LANGAN

Memorandum

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To: Karel Detterman – Alameda County Environmental Health (ACEH)
Dilan Roe – Alameda County Environmental Health

From: Noel Liner, PG – Langan Engineering and Environmental Services
Peter Cusack, Senior Associate – Langan Engineering and Environmental Services

Date: 4 November 2016

Subject: Clarification Memorandum
Addendum to Soil and Groundwater Investigation Report
730-750 A Street
Hayward, Alameda County, California
Project No. 731674401

We have prepared the following clarification memorandum in response to a request from ACEH transmitted via email from Karel Detterman regarding details in reference to our 26 August 2016 *Addendum to Soil and Groundwater Investigation Report.* Our clarifications follow:

Clarification 1: The boring logs for B-6 and B-15 indicated shallow soil impacts in the 0 to 10 foot interval:

- B-6 at a depth of 7 feet below the ground surface (bgs) - the photoionization detection (PID) readings detected vapor concentrations at 2.1 parts per million (ppmB-6 at a depth of 9.5 feet bgs - the PID readings detected vapor concentrations at3.4 ppm and TPH hydraulic oil (ho) was detected in the soil sample at a concentration of 10,000 ppm
- B-15 at a depth of 6 feet bgs - the PID readings detected vapor concentrations at 1.2 ppm
- B-15 at a depth of 11.5 feet bgs – the PID readings detected vapor concentrations at 2.1 ppm and TPHho detected in the soil sample at a concentration of 2,500 ppm

The vertical extent was not delineated in B-6 and B-15 (?), however no deeper impacts were observed in adjacent boring LB-01. TPH impacted soils appear to be localized with NAPL (based on a TPHho concentration of 10,000 ppm at a depth of 9.5 feet) and which are bound in the surrounding clayey soils.

Clarification 2: TPHho in soil exceeds the gross contamination value of 5,100 mg/kg, in the sample collected at a depth of 6.5 feet at boring location B-6. The gross contamination value is for protection against the presence of free product. Based on the detected concentration of TPHho at 10,000 mg/kg at boring location B-6, free product is present however; the soil conditions and immobility of TPHho would bind the contamination into soil. Based on the observed soil conditions and contamination type, the presence of TPHho observed in the groundwater sample (LB-01-GW) at a depth of 71 feet are inconsistent with available natural transport pathways, which would preclude the vertical migration of long-chain, and essentially

immobile hydrocarbons. In our opinion, the most likely origin of the groundwater exceedance is a result of "drag-down". During direct push drilling, the advancement of the casing may have broken a small portion of overlying sediment loose along the borehole wall (slough) containing TPHho. The TPHho was then likely incorporated into the groundwater sample, where suspended sediments caused the appearance of groundwater contamination.

CLOSING

Thank you for your assistance and we trust that this memorandum will sufficiently address your comments. Based on conversations with ACEH, we have provided this Clarification Memorandum for approval. Please feel free to contact Noel Liner of Langan at (510) 874-7041 or at nliner@langan.com with any questions. Alternately, you may also contact Peter Cusack of Langan at (415) 955-5244 or via email at pcusack@langan.com.

cc: Ms. Jeanne Burns – Thornley & Pitt, Inc.

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