



Ohio Department of Natural Resources  
Division of Oil and Gas Resources Management  
Orphan Well Program Plugging Expansion



# Ohio Department of Natural Resources, Division of Oil and Gas Resources Management



ODNR's mission is to ensure a balance between wise use and protection of our natural resources for the benefit of all



The Division of Oil and Gas Resources Management is responsible for regulating Ohio's oil and natural gas industry for the protection of all Ohioans and our environment while ensuring the state's abundant natural resources are managed properly

# Introduction

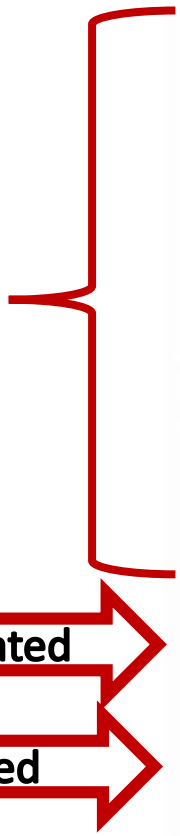
- Who: The Division and Ohio's Oil and Gas History
- What is an Orphan Well?
- Where are Orphan Wells?
- Why now? House Bill 225
- When will this Orphan Well be plugged?
- How are Orphan Wells plugged?
- Orphan Well Program Highlights
  - MAC Additions
  - REM (Risk Evaluation Matrix)
  - Program Encumbrance



# Ohio's Oil and Gas History

- The Orphan Well Program was established in 1977
- Over 280,000 oil and natural gas wells have been drilled in Ohio

Unregulated plugging and abandonment practices, including plugging with cannonballs, trees, and used tools; pulled casing, etc.



| Time Period                     | Oil Field         | Location           | Estimated Number of Wells |
|---------------------------------|-------------------|--------------------|---------------------------|
| <b>1880 - 1930</b>              | Trenton-Limestone | Northwest Ohio     | 70,000                    |
| <b>1880 - 1910</b>              | Ohio Shale        | Northeast Ohio     | 5,000                     |
| <b>1880 - 1910</b>              | Shallow Sandstone | Southeast Ohio     | 3,000                     |
| <b>1860 - 1910</b>              | Mecca Field       | Trumbull County    | 2,500                     |
| <b>1900 - present</b>           | Clinton Sandstone | Statewide          | 85,000                    |
| <b>1800's; 1950's - present</b> | Berea Sandstone   | Statewide          | 13,000                    |
| <b>1960's - present</b>         | Trempealeau       | Morrow County      | 5,000                     |
| <b>1980's - 1990's</b>          | Knox Group        | NE to Central Ohio | 2,500                     |

