

# **Permitting and Compliance for the Oil and Gas Industry in North Dakota**

## **EPA/States Oil and Gas Emissions Summit EPA RTP Offices November 4-5, 2014**

North Dakota Dept. of Health  
Division of Air Quality  
Jim Semerad  
Environmental Engineer  
Manager of Permitting and Compliance

# Discussion Objectives:

- Oil and Gas Development in ND
- Challenges
- Future plans, needs, concerns

# Rapid Development of the Bakken

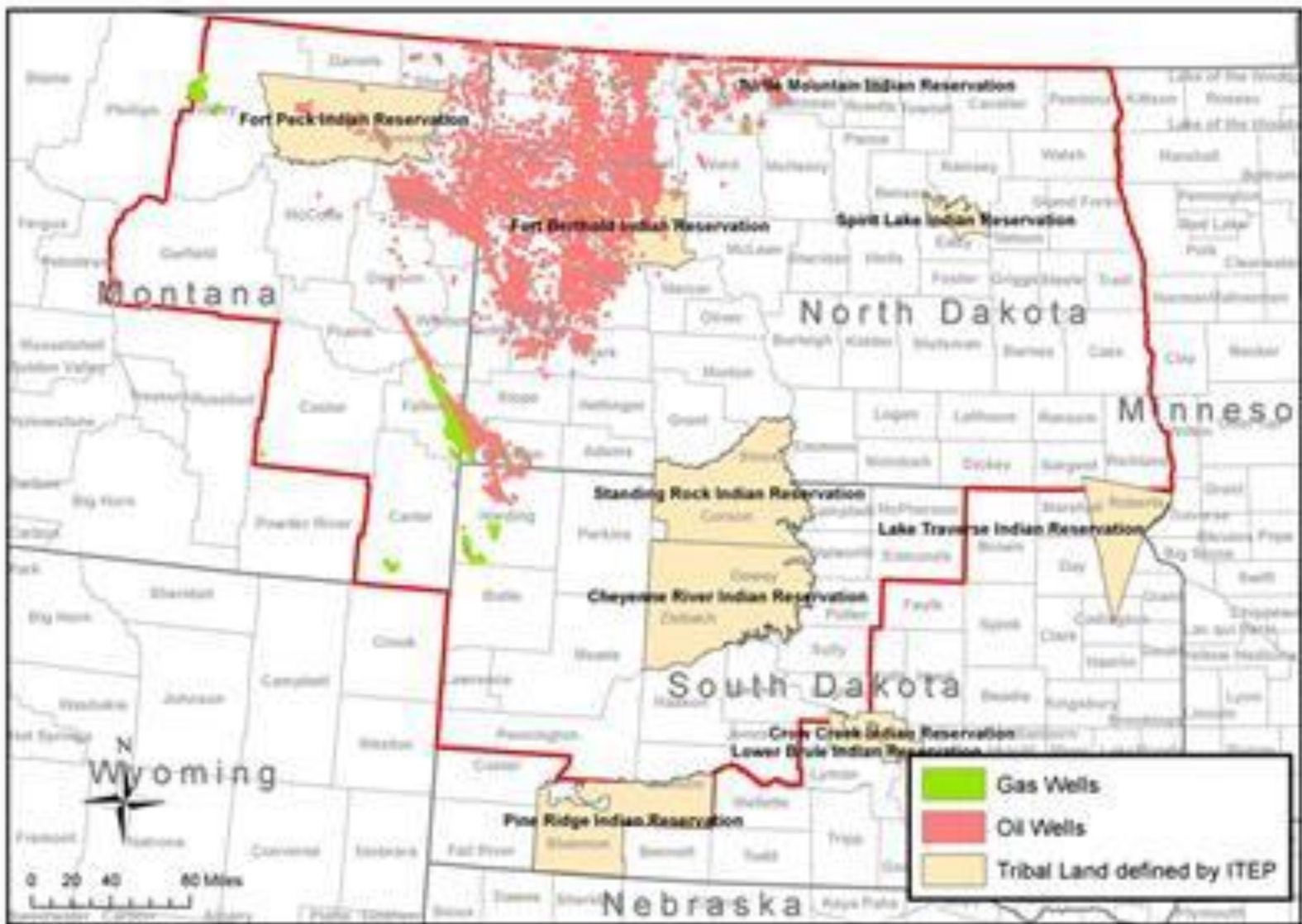
-- Steep learning/growth curve --

- Significant development began around 2004-2006 – now is maturing with  $\wedge$  2000 new wells/yr.
- Lack of infrastructure – electricity, collection piping, people, housing, etc.
- Production reached 1 million BOPD by early 2014; ND is #2 in oil production.



