

David Falatko's comments on MDEP Report

David Falatko has an MS in environmental engineering from Virginia Tech, and a BS in geology from University of Maryland. His professional work focuses on environmental remediation (cleanup) of contaminated groundwater and soil. He has designed air treatment systems for the off-gases associated with these processes using activated carbon, steam-regenerated activated carbon, and thermal and catalytic oxidizers.

David has been very involved and has studied and reported on different aspects of the issue including a multi-source HEM3 (Human Exposure Model) for the tank emissions in South Portland. He is a South Portland resident.

1. The DEP did not propose any substantial changes in determining tank emissions, controlling emissions, and monitoring of the adjacent ambient air in order to demonstrate emissions to not cause exceedances of ambient air guidelines for human health.
2. The DEP does not consider the cumulative effect of multiple permitted emission sources in a limited area:
 - a. South Portland has three “major” emission sources permitted to discharge up to 472 tons/year of VOC emissions, and six “minor” emissions sources permitted to discharge up to 224 tons/year, a cumulative total of 696 tons/year of VOCs.
 - b. These facilities are close enough together as to be considered contiguous or actually are contiguous, and their combined discharge would constitute a “major” source, and they should all be regulated as such and be required to control their emissions. Instead, the DEP has granted several of them “synthetic minor” source status exempting them from “major” source requirements.
 - c. The USEPA’s Nation Emissions Inventory (NEI) data has shown that for Cumberland County, the combination of bulk petroleum storage facilities and industrial/manufacturing emit just 4% of total emissions, but they cause 70% of emissions for South Portland.
 - d. The DEP should be using the USEPA’s Human Exposure Model for multiple facilities (multi HEM-3) or equal to assess the potential ambient air quality impacts these discharges have on the adjacent population and determine appropriate permit limits protective of human health.
3. The DEP did not develop and propose a consistent approach to determine VOC emissions from heated tanks in Maine; this was the original goal of LD1915.
 - a. They allow companies such as Global and Sprague to use some previously obtained test data developed for loading trucks to estimate emissions, but also allow them to repeat site testing to develop new emission factors for static/breathing losses from tanks.
 - b. For facilities with existing heated tanks where no test data exists, they allow them to use AP-42 methods to estimate VOC emissions, despite known issues with these estimating methods.
 - c. For new large heated tanks, they require testing to determine emission factors, but new petroleum storage tanks are unlikely to be installed in the future.

4. The DEP questions the validity of the testing methods used by Eastmount and the EPA, yet still propose to use them, or something similar, but provide no details on the methods to address their concerns:
 - a. The “odor control” system Global proposes to install is essentially the same approach as used in the Eastmount testing to collect vapors: they have to apply a vacuum to the hoods at the top of the tanks to consistently collect vapors.
 - b. They claim the vacuum applied to collect and measure VOCs used in the test method was too high (0.01” water column) and inflated VOC emissions, yet Global needs to apply 0.1” WC for their proposed hoods to collect tank emissions.
 - c. They claim that this applied vacuum caused an oil mist to exist the tank during testing, but do not mention that they were mixing in an additive and blowing air into the product to mix it during part of the testing.
5. The DEP claim that vapor pressure cannot be measured on heavy petroleum, yet the AP-42 methods to estimate VOC emissions require an accurate vapor pressure value be used in the equations.
 - a. Vapor pressure increases dramatically with increases in temperature, and vapor pressure is a key parameter in estimating emissions from heated tanks containing heavy petroleum products.
 - b. Vapor pressure of heavy, mixed petroleum products such as asphalt and #6 oil are significantly impacted by the amount of lighter, more volatile compounds, such as added cutter stocks used to thin out the product.
 - c. Global hired laboratories to measure vapor pressure of their Asphalt and #6 oil using ASTM method D2879, and they appeared to successfully measure it without disclaimers or qualifying statements.
 - d. Global did not use this measured vapor pressure in their AP-42 calculations as it was much higher than their assumed value and would show significant VOC discharges above their permitted limits.
6. The DEP notes that continuous monitoring is not practical due to the highly variable nature of heated tank emissions and associated air flow;
 - a. Global’s and Sprague’s proposed system needs to maintain a constant vacuum and associated air flow to collect VOCs, so it actually can be monitored and measured with standard equipment, and each will have a discharge stack providing a point source discharge that can be easily monitored.
 - b. They dismiss all other monitoring systems and propose infrared monitoring each month to check for leaks around tanks and piping, yet do not present any data on the sensitivity of such infrared methods. In addition, the highly variable nature of the emissions would seem to limit the effectiveness of a once-a-month monitoring approach.
7. The DEP does not propose the collection of any data or new approaches to clarify issues and concerns associated with air emissions despite the USEPA’s lawsuits and consent decrees against two companies that are supposed to be regulated and overseen by the DEP:

- a. They discuss cutter stock to dilute/thin heavy products, but don't require testing of the products to determine VOC content. Chapter 131 of the Maine air regulations (Cutback Asphalt and Emulsified Asphalt) limits the VOC content to 0.1% and provides standard methods for determining VOC content.
 - b. They do not require any collection of headspace vapor samples from above the heated products to determine what could be in the emissions and what to look for in the adjacent ambient air.
 - c. They state that to evaluate the effectiveness of Global's control system, the characteristics of the products need to be known, yet they only say that paperwork and record-keeping will be maintained to achieve this. But the product needs to be analyzed in some form so it can be determined what they are dealing with from the start, not just tracking what might be added to it.
 - d. The asphalt sample that did have vapor pressure testing completed on it in 2012 was delivered by Sargent Ltd. from the ASES refinery in Tarragona, Spain, it may be difficult to know what is in such a product without some actual testing of the product.
 - e. They do not require any samples to be collected from the tanks at the facility to assess on-site conditions, or adjacent to the facility to confirm ambient air quality is not impacted by the facility, saying in essence there are too many sources out there to determine where detected compounds originate.
8. The DEP say they will determine the effectiveness of Global's and potentially Sprague's proposed odor control system for containing and treating VOCs and determine if it can be proven effective as "Best Practical Treatment" to control VOCs.
- a. This odor control system is simply not designed to control VOCs, so it is very unlikely to be shown to BPT.
 - b. For numerous reasons I have stated previously, the use of the hoods in Global's system will require vacuum and high air flow and will render the system ineffective for VOC control with activated carbon.
 - c. In their discussions and final conclusions, they are implicitly saying that odor control is VOC control.