

MEMORANDUM

To: Emery Refining LLC Source File

Through: Reginald Olsen, Permitting Branch Manager

Through: Tim Andrus, NSR Section Manager

From: Tim DeJulis, NSR Engineer

Date: June 18, 2013

Subject: Response to Public Comments

Emery Refining LLC requested an approval order to establish a new petroleum processing plant. The new plant will be located approximately 5 miles west of Green River in Emery County. The processing plant will consist of distillation towers, process heaters, boilers, storage tanks, a flare device, wax crystallizers, material loading/unloading racks, and various pollution control devices. The plant will be capable of processing up to 40,000 barrels of crude oil per day.

An Approval Order (AO) for this source was proposed with a public comment period from February 4, 2013 to March 7, 2013. Written comments were received from Grand Canyon Trust and from J. Phyllis Fox, under Grand Canyon Trust cover letter. Each individual comment was considered as indicated below before final issuance of the AO. All comments are attached to this memo.

The comments received are summarized below along with the Utah Division of Air Quality's (DAQ) response to the comment.

General Response to Comments

1. A number of comments requested additional information about economic impacts and environmental impacts that may be caused indirectly by the facility, e.g., by increased truck traffic. While the analyses of the type requested by the commenters are often part of an environmental impact statement or environmental assessment required under the federal National Environmental Policy Act (NEPA), NEPA does not apply to air permitting actions taken by the State of Utah. There is no requirement in the state air quality statutes or rules for a permittee to address these matters and DAQ has no authority to require the requested analyses. It should be noted that in no instance associated with these comments did a commenter provide any information about a statutory or regulatory requirement that had not been met.
2. A number of comments requested information and consideration about matters that are outside of DAQ's jurisdiction. Generally, if a matter is not required by DAQ statute or rule, it cannot be required by a DAQ permit. Requirements established by other agencies or programs must also be met but are under the jurisdiction of that particular agency and outside the authority of the DAQ to regulate. Again, it should be noted that in no instance associated with these comments did a commenter provide any information about a statutory or regulatory requirement that had not been met.

Written Comments

Comment #1: By approving a refinery [that] processes oil shale and tar sands oil, Utah is making a short sighted choice for its energy future and for the future of the American southwest. Rather than aggravate a serious situation, we strongly urge that Utah become a leader in cooperation within the Colorado River basin by rejecting the development of immature fuels.

Response: The energy policy of the state is beyond the scope of this permitting action which is outlined in Utah Administrative Code (UAC) R307-401. In addition, this comment does not address any specific terms or conditions of the Intent-to-Approve (ITA), so no changes were made.

Comment #2: The commenting parties urge DAQ to take a hard look at whether DAQ's ITA sufficiently monitors and limits hazardous air pollutants (HAP) emissions to ensure that endangered fish species both in the Green River and in downstream populations on the Colorado River are not harmed.

Response:

HAPs from this project are emitted through combustion, leaks, and from evaporation as shown in the emissions portion of the Notice of Intent (NOI). The total potential emissions of HAPs are calculated to be 2.71 tpy. None of the estimated HAPs emissions triggered further review under R307-410-5, which is a modeling rule. Emissions from tanks subject to 40 Code of Federal Regulations (CFR) 60 Subpart Kb are controlled by seals in accordance with the requirements found in 40 CFR 60 Subpart Kb. Emissions from some tanks are controlled by routing the emissions to the flame zone of combustion equipment. Condition II.B.7.a of the Intent-to-Approve will be clarified to show which tanks are subject to this control. Emissions of HAPs from combustion are controlled by proper combustion. Typical monitoring for this level of emissions (2.71 tpy) includes:

- Inspection of seals in accordance with 40 CFR 60 Subpart Kb,
- Inspection of generator emissions in accordance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ,
- Implementation of a leak detection and repair procedure in accordance with 40 CFR 60 Subpart GGGa and Inspection of the maintenance of equipment and
- Inspection and maintenance of equipment

With respect to water pollution and any impact on endangered species, please see General Response to Comment No. 2 above. This comment does not address any term or condition of the ITA, so no changes were made.

Comment #3: There is no discussion of the source(s) of water to be used during construction and operations at the proposed refinery, whether the facility that it will be taken to is company owned, how the facility will store the waste water, and whether the Utah State Plan for Implementation of Emission Controls for Municipal Solid Waste Landfills (SECTION I) is being implemented.

Response: Water rights and solid waste emission controls are not within DAQ's jurisdiction; please see General Response to Comment No. 2. These issues are outside the scope of this permitting action as outlined in UAC R307-401. This comment also does not address any specific term or condition of the ITA, so no changes were made.

Comment #4: There is no company history to evaluate the ability of the company to construct and function correctly. There are no assessments for financial or economic viability.

