

## Nowell, Keith, Env. Health

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**From:** Nowell, Keith, Env. Health  
**Sent:** Wednesday, September 24, 2014 5:31 PM  
**To:** Jeffrey L. Rubin (jrubin@portoakland.com)  
**Cc:** jprall@portoakland.com; dheinze@portoakland.com; Richard Sinkoff; Katherine Brandt (Katherine.Brandt@arcadis-us.com); Roe, Dilan, Env. Health  
**Subject:** Fuel Leak Case RO10/187 - 651 Maritime St., Oakland

Dear Mr. Rubin,

Thank you and Port of Oakland (Port) representatives Richard Sinkoff, Diane Heinze, and Jeff Rubin and Katherine Brandt and Steve Gaito (via conference call), both of ARCDIS U.S. Inc. (ARCADIS) of for the presentation and discussion of the light non-aqueous phase petroleum hydrocarbons (LNAPL) Recovery Assessment (RA) and Natural Source Zone Depletion (NSZD) study findings for the recently conducted studies.

As presented in the meeting, the RA evaluated the physical LNAPL properties, hydraulic properties of the near surface soils, and LNAPL recharge rates. Based on a review of the assessment, ARCADIS concluded the LNAPL plume was stable and that LNAPL recovery was not feasible. One well, RW-7, was reported to present inconsistent data when compared to other wells involved in the RA. The inconsistent results will be addressed in the final report.

The NSZD evaluation included a comparison of soil gas samples from within and outside of the LNAPL plume. The soil gas samples were evaluated for the presence of consumable and byproduct gases in the biodegradation process. As presented, there was a strong correlation between low oxygen levels and high methane production over the LNAPL plume, though well RW-3 yielded inconsistent results. The inconsistent results will be addressed in the final report

The conclusion of the two studies indicated the plume was stable and the volume of LNAPL mass was degrading at the rate of 200- to 2,000 gallons per year. The values were compared to the LNAPL recovery system which yielded 1,500 gallons in the 6-1/2 years of operation.

### **Technical Comments:**

The following technical comments were discussed and are to be addressed in the final RA/NSZD report.

#### Methane Venting System

- Address if the subslab methane venting system is adequate.
- Discuss mechanisms on how to pursue case closure with a self-monitoring plan in place.
- Discuss the possibility of a deed restriction for case closure.
- Provide historic data for the methane venting system.

#### Plume Delineation and Remediation

- Use direct and indirect evidence of LNAPL presence for defining the LNAPL plume. Indirect evidence indicative of free phase product is referenced by the California State Water Resources Control Board (SWRCB) Low Threat Underground Storage Tank Case Closure Policy (LTCP) Technical Justification for Vapor Intrusion Media Specific Criteria, final 03-21-2012.
- Estimate plume length to evaluate potential impacts to off-site receptors.
- Discuss if the LNAPL plume can be effectively removed by NSZD.

#### Site Management

- Develop and implement a Site Management Plan (SMP), independent of the self-monitoring methane venting plan, to address potential human health exposure to sub surface soil and groundwater during construction activities.
- Discuss if utility workers can come in direct contact with LNAPL.

## Technical Report Request

Please upload the technical reports to the ACEH ftp site (Attention: Keith Nowell), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule as discussed in the meeting:

- **November 10, 2014– LNAPL Recovery Assessment and Natural Source Zone Depletion** (file name: RO0000010\_SWI\_R\_yyyy-mm-dd & RO0000187\_SWI\_R\_yyyy-mm-dd)

Thank you for your cooperation. Should you have any questions regarding this correspondence or your case, please call me at (510) 567-6764 or send an electronic mail message at [keith.nowell@acgov.org](mailto:keith.nowell@acgov.org).

Keith Nowell

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PDF copies of case files can be reviewed/downloaded at:

<http://www.acgov.org/aceh/lop/ust.htm>