

Proposed Gas Drilling and Production Regulations

City Council Briefing

August 27, 2007



Purpose of Briefing

- Outline need for code amendments
- Background on natural gas production in the Barnett Shale
- Outline of natural gas drilling and production phases
- Outline major issues to be addressed
- Provide an update on status of code amendments



Review

- City Attorney's Office
- Public Works and Transportation
 - Utilities
 - Streets
 - Floodplain
- Office of Environmental Quality
- Human Resources – Risk Management
- Development Services
- Outside Counsel



Committee Review

- Zoning Ordinance Advisory Committee (ZOAC) considered the proposed ordinance at 6 meetings
- ZOAC had two additional meetings as part of the CPC Environmental Committee to review conditions for SUPs
- ZOAC and CPC took a bus tour to visit gas drilling and production sites on April 12, 2007
- CPC was briefed on August 9, 2007
- CPC had a public hearing on August 23, 2007 and recommended approval of the proposed ordinance



Review of Other Cities Ordinances and Processes

- Ft Worth
- Irving
- Arlington
- North Richland Hills
- Flower Mound
- Colleyville
- Coppell
- Grapevine
- Southlake



Need for Code Amendment

- Natural gas drilling and production is currently considered a mining use
- Existing zoning provisions targeted towards sand and gravel mining
- Location restrictions
 - Limited to Agricultural and Industrial Manufacturing Districts by Specific Use Permit
 - Prohibited in parkland
- Insufficient permitting and review



Need for Code Amendment

- Environmental and Compatibility Issues
 - Air & water quality
 - Noise
 - Earth vibrations
 - Light and glare
 - Aesthetics



Other Regulatory Provisions & Authority

- Texas Railroad Commission
- Applicable Federal Law
 - Air quality
 - Storm water runoff
- City Codes
 - Environmental Performance Standards



Background - The Barnett Shale

- Largest onshore natural gas field in Texas, one of the largest in the U.S.
- First discovered in 1981, recovery methods developed in 1990s made significant production possible
- Heaviest concentration of well development is Tarrant, Johnson and Parker counties
- Current known boundaries would limit any production to the far western portion of the City of Dallas

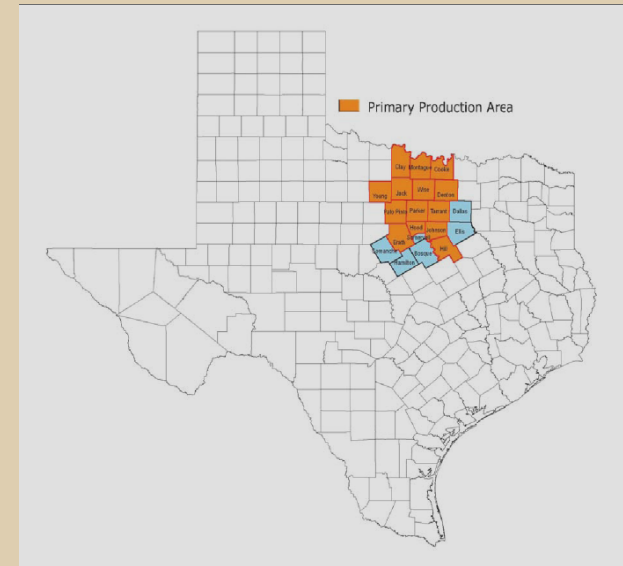
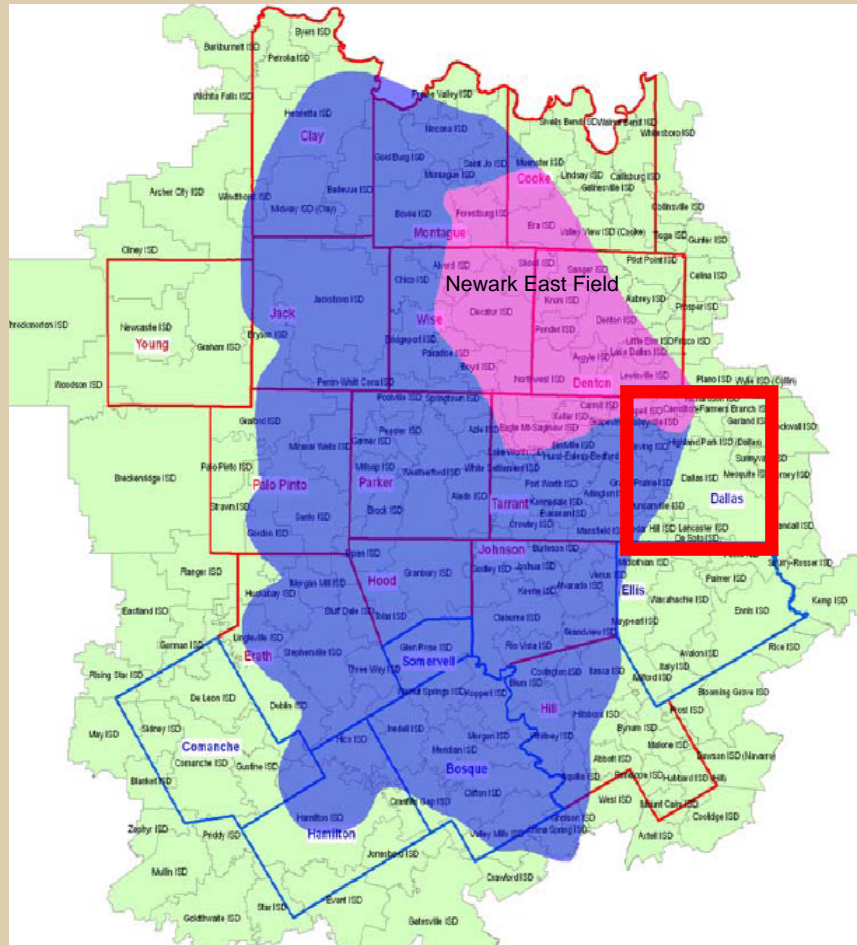


