

ISOLATION REQUIREMENTS FOR TYPICAL WELLS

Date 04/18/2016

COGCC Document No. 2056126

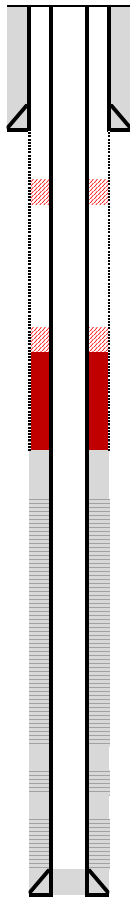
FIELD NAME RULISON
FIELD NUMBER 75400

Notes: Depths to formation tops differ significantly with changes of ground surface elevation across the field. Refer to the Stratigraphy chart on the Field Scout Card. These wellbore diagrams reflect average depths.
Cement isolation requirements of 500' above L. Wasatch are for Township 5S-93W (SE/4 and Sections 9, 13-16, 21, 28, and 33), Township 6S-93W (all, including any overlap with Mamm Creek Field), Township 6S-94W (Sections 1 and 12), and Township 7S-93W (Sections 5-8 and 17); cement isolation requirements of 200' above L. Wasatch are for other parts of the field to the west of those areas described above.

LOCATION

Basin Piceance
Township(s) 5S to 7S
Range(s) 93W to 94W

Depth	Formation/Member
0	Uinta/ Green River/ Landslide Deposit/ Alluvium/ U. Wasatch
1,000	U. Wasatch
2,000	Wasatch G
3,000	
4,000	L. Wasatch Ohio Creek U. Mesaverde
5,000	Top of Gas
6,000	
7,000	Cameo
8,000	Rollins Cozzette Corcoran



Casing and Cement Coverage

Surface Casing Standard

Minimum 10% TVD or cover all apparent water resources in the U. Wasatch, whichever is more stringent; 1,100 ft minimum in Rulison Overpressured Area (most of the field)

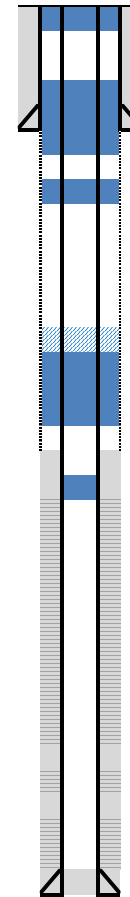
New Cement Standard

Cement must provide coverage across Ohio Creek and Lower Wasatch (200'/500' above Lower Wasatch), in addition to productive interval coverage. Add Wasatch G coverage (stage cement, as shown here, or increase primary coverage) within one mile of productive Wasatch G wells.

Typical Older Well Configuration

TOC covers productive intervals, but cement coverage of U. Mesaverde, Ohio Creek and L. Wasatch may be lacking

Depth	Formation/Member
0	Uinta/ Green River/ Landslide Deposit/ Alluvium/ U. Wasatch
1,000	U. Wasatch
2,000	Wasatch G
3,000	
4,000	L. Wasatch Ohio Creek U. Mesaverde
5,000	Top of Gas
6,000	
7,000	Cameo
8,000	Rollins Cozzette Corcoran



Plug Placement

Surface plug

Surface casing shoe plug
Set deeper shoe plug if casing depth < 1,000 feet

Wasatch G plug if productive within one mile

Stabilization squeeze plug (use if separation between plugs above and below are > 3,000 feet); not shown on this figure

Squeeze plug across Ohio Creek and L. Wasatch (top of plug 200'/500' above L. Wasatch)

Plug in casing above Mesaverde Group Completions