



**Hawk B-1 #69 (API: 30-025-40458) Proposed Procedure**

**September 30, 2013**

**Acid Fracture the Abo**

**Day 1:** MIRU. POOH w/ rods and pump. Install BOP. TFF and POOH w/ 2-7/8" tubing

**Day 2:** If necessary, RIH w/ 4-3/4" bit on 2-7/8" tubing, clean well out to PBTD @ 7050'. POOH

**Day 3:** NU frac equipment

Acid frac the Middle/Upper Abo down 5-1/2" casing with 3,000 gal 15% HCl spearhead followed by 30,000 gal x-linked brine and 450 lb rock salt/24,000 gal retarded 15% HCl/6,000 gal 15% HCl in four equal stages @ 40-60 BPM (max pressure 6,200 psi) as per frac recommendation. Shut-down to obtain fracture closure. After fracture closure, perform 3,000 gal diverted 15% HCl acid stage at matrix rates (max pressure 1,500 psi) to ensure connectivity of hydraulic fracture to the wellbore

ND frac equipment. Shut well in overnight to allow acid to spend

**Day 4:** Open well up and flow back treatment

**Day 5:** RIH w/ 2-7/8" production tubing. RIH w/ 1-1/2" pump and rods

Return well to production. Place well in test

**Apache Corporation**  
**Hawk B-1 #69**  
**WELL DIAGRAM (CURRENT CONFIGURATION)**



<b>WELL NAME:</b>	Hawk B-1 #69	<b>API:</b>	30-025-40458
<b>LOCATION:</b>	2480'S/1805'E Unit J, Sec 8, T-21S, R-37E	<b>COUNTY:</b>	Lea Co, NM
<b>SPUD-TD DATE:</b>	05/25/2012-06/03/2012	<b>COMP. DATE:</b>	6/20/2012
<b>PREPARED BY:</b>	Cindy Rios	<b>DATE:</b>	9/5/2013
<b>TD (ft):</b>	7,500.0	<b>KB Elev. (ft):</b>	3544.00
<b>PBTD (ft):</b>	7,050.0	<b>Ground Elev. (ft):</b>	3531.00
		<b>KB to Ground (ft):</b>	13

CASING/TUBING	SIZE (IN)	WEIGHT (LB/FT)	GRADE	DEPTHS (FT)	
Surface Casing	8-5/8" (Cemented w/725sx circ to surface)	24.0	J-55	0.00	1,389.0
Prod. Casing	5-1/2" (Cemented w/1400sx TOC @ 130' CBL)	17.0	L-80	0.00	7,500.0
Open Hole					
Tubing	2-7/8"	6.5	J-55	0.00	7,047.0

**PRODUCTION TBG STRING**

ITEM	DESCRIPTION	LENGTH (FT)	Depth (FT)
1	216 JTS 2-7/8" 6.5# J-55 TBG		
2	TAC		6848.0
3	SN		7047.0
4			
5			
6			
7			
8			
9			
10			

**PRODUCTION ROD STRING**

ITEM	DESCRIPTION	LENGTH (FT)	Btm (FT)
1	111 JTS 1-1/4" FG RODS	4162.5	4162.5
2	61 JTS 1" KD RODS	1525.0	5687.5
3	37 JTS 7/8" KD RODS	925.0	6612.5
4	12 JTS 1-1/2" K BARS	300.0	6912.5
5	BHP: 2"X 1-3/4"X 24' RHBC	24.0	6936.5
6			
7			
8			
9			
10			

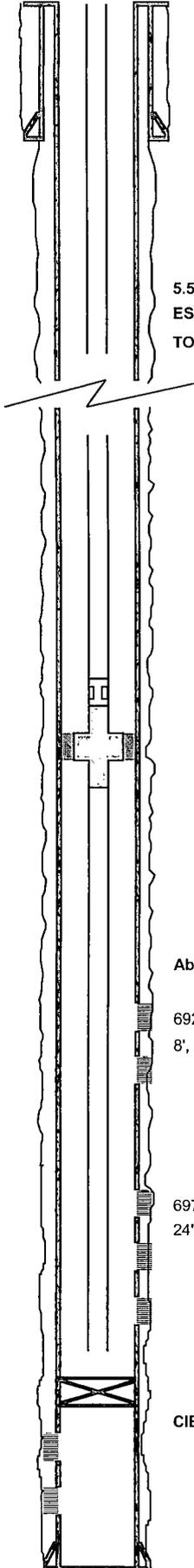
**SURFACE EQUIPMENT**

<b>PUMPING UNIT SIZE:</b>	640 PU	<b>MOTOR HP:</b>	
<b>PUMPING UNIT MAKE:</b>		<b>MOTOR MAKE:</b>	

**PERFORATIONS**

Form.	Intervals	FT	SPF
Upper Abo	6922-30'	8	4
Middle Abo	6977', 79', 81', 87', 89', 91', 93', 95', 97', 99', 7001', 03', 05', 11', 19', 21', 23', 24', 26', 27', 28', 32', 33', 35'	24	1
Lower Abo	7057', 59', 77', 7111', 13', 30', 44' (suspended)	8	4

SURF. CSG.  
CMT. CIRC.



5.5"  
EST. CEMENT TOP  
TOC @ 130' (CBL)

Abo Perfs

6922-30'  
8', 32 shots

6977-7035'  
24', 24 shots

CIBP: 7050'

7057-7144'  
8', 32 shots  
(suspended)

PBTD: 7,050.0  
TD: 7,500.0