

COLLABORATIVE DRILL RIG 1-HOUR NO₂ IMPACTS and MODEL EVALUATION STUDY



Other state and
local agencies



STUDY CONCEPTS

- Collaborative effort between BLM, EPA, States, other FLMs and the Oil and Gas Industry to better predict 1-hour NO₂ impacts from drill rigs through a field study.
- The Western Regional Air Partnership (WRAP) is coordinating the project.

Monitoring

- NO₂ concentrations at multiple locations near operating drill rigs
- Meteorological conditions (i.e. – met stations)

Measuring

- Drill rig emissions (i.e. – stack testing or CEMS)

Modeling

- Model using data from monitoring and measurements



STUDY OBJECTIVES

✓ Data Gathering

Better emissions and impact data to inform oil and gas production NEPA analyses

✓ Oil & Gas Drill Rig Impact data

Monitored and modeled impacts

✓ 1-hour NO₂ Modeling

Develop more accurate methodology for drill rig emission impacts



STUDY BENEFITS

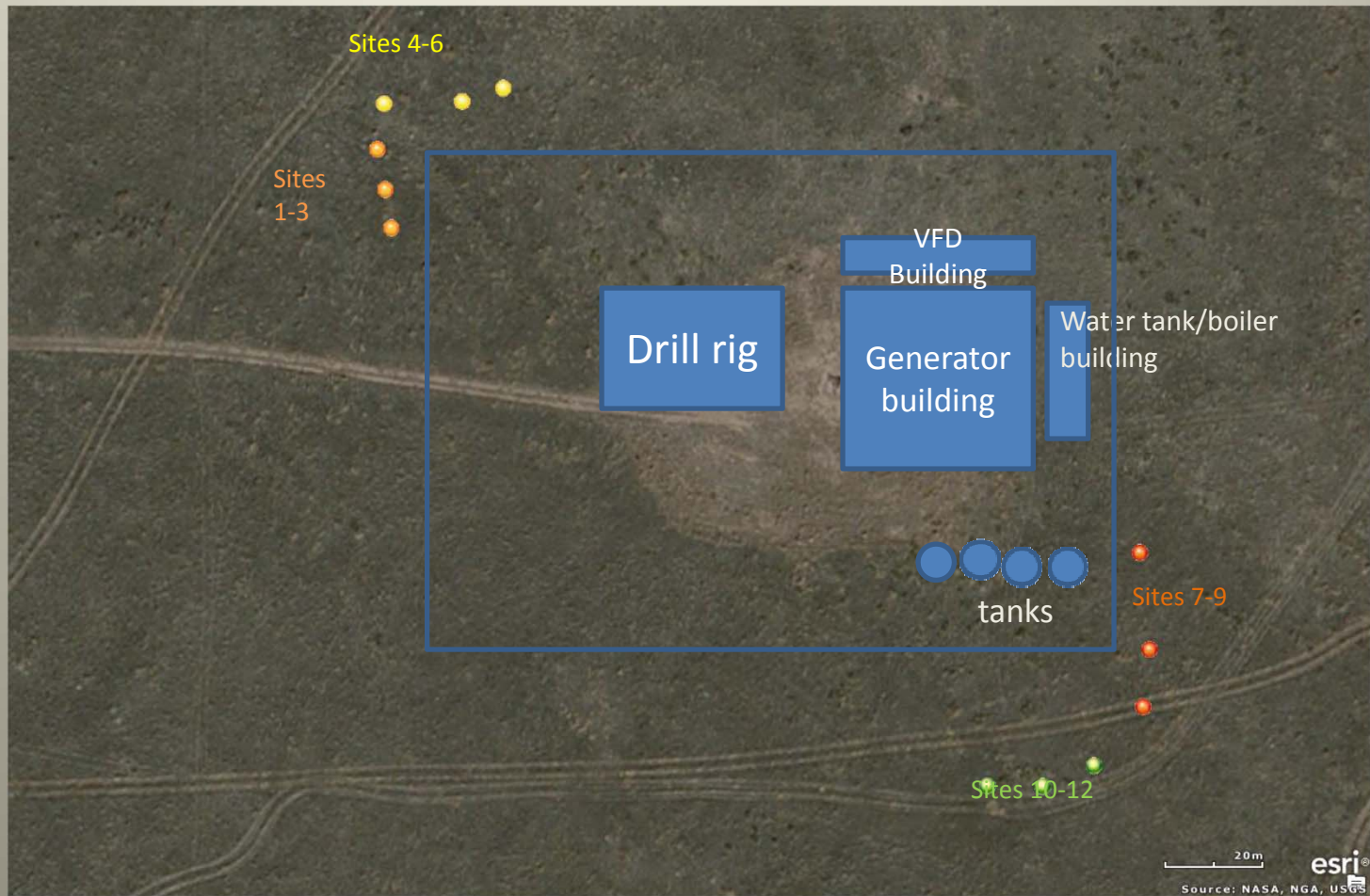


- **Collection of ambient and emissions rate data to inform model performance evaluation**
- **Improves NEPA analysis by providing scientific basis and accurate public disclosure of drill rig impacts**
- **Provides data for evaluation of performance of the OLM, PVMRM and other methods to determine 1-hour NO₂ impacts**
- **Collaborative approach allows for input and funding from federal agencies, states and industry, all who need better information about NO₂ impacts**

