

HANKS #501

MONTHLY GAS PRODUCTION ALLOCATION FORMULA

GENERAL EQUATION:

$$Q_t = Q_{ftc} + Q_{pc}$$

WHERE: Q_t = TOTAL MONTHLY PRODUCTION (MCF/MONTH)
 Q_{ftc} = FRUITLAND COAL (FTC) MONTHLY PRODUCTION (MCF/MONTH)
 Q_{pc} = PICTURED CLIFFS (PC) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR Q_{ftc} :

$$Q_{ftc} = Q_t - Q_{pc}$$

ANY PRODUCTION RATE OVER WHAT IS CALCULATED FOR THE PICTURED CLIFFS (PC) USING THE APPLIED FORMULA IS FRUITLAND COAL (FTC) PRODUCTION.

PICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:*

$$Q_{pc} = Q_{pci} * e^{- (D) * (t)}$$

WHERE: Q_{pci} = INITIAL PC MONTHLY FLOW RATE (CALCULATED FROM FLOW TEST)
 D = MONTHLY DECLINE RATE: (0.00667)
MONTHLY DECLINE RATE FROM FIELD ANALOGY
ANNUAL DECLINE = 8.0%

THUS:

$$Q_{pc} = Q_{pci} * e^{- (0.00667) * (t)}$$

$$Q_{ftc} = Q_t - Q_{pci} * e^{- (0.00667) * (t)}$$

WHERE: (t) IS IN MONTHS

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3.

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DETERMINATION OF Q_{pci} :

(INITIAL PICTURED CLIFFS MONTHLY PRODUCTION)

$$Q_{pci} = Q_{t(1)} * Q_{pc(p)} \setminus \{Q_{pc(p)} + Q_{ftc(p)}\}$$

WHERE:

$Q_{t(1)}$ = FIRST MONTH TOTAL PRODUCTION (MCF)

$Q_{pc(p)}$ = FINAL PICTURED CLIFFS PITOT GAUGE (MCFPD)

$Q_{ftc(p)}$ = FINAL FRUITLAND COAL PITOT GAUGE (MCFPD)