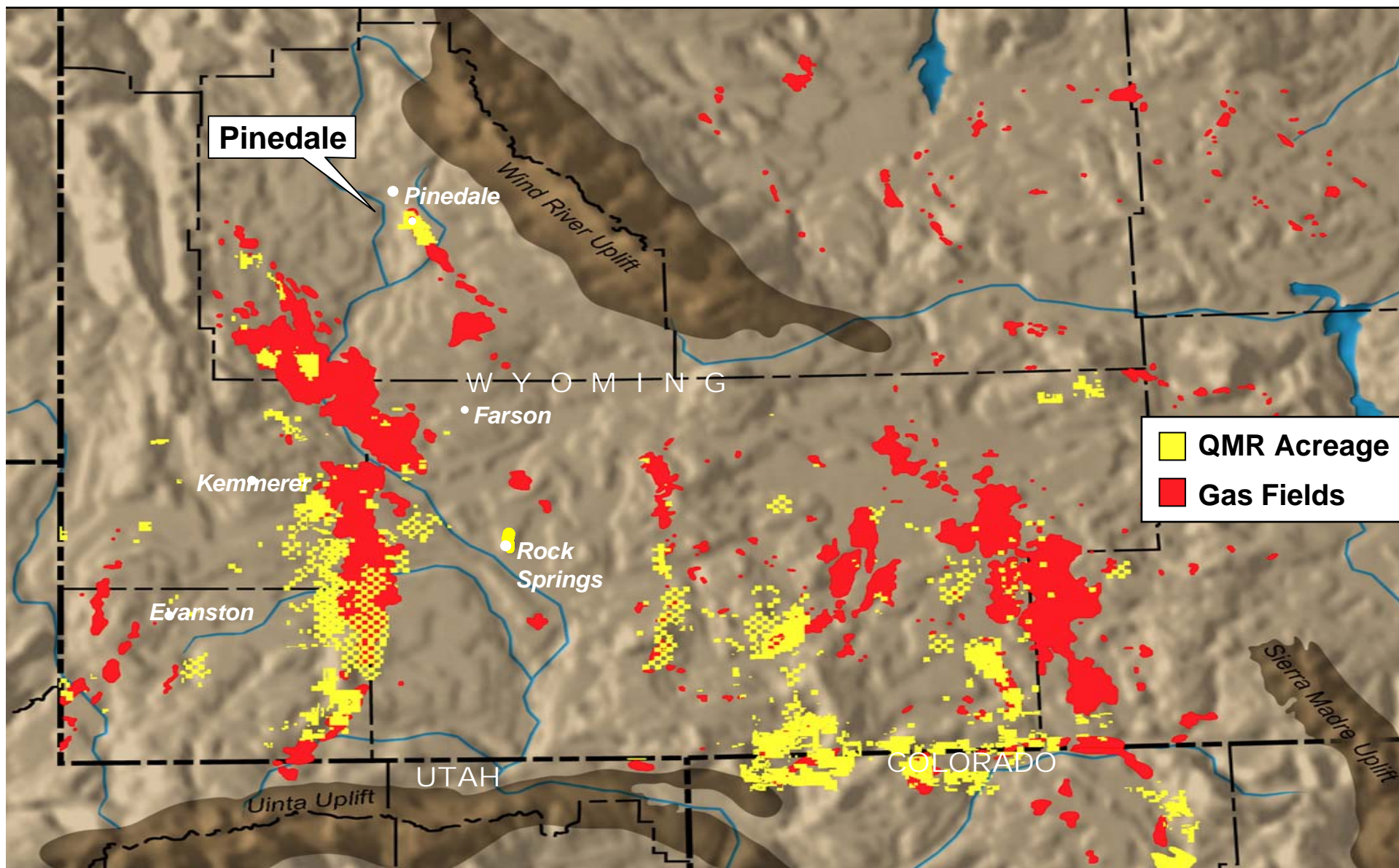




**“Natural Gas Development & Wildlife:  
Sustainable Development on the  
Pinedale Anticline”**

**National Conference for Sage Grouse Local Working Groups  
February 12, 2005**

# Questar Market Resources in Wyoming



# Pinedale Anticline Project

(PAPA 197,345 Acres )