# What is an Orphan Well?

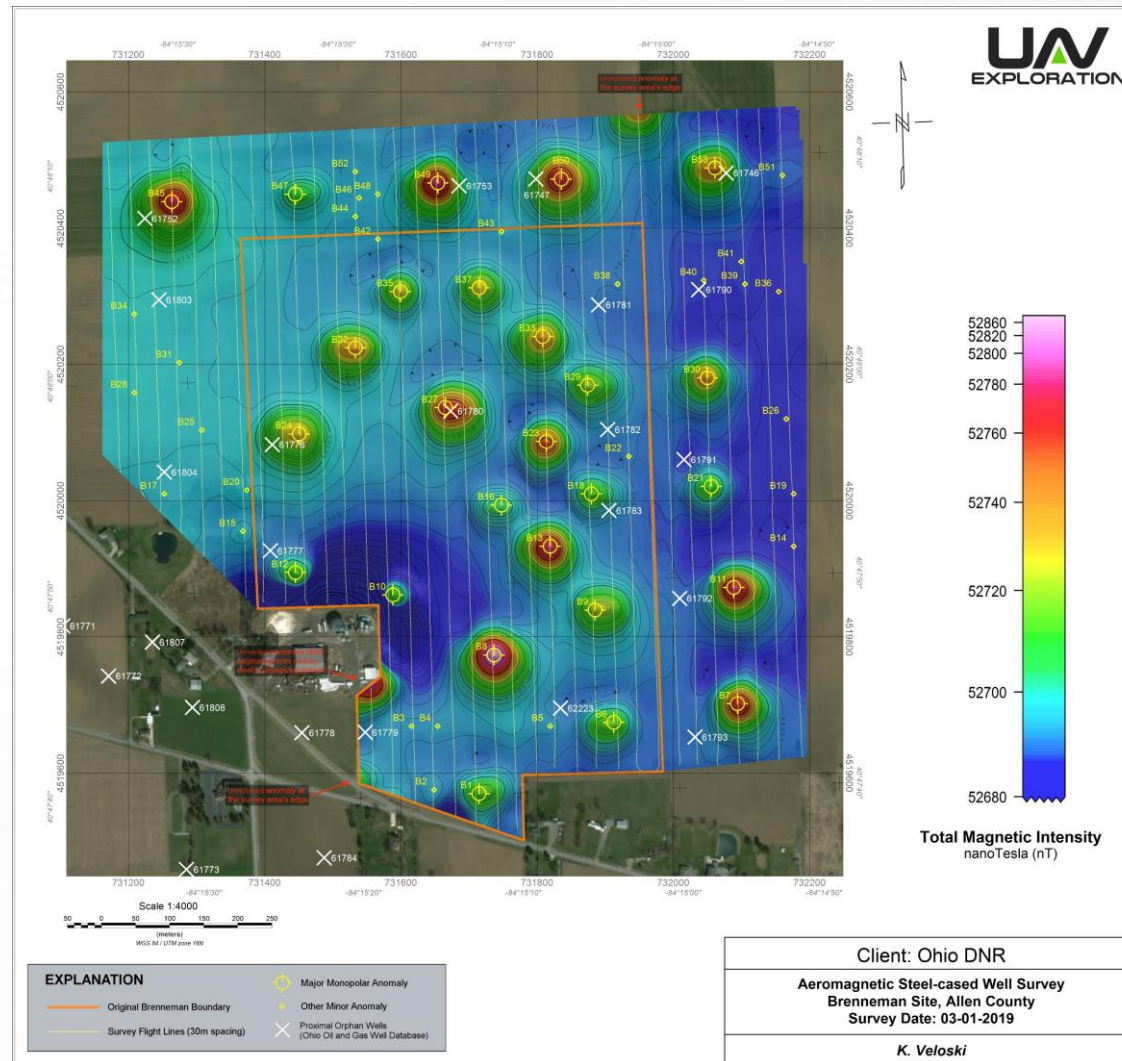
- ORC 1509.01 (CC): “‘Idle and orphaned well’ means a well for which a bond has been forfeited or an abandoned well for which no money is available to plug the well in accordance with this chapter and rules adopted under it.”
- ORC 1509.071 provides for the Orphan Well Program and charges the Chief with plugging idle and orphan wells, land surfaces, and correcting conditions that cause imminent health or safety risks at idle and orphan wells.

# Where are Orphan Wells?

- Orphan wells have been found and plugged in a school gymnasium, in building basements, amongst homes, in farm fields, in waterways and wetlands and along shorelines, and within forests.
- Construction access can be challenging and may require permits or approvals from federal, state, and/or local authorities



# Where are Orphan Wells?



2017 Project: Allen #1  
 Brenneman #1 (1 of 1)  
 Contractor: Hydrocarbon Well Services  
 Project Status: Complete

# Where are Orphan Wells?



2019 Project: Coshocton #1  
Dittmar-Hostetter #1 (1 of 3)  
Contractor: Altier Brothers Inc.  
Project Status: Awarded



# Where are Orphan Wells?



2018 Project: Perry #2

Jonathan Bope #3 (1 of 1)

Contractor: Hydrocarbon Well Services

Project Status: Completed

# Where are Orphan Wells?



2018 Project: Cuyahoga #5  
Sara & David Reid #1 (1 of 1)  
Contractor: GonzOil, Inc.  
Project Status: Completed

# Where are Orphan Wells?



2018 Project: Carroll #1  
DA Kean #2 (1 of 5)  
Contractor: Harley Oilfield Services  
Project Status: Completed

# Where are Orphan Wells?



2018 Project: Knox #1  
Giffin #1 (1 of 3)  
Contractor: Hydrocarbon Well Services  
Project Status: Completed



# Where are Orphan Wells?



2018 Project: Cuyahoga #4  
Michael & Millie Kresevich #1  
Contractor: GonzOil, Inc.  
Project Status: Completed

# Where are Orphan Wells?



2018 Project: Lake #2  
7153 Maple Street #1 (1 of 1)  
Contractor: Nicks Well Plugging  
Project Status: Completed

# Where are Orphan Wells?



2018 Project: Lake #1  
Lakeshore #1 (1 of 1)  
Contractor: R.A. Gibson & Associates  
Project Status: Completed

# Why now? House Bill 225





# Why now? House Bill 225

If unaddressed, orphan wells may pose a significant threat to public health and safety, the environment, conservation of our natural resources, and economic development.