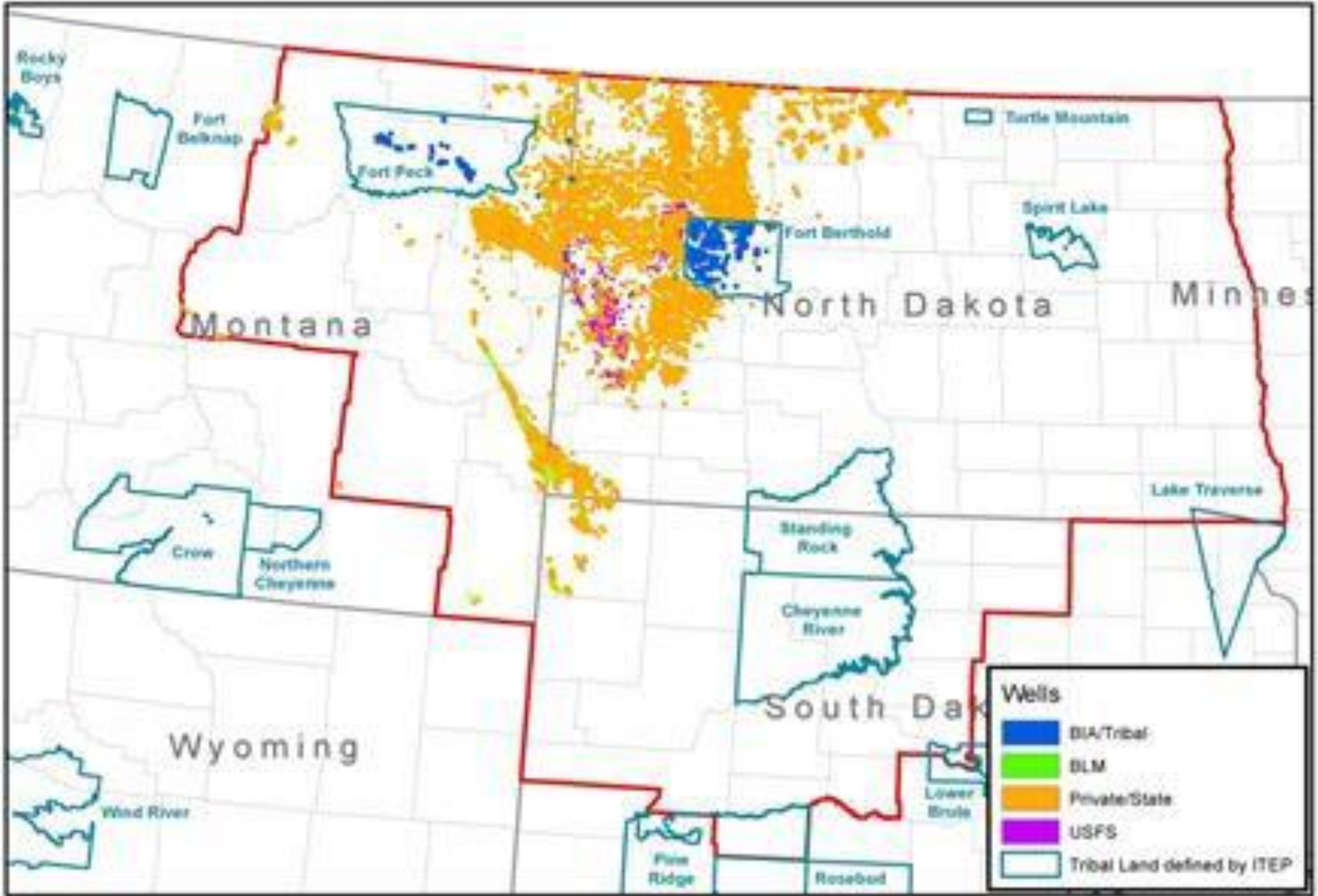
# Geographic Scope

## Williston Basin - 2011 