

# Regulation of Natural Gas Storage in Kansas

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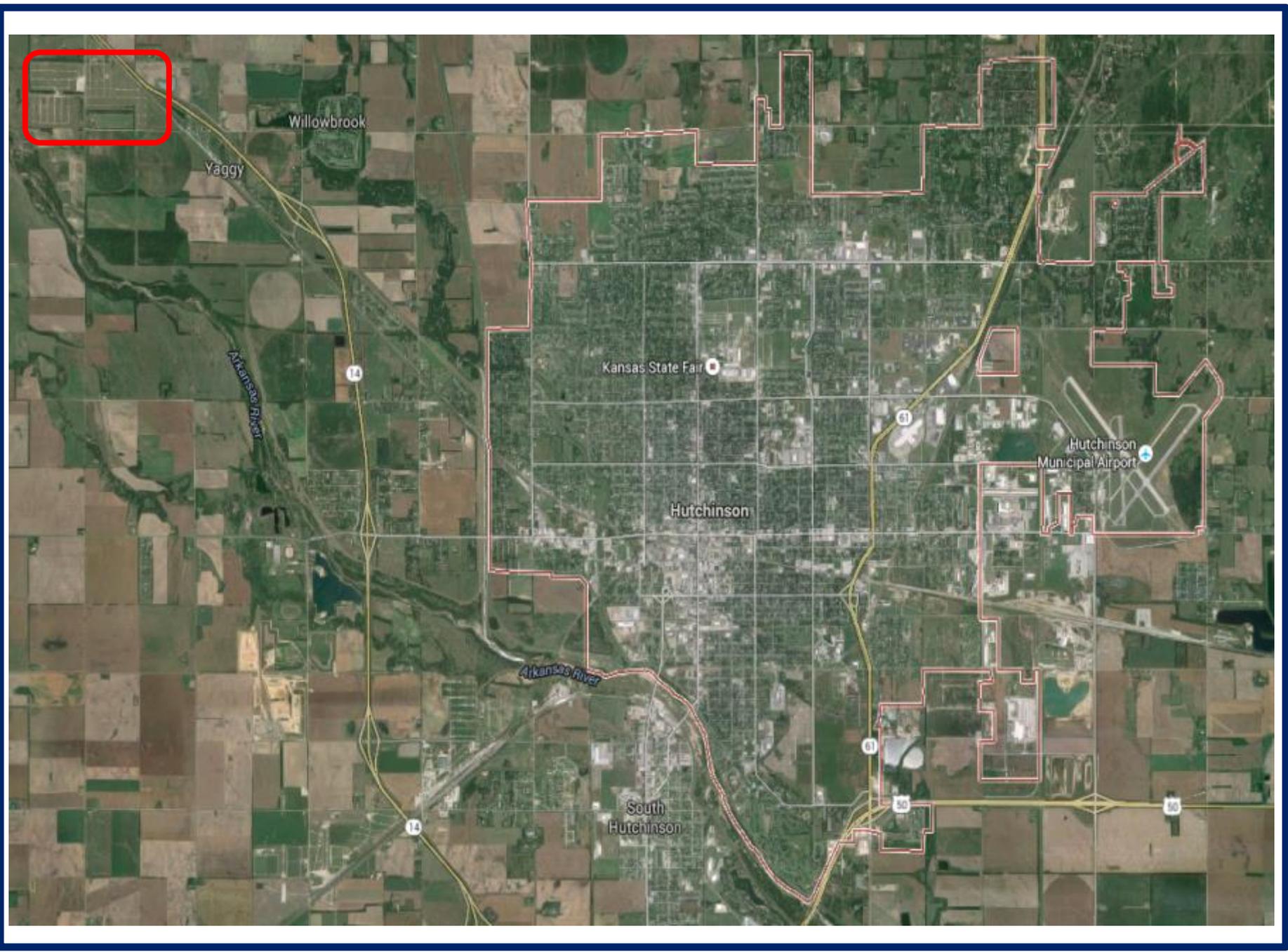
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Photos courtesy of KGS via Hutchinson Fire Department  
([http://www.kgs.ku.edu/Hydro/Hutch/Background/FireDept/Small/ARC07A\\_sm.html](http://www.kgs.ku.edu/Hydro/Hutch/Background/FireDept/Small/ARC07A_sm.html))





