

**IOWA DEPARTMENT OF NATURAL RESOURCES**  
**ADMINISTRATIVE CONSENT ORDER**

<p>IN THE MATTER OF:</p> <p>ARCHER-DANIELS-MIDLAND COMPANY</p>	<p>ADMINISTRATIVE CONSENT ORDER</p> <p>NO. 2023-AQ- 15</p>
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To: Archer-Daniels-Midland Company  
Des Moines Soybean Plant  
Mike Kuntz, Plant Manager  
1935 East Euclid Avenue  
Des Moines, Iowa 50313

**I. SUMMARY**

This administrative consent order is entered into between the Iowa Department of Natural Resources (DNR) and Archer-Daniels-Midland Company (ADM) for the purpose of resolving air quality violations. In the interest of avoiding litigation, the parties have agreed to enter into this administrative consent order as further described in the provisions below. ADM does not admit or deny the statement of facts and conclusions of law stated herein.

Any questions regarding this administrative consent order should be directed to:

**Relating to technical requirements:**

Brian Hutchins  
Iowa Department of Natural Resources  
Wallace State Office Building  
502 East Ninth Street  
Des Moines, Iowa 50319-0034  
Phone: 515-725-9526

**Relating to legal requirements:**

Anne Preziosi, Attorney for the DNR  
Iowa Department of Natural Resources  
Wallace State Office Building  
502 East Ninth Street  
Des Moines, Iowa 50319-0034  
Phone: 515-725-9551

**Payment of penalty to:**

Director of the Iowa DNR  
Wallace State Office Building  
502 East Ninth Street  
Des Moines, Iowa 50319-0034

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**II. JURISDICTION**

This administrative consent order is issued pursuant to the provisions of Iowa Code sections 455B.134(9) and 455B.138(1), which authorize the director to issue any order necessary to secure compliance with or prevent a violation of Iowa Code chapter 455B, Division II (air quality), and the rules promulgated or permits issued pursuant to that part; and Iowa Code section 455B.109 and 567 Iowa Administrative Code (IAC) chapter 10, which authorize the director to assess administrative penalties.

**III. STATEMENT OF FACTS**

1. ADM owns and operates an oilseed processing plant in Des Moines known as the ADM Des Moines, Iowa, Soybean Plant. It is located at 1935 East Euclid Avenue. This facility processes soybeans to produce soybean meal and refined vegetable oil as its primary products. The facility also maintains a coal-fired cogeneration facility for the production of process steam and electricity. As part of the process, the facility emits Particulate Matter (PM, PM10, and PM2.5).

2. Soybeans are received at the Des Moines facility by either truck or railcar. The beans are then cleaned and conveyed to storage. When the beans have high moisture content, such as during harvest time, they may be dried in a soybean heater located onsite. Processing of the soybeans includes drying, cracking, de-hulling and flaking prior to vegetable oil extraction. Hulls removed from the bean are ground and possibly pelletized to aid in hull transfer and load-out. The defatted flakes from the extraction process are sent through a series of processes that de-solventize, dry and grind the resulting meal. The meal and hulls/pellets are transferred to storage until loaded out either by rail or truck.

3. The vegetable oil extracted from the soybeans is separated from the solvent (Hexane) used in the extraction process and then sent to the onsite vegetable oil refinery for further processing. The refining process removes impurities and residual solvent in the oil.

4. ADM has failed to comply with air quality permits issued by the Polk County Air Quality Division (PCAQD) and its Title V operating permit issued by DNR.