Wells





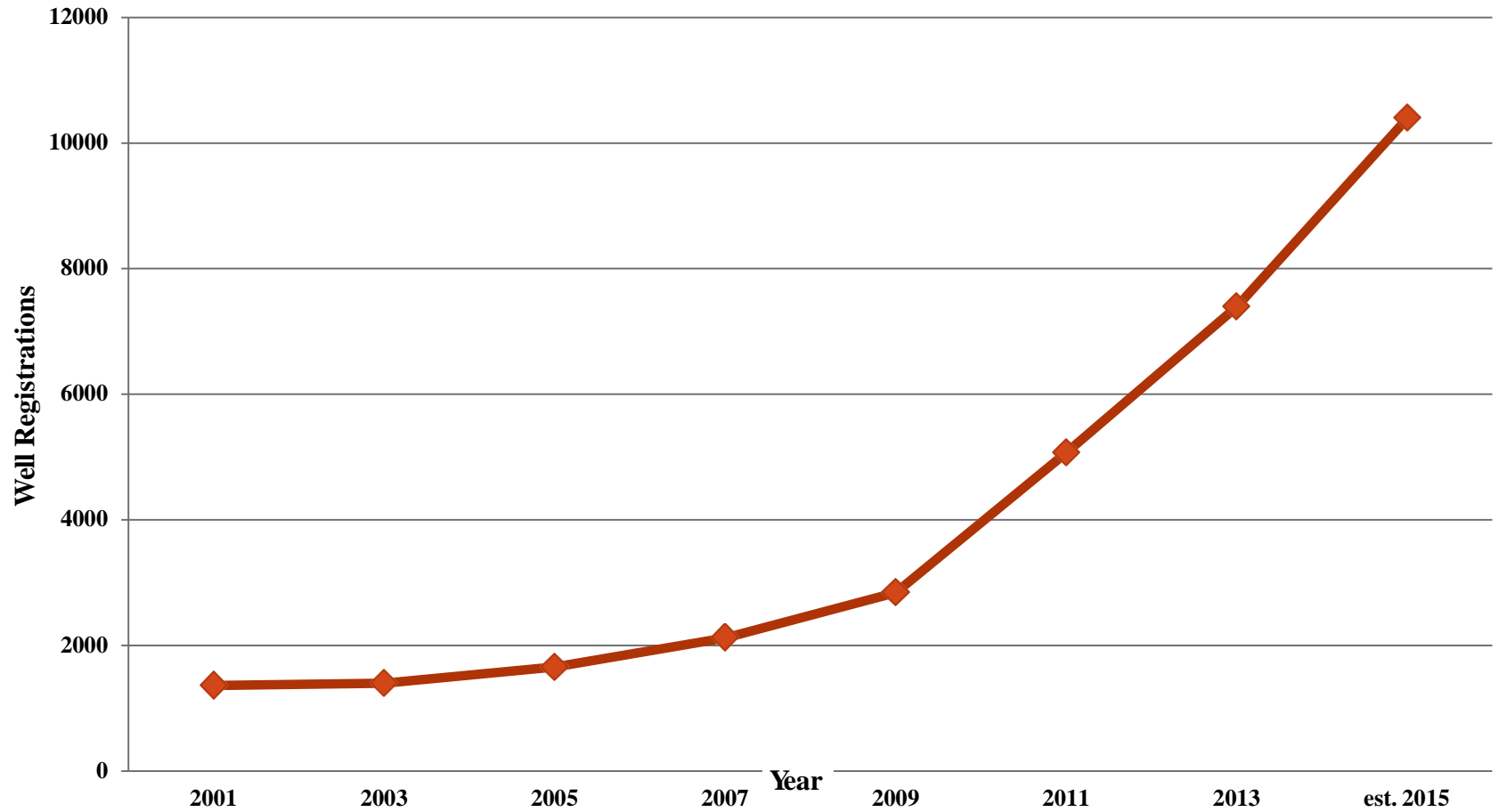
# Mineral Ownership Williston Basin Wells