Willowbrook

Yaggy

Arkansas River

Kansas State Fair

Hutchinson

Hutchinson Municipal Airport

Arkansas River

South Hutchinson

# Yaggy Disaster

- Field originally developed in the early 1980's for propane storage in salt caverns or jugs 650-900 feet deep.
- Propane storage wells were plugged.
- In early 1990's, the cement was drilled out and wells were converted to natural gas storage.
- Yaggy had approximately 70 wells. At the onset of the disaster, approximately 62 were being utilized as active gas storage jugs.
- Field capacity was approximately 3.5 Bcf at 600 psi.
- Only natural gas salt cavern storage field in Kansas at the time.

# Yaggy Disaster

- **January 17, 2001**

- Two explosions rock the downtown business district and two business are engulfed in flames in a short period of time.
- Many other business suffer some sort of damage like broken windows, but injuries were minor.
- Fire originally suspected to be natural gas line leak.
- Officials cut off gas supply but fires can't be extinguished.
- Storage operator notifies city of dramatic pressure drop at 16 jug pod where they had been injecting natural gas for several days.
- That night, gas geysers appear on the east side of town.

- **January 18, 2001**

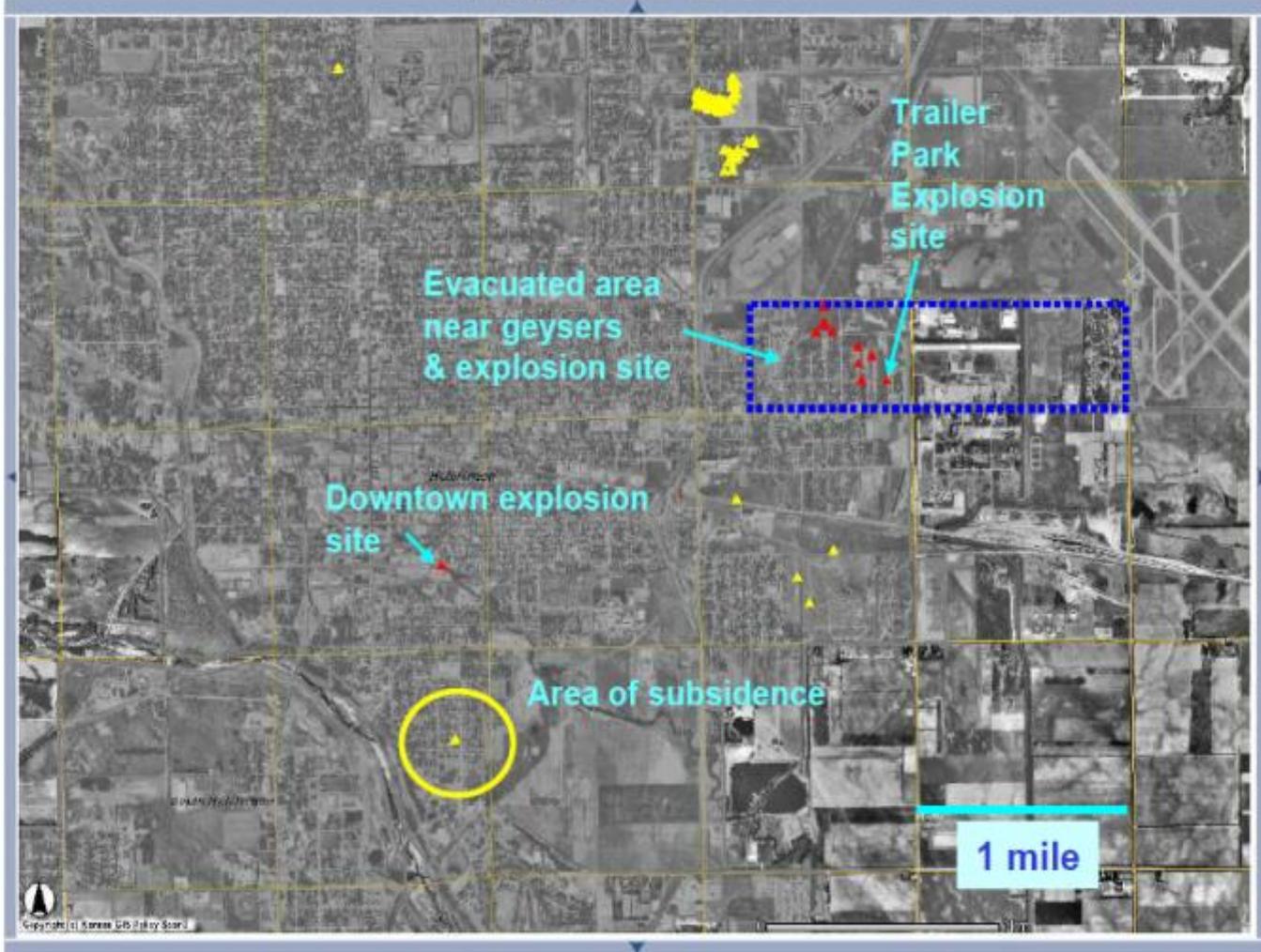
- Explosion under a mobile home severely burns two residents who later die from their injuries.
- Approximately 143 MMcf of gas was lost from the storage site.