Background - The Barnett Shale

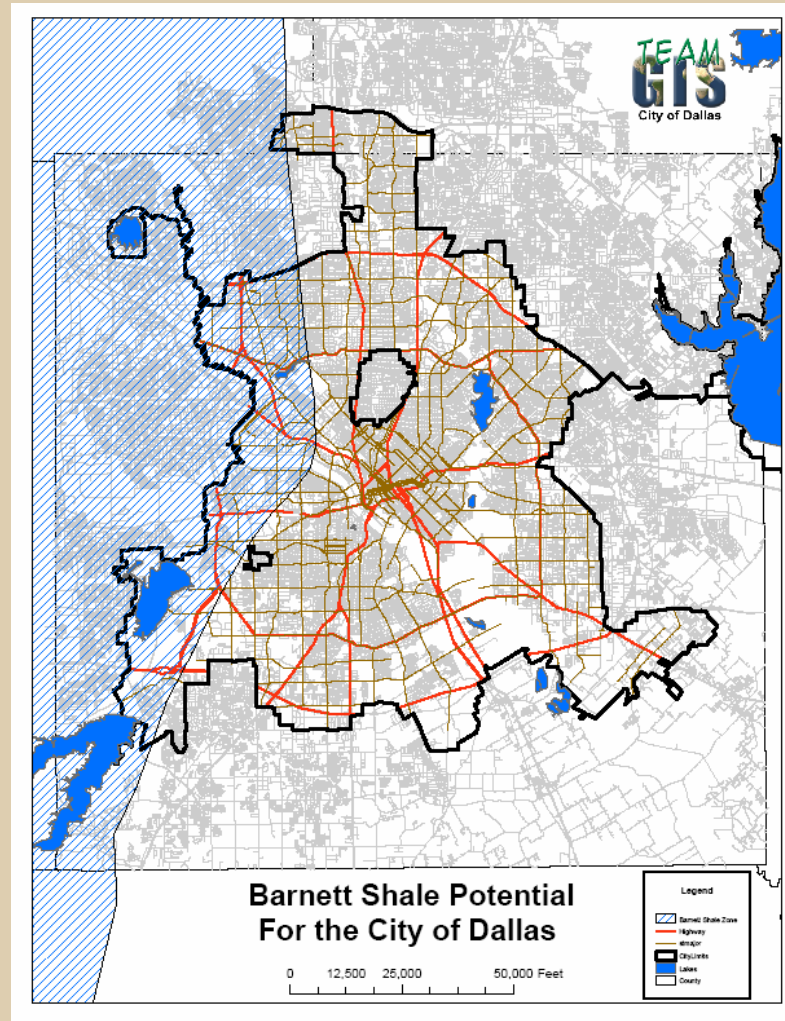
- Barnett Shale gas wells are between 7,000 and 10,000 feet deep
- Lateral drilling techniques reduce the number of wells to be drilled.
- Lateral lines extend up to 5,000 feet from the primary shaft in any or all directions.



