Shale Revolution

Eagle Ford
Shale Play
Today’s agenda

» What is the Eagle Ford Shale Play?

» How much drilling activity & traffic is there in Eagle Ford?

» Who is Chesapeake Energy Corporation?

» Who shares in the Eagle Ford Shale Play revenue?

» What are some of the challenges in Eagle Ford?

» How is the Ports-to-Plains Corridor affected by the Eagle Ford Shale Play?
The Eagle Ford Shale is different from the other shale plays because it has three distinct elements: dry gas, wet gas and oil.

- 150 million years old
  - Unconventional resource play
  - Not a conventional reservoir
  - Requires stimulation to produce

- Formation 140’ – 450’ thick

- Located 5,000’ – 11,500’ below surface
Eagle Ford Shale Windows

Source: Energy Information Administration
Permitting Activity in Eagle Ford

Source: Texas Railroad Commission
Eagle Ford “Hot Spots”

Source: Texas Railroad Commission
TRCC Drilling Permits in 2011

Source: Texas Railroad Commission
Chesapeake Energy Corporation

- Second largest producer of American natural gas and top 15 U.S. liquids producer
- Focused primarily on domestic, on-shore production
- Recognized by the EPA as the 2009 Natural Gas STAR Production Partner of the Year
- Named Energy Producer of the Year and received the Industry Leadership Award at annual Platts Global Energy Awards
- Registered on national disclosure site: fracfocus.org
- Active in Texas since 1990; production in 89 counties*
- More than 5,400* operating wells in Texas
Chesapeake Operational Area
Eagle Ford Shale Development Plan

- Chesapeake has an industry leading leasehold position of:
  - ~627,000 net acres
- Multiple wells drilled from a single pad
- Lateral length: 5000’ - 8000’
- Day to drill well: 20 - 24 days
- Average rig count:
  - Year-end 2010: 21 rigs
  - Year-end 2011: ~31 rigs
  - Year end 2012: ~40 rigs
Seismic Exploration

» An investment in subsurface information

» Lowers risk

» Provides confident geologic information

» Leads to great drilling accuracy
Site Preparation

- Prior to drilling, padsite is prepared as needed
- Drilling multiple wells from a single padsite reduces the number of padsites needed
- With fewer padsites, overall environmental footprint is reduced
Drilling the Well
Hydraulic Fracturing

After the drilling rig leaves, completion activities begin

● The productive zone is perforated

● The well is then “fraced” so reservoir gas can migrate to the well bore

  – Water is mixed with sand and pumped into the Shale Reservoir under high pressure
  – This process fractures the shale to release the gas
  – Completed in a matter of days

Jobs include drillers, roustabouts, truckers, engineers, completion foremans & consultants
Completing the Well
Process to Take Oil and Natural Gas from Well to Market

- Transmission: interstate -> 24”
- Laterals: gathering line 8” – 12”
- Well connects: 6” – 8”
- Local gas distribution systems: 2” – 6”
Who Shares in the Revenue?

- **Mineral owners:** Bonus and royalties
- **Surface owners:** Drillsites and easements
- **Counties, cities, schools, hospital districts:** Ad valorem taxes
- **Workers:** Wages and benefits
- **Businesses:** Of all kinds
- **Non-profit organizations:** Donations and in-kind contributions
- **Shareholders:** You and your neighbors
  - Almost 43% of oil and natural gas stocks are owned by mutual funds for 55 million U.S. households
  - The majority of retirement plans – 401(k) plans and IRAs – have an energy component
  - 2,600 government-run pension funds hold almost 64 billion shares of U.S. oil and gas stock for military, police, firefighters and teachers*
Economic Benefits in 2010

- Generated close to $2.9 billion in total economic output
- Supported approximately 12,600 full-time jobs in the area
- Paid $511.8 million in salaries and benefits to workers
- Provided close to $1.3 billion of gross state product (or value-added)
- Added nearly $61 million in State revenues including severance taxes
- Provided more than $47 million in revenue to local governments for schools, hospitals, emergency services, etc.
Estimated Economic Benefits in 2020

» Close to $21.5 billion in total economic output

» Almost 68,000 full-time jobs in the area

» More than $3.2 billion in salaries and benefits paid to workers

» More than $11.6 billion of gross state product (or value added)

» Approximately $1.1 billion in State revenues including severance taxes

» More than $450 million in local government revenues
Eagle Ford Challenges

- Workforce Training
- Availability of Skilled Labor
- Roads & Bridges
- Water Availability
- Environmental Concerns
- Traffic Congestion/Safety
- Infrastructure Costs
- Educating Our Youth
Eagle Ford Consortium

Middle Rio Grande Foundation

- Education & Workforce
  - School Districts
  - Community Colleges
  - Universities
  - Workforce Groups

- Community Investment
  - Landowners
  - Private Foundations
  - Producer Philanthropy Departments

- Infrastructure
  - Elected Officials
  - Utility Companies
  - Housing Authorities
  - Environmental Groups

- Industry
  - Oil/Gas Producers
  - Service Companies
  - Oil/Gas Associations

- Community & Economic Development
  - Chambers of Commerce
  - Economic Development Groups
  - Social Services Organizations
Primary Objectives of EF Consortium

» Develop and foster effective lines of communications with oil and gas industry and local communities (i.e., public schools, non-profit groups, workforce training and education providers, and others).

» To coordinate workforce and education efforts to improve employment of dislocated and underemployed workers.

» To coordinate and collaborate to procure additional public and private resources including grants and private contributions, to benefit the workforce and community development efforts.

» To maximize on the economic opportunities to communities in the Eagle Ford Shale region, through collaboration with the oil and gas industry and through the development of localized economic development efforts.
Eagle Ford Conference
March 1-2, 2011
San Antonio, TX
Chesapeake Operational Area
2006 to 2008 versus 2008 to 2010

- 3.5% to -11.5%
- -2.8% to % 10.0%
- -3.2% to % 11.4%
- 3.3% to 11.8%
- 24.1% to -1.2%
Questions?

- AskChesapeake: Eagle Ford
  [www.AskChesapeake.com](http://www.AskChesapeake.com)

- Hydraulic Fracturing
  [www.hydraulicfracturing.com](http://www.hydraulicfracturing.com)

- Railroad Commission of Texas
  [www.rrc.state.tx.us](http://www.rrc.state.tx.us)

- America’s Natural Gas Alliance
  [www.anga.us](http://www.anga.us)

- Texas Commission on Environmental Quality
  [www.tceq.state.tx.us](http://www.tceq.state.tx.us)

- Frac Focus Registry
  [www.fracfocus.org](http://www.fracfocus.org)
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