

- To assess air quality cumulative impacts to any state from offshore OCS activities, including assessing multi-sale 2017-2022 Scenario impacts, using photochemical air quality modeling
- To conduct visibility analysis for the GOMR Class I areas: Breton Wilderness, Saint Marks Wilderness, Chassahowitzka Wilderness, and Bradwell Bay

Methods: Dispersion modeling is needed to determine if the exemption level thresholds used during the post-lease plans review phase (30 CFR 550.302 to 550.304) will need to be revised based on newer and lowered NAAQS. Industry must submit plans to BOEM before conducting exploratory drilling or producing, which include air quality spreadsheets that estimate air emissions as required under 30 CFR 550.218 and 30 CFR 550.249. These plans' estimates of emissions are compared to an exemption level threshold to determine if the plan has impacts to the air quality of any state, and if the plan is therefore approved or denied. In the existing regulations and used by the GOMR, the exemption level is based on distance to shoreline and was calculated using the Offshore Coastal Dispersion (OCD) model and older annual NAAQS standards.

OCD, AERMOD-COARE, and CALPUFF dispersion modeling will assess if the current exemption level thresholds are protective of all NAAQS. If they are not protective, new exemption level thresholds need to be developed for the GOMR using modeling results and statistical analysis. Photochemical modeling developed in this study will be necessary to assess the exemption level thresholds for ozone. All modeling will need to follow 40 CFR Part 51 Appendix W (Guideline on Air Quality Models).

Photochemical modeling using the Community Multi-scale Air Quality model (CMAQ) and/or the Comprehensive Air quality Model with extensions (CAMx) is also needed to estimate potential cumulative impacts of offshore OCS air emissions to the air quality of any state. Past cumulative impacts studies completed in 1995 and 2005 no longer support current NAAQS standards. For photochemical modeling, multi-sale 2017-2022 scenario emissions must be developed, all onshore and offshore emissions must be preprocessed, WRF meteorological datasets should be compiled, and resolution grids over the GOMR with finer, nested grids over non-attainment areas and the Class I areas should be established. The modeling results would assist in defining the cumulative and next multi-sale 2017-2022 scenario impacts, if any, of all oil and gas development sources induced by OCS activity, including the formation of secondary fine particulate matter (PM_{2.5}) and ozone, plus visibility impacts analysis for Class I areas.

Products: Products received from this study will include a final report which will include all the results of the above objectives, input and output dispersion and photochemical modeling files, including a 5 year meteorological WRF dataset for the GOMR, new exemption level thresholds for the GOMR (if necessary), and white papers on any additional inputs/outputs needed for the modeling.

Importance to BOEM: Air quality modeling needs to be conducted for the GOMR to assess the OCS oil and gas development pre and post-lease impacts to the states, if any, as required by the Outer Continental Shelf Lands Act (1334 (a)(8)) (OCSLA). This information will be used by BOEM post-lease in the exemption level threshold analysis and pre-lease in the National

Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) cumulative analysis to support compliance with OCSLA.

Current Status: Work is ongoing for this study. A kickoff meeting was held between the contractor, BOEM, and the members of the Science Review Group (SRG). Under Task 2, ENVIRON submitted the final WRF Memo on Existing Datasets addressing BOEM comments, and the draft WRF Modeling Protocol for BOEM, SRG, and USEPA review. Comments were provided by BOEM, SRG, and USEPA, and will be addressed in the final WRF Modeling Protocol. Pending BOEM's concurrence, 2012 will be selected as the base year due to weather anomalies that occurred in the Southeast U.S. in 2011. The following deliverables will be submitted to BOEM in the near future: Final WRF Modeling Protocol, Draft Exemption Level Modeling Protocol for Dispersion Modeling, and Draft Photochemical Modeling Protocol to Support Impact Analyses.

Final Report Due: August 2017

Publications: None at this time

Affiliated WWW Sites: None at this time

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