Background - The Barnett Shale

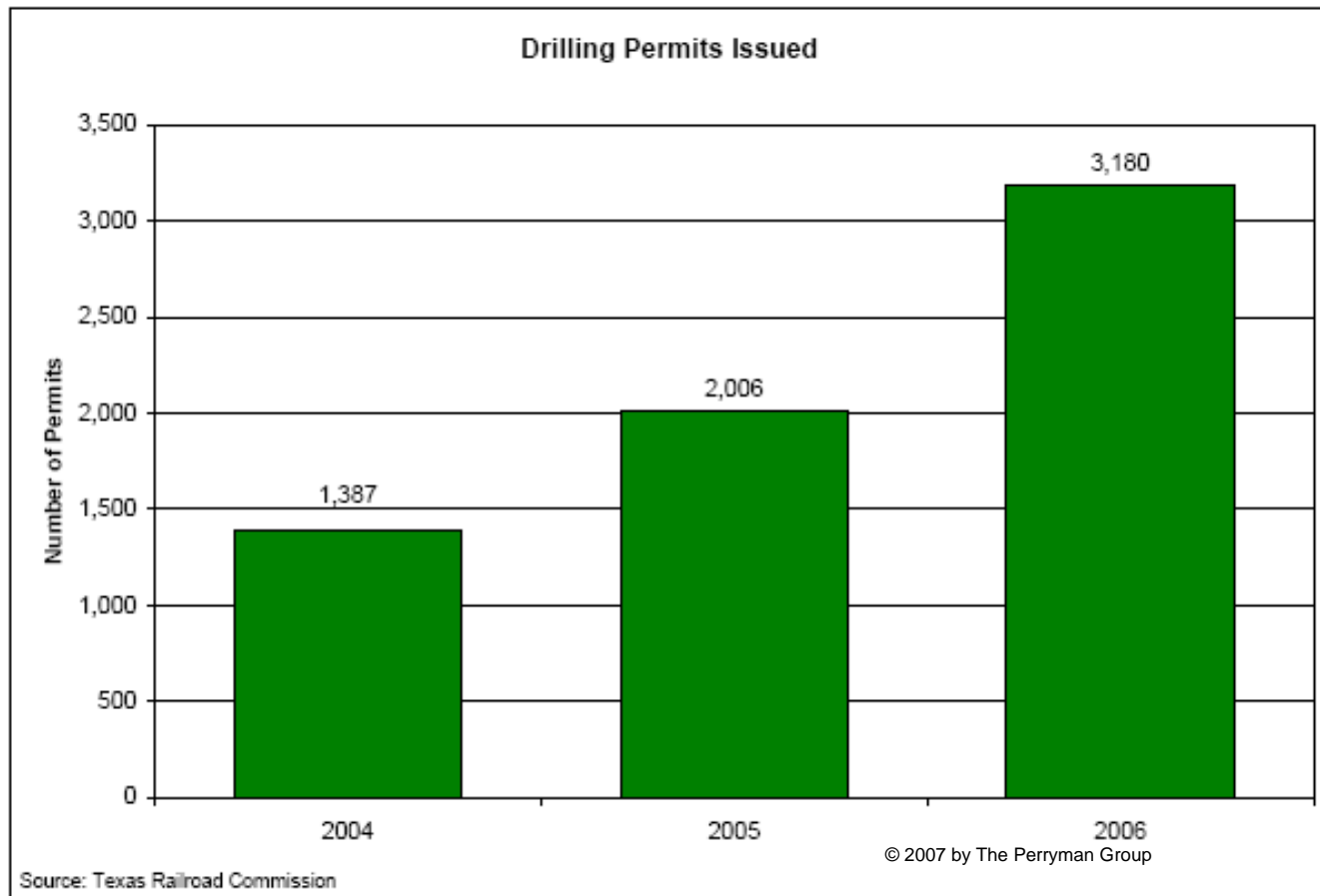


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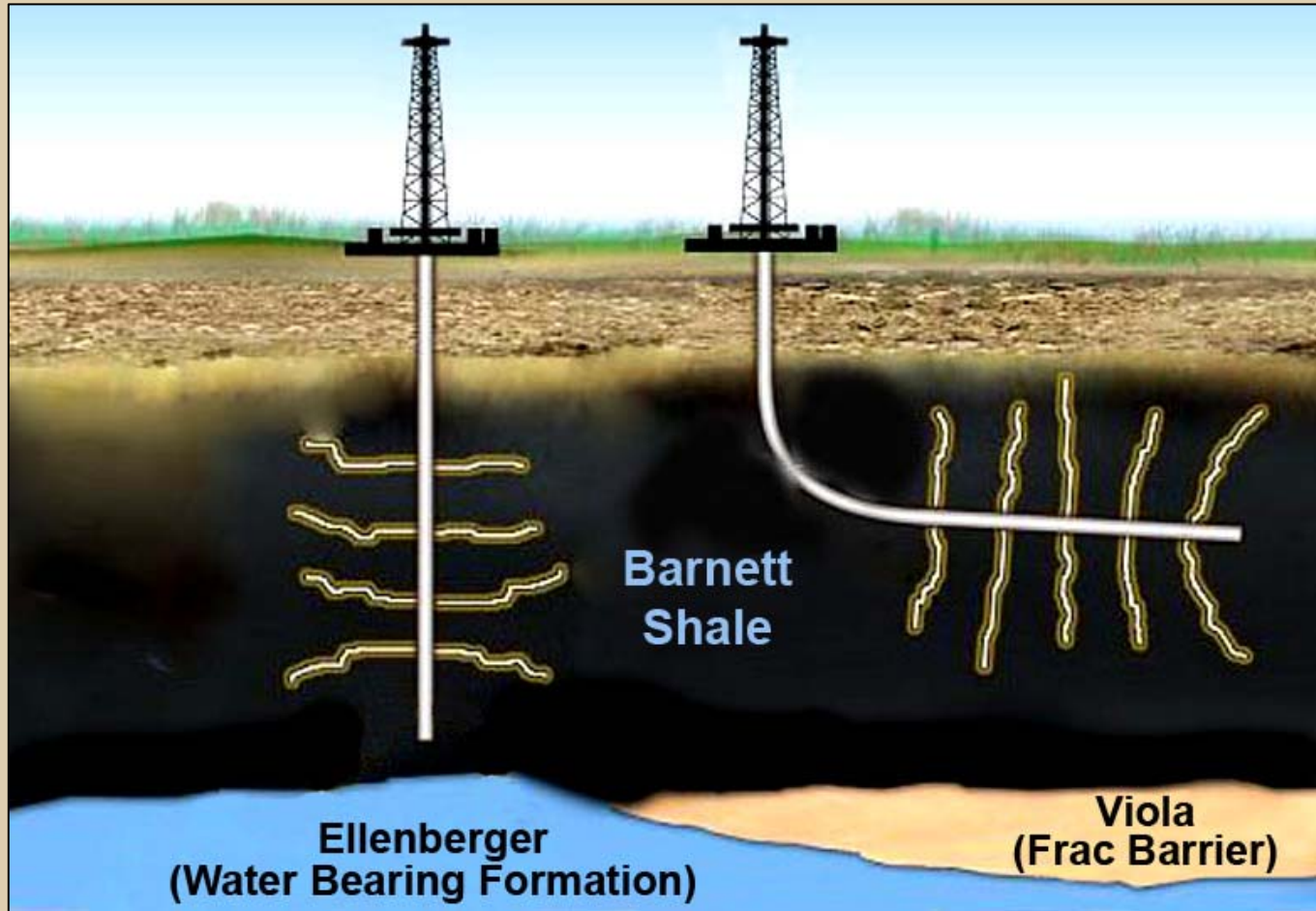