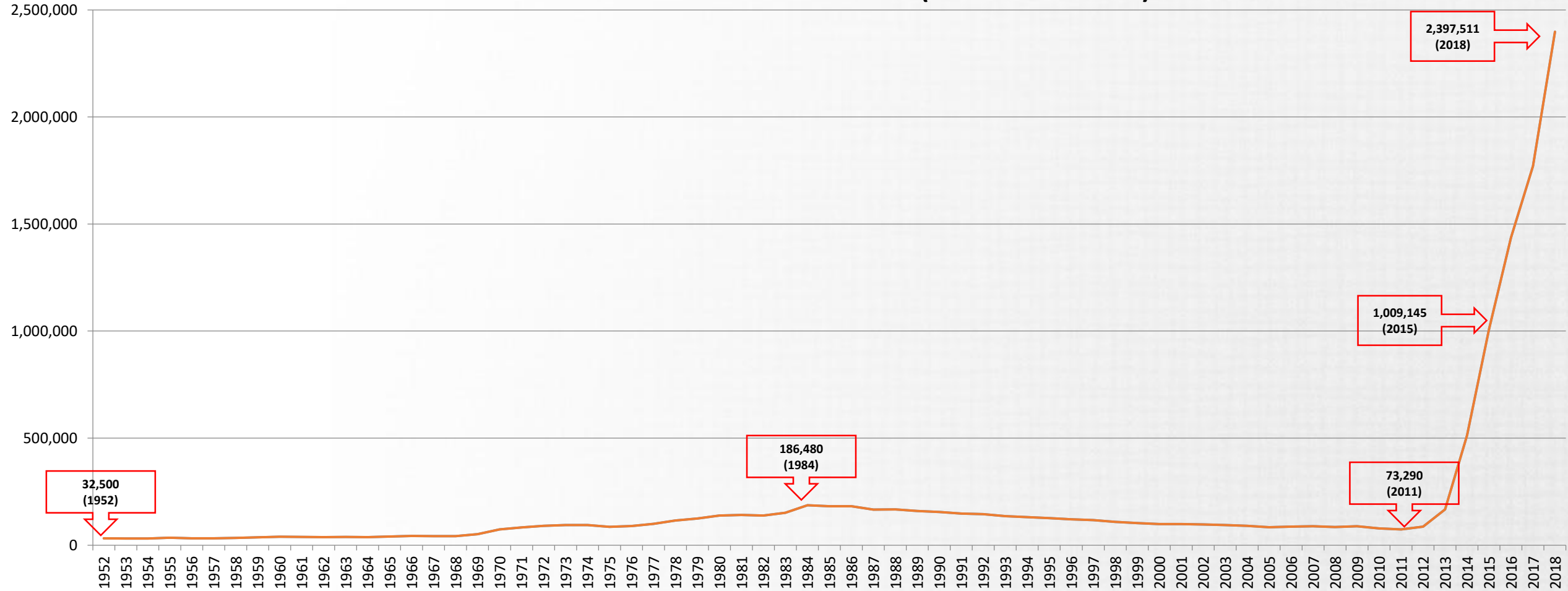


2018 Project: Meigs #1  
MC White #1 (1 of 3)  
Contractor: MH Oilfield Services, LLC  
Project Status: Completed

# Why now? House Bill 225

## Historic Ohio Natural Gas Production (1952 – 2018)

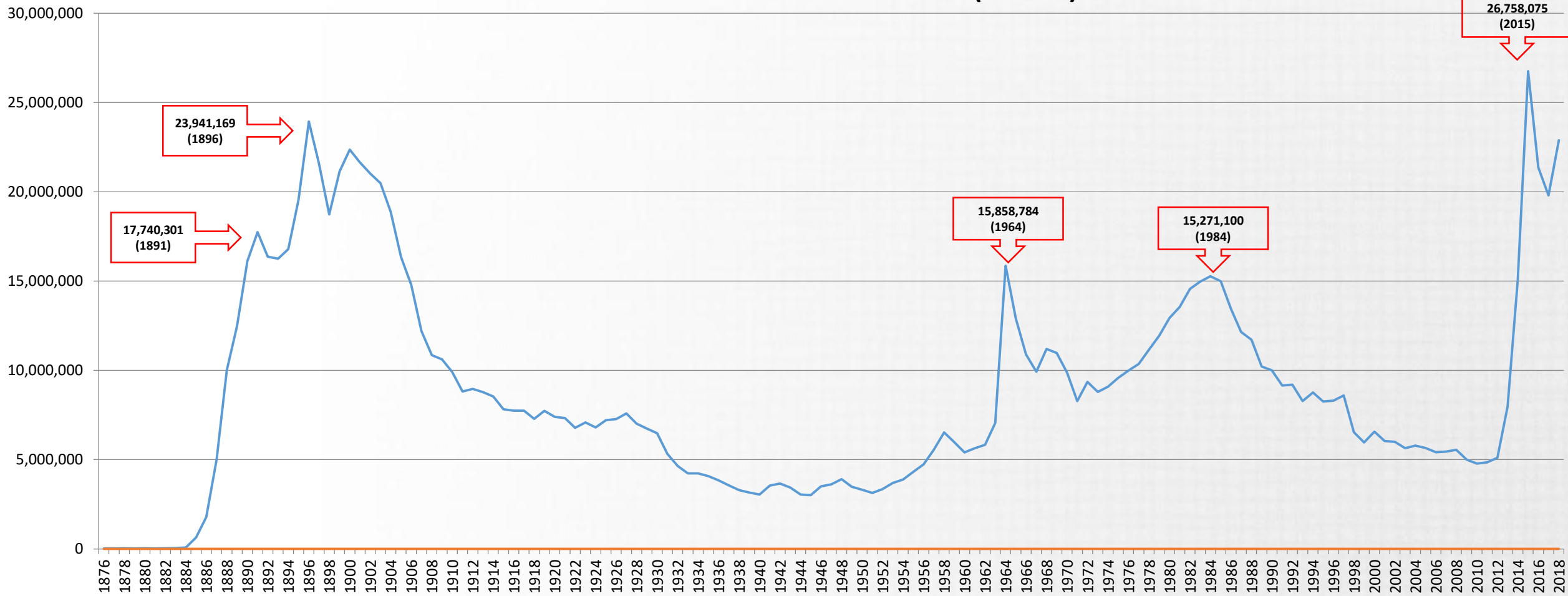
Total amount of Gas Production (Million cubic feet)



# Why now? House Bill 225

## Historic Ohio Oil Production (1876 – 2018)

Total amount of Oil Production (Barrels)