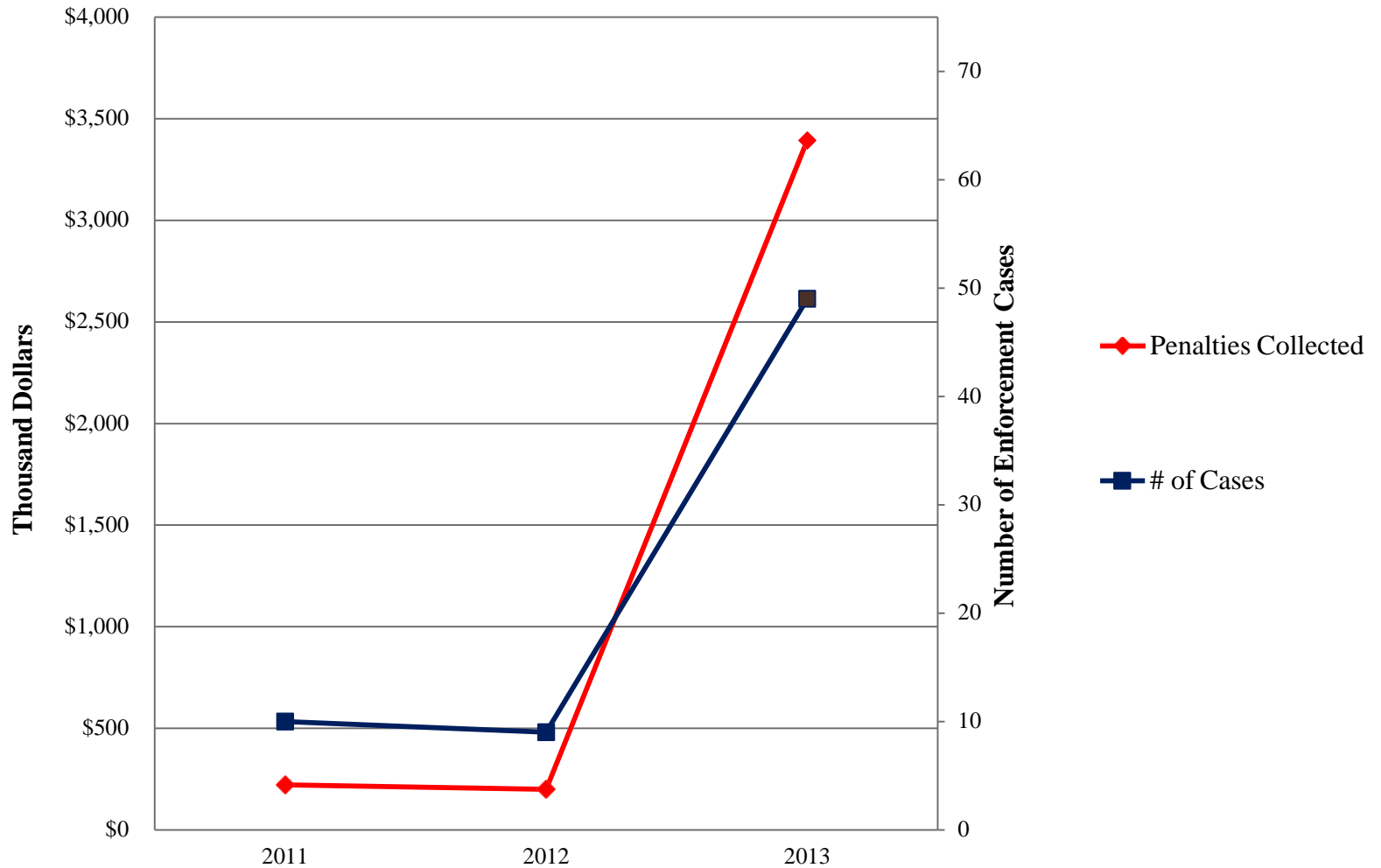
# Oil & Gas Production:

