technically feasible and safe, it is requested that the electrical line be traced using another geophysical technique such as a direct connection method so that a specific frequency could be transmitted along the copper line and detected by a receiver to locate the buried line. This technique/idea is suggested in case it might be easier, more accurate, and more cost effective than using other techniques.	PG&E will include line tracing in the survey if it is technically and logistically feasible and safe to do so.
8	Section 3.3 of the Work Plan states that following the investigation, a site map showing survey coverage and potential location of PGE-02 will be prepared. Please also have maps include the potential location of: existing in-ground gas pipelines in the AOC14 area; any identified debris of significance; historic water lines associated with PGE-01 and PGE-02 water supply wells; the electrical cable/conduit associated with the wells; etc. It seems important that this information be documented in the Work Plan as well so it will be readily available to assist field interpretations and in-field decisions.	Concur.
9	The Work Plan concludes that <i>“if the survey of this area does not identify PGE-02, then the need for investigation of this well will be considered complete”</i> . The quoted statement is highly dependent on the scope, quality of the investigation, data interpretation and the actual outcome of the investigation. Nevertheless, the location of PGE-02 is better documented when compared to all the other historical wells. If this investigation is properly scoped and conducted, it is likely no further work would be warranted for PGE-02. However, as currently constructed, the Work Plan does not address Well #5 and, therefore, investigation of nearby areas to address Well #5 would still be required.	Noted. Please see RTC #4 for the limitations on the available work area for this survey.
10	DTSC requests that a field schedule be developed and that it be notified at least two weeks prior to implementing field work.	The geophysical survey work as defined in the work plan and modified in this Addendum will be conducted the week of October 2, 2023 in order to be complete prior to the NTCRA work.

<sup>1</sup> Department of Toxic Substances Control. 2023. Response to Work Plan For Historical Water Supply Well Reconnaissance – PGE-02, PG&E Compressor Station, Needles, California (EPA ID No. CAT080011729)