# Yaggy Disaster

Map Tools help zoom in zoom out full extent

- Legend ?
- ▲ Geysers
  - Known Subsidence
  - Incorporated Areas
  - Section Lines
  - Aerial Photography

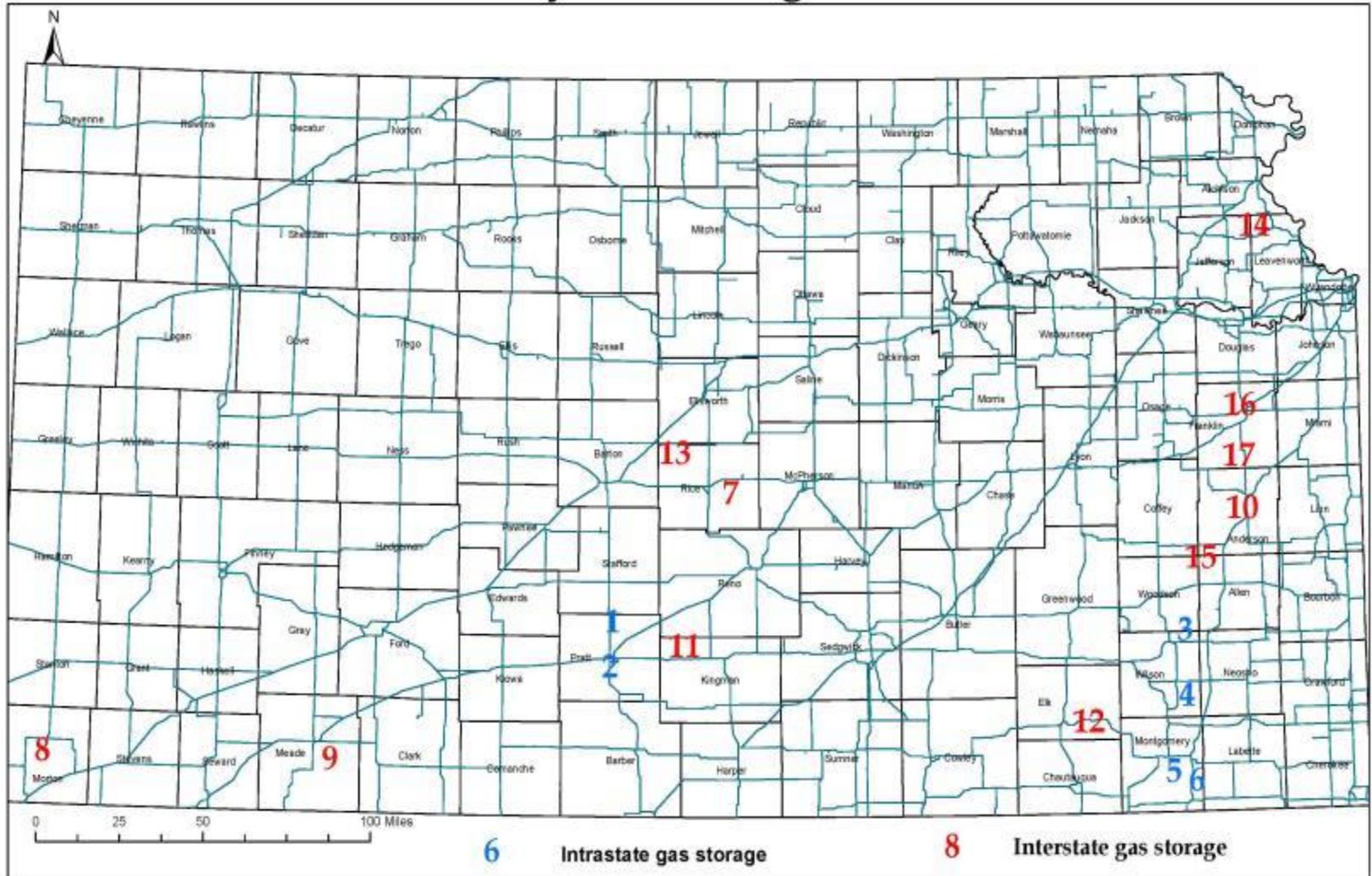
- Table of Contents ?
- Seismic Lines
  - Geysers
  - Vent Well Locations
  - Known Subsidence
  - Incorporated Areas
  - Section Lines
  - County Boundaries
  - USGS Topo Map
  - Aerial Photography
- update inap