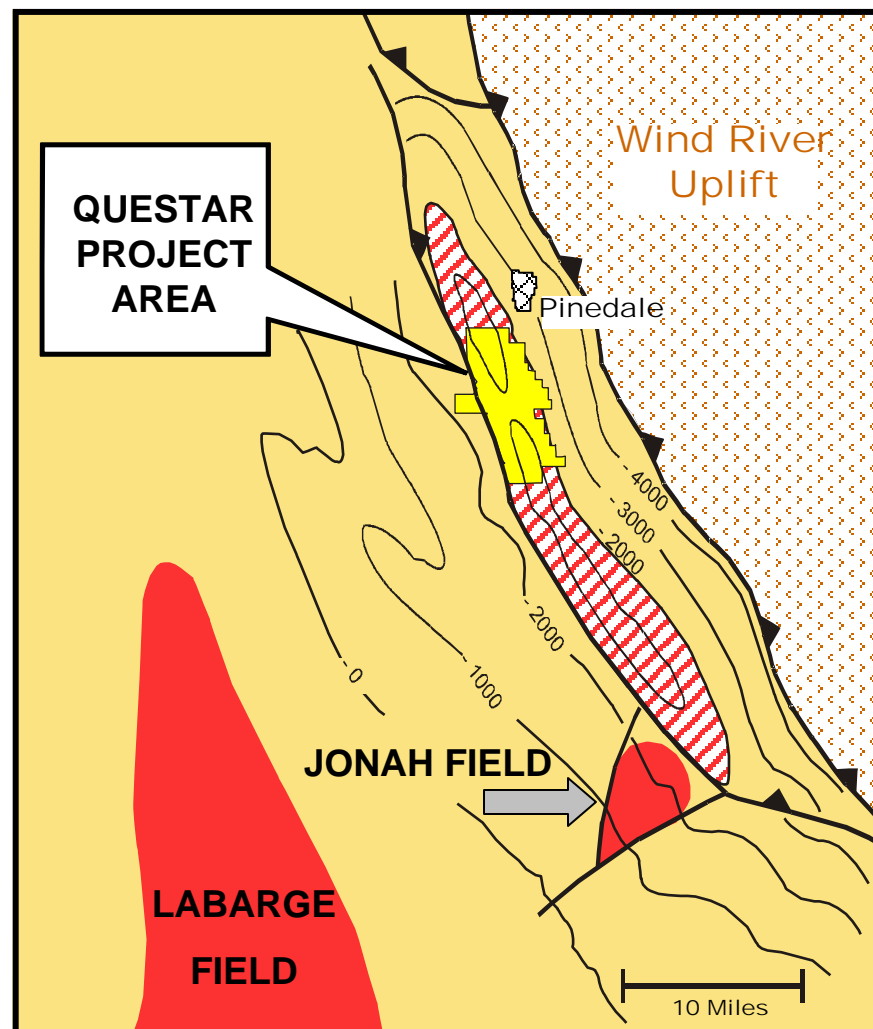
## Questar Acreage:

- 14,800 contiguous acres (8,600 Prod.)
- 7.5% of PAPA (4.4%)
- 100% of acreage is on public land and in habitat for sage grouse and critical mule deer winter range

