

Regulatory Citation(s):

78.83b. Casing and cementing – lost circulation.

(a) If cement used to permanently cement the surface or coal protective casing is not circulated to the surface despite pumping a volume of cement equal to or greater than 120% of the calculated annular space, the operator shall determine the top of the cement, notify the Department, and meet one of the following requirements as approved by the Department.

Question:

What are operators supposed to do in the evenings and on weekends to avoid job delays? Is the notification/approval requirement something that can be pre-approved in a casing and cementing plan (i.e., actions to be taken in the event of no cement returns)? Can a pressure test completed after the shoe is drilled out that shows the cement and casing will hold pressure substitute for the cement log until the well is drilled, at which time the operator can define the cement top by running their usual suite of logs? This will prevent them from having to rig down and accommodate a logging truck.

This requirement seems potentially problematic based on the amount of loggers available, time to schedule the log, the cost for two log jobs, rig down time, and trying to contact the Department after hours. Getting a logging truck to the site to determine the top of cement may take up to several days and result in drilling delays. Some shallow oil operators that may or may not produce gas don't see surface returns on surface strings 50% of the time. Oftentimes the cement does not fall back too far in these cases based on Department inspector experience.

Response:

Operators may not drill out prior to determining the top of cement and getting approval from the Department to proceed. If the cement sheath is less than adequate and drilling continues, more widespread problems may result. Additionally, the new regulations require a zone of critical cement for the surface casing over the bottom 300 feet of this string (Section 78.85(b)). If the surface string is less than 300 feet long, the entire length must be cemented with higher strength, lower free water type cement. Because of this, the Department does not agree that establishing an area of alternative methods under Section 78.75 is appropriate, as it would essentially undermine regulations tailored for the most critical cemented length of casing in oil and gas wells from an environmental perspective – that which is designed to protect fresh groundwater.

Once the top of cement is determined, the operator must contact the Department and operations must not proceed until Department approval is granted. To aid the Department in determining an appropriate requirement in Section 78.83b(a), the operator must submit a copy of the well log used to determine top of cement indicating the location of the cement in terms of feet below the ground surface. This may be submitted either in paper or electronically.

If notification takes place on a weekend or after hours, there may be some delay in operations at the well site. It is recommended that operators establish a pre-approved course of action in areas of operation where lost-circulation problems are expected and effective methods for countering these problems have been developed. This course of action should be summarized in the casing and cementing plan, and will help avoid any unnecessary down time on weekends or after normal business hours.