Maine Department of Environmental Protection (DEP or Department) Response to Comments on the Propose Air Emission License Amendment A-432-71-P-M for Global Companies LLC

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RESPONSE TO COMMENTS

Commenters:

Rachel Burger – Protect South Portland (PSP)
Grace Bukowski-Thall
Chelsea Byun
Dave Falatko
Lauren Glennon
Susan Henderson
Charles Higgins
Abby Huntoon
Tom Keefe – Global Companies LLC (Global)
Dawn Ellen Kirkland
Judith Kline
Senator Rebecca Millett
Scott Morelli - City of South Portland, Clean Air Advisory Committee (CAAC)
Anna O'Sullivan
Jane Palmer
Sue Pastor
Jamie Roux
Sandy Shapiro-Hurt
Dr. Priscilla Skerry
Elizabeth Sullivan
Bruce Taylor
Serena Wade
Pamela White
Roberta Zuckerman

Summary of Comments and Department Responses:

1. **Comment: Operation of odor control system.**
   (CAAC, Glennon, Huntoon, and Shapiro-Hurt): The CAAC does not seek for supplemental control systems to be part of emissions control in the license. However, the CAAC would like for the license to require the operation of any such system at all times, in compliance with an Operation & Maintenance plan approved by the EPA.

   (PSP): [PSP requests] specifically mandating that the "odor" control system operate at all times.

   Response: The Bureau of Air Quality lacks the authority to regulate odor as an air pollutant; therefore, it is inappropriate for the Department to mandate the operation of the odor control equipment within the air emission license.

   The installation and operation of mist eliminators is required by the Consent Decree between the United States Environmental Protection Agency (EPA) and Global (Civil Action No. 2:19-cv-00122-DBH, D. Me., 2019). The Consent Decree does require that this equipment be operated at all times that the tanks are heated, including when the tank receives product. Oversight of compliance with this requirement resides with EPA.

   Global has proposed a redesigned system which adds components (vent hoods, a carbon bed/dry scrubber, and a fan) to the mist eliminator system addressed in the Consent Decree. EPA has provided the City of South Portland and the Department a statement finding the proposed redesign acceptable.

2. **Comment: HAP/VOC Control.**
   (Falatko): Global should be required to install treatment on their heated tank vapor collection system suitable to remove at least 90% of effluent VOC emissions from the heated tanks effluent air. If VOC emissions are as low as Global has claimed recently, activated carbon treatment would be a suitable BPT option. If they are not and carbon is not a suitable treatment option, then another VOC emissions control system should be employed.

   (Glennon and Shapiro-Hurt): Ensure that Global's odor controls also reduce harmful compounds such as VOCs and HAPs.

   (Henderson): There is evidence that the odor reducing devise (sic) proposed may not control toxic emissions, and may make their measurement more difficult.

(Kirkland): Technology exists to effectively measure/monitor emissions and control up to 95% of emissions. It should be required to utilize this technology as a responsibility of being allowed to do business in Maine.

(Palmer): [The license includes] installation of a "carbon scrubber" to reduce "odorous compounds" that has not been determined to be effective in reducing the toxic VOCs so dangerous to people's health.

(O'Sullivan): Global is installing a mist eliminator, as required by the consent decree. It also plans to install a carbon bed to reduce "odorous compounds." It's an important step to have this carbon scrubber in place, as the beginning of real emissions control. But it also raises really critical questions:

The license calls this scrubber an odor control device. DEP states that it does not regulate odors, so it has no oversight authority with regard to its operation. We want to be really clear about what this is: a shell game. Global does not want to acknowledge that this is an emissions capture system, presumably because doing so would acknowledge that they have problematic emissions that require capturing. If the carbon bed were included in the license as an emissions control device, its operation would be subject to oversight by regulators, including proof that it works. It also would have required that Global apply for a fuller license amendment with more scrutiny by the DEP. The DEP acted against public interest when it accepted Global's assessment that such a review wasn't warranted.

In 2002, Global installed a carbon bed at its tank operation in Chelsea, Mass. It didn't work, and the Mass DEP required that the company replace it with a different technology, a regenerative thermal oxidizer (RTO). How can we be sure the carbon bed will be effective here? Will the Maine DEP consult with staff at the Mass DEP about what went wrong with the carbon beds and whether the RTO has been effective in controlling emissions (or odors)?

(Skerry): All minor and major emitters should be required to install state of the art emission "capturing" equipment on their tanks.

(Sullivan): The mist eliminator that Global is reportedly installing is classified as an "odor eliminator." The key question is whether this technology adequately serves to reduce toxic emissions. A similar carbon bed installed in a MA facility failed in its emission-reducing function. What oversight will ensure that any new technology actually reduces emissions?

Several commenters expressed the desire for emissions control either instead of, or in addition to, odor control.

Response: Global is installing a mist eliminator on their heated, fixed-roof residual fuel and asphalt storage tanks in accordance with an approved consent decree with EPA. (See Response to Question 1.) Global is also voluntarily installing a carbon bed adsorption

system downstream of the mist eliminator to reduce odors from these tanks. The installation of this equipment, along with other requirements contained in the consent decree are being incorporated into Global's air emission license with this proposed license amendment. These systems are expected to reduce odors from the storage tanks and may also achieve some level of VOC and HAP emission reductions from the storage tanks. The effectiveness of these systems to reduce odors and emissions of VOC and HAP will not be known until after they are installed, the odor reducing effectiveness evaluated, and emissions testing completed.

Existing emission sources are subject to Best Practical Treatment (BPT), whereas new and modified emission sources are subject to Best Available Control Technology (BACT) in accordance with *Minor and Major Source Licensing Regulations*, 06-096 C.M.R., ch. 115. BPT means that method which controls or reduces emissions of regulated pollutants to the lowest possible level considering the then existing state of technology, the effectiveness of available alternatives for reducing emissions from the source being considered, and the economic feasibility for the type of establishment involved. Control technologies required as BPT for existing sources are generally not state-of-the-art control technologies as may be required as BACT for new or modified emission sources. Add-on control technologies such as mist eliminators, carbon bed adsorption, condensing systems, or thermal oxidizers are not in wide-spread use for controlling VOC or HAP emissions from heated, fixed-roof residual fuel and asphalt storage tanks, and the Department does not currently consider these types of add-on control technologies BPT for existing storage tanks.

The Department is aware of the Global facility in Chelsea, MA and has consulted with the Massachusetts Department of Environmental Protection about the situation there. At the Chelsea, MA facility, the Department understands that after testing was completed on the carbon adsorption system which indicated VOC emissions were higher than expected, Global voluntarily installed a thermal oxidation system to ensure the facility would not exceed major source threshold levels for VOC. The Department has also been in contact with the Rhode Island Department of Environmental Management, which has experience with a similar control system as the one being installed at the Global facility in South Portland. The Department understands that the odor control system installed in RI has resulted in anecdotal reports of good success in reducing odors.

Regarding emissions testing, the installation of the mist eliminator and carbon adsorption system at the Global facility in South Portland should make testing of emissions from the heated, fixed-roof residual fuel and asphalt storage tanks easier and more accurate since there will be a consistent flow of exhaust through the system that will be easier to

measure than the non-existent/inconsistent flow from vents that are simply open to the atmosphere.