5. In February 2015, ADM submitted air quality permit applications to PCAQD requesting authorization to modify the Des Moines facility to allow for increased production. In order to address the applicability of the Prevention of Significant Deterioration of Air Quality (PSD) permitting requirements, a demonstration was included in the application showing project emissions increases (PEI) in PM, PM-10, and PM2.5 were below their respective PSD

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significant emission rates of 25, 15, and 10 tons per year. In September 2015, PSD Synthetic Minor Construction Permits were issued by PCAQD based on the February 2015 permit applications requesting to increase production. The issued permits included Construction Permit 1626 Modified #4, issued September 15, 2015, with a permitted PM, PM10, and PM2.5 emission limit of 0.31 lb/hr and 1.41 ton/yr. The lb/hr PM10 limit was used in the project dispersion modeling analysis and was set in the permit to be protective of the 24-hour PM10 NAAQS. The permit required initial compliance stack testing for PM, PM10, and PM2.5.

6. On September 18 and 19, 2018, ADM completed required initial EPA Methods 5 and 202 stack testing for PM, PM10, and PM2.5 on the Meal Dryer/Cooler (DTDC, EP MP01) permitted by Construction Permit 1626 Modified #4. As required by Construction Permit 1626 Modified #4, PM results from stack testing conducted via EPA Method 5 and Method 202 shall be assumed equal to PM10 and PM2.5. The stack test resulted in a 3.18 lb/hr PM, PM10, and PM2.5 emission rate, exceeding the 0.31 lb/hr limit.

7. On November 12, 2018, ADM submitted an excess emissions report to PCAQD for the September 2018 stack test event. On December 27, 2018, PCAQD issued a Notice of Violation letter (NOV) for alleged violation of the PM, PM10, and PM2.5 permitted emission limits as a result of the September 18 and 19, 2018, stack test event.

8. On February 20 through 22, 2019, ADM retested DTDC EP MP01 resulting in a 1.77 lb/hr PM, PM10, and PM2.5 emission rate, exceeding the 0.31 lb/hr limits.

9. On April 18, 2019, ADM submitted a Compliance Plan stating a permit modification application would be submitted in July 2019 to address the PM, PM10, and PM2.5 exceedances.

10. On September 30, 2019, ADM submitted a letter to PCAQD identifying issues with PM2.5 that would need to be addressed prior to submitting a permit application for EP MP01. ADM proposed alternative methods of calculating baseline PM2.5 emissions for the 2015 production expansion project. PCAQD provided an October 31, 2019, response to the September 30, 2019, ADM letter. After consulting with DNR and EPA Region VII, PCAQD denied ADM's request to use alternative PM2.5 baseline calculation methods.

11. On November 27, 2019, ADM appealed the determination made by PCAQD in its October 31, 2019, letter to ADM. On February 12, 2020, PCAQD retracted its October 31, 2019, letter to ADM, and referred the issue to DNR.

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12. On February 24, 2020, DNR provided a response to the arguments raised in ADM's November 27, 2019, letter regarding the emissions calculations employed.

13. DNR and ADM held a conference call on March 11, 2020, to discuss the issues. At that time, ADM questioned the validity of some of the stack test results, specifically Run #2 of the September 18, 2018, testing. During the March 11, 2020 conference call ADM presented an emissions data table to DNR depicting an exceedance of the 1.41 ton/yr PM, PM10, and PM2.5 emission limit.

14. On April 1, 2020, ADM submitted to DNR a request to discard Run #2 of the September 18, 2018, testing. In support of its position to discard Run #2, ADM provided information that there was a leak in the impinger train during the September 18, 2018, testing.

15. On April 30, 2020, DNR responded to the April 1, 2020, request from ADM. DNR denied the request to discard Run #2 of the September 18, 2018, testing because the reported sample train leakage rate of 0.003 cfm for Run #2 was below the EPA Method 5 requirement, which allows up to 4 percent of the average sampling rate or 0.00057 m<sup>3</sup>/min (0.020 cfm). In addition, DNR requested additional information from ADM.

16. On June 23, 2020, DNR and ADM held a conference call to discuss additional data requests from DNR to ADM, and ADM's request to discard Run #2 of the September 18, 2018, testing.

17. On June 30, 2020 and July 31, 2020, ADM responded to DNR's April 30, 2020 information request. On February 17, 2021, DNR sent an additional information request to ADM based on the June 30, 2020 and July 31, 2020 ADM responses.

