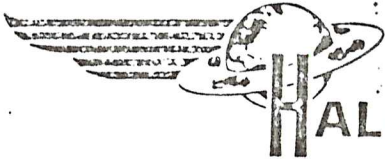


RODGER

File in letter book
with casing event letter

6607309



HALLIBURTON SERVICES

P. O. Box 339
Vernal, Utah 84078
March 17, 1975

Mr. John Auten
Reynolds Electric and Engineering Co.
P. O. Box 14400
Las Vegas, Nevada 89114

Dear Sir:

The following is an analysis of the probable cause of the collapsed 13 3/8" casing in the RRGE #1 in Cassis County, Idaho:

Hole Data: Plugback TD 3,651'
Hole Size 20" average
20" Casing set to 900'
13 3/8" Casing set to 3,650' +

Discussion:

After plugging back with sand and cement to 3,651', 13 3/8" casing was run to TD and the hole circulated for approximately 3 hours to stabilize the temperature. Following this, 100 BBL gel water was pumped into the casing. This fluid was to prepare the formation for cementing and to attempt to slow the water loss from the cement into the formation. A high water loss will cause cement to thicken prematurely. The cementing operation commenced with the mixing of 1500 sacks 50-50 Poz-mix containing 60% silica flour and 0.5% HR-12 followed by 400 sacks 50-50 Pozmix containing 60% silica flour. This amount of cement yields 570 BBL of slurry when mixed. The top plug was dropped and displacement started. A pressure rise was encountered with 150 BBL of displacement in. The pressure continued to rise until, with 454.5 BBL pumped, the pressure reached 2000 psi. At this time pumping stopped. Pressure held for approximately 45 seconds. Then the casing parted near the surface, releasing all pressure inside the casing. Later the casing was screwed back together and was determined to be holding.

Conclusions:

The increasing pressure during displacement was



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probably due in a small part to the changing hydro- agree
 static head and the most part to thickening of the
 cement slurry due to loss of water into the formation. ← disagree
 The first portion of the slurry would thicken to the
 point of non-pumpability because it had the longer con-
 tact time with the formation. When the lead slurry
 was no longer pumpable at 2000 psi, movement ceased.
 The 2000 psi was trapped inside the casing and also
 in the annulus between the thickened slurry at the top
 and the float shoe at the bottom. When the casing
 parted, the pressure inside the pipe was relieved to
 hydrostatic instantly while the pressure in the annulus,
 trapped between the thickened cement and the float shoe,
 could not be relieved. At this point the 2000 psi
 trapped exceeded the 1,540 psi collapse of 13 3/8",
 61# casing. This excess pressure collapsed the casing
 from 3,325' to 3,340'.

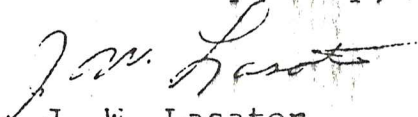
Neither is hy-
 pressure (which would
 hydrate
 likely to be
 possible in
 a slurry in
 formation, no
 is formation
 likely to not
 be saturated

This would have
 not complete
 up to, particularly at
 lower levels.

The attached diagram shows graphically the probable cause of the collapsed casing.

Thank you for this opportunity to be of service to you. Should you require further information, please let us know.

This letter does not address at all the question
 whether the shoe was lifted high enough off
 plug, initially.

Yours very truly,

 J. W. Lasater
 Dist. Engineer

- cc: E. L. McClure
- G. G. Stennis
- R. L. Spillman