3. **Comment: Solvents.**
(CAAC, Glennon, and Shapiro-Hurt): Based on the emissions profiles from the 2012-2013 testing, the CAAC has concerns that solvents or other substances are added to the heated products at some point during transportation or storage. The CAAC asks the DEP include in Global's license a requirement for Global to report amounts, types and timing of solvents or other substances that are added to the asphalt or fuel oil, including substances that were added prior to receiving the hydrocarbons at the facility. The purpose of this requirement is to ensure that testing is accurate and performed in typical worst-case scenarios.

   Several commenters requested documentation of any solvents added to the heated products.

   Response: The Department agrees in part, and a condition has been added to Global's license amendment requiring records be kept of any product added to the heated tanks other than the product(s) the specific tank is licensed to store.

   It is not enforceable as a practical matter to require recordkeeping of products blended with the asphalt or fuel oil prior to Global's receipt of the product. Such operations are outside the facility's control. Additionally, products with different origins may mix in numerous storage and/or transportation vessels between the refinery and the facility, making the contents of a given tank a mixture of an almost endless number of batches.

4. **Comment: Testing (General).**
Several commenters expressed support regarding DEP's plans to require additional site-specific testing of emissions from the heated tanks.

   Response: The Department thanks the commenters for this support.

5. **Comment: Testing Performed by Third Party and PE Certification.**
(Falatko): This testing should be completed by an independent group like Eastmount or others, with data and report compiled and submitted, with review and certification by a Maine Professional Engineer (PE) for independent accountability.

   Several commenters requested the testing be completed by an independent third party.

Response: Emissions testing for compliance purposes is always performed by independent third-party contractors, such as Eastmount and other testing companies. All testing protocols and final reports are submitted to the Department where they are reviewed by a staff member with a Professional Engineer license.

6. **Comment: Public access to information.**
(CAAC and Glennon): The committee would also like to see more frequent reporting to the public about Global's performance. For instance, throughput could be reported monthly with very little effort, and emissions factors should be made public as soon as they are available. In this way, the public could see if the facility is on track and also look retroactively to its 2020 performance. The CAAC is concerned about a year or more of time lag for the facility to show its compliance with the license.

   Several commenters requested the results of testing be made public in a timely manner.

   Response: All applications, reports, and data submitted to the Department are available to the public upon request. Test reports are required to be submitted to the Department within 30 days of test completion and are publicly available as soon as they are received. Monthly throughput data is reported to the Department on an annual basis.

   Although it is possible for the Department to provide this information to the public upon request, the Department does not have the infrastructure, funding, or staffing to publish this data in real time, especially since doing so would quickly lead to the expectation that similar data would be published in real time for all licensed entities. This would be a gargantuan undertaking beyond the Department's resources.

7. **Comment: Testing before and after the odor control system.**
(CAAC): The CAAC wants to ensure that Global, DEP, and the City have data that informs our shared understanding of how well the company's odor controls also reduce harmful compounds such as Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants (HAPs). The CAAC asks that DEP include in the license a requirement to [conduct] this testing periodically on both ends of the odor control system. To be sure, the CAAC supports DEP's approach to set Global's emissions limits by conducting performance tests and setting the emissions factors before vapors enter the system.

   Several commenters requested testing be performed both before and after the odor control system.

   Response: It is the Department's intent to require testing of the stream both entering and exiting the odor control system. The Department has revised the language in the license

amendment to clarify this. In accordance with the Department's established procedures, the details and specifics of the testing program are worked out when the test protocol is submitted to the Department for review prior to testing.

8. **Comment: Testing Protocol/Methodology.**
(Millet): The draft permit refers to a performance test protocol with no further information. This testing is at the heart of assuring the surrounding communities that Global is mitigating toxic emissions from their tanks. The protocol should clearly be specified in the permit and should be rigorous.

(Falatko): Testing methods should be at least as rigorous as the Eastmount testing performed in 2012/2013 and should include analytical methods with continuous monitoring for total volatile organic compounds (VOCs) with a flame ionization detector (FID) or a photo ionization detector (PID), and grab samples for hazardous air pollutants (HAPs) and polycyclic aromatic hydrocarbons (PAHs). Analytical methods for total VOCs, HAPs, and PAHs should be by USEPA methods 25A, TO-15, and TO-13A, respectively, or suitable equivalent methods such as the Air Phase Hydrocarbon (APH) method developed by the Massachusetts DEP.

Sample ports and instrumentation should be installed on the collection ducts from the heated tanks to monitor pressure/vacuum, temperature, and air flow from each tank individually and combined and before and after any treatment unit.

Response: The air emission license generally stipulates which emission units will be subject to testing, which pollutants will be tested, using which test methods, and within what timeframe and frequency. Additional details, too numerous and detailed to be fully specified in a license, are detailed in an emissions test (a.k.a., stack test) protocol which is submitted for the Department's review and approval at least 30 days in advance of the testing event. The license also contains a standard condition that gives the Department the authority to require additional testing that the Department determines is warranted.

The testing performed will be at least as representative and reliable as that performed by Eastmount, if not more so. Once the odor control system is installed, vapors from the heated tanks will be collected and routed to the mist eliminator and carbon bed, resulting in a constant, measurable flow. This will allow for the use of standardized test methods such as those referenced by Mr. Falatko. Such conditions did not exist when the initial testing was performed in 2012/2013.

9. **Comment: Testing Requirements (loading racks).**
(Millet): The test protocol should specify that testing occurs both at the loading sites [loading racks] and at the tanks. Global's estimated emissions grossly understated the heated product's emissions as a result of failing to include loading sites. The Eastmount tests reflected substantial emissions from the tanks and loading/offloading operations.

Response: The license amendment requires that calculations of emissions from the loading of heated product be based on site-specific testing previously performed on this equipment.

10. **Comment: Testing Methodology (tank vents).**
(Millet): If the DEP accepts Global's open vented hoods on the tanks, then the independent, third party contractors should be required to utilize the Eastmount system that was utilized by the EPA to grab a more accurate sample of the emissions.

(Falatko): It will be more difficult to accurately collect and measure effluent VOCs from the tanks if the open vented hoods proposed by Global are used instead of the consent-decree required pressure/vacuum relief valves (PVRVs) that would create a nearly closed system. The Eastmount testing system installed a temporary total enclosure (TTE) around the tank vents and applied a very slight vacuum (~0.05" water column) to collect all vapors and measure and quantify emission rates. Global's vendor for the hoods has stated that they need to have 0.1" WC to 0.2" WC vacuum applied at the hoods to ensure they capture all emissions. Monitoring this hood vacuum level needs to be written into the permit to ensure that the vacuum applied during operations and emissions testing is sufficient to capture all emissions.

Response: The open vented hoods proposed by Global to be installed on the storage tank vents as part of the mist eliminator and carbon bed adsorption system have received approval from EPA. The Department finds that the proposed open vented hoods are comparable to the temporary total enclosures (TTE) utilized during the testing conducted at EPA's direction by Eastmount. As stated in response to Comment #8, the details of emissions testing will be established in the stack test protocol prior to testing, and the testing performed will be at least as representative and reliable as that performed by Eastmount, if not more so.

11. **Comment: Testing Frequency.**
(Millet): Testing should be carried out by an independent third party during all instances of the tanks containing product and during onloading/offloading, not just every 14 months as written in the draft.

(CAAC): The CAAC believes that semi-annual performance testing would be more appropriate [than] annual testing to develop emissions factors.

Several commenters requested testing be performed more often than annually, often suggesting testing be performed at least every six months.

