To: Dorsey, Mike H[Mike.H.Dorsey@wv.gov]
From: Linden, melissa
Sent: Tue 1/28/2014 7:37:17 PM
Subject: FW: WV Spill - Lab Update for 1/28
WO1401010_Preliminary Organic Characterization by SVOC.rtf

Mike,

We got preliminary analysis results for the sample we took from a tank at the Poca Blending Facility. The tank contained possible contents from tank#395-397 since the facility did not keep the tanks separate.

Melissa

From: Caporale, Cynthia
Sent: Tuesday, January 28, 2014 11:51 AM
To: Kelly, Jack (R3 Phila.)
Cc: sharma, raj; Linden, melissa; Wisniewski, Patti-Kay
Subject: WV Spill - Lab Update for 1/28

Below is the Lab Update as of today and attached :

Analysis of Sample (Tank w/ crude HCHM & crude PPh received Friday 1/24) – Preliminary Information:

- GC/MS SVOC analysis – able to identify specific compounds in crude HCHM and crude PPh and match those listed on MSDS documents; four significant peaks were compared to spectra provided by REIC/MATRIC and determined to be diPPh; ratios of diPPh to PPh are consistent with other laboratories; other unknown peaks present and represent similar spectra to other alcohols. To better confirm that these are related to crude PPh we need to obtain source crude PPh from Dow.

- HPLC/UV – able to identify peaks associated with crude PPh and a match to the individual PPh component; other peaks are suspected to be diPPh.

- Estimated pH is 5

- Solubility excellent in methylene chloride and methanol; not very soluble in water

- GC/MS VOC analysis – similar identification as GC/MS SVOC analysis.

- Metals – no metals detected; sample would not dissolve in water/acid (appeared like oil layer)

- Additional analysis planned for Tuesday (1/28) – Anions, Hg, GC/IR, GC/FID, %moisture

- List of compounds detected using GC/MS SVOC analysis – draft attached; need crude PPh to confirm identification of other unknown peaks.

Detection Limits:

GC/MS SVOC - MCHM standard at 0.5 ppb; PPh detection level being determined today

GC/MS VOA – MCHM 1 ppm; PPH not determined yet

HPLC/UV – PPH estimated at 75 ppb

Other Information and Lab Workgroup news:

- Obtained SOP from REIC on micro-extraction SVOC method; 1 ppb detection for PPh; spike recoveries successful

- Obtained spectra of crude PPh from REIC.

- Shipping aliquot of MCHM standard to WV State PH Lab (Tuesday)

- Extra peaks observed over the weekend by HPLC/UV are most likely the four diPPh peaks that other labs are observing. Will attempt to obtain crude PPh from Dow to verify. Also checking on availability of actual standards for these additional compounds found in the mixture.

- Holding time study discussed on Lab Collaboration Call and according to MSDS, PPh biodegrades 100% within 28 days; diPPh biodegrades 70% within 28 days. The need for HT Study was discussed and our lab will begin an unofficial study. Need to know if a more official study is warranted (these usually involve testing on actual matrix – river water, treated water, etc.). Discuss "survival rate" after treatment; potassium permanganate with carbon filtration used at plant which should degrade PPh and diPPh.

- Since MATRIC has limited sample volume from 1/13, etc. and given HT issue, most likely labs will look at existing extracts to determine levels of PPh during DNU – draft results are showing PPh in the 10-15 ppb range. Therefore, HT study will address stability of MCHM and PPh in hexane.

` - MATRIC lab determined ratio of crude PPh is 90-95% diPPh:PPh and four peaks are present from GC run for diPPh.

Cynthia Caporale, Chief
OASQA Laboratory Branch
U.S. EPA Region III
Environmental Science Center
Fort Meade, MD
(410) 305-2732
Fax: (410) 305-3095