Background - The Barnett Shale

Drilling Activity



Background - The Barnett Shale



Vertical v. Horizontal Drilling



Typical Gas Well Site Phases

- Site preparation
- Drilling operations
- Wellhead establishment
- Production
- Reworking / Fracturing
- Site reclamation



Typical Gas Well Phases

- Site preparation



Typical Gas Well Phases

- Site preparation



Digging the mud pit



Lining the mud pit



Typical Gas Well Phases

■ Drilling Operations



Drilling rig move in



Typical Gas Well Phases

- Drilling Operations



Typical Gas Well Phases

- Wellhead establishment



Typical Gas Well Phases

- Production with perimeter screening and landscaping



Typical Gas Well Phases

- Production with perimeter screening and landscaping



Typical Gas Well Phases

- Reworking



Regulatory Issues

- Permissible zoning districts
- Distance to other uses and structures
- Hours of operation
- Sound regulations
- Reclamation
- Impact on city infrastructure (roads)
- Screening



Regulatory Issues

- Permissible zoning districts
 - Current Provisions
 - ◆ By SUP only in Agricultural and IM
 - ZOAC and CPC recommendation
 - ◆ By SUP in all zoning districts
 - SUP provides
 - ◆ Public input
 - ◆ Appropriate site specific restrictions
 - ◆ Flexibility



Regulatory Issues

- Distance to other uses and structures
 - Current Provisions
 - ◆ None – unless imposed by SUP
 - ◆ Prohibited in parkland
 - Proposed ordinance
 - ◆ Greater setbacks may be imposed by SUP
 - ◆ 300 ft from institutional uses, recreation uses and residential uses
 - ◆ 200 ft from any water well
 - ◆ 100 ft from any structure
 - ◆ 75 ft from any right-of-way
 - ◆ 25 ft from any property line, storage tank or source of ignition
 - ◆ Permitted in parkland



Regulatory Issues

- Hours of operation
 - Current Provisions
 - ◆ No formal
 - Proposed ordinance
 - ◆ Fracturing limited to daylight hours
 - Typical
 - ◆ Drilling phase 24/7 (approximately 30-60 days)
 - ◆ Production 24/7 (minimal noise impacts)
 - ◆ Fracturing – daylight hours



Regulatory Issues

- Sound regulations
 - Current Provisions
 - ◆ Defaults to code (varies relative to zoning)
 - Proposed ordinance
 - ◆ Drilling - May not produce a sound level greater than 78dB(a)
 - ◆ Fracturing - May not produce a sound level greater than 85dB(a)
 - ◆ Production – Defaults to code
 - ◆ Measured at 300 ft from the well



Regulatory Issues

■ Reclamation

● Current Provisions

- ◆ Reclamation plan and performance bond

● Proposed ordinance

- ◆ Reclamation plan and performance bond
- ◆ No structure may be built over an abandoned well



Regulatory Issues

- Impact on city infrastructure (roads)
 - Current Provisions
 - ◆ Addressed in SUP and operations plan
 - Proposed ordinance
 - ◆ Require map of truck routes
 - ◆ Video tape of truck routes showing road conditions
 - ◆ Require periodic inspections and repair as needed (within 10 days of notice)
 - ◆ Require road repair agreement



