

From: [Rob Ede](#)
To: [THOMAS Wesley * DEQ](#)
Cc: [Mr. Bob Wyatt](#); [Burkett, Bryce](#); [Powell, James](#); [Mr. Corey Raspone, R.G.](#); [Mr. Andrew Bauer](#); [Jennifer Gates](#); [jmott](#); [HAFLEY Dan * DEQ](#); [NELSON Heidi * DEQ](#); [VANGLUBT Sarah * DEQ](#); [LUTEY Amber * DEQ](#)
Subject: Re: HDR Engineering Work Plan - Seismic Evaluation CPT Locations and Methods
Date: Wednesday, September 4, 2024 7:46:09 AM
Attachments: [NWN PLNG Work Plan 20240904.pdf](#)

Hi Wes,

Thank you for the approval of CPT installation/abandonment procedures as presented in the August 20, 2024 Work Plan prepared by HDR. In response to your request for consideration of the scope as it relates to the location and number of CPT borings to be advanced in areas with known subsurface DNAPL, HDR and NW Natural have reviewed the initially proposed locations and have made some modifications to the number and location of the borings. An updated Table 1 (Proposed Schedule of Explorations) and Figure 1 (Proposed Exploration Layout) to the August 20, 2024 Work Plan describing the proposed locations are attached for your information. The CPT boring procedures as approved by DEQ in the August 20, 2024 Work Plan remain unchanged.

HDR determined that the updated CPT locations (attached Table 1 and Figure 1) will provide the data needed to achieve the objectives of the seismic hazard assessment, while reducing the number of borings through areas with more significant DNAPL occurrences (e.g., Former Tar Pond Area and Former Koppers Area). As shown, the updated scope reduces the total number of CPT borings from the 24 originally planned, to 18 with the revised scope. The transect that formerly extended from the Former Koppers Leasehold through the Former Tar Pond Area and to the shoreline has been shifted to the extent possible to minimize the number of borings in these areas.

Based on our discussion last Friday, I understand that DEQ will not need to approve these updated locations (installations are currently occurring), but that this information is provided to document the updated CPT boring number and location in response to your request for consideration of the original scope to minimize installations through areas of the site with more substantial DNAPL occurrences.

Please let me know if you have any questions or would like to discuss.

Thanks!

Rob Ede, R.G.
Principal

Ede Environmental, LLC
Environmental Consulting
Portland, Oregon
Direct: 503.863.0958
[rede@edeenvironmental.com](mailto:redede@edeenvironmental.com)

On Aug 26, 2024, at 12:02 PM, THOMAS Wesley * DEQ
<Wesley.THOMAS@deq.oregon.gov> wrote:

All,

DEQ has reviewed the work plan describing the objective and scope for collecting subsurface data from the Gasco OU to facilitate completion of seismic assessment of the Gasco LNG facility. We understand that the necessary CPT and seismic CPT borings will inform seismic hazard assessments for the LNG basin, and that the seismic hazard assessments are required under DEQ rules. The proposed scope of work includes advancing 20 CPT borings and four seismic CPT borings from various locations around or near the LNG facility, including locations in the former Koppers/light oil plant area and along or within the former tar ponds area. As you know, many of these borings are in areas where dense non-aqueous phase liquid (DNAPL) is present or potentially present in the subsurface. Potentially mobile DNAPL may be present at the base of the fill (pooled on the upper silt unit surface) and/or present within the underlying alluvium at depths far below the ground surface. We ask that NW Natural consider whether using existing data regarding soil textures, physical properties, saturations, and the depth to underlying bedrock may be a suitable alternative to advancing some of the proposed borings. We understand NW Natural may have already taken this step and determined that the number and location of proposed CPT borings are necessary. The goal of our request to consider existing data is to minimize the potential risk of DNAPL drag down from the fill to the alluvium, within the alluvium, and/or below the lower silt unit.

DEQ approves the CPT boring procedures, as outlined in the work plan. Any changes to the proposed scope of work or deviations from the described procedures should be promptly communicated to DEQ cleanup. Please copy DEQ cleanup on any future reporting related to the data described in the work plan, the subsequent seismic hazard analysis, and any feasibility studies, plans, or designs for seismic improvements. Any future seismic improvements must be compatible with future cleanup actions that will be taken on the Gasco OU.

Thanks,

Wes

Wesley Thomas, P.E.

Project Manager/Environmental Engineer

O: 503-229-6932

M: 971-263-8822

Wesley.Thomas@deq.oregon.gov

From: Rob Ede <[rede@edeenvironmental.com](mailto:redede@edeenvironmental.com)>

Sent: Wednesday, August 21, 2024 5:36 AM

To: THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>

Cc: Burkett, Bryce <Bryce.Burkett@hdrinc.com>; Powell, James

<James.Powell@hdrinc.com>; Mr. Corey Raspone, R.G.

<corey.raspone@nwnatural.com>; Mr. Andrew Bauer

<Andrew.Bauer@nwnatural.com>; Mr. Bob Wyatt <Robert.Wyatt@nwnatural.com>;

Jennifer Gates <jgates@pearllegalgroup.com>; jmott <jmott@anchoragea.com>

Subject: HDR Engineering Work Plan - Seismic Evaluation CPT Locations and Methods

Hi Wes,

As we discussed last week, HDR Engineering, Inc. (HDR) is planning a seismic evaluation at the Gasco liquified natural gas (LNG) facility involving the advancement of 20 cone penetration test (CPT) borings and four seismic CPT (SCPT) borings to collect continuous geotechnical data across the footprint of the site. The assessment is being completed in accordance with the Oregon Department of Environmental Quality (DEQ) Fuel Tank Seismic Stability Rules per OAR 340-300-0000 et seq.

HDR has prepared the attached work plan describing the purpose, locations, and methods for completion of this work - with CPT borehole abandonment and investigation-derived waste procedures being consistent with those previously approved as part of environmental investigations at the site. HDR is tentatively scheduled to begin the CPT/SCPT advancement work as described in the attached towards the end of this month.

Can you please review the attached plan and let us know if you approve of the methodologies to be utilized for borehole advancement / decommissioning as described or if you have any questions regarding locations or scope of this project?

I am happy to discuss / answer any of your questions.

Thank you!

-Rob

Rob Ede, R.G.
Principal

Ede Environmental, LLC
Environmental Consulting
Portland, Oregon
Direct: 503.863.0958
redede@edeenvironmental.com