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To: "Shaun Lehman" <lehmans1@michigan.gov>
Date: Thu, 29 Dec 2016 14:28:09 -0500
Subject: Hartland 36 Gas Plant - Additional Groundwater Investigation Work Plan

Mr. Lehman –

The following presents a Work Plan to complete additional soil borings and monitor wells at the Hartland 36 Gas Plant location (Site). In the event you have questions or comments associated with the Work Plan, Environmental Consulting & Technology, Inc. (ECT), on behalf of Merit Energy Company (MEC), respectfully requests your expedited review. ECT is in the process of scheduling the work with the drilling contractor.

The additional monitor wells are warranted to refine the extent of groundwater impacted with sulfolane that has been determined to migrate westerly-southwesterly, with depth, on top of the clay confining layer. Essentially, monitor well clusters appear warranted at most locations currently containing one shallow screened monitor well.

The purpose of the soil borings is to determine the depth of the confining layer with respect to the proposed monitor well locations.

The proposed soil boring and monitor well locations are depicted on the attached Figure 3 - Site Plan.

Drilling Methods

The Scope of Work (SOW) presented below is proposed to be completed using a direct push rig (GeoProbe® 7822DT) and truck-mounted drill rig (Mobil Drill B-57) operated by Shepler Well Drilling of Manton, Michigan. Discrete soil sampling with the direct push rig will be completed using Macro-core methods (5' long, 1" diameter inner rods and 2¼" OD outer casing). Discrete soil sampling with the truck mounted drill rig will be completed using split-spoon methods (2' long, 2" OD sample barrel) via 4¼" ID hollow stem augers (HSAs). Monitor well installation activities will be completed using 4¼" ID HSAs.

Monitor Wells – MW-3D, MW-8D, MW-9D, MW-10D, MW-15D, AND MW-16D

Soil lithology will be collected either via the direct-push or truck-mounted drill rig at each location. Soil samples will be collected continuously starting from 15 feet below grounds surface (bgs) and will extend to the confining layer. Subsequent to identifying the depth of the confining layer, the truck-mounted drill rig will be utilized to install 2" Sch 40 PVC casing equipped with a 5' long, 10-slot PVC screen. Filter pack will be placed from bottom to 2' above the screen, Benseal EZ Mud will be tremie grouted from the top of the filter pack to approximately 10' bgs, and auger cuttings will be placed from 10' bgs to the ground surface. Each monitor well will be completed with a twist-pressure cap and stand-up (locking) steel protective cover set in concrete (1 bag/pro-cover). Each monitor well will be developed with a surge bailer until development water is visibly clear (minimum 10 well volumes), pending well capacity/groundwater recovery.

Soil Borings (3)

Soil lithology will be characterized at each boring. Soil samples will be collected continuously starting from 15' bgs and will extend to the confining layer or a maximum depth of 50 feet bgs. The resulting borehole will be abandoned with bentonite.

Decontamination Procedures

Equipment decontamination will be completed between every boring/monitor well location using a high pressure steam cleaner. Equipment decontamination will be completed such that decontamination water is collected into containment.

Investigative Derived Waste

Residual auger cuttings will be transferred to a roll-off container. Decontamination water will be transferred from the containment into a poly tank. Well development water will be containerized and transferred into a poly tank. Investigative derived waste will be transported off-site to a regulated disposal facility in accordance with applicable regulations.

Groundwater Sampling

Approximately 1 week following installation, the new monitor wells will be sampled for sulfolane, consistent with previous groundwater sampling activities completed at the Site.

Respectfully Submitted -

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