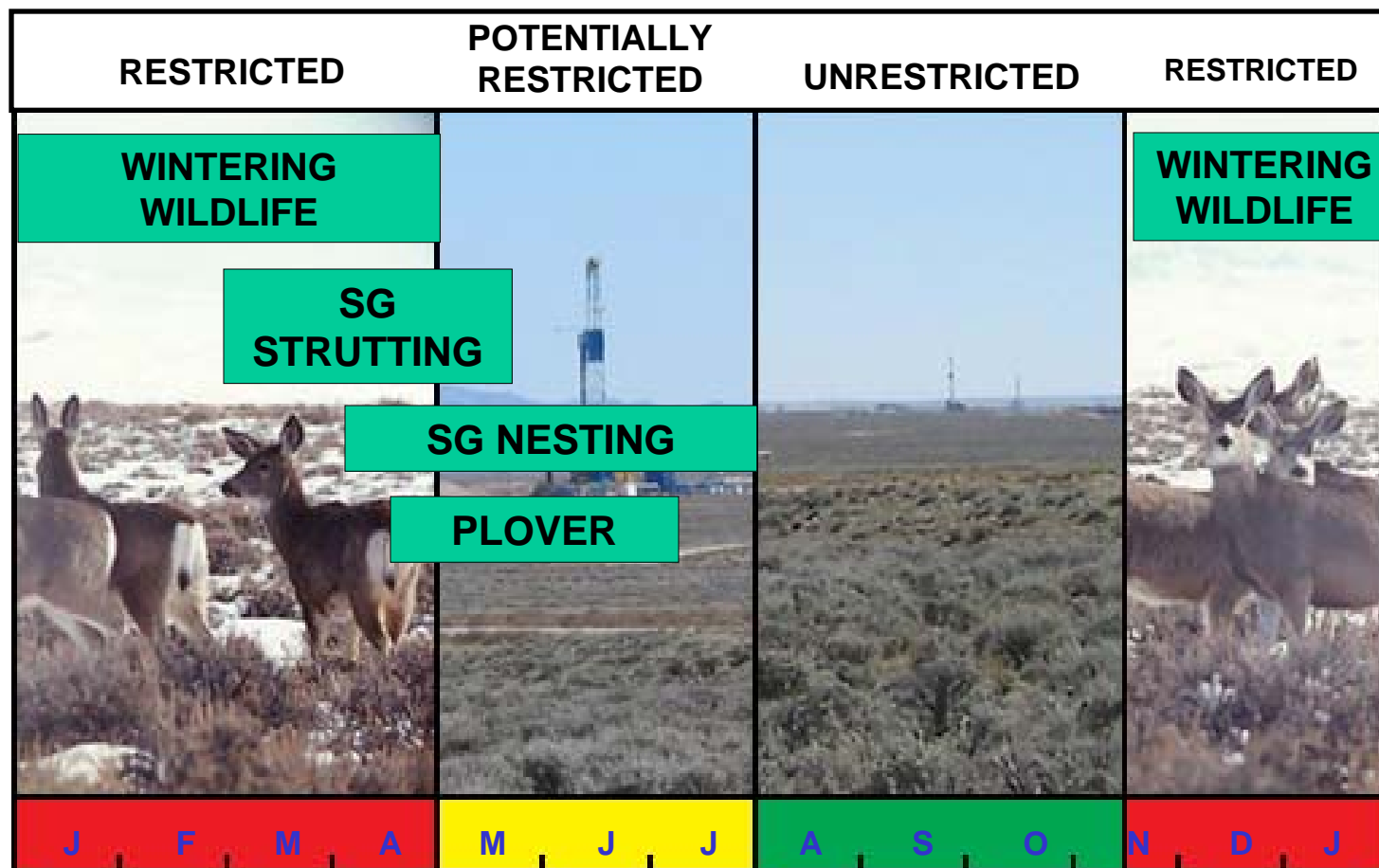
## Development:

- Began 1963
- 106 Current Wells
- 250 to 430 total BHL's
- 20-acre down spacing approved

Potential Reserves > 20 TCF from the Pinedale Anticline



# Wildlife restrictions compress drilling activities into a narrow window





# Questar's Pinedale Anticline Project

---

- Questar formally submitted a proposal to BLM in April 2004 requesting sustained year-round operations through the drilling phase of the project.
- Conditional approval from BLM received in November 2004.
- Key components of Questar's program includes:
  - 3 Winter drilling pads with 2 drilling rigs per pad beginning winter of 2005-2006
    - **BLM conditional approval allows Questar to drill one pad this winter to support ongoing winter drilling research.**
  - Extensive directional drilling from multiple well pads
  - Liquids pipelines
- Approval of Questar's program allows for more timely development of the resource, and at the same time enhances the benefits put in place by the ROD for the protection of other natural resources.