# Kansas' Response

- HB 2200 created K.S.A. 55-1,115 which directed the KCC to draft and implement regulations for porosity gas storage and for KDHE to do the same for gas storage in salt caverns (K.S.A. 55-1,117).
  - Provided a two-year moratorium or until regulations were promulgated on storage of natural gas in bedded salt.
- KCC adopted regulations for porosity gas storage (UPGS) in K.A.R. 82-3-1000 *et seq.* in 2002.
- KDHE adopted regulations for salt cavern storage in K.A.R. 28-45a-1 *et seq.* in 2003.
  - To date, Yaggy is the only natural gas storage cavern in Kansas – it is in monitoring status and not permitted under the new regulations.
    - Caverns are filled with brine.

# Porosity Gas Storage Fields



# Kansas Regulations

- K.A.R. 82-3-1000 is the definitional section.
  - K.A.R. 82-3-1000(o) "**Underground porosity gas storage**" means the storage of hydrocarbon gas in underground porous and permeable geologic strata that have been converted to hydrocarbon gas storage.
  - K.A.R. 82-3-1000(p) "**Underground porosity gas storage facility**" and "**storage facility**" mean the leased acreage associated with the storage field. This term shall include the wellbore tubular goods, the wellhead, and any related equipment, including the last positive shutoff valve attached to the flowline.
- K.A.R. 82-3-1001 requires the operator to provide the KCC with copies of all documents filed with FERC.

# Kansas Regulations

- K.A.R. 82-3-1002 provides for provisional permits.
  - All existing UPGS facilities were required to obtain provisional permits.
  - Provisional applications had to be acted on within 90 days and would expire after two years.
  - Operators were to apply for fully authorized permits during this two-year term.
  - Provided for a \$1,000 monetary penalty per day for operating without a permit and shutting-in the storage facility's operations.

# Kansas Regulations

- K.A.R. 82-3-1003 outlines the requirements for a fully authorized operating permit.
- K.A.R. 82-3-1004 implements notice requirements for facilities constructed after July 1, 2002.
  - Copies of the application to:
    - Each owner or operator within ½ mile of the storage boundary;
    - Each unleased mineral owner of record within ½ mile of the storage boundary; and
    - Landowner(s) upon whose land the well or wells affected by the application are located.
  - Requires publication in the official county newspaper for two weeks where lands impacted by application are located and at least one issue of the Wichita Eagle.
  - Provides protest (15-day window) and notice of hearing requirements.