Regulatory Issues

■ Environmental

- Allow open or closed loop systems determined by SUP
- Only fresh water mud systems
- Restriction on metal additives to drilling fluids
- Emissions
- Salt water disposal wells prohibited



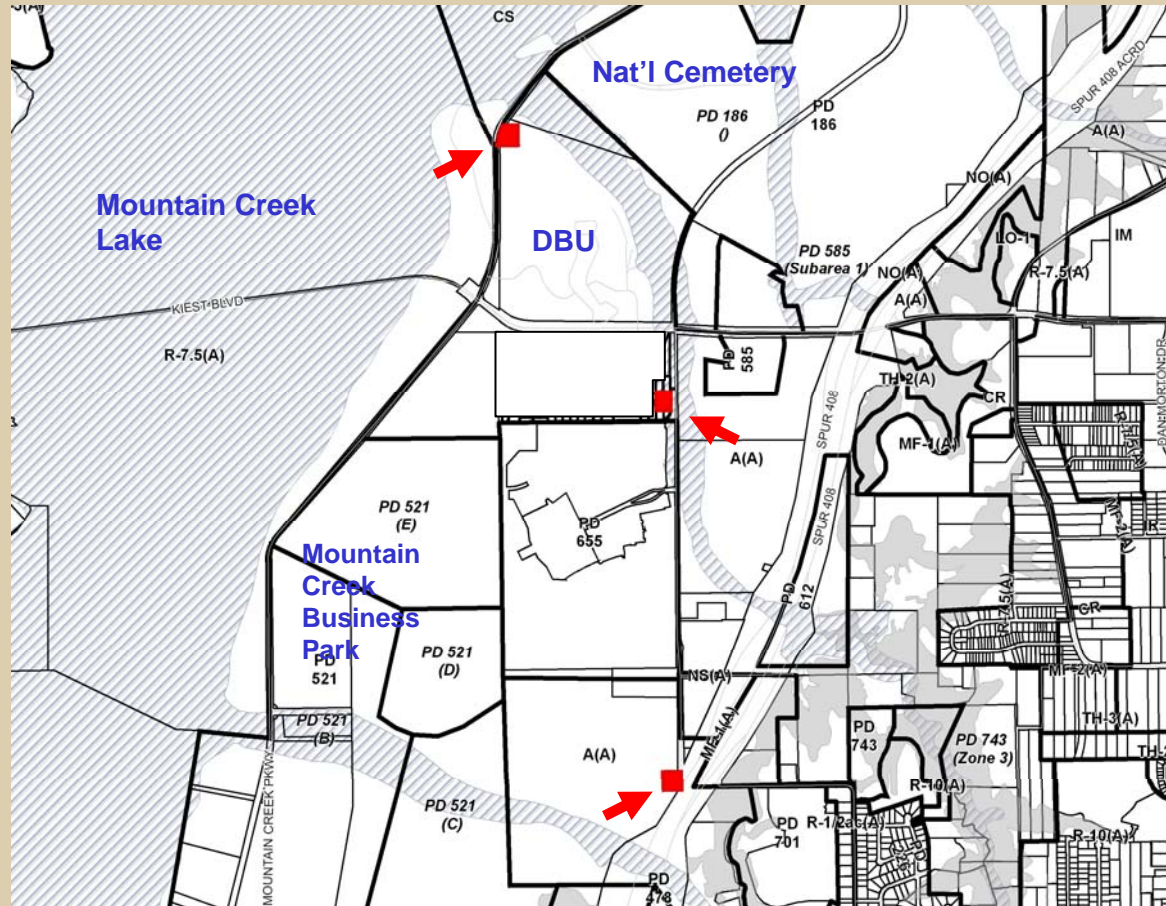
Other Regulatory Issues

- Notice prior to fracturing
- Insurance and Indemnification
- Emergency response plan
- Screening
 - Site specific requirements through SUP