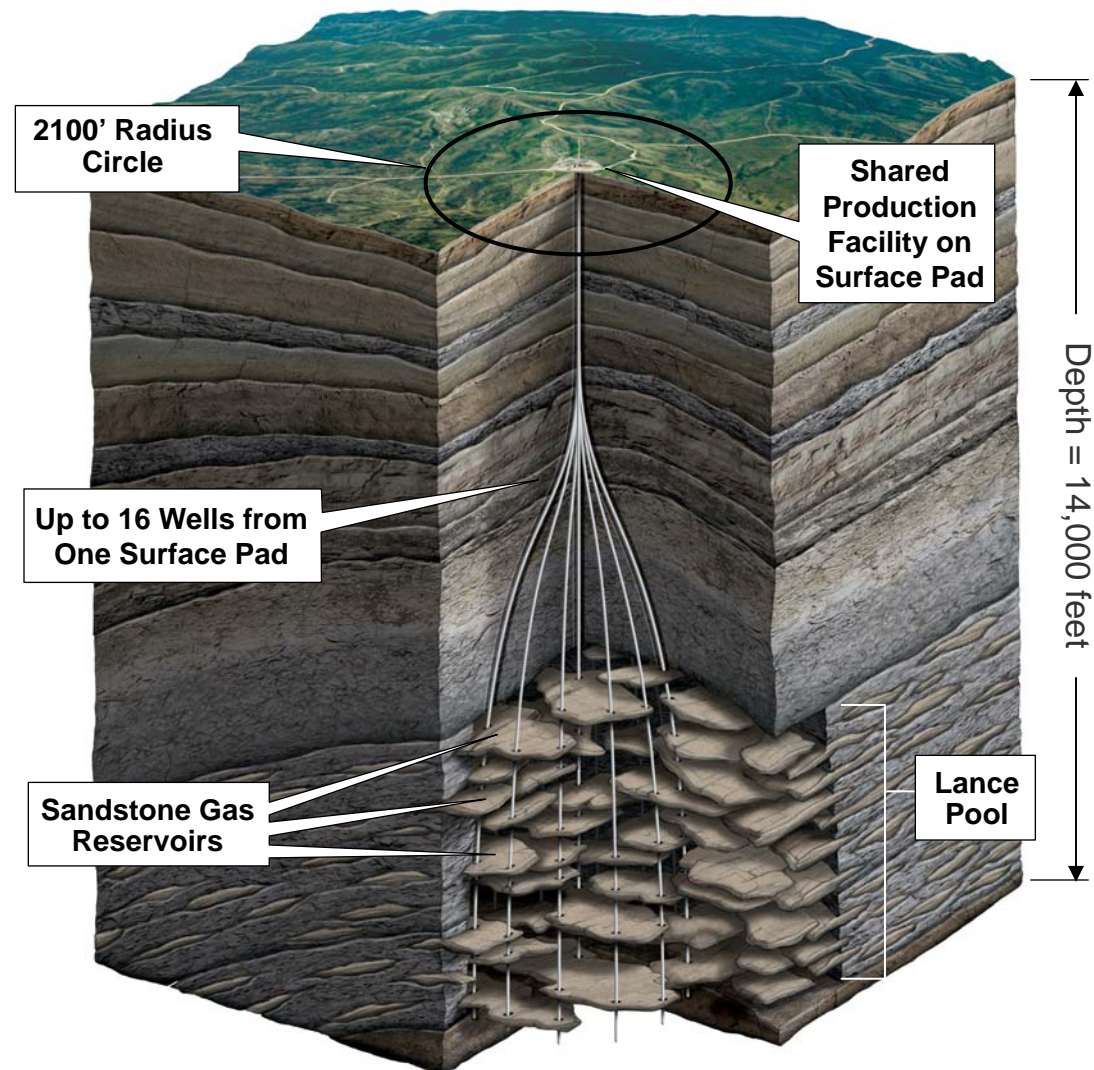
# Questar's Commitment To:

