

RAILROAD COMMISSION OF TEXAS

Oil and Gas Division

NOTICE TO OIL AND GAS OPERATORS

Determining Top of Cement by Calculation for Compliance with Statewide Rule 13

Railroad Commission of Texas (RRC) rules require operators to report the top of cement (TOC) for cemented casing strings in accordance with Statewide Rule 13 (relating to Casing, Cementing, Drilling, Well Control, and Completion Requirements). The most common method of determining TOC involves a volumetric calculation. Different equations and assumptions, including a washout factor, may be used when performing this calculation.

As part of the Texas Oilfield Relief Initiative, the RRC has modified the equation used to calculate the TOC to be consistent with the industry practice for calculating excess borehole volume. The improved accuracy of the RRC calculations saves both the agency and the operators time previously involved in resolving discrepancies between the RRC-calculated and the operator-reported TOC.

The RRC has also reviewed the baseline washout factors used in RRC calculations. The RRC has long used a baseline washout factor of 20 percent across most of the state, and 30 percent in coastal counties due to higher probabilities of encountering unconsolidated sands in the coastal region. Unless presented with evidence supporting adjustments on a county-by-county basis, the RRC will continue to use these baseline washout factors. A map showing these factors by county may be found on the RRC website at <http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info/washout-factors-and-top-of-cement>.

In some individual cases, however, advances in drilling technology and efficient drilling practices have proven to significantly reduce hole washout. Therefore, the RRC may approve lesser washout factors on a case-by-case basis, provided the operator requesting the lesser washout factor submits supporting documentation (see Instruction D on Form W-15). Accepted supporting documentation includes, but is not limited to, the following:

- fluid caliper data from third-party daily reports;
- open-hole caliper log data; and
- correlations from temperature surveys and/or cement evaluation logs.

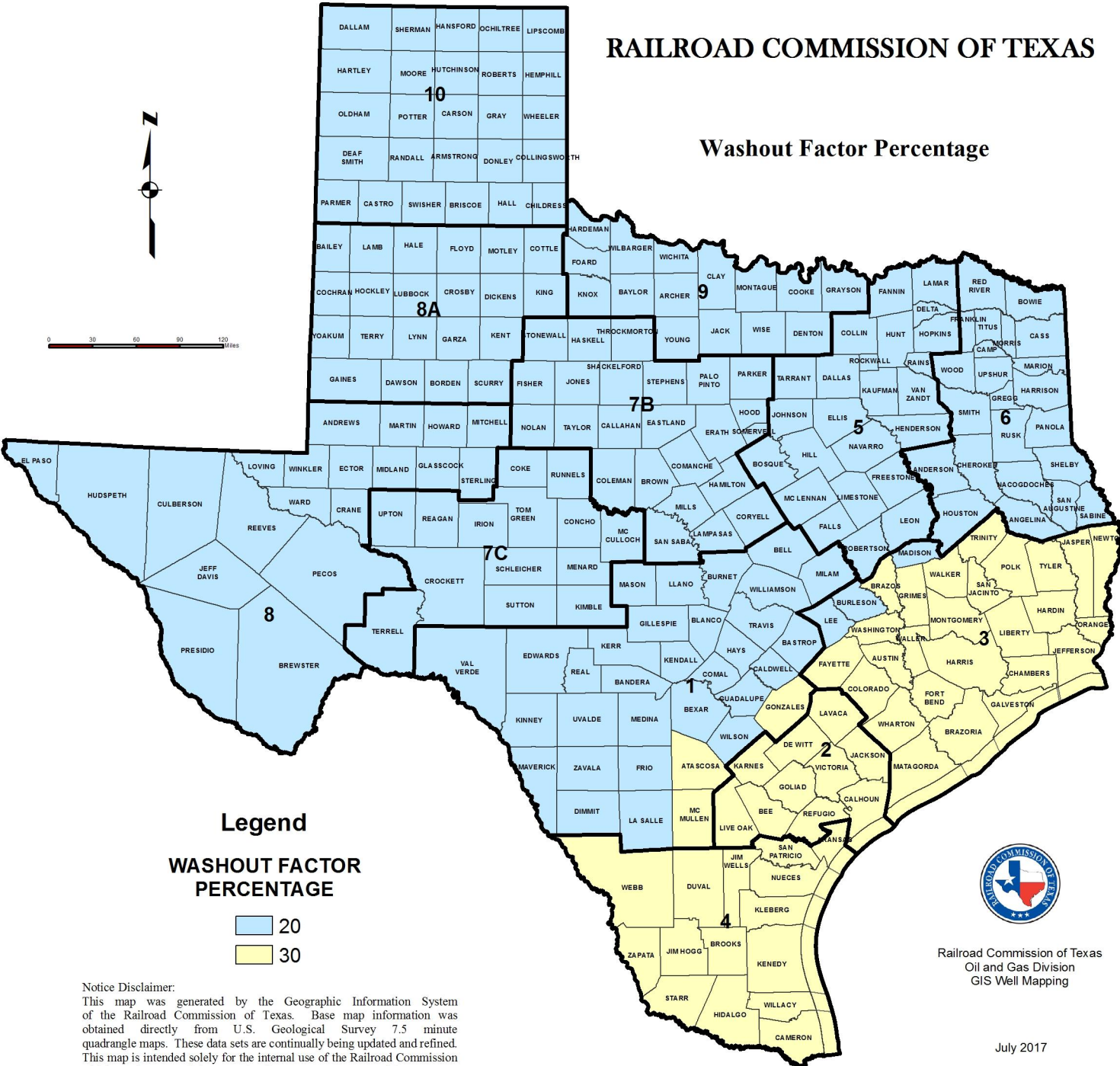
An operator may request approval to apply a lesser washout factor across an area such as a field or county, but each operator's drilling technology and practices and supporting washout documentation will be evaluated independently of other operators' data. Operators requesting a lesser washout factor should submit the request and supporting documentation to the appropriate RRC District Office.

The washout factor used for calculating the TOC should be entered in the appropriate box on the Form W-15. Please note that the washout factor addresses the excess borehole volume only. It does not account for fluid losses due to formation fractures or fluid loss zones, nor is it the same as the excess volume of cement pumped. Also, if the TOC was not determined by calculation (for example, it was determined by temperature survey or cement evaluation log), a note should be entered in the washout factor box and/or the comment section on the Form W-15 to indicate that a TOC calculation is not necessary.

Please Forward to the Appropriate Section of Your Company

RAILROAD COMMISSION OF TEXAS

Washout Factor Percentage



Legend

WASHOUT FACTOR PERCENTAGE

- 20
- 30

Notice Disclaimer:
 This map was generated by the Geographic Information System of the Railroad Commission of Texas. Base map information was obtained directly from U.S. Geological Survey 7.5 minute quadrangle maps. These data sets are continually being updated and refined. This map is intended solely for the internal use of the Railroad Commission which makes no claims as to its accuracy or completeness.



Railroad Commission of Texas
 Oil and Gas Division
 GIS Well Mapping

July 2017