# Kansas Regulations

- K.A.R. 82-3-1005 sets out the five year testing requirements for gas storage wells.
  - Staff must witness at least 25% of tests – currently averaging approximately 50% each year.
    - Establishes a \$1,000 penalty for failing to test wells for mechanical integrity and for failing to repair wells which fail integrity tests.
  - Requires leak detector inspections and testing at least once per year.
    - Establishes a \$500 penalty for failing to comply with the leak detector inspection and testing requirements.
  - Each day of a continuing violation represents a separate violation and the Commission may increase the penalties if aggravating factors are present.

# Kansas Regulations

- K.A.R. 82-3-1006 establishes the monitoring and reporting procedures for:
  - Monthly and annual wellhead pressures;
  - Potential leaks;
  - Gas metering; and
  - Monthly volume reports.
- Establishes a \$100 penalty for failing to file annual pressure reports and monthly gas volume reports.
- Establishes a \$5,000 penalty for failing to report a potential leak.
- Each day may be considered a separate violation and the Commission may increase monetary amounts if aggravating factors are present.

# Kansas Regulations

- K.A.R. 82-3-1007 requires identification signs and the specific details necessary for each well and associated compressor site.
  - Establishes a \$100 monetary penalty.\*
- K.A.R. 82-3-1008 requires annual safety inspections.
  - Operators must notify KCC at least 10 days prior to inspection and turn in written inspection report within 30 days following the inspection.
  - Criteria for inspection:
    - All gas storage well manual valves are in normal operating condition;
    - All surface automatic shut-in safety valves are in normal operating condition;
    - Wellheads and all related equipment are in normal operating condition.
    - All warning signs, safety fences or barriers, and security equipment meet the requirements of the operator's safety plan.
  - Establishes a \$500\* penalty for violating these requirements.

# Kansas Regulations

- K.A.R. 82-3-1009 identifies the requirements to transfer operator authority of a storage field.
- K.A.R. 82-3-1010 lists the requirements for plugging storage wells.
- K.A.R. 82-3-1011 outlines the different procedures for temporarily abandoning a storage well and for decommissioning or abandoning a facility.
- 82-3-1012 establishes an annual well fee of \$240 per well and application fees:
  - Provisional: \$2,000 and \$50 per well.
  - Full Permit: \$2,500 and \$75 per well.
    - An amendment to either permit is \$250.

# Kansas Cases

- Two main areas addressed in litigation are:
  - Ownership of storage gas and
  - Jurisdiction.
- Ownership is an issue because Kansas is a rule of capture state modified over time by conservation regulations and practices.
- Once minerals move off the landowner's property and are produced or captured by someone else, the landowner loses his ownership rights to those minerals. To perfect his ownership interest in minerals underlying his land, the landowner must produce or capture those minerals. The rule of capture protects an adjacent landowner who, through production on his land, causes the minerals to migrate across surface boundaries. Natural Gas Co. v. Baker, 197 F.2d 647 (10<sup>th</sup> Cir. 1952).

