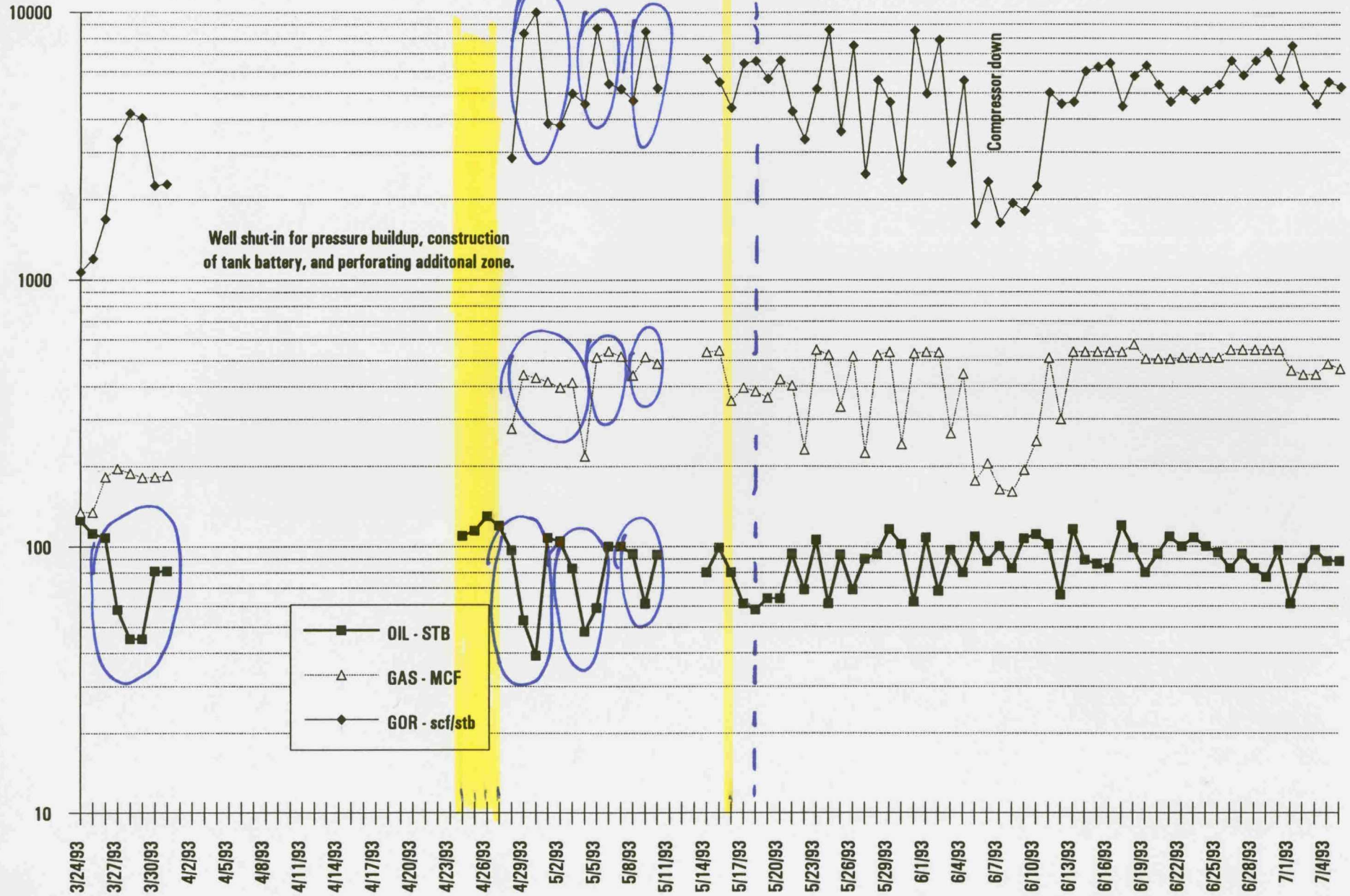
Before the Oil Conservation Division
New Mexico Department of Energy, Minerals, and Natural Resources
Case No. 10746
Exhibit No. 5

CACTUS STATE #1
Daily Production



Cactus State #1
Section 16-21S-26E
Eddy County, New Mexico

Before the Oil Conservation Division
New Mexico Department of Energy, Minerals, and Natural Resources
Case No. 10746
Exhibit No. 6

