

# International Well Control Forum

## Surface BOP Kill Sheet - Deviated Well (API Field Units)

DATE : \_\_\_\_\_

NAME : \_\_\_\_\_

**FORMATION STRENGTH DATA:**

SURFACE LEAK -OFF PRESSURE FROM FORMATION STRENGTH TEST

(A) \_\_\_\_\_ psi

MUD WEIGHT AT TEST

(B) \_\_\_\_\_ ppg

MAXIMUM ALLOWABLE MUD WEIGHT =

$$(B) + \frac{(A)}{\text{SHOE T.V. DEPTH} \times 0.052} = (C) \text{ ppg}$$

INITIAL MAASP =

$$((C) - \text{CURRENT MUD WEIGHT}) \times \text{SHOE T.V. DEPTH} \times 0.052$$

= \_\_\_\_\_ psi

**CURRENT WELL DATA:**

**DRILLING MUD DATA:**

WEIGHT \_\_\_\_\_ ppg

GRADIENT \_\_\_\_\_ psi/ft

**DEVIATION DATA:**

KOP M.D. \_\_\_\_\_ ft

KOP T.V.D. \_\_\_\_\_ ft

EOB M.D. \_\_\_\_\_ ft

EOB T.V.D. \_\_\_\_\_ ft

**CASING SHOE DATA:**

SIZE \_\_\_\_\_ in

M. DEPTH \_\_\_\_\_ ft

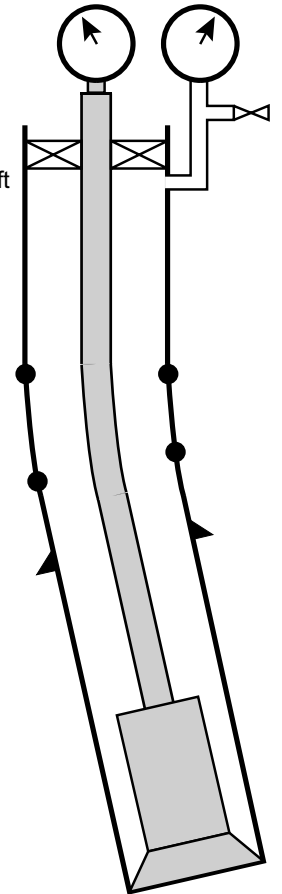
T.V. DEPTH \_\_\_\_\_ ft

**HOLE DATA:**

SIZE \_\_\_\_\_ in

M. DEPTH \_\_\_\_\_ ft

T.V. DEPTH \_\_\_\_\_ ft



PUMP NO. 1 DISPL.	PUMP NO. 2 DISPL.
bbls / stroke	bbls / stroke

SLOW PUMP RATE DATA:	(PL) DYNAMIC PRESSURE LOSS	
	PUMP NO. 1	PUMP NO. 2
SPM	psi	psi
SPM	psi	psi

PRE-RECORDED VOLUME DATA:	LENGTH ft	CAPACITY bbls / ft	VOLUME bbls	PUMP STROKES strokes	TIME minutes
DP - SURFACE TO KOP	x	=		(L) stks	
DP - KOP TO EOB	x	=	+	(M) stks	
DP - EOB TO BHA	x	=	+	(N1) stks	
HEVI WALL DRILL PIPE	x	=	+	(N2) stks	
DRILL COLLAR	x	=	+	(N3) stks	
DRILL STRING VOLUME			(D) bbls	stks	min
DC x OPEN HOLE	x	=			
DP / HWDP x OPEN HOLE	x	=	+		
OPEN HOLE VOLUME			(F) bbls	stks	min
DP x CASING	x	=	(G) +	stks	min
TOTAL ANNULUS VOLUME			(F+G) = (H) bbls	stks	min
TOTAL WELL SYSTEM VOLUME			(D+H) = (I) bbls	stks	min
ACTIVE SURFACE VOLUME			(J) bbls		
TOTAL ACTIVE FLUID SYSTEM			(I+J) bbls		