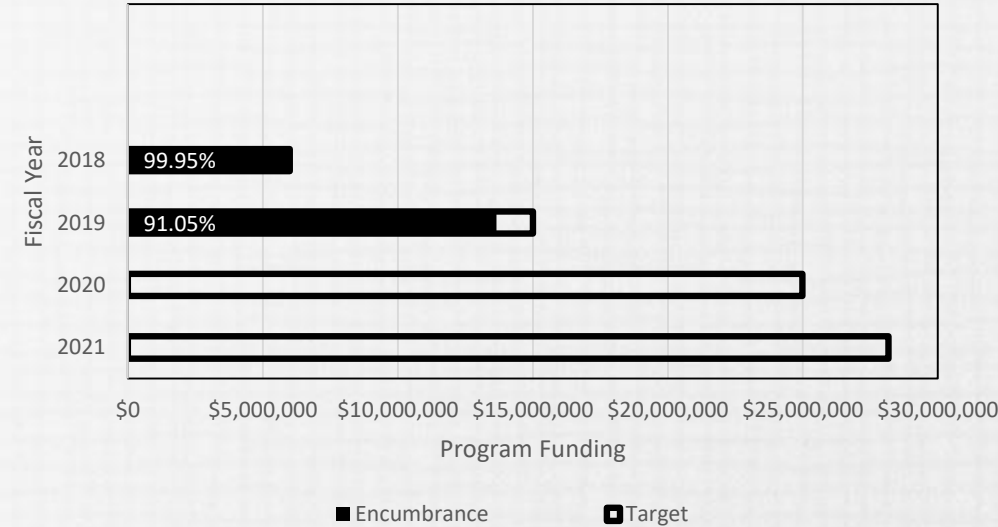
# Why now? House Bill 225

(B)(1) All moneys collected because of forfeitures of bonds as provided in this section shall be deposited in the state treasury to the credit of the oil and gas well fund created in section 1509.02 of the Revised Code.

The For purposes of promoting the competent management and conservation of the state's oil and natural gas resources and the proper and lawful plugging of historic oil and gas wells for which there is no known responsible owner, the chief annually shall spend not less than ~~fourteen~~ thirty per cent of the revenue credited to the oil and gas well fund during the previous fiscal year for both of the following purposes:

|      |        |                         |    |            |    |            |       |
|------|--------|-------------------------|----|------------|----|------------|-------|
| 5180 | 725677 | <b>Oil</b> and Gas Well | \$ | 24,979,365 | \$ | 28,177,215 | 90965 |
|      |        | Plugging                |    |            |    |            |       |

Opportunities Within the Orphan Well Program



# Why now? House Bill 225

- Funding increase (from 14% to 30% of previous years take)
- Limits title review (40 years from when the well is determined orphan)
- Eliminates notice requirements to adjacent landowners
- Allows for direct payment to contractors under Landowner Passthrough Program
- Removes requirement for traditional program contractor bonding
- Funds mitigation expenditures, such as the installation of a vault and vent system
- Adds reporting requirements to the TAC and Legislature

# Why now? House Bill 225

- Division Response
  - Improving contracting process
    - Larger packages of wells
    - Streamlining processes to incentivize contractor participation
  - Locating and identifying additional orphan wells
  - Working to bolstering the Landowner Passthrough Program
  - Unit Price Contract (UPC) developed and implemented to allow for preliminary investigations to be performed on orphan wells prior to plugging operations



2018 Project: Portage #1  
Dunlap #2 (1 of 3)  
Contractor: GonzOil, Inc.  
Project Status: Completed

# When will this Orphan Well be plugged?

- The Division endeavors to plug orphaned wells in a timely manner and on a risk-prioritized basis with a geographic distribution. **Emergency wells take precedence.**
- Site and well specific conditions, and associated survey or permit mandates can significantly increase the timeframes necessary to commence or complete plugging operations.
- Failure to complete critical evaluations and surveys or failure to obtain necessary permits and certifications could result in significant penalties, thereby diverting orphan well funds, or resulting in public safety hazards or damage sensitive environments.

# When will this Orphan Well be plugged?

- The Orphan Well Review process begins when the Division becomes aware of a suspected abandoned oil and gas well
  - Program staff inspect the well and conduct a detailed risk assessment of each well
  - Determine the risk the well poses on public health, human safety and the environment
- Some of the other factors which are considered, including proximity to:

## Public Health / Safety

Public and/or private water wells  
Public surface water intakes  
Drinking water protection zones  
Presence of hydrogen sulfide gas  
Stray gas migration  
Radioactive material (TENORM)

## Environmental

Surface waters  
Wetlands  
Streams and rivers  
Floodplains  
Bodies of water / shorelines

## Biological

Habitat / Land Use  
State & Federal Threatened Species  
State & Federal Endangered Species  
Natural Heritage Database  
Mussel Stream Classifications

- The Division establishes an annual schedule for the Traditional Program



# When will this Orphan Well be plugged?

- The Division has sole and exclusive authority to regulate oil and gas wells in Ohio.
- However, consideration of other regulatory authorities and their jurisdiction(s) is also required, as other federal, state and local requirements may apply.
- The Orphan Well Program regularly consults with a multitude of agencies.