	OIL	GAS	GOR	WATER	TBG PSI	CSG PSI	COMMENTS
3/24/93	126	135	1071	78	155	650	
3/25/93	112	135	1205	228	145	600	
3/26/93	108	183	1694	109	130	590	
3/27/93	58	196	3379	187	145	590	
3/28/93	45	189	4200	161	140	560	
3/29/93	45	182	4044	155	145	540	
3/30/93	81	183	2259	87	135	560	
3/31/93	81	185	2284	87	135	560	
4/1/93	0	0	0	0		1150	Shut-in for build-up
4/2/93	0	0	0	0	1140	1150	Shut-in for build-up
4/3/93	0	0	0	0		1150	Shut-in for build-up
4/4/93	0	0	0	0		1160	Shut-in for build-up
4/5/93	0	0	0	0	1180	1170	Shut-in for build-up
4/6/93	0	0	0	0	1150	1160	Shut-in for build-up
4/7/93	0	0	0	0	1175	1160	Shut-in for build-up analysis
4/8/93	0	0	0	0	1200	1210	Shut-in for build-up analysis
4/9/93	0	0	0	0	1210	1200	Shut-in for build-up analysis
4/10/93	0	0	0	0	1210	1200	Shut-in for build-up analysis
4/11/93	0	0	0	0	1220	1200	Shut-in for build-up analysis
4/12/93	0	0	0	0	1220	1210	Shut-in for build-up analysis
4/13/93	0	0	0	0			Shut-in for build-up analysis
4/14/93	0	0	0	0	1220	1220	Shut-in for build-up analysis
4/15/93	0	0	0	0			Pulling unit on well
4/16/93	0	0	0	0			Pulling unit on well
4/17/93	0	0	0	0			Pulling unit on well
4/18/93	0	0	0	0			Pulling unit on well
4/19/93	0	0	0	0			Pulling unit on well
4/20/93	0	0	0	0			Pulling unit on well
4/21/93	0	0	0	0			Pulling unit on well
4/22/93	0	0	0	0			Pulling unit on well
4/23/93	0	0	0				Pulling unit on well
4/24/93	110	0	0	239	600	960	Flow testing
4/25/93	115	0	0	140	670	920	Flow testing
4/26/93	130	0	0	145	710	900	Flow testing
4/27/93	120	0	0	125	700	900	Flow testing
4/28/93	97	277	2856	10	900	1000	Flow testing
4/29/93	53	442	8340	0	940	1010	Start Gas Sales
4/30/93	39	431	9999	4	950		
5/1/93	108	416	3852	0	950		
5/2/93	105	397	3781	1	950		

Cactus State #1
Section 16-21S-26E
Eddy County, New Mexico

	OIL	GAS	GOR	WATER	TBG PSI	CSG PSI	COMMENTS
5/3/93	83	414	4988	0	460		Shut-in, compressor down
5/4/93	48	219	4563	3	1175		Down for 11 hours, compressor do
5/5/93	59	515	8729	1	960		
5/6/93	100	542	5420	3	910		
5/7/93	100	519	5190	11	910	1050	
5/8/93	94	440	4681	8	900	1050	
5/9/93	61	517	8475	8	900	1050	
5/10/93	93	486	5226	11	900	60	
5/11/93	0	0	0	0	1150		Shut-in by GCONM, repairing plant
5/12/93	0	0	0	0	1150		Shut-in by GCONM, repairing plant
5/13/93	0	0	0	0	1150		Shut-in by GCONM, repairing plant
5/14/93	80	537	6713	3	1075	1150	
5/15/93	99	544	5495	6	975	1075	
5/16/93	80	353	4413	6	1100		
5/17/93	61	395	6475	1	960	1150	
5/18/93	58	383	6603	0	900		
5/19/93	64	362	5656	2	910		
5/20/93	64	424	6625	11	910	1100	
5/21/93	94	402	4277	14	875	1050	
5/22/93	69	232	3362	14	875	1050	
5/23/93	106	549	5179	19	875	1050	
5/24/93	61	525	8607	11	875	1050	
5/25/93	93	335	3602	0	875		CD 4 hrs Fagan
5/26/93	69	519	7522	3	875	1070	
5/27/93	90	225	2500	15	900	1070	CD 18 hrs - Fagan
5/28/93	94	525	5585	14	80	1025	
5/29/93	116	537	4629	16	80	1025	
5/30/93	102	243	2382	14	80	1000	CD 12 hrs
5/31/93	62	531	8565	0	80	1025	
6/1/93	108	537	4972	6	800	1025	
6/2/93	68	536	7882	14	875	1025	
6/3/93	97	267	2753	17	900	1025	CD 16 hrs
6/4/93	80	445	5563	32	860	1025	CD 3 hrs
6/5/93	109	177	1624	2	850	1025	CD 21 hrs
6/6/93	88	205	2330	11	875		CD 19 hrs
6/7/93	100	164	1640	8	875	1025	CD 21 hrs
6/8/93	83	161	1940	11	875	1025	CD 20 hrs
6/9/93	107	194	1813	28	875		CD 18 hrs
6/10/93	111	249	2243	17	875	1025	CD 10 hrs
6/11/93	102	511	5010	27	875	1025	