18. On June 4, 2021, ADM submitted a compliance plan informing DNR that ADM would submit a new construction permit application to replace the Desolventizer Toaster (DT) and modify the Dryer Cooler (DC) section of the existing DTDC. According to ADM, this project will improve the recovery of hexane from soybean meal, which is attributed to 85% of the plant's overall hexane losses. ADM termed these proposed changes the DTDC Replacement and Upgrade Project (DRUP).

19. On November 4, 2021, ADM and DNR held a conference call to discuss DNR's February 24, 2020 letter. On December 1, 2021, DNR requested revised calculations in response to the November 4, 2021 discussion. ADM submitted the revised calculations by the deadline of December 17, 2021.

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20. On February 7, 2022, DNR sent an email to ADM stating it appeared PM2.5 emissions did not exceed the Prevention of Significant Deterioration (PSD) net significant increase threshold, but DNR could not make a final determination until ADM addressed calculation discrepancies. ADM addressed the calculation discrepancies in a February 22, 2022 letter.

21. ADM's failure to comply with the provisions of PCAQD Construction Permit 1626 Modified #4 are a failure to comply with the provisions of DNR Title V Operating Permit 04-TV-020-R1, which was issued by DNR to ADM on April 23, 2014. PCAQD issued Construction Permit 1626 Modified #4 to ADM on September 15, 2015. The Title V permit requires ADM to meet requirements that become effective during the permit term. DNR Title V Operating Permit 04-TV-020-R1, General Condition G1.6, states that the permittee shall meet, on a timely basis, applicable requirements that become effective during the Title V permit term.

22. Polk County issued a Demand for Payment (\$7,500.00) on November 22, 2016, for alleged failure to perform weekly VE checks from March 11, 2016, to May 13, 2016. ADM paid this penalty. Also, on June 8, 2015, Polk County issued a Demand for Payment (\$6,500.00) for allegedly failing to perform semi-annual Beryllium analysis for 1<sup>st</sup> half of 2014; failing to perform VE checks on EP GP06A from April 23, 2014, to October 24, 2014; and failing to record pressure drops on EP U03 from April 23, 2014, to October 24, 2014. ADM paid this penalty.

#### **IV. CONCLUSIONS OF LAW**

1. Iowa Code section 455B.133 provides that the Environmental Protection Commission (Commission) shall establish rules governing the quality of air and emission standards. The Commission has adopted 567 IAC chapters 20-35 relating to air quality.

2. According to the requirements of 567 Iowa Administrative Code section 22.104:

“[n]o source may operate after the time that it is required to submit a timely and complete [Title V] application, except in compliance with a properly issued Title V operating permit.”

ADM's Title V permit requires ADM to meet requirements that become effective during the permit term. ADM has failed to comply with Title V Operating Permit 04-TV-020-R1, issued to ADM by DNR on April 23, 2014. DNR Title V Operating Permit 04-TV-020-R1, General Condition G1.6, states that the permittee shall meet, on a timely basis, applicable requirements that become effective during the Title V permit term. PCAQD issued Construction Permit 1626 Modified #4 to ADM on September 15, 2015. As stated above, ADM has failed to comply with the

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provisions of PCAQD Construction Permit 1626 Modified #4. Additionally, ADM has failed to timely submit the required application to modify its Title V permit, as required by 567 IAC 22.113.

3. According to the provisions of Iowa Code section 455B.145, the acceptance by DNR of a local program, such as the PCAQD, shall not be construed to limit the power of the director to issue state permits and to take other actions consistent with Iowa Code chapter 455B or the rules established thereunder that the director deems necessary for the continued proper administration of the air pollution programs within the jurisdiction of the local air pollution program.

