Memo

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To: Susan Morales and Donald Brown (USEPA)

From: Joel Hecker, LG (WA, OR, KY, IN, NC, SC), LHG (WA)

Cc: Mike Reid (City of Olympia), Nick Acklam (Ecology), Brandon Smith (Milestone), Troy Bussey (PIONEER)

Date: September 28, 2021

Subject: Minor Updates/Clarifications to the March 2021 RI Data Gaps Investigation Work Plan for Methane Soil Vapor Sampling at the Hardel Mutual Plywood Corporation Site
Olympia Washington USEPA Brownfield Assessment Grant (BF01J66201)

Methane soil vapor sampling will be conducted at the Hardel Mutual Plywood Corporation Site in accordance with the USEPA-approved March 2021 Remedial Investigation (RI) Data Gaps Investigation Work Plan. The purpose of this memo is to document the following minor updates/clarifications to the March 2021 RI Data Gaps Investigation Work Plan for methane soil vapor sampling:

- The 20 previously proposed soil vapor probe (SVP) locations have been adjusted now that the redevelopment schematic design for the Site has been completed. In addition, another SVP location (SVP21) will be installed and sampled per the request of the Washington State Department of Ecology (Ecology). The updated SVP locations are shown on the enclosed figure.
- SVPs will be installed per Standard Operating Procedure 22 in the USEPA-approved Quality Assurance Project Plan (PIONEER 2020).
- Assuming the previously installed SVPs B10 and B11 are still in place and usable, methane soil vapor samples will be collected from B10 and B11 during the same sampling event as SVP1 through SVP21.
- At each SVP, methane and associated measurements will be collected during (1) the initial purging of at least three volumes of air, and (2) the subsequent purging after capping the SVP for at least four hours. In the initial purging, measurements will be obtained at the start of purging and at the end of purging. In the subsequent purging, measurements will be obtained at the start of purging and at the end of purging, which will be defined as 15 minutes of purging or a stable methane concentration with an increase/decrease of less than 1% over five consecutive minutes of purging.
- The enclosed PIONEER Methane Field Measurements Form will be used in the field to record data associated with methane soil vapor measurements during both the initial purging and the subsequent purging.
- The methane soil vapor sampling will be conducted near the end of the dry season as previously proposed. In addition, if methane soil vapor concentrations are less than 30% and pressure differentials are less than 500 Pascals in all or almost all SVPs, then another methane soil vapor sampling event will likely be conducted in spring or summer 2022 for confirmation purposes. If another event is conducted, it would be not be funded by the USEPA Brownfield Assessment Grant.

Enclosures

Figure 12 Mod: Summary of Methane Soil Gas Results and Proposed Sampling Locations
PIONEER Methane Field Measurements Form

Memo Approval

The Memo titled Minor Updates/Clarifications to the March 2021 RI Data Gaps Investigation Work Plan for Methane Soil Vapor Sampling at the Hardel Mutual Plywood Corporation Site has been approved by the following Project Team members:

Name and Role	Signature and Date
Susan Morales USEPA Project Manager	
Donald M. Brown USEPA Brownfields QA Reviewer	
Mike Reid City of Olympia Grantee Project Manager	MIKE REID 9/28/21
Joel Hecker, LG PIONEER Project Manager	9/28/2021
Angela Noyan PIONEER QA Manager	**For Angela Noyan** **9**/28/2021

Legend

- Proposed Soil Vapor Probe
- Previous Soil Vapor Probe

Site Features

- Property Boundary

SVP1
SVP2
SVP3
SVP4
SVP5
SVP6
SVP7
SVP8
SVP9
SVP10
SVP11
SVP12
SVP13
SVP14
SVP15
SVP16
SVP17
SVP18
SVP19
SVP20
SVP21

B10 (6/4/2020)
Peak Methane: 8.0%
Sustained Methane: 0.9%

B11 (6/4/2020)
Peak Methane: 23%
Sustained Methane: 21%

DOWN TO PARKING
OPEN BELOW
LOBBY/ MAIL
BOARD ROOM
FEDEX/ KINKOS
PARCEL CONTROL
COFFEE HOUSE
RECREATION FACILITY
POOL
CAFE
PET GROOM-ING
DRY-CLEANING
SALES CENTER
MODEL
WINE BAR & RESTAURANT
OFFICE
WEST BAY DRIVE
DOWN TO PARKING
NEW WEST PROPERTY LINE
EXISTING PROPERTY LINE
PROPERTY LINE

BACK BEACH WHERE NECESSARY
BOLD LINE OF PROPOSED TOP OF BANK 17' NAVD88
RIPARIAN/ UPLAND (VEGETATION CONSERVATION ZONE) 17'-11.5' NAVD88
SALT MARSH 11.5'-8' NAVD88
GRAVEL BEACH 8'-6' NAVD 88
KAYAK LAUNCH
EX. OHWM 11.5' NAVD88
NEW ORDINARY HIGH WATER MARK 11.5' NAVD88
NEW 100' OHWM SETBACK
NEW HTL (HIGH TIDE LINE)
NEW MHW (MEAN HIGH WATER)
30' VEGATATION CONSERVATION AREA
CANTILEVER VIEW PLATFORM
KAYAK LAUNCH
WATERFRONT TRAIL
TERRACED LANDSCAPING
BOLLARDS

Notes:
-%: percent by volume
-Peak methane readings are those recorded at the beginning of SVP purging on June 4, 2020 and represent built up gasses within the capped SVP.
-Sustained methane readings are those recorded after 15 minutes of SVP purging on June 4, 2020.

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Summary of Methane Soil Gas Results and Proposed Sampling Locations Remedial Investigation Data Gap Report Hardel Mutual Plywood Corporation Site

Figure 12 Mod

Document Path: G:\Projects\Hardel\Maps\2021\RI Interim Status\Fig 12 MOD_Methane Results_plans.mxd; Author: MK; Date Saved: 9/27/2021

Methane Field Measurements Form

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Site Name: _____ **Instrument:** _____

Sampler Name: _____ **Barometric Pressure (inches Hg):** _____

Date: _____ **Pressure Differential Units for This Instrument (e.g., inches Hg, inches H_2O):** _____

Weather Conditions: _____ **Temp (^oF):** _____

Samp_No	Start Time	Initial Conditions at Start of Purging					Final Conditions at End of Purging					Notes (e.g. did conditions stabilize?)
		Pressure Differential (Record Units!)	CH_4 (%)	O_2 (%)	CO_2 (%)	Balance (%)	Pressure Differential (Record Units!)	CH_4 (%)	O_2 (%)	CO_2 (%)	Balance (%)	

Notes: _____