Response: There is no requirement in the state air quality statutes or regulations for a permittee to demonstrate the adequacy of its financial resources. Also, the commenter did not provide any information about a statutory or regulatory requirement that had not been met. This comment does not address any term or condition of the ITA, so no changes were made.

Comment #5: The Company must provide an independent assessment of the wider environmental and economic costs to the town of Green River, Emery County and the state for building new and maintaining existing infrastructure within accepted environmental, sanitation, and safety standards.

Response: See General Response to Comment No. 1. This comment does not address any specific term or condition of the ITA, so no changes were made.

Comment #6: Construction of the proposed refinery will have significant environmental impacts in terms of air quality, dust, visibility, increased truck and commercial traffic. Abatement plans need to be put in place in the notice of intent. The Emery Refining notice of intent needs to include an assessment of the estimated costs of construction and the costs of refining a barrel of finished product.

Response: With respect to dust and visibility, fugitive dust control is required by rule UAC R307-205. This rule requires control of fugitive dust at all times. Traffic issues are not within the scope of this permitting action under UAC R307-401. There is no requirement in rule for the suggested abatement plan or the cost assessment and the commenter did not provide a reference to any such requirement. See General Response to Comment No. 1. With respect to the request for costs of refining a barrel of finished product, there is no requirement in the state air quality statutes or regulations for a permittee to provide this information. The commenter did not provide any information about a statutory or regulatory requirement that had not been met and this comment does not address any specific term or condition of the ITA, so no changes were made.

Comment #7: Diesel emissions from hundreds of truck trips have profound health impacts.

Response: Mobile emissions are regulated separately under various Federal regulations for on-road and off-road mobile sources, not as part of an approval order for stationary sources under UAC R307-401 and corresponding federal rules. There is no requirement in the state air quality statutes or regulations for a permittee to address this issue for a project of this size. The commenter did not provide any information about a statutory or regulatory requirement that had not been met. See also General Response to Comment No. 1. This comment does not address any specific term or condition of the ITA, so no changes were made.

Comment #8: Federal regulations should be directly incorporated into the ITA.

Response: While there is no requirement in UAC R307-401 to include federal requirements, they are included as an informational item and the source is subject to the appropriate standards, regardless of whether they're listed in the AO. The federal requirements are identified as currently codified as the requirements may change without any modification of the AO. The final version of the AO reflects all requirements that DAQ has the authority to impose. Therefore, no changes were made as a result of this comment.

Comment #9: The public must be given the opportunity to comment on additions to the record as a result of this comment period.

Response: DAQ does not agree with this comment. The commenters suggested approach would create a circularity that would make the permitting process impossible. It should also be noted that DEQ statutes

anticipate that information will be added after the comment period without going back out for public comment. See Utah Code Ann. Section 19-1-301.5(8)(b)(vi) and (vii). DEQ statutes also provide a standard and a remedy with respect to added information. See Utah Code Ann. Section 19-1-301.5(8)(c). In this case, DAQ requested additional information on the greenhouse gas emissions and the unpaved areas. DAQ reviewed the response to those requests and added the corrected emission totals for greenhouse gases and PM₁₀ and PM_{2.5}. We also added a new requirement for gravel to be applied to the unpaved areas of the source.

Comment #10: “The ITA does not impose Federally enforceable limits on Emery LLC’s Potential to Emit (PTE) VOCs.”

Response: Federally enforceable limits are included for the production amounts of various products in the refinery and these limits serve as a surrogate, or replacement control, for emissions. The emissions were, in-turn, calculated based on those production quantities. A Best Available Control Technology (BACT) review was performed in accordance with UAC R307-401 (see pages 9-11 of the NOI and page 4 of the Engineering Review). A review of applicable federal regulations and the respective controls was also completed (see page 12 of the NOI and pages 14-22 of the Engineering Review). This combined process resulted in federally-enforceable conditions that limit VOC emissions. Other emissions cannot be exceeded because of the design capacity of the equipment. PTE, as defined in UAC R307-101-2, includes both emissions limited by design and those limited by enforceable conditions.

Comment #11: VOC emissions were underestimated. The source used emission factors published in 1995 (AP-42) with very aggressive control efficiencies. This approach and these factors have been widely discredited in numerous field studies in which VOC emissions were measured.

