



Commercial Slurry Fracture Injection Well Permit Application
Office of Conservation
Injection & Mining Division
P.O. Box 94275
Baton Rouge, LA 70804-9275

UIC-2 SFI COM

TYPE ONLY

1. Application to:							<input type="checkbox"/> Drill New Commercial SFI Disposal Well <input type="checkbox"/> Convert to Commercial SFI Disposal Well	
2. Operator's Name and Address:					3. Operator Code:			
					4. Phone ()			
WELL INFORMATION								
5. Proposed Well Name and Number:					6. Serial No. (Conversion)			
7. Field:		8. Parish:			9. Sec.	Twp.	Rng.	
10. Location Description:								
11. Latitude: _____				Louisiana Lambert Coordinates (NAD 27)				
Longitude: _____				(Check One Coordinate Zone) <input type="checkbox"/> North Zone <input type="checkbox"/> South Zone				
				X: _____				
				Y: _____				
WELL CONSTRUCTION INFORMATION								
12. Casing Size	Hole Size	Casing Weight	Depth Set		Sacks Cement	Type Cement	Top of Cement	
			Top	Bottom				
13. Tubing <input type="checkbox"/> Steel <input type="checkbox"/> Other (Identify):					Size	Depth		
14. Packer: <input type="checkbox"/> Tensional <input type="checkbox"/> Compressional <input type="checkbox"/> Permanent			Depth Set:		Make:	Model:		
15. Bottom Hole Pressure Sensor								
Depth Set:			Make:			Model:		
16. Plugged-Back Depth:			17. Drilled-Out Depth:			18. Total Depth:		
19. Depth of Proposed Injection Zone:				20. Formation Names(s) of Injection Zone:				
Top:		Bottom:						

21. Depth of Proposed Injection Interval: Top: _____ Bottom: _____	22. Proposed Perforated Interval: Top: _____ Bottom: _____
23. Depth of Proposed Containment Zone: Top: _____ Bottom: _____	24. Depth of Proposed Confining Zone: Top: _____ Bottom: _____
PRESSURE CALCULATION DATA	
25. Description of Material(s) to be Injected: *	26. Density of Injection Fluid (ppg): Normal: _____ Maximum: _____
27. Injection Rate (gallons/minute): Normal: _____ Maximum: _____	28. Injection Fluid Expected Temp (F): Summer: _____ Winter: _____
29. Injection Formation Properties: <input type="checkbox"/> Estimated <input type="checkbox"/> Measured Permeability (md): _____ Porosity (%): _____	
OTHER INFORMATION	
30. Describe contingency plans for disposal when well is down: *(Attach separate sheet if necessary)	
31. Is the proposed well located within 2 miles of a Wellhead Protection Area? If "yes", Identify: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
32. Is the proposed well located within the Coastal Zone? If "yes", Permit #: _____ Expiration Date: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No
33. Is the proposed well located on Indian lands under the jurisdiction or protection of the federal government?	<input type="checkbox"/> Yes <input type="checkbox"/> No
34. Is the proposed well located on State water bottoms or other lands owned by or under jurisdiction of the State?	<input type="checkbox"/> Yes <input type="checkbox"/> No
35. Agent or contact authorized to act for the operator during processing of this Application Name: _____ Address: _____ Phone () _____	
The signature below authorizes this agent or contact to submit additional information as requested and to give oral statements in support of this application.	
CERTIFICATION BY OPERATOR	
<i>I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.</i>	
36. Name	37. Title
38. Signature	39. Date

**COMMERCIAL SLURRY FRACTURE INJECTION DISPOSAL WELL PERMIT
APPLICATION PROCEDURES FOR
FORM UIC-2 SFI COM**

- These procedures are intended to provide applicants a checklist to be sure all information is provided.
- This list applies both to new wells to be drilled as well as those to be converted to disposal--check all appropriate boxes.

Supporting documentation will be required in the form of attachments. Label each of the attachments by number in the lower right-hand corner; example: "Attachment 2A"

- The well permitting process is a two-step procedure:

1st Step: After the Application is reviewed and found to be complete and to meet the requirements of Statewide Order 29-B, an "**Approval to Construct**" letter will be issued. This will allow the well to be drilled and completed or to be converted as described in the Application, **but not to inject**. A list describing the "Reporting Requirements" will be included with the "Approval to Construct" letter. The "Reporting Requirements" will tell you what you need to file with the Injection & Mining Division after completion of the well and before issuance of the final well PERMIT TO INJECT.