Approved Sites

- Three approved SUPs



Status

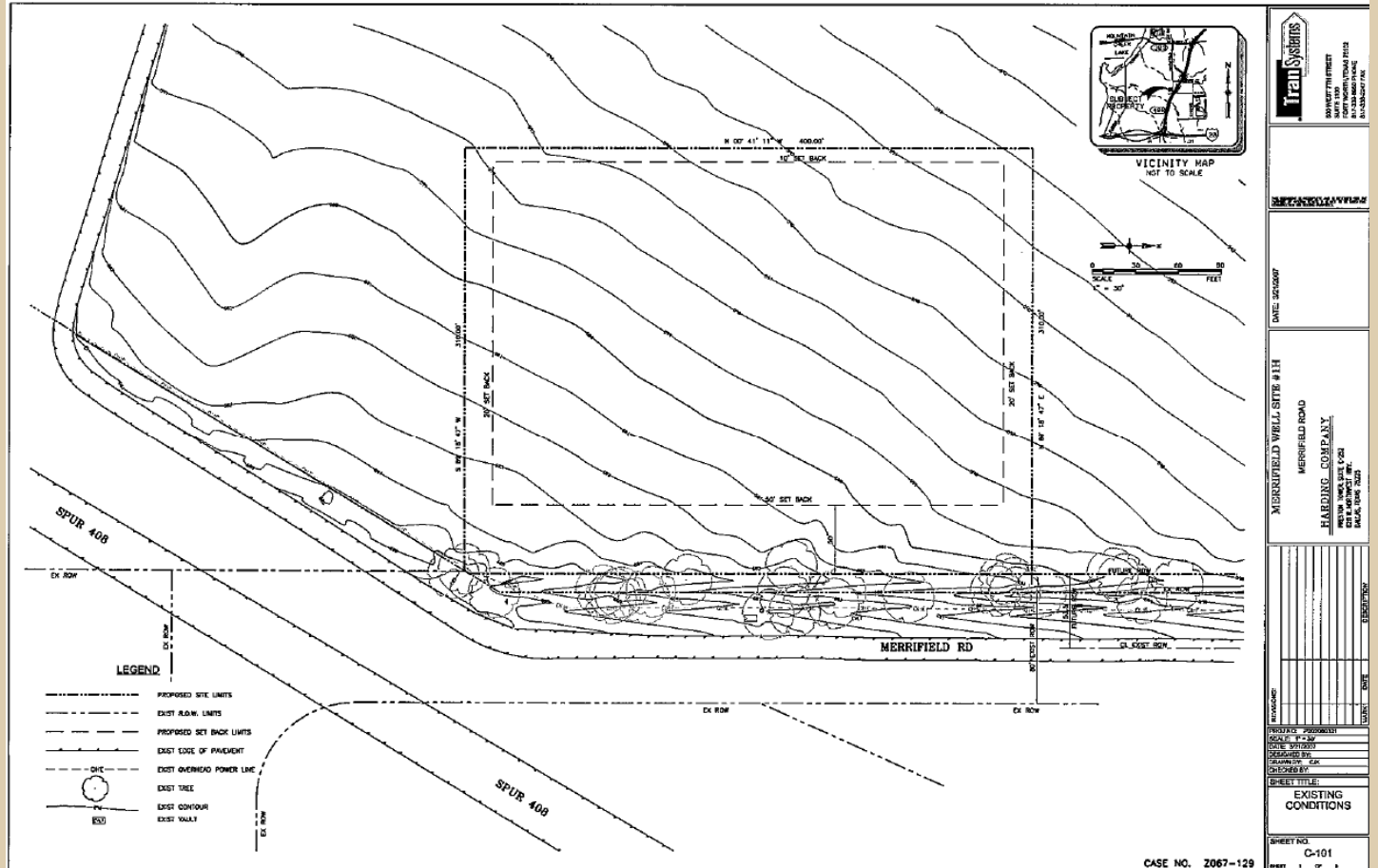
- City Plan Commission recommended approval on August 23, 2007
- Scheduled for City Council consideration on September 12, 2007