# Kansas Cases

## Anderson v. Beech Aircraft Corp. 237 Kan. 336, 699 P.2d 1023 (1985)

- “The specific issue presented in this case is truly one of first impression in Kansas. As far as natural gas is concerned, Kansas has long recognized the law of capture, holding that natural gas in the ground is part of the real estate until it is actually produced and severed. At that point, it becomes personalty. Burden v. Gypsy Oil Co., 141 Kan. 147, 40 P.2d 463 (1935); Gas Co. v. Neosho County, 75 Kan. 335, 89 P.750 (1907); In re Estate of Sellens, 7 Kan.App.2d 48, 637 P.2d 483 (1981), rev. denied 230 Kan. 818 (1982).”
- Beech lost ownership to the gas when it migrated under the adjoining property.
- “We also are convinced that by applying the law of capture, as traditionally followed [699 P.2d 1032] in this state, the court would be carrying out the Kansas statutory scheme as set forth above in K.S.A. 55-1201 et seq. The court in Strain v. Cities Service Gas Co., 148 Kan. 393, 83 P.2d 124, recognized that the regulation of the underground storage of natural gas is a matter for the consideration of the legislature. In the event the legislature should determine that it would be in the best interests of the people of Kansas to adopt different legal principles to regulate the storage of gas, that is a matter for future legislative action.”
- Also see Reese v. Williams Natural Gas, 983, F.2d 1514 (1993) and Northern Natural Gas Company v. Martin, Pringle, 289 Kan. 777, 217 P.3d 966 (2009) for discussion and applicability of Anderson to other factual situations.

# Kansas Cases

- In 1993, the legislature enacted K.S.A. 55-1210 to limit the applicability of the rule of capture to gas storage.
- 55-1210. **Property rights to injected natural gas established.** (a) All natural gas which has previously been reduced to possession, and which is subsequently injected into underground storage fields, sands, reservoirs and facilities, whether such storage rights were acquired by eminent domain or otherwise, **shall at all times be the property of the injector**, such injector's heirs, successors or assigns, whether owned by the injector or stored under contract.

# Kansas Cases

- K.S.A. 55-1210(b) **In no event shall such gas be subject to the right of the owner of the surface of such lands or of any mineral interest therein**, under which such gas storage fields, sands, reservoirs and facilities lie, or of any person, other than the injector, such injector's heirs, successors and assigns, to produce, take, reduce to possession, **either by means of the law of capture or otherwise**, waste, or otherwise interfere with or exercise any control over such gas. Nothing in this subsection shall be deemed to affect the right of the owner of the surface of such lands or of any mineral interest therein to drill or bore through the underground storage fields, sands, reservoirs and facilities in such a manner as will protect such fields, sand, reservoirs and facilities against pollution and the escape of the natural gas being stored.

# Kansas Cases

- K.S.A. 55-1210(c) With regard to natural gas that has migrated to adjoining property or to a stratum, or portion thereof, which has not been condemned as allowed by law or otherwise purchased:
  - (1) The injector, such injector's heirs, successors and assigns shall not lose title to or possession of such gas if such injector, such injector's heirs, successors or assigns can prove by a preponderance of the evidence that such gas was originally injected into the underground storage.
  - (2) The injector, such injector's heirs, successors and assigns, shall have the right to conduct such tests on any existing wells on adjoining property, at such injector's sole risk and expense including, but not limited to, the value of any lost production of other than the injector's gas, as may be reasonable to determine ownership of such gas.
  - (3) The owner of the stratum and the owner of the surface shall be entitled to such compensation, including compensation for use of or damage to the surface or substratum, as is provided by law, and shall be entitled to recovery of all costs and expenses, including reasonable attorney fees, if litigation is necessary to enforce any rights under this subsection (c) and the injector does not prevail.

# Kansas Cases

- K.S.A. 55-1210(d) The injector, such injector's heirs, successors and assigns shall have the right to compel compliance with this section by injunction or other appropriate relief by application to a court of competent jurisdiction.
- And litigation ensued...

# Kansas Cases

***NNG v. Nash Oil & Gas, Inc.*, No. 04-1295 (D. Kan. 2007), *aff'd*, 526 F.3d 626 (10<sup>th</sup> Cir. 2008)**

- NNG sued under common law, claiming conversion and unjust enrichment, and under K.S.A. 55-1210, alleging production of migrated gas from Cunningham Storage Field.
- On common-law claims, NNG was barred from recovery due to operation of statute of limitations.
- The statutory claim was dismissed because no independent cause of action was created by the statute, “rather, it simply abolishes the common-law rule of capture with respect to property rights of migrated gas such that a plaintiff is no longer precluded from bringing some other cause of action [such as conversion] to enforce those rights.” 526 F.3d 626, 632.