Fall 2014 monitoring studies

1. Colorado Denver-Julesburg October-November 2014 (funded by API and BLM, in-kind assistance from Wyoming DEQ and EPA)
2. Alaska Kuparuk August –December 2014 (funded by Conoco Phillips Alaska and API, in-kind assistance from BLM, ADEC, WRAP)

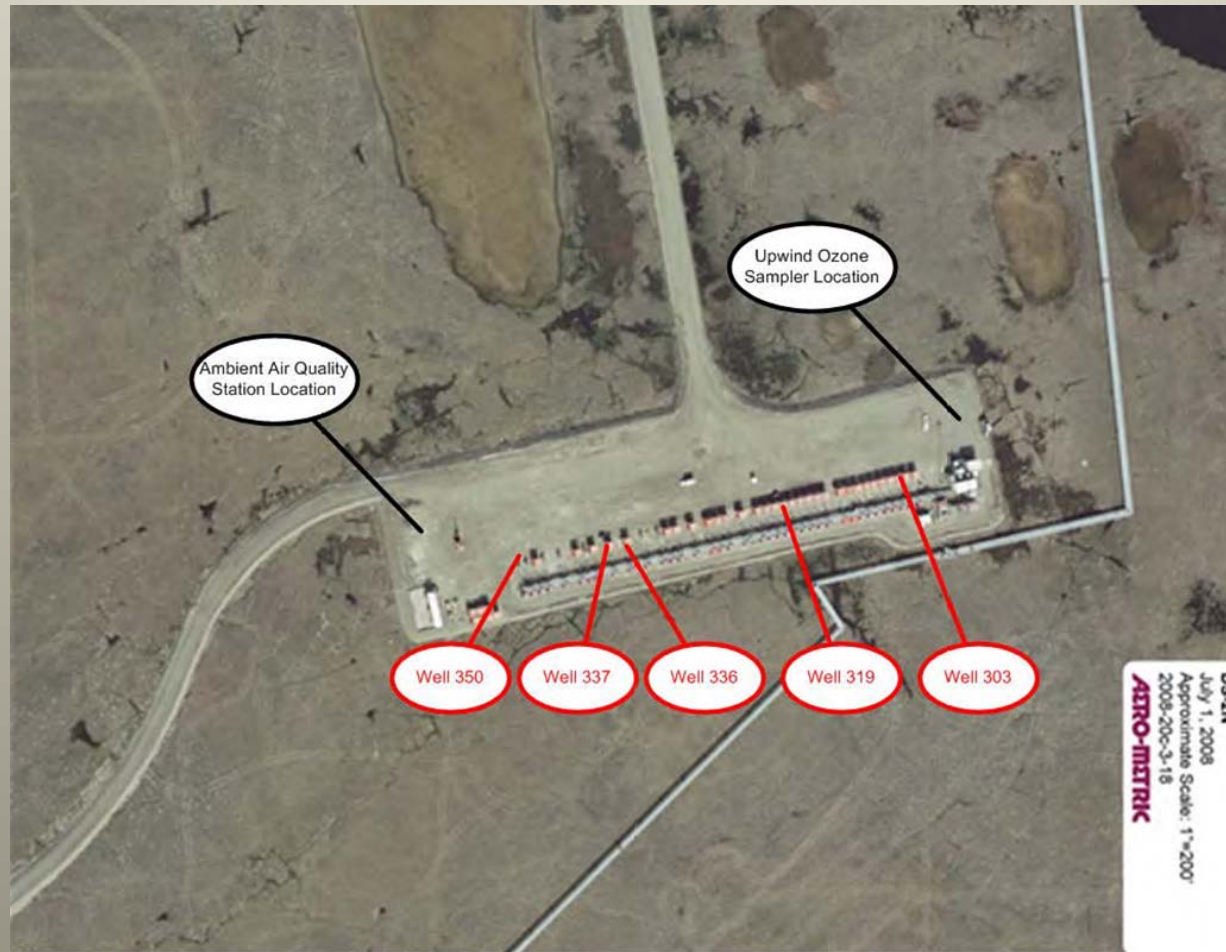
DJ Monitor locations



DJ Study Challenges

- Limited resources/funding
- Coordination with drill rig schedule
- Staffing
- Mix of monitoring equipment
- Land access
- Indian summer weather
- Other sources of emissions
- Data capture issues-when to move the arrays?
- Difficult to analyze data and know what we have while making project management decisions

Alaska North Slope Kuparuk DS-2N Site



Alaska Study Challenges

- Monitoring all emissions sources
- Weather challenges
- Limited in monitor location and numbers due to restrictions of tundra
- Other sources of emissions

STUDY SCHEDULE

TIME PERIOD	ACTIVITY
Nov. 2013 to April 2014	Workgroup formation, schedule and overall study workplan development
March to June 2014	Development of a field study design for western U.S. Basins, including specifications for the sampling protocol and quality assurance/control plans
June to July 2014	Evaluate responses to RFP for field studies in lower 48
August 2014-January 2015	Field data collection
January -July 2015	Data analysis, model evaluation, and reporting

Summary

- Lots of new, valuable information for evaluating AERMOD and NO₂ conversion in the nearfield
- Evidence that fresh O₃ not mixed entirely through the plume—important finding
- Post-study follow-up evaluation needed