## **Federal**

- U.S. Environmental Protection Agency
- U.S. Forest Service
- Occupational Safety & Health Administration
- USDA – National Resources Conservation Services
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- National Institute for Occupational Safety & Health
- Federal Emergency Management Agency

## **State**

- Ohio Environmental Protection Agency
- Ohio Department of Health
- ODNR, Division of Wildlife
- State Emergency Response Commission
- Ohio Utilities Protection Services
- Oil & Gas Producers Underground Protection Service
- Ohio Department of Transportation
- Ohio Dept. of Commerce, State Fire Marshal
- ODNR, Division of Minerals Resources Mgmt.
- Public Utilities Commission of Ohio
- Ohio State Historical Preservation Office
- State Board of Registration for Professional Engineers and Surveyors

## **Local**

- County Engineer
- Township Road Superintendent
- Local Emergency Planning Committee
- Local Fire Department

# When will this Orphan Well be plugged?

## Risk Evaluation Matrix (REM) Development

- HB225 requires wells be scored and prioritized by three risk categories – High, Moderate, and Low Risks
- DOGRM inspectors place the well into one of the four REM risk classes based on Division flow chart process. Risk scores are then calculated for each well.
- **Risk = Condition of Well (What is leaking and how much) + What has the potential to come in contact with what is leaking (public and environmental factors)**

| REM Risk Classes                             | HB 225                     |
|--|----------------------------|
| Class 1 – Emergency (only declared by chief) | Distressed – High Priority |
| Class 2 - High Risk (Non-Emergency)          |                            |
| Class 3 – Medium Risk                        | Moderate – Medium Priority |
| Class 4 - Low Risk                           | Maintenance – Low Priority |

| Scoring                  |             | Score  | Score                         |   |                                   |
|--------------------------|-------------|--------|-------------------------------|---|-----------------------------------|
| Dwelling                 | 0           | 3      | Total Equipment Leaking Score |   |                                   |
| Landuse                  | 5           | 1.4712 | Time                          |   |                                   |
| Public Health and Safety | 0.42        | 4      | Accessibility                 |   |                                   |
| Environmental            | 17.88       | 3      | Landowner Complaint           |   |                                   |
|                          | <u>23.3</u> | X      | <u>1</u>                      | + | <u>11.47</u>                      |
|                          |             |        |                               | = | <b>Risk Score</b><br><b>34.77</b> |

Close-up of the Actual Math of the REM

# How are Orphan Wells plugged?

- Construction access can be challenging (stream crossings, wetlands, timber cutting, urban areas, etc.)
- Weather conditions can dictate site access
- Federal permits and authorizations may be required, can lead to strict permit conditions and tight timeframes on completion dates
- Lack of historical records (drilling, casing, completion, production, plugging)
- Drilling, milling and/or fishing, logging are common requirements (most of the time unknown prior to beginning work)

2018 Project: Knox #2  
Harstine #1 (1 of 1)  
Contractor: Knox Energy Inc.  
Project Status: Completed



# How are Orphan Wells plugged?

- Program Pathways (ORC 1509.071)
  - **Traditional Program** – under this program, the Division hires a qualified contractor through a competitive offer process to perform plugging
  - **Landowner Passthrough Agreement** – under this program, a landowner hires a contractor to plug an orphan well under the Chief's approval and seeks reimbursement for the contractor from the Division
  - **Emergency Remediation or Plugging Contract** – under this program, the Division immediately acts to plug or remediate a well with a non-responsive owner that is causing an immediate hazard

# How are Orphan Wells plugged?

- Traditional Program
  - The Division creates a Scope of Work including access plans, engineered drawings, plugging plans coupled with environmental, radiation, hydrogeological and safety assessments
  - Scope of Work posted to Division website
  - <http://oilandgas.ohiodnr.gov/regulatory-sections/orphan-well-program/scope-of-work>
  - Mandatory on-site review of all wells for which a Scope of Work (SOW) is released
  - Certified contractors submit an offer to complete the work outlined in the Scope of Work





# How are Orphan Wells plugged?

## Traditional Program - MAC (Multiple Award Contract)

- In conjunction with the Ohio Department of Administrative Services (DAS), the Division prequalifies contractors. Contractors are evaluated based on submitted proposals documenting their ability to perform Oil & Gas plugging operations.
- Upon approval, Contractors are able to submit offers for the Orphan Well Program plugging projects.
  - 2017: 28 contractors added
  - 2018: 6 contractors added
  - 2019: 6 contractors added
  - Two contractors have indicated they are out of business
- Contractor Participation:
  - 13 contractors have plugged wells
  - 2 contractors have provided extensive subcontractor work to those completing plugging work
  - 12 others have attended site reviews and/or submitted offers on Scopes of Work

# How are Orphan Wells plugged?

## Traditional Program: Project Management

- The submitted Offer Sheet is the list of agreed upon pay items for the Project.