Response: It is not practical to conduct testing of emissions, especially working losses, more often than annually. Working losses only occur when the tank is being filled, a procedure that only occurs occasionally during the year. Working losses may be artificially induced for testing purposes, for example, by transferring product from one storage tank to another. However, this would have the effect of needlessly causing additional emissions solely for testing purposes.

Additionally, scheduling a test is not a simple matter. Emissions testing for compliance purposes is always performed by independent third-party contractors. Their services must be scheduled weeks, if not months, in advance. Each testing event also requires the submittal of a testing protocol for the Department's review at least 30-days in advance of testing, and the test date must accommodate the schedules of Department staff.

12. Comment: Testing Notice.

(Henderson): Testing needs to not give the company the chance to prepare for it.

Response: Emissions testing is conducted by an independent third-party stack testing company and must be coordinated with Department staff from both a technical and logistical basis. Being involved in the stack testing planning and preparation process provides the opportunity for all parties, including the regulated entity, to come to agreement on how, what, when, where, and why the stack testing will be conducted, which is essential to obtaining representative, accurate, and useful results.

13. Comment: Testing Location.

(Henderson): Testing needs to be done at the fence line to identify risk to direct neighbors.

Response: The Department does not find the requirement of fence line monitoring at the Global facility appropriate for the configuration of the facility and the area. The EPA fence line monitoring method includes cautions against general interferences to monitoring integrity, potentially including obstructions to air flow such as trees, walls, buildings, bodies of water, and hills at the monitoring site. Cautions also include potential background pollution interference from nearby or upwind sources of target emissions outside the facility being tested, such as neighboring industrial facilities, transportation

facilities (e.g., nearby airports, train/rail traffic, highways), fueling operations, combustion sources, short-term transient sources, and residential sources. Also, because passive samplers continuously sample ambient air, changes in wind direction can cause variation in the level of background concentrations from interfering sources during the monitoring period. The proximity to the Global facility of several potential sources of similar air pollutants would effectively prevent accurate identification of the source of pollutants potentially detected during fence line monitoring. In addition, the close proximity of the port itself, buildings, trees, and other tanks create complex micro-meteorological effects which also hinder the effectiveness of attribution of pollutants to a source. Further, potential emissions from vents at the tops of tanks inside the facility's fence line may never reach the fence line but are more likely to disperse upward and/or travel beyond property boundaries before being detected at ground level.

Ambient monitoring in the area currently being conducted by the Department provides the best data for accurately identifying pollutant levels.

14. Comment: Establishing Limits.

(Glennon and Shapiro-Hurt): Please set Global's emission limits by conducting performance tests and setting the emission factors before vapors enter the system.

Response: The Department agrees, and the license amendment requires exactly that.

15. Comment: Non-Compliance.

(Millet and PSP): The permit needs to specify what mitigation actions must be taken by Global should reported test results surpass acceptable thresholds.

(Zuckerman): A requirement for timely mitigation should be included [in the license] if they are found to be out of compliance through testing. If there is continued non-compliance their operation should be shut down until they can prove they are capable of functioning in compliance (similar to restaurants [when] they are in violation of the health code).

(Byun): What happens if results of testing put Global in excess of its license? Wants this process spelled out in the license.

Response: Non-compliance is handled outside of the license on a case-by-case basis through various levels of enforcement actions that the Department or EPA is authorized to initiate. Should Global (or any other company/individual) experience non-compliance with its license, the Department will respond in a fair and appropriate manner based on the severity of the specific non-compliance event. The Commissioner has the authority and discretion to require a business or individual to take action or to cease operations in

response to a violation in accordance with emergency orders as described in Subsection 3 of 38 M.R.S., Section 347-A., *Violations*.

16. Comment: Non-Heating Days.

(Zuckerman): The 120 unheated days can be used up in 30 days since each unheated tank is considered as one day – all 4 heated tanks, not being heated on one day counts as 4 days. They don't heat tanks in the winter anyway. Would these non-heated days be required during their heating season?

Response: The Department is incorporating this requirement into Global's State license as required by EPA's Consent Decree. Please direct any questions about this requirement and the rationale behind it to EPA.

17. Comment: Throughput Limits.

(Zuckerman): The "throughput limits" that are claimed to control Global's emissions are several times greater than their previous emissions & no one has explained how this will limit their emissions that were already putting them, when actually measured, into the category of a major emitter.

Response: The Department is incorporating this requirement into Global's State license as required by EPA's Consent Decree. It is the Department's understanding that EPA determined that, at the emission rates measured by their testing, Global had the potential to exceed the level to be considered a major source. Since Global's license did not explicitly limit throughput, EPA calculated potential emissions assuming the tanks processed a significantly higher throughput than has ever occurred historically. EPA found that if the facility were to operate in a manner such that the throughput limits established in the Consent Decree were exceeded, then Global could potentially emit above 50 tons per year of VOC.

The limits on the heated tank throughput will not lower the facility's actual emissions of VOC, and EPA did not intend them to. Those limits were imposed to cap the potential emissions, i.e., to make it clear that Global is not allowed to emit at or above the major source threshold.

18. Comment: Vapor Pressure.

(Falatko): Samples of the heated tanks products, asphalt and #6 oil, should be analyzed for vapor pressure by standard methods whenever emission testing is done to assess the use of vapor pressure as an indicator of volatility and VOC emissions at higher temperatures.

(Sullivan): The fact that companies are allowed to "self-report" with considerable discretion in their measurements and calculations (for instance, being allowed to use an industry standard approximation for the vapor pressure of asphalt rather than being required to use their own measured values, a substitution which directly affects measured emissions calculations and determines whether they are within safe parameters) warrants further scrutiny and revision.

Response: The Department will continue to evaluate new standard test methods for vapor pressure from heavy oil products. When a method becomes available that can reliably and accurately measure the true vapor pressure of these products, the Department will reassess the monitoring requirements for Global and other similar facilities.

19. Comment: Monitoring/Fence Line Monitoring.

(Falatko): The highly variable nature of the heated tank emissions caused by seasonal ambient temperature changes, additive addition and subsequent mixing/blending and aeration, and rapid head space displacement when filling tanks due to fixed roofs, all point toward the need for continuous or long-term monitoring of emissions instead of spot testing every 14 months.

(Higgins): Please force Global to install 24/7 air quality monitoring with full transparency so that residents will know that Global has reduced their emissions and that we can know when we are not being protected.

(Huntoon): As soon as possible there should be 24/7 fence line monitoring with all results made available to the public.

(Kirkland and Skerry): All of the tank farms in the state should be required to have 24/7 continuous monitoring and control their emissions using the most effective technology available.

(Taylor): There should be emissions monitoring for both heated and non-heated tanks, including distillate.

Several commenters requested Global be made to install "24/7 monitoring" with all results made available to the public.

Response: The greatest variability in emissions from heated tanks is between working losses (tank filling) and breathing losses (diurnal and seasonal ambient temperature and pressure changes). The license amendment requires the facility to test emissions from heated tanks under conditions representative of those two scenarios. Annual testing is

required by the license amendment to either confirm the previous test results or to establish updated emissions values if the operating scenario has changed.

Emissions from unheated tanks are minimized through the use of floating roofs, inspections, and other safeguards, as well as vapor controls already in place at the corresponding loading racks.

20. Comment: Application Classification.

(Kline): I still object to DEP's refusal to consider this application as anything more than a minor revision given: the apparent acceptance of the Eastmont testing results from 2012-2013; the admission that heated tanks were not and have not until now been considered in Global's license; and the multiple increase in through put (sic) that has now been authorized for Global with no corresponding increase in estimated emissions.