2nd Step: The Well History, mechanical integrity test results, and logs are reviewed. If found adequate, a final "Permit" letter to inject fluids will be issued. If not adequate, the Injection & Mining Division (I&M) will tell you what remedial action, if any, can be taken to obtain a "PERMIT TO INJECT".

PUBLIC NOTICE

- **For New Commercial SFI Wells or Major Modifications to Commercial SFI Wells**

Public notification shall conform to the requirements of LAC 43:XIX.519 and LAC 43:XIX.529

- **For Minor Modifications to Commercial SFI Wells**

See "Attachment 13"

SUBMIT THE FOLLOWING IN ORDER:

- **Application for Permit or to Amend Permit to Drill for Minerals**
 - For a NEW WELL**, two copies of completed form MD-10-R (Yellow Card)

- For a CONVERSION**, two copies of completed form MD-10-R-A (Pink Card)
- Both cards must have original signatures. The information provided must match items 1 to 11 on the Application (Form UIC-2 COM SFI).
- **Filing Fee**
 - To determine the current well application fee(s), refer to Statewide Order No. 29-R-01/02. The current version may be obtained from the State Registry or downloaded directly from the DNR/OC website. Make check payable to "Office of Conservation".
- **APPLICATION -- Commercial E&P Slurry Disposal Well Permit Application**
 - Form UIC-2 SFI COM with original signature. All items must be answered or noted "Not Applicable" ("N/A" is not an acceptable response). **Include pages 1 to 8 as part of the Application.**

ATTACHMENT 1 -- Location Plat

- For ALL WELLS both New and Conversion**, include a current, **original** certified drilling location plat, labeled "Attachment 1." This plat must contain the latitude and longitude and the Lambert-X & Y coordinates for the NAD 27 and the NAD 83.

ATTACHMENT 2 -- Area of Review

- A. An Area of Review (AOR) map, labeled "Attachment 2A." The AOR map must be of a scale sufficient to include all required information within a two mile (10,560-ft.) radius of the proposed disposal well and identify locations for the following:
 - The proposed disposal well
 - Source Water Protection Areas
 - All producing wells
 - All disposal/injection wells
 - All shut-in wells
 - All plugged and abandoned wells
 - All dry holes
 - All source water wells
 - All freshwater wells (public and private)
 - Identification of all surface owners and their respective tracts of land within the AOR.
 - Identification of all operators with producing leaseholds within the AOR and outline of the leaseholds.

- Surface bodies of water, mines (surface and subsurface), quarries, public water systems, and other pertinent surface features including residences and roads.
- Include a legend to identify each well with the appropriate name and well number along with any other information required to otherwise clarify the AOR map. Except for freshwater wells, only well information on file with the Office of Conservation and pertinent information known to the applicant is required to be included on this map.
- B. An "Area of Review Well List" labeled "Attachment 2B" that identifies all wells in the AOR **except freshwater wells**. Use the enclosed Attachment 2B or you may make up your own list, as long as all the information is included; label the list, "Attachment 2B". Each well which penetrates the proposed confining zone must be identified and include a description of the well's type, construction, date drilled, location, depth, and record of plugging and/or completion. If no wells are found within the AOR indicate with "no wells found" on "Attachment 2B".
- C. A "Freshwater Well List" labeled "Attachment 2C" identifying the freshwater wells within the AOR. Each freshwater well shall be identified by owner, type of well, depth and current status of the well. If unclear on the AOR map (Attachment 2A), also describe how each freshwater well can be located in the field. Use the enclosed Attachment 2C or you may make up your own list, as long as all the information is included; label the list, "Attachment 2C". If no fresh water wells are found within the AOR, indicate with "No wells found" on "Attachment 2C". **A DILIGENT PHYSICAL SEARCH MUST BE ATTEMPTED TO LOCATE ALL FRESHWATER WELLS WITHIN THE AOR.**
- D. A laboratory analysis from each freshwater well must be included (if practicable). The analysis must be performed by a DEQ certified laboratory. Test parameters at a minimum shall include pH, chloride (mg/l) and total dissolved solids (mg/l). Depending upon the characterization of the proposed waste stream, addition test parameters may be required. Attachment 2D.
- E. Corrective action plan for wells which penetrate the confining zone but are not properly completed or plugged. Attachment 2E