Response: DAQ disagrees with this comment. Most of the VOC emissions were calculated using the current version of EPA’s AP-42, entitled “Compilation of Air Pollutant Emissions Factors.” While the Fifth Edition of AP-42 was published in January 1995, since then EPA has published supplements and updates to the chapters and made them available on their website (www.epa.gov/ttnchie1/ap42). These updated factors were used in calculating emissions. The oil-water separators reflect the 96% control given in AP-42 Table 5.1-2. Tank emissions were calculated with an approved version of the EPA TANKS program using 40 CFR 60 Subpart Kb controls where applicable. The emissions from leaks were calculated utilizing EPA published emission factors (EPA 453/R-95-017 for Connectors and Sampling Connections) as indicated in the NOI (page 33). Leaks are controlled by a Leak Detection and Repair (LDAR) program as required by 40 CFR 60 Subpart GGGa. At this point in time, the EPA has not chosen to pursue the incorporation of any of the referenced field studies into AP-42 or into any of the appropriate federal regulations. DAQ chose to rely on officially published EPA documents. Compliance with the federal regulations and the conditions of this approval order are sufficient to control the emissions of VOCs to non-major source thresh-hold levels.

Comment #12: “The ITA fails to ensure that the Green River Refinery’s emissions will not interfere with attainment or maintenance of the National Ambient Air Quality Standards (NAAQS)”

Response: This comment specifically addresses the ozone and CO NAAQS and suggests that there should be emission limits on the same time averaging period as the standard (9 ppm on an 8-hour average and 35 ppm on a 1-hour average for CO; 0.075 ppm on a 8-hour average for ozone). A determination that the NAAQS are protected can be achieved by several methods, of which modeling is but one option. However, the levels of emissions from this project do not require modeling under R307-410 for CO, NO_x or VOC (NO_x and VOC being precursors to ozone).

The NAAQS impact is determined at and outside the source boundary, not the stack exit where a limit would be presumably measured and enforced. In general, limits, work practices and monitoring are useful when an add-on control technology is used to reduce emissions. In this case, there are no CO controls to monitor. In addition, since the maximum uncontrolled CO emissions are below modeling thresholds, there is no evidence that the NAAQS will be violated.

For ozone, there is no technical way to attribute ozone levels to an individual emission unit or source as ozone is formed through a chemical reaction in the atmosphere. Here again, the ozone NAAQS is protected based on the low level of emissions of the precursors (NO_x and VOC as described above) and the typically low background levels found in this part of the state (vic. Green River – see Dave Prey email of May 9, 2013 attached).

Comment #13: “The ITA must incorporate monitoring for criteria pollutants and greenhouse gases to ensure that the Green River Refinery emissions remain within the permitted limits”

Response: This comment focused on the emissions from the flare and other combustion equipment, specifically the NO_x, CO, and CO₂ emissions. The commenter also suggests that there should be continuous emission monitors (CEMs) for all combustion equipment and for VOCs on the loading racks. While the monitoring of sulfur compounds from the flare is feasible (because the sulfur compound emissions can be calculated from the sulfur content of the gas going to the flare), the remaining combustion products cannot be calculated in this manner. However, the DAQ is not aware of any technical or feasible method to monitor the requested pollutants of NO_x, CO and CO₂ from the flare. Emissions based on approved emission factors are acceptable as the information used in the calculations can be verified through methods other than direct monitoring. (See discussion above on AP-42 and other sources of emission factors).

Finally, the emission requirements from 40 CFR 60 Subpart Ja (60.102(a)-(d)) that the commenter suggested should be required only apply to a process unit (FCCU) that is not present at this refinery.

Comment #14: “An emissions impact analysis should be required because the PM₁₀ limits may exceed the limits set forth in R307-410-4”

Response: The comment suggests that since the PM₁₀ emissions exceed the threshold of 5 tpy an emissions impact analysis (modeling) should be required. Commenter also expressed a concern that there is no threshold for VOC in UAC R307-410-4. The total PM₁₀ emissions of 10.92 tpy includes ALL PM₁₀ emissions, from fugitive and point sources. The fugitive portion of the PM₁₀ emissions does not exceed the modeling threshold of 5 tpy in UAC R307-410-4, Table 1. Likewise, non-fugitive PM₁₀ emissions are below the 15 tpy threshold. (See NOI Appendix C updated May 6, 2013). (NOTE: The updated emissions data for PM₁₀ was submitted as a result of a query from the DAQ in response to the comment.) Commenter’s concern over the lack of a VOC threshold in R307-410 is noted, but a rule change is not within the scope of this permitting action. This comment does not address any term or condition of the ITA, so no changes were made.

Comment #15: The record does not support DAQ’s BACT determination thoroughly enough.

Response: The top-down approach to BACT is one way to conduct a BACT analysis; it is not a required methodology spelled out anywhere in state or federal air rules. Additionally, in cases such as this where emissions are not large, it goes far beyond what is necessary. BACT is defined at UAC R307-401-2. A BACT analysis does not need to translate to a specific emissions limit but may result in a control requirement or work practice standard to limit emissions. The comments suggest that other technologies should be considered, but only provide one example (see below). While there may be technologies or practices that may achieve lower emission rates at other locations in the world, that technology may not

be directly related, nor relevant to this project due to feed-stock makeup, sizes, or products being produced. Additionally, BACT does not require the most stringent level of control available, but the best available (see definition in UAC R307-401-2). The single NO_x control equipment suggested in the comment is produced by a single company and appears to be focused on coal combustion (see case studies at <http://www.ftek.com/en-US/products/apc/low-nox-burners>). The equipment at the source under review is fired by gas, not coal. Based on this information, the transference of fuel type is suspect.