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KICK DATA :

SIDPP  psi

SICP  psi

PIT GAIN  bbl

KILL MUD WEIGHT

$$\text{CURRENT MUD WEIGHT} + \frac{\text{SIDPP}}{\text{TVD} \times 0.052}$$

KMW

$$\dots\dots\dots + \frac{\dots\dots\dots}{\text{X } 0.052} = \dots\dots\dots \text{ ppg}$$

INITIAL CIRC. PRESSURE

DYNAMIC PRESSURE LOSS + SIDPP

$$\text{ICP} \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \text{ psi}$$

FINAL CIRCULATING PRESSURE

$$\frac{\text{KILL MUD WEIGHT}}{\text{CURRENT MUD WEIGHT}} \times \text{DYNAMIC PRESSURE LOSS}$$

FCP

$$\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots \text{ psi}$$

DYNAMIC PRESSURE LOSS AT KOP (O)

$$PL + \left[ (\text{FCP} - PL) \times \frac{\text{KOPMD}}{\text{TDMD}} \right] = \dots\dots\dots + \left[ (\dots\dots\dots - \dots\dots\dots) \times \dots\dots\dots \right] = \dots\dots\dots \text{ psi}$$

REMAINING SIDPP AT KOP (P)

$$\text{SIDPP} - \left[ (\text{KMW} - \text{CMW}) \times 0.052 \times \text{KOPTVD} \right]$$

$$= \dots\dots\dots - \left[ (\dots\dots\dots - \dots\dots\dots) \times 0.052 \times \dots\dots\dots \right] = \dots\dots\dots \text{ psi}$$

CIRCULATING PRESS. AT KOP (KOP CP)

$$(O) + (P) = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \text{ psi}$$

DYNAMIC PRESSURE LOSS AT EOB (R)

$$PL + \left[ (\text{FCP} - PL) \times \frac{\text{EOBMD}}{\text{TDMD}} \right] = \dots\dots\dots + \left[ (\dots\dots\dots - \dots\dots\dots) \times \dots\dots\dots \right] = \dots\dots\dots \text{ psi}$$

REMAINING SIDPP AT EOB (S)

$$\text{SIDPP} - \left[ (\text{KMW} - \text{CMW}) \times 0.052 \times \text{EOBTVD} \right]$$

$$= \dots\dots\dots - \left[ (\dots\dots\dots - \dots\dots\dots) \times 0.052 \times \dots\dots\dots \right] = \dots\dots\dots \text{ psi}$$

CIRCULATING PRESSURE AT EOB (EOB CP)

$$(R) + (S) = \dots\dots\dots + \dots\dots\dots = \dots\dots\dots \text{ psi}$$

$$(T) = \text{ICP} - \text{KOP CP} = \dots\dots\dots - \dots\dots\dots = \dots\dots\dots \text{ psi}$$

$$\frac{(T) \times 100}{(L)} = \dots\dots\dots \times 100 = \dots\dots\dots \frac{\text{psi}}{100 \text{ strokes}}$$

$$(U) = \text{KOP CP} - \text{EOB CP} = \dots\dots\dots - \dots\dots\dots = \dots\dots\dots \text{ psi}$$

$$\frac{(U) \times 100}{(M)} = \dots\dots\dots \times 100 = \dots\dots\dots \frac{\text{psi}}{100 \text{ strokes}}$$

$$(W) = \text{EOB CP} - \text{FCP} = \dots\dots\dots - \dots\dots\dots = \dots\dots\dots \text{ psi}$$