Response: The license change requested by this application was classified as a minor revision in accordance with state regulations. As stated in 06-096 C.M.R. ch. 100 (Ch. 100), the definition for *Minor Revision* includes a license change with a licensed emissions increase under four (4) tpy (tons per year) for any one regulated pollutant except GHGs (greenhouse gases) and under eight (8) tpy of total regulated pollutants except for GHGs, and is determined not to be a Major or Minor Modification. The application does not meet the identifying criteria in Ch. 100 for either a major modification or a minor modification and is therefore is classified as a minor revision.

21. Comment: Facility Classification.

(Falatko): The tacit acknowledgement by the DEP of the Eastmount testing methodology also gives validity to the testing results, which showed much higher levels of VOC emissions from these heated tanks than was previously acknowledged or reported. The USEPA used these results to determine that Global had the potential to emit VOCs at rates greater than 50 tons per year and should be classified as a major source of VOC emissions; this was the basis of the civil suit against Global. Global has the potential for short-term high rates of VOC emissions due to variable conditions. The DEP grants Global "synthetic minor" classification for air emissions because they place a regulatory limit on VOC emissions at 21.9 tons/year and now have added on the consent decree throughput limits. The synthetic minor classification raises several issues:

a. Global's synthetic minor classification was established prior to when the 2013 permit was granted and when the heated tanks were considered to have no emissions, and the permit did not appear to take these tank VOC emissions into account. The basis for this synthetic minor status is not clear, but it would seem like an evaluation of the synthetic minor status should be completed since the known existing conditions have changed considerably.

b. By definition in the Code of Federal Regulations (C.F.R.), granting synthetic minor source classification means that the source does have the potential to emit greater than 50 tons per year, and without DEP-granted synthetic minor source status it would normally be subject to treatment requirements associated with major source classification. Considering the adjacent residential population surrounding Global, it is unclear why this synthetic minor status was granted and is still retained, and the DEP should state explicitly why it is still granted or remove it and declare Global a potential major emitter.

(PSP): We believe the DEP has not provided adequate justification for Global's designation as a synthetic minor emitter. That designation should be reassessed.

(Henderson): If Global is a minor emitter, they are not required to use best practices. It appears likely that Global is a major emitter and is concealing that fact by the way they calculate, test, and report.

(O'Sullivan): In Maine, facilities that have a potential to emit more than 50 tons of VOCs per year are considered major emitters and subject to emissions testing and control. Yet many facilities, including Global, get around those requirements by being classified as a "synthetic minor," meaning they agree to state permits that assert certain limits on their operations to hypothetically keep them below that 50 ton threshold. In Global's case, one of those limits was the facility's total allowable VOC emissions per year: 21.9 tons. Yet, the EPA found that the company had the potential to emit at such a high rate from its heated tanks that compliance with that limit would have been impossible and was not being monitored with actual testing. This license update imposes another "synthetic minor limitation", by for the first time saying how much product the company can move each year. But the new throughput limit is actually many times higher than the company's actual annual operations, making it no limit at all. Still, the DEP relies on both factors to reaffirm Global's status as a synthetic minor emitter.

Using the emission data from 2012/2013 can you produce your calculations including the assumptions about "limits" that result in Global being designated a "synthetic" minor emitter? The EPA used that same data to determine that Global had potential to emit over 50 million tons per year which would qualify them as a major emitter.

If Global were classified as a major emitter, it would be required to account for—and control—the bursts in emissions that occur when it fills tanks, the ones we smell and are causing adverse health symptoms. A facility's status as a major emitter is based on its potential to emit, meaning at its highest capacity. The state's limit on Global as a synthetic minor emitter is based on total annual emissions, meaning it doesn't account for spikes. Given the seasonality of operations there, Global might technically be able to stay within such a limit while still exposing its neighbors to huge doses of toxic emissions throughout the spring and summer. The state should be required to justify Global's status as a synthetic minor.

(Palmer): [The license includes] a tricky method for calculating emissions that would in fact allow the company to emit far more than the annual limit for a purported "minor emitter."

(Skerry): Global has the potential to emit more than 50 tons/yr of VOCs. Because of this, their license should not be given a "synthetic minor" status. Their emissions were limited to 21.9 tons/yr, but there is, at this time, no actual measurement of VOC emissions. Rather they are calculated using a formula developed by the oil industry itself. No longer should questionable emission calculations based on a math formula designed by the oil industry be acceptable, especially since the EPA findings have not been adequately refuted.

(Sullivan): Global's classification as a "minor emitter" is problematic in that it is based on annual emissions, but Global's processing protocols are highly seasonal and vary greatly throughout the year. In this way, people are being exposed to potentially excessive levels of airborne petrochemical toxins during certain months of the year. This classification is also problematic in that the EPA's own investigation concluded that Global has the potential to actually be emitting far more than the permissible amount of VOCs for a minor emitter, and, in fact, to actually be emitting as much as a "major emitter" without being subject to the same rules, oversight, and rigorous, frequent testing as any major emitter. The EPA's study suggests that determining the actual emissions with greater precision is essential to assigning it the appropriate classification and thereby monitoring it safely and appropriately. This relates back to the aforementioned necessity of more precise, more frequent, and more externally supervised and executed measurements of emissions.

(Wade): Require that Global's emitter status be on that of its spike emissions, not on an average.

Several commenters asked why Global was able to operate as a synthetic minor source, stating that being a major source would require better controls and/or monitoring.

Response: Classification as a minor/major source is based on an annual total, not short-term emissions. Emission spikes from working losses are included in the assessment of total annual emissions, and, therefore, the source's classification. The calculation methodology contained in AP-42 does account for the fact that there are higher emissions (working losses) during periods when the tank is being filled.

Both the Department and EPA agree that the proposed license restrictions contained in Global's license effectively limit the facility to emissions of less than 50 tons per year of VOC. Therefore, this facility is properly classified as a minor source. It is considered a synthetic minor source because the facility is physically capable of emitting above 50 tons per year of VOC, but restrictions, such as those included in Global's license, limit emissions to a lower number.

22. Comment: Facility Location.

(Kirkland): We would all prefer it if all of the oil tanks were all removed. South Portland is mostly residential and should no longer have industrial landscapes in the middle of our homes and schools. The city can bring in revenue from other more suitable businesses and should remove such archaic businesses from our modern neighborhoods and consequently from our visual landscapes and the air we breathe.

Response: Land use and zoning are beyond the scope and authority of the Bureau of Air Quality.

23. Comment: BPT.

(Falatko): On page 8 of the revised draft permit, the DEP states that the Global facility was previously considered in 2013 to have Best Practical Treatment (BPT) by the DEP, but this was before the heated tank emissions were known. The basis for this determination of BPT in 2013, and then the granting of the synthetic minor status with a limit of 21.9 tons per year is not presented. Since there was no treatment in 2013, and there is not treatment proposed now, it is unclear how this facility meets BPT status, and it would appear that this evaluation of BPT should be updated to account for the heated tank emissions. Furthermore, in complying with the EPA consent decree, Global has to contain all effluent from the tanks and pass them through the mist eliminator, creating a point source discharge. Adding on treatment to a point source air discharge of VOCs and HAPs should meet the criteria of "practical" treatment since it is a relatively easy add-on at that point. It goes against the intent of the state and federal air regulations to have a point source discharge that has the potential to emit at a rate greater than 50 tons/year within a residential area [which] does not have an effluent VOC emissions treatment requirement.