## How are field changes handled during plugging operations?

- Field Orders provide documentation of defective work or materials, as well as specific notice, instruction, clarification, explanations, and/or interpretations of the contract documents.
  - Contingency work is authorized via a Field Order
- Change Orders are written orders issued by the Orphan Well Inspector to the Contractor covering changes to the Contract within or beyond the scope of the Contract and establishing the basis of payment and any necessary time adjustments for the work affected by the changes.
  - Unforeseen work outside the original Scope of Work is added to the contract via a Change Order

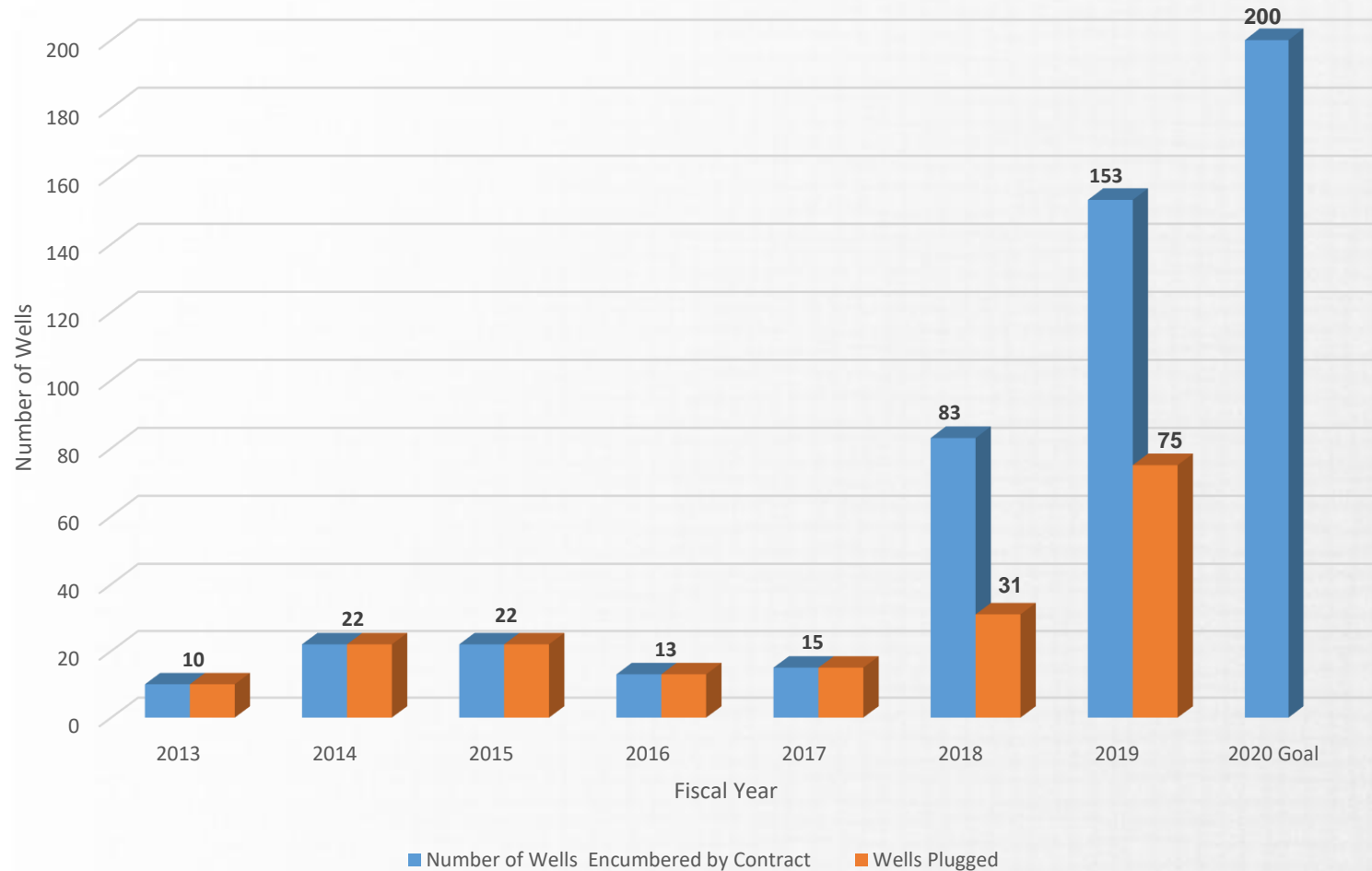


2018 Project: Portage #1  
Dunlap #2 (1 of 3)  
Contractor: GonzOil, Inc.  
Project Status: Completed



# Orphan Well Program Highlights

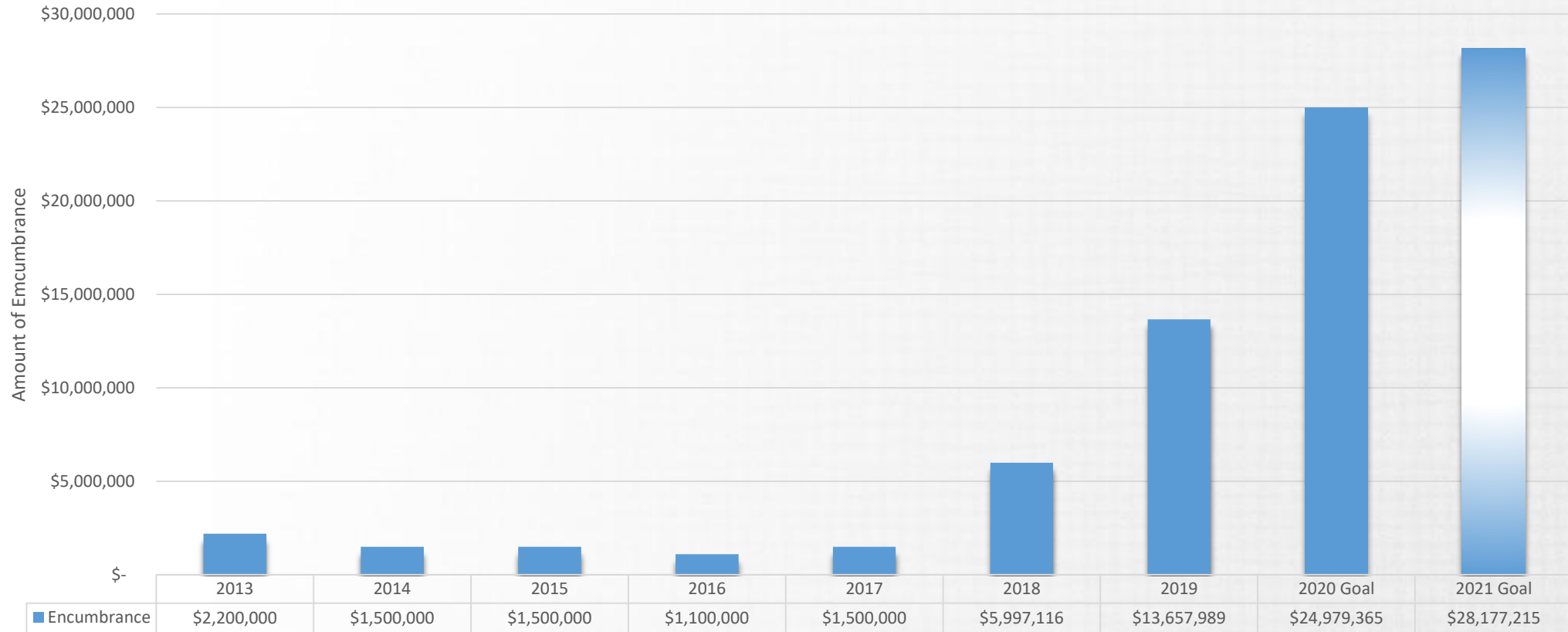
Orphan Well Program Plugging



Years represent fiscal years  
from July 1 to June 30

# Orphan Well Program Highlights

Orphan Well Program Encumbrance





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