

Summary of the events

67L07393

Pumping test 8-19-80 + 9-10-80

RRG#1
Max drawdown 335 PSI
Sp. capacity 2.69 gpm/PSI

Pumping from well RRG#1
injection to RRG#7 started 8-19-80 (11⁰⁰ pump on, 12²⁷ pump off) 1050 gpm
13³² pump on 990 gpm reduced to 950 at 14⁰⁰
and to 900 at 14⁴⁰ till (23³⁸ hr. 8-20-80) 310 PSI at 14³⁸
started injection to RRG#7 on 8-28 11⁴⁷ hr Max. of
stopped on 9-10 at 8⁵⁸ hr. reached ~~highest~~ high pressure
at (on 8-29 at 9⁰⁰) of 260.987 PSI continue to build up
pressure around 260 - 261

Calculated recovery on 8-20 and 9-10
~~pumping~~ drawdown

specific capacity = $\frac{900}{261} = 3.45 \frac{\text{gpm}}{\text{psi}}$

Injection to RRG#6

started on 8-20-80 at 00⁰⁵ temp. 202° to 258°F
pump of 8-28-80 at 9³¹ pumping 900 gpm
(about 10600 min)

specific capacity = $\frac{900}{314} = 2.87 \frac{\text{gpm}}{\text{PSI}}$

RRGP#4

8-1-80	≈ 161. PSI	9-12-80	141.2
8-8-80	≈ 154.8 PSI	9-19-80	143.4
8-13-80	≈ 152.6	11-14-80	151.8
8-18-80	≈ 151.8		
8-19-80	151.4		started pumping at RRG#1
8-22-80	146.8		
9-10-80	138.6		stopped pumping

Pumping well RRP #1 pumping from 8-19-80
 Pumping time \approx 31440 average rate 900 gpm till 9-16-8 (858)

t	t_1	$\frac{t}{t_1}$	Bubbler PSI	t	t_1	$\frac{t}{t_1}$	Bubbler pressure
31440	0.5	62880	594	32220	780	41	886
31441	1	31441	608	32280	840	38.5	886
31442	2	15721	633	32340	9000	36.0	888
31443	3	10481	654	32460	1020	32	888
31444	4	7861	663	32580	1140	28.5	890
31445	5	6289	671	32700	1260	26	891
31446	6	5241	698	32820	1380	24	893
31447	7	4492	703	32940	1500	22	894
31448	8	3931	706				
31449	9	3494	709				
31450	10	3145	711				
31451	11	2859	730				
31452	12	2621	732				
31453	13	2419	733				
31457	17	1850	754				
31459	19	1655	754				
31460	20	1573	760				
31465	25	1258	783				
31470	30	1049	808				
31475	35	899	821				
31480	40	787	839				
31485	45	700	843				
31490	50	630	845				
31495	55	572	846				
31500	60	525	848				
31520	80	394	852.5				
31540	100	315	856 ✓				
31560	120	263	860				
31580	140	225	862				
31600	160	198	864				
31620	180	176	866				
31640	200	158	868				
31660	220	144	869				
31680	240	132	870				
31700	260	122	872				
31720	280	113	872				
31740	300	106	874				
31760	320	99	874				
31780	340	93	875				
31800	360	88	876 ✓				
31860	420	76	878				
31920	480	66.5	880				
31980	540	59	882				
32040	600	53	882				
32100	660	48.5	884				
32180	740	43.5	886				

904 PSI initial
 575 ' end

329

759 ft of drawdown

1.19 gpm/ft of drawdown

264.01

261. 36

Pumping - injection tests

from 5-¹⁴18-80 RRG P#3 to RRGJ#6
to 6-¹⁷12-80

from 8-18(19)-80 RRG P#1 to RRGJ#7 and 6
to 9-16-80

RRG1-6 KH = 16,673 md/m March 79
RRGE-2 KH = 3125 md/m (DM Callan)

