

COMPUTATION SHEET

BY DS DATE 10/13/99 PROJECT 86-21 (production) SHEET NO. 1 OF 3
 CHKD. BY _____ DATE 10/14/99 FEATURE Plugging ACTIVITY _____
 OFFICE _____ DETAIL All depths KB (33' above GL)

10/13/99

Joe Hickey, Bob Mueller, CalEnergy present

Well had been bled earlier. Halliburton rigged-up checked wellhead pressure - 400psig started to bleed-off at

2:50 pm	400 psi	(Note: installed 2nd gate valve downstream of Kill line valve to bleed through so not to cut Kill valve)
3:05 pm	325 psi	
3:20 pm	307 psi	
3:40 pm	262 psi	

Mostly CO₂, pipes coated with ice ~ 5-10 ppm H₂S. Decided to try to build hydrostatic head, so shut in and tested BOPs. Pipe rams lost 50psi in 10 minutes. (1005 - 955). Tried to pressure up blind rams. Leaking ~ 1psi/1/2 seconds. Tightened fittings - same leak-off rate. Blew O ring in BOP/Wellhead coupling. Replaced - still leaked. Some leakage around lower coupling/wellhead flange joint. Took coupling + nipple out, cleaned and taped. At that point, gas was bubbling up thru master valve (leak - possible leak responsible for test failure. Had them remove coupling on top of flange above blind rams. Now blind rams open to atmosphere and leaks thru rams would be visible. Pressured up to 1100 psi. Blind rams did not leak.

Established circulation, ran in hole to 4951 and pumped 11 bbls cm (Class G, 40% SiO₂, .65% CFA3) CIP 8:00pm

10/14/99

Wellhead pressure was 985 psi after sitting overnight. Tagged plug at 8:30 am at 4894, 67' up into 7" CSG (4000#). We agreed that instead of putting additional 100' cm on plug 1, mud hole and cm across 7" / 9 5/8" lap at 4180, and put extra cm on top. (because plug 1 inside 7" wouldn't be able to squeeze more into open of hole when 9 5/8 parted. ∴ Plug 2 will be from 3740 - 4307 (540'). Successful tag will be at least 3840' (440' plug). Pumped 23 1/2 bbls 9.6" 36us mud.

Pumped 48 bbls cm CIP 10:50 am. Tagged plug at 3816 (3:10pm) 4000#. 491 foot plug. (Class G, 40% SiO₂, .65% CFA3)

COMPUTATION SHEET

BY 197 DATE 10/14/99 PROJECT B6-21 (production) SHEET NO. 2 OF 3
 CHKD. BY _____ DATE _____ FEATURE Plugging ACTIVITY _____
 OFFICE _____ DETAIL All depths KB (33' above G.L.)

10/14/99 (continued)

Pumped ~~289~~ bbls 9# 36 vis mud. Tried bleeding off pressure
 5:35 pm 985 psi
 5:45 pm 525 psi
 6:08 pm 350 psi
 6:14 pm 455 psi (shut in about 6:10 pm)

Pumped 19 bbls Class G, 40% SiO₂, 165% CFA 3 cm
 1708 - 1860. CIP 7:20 pm

10/15/99

256 psi shut-in - started to bleed @ 9:40 am
 160 psi @ 9:55 then shut in
 171 psi @ 10:00
 181 psi @ 10:05

RIT and tagged Plug # 3 @ 1648' (4000 ft) @ 10:50 am
 Bled psi from 292 psi @ 10:55 am to 22 psi @ 11:10 am
 Gas and cold water coming out of blooie line.

Pumped 466 bbls 9.6 36 vis mud 1648-1040
 Pumped 50 bbls cm from 1040 - 627 CIP 12:45 pm
 (Class G cm, 40% SiO₂, .45 CFA 3 - w/3% CaCl₂ in lead slurry (first 1005x)). Well shut in. Pressure dropped from 1000 psi to 380 psi while WOC. About 3:30 pm

Tagged very soft cm @ 648'. WOC. At 5:20 pm 219 psi wellhead. Started bleeding off. Dug out gate valve connected to 13 3/8 x 20" CSG annulus to see if pressure in annulus. Put valve on gate flange, no pressure in annulus (used two different gauges). Blooie line stopped flowing. Wellhead pressure 0 psig. Pressured-up 13 3/8 to 185 psi to see if 13 3/8 x 20 annulus pressured-up. 0 psig. No communication between 13 3/8 + 20". Pressure only dropped 3 psi in 2 1/2 minutes.

Pumped 80 bbls of calculated 96 bbls cm in hole before cm started to gel + restrict flow. Had to POOH and

COMPUTATION SHEET

BY DB DATE 10/15/99 PROJECT 86-21 (production) SHEET NO. 3 OF 3
 CHKD. BY _____ DATE _____ FEATURE Plugging ACTIVITY _____
 OFFICE _____ DETAIL All depths KB (33' above G2)

10/15/99 continued

Pump remaining 16 bbls in reserve pit.
 CIP 8:45 pm. Will tag and finish
 cm job on 10/16.
 (class G, 40% silica flour, 65% CFR3)

10/16/99

9:56 am opened gate valve (wing valve). No pressure
 Tried to pressure test plug. Top 3" gate valve leaking.
 closed it tighter. Tested @ 400 psi. Leaked to
 400 psi in about 1 1/2 minutes. RIT and tagged
 plug at 156' w/ 3000#.

Pumped 26 bbls 15.6# eq Class G cm, 40% SiO₂, 65% CFR3
 and 3% Calc. Good cement returns to surface,
 CIP 11:35 am. Removed wellhead at 1:05 pm
 No fallback. Water drained from wellhead and
 stood at top of expansion spool. No bubbles,
 no leaks.

Annun Semintochi