

Gas Well Inspections

City of Denton

Oct. 24, 2017



Objectives:

1. Provide a **high-level overview of regulatory agencies** for gas well drilling and production and review scope of the **City of Denton's** regulatory authority
2. Review **a recommended service provision option** for assistance with inspection activities performed under City's Gas Well Ordinance and Municipal Code

Regulatory Matrix:

- ▶ A number of regulatory bodies that influence gas well drilling and production activities within the City's limits and ETJ
- ▶ Two main State agencies:

State	Railroad Commission (RRC)	<ul style="list-style-type: none">• The RRC is responsible for regulating almost all aspects of oil and gas development in Texas, including processes from well drilling to well plugging.• RRC maintains records of operating companies as well as their mineral leases, wells, and production levels.• RRC regional offices conduct periodic inspections of well sites and can issue violations for improper equipment operation.
	Texas Commission on Environmental Quality (TCEQ)	<ul style="list-style-type: none">• TCEQ's primary concern is the regulation of air emissions, such as venting and flaring• TCEQ reviews air emission calculations for pad sites and issues permits for the maximum amount of allowable emissions of regulated pollutants.

Regulatory Matrix:

- ▶ In May 2015, the State Legislature **approved HB40** providing the State with exclusive jurisdiction over gas well drilling and production activities
- ▶ Breakdown of regulatory authority under HB40:

STATE	LOCAL
Oil and Gas Operation Activities, including:	Aboveground Surface Activities, including:
1. Exploration, development, production, processing, and transportation of oil & gas	1. Fire and emergency response
2. Drilling	2. Traffic
3. Hydraulic fracturing	3. Lights
4. Completion	4. Noise
5. Maintenance	5. Imposing Notice
6. Reworking	6. Reasonable setback requirements
7. Recompletion	7. Other aboveground activities, such as inspecting for air and water emissions. Any irregularities would be reported to the appropriate agency.
8. Disposal	
9. Plugging and abandonment	
10. Secondary or tertiary recovery	
11. Remediation activities	

Regulatory Matrix:

- ▶ Based on HB40:
 - ▶ Local government regulations:
 1. Are limited to regulating aboveground activity related to an oil and gas operation, including fire and emergency response, traffic, lights, noise, notice, and reasonable setback requirements (as noted on slide 4);
 2. Must be commercially reasonable;
 3. Do not effectively prohibit an oil and gas operation conducted by a reasonably prudent operator; and
 4. Are not otherwise preempted by state or federal law.
 - ▶ All of the 4 above factors must be met.
- ▶ In August 2015, the Denton City Council adopted Ordinance 2015-233 (the “Gas Well Ordinance”) to reconcile municipal ordinance with state law

City of Denton Regulatory Areas:

I. Land Use Compatibility

Gas Well Ordinance and
Municipal Code

- Conducts Site Plan Review

Planning Division

2. Gas Well Drilling and Production (aboveground elements)

Gas Well Ordinance and
Municipal Code

- Conducts Initial and Ongoing Inspections
- Responds to inquiries or complaints

Gas Well Inspections Division
+ Recommended Contract Assistance

Note: The Police Department also responds to noise/nuisance complaints

3. Fire and Emergency Response

Fire Code

- Conducts Initial and Annual Inspections
- Grants Permits

Fire Department

Recommended Service Provision Option:

- ▶ Contract with Modern Geosciences for assistance with inspection activities performed **under the City's Gas Well Ordinance**
- ▶ **Service Enhancements:**
 - ▶ Inspection program that prioritizes inspection frequency and activity
 - ▶ Instruments used to identify leaks and potential environmental concerns
 - ▶ Optical gas imaging systems, radiation meter, methane meter, hydrogen sulfide meter, photoionization detector, noise meter, and others
 - ▶ Inspection reports with site photos and instrument images along with enhanced GIS information that includes on-site equipment
 - ▶ Professionals with experience serving municipalities (Flower Mound, Colleyville, Grand Prairie, Kennedale) and established relationship with gas well operators
 - ▶ Flexibility to provide additional inspection services and support for Denton gas well inspector as needed

Inspection Activities Comparison

Current

- 2 per year, inside city and ETJ
- Code compliance – signs, equipment, fencing, trash, lighting, landscape, pipeline marking, erosion control.
- Some NORM, some leak detection

