

On December 9, 2014, the North Dakota Industrial Commission (NDIC) unanimously approved an order that required all oil producers in North Dakota install and utilize oil-conditioning equipment to significantly reduce the vapor pressure of all Bakken crude oil beginning April 1, 2015. On January 1, 2019, the North Dakota Industrial Commission signed Order No. 29398 which amended the previously approved oil conditioning Order No. 25417. Industrial Commission Order No. 29398 allows the Commission to establish oil conditioning requirements and test frequency through a policy/guidance document. This document can be found on the Oil and Gas Division's website at [www.dmr.nd.gov/oilgas](http://www.dmr.nd.gov/oilgas) under Policies & Guidance.

Oil Conditioning has been a highly debated topic in the news. Often technical terms or other information can be easily misunderstood or not entirely explained. The following questions and answers take some of the more commonly asked questions and breaks them down in the simplest form.

**Q: What is Oil Conditioning?**

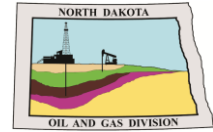
A: Oil Conditioning is a process that is performed at the well site. It uses Commission prescribed temperatures and pressures to produce a consistent product prior to shipment. It can be done with no additional footprint to the surface, and the excess gas that is conditioned off the oil can be transported in existing or planned pipelines to existing or planned processing facilities.

**Q: Why did the Commission act on this topic?**

A: The Oil Conditioning order was written to better regulate how Bakken oil is produced and processed at the well site. The Commission initially received 1,114 pages of testimony from 33 groups or individuals, all providing input on how Bakken crude oil is produced and how to make it as safe as possible to transport. After the November 13, 2014 Industrial Commission meeting the record was re-opened and an additional 141 pages of testimony from 25 groups or individuals were provided on the working draft order. On or around September 18, 2018, the

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Commission published notice to amend the order. The Commission received 49 pages of testimony from 13 groups or individuals on the Commission's proposed amendments. Several requests to hold a hearing on the matter were received and the Commission voted unanimously to docket the proposed amendments for hearing on October 25, 2018 where the Commission received an additional 29 pages of testimony from 5 groups or individuals.

**Q: What is the goal of Oil Conditioning?**

A: The goal, based on scientific research, is to produce crude oil that does not exceed a Vapor Pressure of 14.7 pounds per square inch (psi). National standards recognize oil with a Vapor Pressure of 14.7 psi or less to be stable.

**Q: What is Vapor Pressure?**

A: The pressure exerted by a vapor escaping from a liquid. It quantifies the tendency of molecules to enter the gaseous phase.<sup>1</sup> In North Dakota, Bakken oil and gas are produced together. It is not possible to produce one without the other. For the purposes of this order, vapor pressure is measured at the point when the gas has been stripped or "conditioned" out of the oil.

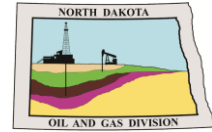
**Q: What is the difference between Vapor Pressure of Crude (VPCR) and Reid Vapor Pressure (RVP)?**

A: VPCR is the standard of measurement used for crude oil. RVP is the standard of measurement used for gasoline. They are different standards of measurement and do not represent an apples to apples comparison.

**Q: Why did the Commission choose VPCR-4 as the standard of measurement?**

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A: The answer is simple, there is only one definition of stable crude oil, and that is 14.7 psi. All other ratios, test methods, values and readings are unstable and unrepeatable techniques that don't include a standard for stable crude oil.

**Q: I've heard about Stabilization. What is that?**

A: Stabilization is a process developed for condensate that is produced along with natural gas from gas wells.

**Q: Does Texas require stabilization?**

A: Texas does not require stabilization. However, some parts of the Eagle Ford where condensate is produced utilize this method. This part of Texas is near large industrial facilities. They already have pipelines needed to get removed gases to market. The market, pipelines and stabilization facilities currently do not exist in North Dakota and would take significant time to implement.

**Q: If Texas doesn't require stabilization, what are they doing?**

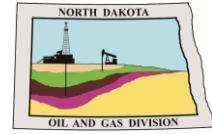
A: The same thing as North Dakota. The oil producing parts of Texas are using temperatures and pressures at well sites to separate natural gas from oil.

<sup>1</sup> Schlumberger Oilfield Glossary;

[http://www.glossary.oilfield.slb.com/en/Terms/v/vapor\\_pressure.aspx](http://www.glossary.oilfield.slb.com/en/Terms/v/vapor_pressure.aspx)

**Q: The crude oil after the accident in Quebec had a vapor pressure of 9.3 psi. Why doesn't the Commission require a vapor pressure of 9 or less?**

A: Evidence in the record shows that the Transportation Safety Board of Canada questions the validity of the sample taken from the tank cars. The Transportation Safety Board of Canada has stated that any product samples from the derailed tank cars would not be representative of the cargo prior to shipment<sup>2</sup>. In addition, the



timing, source, sampling, and analysis of the samples used have raised numerous questions about the results. No evidence supporting a lesser standard was presented in Industrial Commission hearings on the subject.

**Q: Is there a cost to oil conditioning?**

A: All regulations have a cost, so the answer is yes. Our estimate is about ten cents per barrel. When asked the day the order was signed what the costs would be, it took additional research from the department to be able to produce an answer.

**Q: How will conditioning be enforced?**

A: Utilizing the best inspector to well ratio in the country, North Dakota inspectors will spot check pressure and temperature at producing well sites. If an operator chooses to utilize a pressure and temperature different than described in the Commission order they must demonstrate through field testing that the vapor pressure of the produced oil does not exceed 14.7 psi, or receive NDIC approval that oil is being delivered to a pipeline with tariff specifications at least as strict as NDIC standards. Failure to comply with the Commission order could result in a fine of up to \$12,500 a day.

**Q: Why did the Commission amend the original order?**

A: Amendments to the order created a policy/guidance document that provides for sampling and testing to be done based on the most current standards. This sample and testing will be done during time periods each year when oil conditioning is necessary to maintain vapor pressure within North Dakota requirements.