UIC Class I Application Issues and Updates

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Texas Commission on Environmental Quality
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Class I Injection Well Application Issues

Starting the Application Process

Starting the Application Process

- Download current application form from TCEQ website
- For renewals, update application to follow current application form
- Combine permits with multiple expiration dates into one application
- Schedule pre-application meeting to discuss questions or concerns

Class I Injection Well Application Issues

Common Application Deficiencies

Common Application Deficiencies

Lands Dedicated to the Permanent School Fund

- May include property and mineral rights owned by State of Texas
- Includes navigable waters in Texas (rivers, bays, coastal waters)
- Provide documentation from General Land Office that property and mineral rights are not dedicated to the permanent school fund

Common Application Deficiencies

Lands Dedicated to the Permanent School Fund (cont.)

- Or provide location of the land that may be affected
- And a description of any foreseeable impact or effect the proposed permitted action may have on the permanent school fund land
- TCEQ will provide notice to General Land Office

Common Application Deficiencies

Texas Railroad Commission "No Harm" Letter

- Letter from RRC stating that drilling the well and injecting waste will not endanger or injure known oil or gas reservoirs
- RRC reviews have been finding that waste disposal wells may endanger or injure reservoirs
- Provide detailed information on geology of injection zone to the RRC

Common Application Deficiencies

Provide Correct Well Location Survey Data

- If application is renewal for (or includes) drilled/operational wells
- Make sure surveyed well location(s) used in application are consistent with surveyed well location(s) in completion report
- Verify latitude and longitude are correct before submitting application

Common Application Deficiencies

Reservoir Pressure Modeling & MASIP

- Calibrate model with historical injection rates and measured pressures
- Use 100 psi safety factor when calculating MASIP
- If underpressured reservoir, may have a negative MASIP
- Consider downhole gauges/sensors to monitor flowing bottomhole pressures

Common Application Deficiencies

Area of Cone of Influence

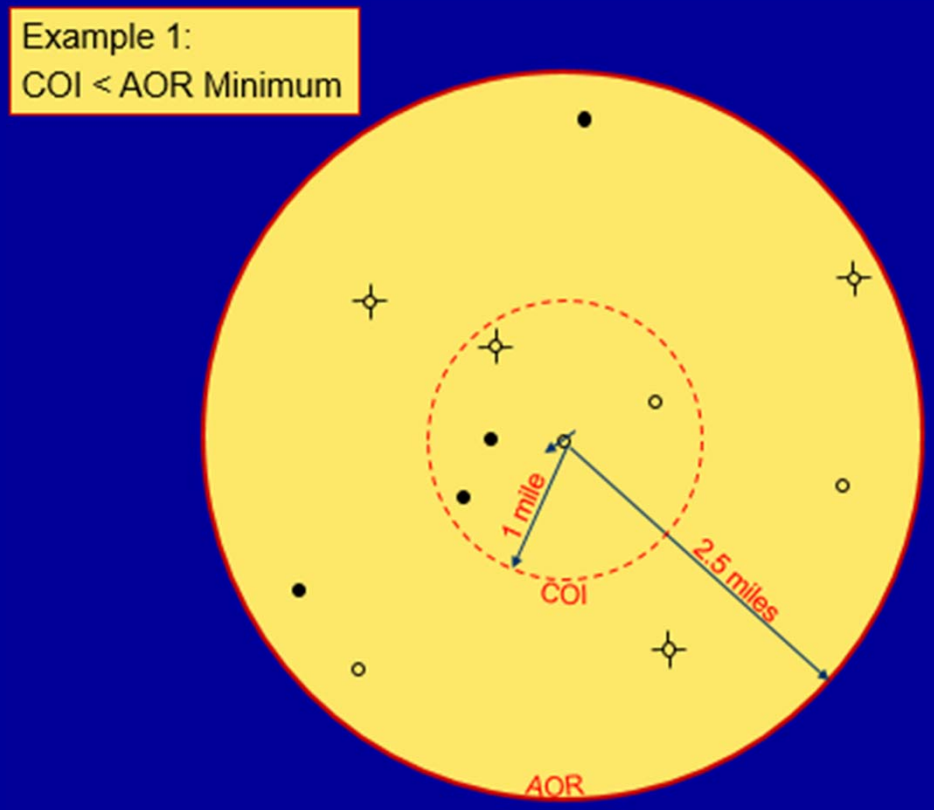
- Area where increased injection pressure could move a 9 pound per gallon fluid column
- Column measured from 50 feet below ground surface to top of injection reservoir
- Based on maximum injection rates and conservative reservoir parameters