# Kansas Cases

*NNG v. Trans Pacific Oil, et al.* No. 02-1418 (D. Kan. 2005), *aff'd*, 248 Fed. Appx. 882 (10<sup>th</sup> Cir. 2007)

- NNG sued under K.S.A. 55-1210 alleging production of gas that had migrated away from its Cunningham field. Defendants asserted various counterclaims.
- NNG lost its claim because it did not prove the gas migrated on or after July 1, 1993, the effective date of K.S.A. 55-1210.
- Defendants were awarded \$4.65M on counterclaim for damages sustained for shut in of their wells.

# Kansas Cases

***NNG v. Oneok Field Services., et al. v. Nash Oil & Gas, Inc. and L.D. Drilling, 759 F.Supp.2d 1282 (D. Kan., 2010)***

- NNG filed action for the conversion of migrated storage gas. Oneok and Lumen filed third-party indemnity claims against Nash and L.D.
- Pratt County District Court Judge Schmisser granted Nash's and L.D.'s motions for summary judgment finding:
  - The wells at issue are too far from the Cunningham Field to qualify as "adjoining property" as the term is used in K.S.A. 55-1210(c).
  - Meaning of the term given interpretation in *Williams* (1997) - "any section of land which touch[es] a section containing a storage field [is] adjoining."
  - K.S.A. 55-1210 does not protect title to gas that has allegedly migrated to property more distant than "adjoining property."
- NNG appealed; transferred to Kansas Supreme Court on July 1, 2010.

# Kansas Cases

*NNG v. ONEOK Field Servs. Co., L.L.C., 296 P.3d 1106, 296 Kan. 906 (Kan. 2013)*

- To summarize, we interpret K.S.A. 55-1210(a) and (b) to govern ownership rights to previously injected storage gas that remains within a designated underground storage area, while K.S.A. 55-1210(c) governs ownership of migrating gas. Section (c) permits an injector to maintain title to gas which migrates horizontally to adjoining property or vertically to another stratum if the injector can prove by a preponderance of the evidence under subsections (c)(1) and (2) that the migrating gas originally was injected into the injector's underground storage area. **However, section (c) preserves the rule of capture as to injected gas which migrates horizontally beyond property adjoining the certificated boundaries of a storage field.**

# Kansas Cases

*CIG v. Wright, 707 F.Supp.2d 1169 (D.Kan. 2010)*

- August 1973 – Federal Power Commission issues CIG a certificate to build, operate and maintain the Boehm Gas Field in Morton County, Kansas.
- January 2001 – Gas being stored in underground salt caverns near Hutchinson, Kansas escapes causing two explosions.
- 2001-2002 – Kansas statutes and KCC regulations enacted and adopted in direct response to Hutchinson explosions.
- CIG brought action seeking injunctive and declaratory relief.