Response: Existing emission sources are subject to Best Practical Treatment (BPT), whereas new and modified emission sources are subject to Best Available Control Technology (BACT) in accordance with *Minor and Major Source Licensing Regulations*, 06-096 C.M.R., ch. 115. BPT means that method which controls or reduces emissions of regulated pollutants to the lowest possible level considering the then existing state of technology, the effectiveness of available alternatives for reducing emissions from the source being considered, and the economic feasibility for the type of establishment involved. Control technologies required as BPT for existing sources are generally not state-of-the-art control technologies as may be required as BACT for new or modified emission sources. Add-on control technologies such as mist eliminators, carbon bed adsorption, condensing systems, or thermal oxidizers are not in wide-spread use for controlling VOC or HAP emissions from heated, fixed-roof residual fuel and asphalt

storage tanks, the level of effectiveness for some of these types of systems in reducing VOC emissions are not known, and the Department does not currently consider these types of add-on control technologies BPT for existing storage tanks.

At this time, the Department considers the installation and operation of the mist eliminator and carbon bed adsorption system as going above and beyond BPT for heated, fixed-roof residual oil and asphalt storage tanks. Once the effectiveness of the mist eliminator and carbon bed adsorption system on reducing VOC emissions is known, the Department will take that information into consideration in making future determinations about BPT for heated, fixed-roof residual fuel and asphalt storage tanks.

24. Comment: BPT.

(Falatko): On page 13 of the revised draft permit, the DEP states:

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

a. will receive Best Practical Treatment,
b. will not violate applicable emission standards, and
c. will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

There is no basis for these statements:

a. There is no treatment at all now, the evaluation of BPT should be reconsidered since known conditions have changed since the 2013 permit was issued, and adding on treatment to a point-source discharge should be easily be considered BPT.

Response: In completing the study for the Maine Legislature regarding emissions from above ground petroleum storage tanks, the Department reached out to many other state environmental agencies to ask questions about other state requirements in relation to controls for residual fuel and asphalt storage tanks. This outreach confirmed our understanding that the majority of residual fuel and asphalt storage tanks throughout the United States are fixed-roof storage tanks with no add-on controls for VOC. This is consistent with residual fuel and asphalt storage tanks in Maine. BPT for these types of storage tanks in Maine has generally been determined to be conducting monthly inspections of the tanks and piping to detect leaks and identify repairs needed and to track and maintain records of monthly throughput amounts of products; Global's license contains these BPT requirements. This license amendment also adds BPT requirements for Global to monitor and record liquid temperature levels of the products in the heated storage tanks and fan operating parameters for the mist eliminator and carbon bed adsorption system.

The testing conducted at Global's South Portland facility identified that potential VOC emissions may be higher than originally understood; however, it also confirmed that actual emissions from these tanks are still comparatively small and do not warrant a

change in BPT based on our current understanding of available control technologies, their effectiveness, and costs associated with installing and operating these control technologies on existing storage tanks.

Comment: BPT (continued)

(Falatko):

b. The DEP has switched positions on how to estimate emissions from Global's tanks, first denying the validity of Eastmont's methods, and saying AP-42 estimations methods were better. When the actual quantified vapor pressure values determined in 2013 were used in the AP-42 method recommended by the DEP, it showed VOC emissions much higher than the permitted limits; this was previously submitted to the DEP without a response from the DEP. The DEP has now switched back having Global use the emission factors derived from the Eastmount testing since they can be used to show Global is within their permitted limits. But now they also want Global to repeat the testing in a similar, but perhaps in a less rigorous manner. In short, it appears the DEP is uncertain what Global's emissions are, and that violations of emission standards are entirely possible as shown by a variety of data and estimation methods.

Response: While the Department still has concerns about the representativeness of the testing conducted at EPA's direction by Eastmount in 2012/2013, it has been established, with EPA concurrence, that on-site emissions test data should be used to determine emissions until more representative and more accurate emissions data can be generated. Therefore, as part of the license amendment, Global will be required to conduct emissions testing following installation of the mist eliminator and carbon bed adsorption system as this will likely change the emission and flow characteristics of these storage tanks.

Comment: BPT (continued)

(Falatko):

c. There is no fence-line air-quality data or air modeling of Global's emissions (and/or others) to demonstrate they do not violate ambient air quality standards in conjunction with other sources. In fact, air quality data from South Portland may be indicating that emissions do end up violating ambient air quality standards. Attached is a preliminary summary of an air model for South Portland using the Human Exposure Model (HEM-3), which was developed by the USEPA to evaluate risk to residential population adjacent to industrial air emissions. The results of this model indicate potential exposure to adjacent populations.

Response: The U.S. national ambient air quality standards (NAAQS) established by the EPA identify concentration levels of six pollutants known as criteria air pollutants: ozone (O_3), particulate matter, lead, carbon monoxide (CO), sulfur oxides (SO_x), and nitrogen oxides (NO_x). The NAAQS are established with both primary and secondary standards:

Primary standards are designed to protect the health of sensitive populations, and secondary standards are targeted to protect the environment. Maine's ambient air monitoring network monitors levels of these criteria pollutants throughout the state in accordance with EPA requirements to demonstrate ongoing attainment of the NAAQS.

Maine also conducts ambient monitoring for other pollutants. Ambient monitoring currently being conducted in the Portland/South Portland areas is providing data representing actual levels of various other pollutants in the ambient air. Although models are useful tools in predicting impacts of various sources, ambient monitoring data is the standard to which modeling results are to be compared for accuracy of modeled predictions. The Maine CDC is actively involved in analysis of the monitored data regarding exposure to local populations.

Please also see earlier responses regarding monitoring at the fence line.

25. Comment: Loading Racks.

(Global): Section I.B identifies the "Loading Rack" as process equipment. For clarification, the Facility is equipped with two truck loading racks, one loading rack for distillate products and a second loading rack for residual fuel products (asphalt and No. 6 fuel). The distillate truck loading rack is equipped with a vapor combustion unit (VCU) to treat vapors associated with switchloading (loading a distillate product into a tanker that previously carried gasoline). Switchloading does not occur with No. 6 fuel oil or asphalt loading.

[Global requests DEP] include a description of both the distillate truck loading rack and the residual fuel truck loading rack in the License, as necessary, to clarify that emissions from all equipment is included in the License. Also modify Section 20 from "Loading Rack" to "Distillate Truck Loading Rack" to clarify that Section 20 requirements do not apply to the residual fuel truck loading rack.

Response: The Department agrees, and the applicable clarifying language has been added.

26. Comment: Terminology, Performance/Emissions Testing.

(Global): Global requests that the term performance testing be replaced throughout the Draft License with "emission testing". The testing to be required is not intended to determine the performance of the Equipment or any emissions reductions that may result from installation of the Equipment. Rather, the emissions testing is intended to develop site-specific emissions factors for the reporting of emissions.

Response: The Department agrees, and the applicable terminology change has been made to the license amendment.

27. Comment: Terminology, 180 days of startup vs full operation.

(Global): Sections [of the license] require the testing of the unit "within 180 days of startup" Global requests this be modified to "within 180 days of full operation" to accommodate for periods of the year when asphalt tanks are typically out of service and ensure the initial testing is conducted under conditions that represent normal, maximum operation as required in the Draft License.

