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**Workforce Development  
Seminar  
Marcellus Shale Initiative**

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**Ohio Department of Natural Resources  
What is Our Role in Shale  
Development**

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**On Behalf of:**

**Director David Mustine**

**Assistant Director Scott Zody**

**Deputy Director Mike Biddison**

**Chief of DMRM John Husted**

**Presenter: Tom Tugend**

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# ODNR Divisions and Programs

## - Divisions -

- **Forestry**
  - **Mineral Resources**
  - **Parks**
  - **Soil and Water**
  - **Watercraft**
  - **Engineering**
  - **Coastal**
  - **Geological Survey**
  - **Wildlife**
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# **ODNR Divisions and Programs**

## **Continued – Programs**

- **Volunteer**
  - **Safety**
  - **Technical Assistance**
  - **Research**
  - **Protection and Preservation**
  - **Mining and Drilling**
  - **Land Management**
  - **Fire Management**
  - **Education/Outdoor Skills**
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# ODNR Divisions and Programs Continued – Programs

- **Business/Industry**
  - **Grants**
  
  - **Sub Programs – Over 100**
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# Division of Mineral Resources Management (DMRM)

- **Oil and Gas Regulation**
  - **Coal Mining Regulation**
  - **Mine Safety**
  - **Abandoned Mined Lands**
  - **Industrial Mining Regulation**
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# State Budget Bill Changes to DMRM

- **Oil and Gas Regulation Will Become a Stand Alone Division – Split off from DMRM**  
**An Acknowledgement of the Importance of Having a Direct Focus on Oil and Gas Regulation and the Pending Shale Development**
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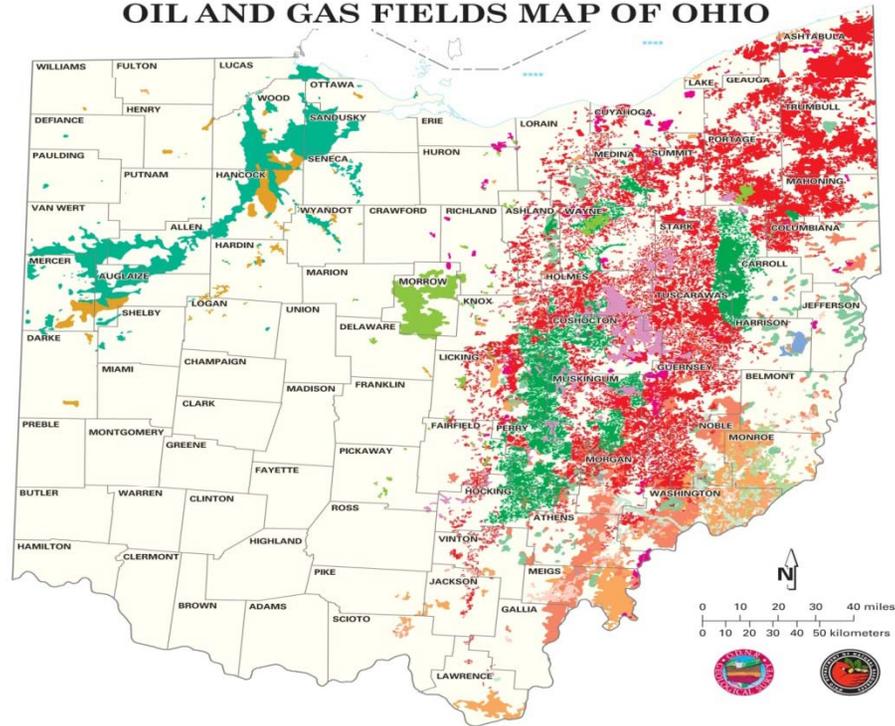
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# Oil and Gas Programs

- **Permitting for Crude Oil, Natural Gas, Solution Mining.**
  - **Permitting the Plugging of Wells**
  - **Oversight of the Underground Injection of Oilfield Wastes**
  - **The Plugging of Orphan Wells**
  - **Field Inspection**
  - **Enforcement**
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# A Little History