**V. ORDER**

THEREFORE, DNR orders and ADM agrees to the following:

1. To resolve the violations referenced in Sections III and IV, upon issuance of this order, ADM shall initiate construction and comply with the compliance schedule as outlined in Appendix A of this order; and

2. ADM shall conduct two stack tests on Emission Point MP01 for PM, PM10, and PM2.5 to demonstrate current emission levels of the emission point. The first test shall be conducted between the dates of July 15, 2023 and August 15, 2023, and the second test shall be conducted between the dates of October 1, 2023 and December 31, 2023; and

3. With respect to the NAAQS assessment, ADM shall comply with DNR approved modeling submitted February 22, 2023, and approved by the DNR on February 24, 2023 or a later modified NAAQS assessment submitted by ADM and approved by DNR in accordance with Paragraph 9 below; and

4. ADM shall comply with all construction permits required by Appendix A once issued, including completion of any changes required to conform with issued construction permits and achieve compliance; and shall comply with all applicable state and federal air quality requirements related to equipment addressed in Appendix A; and

5. ADM shall submit to DNR written quarterly progress reports regarding its efforts to comply with the requirements of this Order and any NAAQS analysis updates, with the first quarterly report due by June 30, 2023, until completion of Appendix A Compliance Plan and Schedule; and

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6. Within 90 days of the date this order is signed by the director, ADM shall submit amended Emission Inventories for the years of 2017-2022 to correct for emissions calculation errors. The facility shall submit fees for any unreported emissions; and

7. Within 60 days of construction permit issuance for all items included in Appendix A, ADM shall submit a supplemental Title V permit application to account for all changes at the facility; and

8. ADM shall request a withdrawal of Project Number 19-343 within 30 days of the director signing this order. In addition, within 30 days of the director signing this order, ADM shall provide permit applications and related information to the Air Quality Division of the Polk County Public Works and simultaneously shall supply the permit applications and related information to DNR; and

9. The parties agree that an amended compliance schedule may be submitted for DNR approval prior to the compliance plan deadlines passing. With any proposal for an amended compliance plan schedule, ADM shall provide evidence (e.g., building permit delay or supply chain issues) that can be demonstrated by purchase orders, proposals, email exchanges, or other information requested by DNR; and

10. Within 30 days of the date this order is signed by the director, ADM shall pay a penalty of \$10,000.00.

## **VI. PENALTY**

Pursuant to the provisions of Iowa Code section 455B.109 and 567 IAC chapter 10, which authorize the director to assess administrative penalties, a penalty of \$10,000.00 is assessed by this administrative consent order. The penalty must be paid within 30 days of the date this order is signed by the director. The administrative penalty is determined as follows:

Iowa Code section 455B.146 authorizes the assessment of civil penalties of up to 10,000.00 per day of violation for the air quality violations involved in this matter. More serious criminal sanctions are also available pursuant to Iowa Code section 455B.146A.

Iowa Code section 455B.109 authorizes the Commission to establish by rule a schedule of civil penalties up to \$10,000.00 that may be assessed administratively. The Commission has adopted this schedule with procedures and criteria for assessment of penalties through 567 IAC chapter 10. Pursuant to this

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rule, DNR has determined that the most effective and efficient means of addressing the above-cited violations is the issuance of an administrative consent order with a penalty. The administrative penalty assessed by this order is determined as follows:

Economic Benefit – 567 IAC chapter 10 requires that DNR consider the costs saved or likely to be saved by noncompliance. 567 IAC 10.2(1) states that “where the violator received an economic benefit through the violation or by not taking timely compliance or corrective measures, DNR shall take enforcement action which includes penalties which at least offset the economic benefit.” 567 IAC 10.2(1) further states, “reasonable estimates of economic benefit should be made where clear data are not available.”

ADM has gained an economic benefit by operating in excess of the permitted emission limits since September 2018. ADM has not implemented all necessary measures to mitigate the excess emissions and has avoided related expenses to achieve compliance.

For these reasons, \$4,000.00 is assessed for economic benefit.

