

Blehm Form 2B Technical Review Response to Comments 09152021

1) In the Noise Impacts section on the Oil & Gas Location Data tab, the operator is instructed to provide a qualitative evaluation of incremental adverse noise impacts to the surrounding receptors during both the pre-production and production stages. It appears that only a quantitative measure (expected decibel levels) were provided instead. Provide an evaluation of the sources of adverse noise impacts during the pre-production and production stages of the Oil & Gas Location. The evaluation should also include a discussion of the site-specific surrounding receptors, the time of day these adverse impacts will occur, an estimation of their duration, and the impacts after minimization/mitigation measures are in place for the nearby receptors.

Adverse noise impacts are expected during pre-production activities for the nine building units within 2000' of the site. There also are no High Priority Habitats within a mile and therefore no adverse noise impacts are expected in that regard. The heavy equipment used to construct the pad, followed by the 24-hour drilling operations and subsequent 24-hour completion frac, drill out and flowback operations will be the source of potential noise impacts. A third-party Noise Impact Assessment (NIA) has been done (attached), which includes a predictive noise model of the planned drilling and completion operations at the site. Such modeling indicates that some mitigation efforts will be needed to stay within the compliance levels of the C-weighted noise level limits. A "mitigated" predictive model was then ran which predicts that both C & A weighed noise levels will be within the COGCC limits at the nine building unit receptors. The mitigation measures include the installation of 32' high STC 32 engineered sound walls around the perimeter of the working pad surface, an upgrade to the exhaust silencers associated with the generators on the drilling rig and the installation of 24' STC 43 sound walls near the drilling rig shakers. Bayswater will also use one of the "quiet frac fleets" to further mitigate the impact of sound generated by the completion operations. Sound walls will remain in place through the duration of the completion operations.

Adverse noise impacts are not expected during production activities for the nine building units within 2000' of the site. Noise during production stage will be limited to daily pumper and water hauling vehicle traffic and the operation of compressors and enclosed combustion devices. The noise from the compressors will be mitigated by the installation 16' high sound walls around them. Some additional noise will be encountered during workover operations if a workover rig is needed at a date following initial completion operations. The use of pipelines for oil and gas takeaway will eliminate noise by eliminating truck traffic associated with takeaway.

2) For the Light and Odor Impact sections, provide an evaluation, for both pre-production and production stages of activity, of the impacts after minimization/mitigation measures are in place for the different receptors.

Rig lighting and lighting associated with completion equipment may pose adverse lighting impacts during the drilling and completions phases to the nine residential building unit owners within 2,000' of the site. There are no High Priority Habitats within a mile of the site. Lighting impacts will be mitigated by the installation of 32' sound walls around the perimeter of the working pad surface and the additional lighting BMPs as noted in the Lighting Plan.

Production lighting impacts to the nine residential building unit owners within 2,000' of the site will be limited to manually controlled lighting at the tank battery location as needed for safety purposes and

vehicle lights. Lighting impacts will be mitigated by utilizing timer-controlled lighting and by additional visual screening along the west side of the location by virtue of an earthen berm utilizing the topsoil stockpile.

3) The Light Impact evaluation during the production stage includes what appears to be the following Best Management Practice: "Lighting will be timer controlled to eliminate full time dusk to dawn lighting on the location." This should be moved to the Mitigation Measures section of the Form 2B. Please let me know if this is acceptable.

Yes, this may be moved to a BMP.

4) In the Beneficial Impacts section Bayswater has indicated that removal of two wells and one common tank battery will reduce **all** potential emissions and traffic to the surrounding community and that might disturb the surrounding wildlife and ecosystems. Use of the term "**all**" is misleading and not accurate. Either the word "**all**" should be removed or clarifying language added indicating only those potential emissions associated with the two wells and common tank battery.

Removal of two wells and one common tank battery will reduce air, light, noise, odor, and dust impacts and traffic associated therefrom to the surrounding community.

5) In the Beneficial Impacts section concerning beneficial impacts to the surrounding wildlife and ecosystems Bayswater has only used the statement concerning reduction of emissions. An evaluation should also be provided discussing the beneficial impacts to the surrounding wildlife and ecosystem resulting from reclaiming these oil and gas locations and the Access Road which will lead to the creation/restoration of wildlife habitat and reducing wildlife habitat fragmentation.

Removal of two wells and one common tank battery will reduce air, light, noise, odor, and dust impacts and traffic associated therefrom that might disturb the surrounding wildlife and ecosystems and fragment potential wildlife habitat and migration corridors.

