

**UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF OCEAN ENERGY MANAGEMENT  
GULF OF MEXICO AND ALASKA REGIONAL OFFICES**

BOEM NTL No. 2020-N02

Effective Date: October 1, 2020

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL, GAS, AND SULPHUR  
LEASES IN THE OUTER CONTINENTAL SHELF

**BOEM’s Approved Air Quality Models**

The Bureau of Ocean Energy Management (BOEM) is issuing this Notice to Lessees and Operators (NTL) in compliance with Executive Order (E.O.) 13891 of October 9, 2019, Promoting the Rule of Law Through Improved Agency Guidance Documents, and the Office of Management and Budget (OMB) Memorandum, M-20-02, implementing the E.O. This NTL supersedes all previous guidance on this subject issued by BOEM or any of its predecessor agencies. It lists the air quality models that are approved by the BOEM Director for operators’ use for air quality assessments in areas of BOEM’s jurisdiction.

**Introduction**

BOEM is issuing this NTL in accordance with 30 CFR 550.218(e) and 550.249(e) to inform lessees and operators of the approved air quality models for air quality assessment in the areas that BOEM regulates on the Outer Continental Shelf (OCS) in the Gulf of Mexico (GOM) west of 87°30’W longitude and offshore of the North Slope Borough of Alaska. Those models are the U.S. Environmental Protection Agency (USEPA) approved versions of American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) and California Puff Model (CALPUFF), along with alternative models on a case-by-case basis (based on the alternative model approach given in Appendix W of 40 CFR part 51).

**Background**

In April 2012, BOEM approved the use of the Offshore and Coastal Dispersion Model (OCD) within 50 kilometers (km) of the shoreline (short-range transport) and CALPUFF for greater than 50 km from the shoreline (long-range transport) for use on the Outer Continental Shelf (OCS) in the Western and Central GOM Planning Areas. The OCD model is out of date and is no longer supported. There are several versions (e.g., versions 5, 6, and 7) of CALPUFF, however, the 2012 approval of CALPUFF was not version-specific. BOEM has not had the option to approve alternative models as they arise.

The regulations at 30 CFR 550.218(e) and 550.249(e) provide that air dispersion modeling of sources under the BOEM jurisdiction must be conducted using a model that is approved by the BOEM Director and follows the guidelines in Appendix W of 40 CFR part 51 (“*Appendix W*”).

*Appendix W* was updated recently (USEPA, 2017<sup>1</sup>), and provides several preferred models in *Appendix A to Appendix W of part 51* that do not require justification before use for recommended applications in areas of USEPA jurisdiction.

At present in *Appendix W*, the OCD is the preferred air dispersion model for short-range transport overwater; and the AERMOD is the preferred air dispersion model for short-range transport overland. However, the last substantial change to the OCD model was in 1997<sup>2</sup> and the graphical user interface that came with the 1997 release of OCD cannot be run on modern computers. The current version of *Appendix W* does not list any preferred air dispersion model for long-range transport overwater. However, the 2005 prior version listed CALPUFF as the preferred model for long-range transport overland. The USEPA's reason for removing its preference for the use of CALPUFF was to provide the modeling community flexibility to use a screening approach and more appropriate modeling techniques, such as photochemical grid models, for long-range transport assessments. BOEM's previous approval of models did not provide a correspondingly flexible approach. *Appendix W* offers a statistical basis for approval of an alternative model under 40 CFR Part 51, App. W, Section 3.2.

BOEM and the USEPA agree that AERMOD is appropriate for modeling OCS sources from offshore oil and gas activities within 50 km of the shoreline using appropriate overwater meteorological data. BOEM and USEPA are participating in the Interagency Working Group on Air Quality Models for Overwater to research and improve overwater modeling. The USEPA suggested for overwater usage that platform downwash and shoreline fumigation algorithms from OCD be incorporated into AERMOD. Consequently, BOEM's Gulf of Mexico Regional Office (GOMR) entered into an agreement with the USEPA to incorporate these algorithms. In addition, BOEM GOMR is planning to further study deep-water platform and drilling rig downwash. BOEM plans to continue to improve AERMOD for use in overwater assessments.

AERMOD was recently approved by USEPA Region 6 for use addressing offshore oil ports being installed off the coast of Texas.<sup>3</sup> The USEPA has also approved AERMOD for use in an Arctic ice-free environment, which includes BOEM's Alaska region.<sup>4</sup> With scientific justification and using overwater meteorological data, the USEPA is allowing AERMOD to be used as an alternative model to OCD for overwater sources. BOEM's *Air Quality Modeling in the GOM Region* Study conducted a model justification, comparing OCD to AERMOD and CALPUFF in the GOM.<sup>5</sup> The model justification concluded that AERMOD performs at least as well as OCD and can be used as an alternative to OCD in the GOM. BOEM's *Arctic Air Quality Impact Assessment Modeling Study: Final Project Report*<sup>6</sup> also conducted a model justification, comparing OCD to AERMOD and CALPUFF in the Arctic environment of the Alaska Region.

