North Dakota Shale Oil
Extraction and Transportation Safety

- Resource Play
- Development
- Bakken Results
- Oil Conditioning

Bruce E. Hicks
Assistant Director
NDIC-DMR-OGD
Bismarck, ND
Welcome to the North Dakota Industrial Commission, Department of Minerals and the Oil and Gas Division, home of Oil and Gas Division.

Please check out the new Information Center and Policy Center.

**Proposed Rule Changes and Adoption of New Rules**

[Rule Changes Full Notice](#)

**General Guidelines for Temporary Abandonment of Wells**

[Bakken and Three Forks Information](#)

Available on the ND Petroleum Council website are the Surface Owner Information Center, the Royalty Owners Information Center, and the Production Information Center.

The Oil and Gas Division regulates the drilling and production of oil and gas in North Dakota. Our mission is to encourage and promote the development, production, and utilization of oil and gas in the state in such a manner as will prevent waste, maximize economic recovery, and fully protect the correlative rights of all owners to the end that the landowners, the royalty owners, the producers, and the general public realize the greatest possible good from these vital natural resources.
Information Center

The Director's Cut is an update on current activity in the North Dakota oil patch from the Director of the Department of Mineral Resources.

**Tentative Director's Cut Dates**

- Director's Cut - 02/17/2016
- Director's Cut Archive
- Director's Cut Webinars

**Recent Presentations**

View press releases from the Oil and Gas Division

**Oil and Gas Division Program Descriptions:**

This section of the Information Center is dedicated to program descriptions within the Oil and Gas Division. We will be adding descriptions as they become available, so check back for further information.

**Underground Injection Control Program**

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North Dakota Development

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Current drilling activity is focused in Mountrail, Dunn, McKenzie, and Williams Counties.
First 60 Day Average Bakken Horizontal Production by Well

July 2015

EXPLANATION
- > 1000 barrels per day
- 500 - 1000 barrels per day
- 250 - 500 barrels per day
- 125 - 250 barrels per day
- 50 - 125 barrels per day
- < 50 barrels per day

Oil Production Averaged Over the First 60 Days of Production
Current drilling activity is focused in Mountrail, Dunn, McKenzie, and Williams Counties.
Well density is the big question.

Source: Continental Resources

Bakken Fm

Three Forks Fm

1,320’ & 660’ Pilot Density Projects: 2013-14

Hawkinson, Tangsrud, and Rollefstad

1,320’ Pilot

Wahpeton, Lawrence, Mack, and Hartman

660’ Pilot

- 3 project areas
- 1,320 ft. same-zone spacing
- 34 new wells (gross)

- 4 project areas
- 660 ft. same-zone spacing
- 31 new wells (gross)

1 MILE

2 MILES

BAKKEN

TF1

TF2

TF3

TF4

Bakken Fm

Three Forks Fm
North Dakota Development

• Resource Play

• Development
  – Uniform Spacing—orderly development
  – Multi-well locations—small footprint
  – Energy Corridors—industry & residents

• Bakken Results

• Oil Conditioning
Five Spacing Patterns
ICO 14497—signed 4-22-2010
3000 sq miles
Uniform standup 1280-acre units
North Dakota Development

• Resource Play

• Development
  – Uniform Spacing—orderly development
  – Multi-well locations—small footprint
  – Energy Corridors—industry & residents

• Bakken Results

• Economic & Fiscal Impact
North Dakota Development

- Resource Play
- Development
  - Uniform Spacing—orderly development
  - Multi-well locations—small footprint
  - Energy Corridors—industry & residents

- Bakken Results
- Oil Conditioning
Energy Corridor
• uniform development
• pipelines, electrical, traffic
• less impact on adjacent roads

Vern Whitten Photography
North Dakota Development

- Resource Play
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WELLS

• 13,119 wells currently producing
  • 10,756 Bakken
• 40,000 additional development wells
  • 100 rigs – another 20 years
• Bakken Pool: 4 targets = more wells
Dec Production 1,152,280 bopd (appr 1,096,044 Bakken—95%)
North Dakota Oil Production

Barrels per Day

Reclalm

EOR? +++

Legend:
- History
- Peak Production Estimate
- Current ND Revenue Estimate
- Current Production Limited-No Drilling
Estimated Williston Basin Oil Transportation

- Pipeline Export: 45%
- Refined: 7%
- Truck to Canadian Pipelines: 47%
- Estimated Rail: 1%

October 2015
North Dakota Development

• Resource Play
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• Bakken Results
• Oil Conditioning
OIL CONDITIONING RULES

• Case 23084
  – Heard 9-23-2014
  – Called on IC motion
  – Bakken Petroleum System crude oil
  – Conditioning Standards
    • Improve Transportation Safety
    • Improve Marketability of oil
  – Noticed in all Counties w/BPS crude
OIL CONDITIONING RULES

• Case 23084
  – Hearing 9-23-2014
    • Written comments from 8 organizations/companies
    • Written comments from 6 concerned citizens
    • Oral comments from 16 organizations/companies
    • 4.5 hrs of testimony
  – Working draft order posted 11-13-2014
    • IC allowed comments thru 11-19-2014
    • Written comments from 19 organizations/companies
    • Written comments from 5 concerned citizens
OIL CONDITIONING RULES

• ICO 25417—effective 4-1-2015
  – Utilize separator and/or heater treater
    • ≤ 50 psi + ≥ 110°F
    • > 50 psi + ≥ 110°F → vapor recovery system
      – VRS must remove tank vapors + positive tank press
    • Other psi / temp → quarterly VPCR₄ ≤ 13.7 psi
  – No separator / heater treater
    • IC hearing
      – Deliver oil with VPCR₄ ≤ 13.7 psi @ custody transfer (or)
      – Safe transport to oil conditioning or stabilization plant
  – Prohibit blending w/liquids prior to CT
  – Rail facility notify IC of fed oil safety violations
OIL CONDITIONING RULES

• VPCR\textsubscript{4} Testing
  – Oil samples per ASTM D3700 or ASTM D5842
  – Testing per ASTM D6377
  – Quarterly
  – Sundry Notice followup
    • Due 15 days after test
    • Screen shot or printout of VPCR\textsubscript{4} test
    • Operating capacities, press, and temp of equip
OIL CONDITIONING RULES

• VPCR₄ Testing
  – Rec’d 11,566 test results to date
    • 99.6% in compliance
    • 43 not in compliance—further conditioning necessary
      – Can not transport oil
      – Bring into compliance within 48 hrs
        » Recondition thru equip and retest VPCR₄
        » Recondition thru equip set to correct temp/press
  – NDIC inspections
    • Separator and heater treaters
    • Oil sampling
    • Processing Sundries