Cold water injection RRGJ#6

7-16-80 491 gpm for 9 hr 55 min 120 PSI 4.09 gpm/psi

~~7-20-80~~

7-6-80 370 gpm for 10 hr 55 min pr. 100.3 sp cap 3.7 PSI

19 - 12²⁰ to RRG1-7

fill 20 23 38 about 118 psi

²⁴
≈ 1120

3520

≈ 2100 at 300 gpm

$$KH = \frac{162.6 \text{ BM}}{\text{or } S_{10}}$$

m = slope of S_{10}

q = in barrel/day

M =

Cold water injection RRGJ#7 from pond #4

about 404 gpm pressure to 130 PSI 3.18 gpm/psi

on 07/01/80 7 hr at 423 gpm

on 07/02/80 11 hr 26 min at 414 gpm

0.037 gpm/psi
0.034 gpm/psi

16 58 shut off

Recovery RRG#3

17

6-17-80

t	t ₁	t ₂	Pressure
48760 min	90	541	178
48860	100	488	178.5
48880	120	407	180.5
48900	140	349	182.5
48920	160	306	259.0
48940	180	272	261
48960	200	245	275 ✓
48980	220	223	291
49000	240	204	294
49020	260	188	298
49040	280	175	302
49060	300	163	305.8
49120	360	136	315.7
49150	390	126	319.9
49180	420	117	324
49210	450	109	334
49270	510	96.5	341
49330	570	86.5	346
49390	630	78	351
49450	690	72	358
49510	750	66	363
49570	810	61	367.5
49630	870	57	370
49690	930	53	374
49760	1000	50	378
49880	1120	44.5	383.5
45005	1245	36	388.5
45120	1360	33	393
45240	1480	30.5	397
45360	1600	28.3	402
45480	1720	26.4	406
45580	1820	25.0	409

6-12-80

recovery after ~ 41500_{min} RRG-7#6

t	t'	$\frac{t}{t'}$	Pressure	t	t'	$\frac{t}{t'}$	Pres
41502	2	20751	165.3				
41503	3	13834	163.0	43620	2120	20.6	87.2
41504	4	10376	161.4	43740	2240	19.5	86.2
41505	5	8301	160.1	43860	2360	18.6	85.3
41506	6	6918	158.8	43980	2480	17.7	84.45
41507	7	5929	157.9	44100	2600	17.0	83.65
41508	8	5188	157.0	44220	2720	16.3	82.85
41509	9	4612	156.2	44340	2840	15.6	82.1
41510	10	4151	155.6	44460	2960	15.0	81.45
41512	12	3459	154.4	44580	3080	14.5	80.8
41514	14	2965	152.7	44700	3200	14.0	80.2
41516	16	2594	151.4				
41518	18	2306	150.4				
41520	20	2076	149.5				
41525	25	1661	147.5				
41530	30	1384	145.9				
41535	35	1186	144.4				
41540	40	1038	143.1				
41550	50	831	141.2				
41560	60	693	139.2				
41570	70	594	137.5				
41580	80	520	136.1				
41590	90	462	134.8				
41640	140	297	129.9				
41700	200	208	125.3				
41760	260	160	121.7				
41820	320	130	118.7				
41880	380	110	116.2				
41940	440	95	114.0				
42000	500	84	112.0				
42060	560	75	110.2				
42120	620	68	108.6				
42180	680	62	107.1				
42240	740	57	105.7				
42300	800	53	104.4				
42360	860	49	103.2				
42420	920	46	102.1				
42480	980	43	101.1				
42540	1040	41	100.1				
42600	1100	38.7	99.15				
42660	1160	36.8	98.4				
42780	1280	33.4	96.5				
42900	1400	30.6	94.8				
43020	1520	28.3	93.2				
43140	1640	26.3	91.8				
43260	1760	24.6	90.5				
43380	1880	23.1	89.3				
43500	2000	21.75	88.2				

Injection for 10600min

RRG-1 #6

t	t ₁	$\frac{t}{t_1}$	Pressure	t	t ₁	$\frac{t}{t_1}$	Press
10602	2	5301	185.5	11770	1170	10.1	99.1
10603	3	3534	186.1	11890	1290	9.2	97.0
10604	4	2551	184.6	12010	1410	8.5	94.9
10605	5	2121	182.5		1530		
10606	6	1767	181.1				
10607	7	1515	180.8				
10608	8	1326	179.9				
10609	9	1179	178.8				
10610	10	1061	177.8				
10611	11	964	176.9				
10612	12	884	175.9				
10615	15	708	173.5				
10617	17	624	172.1				
10620	20	531	170.2				
10625	25	425	167.5				
10630	30	354	165.2				
10635	35	303	163.1				
10640	40	266	161.3				
10645	45	236	159.7				
10650	50	213	158.2				
10655	55	194	156.9				
10660	60	178	155.6				
10670	70	152	153.3				
10680	80	133	151.3				
10690	90	119	149.5				
10700	100	107	147.8				
10710	110	97	146.2				
10720	120	89	144.8				
10730	130	82	143.4				
10740	140	77	142.1				
10750	150	72	140.9				
10760	160	67	139.8				
10780	180	60	137.6				
10810	210	51	134.8				
10870	270	40	129.8				
10930	330	33	125.8				
10990	390	28	122.4				
11050	450	24.5	119.4				
11110	510	22	116.8				
11170	570	19.5	114.5				
11230	630	18	112.4				
11290	690	16	110.5				
11350	750	15	108.7				
11410	810	14	107.0				
11470	870	13.2	105.5				
11530	930	12.4	104.1				
11590	990	11.7	102.8				
11650	1050	11.1	101.5				