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<sup>1</sup> 82 FR 5182 (Jan. 17, 2017). Those changes ultimately became effective on March 21, 2017. 82 FR 14324 (Mar. 20, 2017).

<sup>2</sup> See <https://www3.epa.gov/ttn/scram/mcbs/ocdz2.txt>

<sup>3</sup> See Appendix T at <https://www.regulations.gov/document?D=MARAD-2019-0094-0004>.

<sup>4</sup> See <https://www.epa.gov/scram/air-quality-dispersion-modeling-related-model-support-programs>

<sup>5</sup> See [https://espis.boem.gov/final%20reports/BOEM\\_2019-057.PDF](https://espis.boem.gov/final%20reports/BOEM_2019-057.PDF)

<sup>6</sup> See [https://www.boem.gov/sites/default/files/boem-newsroom/Library/Publications/2018/BOEM-2018-020-Arctic-AQ-Study\\_Final-Project-Report\\_June-2018.pdf](https://www.boem.gov/sites/default/files/boem-newsroom/Library/Publications/2018/BOEM-2018-020-Arctic-AQ-Study_Final-Project-Report_June-2018.pdf)

The results presented in these studies suggest AERMOD is comparable to, if not producing more accurate results than, the OCD model in the Alaska Region.

Because of deep-water activities on the OCS where BOEM has air jurisdiction, BOEM gives priority to approval of an overwater, long-range transport model. CALPUFF continues to be appropriate for this purpose, and the USEPA's decision to remove it from *Appendix W* did not reflect any substantive determination by USEPA about CALPUFF's performance. BOEM expert staff believe that CALPUFF should continue as its approved model for distances greater than 50 km from the shoreline.

BOEM can follow the Alternative Model Approach given in *Appendix W* (Section 3.2 "Use of Alternative Models") for consideration of future model approvals. This approach provides a specific evaluation protocol with a statistical technique for evaluating model performance for predicting peak concentration values, as might be observed at individual monitoring locations. This protocol is available to assist in developing a consistent approach when justifying the use of other models not currently approved by the BOEM Director. The procedures in this protocol provide a general framework for objective decision-making on the acceptability of an alternative model for a given regulatory application.

### **Models Approved by the BOEM Director**

For the reasons above, the BOEM Director has approved the use of USEPA's approved versions of the AERMOD and CALPUFF models and authorized the Regional Directors to approve alternative models on a case-by-case basis, based on the alternative model approach given in *Appendix W* of 40 CFR part 51. Subsequent versions of AERMOD or CALPUFF and the use of alternative models may be approved by BOEM's Chief Environmental Officer (CEO).

1. AERMOD v.19191 should be used for air quality assessments within 50 km of the shoreline in areas of BOEM's jurisdiction.
2. CALPUFF v.5.8.5 should be used for air quality assessments for sources greater than 50 km of the shoreline in areas of BOEM's jurisdiction.
3. Alternative models may be approved on a case-by-case basis in accordance with the alternative model approach given in *Appendix W* of 40 CFR part 51.

### **Guidance Document Statement**

BOEM issues NTLs as guidance documents in accordance with 30 CFR 550.103 to clarify and provide more detail about certain BOEM regulatory requirements and to outline the information to be provided in various submittals. Under that authority, this NTL provides notice of BOEM's decision under certain regulatory provisions that require the BOEM Director's approval of air quality models.

If you wish to use an alternate method for compliance, you are encouraged to get feedback from BOEM staff on the adequacy of your proposal to comply with the regulation.

Except to the extent that provisions of this NTL derive from requirements established by statute, regulation or by a provision in the lease, they do not have the force and effect of law and are not meant to bind the public in any way. This NTL is intended only to provide clarity to the public regarding existing requirements under the law.

While the provisions of this NTL are non-binding recommendations and guidance, the provisions may be made mandatory in whole or part through stipulations or conditions of approval from BOEM or BSEE in leases, plan stipulations, permits, or other authorizations. In that case, you must comply with those provisions.

### **Paperwork Reduction Act of 1995 Statement**

This NTL provides clarification, description, and interpretation of the requirements contained in 30 CFR Part 550, Subpart B, and C. An agency may not conduct or sponsor a collection of information unless it displays a currently valid OMB Control Number. OMB has approved the information collection requirement in these regulations under OMB control numbers 1010-0057 and 1010-0151. This NTL does not impose additional information collection requirements subject to the Paperwork Reduction Act of 1995.

### **Contact**

If you have any questions concerning this Notice, please contact Ms. Holli (Ensz) Wecht of BOEM's Office of Environmental Programs by telephone at (703) 787-1629, or by email at [holli.ensz@boem.gov](mailto:holli.ensz@boem.gov).

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