Cactus State #1
Section 16-21S-26E
Eddy County, New Mexico

	OIL	GAS	GOR	WATER	TBG PSI	CSG PSI	COMMENTS
6/12/93	66	301	4561	21	850	1000	CD 12 hrs
6/13/93	116	537	4629	19	850	1025	
6/14/93	89	537	6034	21	875	1025	
6/15/93	86	537	6244	14	875	1025	
6/16/93	83	537	6470	19	875	1025	
6/17/93	120	537	4475	5	850	1025	
6/18/93	99	573	5788	11	875	1025	
6/19/93	80	506	6325	5	830	1010	
6/20/93	94	506	5383	17	875	1005	
6/21/93	109	506	4642	19	875	1000	
6/22/93	100	512	5120	19	825	1000	
6/23/93	108	512	4741	11	825	1000	
6/24/93	100	512	5120	13	825	1000	
6/25/93	95	512	5389	14	850	1010	
6/26/93	83	549	6614	19	850	1000	
6/27/93	94	549	5840	14	825	1000	
6/28/93	83	549	6614	19	825	1000	
6/29/93	77	549	7130	13	825	1000	
6/30/93	97	549	5660	19	825	1000	
7/1/93	61	458	7508	8	850	1000	
7/2/93	83	442	5325	17	850	1000	CD 2 hrs
7/3/93	97	442	4557	15	840	1000	
7/4/93	88	485	5511	17	840	1000	
7/5/93	88	464	5273	17	840	1000	

Monthly Production
East Catclaw Draw (Delaware) Pool

Before the Oil Conservation Division
New Mexico Department of Energy, Minerals, and Natural Resources
Case No. 10746
Exhibit No. 7