6) In the Public Health Resources section of the Oil & Gas Location Data tab Bayswater has answered "None anticipated" for the two questions requiring a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the total pre-production and annual production hazardous air pollutant emissions. None anticipated is not a sufficient evaluation by itself. While the conclusion may be "none anticipated", the evaluation should explain why/how that conclusion was reached.

FOR BOTH Pre-Production and Production HAP emissions

On February 21, 2017, CDPHE released the "Assessment of Potential Public Health Effects from Oil and Gas operations in Colorado". Following that report, the CDPHE released another study (October 17, 2019) titled, Human Health Risk Assessment for Oil & Gas Operations in Colorado. The earlier study reviewed more than 10,000 air samples in regions of Colorado where people are living near oil and natural gas development. It concluded that all measured air concentrations were below short- and long-term safe levels. In addition, based on the CTEH report "Compilation of Benzene Measurements Near Wellpads in Colorado: A Comparison to Health Guideline Exposure Values" CTEH, LLC (July 28, 2020) it compiled over 6,500 air samples of benzene from 175-500 feet from the various operational phases. Their findings found that 99.9% of measured values were below the acute value for benzene of 9 ppb.

Based on these reports and findings, it is not anticipated that the proposed operations will present any potential acute or chronic, short- or long-term incremental impacts to public health.

7) In the Existing Oil & Gas section of the Oil & Gas Location Data tab where total permitted capacity of on-location storage tanks within 1-mile of the Oil & Gas Location is summarized, Bayswater has indicated there are 0 permitted oil storage tanks and 15 existing oil storage tanks. This suggests there are unpermitted oil tanks within 1-mile of the proposed location. In instances where there are existing oil and gas locations that pre-date the Form 2A process, they will likely have tanks on them that won't necessarily be "permitted via a Form 2A", and so they might not be listed on the Location Scout Card. In these instances, we ask that an Operator use the existing tank count as the permitted count, as the location that pre-dates the Form 2A is presumed to have been considered/reviewed for at least the existing tank count.

Revise to 6 existing and 9 permitted oil tanks.

8) After reviewing the Air Resources and Public Health sections of estimated emissions on the Oil & Gas Location Data tab, we have some clarifying questions as to how the estimates for the separator emissions were calculated.

- What is the type and manufacturing specification for the planned separator equipment?

3-phase separator per well

Bulk oil separator

- What is the emission factor used and the source of the emission factor for this estimation?

The emission factors were derived from using representative natural gas analyses and estimated venting volumes per annual basis. The emission factors are then used to calculate VOC separator emissions during the event of compressor engine downtime. Emissions were estimated for both the individual well separators for LP gas and for the bulk oil separator. The controlled VOC emission factor for the LP separator is estimated to be 1.2 lbs/mscf. The controlled VOC emission factor for the bulk oil separator is estimated to be 0.83 lbs/bbl.

- What is the planned emission control device(s) for the separators?

When a compressor engine is not in operation, the natural gas from the LP separator unit is controlled by being routed to the onsite combustion with a destruction rate of 95% or greater.

- Are the values provided:

a) emissions from venting of natural gas from the separator (to a combustor); OR

Emissions provided are for controlled combustion of separator gas vented during compressor downtime. An estimated 2% downtime was used.

The intent of this emissions question on the Form 2B is to align with the CDPHEs Air Pollution Control Division (APCD) production equipment emissions inventory sheet, which is asking about "Routine Separator Venting or Flaring" (Note: If separator emissions are a result of a malfunction, abnormal event, or other activity besides routine venting as a part of normal operation, report these emissions under the "Venting or Blowdowns" section.). With this in mind, are the emissions estimates provided correct for "Routine Separator Venting or Flaring"? Yes. If not, please provide updated information for us to adjust these separator emissions numbers with.

From Production Inventory guidance:

Separators

Emissions from all routine separator venting for separators operating at oil and natural gas operations in the state of Colorado must be reported using the Separators tab. See important note below on reporting.

Separator Types covered in this Spreadsheet Tab:

- 1) High, Low, HLP, Combined, Blooded
- 2) VRT
- 3) Liquid-Liquid (Water-Oil)
- 4) Other (specify)

Disaggregation:

Report emissions on a per-separator-type, per-control (or not-controlled), per-workover basis, per facility. Aggregation may only be done for separators that meet the criteria in Section 3.

IMPORTANT NOTE ON REPORTING SEPARATOR EMISSIONS:

- Report separator emissions based on the cause of the emissions. Report routine separator venting and leaking in this tab. If separator venting or flaring occurred due to other reasons such as abnormal operation or for maintenance/safety, it may be reported separately on the "Venting or Blowdowns" tab.