- Compressor stations and gas plants
- Crude oil facilities
- Diesel topping refineries – on/off reservation
- \$3 billion fertilizer plant - permitted
- \$4 billion plastics plant - proposed

# Air Quality Well Permit Registrations



# Enforcement



# Well pads have changed

**Multi well pads are being constructed – good for the environment but may reach T5 status**



**Search**

Fly To Find Businesses Directions

Fly to e.g., Hotels near JFK

sublette county wy

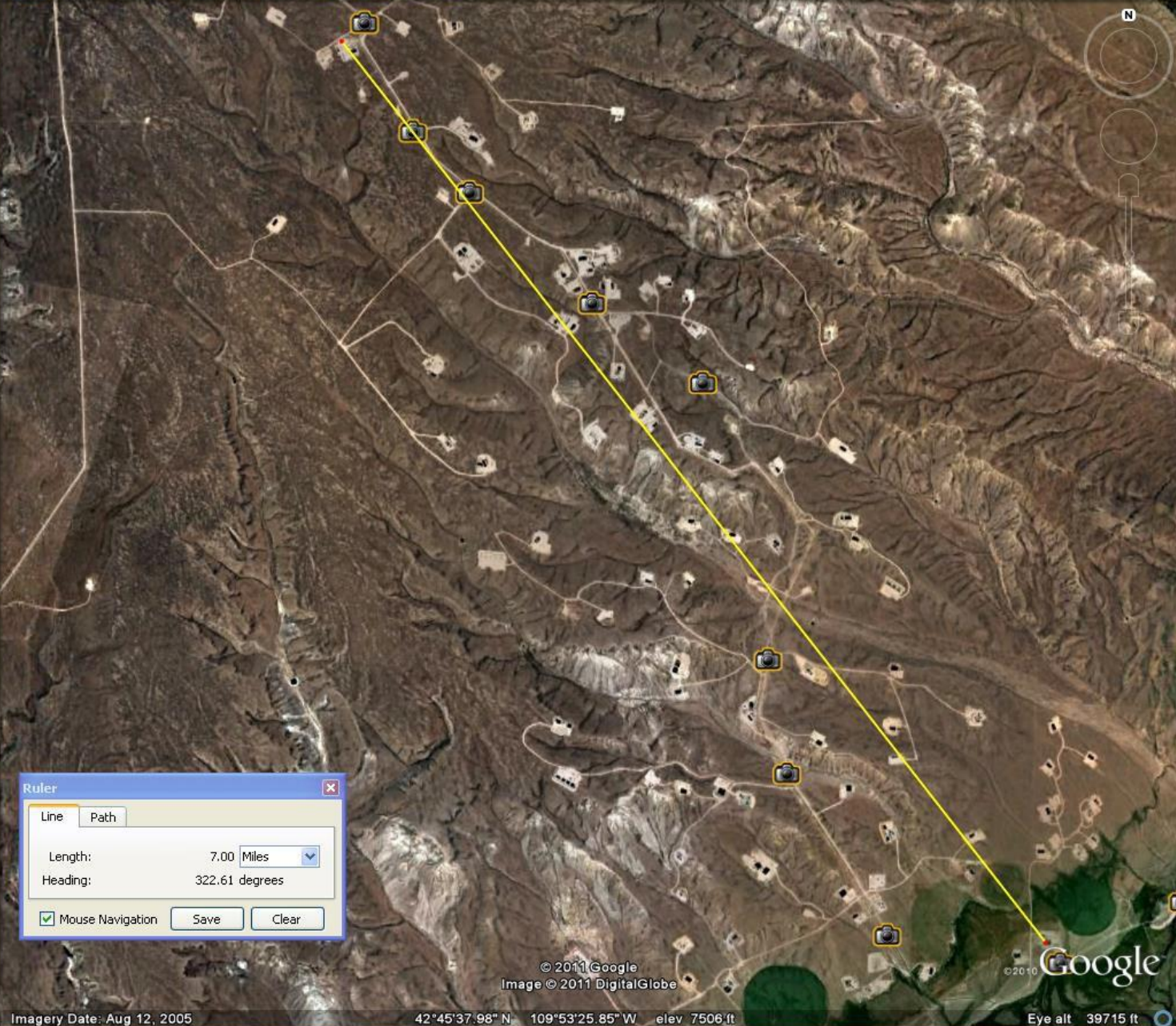
Sublette, Wyoming

**Places**

- My Places
- Sightseeing Tour
  - Make sure 3D Buildings layer is checked
- Temporary Places

**Layers** Earth Gallery >>

- Primary Database
- Borders and Labels
- Places
- Photos
- Roads
- 3D Buildings
- Ocean
- Street View
- Weather
- Gallery
- Global Awareness
- More



