

**PO&G Operating  
Wellbore Sketch**

Date **October 21, 2021**

Well Name **HRMU #3**  
Field Name **Harker Ranch**  
County **Cheyenne**  
State **Colorado**

Legal Location **SW NW Sec 12, 13S, 42W**  
Coordinates: **38.938535 -102.180756**  
Unit No.  
API No. **05-017-07111**

KB: **4091'**  
GL: **4081'**

CASING			
Size	Description	Top	Bottom
8 5/8"	23#, M-50, ST&C	0'	625'
5 1/2"	15.5#, M-50, ST&C	0'	5389'

CEMENT	
Pipe Size	Description
8 5/8"	285 sx 65:35 Poz, 6% gel + 75 sx Class A
5 1/2"	100 sx 50:50 Poz, 3% KCl, 0.75% HA-322 + 150 sx standard, 3% KCl, 0.75% HA-322, 1/4# CF

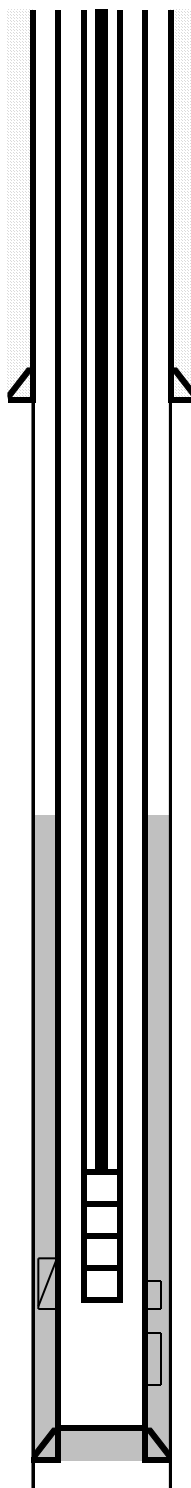
TUBING STRING		
Description	Length	Depth
MA, SN	15'	5296'
4-2-7/8		
TAC 5 1/2X 2-7/8		
160-2-7/8		
10' 2-7/8 SUB		

RODS / PUMP		
Description	Length	Depth
129-3/4		
87-78		
2-1/2x1-1/2x16'		
6' GA		
22' PR		

PUMPING UNIT	
Manuf'r:	
API Size:	
Crank Hole:	

PRIME MOVER	
TYPE	SIZE

FLUID PROPERTIES	
API Grav	Chlorides



TOC : 3960'

SN @ 5281'

Morrow Perfs:

5261'-64'

5267'-84' 1000 Gal Re-Ax acid Job 2-13-09

5256'-64' (squeezed)