ATTACHMENT 3 -- Facility Diagram

- A surface facility diagram that shows the following, where applicable:
 - Proposed well
 - Tanks
 - Pits
 - Containment levees

- Flow lines entering and leaving the facility
- Rig supply well
- Pertinent buildings
- Landmarks and other significant structures or features
- Any other facilities or equipment particular to the operation

The diagram should be to scale or reasonably close, preferably on 8 ½" x 11" paper, and labeled, "Attachment 3".

ATTACHMENT 4 -- Well Schematic Diagram

- For a NEW WELL**, two attachments are required:
 - A schematic diagram of the proposed well, labeled "Attachment 4A".
 - A detailed work prognosis describing the sequence of work to be performed, labeled "Attachment 4B",
- For a CONVERSION**, three attachments are required:
 - A schematic diagram of the well as it currently exists (before conversion to disposal), labeled "Attachment 4A".
 - A schematic diagram of the well as it is proposed to be completed, labeled "Attachment 4B",
 - A detailed work prognosis describing the sequence of work to be performed, labeled "Attachment 4C",

The schematic diagram(s) must match items 12 to 24 on the Application (Form UIC-2 SFI COM) and show the following:

A. Surface equipment:

- Well head
- Pressure gauges
- Flow line diameters at wellhead
- Monitoring equipment, if used

B. Subsurface equipment:

1. All casing strings:
 - Diameter
 - Weight (per foot)
 - Depth set (top and bottom)
 - Location(s) of stabilizers
2. Hole (drill bit) diameters

3. Cement specifications:
 - Type or class
 - Number of sacks
 - Tops of cement (indicate whether calculated/logged, or to be logged)

4. Proposed cement squeeze(s), if any:
 - Type or class
 - Number of sacks
 - Calculated top of cement (to be logged)

5. Injection tubing:
 - Diameter
 - Type or material
 - Depth

6. Packer:
 - Type
 - Depth set: Packer must be set no higher than 150 feet above the top of the injection zone. **Proof of isolation (bonded cement) of the Top of Injection Zone must be at or above the packer.**

7. Down-hole Sensor:
 - Type and Model
 - Location in Casing String
 - Depth

8. Proposed Injection zone:
 - Top
 - Bottom

9. Proposed initial perforated interval:
 - Top
 - Bottom

10. Depths (where applicable):
 - Total Depth
 - Drilled-out depth
 - Plugged-back depth

ATTACHMENT 5 – Well Monitoring Program

1. Detailed description of the Bottom Hole Pressure Monitoring Program and equipment labeled “Attachment 5A”.
 - Gauge Type
 - Gauge Depth
 - Recording Device

2. Detailed Description of the Fall Off Monitoring Program and equipment labeled "Attachment 5B".
 - Gauge Type
 - Gauge Depth

ATTACHMENT 6 – Well Logging

- A detailed discussion of the proposed well logging program labeled "Attachment 6".

ATTACHMENT 7 – Operational Procedures

- Proposed injection procedures including storage and pre-injection of the waste stream and the well use schedule labeled "Attachment 7A".
- Detailed contingency plans to cope with all shut-ins or well failures labeled "Attachment 7B".

ATTACHMENT 8 -- Characterization of E & P Slurry

- Include a characterization of the E&P waste types that the will be slurried and injected, include as "Attachment 8". The characterization sheet must include, at a minimum:
 - Types, sources description of material to be injected
 - Specific gravity or density (g/cc or ppg)
 - Temperature of sample when specific gravity was measured
 - Particle size

ATTACHMENT 9 – Injection Domain Geology

The following attachments may be derived from available well log data if sufficient control exists to adequately map the geologic features of the injection domain and confining zone. If adequate control points are not available, seismic surveys with acceptable interpretation shall be required. At a minimum, the following attachments should be submitted:

- A. Isopach map of Injection Interval(s) labeled "Attachment 9A".
- B. Isopach map of Containment Zone(s) labeled "Attachment 9B".
- C. Isopach map of Confining Zone labeled "Attachment 9C".
- D. Structure Map on Top of the Injection Zone labeled "Attachment 9D".
- E. Structure Map on Top of Confining Zone labeled "Attachment 9E".
- F. Two (2) Structural Cross Sections transecting the AOR and extending from below the base of the injection zone to above the base of the USDW labeled "Attachments 9F1 and 9F2".
- G. Regional map contoured on the base of the USDW labeled "Attachment 9G".
- H. Fault plane map(s) including all fault planes within the AOR which pass through the injection zone and/or the confining zone labeled "Attachment 9H".