Comment #16: BACT was not required on all emission units, particularly the equipment leaks and the flare. Additionally, an article from the internet concerning a welded system should be considered. Also for the process connections, a fully sealed system is indicated. In the case of the process flare device, a ground-based unit should be prescribed over an elevated flare. See the article at http://www.waybuilder.net/free-ed/bldgconstr/welding01/welding01_v2.asp.

Response: First, the referenced web link is apparently invalid as it did not lead to the referenced article. As a result, DAQ was unable to validate the assertions stated in the comment. Moreover, based on DAQ's experience, a welded system as described in the comment would not be feasible or practical and could instead be a safety risk. In this case, a leak detection and repair (LDAR) program or system is required to minimize emissions. The source may choose to weld connections to reduce the number of locations that must be monitored. With regard to flare design, while there are several types of flares, only one AP-42 factor exists for all flares and that factor was used for the BACT analysis.

Comment#17: Monitoring and regulation of the flare system is inadequate and projected emissions in the NOI do not include breakdowns.

Response: The flare at this source is for emergency decompression of the plant as shown in Condition II.A.6. Advanced flare control technology, such as flare gas compression, is available, but has been typically applied as part of consent decrees for larger and more complex refineries. The example cited in the comment (Lion Oil Company El Dorado refinery) is not comparable. The *reductions* in emissions obtained at that refinery through the 2003 Consent Decree (not BACT) are an order of magnitude larger than the *total* emissions from this source. The currently-permitted emissions for the El Dorado refinery are, in tpy: PM₁₀ 322.6; NO_x 614.8; CO 1440.3; VOC 9896.4. This is after the Consent Decree reductions of 200 tpy in PM₁₀, 530 tpy in NO_x and 650 tpy in SO₂. The Emery Refinery emissions are calculated to be, in tpy: PM₁₀, 10.9; NO_x 21.1; CO 73.2; VOC 36. An AO under UAC R307-401 is issued for normal operations. By definition, a breakdown is random and not expected. There is no way to include such emissions in an annual emission estimate. The source must comply with the breakdown rule at UAC R307-107 and actual emissions, including those from breakdowns, must be reported in accordance with UAC R307-150.

Comment #18: Monitoring and regulation of fugitive emissions is inadequate

Response: Fugitive emissions of VOC are regulated under 40 CFR 60 Subpart GGGa by establishment of the required leak detection and monitoring program. Fugitive emissions of VOC from wastewater systems are regulated under 40 CFR 60 Subpart QQQ. Fugitive emissions of PM₁₀ are regulated under UAC R307-205. Every approval order also contains a requirement for proper operation and maintenance of emission units, implementing the requirement under UAC R307-401-4(1). Vapor continuing to escape from tanks beyond the applied controls is accounted for in the approved of TANKS 4.0 program that will be used to calculate actual emissions for the requirements of UAC R307-150. The papers that were referenced in the comment do not form the regulatory basis for additional measures to be considered in the rules, as the papers have not been promulgated at either the state or federal level for use in permitting. It is not typical to require the same level of monitoring for sources such as Emery Refining, with VOC

emissions of 36 tpy, as for much larger sources. (For comparison, the VOC emissions from refineries in the Salt Lake/Davis County are Tesoro 793 tpy; Holly 121.72 tpy.) The comment provides no persuasive reason to treat Emery Refining the same as much larger refineries.

Comment #19: The greenhouse gases GHG were underestimated. The calculated GHG emissions only include the emissions from the combustion sources and do not include the fugitive sources. The fired sources burn natural gas, predominantly methane, and the calculations do not include a provision for this to include the fugitive releases of the methane gas from this source.

Response: GHG emissions were calculated from the combustion sources according to EPA's GHG reporting rule at 40 CFR 98, Subpart C which address combustion units. However, Emery Refining used an incorrect reference for the calculations. The correct reference is 40 CFR 98, Subpart Y, which addresses refinery GHG emissions including methane emissions from tanks, equipment leaks, etc. These additional emissions covered in Subpart Y were not included in the original NOI. However, based on revised calculations from the source using 40 CFR 98 Subpart Y, the maximum GHG emissions are 90,096 tons per year, CO₂e. The revised greenhouse gas emissions still show that the source will be below the 100,000 tpy threshold for designation as a major source for either PSD or Title V purposes.