**Ruler**

Line Path

Length: 7.00 Miles

Heading: 322.61 degrees

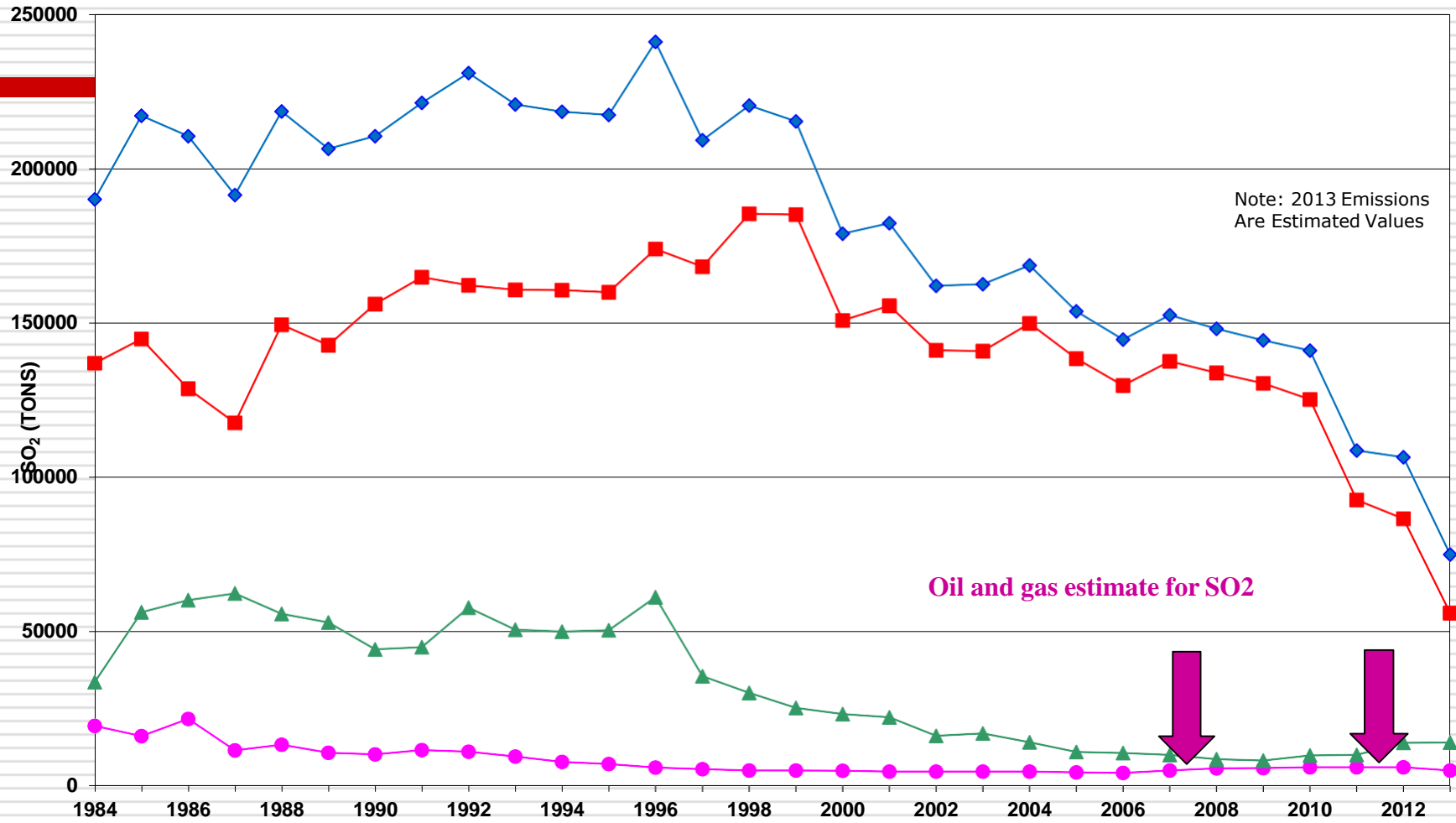