	Chi Operating Hondo Federal #2			Chi Operating Hondo Federal #3			Chi Operating Oxy State #1			Chi Operating Oxy State #2			Chi Operating Wiser State #1			Chi Operating Wiser State #2			Chi Operating Wiser State #3			East Catclaw Draw Pool Total		
	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR
Jul-90							456	0	0													456	0	0
Aug-90							668	0	0													668	0	0
Sep-90							1054	3500	3321													1054	3500	3321
Oct-90							868	2653	3056				885	2015	2277	688	1395	2028				2441	6063	2484
Nov-90							503	1526	3034				675	1537	2277	395	965	2443				1573	4028	2561
Dec-90							494	2837	5743				505	4185	8287	824	1650	2002				1823	8672	4757
Jan-91							2285	4890	2140				2050	4765	2324	1798	4974	2766				6133	14629	2385
Feb-91				1975	3620	1833	1584	3160	1995				1238	4312	3483	2019	3326	1647				6816	14418	2115
Mar-91				1639	4370	2666	1345	1975	1468				1006	2265	2251	1095	3675	3356				5085	12285	2416
Apr-91				2356	2250	955	1295	1925	1486				1089	2921	2682	1180	2030	1720				5920	9126	1542
May-91				2005	960	479	1111	4621	4159				702	4675	6660	931	4370	4694				4749	14626	3080
Jun-91	218	579	2656	1066	1495	1402	1146	4539	3961				1236	4592	3715	1435	4172	2907		5740		5101	21117	4140
Jul-91	1321	899	681	1953	2690	1377	1008	4896	4857				779	5735	7362	1023	4965	4853	868	6415	7391	6952	25600	3682
Aug-91	1359	2001	1472	2039	6003	2944	776	3594	4631				581	4847	8343	661	4137	6259	761	3757	4937	6177	24339	3940
Sep-91	2271	4655	2050	2940	7278	2476	996	3317	3330				655	4530	6916	950	3418	3598	521	4531	8697	8333	27729	3328
Oct-91	2387	5115	2143	2731	6613	2421	852	3170	3721				625	4385	7016	392	4075	10395	943	3463	3672	7930	26821	3382
Nov-91	1962	5047	2572	2310	6625	2868	836	2737	3274				641	4050	6318	295	2329	7895	853	3325	3898	6897	24113	3496
Dec-91	1653	4712	2851	2418	5756	2380	757	2325	3071				571	3875	6786	434	1601	3689	899	1674	1862	6732	19943	2962
Jan-92	189	1150	6085	264	2133	8080	880	2470	2807				835	3723	4459	996	3420	3434	468	2945	6293	3632	15841	4362
Feb-92	1352	1247	922	1984	2775	1399	808	2755	3410	86	1126	13093	822	4205	5116	975	3275	3359	390	2280	5846	6417	17663	2753
Mar-92	1795	2443	1361	2294	4875	2125	705	1975	2801	138	1060	7681	946	3121	3299	920	2544	2765	309	1767	5718	7107	17785	2502
Apr-92	1232	4426	3593	2160	4745	2197	687	2640	3843	187	1230	6578	995	3915	3935	840	2670	3179	398	2032	5106	6499	21658	3333
May-92	1477	2040	1381	2108	2325	1103	588	875	1488	289	497	1720	925	1475	1595	557	1079	1937	589	950	1613	6533	9241	1415
Jun-92	1023	4229	4134	1875	4645	2477	515	2325	4515	284	1085	3820	825	3750	4545	563	2265	4023	532	1574	2959	5617	19873	3538
Jul-92	1340	3596	2684	1448	4185	2890	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2788	7781	2791
Aug-92	1234	3310	2682	1393	3735	2681	495	1878	3794	435	1735	3989	770	1980	2571	617	1880	3047	448	2036	4545	5392	16554	3070
Sep-92	1170	3954	3379	1260	4740	3762	479	978	2042	376	840	2234	625	1350	2160	735	1170	1592	527	857	1626	5172	13889	2685
Oct-92	996	1544	1550	1267	2132	1683	715	1275	1783	539	750	1391	503	1215	2416	574	1052	1833	434	848	1954	5028	8816	1753
Nov-92	852	1606	1885	1083	2042	1886	773	1421	1838	516	1028	1992	540	1444	2674	570	1215	2132	270	835	3093	4604	9591	2083
Dec-92	725	730	1007	198	206	1040	782	1490	1905	564	1075	1906	0	0	0	646	1079	1670	317	742	2341	3232	5322	1647
Jan-93	725	730	1007	198	206	1040	782	1490	1905	564	1075	1906	540	1444	2674	646	1079	1670	317	742	2341	3772	6766	1794
Feb-93	145	160	1103	1146	328	286	1377	1755	1275	0	0	0	348	713	2049	415	851	2051	203	415	2044	7612	15723	2066
Mar-93	141	158	1121	2948	3172	1076	1610	2826	1755	0	0	0	416	732	1760	497	873	1757	244	427	1750	5856	8188	1398
Cumulative	25567	54331	2125	45058	89904	1996	29230	77818	2662	3978	11501	2891	22328	87756	3930	23671	71534	3022	10291	47355	4602	164101	451700	2753

Before the Oil Conservation Division
New Mexico Department of Energy, Minerals, and Natural Resources
Case No. 10746
Exhibit No. 8

EFFECT OF GAS/OIL RATIO ON RECOVERY FROM SOLUTION GAS DRIVE RESERVOIRS

$$r = \frac{Np}{N} = \frac{Bo - Boi + Bg(Rsi - Rs)}{Bo - Bg(Rp - Rs)}$$

Equation 3.14
Applied Petroleum Reservoir Engineering
by Craft and Hawkins

where r = fractional recovery of oil-in-place
Np = cumulative oil produced
N = initial oil in place
Bo = oil formation volume factor
Boi = initial oil formation volume factor
Bg = gas formation volume factor
Rsi = initial solution gas-oil ratio
Rs = solution gas-oil ratio
Rp = cumulative produced gas-oil ratio

"An inspection of Eq. 3.14 indicates that all of the terms except the produced gas-oil ratio, Rp, are functions of pressure only, and are the properties of the reservoir fluid. As the nature of the fluid is fixed, it follows that the fractional recovery, r, is fixed by the PVT properties of the reservoir fluid and the produced gas-oil ratio."