Gravity of the Violation – One of the factors to be considered in determining the gravity of a violation is the amount of penalty authorized by the Iowa Code for that type of violation. As indicated above, substantial civil penalties are authorized by statute. Despite the high penalties authorized, DNR has decided to handle the violations administratively at this time, as the most equitable and efficient means of resolving the matter.

By failing to comply with the permitted PM, PM<sub>10</sub>, and PM<sub>2.5</sub> limits, ADM is causing excess emissions. The PM<sub>10</sub> limit was used in the project dispersion modeling analysis and was set in the permit to be protective of the 24-hour PM<sub>10</sub> NAAQS.

Additionally, in order to address the applicability of the Prevention of Significant Deterioration of Air Quality (PSD) permitting requirements, a demonstration was included in the application showing project emissions increases (PEI) in PM, PM<sub>10</sub>, and PM<sub>2.5</sub> were below their respective PSD significant emission rates of 25, 15, and 10 tons per year. In September 2015, PSD Synthetic Minor Construction Permits, including Construction Permit 1626 Modified #4, were issued by PCAQD based on the February 2015 permit applications requesting to increase production. However, ADM has failed to comply with these permit requirements.

In addition, ADM's failure to comply in a timely manner has forced both DNR and PCAQD to spend additional time and resources in an effort to assist the facility in



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attempting to comply. Thus, this violation threatens the integrity of DNR's air program.

For these reasons \$3,000.00 should be assessed for this factor.

Culpability – ADM has known about the excess emissions since September 2018 but has failed to resolve the PM, PM10, and PM2.5 violations.

For these reasons, \$3,000.00 is assessed for culpability.

**VII. WAIVER OF APPEAL RIGHTS**

This administrative consent order is entered into knowingly and with the consent of ADM. For that reason, ADM waives its right to appeal this order or any part thereof.

**VIII. NONCOMPLIANCE**

Failure to comply with this administrative consent order, including failure to timely pay any penalty, may result in the imposition of further administrative penalties or referral to the attorney general to obtain injunctive relief and civil penalties pursuant to Iowa Code section 455B.146. Compliance with Section "V. Order" of this administrative consent order constitutes full satisfaction of all requirements pertaining to the specific violations described in Section "IV. Conclusions of Law" of this administrative consent order.

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Kayla Lyon, Director  
Iowa Department of Natural Resources

  
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Archer-Daniels-Midland Company

Dated this 24<sup>th</sup> day of  
May, 2023.

DNR Field Office 5; Anne Preziosi

Appendix A: ADM Des Moines – Compliance Plan and Schedule

Equipment Changes*	Emission Unit	Current Status	Required Changes	Completion Date
Coal boiler and material handling permanent shutdown	C01-C05	Coal boiler & material handling equipment	Cease Operation	6/30/2023 contingent on gas boiler start of construction.
Haul Roads Silt Level Limit Reduction	U08	10.0 g/m2	Request revised limit of 1.0 g/m2	Revised limit request included in DTDC application submitted on 11/23/2022. Limit already met in practice.
Extraction Cooling Tower	GP019_1-4	3,000 ppmw TDS	Request revised limit of 1,500 ppmw TDS & replace drift eliminators for four cells	Revised TDS limit request and new drift eliminator modification included in DTDC application submitted on 11/23/2022. TDS limit already met in practice.  Total of four individual cells require replacement with new drift eliminators. 1-cell will be replaced by 12/31/2023 and 3 -cells by 12/31/2024.
Flakers	GP06A	Cyclone	Baghouse	New baghouse and request for stack modifications included in DTDC application submitted on 11/23/2022. Installation will be completed 06/30/2024. Baghouse lead time is 10 months. Baghouse was ordered on 04/06/2023.
DTDC Project	MP01	4 Cyclones	6 cyclones	This project requires building permits. Based on current estimates the installation will be completed by 10/31/2024.
Conveying to Process	GP04A	22'	80'	These stacks will all require building permits and additional structure to extend the height. Based on current estimates the installation will be completed by 10/31/2024.
Secondary Aspiration	HR01A	85'	110'	
Pellet Cooler	HR03	70'	120'	
DTDC	MP01	75'	120' & relocate	
Meal Grinding	MP02A	60'	120'	