Response: Based on the simplicity of the odor control system, it is not expected to require an extensive construction timeframe or shake-down period after initial startup. However, the Department recognizes the assessment of emissions when they are most likely to be representative of normal maximum operation will require testing be performed during warmer months when the tanks are actively in use. Therefore, the license amendment has been revised to set the deadline for emissions testing as November 1, 2021.

28. Comment: Timing of Testing.

(Global): Section II.C.1 of the Findings and Section 21.F.1 of the Order contained in the Draft License require that Global conduct emissions testing annually with no more than 14 months between tests. Global requests that this testing be modified to include a provision of no more than 18 months between tests. This change is requested due to the variability of operations during the year (e.g. certain tanks are not in service during a significant portion of the year) and will ensure the annual testing is conducted under conditions that represent normal, maximum operation as required in the Draft License.

Response: The intent of the language is for Global to test approximately every 12 months with flexibility to extend as far as 14 months to accommodate operational variability as described above. Additionally, nothing prohibits Global from testing earlier, i.e., within less than 12 months from the last test, if operation is expected to be non-representative in the time period when the testing would otherwise fall. The Department therefore declines to make the requested change to the license amendment.

29. Comment: Testing, Future Flexibility.

(Global): Section II.C.1 of the Findings and Section 21.F.1 of the Order contained in the Draft License require Global to undertake testing of the Equipment after installation and commencement of operation and annually thereafter (with no more than 14 months between tests) to develop emissions factors for the reporting of emissions. Although Global agrees that such testing will provide current site-specific data, Global requests that provisions be added to the testing requirement that provide flexibility in the future to reduce the frequency of testing and/or utilize other methods to calculate emissions (such as use of AP-42 emission factors if testing data shows the tank emissions are consistent with AP-42), if acceptable to the Department.

DEP Note: Specific language was suggested by Global.

Response: The Department declines to make the suggested changes to the license amendment. Data from site-specific testing is always preferred over generic emission factors (e.g., AP-42) for estimating facility emissions. Indeed, where site-specific test data exists, *Emission Statements*, 06-096 C.M.R. ch. 137 requires its use.

Regarding the reduction of testing frequency, nothing prohibits Global from applying to amend their license in the future if multiple years of test results demonstrate minimal variability in the emission factors developed from the tests.

30. Comment: Testing of Working Losses.

(Global): Section II.C.1 of the Findings and Section 21.F.1. of the Order contained in the Draft License require that an emissions factor be developed for heated tank emissions. The Draft License envisions testing for both working losses (when tank is being filled) and breathing losses (all other times). Testing is not necessary for working losses because Global proposes to use the AP-42 emission factors (with updated vapor pressure data published November 2019) which calculates higher annual emissions than the site-specific working loss factors from the 2012/2013 testing conducted by Eastmount Environmental Services, Inc (The "Eastmount test"). While Global considers the breathing loss data collected during the Eastmount test as invalid (see further discussion in Comments 6 and 7), the working loss data is valid because the flow from the tanks during filling were not significantly impacted by the testing apparatus.

Based on the throughput limitations of 50 million gallons/year of No. 6 oil and 75 million gallons of asphalt, the Eastmount test results would indicate annual tank working emissions of 1.1 tons per year (tpy) in comparison to the revised AP-42, which results in 2.5 tpy. Thus, Global desires to calculate working loss emissions based on a national standard (AP-42) to be consistent with other similar facilities in the United States.

Global requests that the requirement to test during tank filling to determine a site-specific factor for working losses be removed from the permit and be replaced with a requirement to use the current version of AP-42.

Response: The Department declines to make the requested changes to the license amendment. The Department is requiring testing of both working losses and breathing losses in the proposed license amendment because the installation of the mist eliminator and carbon bed adsorption system on the storage tanks will likely change the emission and flow characteristics of the storage tanks such that both the testing conducted by Eastmount in 2012/2013 and AP-42 emission estimation methods will no longer be representative of working or breathing losses from these tanks.

31. Comment: Previous Site-Specific Testing of Working Losses.

(Global): Section II.C.1 of the Findings and Section 21.F.1 of the Order contained in the Draft License require that, until initial testing is completed, Global shall estimate

emissions from the heated bulk storage tanks using emission factors developed from previous site-specific testing conducted at the Facility in 2012 for asphalt and in 2013 for residual oil. The emission factors developed from the Eastmount test in 2012 and 2013 were specific to the products stored and the condition of each tank at the time of testing. Since testing was completed, the products stored in the tanks and tank conditions have changed such that emission factors for breathing losses developed in 2012/2013 do not translate to current emissions from the heated tanks. Specific changes at the Facility include a change in product from No. 6 fuel oil to asphalt in Tank #3 (which decreases emissions), a change in the vent configuration on Tank #9 in which the remnants of previous side vents from when the tank was in gasoline service were sealed (which decreases emissions), and reinstallation of roof insulation on Tank #3 which was not present at the time of the Eastmount test (which decreases emissions).

Regardless of the validity of the Eastmount test data, the site-specific factors developed in 2012-2013 cannot be used to estimate the current heated tank emission because of these changed conditions. While the calculation methodologies in AP-42 can account for changes in site-specific conditions such as changes in products, storage temperatures and tank conditions, there is no valid method to adjust the Eastmount test data generated in 2012/2013 to ascertain current emissions from the heated tanks.

There is no reason to believe that the heated tanks at Global are any different than others throughout the United States. Therefore, the recently adopted emission factors and calculation methodologies reflected in the current version of AP-42 should be utilized to calculate the emissions from the heated tanks, at least until the site-specific testing is completed.

Global requests the permit be modified to use the calculation methodology in the most current version of AP-42 in place of the 2012-2013 Eastmount data for calculating emissions prior to the testing of the Equipment.

Response: The Department agrees with the commenter's explanation but does not agree that the proposed change to the draft is appropriate. Testing conducted by Eastmount (in 2012 for asphalt and 2013 for residual oil) was conducted on heated tanks which have since been modified in ways that affect emissions. In addition, one heated tank now holds a different product. Those changes, listed below, all would be expected to result in emissions decreases from the tank scenario tested in 2012/2013.

- Tank #3 now holds asphalt, not #6 fuel oil;
- Tank #3 roof has been insulated (not insulated when tested by Eastmount); and
- Tank #9 vent configuration was changed, including sealing of side vents appropriate under a previous tank use scenario when the tank held gasoline.

The Department and Global appear to agree that the Eastmount test results likely provide an over-estimate of actual emissions. Given the order of emission estimation approaches

in *Emission Statements*, 06-096 C.M.R. ch. 137, in AP-42, and EPA's directive that on-site testing results are to be used to quantify emissions whenever available before using emission factors such as from AP-42, the Department will require Global's reported emissions to be based on the available on-site test data until such time that testing is conducted under the currently representative scenarios.

Required recurring annual testing will accommodate future tanks/contents scenario changes so that each annual emissions report will be based on more current test results and reflective of the most recent tanks/contents scenario. Language has been added to the text in the Findings of Fact of the amendment to more fully describe the logic of this approach.

32. Comment: Calculating Interim Emissions.

(Global): The primary issue underlying EPA's allegations which led to the parties entering into the Consent Decree was the characterization of emissions from the four heated bulk oil storage tanks at the Facility. At EPA's direction, residual product terminals including Global and Sprague were required to conduct emissions testing in 2011, 2012, and 2013 in an effort to characterize emissions from the heated residual oil products, including emissions during truck loading, tank filling, and tank breathing.