Before the Oil Conservation Division
New Mexico Department of Energy, Minerals, and Natural Resources
Case No. 10746
Exhibit No. 8

CACTUS STATE #1
Section 16-21S-26E
Eddy County, New Mexico

PAYOUT CALCULATION

Basic Assumptions:

Total Investment	$345,850
Oil Price	$16.75/bbl*
Gas Price	$1.50/mcf

* $19.00 WTI less $2.25 for sour crude

Case 1 : 6000 GOR Limit

Initial oil rate = 2432 bopm (80 bopd)
Initial gas rate = 14,592 mcfpm

PAYOUT = 8 months

Case 2 : 2000 GOR Limit

Initial oil rate = 811 bopm (27 bopd)
Initial gas rate = 4864 mcfpm

PAYOUT = 27 months

Monthly Production
East Catclaw Draw (Delaware) Pool

Before the Oil Conservation Division
New Mexico Department of Energy, Minerals, and Natural Resources
Case No. 10746
Exhibit No. 9

	Chi Operating Hondo Federal #2			Chi Operating Hondo Federal #3			Chi Operating Oxy State #1			Chi Operating Oxy State #2			Chi Operating Wiser State #1			Chi Operating Wiser State #2			Chi Operating Wiser State #3			East Catclaw Draw Pool Total		
	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR	OIL	GAS	GOR
Jul-90							456	0	0													456	0	0
Aug-90							668	0	0													668	0	0
Sep-90							1054	3500	3321													1054	3500	3321
Oct-90							868	2653	3056				885	2015	2277	688	1395	2028				2441	6063	2484
Nov-90							503	1526	3034				675	1537	2277	395	965	2443				1573	4028	2561
Dec-90							494	2837	5743				505	4185	8287	824	1650	2002				1823	8672	4757
Jan-91							2285	4890	2140				2050	4765	2324	1798	4974	2766				6133	14629	2385
Feb-91				1975	3620	1833	1584	3160	1995				1238	4312	3483	2019	3326	1647				6816	14418	2115
Mar-91				1639	4370	2666	1345	1975	1468				1006	2265	2251	1095	3675	3356				5085	12285	2416
Apr-91				2356	2250	955	1295	1925	1486				1089	2921	2682	1180	2030	1720				5920	9126	1542
May-91				2005	960	479	1111	4621	4159				702	4675	6660	931	4370	4694				4749	14626	3080
Jun-91	218	579	2656	1066	1495	1402	1146	4539	3961				1236	4592	3715	1435	4172	2907		5740		5101	21117	4140
Jul-91	1321	899	681	1953	2690	1377	1008	4896	4857				779	5735	7362	1023	4965	4853	868	6415	7391	6952	25600	3682
Aug-91	1359	2001	1472	2039	6003	2944	776	3594	4631				581	4847	8343	661	4137	6259	761	3757	4937	6177	24339	3940
Sep-91	2271	4655	2050	2940	7278	2476	996	3317	3330				655	4530	6916	950	3418	3598	521	4531	8697	8333	27729	3328
Oct-91	2387	5115	2143	2731	6613	2421	852	3170	3721				625	4385	7016	392	4075	10395	943	3463	3672	7930	26821	3382
Nov-91	1962	5047	2572	2310	6625	2868	836	2737	3274				641	4050	6318	295	2329	7895	853	3325	3898	6897	24113	3496
Dec-91	1653	4712	2851	2418	5756	2380	757	2325	3071				571	3875	6786	434	1601	3689	899	1674	1862	6732	19943	2962
Jan-92	189	1150	6085	264	2133	8080	880	2470	2807				835	3723	4459	996	3420	3434	468	2945	6293	3632	15841	4362
Feb-92	1352	1247	922	1984	2775	1399	808	2755	3410	86	1126	13093	822	4205	5116	975	3275	3359	390	2280	5846	6417	17663	2753
Mar-92	1795	2443	1361	2294	4875	2125	705	1975	2801	138	1060	7681	946	3121	3299	920	2544	2765	309	1767	5718	7107	17785	2502
Apr-92	1232	4426	3593	2160	4745	2197	687	2640	3843	187	1230	6578	995	3915	3935	840	2670	3179	398	2032	5106	6499	21658	3333
May-92	1477	2040	1381	2108	2325	1103	588	875	1488	289	497	1720	925	1475	1595	557	1079	1937	589	950	1613	6533	9241	1415
Jun-92	1023	4229	4134	1875	4645	2477	515	2325	4515	284	1085	3820	825	3750	4545	563	2265	4023	532	1574	2959	5617	19873	3538
Jul-92	1340	3596	2684	1448	4185	2890	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2788	7781	2791
Aug-92	1234	3310	2682	1393	3735	2681	495	1878	3794	435	1735	3989	770	1980	2571	617	1880	3047	448	2036	4545	5392	16554	3070
Sep-92	1170	3954	3379	1260	4740	3762	479	978	2042	376	840	2234	625	1350	2160	735	1170	1592	527	857	1626	5172	13889	2685
Oct-92	996	1544	1550	1267	2132	1683	715	1275	1783	539	750	1391	503	1215	2416	574	1052	1833	434	848	1954	5028	8816	1753
Nov-92	852	1606	1885	1083	2042	1886	773	1421	1838	516	1028	1992	540	1444	2674	570	1215	2132	270	835	3093	4604	9591	2083
Dec-92	725	730	1007	198	206	1040	782	1490	1905	564	1075	1906	0	0	0	646	1079	1670	317	742	2341	3232	5322	1647
Jan-93	725	730	1007	198	206	1040	782	1490	1905	564	1075	1906	540	1444	2674	646	1079	1670	317	742	2341	3772	6766	1794
Feb-93	145	160	1103	1146	328	286	1377	1755	1275	0	0	0	348	713	2049	415	851	2051	203	415	2044	7612	15723	2066
Mar-93	141	158	1121	2948	3172	1076	1610	2826	1755	0	0	0	416	732	1760	497	873	1757	244	427	1750	5856	8188	1398
Cumulative	25567	54331	4125	45058	89904	1995	29230	77818	2662	3978	11501	2891	22328	87756	3930	23671	71534	3022	10291	47355	4602	164101	451700	2753