## NEW TECHNOLOGIES & APPROACHES

---

- Directional Drilling
  - **Less impacts to wildlife and wildlife habitat**
  - **Significantly minimize visual and physical impacts to surface**
  - **Fewer roads & less road traffic required (and less habitat fragmentation, less public access roads)**
  - **Should be considered on a site-by-site basis.**
- Liquids Pipelines
  - **Eliminate tanks and trucking**
  - **Pipeline will eliminate more than 25,500 semi-truck trips per year**
  - **Lowers NOx emissions from production equipment by more than 40% per well.**
  - **Production facilities consolidated**
- Flareless Completions
- SCADA system
- Oil-based mud

# Multiple directional wells from one pad REDUCES TOTAL SURFACE IMPACT



# View to Southeast, 21 May 2003





# Photo Model: All well pads contemplated in EIS



# Photo model: Questar's program with 9 new pads



## ADDITIONAL BENEFITS OF SUSTAINED YEAR-ROUND OPERATIONS

---

- Creates opportunities to invest in more specialized, more efficient and more environmentally sound equipment.
  - This equipment can be used consistently for the entire drilling and production period.
- Minimizes total drilling days
  - Shortened impact to wildlife and wildlife habitat
- Improved efficiencies and continuous employee training.
- Lessens boom and bust effect on local economies through elimination of seasonal-only work force.

**Shortens total time needed to fully develop resource by more than a decade.**

# BLM Wildlife Management on the Anticline

---



- Wildlife Restrictions
  - Deer Winter Range (15 Nov – 1 May)
  - Sage Grouse Strutting (1 March – 15 May)
    - Stay ¼ mi. away from leks
  - Sage Grouse Nesting (1 April – 31 July)
    - Stay 1 mi. away from active nests
- Ongoing annual monitoring under EIS/ROD of all Anticline wildlife species
- Site-specific monitoring of active leks and nests
- BLM is currently treating sage grouse as a species of concern, with enhanced protections to avoid jeopardy to the species and their habitat.