Because no test protocol existed for this type of sampling, Global, working with its consultants, Eastmount and MJB&A, in consultation with EPA, designed and implemented a test protocol. During this design and testing process, to measure tank breathing, Eastmount initially proposed reducing the tank exhaust mushroom vents from the standard eight (8) inch diameter to a smaller diameter that could generate a detectable flow. However, EPA opposed this approach because they believed the constriction could reduce the normal tank breathing exhaust rate. EPA then directed Global and Sprague to utilize a temporary total enclosure (TTE) method in which a box is placed over the storage tank vent(s) and a vacuum is applied to capture emissions. Global and its engineering and testing consultants repeatedly expressed concern that the TTE test method could result in inaccurate and inflated emissions levels for breathing losses because of the level of negative pressure required within the "box" while sampling. The concern was that rather than sampling the actual emissions from the tanks' vents, emissions from the headspace of the tanks would be drawn out of the vents at a substantially greater rate and, therefore, would not be representative of normal tank breathing losses.

Despite these concerns, Global included the TTE method in the protocol as directed by EPA and conducted the testing. Based on observations during the testing and a review of the data, the concerns regarding the reliability of the test data, and specifically the data associated with tank breathing loss, were justified. It remains Global's position that vapor was drawn out of the tank headspace during the test and does not reflect a true breathing loss under normal conditions. This is demonstrated by the resulting data: the breathing emission rate (pounds of VOCs emitted per hour) for the asphalt tank was found to be 75% of the working emissions rate (1.22 lb/hr breathing and 1.62 lb/hr working losses)

during tank filling when ~500 cfm of displaced air is exiting the vent. Based on modified AP-42 tank emission calculations, the breathing emissions for an asphalt tank would be approximately 3% of the working emissions (3.25 lb/hr working emissions and 0.1 lb/hr breathing emissions). The data generated during this test has been widely questioned in the engineering and regulatory communities as evidenced below:

- EPA Review of Available Documents and Rationale in Support of Final Emissions Factors and Negative Determinations for Flares, Tanks, and Wastewater Treatment Systems, April 2015: This document (available at https://www3.epa.gov/ttn/chief/consentdecree/final_report_review.pdf) summarizes EPAs analysis of emission factors for a wide array of sources, including heated petroleum storage tanks, and formed the basis for the November 2019 updates to AP-42. While the document categorized the testing conducted at Sprague and Global as "interesting" it excluded the results from consideration in the development of the revised emission calculation methodologies for heated tanks. The document emphasizes the comparison of breathing losses to working losses and points out that in one of the tests the emission rate for breathing losses was actually greater than the working loss value, further supporting the conclusion that the breathing loss data generated during the Eastmount testing is inaccurate.

- November 24, 2014 letter from Eastmount testing services to EPA: Eastmount submitted a comment letter to EPA related to the above-mentioned document. The letter identified several issues that were observed during the tests performed at the Global and Sprague terminals which led to inaccurate emissions estimates, including that the VOC mass emission rate from the tanks changed as the fan speed of the sampling system was changed indicating that the data obtained using the TTE system was not representative of normal breathing conditions. The letter questioned the methodology used to quantify VOC mass emissions from the vents given that the vent configurations were modified and an artificial pressure drop was induced around the vents when, under normal conditions, vent air flow may be inward, outward, or static depending on atmospheric conditions.

- February 10, 2016 Letter from DEP to EPA Region 1: In this letter, DEP strongly objected to the validity of the TTE testing methodology and EPA's use of the Eastmount test data for the purpose of calculating emissions at the Sprague Terminal. As the same methodology was used at the Global Facility, the same rationale should apply. In the letter, DEP stated, "the Department has strong reservations as to the validity and usefulness of data obtained. Although this nonstandard method (referring to the TTE method) did result in measurable flows and corresponding calculated VOC emission rates, **the values were obtained under conditions not indicative of normal operation of the tested units**." (Emphasis added.). The letter also states, "Given the incongruities discussed above and the EPA's recent re-affirmation of the appropriateness of AP 42 emission factors with site-specific data, **it would be both inaccurate and irresponsible for the Department to base licensing action on emissions values obtained under artificial conditions** (emphasis added) without consideration of the aberration of such artificial conditions from actual operating

conditions." Since the letter was drafted, Global is not aware of any new technical information or data that would affect the engineering evaluation conducted by the Department in 2016.

Global requests DEP revise the Draft License to require that emissions be estimated for the Facility using the most recent version of AP-42 until new emissions testing can be completed on the Equipment.

Response: See the response to Comment 31.

33. Comment: Monitoring Tank Temperatures.

(Global): The Draft License requires in Section II.C.I of the Findings and Section 21.H.1 of the Order that Global record and maintain "liquid temperatures (hourly average) of each heated tank monitored and recorded continuously". The term continuously is defined in the Draft License as "equally spaced data points … in each successive 15-minute period."

Global typically monitors and records the liquid temperature for each of the active heated tanks on a daily basis using direct reading temperature probes installed at each tank. Twenty-four-hour temperature monitoring collected every fifteen minutes provides no additional insight into the emissions at the Facility, especially since emission factors developed for the heated tanks will be based on normal maximum operation as required in the Draft License and not based on temperature fluctuations.

[Global provided graphs showing the daily temperature monitoring during the 2020 heating season for Tank 1 and Tank 9 which store #6 fuel oil and asphalt, respectively.]

The data clearly demonstrate that the temperature in the tanks does not vary significantly on a daily basis; on average the temperature changes less than 2 degrees Fahrenheit per day under heating and non-heating conditions. This is due to the limited boiler capacity at the Facility and the large volumes of products being heated.

To supplement the daily data, Global conducted hourly temperature measurements of the products in Tanks 3 and 9 (asphalt) and Tank 1 (No.6 fuel oil) from September 27 - 29, 2020. During the monitoring period, heat was applied to the asphalt tanks while no heat was applied to the No. 6 oil tank to give a representation of hourly changes in product temperature under heating and non-heating conditions.

[Graphs of the monitoring data were provided.]

Both graphs show that hourly changes in product temperature are fractions of a degree under both heating and non-heating conditions. Based on the low rate of temperature change observed in the daily and hourly monitoring data, continuous monitoring of temperature would provide no additional benefit over daily monitoring and the requirement to implement continuous temperature monitoring does not justify the

substantial cost to install a fully automated temperature monitoring network at the Facility.

Global requests DEP revise the Draft License to remove the requirement for continuous temperature monitoring and replace the requirement with a condition that requires daily temperature monitoring at least 6 days per week when the tanks are in active service (when tanks are capable of sourcing product to the truck loading racks).

Response: In its research conducted in completing the study for the Maine Legislature regarding emissions from above ground petroleum storage tanks, the Department has determined that changes in the liquid temperature of a product being stored in a heated tank can have a significant effect on emissions. The Department has determined that daily recording of the liquid temperature for a heated storage tank does not provide enough data to demonstrate that a constant temperature is being maintained throughout the day, which is important in minimizing emissions from heated storage tanks.

The Department, however, is agreeable to limiting continuous temperature monitoring to when a tank is in-service (i.e., holding product). The Department also recognizes that a certain amount of time will be needed to select, purchase, and install the equipment needed to continuously monitor the liquid temperature of the products stored in Global's heated storage tanks. The Department has therefore revised the license amendment to include a 90-day period following issuance of the license amendment to account for this needed time.