Before the Oil Conservation Division
New Mexico Department of Energy, Minerals, and Natural Resources
Case No. 10746
Exhibit No. 10

CACTUS STATE #1
Section 16-21S-26E
Eddy County, New Mexico

PAYOUT CALCULATION

Basic Assumptions:

Total Investment	$345,850
Oil Price	$16.75/bbl*
Gas Price	$1.50/mcf

* $19.00 WTI less $2.25 for sour crude

Case 1 : 6000 GOR Limit

Initial oil rate = 2432 bopm (80 bopd)
Initial gas rate = 14,592 mcfpm

PAYOUT = 8 months

Case 2 : 2000 GOR Limit

Initial oil rate = 811 bopm (27 bopd)
Initial gas rate = 4864 mcfpm

PAYOUT = 27 months

Before the Oil Conservation Division
New Mexico Department of Energy, Minerals and Natural Resources
Case No. 10746
Devon Energy Corporation Exhibit No. 10
May 18, 1995

THE SCOTIA GROUP

EAST CATCLAW DRAW (DELAWARE) FIELD
ONE WELL NATURAL DEPLETION SIMULATION

PREPARED FOR:
DEVON ENERGY CORPORATION

PREPARED BY:
The Scotia Group, Inc.

May 1995

TABLE OF CONTENTS

SUMMARY

At the request of Devon Energy Corporation (Devon), a simulation of natural depletion from a typical well spacing unit in East Catclaw Draw (Delaware) field has been performed. All data necessary to initialize the simulator was either supplied or specified by Devon. The results of two simulation cases, one constrained by a maximum oil rate and minimum flowing bottom hole pressure, and a second constrained by a maximum gas rate and minimum flowing bottom hole pressure, are presented. These results show that while oil and gas recovery rates differed depending on which phase was constrained, the cumulative volumes of oil and gas recovered during the simulated period (16 years) were little affected. Table 1 quantifies the recovery comparison.

TABLE 1
SIMULATION RESULTS SUMMARY

CONSTRAINING CONDITION		CUMULATIVE VOLUME RECOVERED	
PHASE	RATE	OIL	GAS
Oil	80 stbd	72,340 stb	535 MMcf
Gas	160 Mcfd	72,050 stb	525 MMcf

It is emphasized that both cases were eventually constrained by an assumed flowing bottom hole pressure of 200 psig. The simulations did not account for wellbore pressure losses due to multi-phase flow in the tubing or artificial lift.

CONCLUSIONS

On the basis of the simulations described in this report, the following conclusions are drawn:

1. Primary production rate constraints of 80 stbd oil or 160 Mscfd gas yielded essentially the same cumulative volumes of oil and gas recovery to the end of the 16 year simulation period.

2. The rates of oil and gas recovery are accelerated when the constraining phase is oil at the rate of 80 stbd as compared to a gas constraining rate of 160 MMscfd.