## Questar's Commitment To: WILDLIFE HABITAT MANAGEMENT, ENHANCEMENT & RECLAMATION

---

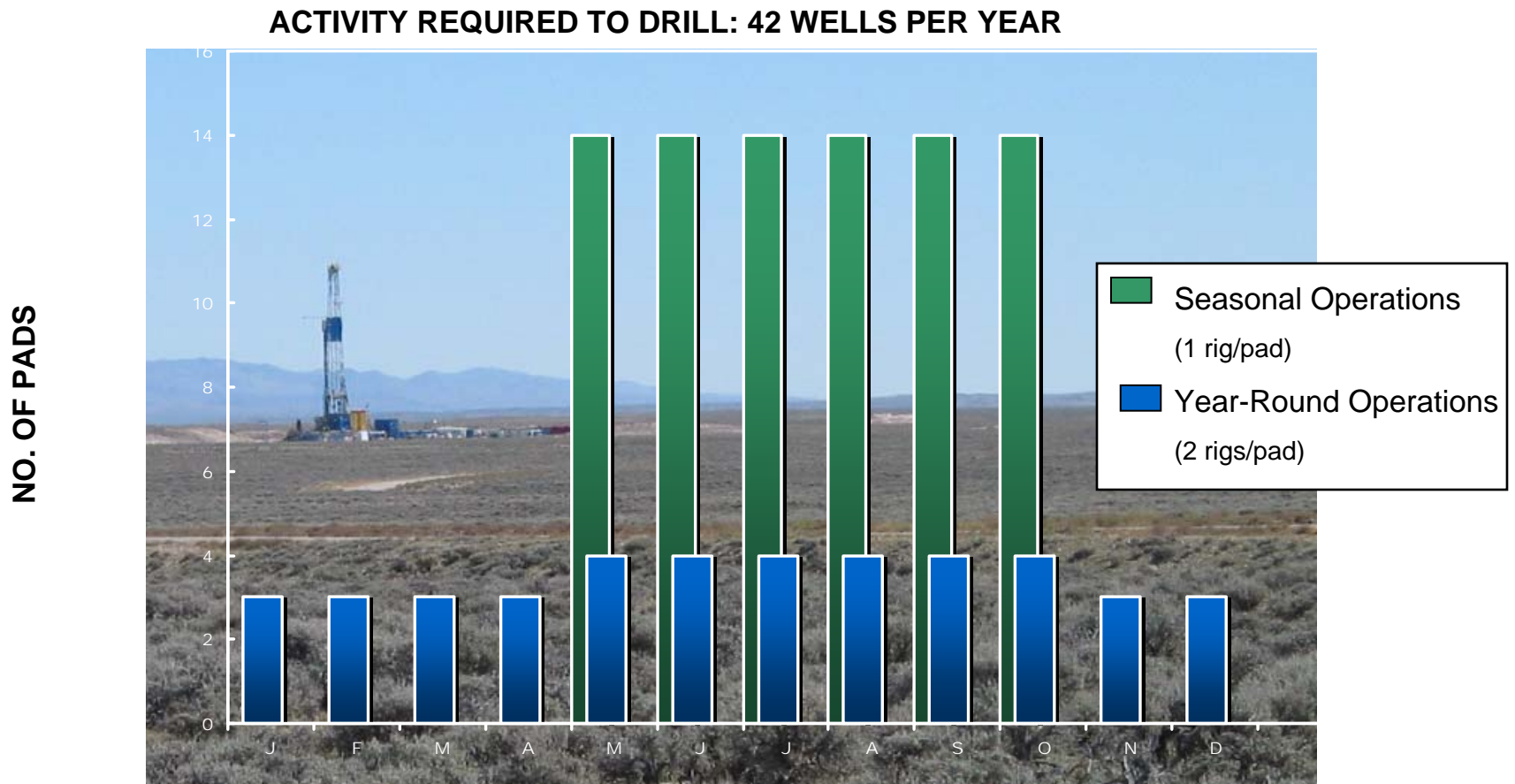
- Questar well location was included in UW sage grouse study
- Program reduces habitat disturbance, also benefiting winter concentration areas, leks and nesting areas
- Committed to sound science: 4<sup>th</sup> year of voluntary study of winter operations on seasonal deer habitat with Game and Fish & University of Wyoming
- Committed to funding range habitat improvements and/or other on-site mitigation as recommended by Agencies
- Cooperative effort with specialists for habitat growth & management plan
- Post-drilling reclamation of well pads will be accelerated using endorsed methods, minimizing Questar's total post drilling footprint to approximately 260 acres and restoring habitat sooner

# Questar Pinedale Project

## *Mitigation Summary*

	Permitted by EIS	Questar Program
Surface Disturbance	1474 Ac	533 Ac
Surface Disturbance <i>(new well pads)</i>	150 Pads <i>(98 new well pads)</i>	61 Pads total <i>(9 new well pads)</i>
Semi-Truck Trips Annually	25,467	0
Emissions	133 TPY	116 TPY
Duration of drilling	18 yrs	9 yrs
Mitigation Cost	\$37.5MM	\$209.5MM

Expanded year-round access is operationally safer and will minimize impact to wildlife habitat, the environment, community, and service sector.



# Questar Pinedale Project

## Summary of Benefits

---

- Benefits of sustainable development are being realized by Questar's investment in:
  - New technologies and approaches;
  - Dedication of resources
  - Working cooperatively on wildlife and habitat mitigation solutions; and,
  - Proactively building better relationships w/ our neighbors.
- Questar has developed solutions in Pinedale that promote sustainable development.
  - A win-win for wildlife and everyone involved – including government agencies, the community, Questar and the industry-at-large.
  - Pinedale project design has developed and implemented solutions that successfully address technological, environmental, land management and community issues & concerns – all while working to meet demanding production goals for consumer needs.





**QUESTAR**  
Market Resources Group

**CONCLUSION**

# Producing Wells on 2002-2003 Winter Pad

---



# Expanded Year-Round Access:

## *Summary of Benefits*

---

- Species & Habitat Protection / Environment
  - Reduces surface impact / habitat fragmentation
  - Fewer surface locations & roads
  - 8-16 wells per pad
  - Eliminates tanker traffic
  - Flow liquids off Mesa
  - Reduce duration of development
- Safety
  - Train & retain experienced workers
  - Reduce summer peak traffic
- Economic
  - Sustain motel & restaurant demand through year