Discussion

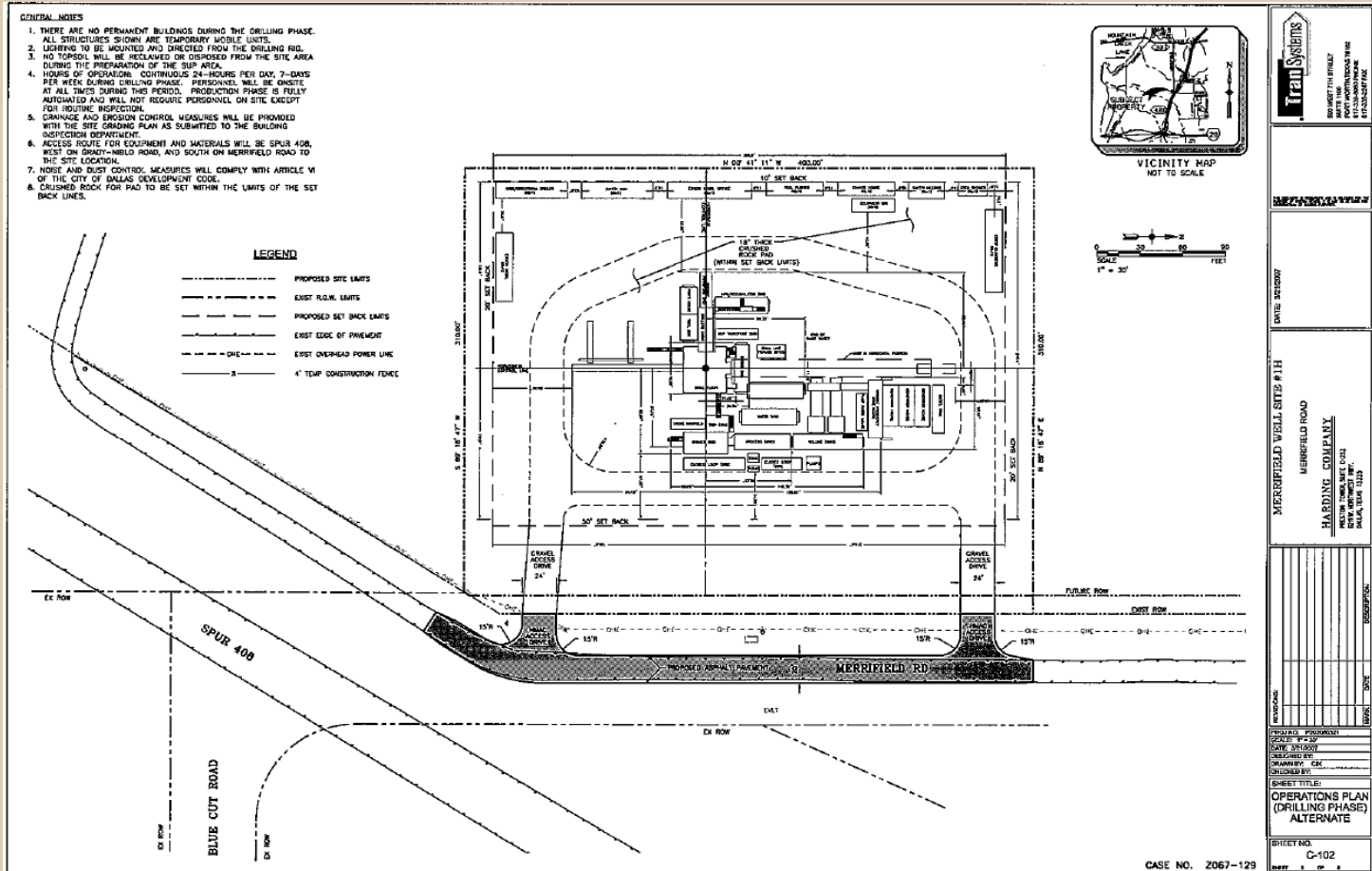


Required Plans



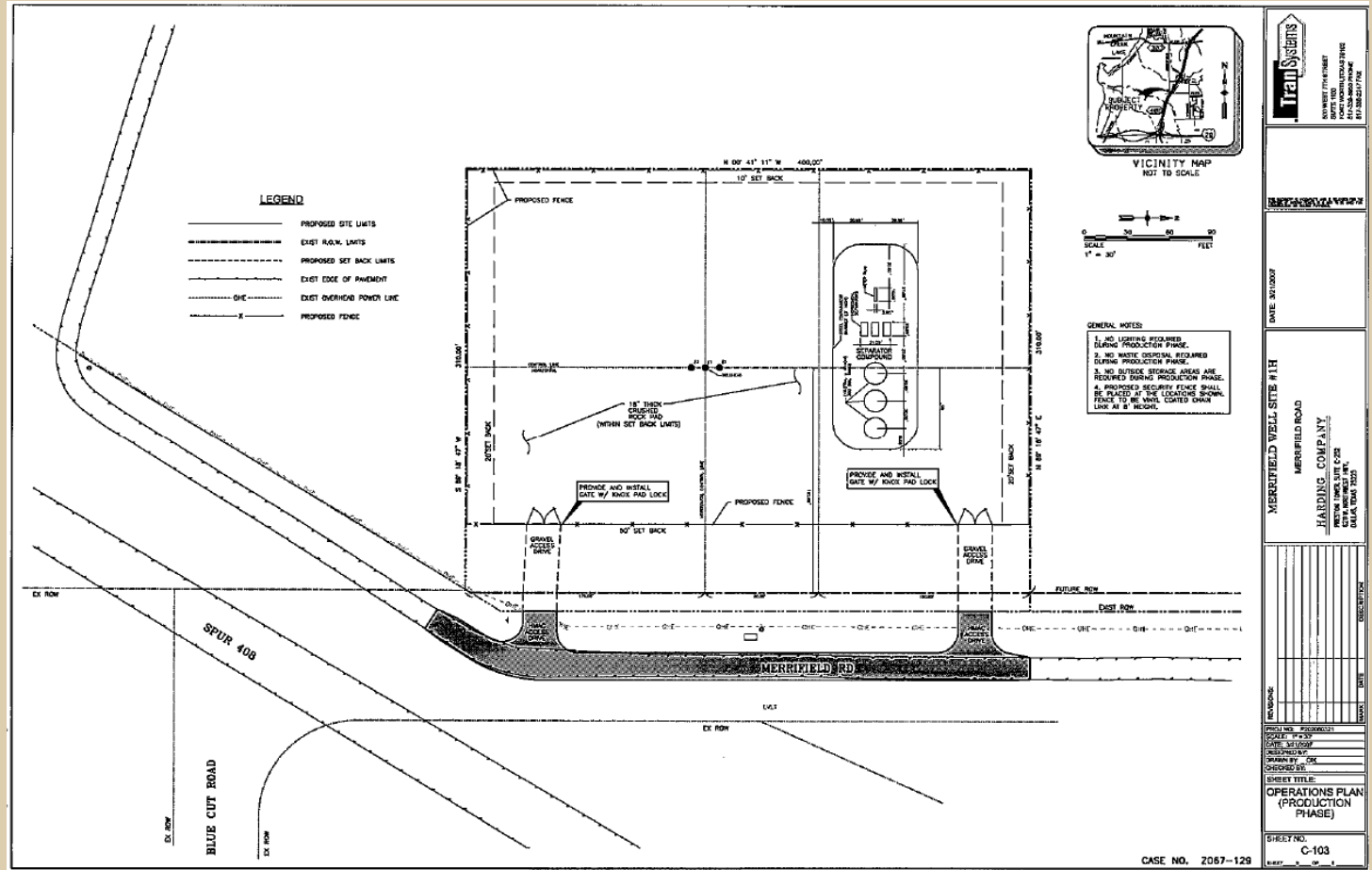
Existing Site Plan

Required Plans