DISCUSSION

A segment of the subject reservoir equivalent to a 40 acre spacing unit was initialized using the Computer Modelling Group's IMEX Black-Oil Simulator. The characteristics of this simulator are described in Appendix A.

The simulator grid geometry was two-dimensional, radial (r, Θ, z) with 12 grid nodes in the r direction, Θ = 360° and two layers in the z direction. The segment was assumed to be flat lying (no dip) and the properties of each layer were assumed to be homogeneous and isotropic. The grid discretization in the r direction progressed logarithmically from a minimum value of 0.331 feet adjacent to the wellbore to 349.2 feet at the drainage area boundary. The layer-dependent reservoir properties used for the initialization are summarized in Table 2. The depth and thickness values reflect the simulation of a 50 foot thick shale intervening the two reservoir layers. The excluded interval was assumed to be impermeable, thus the vertical transmissibility between layers was explicitly set to zero.

TABLE 2
SIMULATOR LAYER DEPENDENT DATA

	LAYER 1	LAYER 2
Mid-Point Depth, ft.	3,130	3,235
Thickness, ft.	60	50
Porosity	0.15	0.17
Permeability, md	6	2

Experimental relative permeability data, as provided, was used to define the oil-water and gas-oil relative permeability functions for each layer. The functions as input for Layer 1 are illustrated in Figures 1 and 2, while the Layer 2 functions are illustrated in Figures 3 and 4. The relative permeability data as reported by the laboratory for the samples selected to represent the two simulator layers are provided in Appendix B. The sample designated

as D940 was used for Layer 1 while sample number D973 was used for Layer 2. The end points implied by these samples are summarized in Table 3.

TABLE 3
SIMULATOR ROCK TYPE END POINTS

PROPERTY	LAYER 1	LAYER 2
Irreducible Water Saturation	0.386	0.286
Residual Oil Saturation to Water	0.24	0.319
Residual Oil Saturation to Gas	0.334	0.364

The simulator PVT properties were taken from the provided experimental fluid study. The gas saturated fluid properties as input to the simulator are shown in Figures 5a and 5c. The data above 1,277 psig (the experimentally determined bubble point at a reservoir temperature of 85° F) have been extrapolated.

The initial pressure and saturation conditions assumed for the simulator initialization are given in Table 4.

TABLE 4
SIMULATOR INITIALIZATION DATA

	LAYER 1	LAYER 2
Pressure, psi	1,300	1,343
Water Saturation	0.49	0.54
Gas Saturation	0.01	0.01

The use of these conditions together with the neglect of capillary pressure (P_{cow} = P_{cgo} = 0) and the irreducible water saturations given in Table 3 meant that the simulator was initialized in a non-equilibrium or dynamic condition, with mobile water and gas

saturations present everywhere in the reservoir. To accommodate the free gas, the saturation pressure (bubble point) was set equal to the initial pressure. A dynamic condition, such as has been assumed for these simulations, might arise as a result of drainage from offsetting well production, although one would also expect some pressure differential across the reservoir segment toward the offsetting sinks.

The well productivity was computed by the simulator from the input reservoir properties and a wellbore radius of 0.25 feet and no skin. Both layers were assumed to be fully open to flow into the wellbore and thence to the surface.

For the first case of simulated production, denoted Case01 on all illustrations, the producing well primary constraint was 80 stbd of oil production. The well was allowed to produce at this rate until the calculated flowing bottom hole pressure reached 200 psi. Thereafter, the production was constrained by the minimum bottom hole flowing pressure of 200 psi. Irrespective of governing constraint, the simulator computed gas-oil ratios and water cuts on the basis of pressures and fluid saturations and the layer-dependent relative permeability functions. The rates of oil and gas production and the producing gas-oil ratio for this case are shown on Figure 6.

The second simulation case (Case02) was similar in all respects, save one, to Case01. The single exception was the primary constraint which was set to a maximum gas rate of 160 Mscfd. The case was produced at this constant gas rate until such time as the limiting bottom hole flowing pressure was reached. Thereafter, the production was computed for a constant bottom hole flowing pressure of 200 psi. Again, the producing GOR and water cut which determined the oil and water producing rates were computed in accordance with the well block phase saturations and pressures and the governing relative permeability functions. The results for Case02 are plotted on Figure 7.

Comparisons of the two cases are presented in Figure 8 in terms of cumulative oil recovered versus time, and in Figure 9 in terms of cumulative gas recovery versus time.