PBTD **5341'**  
RTD **5390'**

**HISTORICAL SUMMARY**

1/27/90	Spud well.
1/28/90	Set 8 5/8" casing @ 625'
2/3/90	Core well from 5259'-86'
2/4/90	TD well @ 5390'. Ran logs.
2/5/90	Set 5 1/2" casing @ 5389'
2/9/90	Ran CBL, TOC @ 3960'
2/13	Swab well down w/ casing swab. Perf <b>5256'-5264'</b> w/ 4 JSPF, 4" HSC.
2/14	SICP 140 psi. Ran tbg w/ SN @ 5274'. Swab 10 BO, 10 BLW. FL @ 2700', 98% oil cut @ end.
2/15	SITP 160 psi, SICP 265 psi. IFL @ 2600'. Swab 5 hrs, recovered 28 BO, 0 BW. FL @ 2700'. Ran rods & pump.
2/19	11 hrs, Pump 68 BO, 0 BW, NR gas
2/20	24 hrs, Pump 78 BO, 0 BW, 117 MCF
2/22	24 hrs, Pump 62 BO, 0 BW, froze off
2/23	24 hrs, Pump 43 BO, 0 BW, 207 MCF
2/24	24 hrs, Pump 42 BO, 0 BW, 142 MCF
2/27	24 hrs, Pump 5 BO, 0 BW, 61 MCF
4/25/90	POOH w/ tbg & rods. Ran tbg open-ended. Spot 25 sx Premium w/ 0.75% Halad 322 across perfs. Pull 10 stands. Pressure tbg to 1000 psi & held 10 mins. Close pressure in.
4/26/90	POOH w/ tbg. Ran bit & tag @ 5050'. Drill out 230' cmt.
4/28/90	Perf <b>5267'-73'</b> and <b>5274'-84'</b> w/ 4 JSPF.
4/29/90	TIH w/ tbg, SN @ 5301'. Swab 7.5 hrs, rec 1/2 BO, 20 BLW, 14 BFW.
5/1/90	38 hr, SITP VAC, 0 SICP. IFL @ 4900'. Swab 1.5 hrs, rec 9 BW. POOH w/ tbg. Perf <b>5261'-64'</b> w/ 4 JSPF. Ran tbg back. Swab 3 hrs, rec 15 BLW + 5 BFW. FFL @ 4800'.
5/2	SITP 0, SICP 125#. Swab 6 hrs, rec 16 BO, 2.5 BW.
5/3	SITP 30#, SICP 450#. IFL @ 3400'. Swab 6 hrs, rec 10 BO. Ran pump & rods.
5/4	16 hrs, Pump 22 BO, 10 BW, 38 MCF
5/5	24 hrs, Pump 17 BO, 13 BW, 38 MCF
5/6	24 hrs, Pump 22 BO, 3 BW, 84 MCF
5/7/90	24 hrs, Pump 23 BO, 2 BW, 84 MCF
3/14/91	POOH w/ rods, found severe paraffin. Tried to hot oil down tbg w/o success. Pump 20 bbls down csg. Tried to cut w/ knife.
3/15	FOOH w/ tbg.
3/16	Perf Morrow <b>5261'-70'</b> w/ 8 JSPF. Ran BHP bomb w/ 72 hr clock.
3/19	Pull BHP bomb. Swab 1.5 hrs, rec 10 BO. Pressure was still building so re-ran bomb.
3/20	Pull BHP bomb. BHP 733 psi. Ran rods & pump. POP.
3/25	24 hrs, Pump 37 BO, 0 BW, 155 MCF
3/28/91	24 hrs, Pump 35 BO, 0 BW, 196 MCF
2/4/92	Pull pump and Ran BHP. BHP 507 psi & still building @ 0.96 psi/hr.
1/22/93	Did Parakleen Treatment (?). Before: 15 BO, 0 BW, 27 MCF After: 20 BO, 0 BW, 15 MCF
1/30/95	Re-perf Morrow <b>5261'-70'</b> w/ 4 JSPF. Before: 7 BO, 0 BW, 7 MCF. After: 7 BO, 0 BW, 0 MCF.
6/4/98	Dump 3 bbls condensate, 250 gals MOD-202 w/ 17 gals mutual solvent + 27 bbls condensate. Soak 4 hrs.
7/20/2004	POOH w/ all well equipment.
9/13/2004	Set CIBP @ 5226'. Dump 2 sx cmt on top.
9/21/04	MIT casing to 360 psi, OK
2/27/06	Pressure test casing to 650 for 10 min - ok. Drilled out and pushed CIBP to 5312'.
3/3/06	Acidized with 1000 gal 15% (85% acid-15% Xylene Solvent Acid Soln) gelled (REAC) acid + additives. Drop 100 BS throughout job, no ball action. Acid on perfs @ 2.5 BPM / 1000 psi. Good pressure break, rate rose to 3.5 BPM / 600 psi.
3/4/06	Put well on pump.
6/13/07	Pump change.
	Pumped 1000 gal 85/15, 30 gal PASC, 30 gal Re-ax 3000, 3 gal Al-150, 3 gal Feno, 3 gal Fe-green (dispersant). Flush w/ 50 bbl lease oil.
6/29/09	Pump 4 bbls PEP-1 & 6 bbls PEP-3 @ 2-3 bpm at 0 psi. Flush with 60 bbls of condensate.
8/19/09	Pump change.
10/12/11	Rod part. Body break on 210th rod.
9/13/2017	Repair Hole in Tbg Sub had hole in it, replaced w/ 8' x2 7/8" tbg sub removed 2' 7/8 rod sub
6/19/2018	Rod Part, Found rods 166-167 came unscrewed. Replace both rods (166 & 167) with new rods, changed 24 3/4" Rods and 20-7/8" Rod Boxes. Swapped pumps from inventory @ wildcat. Replaced liner and changed bottom section of stuffing box, changed Packing Rubbers and spaced well 12", loaded and tested to 500#

11/14/2018	Repair Hole in Top Tbg Sub had hole in it, replaced w/ 8' x2 7/8" tbg sub (L-80,Sam Length) Set TAC , changed flow T & bottom of stuffing box. Added extra anode to be tied onto tubing
2/18/2019	Pump change.

SW DISPOSAL

CHEMICAL PROGRAM

PRODUCTION ENHANCEMENT OPPORTUNITES