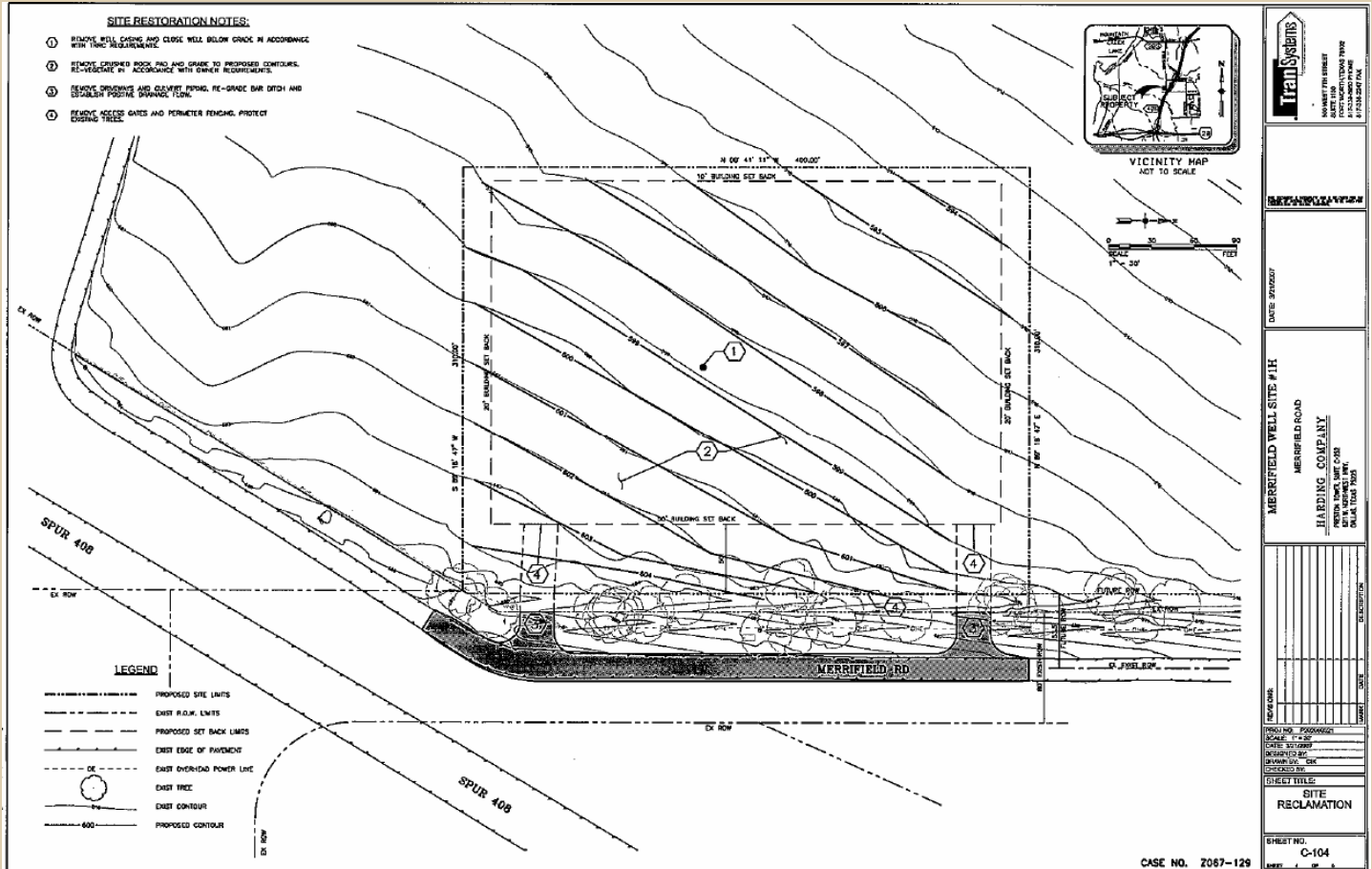
Operations Plan: Drilling

Required Plans



Operations Plan: Production

Required Plans



Reclamation Plan