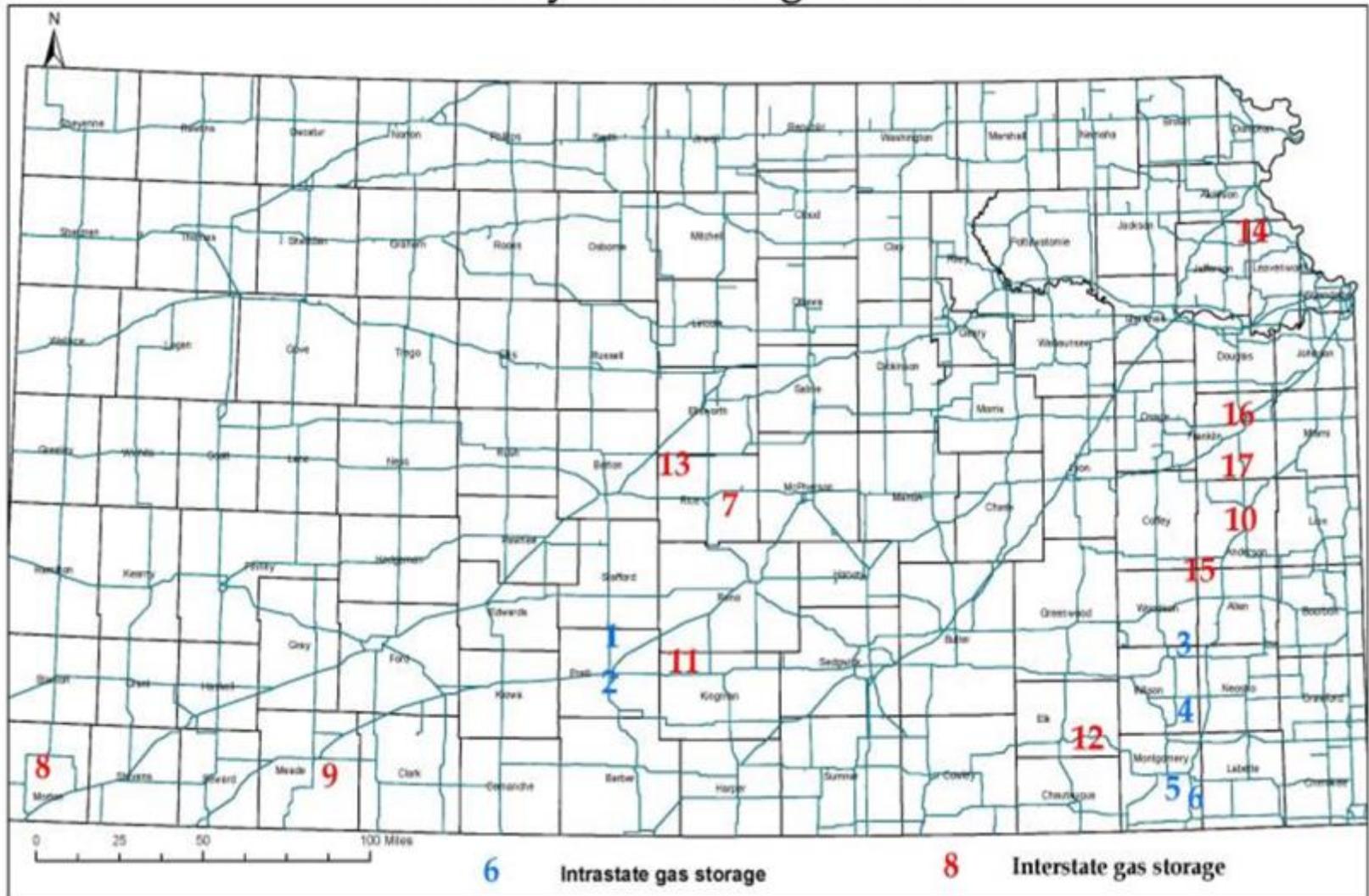
# Kansas Cases

- The court's decision addresses primarily two aspects of the KCC's regulations - permitting and safety. The permitting aspect involves pre-emption issues related to the FERC's authority under the Natural Gas Act; the safety aspect involves pre-emption issues related to the USDOT's authority under the Pipeline Safety Act.
- The KCC advanced a number of arguments, including attacking definitions of "pipeline" and "facility." These contentions were comprehensively addressed and dismantled by the Court.

# Kansas Cases

- The FERC has exclusive jurisdiction over the rates and facilities of interstate natural gas companies. This jurisdiction includes all aspects of operations, including economic matters and safety.
- The Court determined that the KCC's regulations are "plainly focused upon regulating a field exclusively occupied by FERC's permitting authority." *707 F.Supp.2d 1169, 1179.*
- The PSA includes a provision that explicitly forbids any state safety regulation over pipeline transportation or pipeline facilities
- The Court found that the Pipeline Safety Act "expressly pre-empts all state 'safety standards' imposed for the purpose of addressing [risks to life and property posed by pipeline transportation and pipeline facilities]. *707 F.Supp.2d 1169, 1187.*

# Porosity Gas Storage Fields



Interstate storage as of 2008: 11 fields, 725 wells, 268,699 Mmcf capacity.  
Current Intrastate storage: 6 fields, 102 wells, 11,871 Mmcf capacity.

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