<b>Equipment Changes*</b>	<b>Emission Unit</b>	<b>Current Status</b>	<b>Required Changes</b>	<b>Completion Date</b>
<b>Meal Rail Loadout</b>	MP07A	40'	90'	
<b>Conveyor to Extractor</b>	GP07	65.5'	95'	10/31/2023 – requires plant shutdown.
<b>Emergency Fire Pump</b>	GP018	8'	20' - Vertical	10/31/2023
<b>Emergency Fire Pump</b>	R08	8'	20' - Vertical	
<b>Standby Boiler (Murray)</b>	C09	Fuel Oil backup	Remove fuel oil supply train	12/1/2023 – Decommission fuel oil system. 6/1/2023 – Submit Construction Permit applications to IDNR for the two emission points.

\*The Construction Permit for Emergency Generator C012 is required to be modified to correctly represent the current operating status of the stack as unobstructed.

## **ATTACHMENT B: Emissions Minimization Plan**

- (1) Until such time that the DTDC Project is fully operational, ADM shall do the following to minimize VOC emissions from the Oilseed Extraction Process:
  - a. Complete monthly sampling and testing of hexane content in representative samples of the meal, oil and wastewater. Results shall be compared to the prior 12-month average. For samples that vary by more than two standard deviations, ADM shall conduct a review as to the cause of variation and take actions as appropriate. These actions shall include, but are not limited to:
    - i. If excess hexane is found in the meal, as appropriate, ADM should adjust the sparge steam, check the deck levels to verify the proper level, and potentially adjust production levels.
    - ii. If excess hexane is found in the oil, as appropriate, ADM should check the temperature, pressure and vacuums of the distillation system, adjust the sparge steam, and check heat exchangers for leaks.
    - iii. If excess hexane is found in the wastewater, as appropriate, ADM should adjust the temperature on the separation tank and the wastewater evaporator, and check the heat exchanger for any leaks.
  - b. For the mineral oil heat exchanger system:
    - i. Continuously monitor temperature on the cold mineral oil, except during periods of monitor malfunctions.
    - ii. If the temperature exceeds 100° F for more than 24 consecutive hours, the heat exchanger(s) shall be scheduled for cleaning during the next planned, short shutdown (1/2 – 1 day).
  - c. Maintain one of three weirs closed to improve hexane drainage from the extractor to the DT. The increase in drainage from the extractor helps reduce the amount of hexane entering the DT, meaning that there is less to remove through desolventizing the meal. The closed weir shall remain locked and verified monthly that it remains closed. Records of the monthly verification shall be maintained.
  - d. Operate with a level setpoint of at least 50% of the #1 (the top) Hollow Staybolt Deck of the DT to maximize residence time during normal operations. The process controls system shall be modified to automatically reset the level setpoint to at least 50% if level changes are detected.

- e. For any individual month when solvent loss exceeds 22,995 gallons of hexane, ADM shall:
  - i. Conduct leak detection monitoring of the extraction process area through use of a FLIR camera within 45-days from the end of that month. Camera indicated leaks (e.g., visible FLIR plume) shall have first attempt at repair within 15 days. A reading of <10,000 ppm measured by a Flame Ionization Detector (FID) or no visible FLIR Plume indicates that a leak is repaired. Leaks that cannot be repaired within 15 days shall be reported to IDNR along with a plan to address the leak.
  - ii. Sample and test hexane content in representative samples of the meal, oil and wastewater. Such testing is in addition to the sampling described in Item 5.a. above. Results of the sampling shall be reviewed as to the cause of any variation. Appropriate actions shall be taken to minimize hexane loss.