Common Application Deficiencies

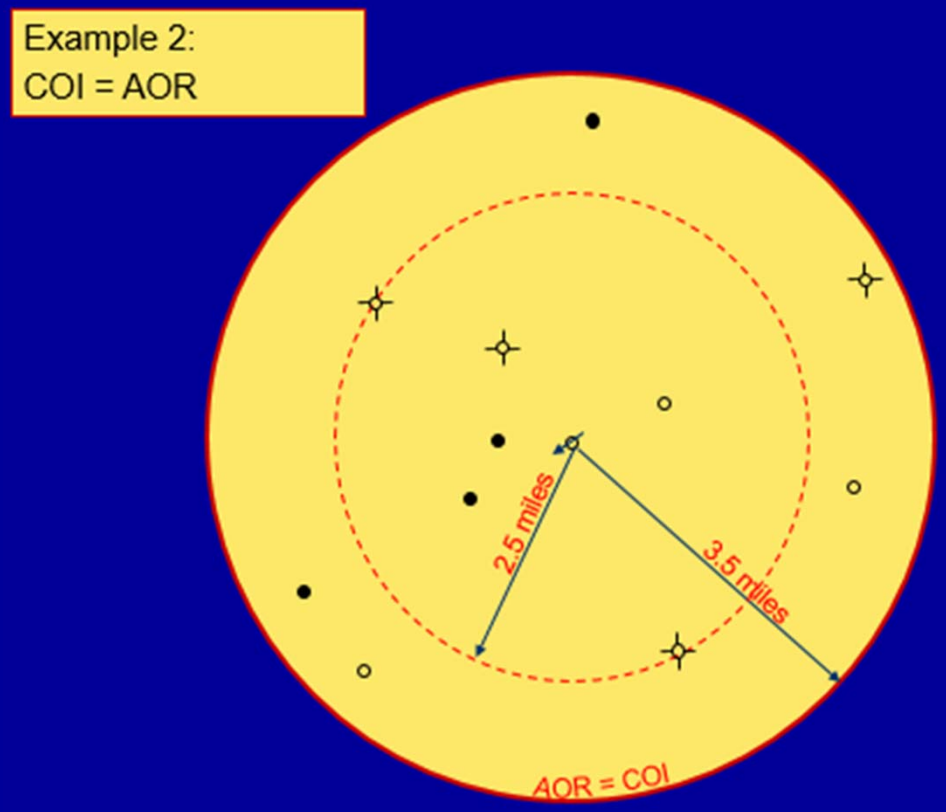
Area of Review

- Either 2½ mile radius or area of cone of influence, whichever is greater
- Provide tabulation of condition of all wells within AOR that penetrate confining zone
- Provide schematic of all wells within cone of influence

Area of Review Example 1



Area of Review Example 2



Common Application Deficiencies

Area of Review (cont.)

- Identify wells in cone of influence that might allow movement of fluids into or between USDWs
  - Improperly constructed or abandoned
  - Incomplete well records (assume insufficient cement and 9 pound per gallon fluid density)
  - May consider 20 pound per 100 square feet gel strength

Class I Injection Well Application Issues

Application Form Revisions

Application Form Revisions

Sections I & II

- If permittee is not facility owner, application must be signed by both the facility owner(s) and permittee (the facility includes all contiguous land, structures, other appurtenances, and improvement on the land)
- Provide property deed for facility legal description

Application Form Revisions (cont.)

Sections IV & V

- Demonstrate financial capability (30 TAC §305.49(c))
  - Only applies to hazardous waste injection wells
  - Demonstrate sufficient financial resources to operate the facility in a safe manner and in compliance with the Class I permit and all applicable rules (different requirements for new permits and renewal permits)
- Assessment of potential for injection into the well to result in a seismic event - if potential for seismic event, provide plan for mitigation of this potential

Application Form Revisions (cont.)

Section VI

- Document that 100 psi positive pressure will be maintained in the annulus along entire length of tubing and packer
- Document that formation fracture pressure will not be exceeded during drilling and cementing of the well
- Provide contingency cementing plan if 100% of annular space is not filled with cement

Application Form Revisions (cont.)

Section VI (cont.)

- Well history should include logging and testing results, failed MITs, permit violations, and period of no operation or temporary abandonment
- Engineering assessment of existing well materials should consider design and operational problems and should include recalculation of design safety factors
- Information on wells in temporary abandonment
- Include material decontamination and disposal costs in closure cost estimates

Application Form Revisions (cont.)

Section VII

- If MASIP is less than zero psi, provide the maximum flowing bottomhole pressure – will require installation of downhole gauges to measure bottomhole pressure
- Use historical injection rates and reservoir pressure data to calibrate pressure buildup model

Application Form Revisions (cont.)

Section IX

- Include detailed description of each waste stream including the process generating the waste
- Identify off-site facilities
  - Provide facility name, location, RN number, and waste to be injected

Application Form Revisions (cont.)

Section IX (cont.)

- Identify captured facilities
  - Include captured facility boundary on topographic map in Section I
  - Provide captured facility name, RN number and waste to be injected
  - Provide demonstration that facilities meet definition of captured facility

Application Form Revisions (cont.)

Section XII

- Pre-injection units used for storage of and processing hazardous waste must be authorized by a RCRA permit under 30 TAC §335.2 or by accumulation time requirements under 30 TAC §335.69
- Table XII (Pre-Injection Unit Summary)- complete for each pre-injection unit that is or will be used for storage or processing of waste to be injected, or in conjunction with an injection operation

Application Form Revisions (cont.)

- The revised application is posted on the TCEQ website at the following web address: https://www.tceq.texas.gov/permitting/waste_permits/uic_permits/UIC_Guidance_Class_1.html/#Forms

UIC Program Contacts

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