34. Comment: Monitoring of Fan Speed.

(Global): The Draft License requires in Section II.C.I of the Findings and Section 21.H.2 of the Order continuous monitoring of the blower fan associated with the Equipment. The intended set up of the fan is to simply have two set points (low and high). The high speed setting is designed for periods when a tank is being filled (actual occurrence ~16 hours/month) and the low speed setting is to be used at other times. Based on this operating schedule, continuously monitoring fan speed does not seem beneficial and does not justify the cost to install a continuous monitoring system.

Global requests that the Draft License be revised to remove the requirement for continuous monitoring of the fan speed and add a condition to maintain a log of when the fan speed is changed and to log the on/off status of the system and fan speed setting at least 6 days per week.

Response: In recognition that the blower fan associated with the mist eliminator and carbon bed adsorption system will only operate at two different speeds (low and high), the Department has revised Sections II(C)(1) and II(E)(2) of the Findings and Specific Condition (21)(H)(2) of the Order requiring Global to maintain a log documenting

whenever the blower fan speed is changed along with an indication of the operational status the blower fan is being changed to (i.e., off, low speed, or high speed).

35. Comment: Non-heated Asphalt Tanks.

(Global): Section II.C.1 of the Findings in the Draft License indicates that any heated tank that is not being heated (a non-heating day) "shall be assumed to be emitting at the same rate as a normal operating (heated) day unless the tank is being (or has been) emptied and degassed or the tank vents have been sealed such that vapor cannot escape."

Asphalt is commonly allowed to cool to the ambient temperature during the winter months. During these times, the asphalt is solid and does not emit vapors. While the Draft License recognizes that these non-active tanks may not emit VOCs, there is a requirement to seal the tank vents to report no emissions from the tanks. From a safety perspective, Global cannot completely seal a tank as natural changes in barometric pressure could cause excess pressure or vacuum in the tank and result in structural damage.

According to the International Chemical Safety Card for Asphalt (ICSC# 0612) produced by the International Programme on Chemical Safety and adopted by the National Institute for Occupational Safety and Health (NIOSH), the lower limit on the melting point of asphalt is 54 degrees Celsius (129 degrees Fahrenheit). This would be a conservative temperature to demonstrate that the asphalt is solidified and no longer emitting VOCs.

Global requests that the Draft License be revised to modify the provisions related to emissions from heated tanks to indicate that the tanks shall be assumed to be emitting at the same rate as a normal operating (heated) day unless the tank is being (or has been) emptied and degassed, or in the case of Asphalt, that the content of the tanks is below a temperature of 130 degrees F.

Response: The Department agrees and has added clarifying language to the license amendment.

36. Comment: Tank Maintenance.

(Global): Section II.C.3 of the Draft License requires inclusion of emissions from tank maintenance in the Facility-wide emissions calculation. While Global does not object to this requirement, emissions from this process are very limited and would normally be considered an insignificant activity based on Appendix B, Section B of Chapter 115 of the Regulations. Calculations using the methodology from the current version of AP-42 indicate that a typical distillate tank (such as Tank 4) would emit well below <0.1 tons per cleaning and degassing event. Given that the typical frequency of tank cleaning is once every 10 years it seems arbitrary to include an emissions source of this level in Global's minor source license unless this represents a change that DEP is undertaking in all minor source licenses going forward.

Response: The operation of the storage tanks themselves is no longer considered insignificant; therefore, emissions from the related maintenance activities of those tanks

is also not insignificant and must be included when demonstrating compliance with the facility-wide standard.

37. Comment: Leak Repair.

(Global): It appears that the draft permit incorporates Leak Detection and Repair (LDAR) requirements for gasoline terminals under the federal MACT standards (40 CFR 63 Subpart R and Subpart BBBBBB) which are not analogous to the operations at the Global Facility.

The draft license requires that "all leaks must be repaired as quickly as possible, but within 15 calendar days, with the first attempt at repair made no later than five days from the initial detection of the leak". Review of the more stringent regulations for gasoline terminals outlined in the above-mentioned MACT standards reveals that delay of repair of leaking equipment will be allowed if the repair is not feasible within 15 days as long as appropriate notifications and follow up information is provided to the regulatory agency. As the regulations envision, there are circumstances where it may not be feasible to complete a repair within 15 days and that should not result in a permit violation if appropriate information is communicated to the Department and the delay is valid. Global should not be held to a higher standard than terminals handling much more volatile products, such as gasoline.

[Global requests DEP] add a provision to Section 20.H to indicate that if a repair cannot be made within 15 days, the Department shall be notified. This is consistent with other LDAR regulations that recognize that if there are extenuating circumstances that prevent a repair from being completed within 15 days, the circumstance is not necessarily a permit violation as long as appropriate notifications are made.

[Global requests DEP] add a provision to Section 20.E (prohibition of LEL readings >100%) to indicate that the successful completion of the inspection and repair program required under Section 20.H is sufficient to demonstrate compliance with Section 20.

Response: This requirement is incorporated into Global's license under the authority of BPT. It is a common condition for any facility in Maine with loading racks for petroleum products, not just gasoline. However, ceasing operation of the leaking equipment is as effective as a repair. The Department has therefore added language to the license amendment to clarify that the leak must be repaired within 15 days <u>or the line with the leak taken out of service until the repair can be made</u>.

38. Comment: Calculating Fugitive Emissions.

(Global): The Draft License requires in Section II.C.I of the Findings and Section 21.H.1 of the Order inclusion of fugitive emissions in the facility-wide emissions calculation. While Global does not object to the concept of including the fugitive emissions in facility wide emissions calculation… The Draft License also requires calculation of fugitive emissions in accordance with EPA's Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995 ("Protocol").

EPA's Protocol does not include emissions factors for "Heavy Liquids" such as the No. 6 fuel oil and asphalt (and arguably the distillate products) stored at petroleum marketing terminals. Global cannot be expected to meet the requirement in the Draft License to calculate the emissions in accordance with the EPA Protocol when there is no calculation methodology in the Protocol for certain products. Presumably, these factors were not included in the document due to the insignificant levels of VOC emissions associated with the activity. Based on the calculation methodology provided in the Protocol for "Light Liquid" storage which would be indicative of gasoline, the resulting emission for the Facility would be <0.1 tons per year ***if*** the Facility was a gasoline terminal. The actual emissions are likely an order of magnitude less than the gasoline value and would normally be considered an insignificant activity based on Appendix B, Section B of Chapter 115 of the Regulations.

For the purposes of demonstrating compliance with the License limit of 21.9 tons per year, Global will need to discuss an appropriate calculation method with the Department and have the Department approve the methodology.

[Global requests DEP] revise requirements related to using the EPA Protocol for calculating fugitive emissions and include flexibility to use calculation methods acceptable to the Department.

Response: Fugitive emissions from piping are not considered an insignificant activity because they are considered part of the licensed emission units (i.e., storage tanks and loading racks).

The Department agrees that, based on the definitions of "light liquid" and "heavy liquid" on page 2-7 of EPA's protocol, all products stored at Global's facility would be classified as heavy liquid and there are no emission factors given for equipment which handles heavy liquid at marketing terminals (Table 2-3). The Department is therefore agreeable to Global using emission factors for light liquids at marketing terminals to estimate fugitive piping emissions. This will result in reported emissions that are conservatively high, but as Global points out in their comment, not so high as to affect the facility's ability to demonstrate compliance with the facility-wide limit on VOC.