## OIL AND GAS FIELDS MAP OF OHIO



OIL FIELD	GAS FIELD	COALBED METHANE	
			<b>EXPLANATION</b> PRODUCING HORIZON(S) GROUPED BY STRATIGRAPHIC INTERVAL Pennsylvanian undifferentiated sandstones and coals Mississippian undifferentiated sandstones and Maxville Limestone Devonian Berea Sandstone and Cussewago Sandstone Devonian Ohio Shale and siltstones Silurian-Devonian "Big Lime" interval Silurian "Clinton/Medina" sandstone and "Packer Shell" Ordovician fractured shale, Trenton Limestone, Black River Group, and Wells Creek Formation Cambrian-Ordovician Knox Dolomite

Recommended citation: Ohio Division of Geological Survey, 2004, Oil and gas fields map of Ohio: Ohio Department of Natural Resources, Division of Geological Survey Map PG-1, generalized page-size version with text, 2 p., scale 1:2,000,000.

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# Wells Drilled and When

<u>Year</u>	<u>Wells Drilled</u>
1895	6147
1930	2134
2008	1087
2010	431

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# Our Legal Authority

- **Ohio Revised Code 1509**
- **Ohio Administrative Code 1501**

**Our Marching Orders  
Sets our Boundaries**

**RC 1509 Effective in 1965 – Morrow County  
“Oil Boom”**

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# Our Legal Authority Continued

- **From 1893 – 1965 the Minimal Regulations in Place Were Primarily Self Enforced With the Focus on Miner Safety**
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# Basis of the Oil and Gas Laws and Rules

- **Conservation**
  - **Protection of the Environment**
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# **Basis of the Oil and Gas Laws and Rules**

## **Conservation Based Laws and Rules**

**For the Effective Development of Ohio's Oil and Natural Gas Resources to Prevent Waste**

**- Maximize Recoverable Resources -**

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# **Basis of the Oil and Gas Laws and Rules**

## **Health and Safety/Environmental Protection**

- **Bonding and Insurance Requirements\***
  - **Set-Back Requirements\***
  - **Well Construction\***
  - **Well Plugging Standards**
  - **Orphan Well Plugging Program\***
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# Basis of the Oil and Gas Laws and Rules

- **Brine Management**
  - **DMRM Primacy Over Class II Injection Wells**
  - **Notification to DMRM of all Critical Aspects of Well Site Development/Drilling\***
  - **Restoration Requirements – Drill Site, Pit Closure\***
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# Basis of the Oil and Gas Laws and Rules

- **Special Permit Conditions – Provides for Site Specific Controls\***
  - **Enforcement Authority – Formal/Informal\***
  - **Web Availability of Well/Permitting Records**
  - **Web-Based Emergency Response Information**
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# Basis of the Oil and Gas Laws and Rules

- **Stable Funding\***
  - **\* Major Changes Pursuant to SB 165**
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# Protection of the Environment and Public Health and Safety

- **Key Factors:**
  - **Permitting**
  - **Well Site Construction**
  - **Well Construction !**
  - **Well Control !**
  - **Fluid Control !**
  - **Oversight**
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# Permitting Overview

- **Leasing Precedes Permitting**
  - **Owner Registration (Bonding/Insurance)**
  - **Permitting: Spacing, Casing, Pre-Permit Issuance Site Review, Permit Conditions**
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## Spacing Categories

<u>Depth</u>	<u>Acres</u>	<u>Unit Lines</u>	<u>Distance Bet. Wells</u>
0 to 1,000'	1	100'	200'
1 to 2K	10	230'	460'
2 to 4K	20	300'	600'
4,000 +	40	500'	1,000'

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# Shale Wells Permitted/Drilled

- **Vertical Marcellus and Utica Permits: 86**
  - **Drilled: 53**
  
  - **Horizontal Marcellus and Utica Permits Issued: 19**
  - **Horizontal and Marcellus Wells Drilled: 10**
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