Mouse Navigation Save Clear



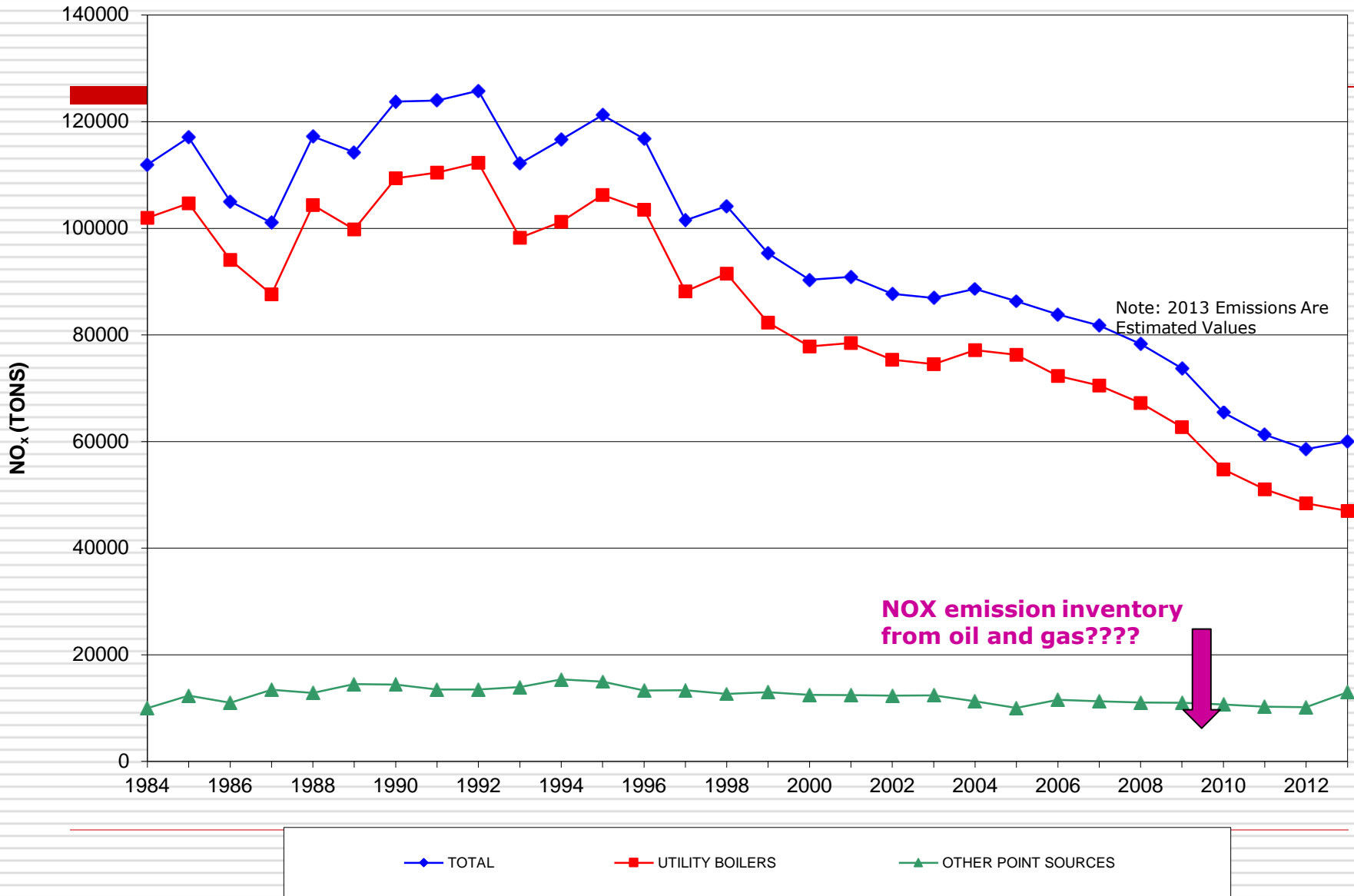
# Regulatory Actions taken in AQ:

- State Rules, NSPS, Major/Minor Source Permitting
- Bakken Guidance issued 2011 – Required “best available” APC at wells and resulted in significant VOC emission reductions.
- Bakken Guidance is based on ND APCR 33-15-07
- Guidance was used by EPA for R8 FIP on Fort Berthold Reservation

# NORTH DAKOTA POINT SOURCE SO<sub>2</sub> EMISSIONS



**c**



# Positives:

- Ambient Standards consistently maintained
- No/little H<sub>2</sub>S in Bakken Gas
- Emission trending down from other industry in State (coal)
- Excellent relationship with R8 compliance and enforcement:
  - Combined to conduct inspections
  - Shared inspection information, findings, and techniques for on/off state/reservation lands
  - Obtaining our first FLIR camera via EPA grant

# Negatives:

- As an agency, our strength has been dealing with major source permitting and compliance of a smaller number of large emitting sources – we have excellent tracking/compliance tools.
- Conversely, this new development is a large number of small sources
- Time and Turnover – agency and industry
- Flaring

# Flaring:

- Flaring was high due to a number of factors – including high surge of gas followed by steep decline, lack of infrastructure, size of the Bakken, pace of development, and oil was focus.
- New flaring regulations imposed by NDIC – major reductions required

# Current Program Challenges

- Large national issues - 111(d), RH, new ambient standards, new regulations.
- Issues associated with rapid growth of Oil and Gas industry and the tertiary growth that is occurring in ND
- Public outreach/interest/complaints

**\*In general, the above often don't line up well which can result in time problems due to limited staff.**

# Future:

- Increase staff – conduct more inspections
- Continue to work collaboratively with EPA R8
- Develop our FLIR Program
- Expect new large sources to utilize natural gas that was previously flared – more permitting, inspections, etc.
- Continue to closely monitor our ambient results
- Use better emission inventories to determine if/what new requirements are needed for oil wells

# Questions?