Service Enhancement

- **Current inspections continue and unchanged**
- **Contractor performs additional inspections** within the City limits based upon priority (high: 2x/year | moderate: 1x/year | and low: 1x/2 years)
 1. Fenceline inspections:
 - High Priority - meteorological data; upwind and downwind total VOCs (PID), NORM, hydrogen sulfide, methane (DP-IR), particulate matter, noise.
 - Moderate – same except no particulate matter and noise
 - Low - no fenceline in base inspections
 2. Near Equipment inspections:
 - OGI for leaks, NORM, all fenceline instruments if needed
 3. Other:
 - Reporting via GIS database with infrastructure, including leak tagging with photos
 - VOC: real time continuous sampling if needed
 - Provide services to current inspections as needed

Inspection Task	Modern Proposal				Comment
	Current	High	Moderate	Low	
General Code Compliance	X	X	X	X	City-approved checklist
Accessibility Evaluation	X	X	X	X	City-approved checklist
Maintenance Observations	X	X	X	X	City-approved checklist
Audio, Visual, Olfactory Observations	X	X	X	X	City-approved checklist
GIS Database with inspection data tracking		X	X	X	Tracking tool to allow tracking and use across departments
Annual Inspection Summary Report w/ stats		X	X	X	Will include statistics from each annual inspection effort
Near Equipment Inspection ¹					
NORM Inspections	X	X	X	X	Radiation Meter (uR/hr - RRC req.)
NORM Signage Conditions	X	X	X	X	Exceedances noted per RRC Guidance
Leak inspection at Wells		X	X	X	Use of OGI per Quad Oa;
Leak inspection at Separators		X	X	X	Use of OGI per Quad Oa;
Leak inspection at ASTs		X	X	X	Use of OGI per Quad Oa;
Leaks at Compressors		X	X	X	Use of OGI per Quad Oa
Leak and NORM inspection at Ancillary Piping		X	X	X	Use of OGI per Quad Oa; Radiation Meter (uR/hr - RRC req.)
Fenceline Inspection (up and down wind) ²					
Noise		X			Use of Class 1 Microphone with 3 Octave Band (Leq DbA)
Meteorological Data		X	X		Wind Direction, Speed, Barometric Pressure
total Volatile Organic Compounds		X	X		Use of PID (ppbv resolution)
Radiation		X	X		Use of Radiation Meter (uR/hr resolution - RRC req.)
Hydrogen Sulfide		X	X		Use of H2S Meter (ppbv resolution - CAA req.)
Methane		X	X		Use of DP-IR Meter (ppmv resolution)
Particulate Matter		X			PM2.5 & PM10 (ug/m3 resolution; ~10-minute dataset)
Communication of Issues to Operator ³					
Written report per inspection event	X	X	X	X	Presented in pdf format with clear depiction of findings
Photos of Site Concerns		X	X	X	Photos of general site concerns (corrosion, non-compliance)
Tabulated results from inspection by equipment		X	X	X	Quantitative data sets for tracking over life of padsite
Photos of Leaks (OGI/Standard)		X	X	X	Standard and OGI leak photos per point for clear location
Tagging of Leaks		X	X	X	Accessible Leaks can be tagged if operator consents
Summary of NORM exceedances	X	X	X	X	NORM summary by equipment observations
Summary of Fenceline Inspection		X	X		Quantitative summary of monitoring results
Summary of Corrective Action Suggested		X	X	X	Clear summary of suggested areas to be addressed
Figures with Equipment IDs to be addressed		X	X	X	Clear summary of equipment and findings
Additional Monitoring Support					
Real-time continuous air monitoring (3 points)					Includes Methane, H2S, Met Data, tVOCs, PM
VOC sampling (~50+ compounds)					Discrete samples per EPA TO-17M to determine VOC of interest

Inspection Frequency Comparison

Current

- 2 times per year within the City limits and ETJ
- Number of wells:
 - City – 294
 - ETJ – 207

Service Enhancement

- Within City limits only
- High Priority (300 feet or less to protected use | 18% of wells):
 - 2 inspections City
 - 2 times contractor (2 times current)
- Moderate Priority (301 feet to 1000 feet | 45%):
 - 2 inspections City
 - 1 inspection contractor (1.5 times current)
- Low Priority (Greater than 1000 feet | 37%):
 - 2 inspections City
 - 1 inspection contractor every other year (1.25 times current)

Budget:

- ▶ Proposal is not to exceed \$250,000 over 12 months
- ▶ Staff anticipates that salary savings and associated expenses from 3 unfilled positions will cover contract cost
- ▶ No increase in fees to the gas well operators necessary to support this contract and service enhancement

Direction:

- ▶ Staff is requesting direction regarding recommended service provision option for assistance with inspection activities performed under the City's Gas Well Ordinance
- ▶ A contract with Modern Geosciences is included as an agenda item for consideration at tonight's City Council meeting

