Produced Water Emissions Inventory Workgroup; Call #2

Thursday, November 9, 2017

8:58 AM

Attendance:

UDAQ

* Patrick Barickman
* Whitney Oswald
* Todd Wetzel
* Greg Mortensen
* Lexie Wilson

EPA Region 8

* Cindy Beehler

USU

* Seth Lyman
* Mark Mansfield
* Huy Tran

Newfield Production

Kleinfelder

* Bob Hammer

QEP

* Christy Woodward

Proposed method for 2014 inventory:

* Request input from call members - any other ideas for solutions?
  + Request for caution for overestimating methanol
  + stand alone methanol numbers have been left aside in this methodology
* Slide 1: UDAQ Basin EI Results (same numbers and slide as last week)
* Slide 2: Correcting Emission Factor
* Slide 3: Revised Totals for new Skim Pond Emission Factor
* Slide 4: Oil Recovery Emissions
  + Assumed 7% oil recovery (upper bound) --> 1,095,731 bbl recovered
  + Oil density = 450 kg/m3 (upper bound)
  + VOC weight fraction of crude - from generic oil samples that DAQ had on-hand. Result = ~ 15%
  + Total weight = volume \*density\*VOC wt fraction
    - 12,946.7 tons recovered
* Slide 5: Added equipment emissions
  + Used EPA tanks (with a few assumptions) to get quantitative estimates for emissions totals from tanks and truck loading
* Slide 6: New totals
  + See table for total tons of emissions from produced water facilities

Questions:

* Tanks vs skim ponds: they serve similar purposes in production but have vastly different emissions
  + Does the proposed UDAQ method account for that?
    - Yes and no: sample was taken after having been in the tanks and then moved to the ponds, so a bit of both scenarios are captured
* 2014 vs. 2017 ?
  + Emissions from ponds have not been included in EI before
  + 2014 will be superseded by 2017 regardless of 2014 number
* What percentage of the entire inventory are due to skim pond emissions?
  + About 60%
  + Currently using 72,000 tons, and this new method would reduce that to about 30,000 tons
* How can we quantify the uncertainty of these estimates?
  + Concern about putting error bars on these assumptions. Is it better to have no value than to have a value without error bounds?
    - We have used the upper bounds of reported emissions to calculate a rather conservative result for emissions in the basin
  + Regulatory vs. "reality" environments
    - In order to generate regulation, we work with what we have to create the necessary EI. While 2014 is very unlikely to inform any SIPs in the basin, it is a starting point for estimating emissions from skim ponds. The 2014 EI is very late and needs to be adjusted quickly, but more precision can be afforded for the 2017 inventory.
* Bottom line: this method is simplistic but it is imperfect. We present a selection of assumptions to produce estimates that will bring the surrogate pond emissions value down to a more reasonable value.

Plan: move forward with DAQ method-produced number for the 2014 inventory. Because of the short-notice delivery of these slides, there will be a time for comments before taking action on November 15th 2017.