9H".

ATTACHMENT 10 -- Geophysical Logs

- A copy or continuous folded photocopy of an electrical log labeled "Attachment 10. The log must be complete from the log heading to depth logged: the 5-inch/100-ft-scale portion is not necessary.
- The Serial Number of the well must be written on the log.
- **For a NEW WELL**, the log should be of a nearby well if available. The log should be **shallow enough** to show the base of the USDW and **deep enough** to show the proposed disposal zone. Logs of more than one well may be included, if necessary, to show both the lowermost USDW and proposed injection zone. A diligent search must be made to locate at least one log within two miles of the proposed well. If a log is not available, use a sheet of paper labeled, "Attachment 10" which states, "No well logs are available within a two-mile radius of the proposed well".
- **For a CONVERSION**, the log should be of the proposed well itself. If the lowermost USDW was not logged, include a log of a nearby well that shows the lowermost USDW.

Indicate the following **on each** log:

- A. The base of the lowermost Underground Source of Drinking Water (USDW).

The USDW can be determined by the deep induction curve, generally the dotted curve, on the electric log. Since resistivity changes with temperature and, therefore, depth, **an approximate rule** that can be followed to determine the lowermost USDW is:

3 ohms from surface to 1000 feet;
2 ½ ohms from 1000 feet to 2000 feet;
2 ohms below 2000 feet.

That is, all sands that indicate higher resistivities than these are considered to be USDW's. Clay or shale intervals with resistivities higher than these are not considered USDW's.

- B. The top and bottom of the proposed confining zone, top and bottom of the proposed containment zone(s), top and bottom of the proposed injection interval(s), and top and bottom of proposed injection zone(s).

A zone consisting of multiple sands may be permitted, provided USDW's and sands capable of hydrocarbon production are isolated. This will generally allow additional sands for future disposal that can be approved by work permit (UIC-17) as the need occurs. The zone requested must be completely isolated above and below by cement outside the perforated casing.

- C. The proposed initial perforated interval.

ATTACHMENT 11 -- Closure plan and Cost Estimate

- A. Detailed plan to P&A the well labeled "Attachment 11A".
- B. Detailed cost estimate to close well labeled "Attachment 11B".

ATTACHMENT 12 -- Well History and Work Resume Report

- For a CONVERSION**, a photocopy of each Well History and Work Resume Report (Form WH-1) that have previously been filed with the Office of Conservation (labeled Attachment 12A, 12B, etc.).
- For a NEW WELL**, there is no Attachment 12, unless the "NEW" well is a reentry of a well that has been plugged and abandoned. In this case the WH-1 of the P & A'd well must be submitted as Attachment 12.

ATTACHMENT 13 -- Public Notice for Minor Modifications to Commercial SFI Wells

- An **original** copy of proof of publication of the legal notice from the official state journal.

You will be billed by the Morning Advocate for the ad.

Complete the legal notice attachment and send the notice to:

**The Advocate
Legal Ad Department
P.O. Box 588
Baton Rouge, LA 70821
(504) 388-0128**

The Advocate will send you a notarized "Proof of Publication", which is to be labeled, "Attachment 12A", and included as part of the Application. If the Proof of Publication is not received when the Application is sent to the Injection & Mining Division, it may be sent later provided you also write the Application No. on Attachment I. The "Application No." can be found on your receipt letter, which you should receive with in two weeks after your Application reaches the Injection & Mining Division.

- An **original** copy of proof of publication of the legal notice from the official journal of the affected parish labeled "Attachment 12B".
- An **original** copy of proof of publication of the legal notice from journal of general circulation in the area where the proposed well is to be located (if different from the official parish journal) labeled "Attachment 12B".

The above constitutes an “original” application. Also include a photocopy of all of the above. Both the “original” and the “photocopy” must be included to be considered a complete Application.