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GOVERNOR

**State of Louisiana**  
**DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION**

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SECRETARY

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COMMISSIONER OF CONSERVATION

**INJECTION AND MINING DIVISION**

**INTRA-OFFICE POLICY STATEMENT**

**POLICY NO.:** IMD-GS-09

**EFFECTIVE DATE:** March 24, 2009

**SUBJECT:** Clarification of LAC 43:XIX.405.B.4 for Determining Maximum Allowable Surface Injection Pressure for Class II Saltwater Disposal and Enhanced Oil Recovery Wells

**BACKGROUND:**

The regulatory provision at LAC 43:XIX.405.B.4 for establishing the maximum allowable surface injection pressure (MASIP) in saltwater disposal (SWD) and enhanced oil recovery (EOR) wells require that the application contain,

*"information showing that injection into the proposed zone will not initiate fractures through the overlying strata which could enable the injection fluid or formation fluid to enter an underground source of drinking water. This requirement will be satisfied upon proper demonstration by the applicant that the pressure in the well at the depth of injection shall not exceed 75 percent of the pressure needed to fracture the formation;"*

Applications for SWD and EOR wells historically lacked any data regarding the confining zone's geomechanical properties, therefore, the MASIP criteria stated above was applied to properties of the injection formation.

**REVISED POLICY**

Applicants who do not provide geomechanical data of the confining zone so that the fracture gradient can be determined, will have the well's MASIP calculated as stated in Policy No. IMD 1999-03, effective March 1, 1999.

**Injection and Mining Division**

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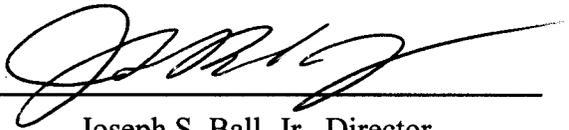
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Applicants who provide geomechanical data of the confining zone will have the well's MASIP calculated as interpreted in LAC 43:XIX.405.B.4 and will comply with the control measures listed below to assure protection of the lowermost underground source of drinking water (USDW).

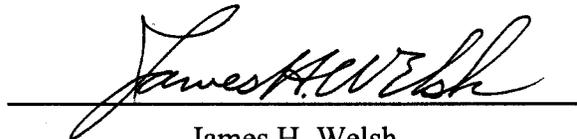
1. Applicants will request in writing that the SWD or EOR well's MASIP be established under the conditions of this policy.
2. Applicants will provide geomechanical data of the confining beds above the proposed injection zone to determine the fracture gradient of the confining beds. This data may be derived from subsurface core acquisition and testing of the confining beds, wireline logging to generate mechanical properties logs, leak-off testing of the confining beds using fluid with timed viscosity, or other means acceptable to the commissioner.
3. The area-of-review will encompass a radius of one-half mile (2,640 feet) around the SWD or EOR well. Any deficient well within the area-of-review must be properly plugged and abandoned or other approved corrective action performed to protect the USDW.
4. If the top of the injection zone is within 1,000 feet of the base of the USDW, the MASIP will be based on a surface pressure gradient not to exceed 0.25 psi/ft calculated with respect to the depth of the shallowest injection perforation or the top of an open-hole completion.
5. The SWD or EOR well's surface casing will be set at least 100 feet below the base of the USDW.
6. A groundwater monitoring plan will be submitted with the SWD or EOR well application and will incorporate the following:
  - a. Installation of a monitor well or wells screened or perforated at the base of the USDW.
  - b. Fluid from the monitor well or wells will be sampled by a third party and analyzed by a Louisiana Department of Environmental Quality, LELAP accredited laboratory on a quarterly basis for:
    - i. chlorides,
    - ii. total dissolved solids,
    - iii. BTEX,
    - iv. specific gravity,
    - v. temperature, and
    - vi. pH.
  - c. The fluid level in the monitor well or wells will be measured monthly.

- d. All laboratory analytical data and fluid level measurements will be assembled in a report and submitted to the Injection & Mining Division quarterly. The report will be submitted within 30 days of the end of the quarter in which the sampling and measurements were performed. Failure to file reports or delinquent report filings will subject the well operator to enforcement action.
  - e. If changes occur in the laboratory analytical data or fluid level measurements that indicates the injection well operation may be endangering the USDW, the Commissioner of Conservation may require the well operator to cease injection into the SWD or EOR well until the reason for the data excursion is determined.
7. No surface casing variances will be considered for SWD or EOR wells whose MASIP is calculated under the conditions of this policy.
8. This policy is not applicable to any form of annular disposal well.

**APPROVED BY:**



Joseph S. Ball, Jr., Director  
Injection & Mining Division



James H. Welsh  
Commissioner of Conservation