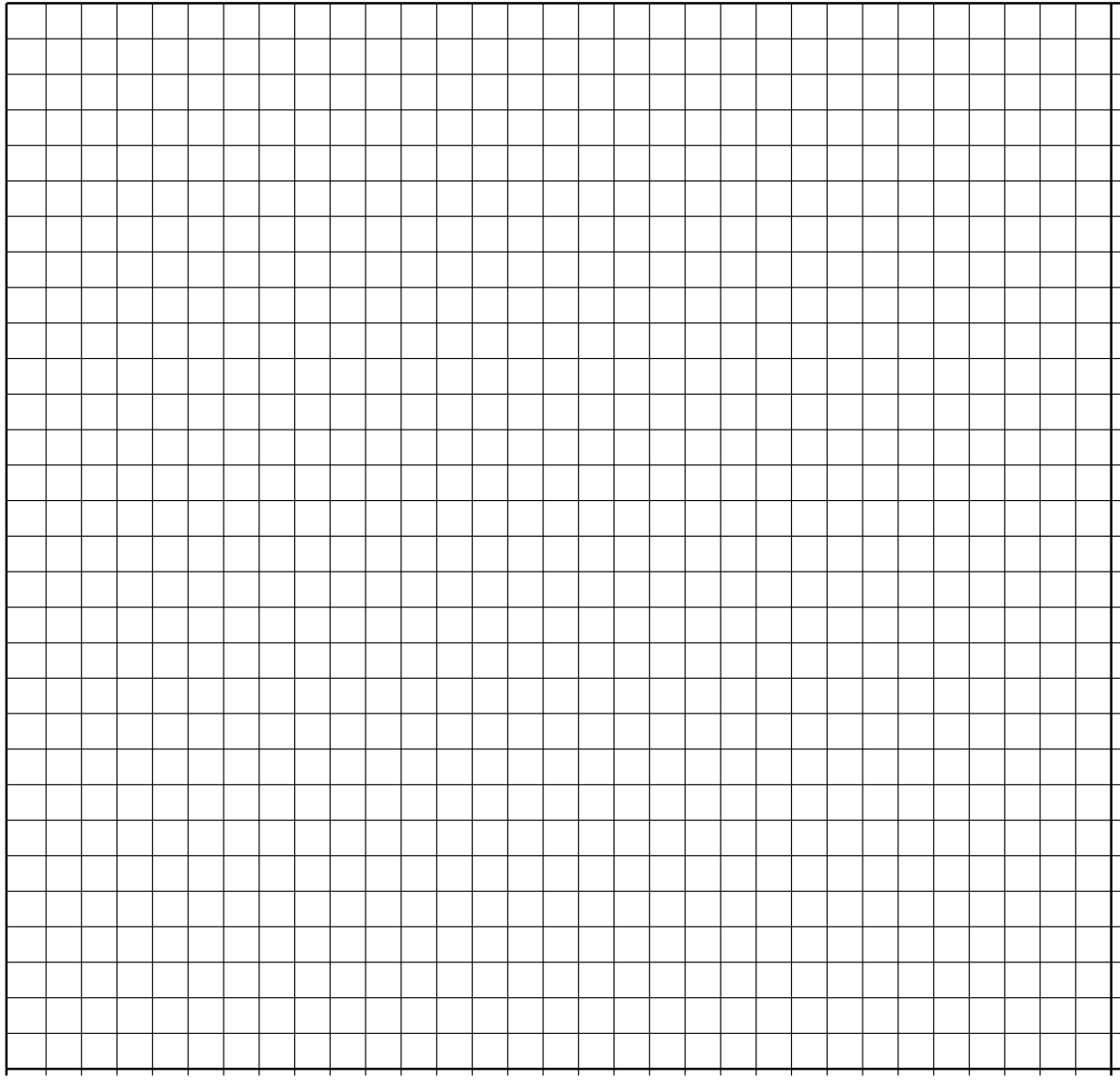
$$\frac{(W) \times 100}{(N1+N2+N3)} = \dots\dots\dots \times 100 = \dots\dots\dots \frac{\text{psi}}{100 \text{ strokes}}$$

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STATIC & DYNAMIC DRILL PIPE PRESSURE [psi]



STROKES →

STROKES	PRESSURE [psi]