Both illustrations show that the rate of oil or gas recovery differs, depending on which phase is constrained (oil for Case01 and gas for Case02), but that the cumulative volume recovered to the end of the 16 year simulation period is affected very little. The recovery volumes (see Table 1) are slightly larger when oil is the constraining phase, 290 additional stb of oil and 10 MMscf of additional gas. In terms of percent, these recovery increments represent 0.4% for oil and 1.9% for gas (Case01/Case02-1).

FIGURES

FIGURE 1

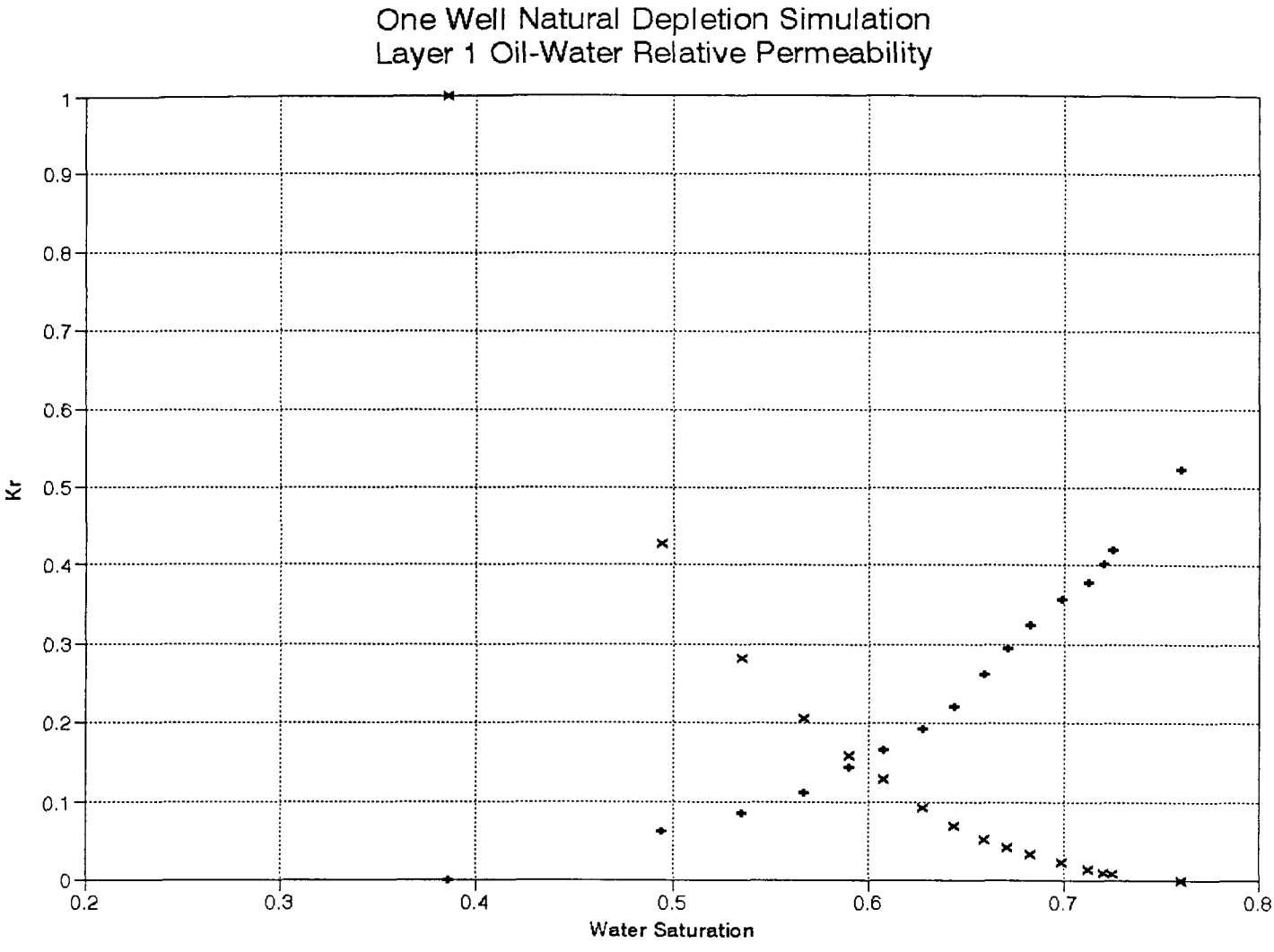

One Well Natural Depletion Simulation
Layer 1 Oil-Water Relative Permeability
Kr
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Water Saturation

FIGURE 2

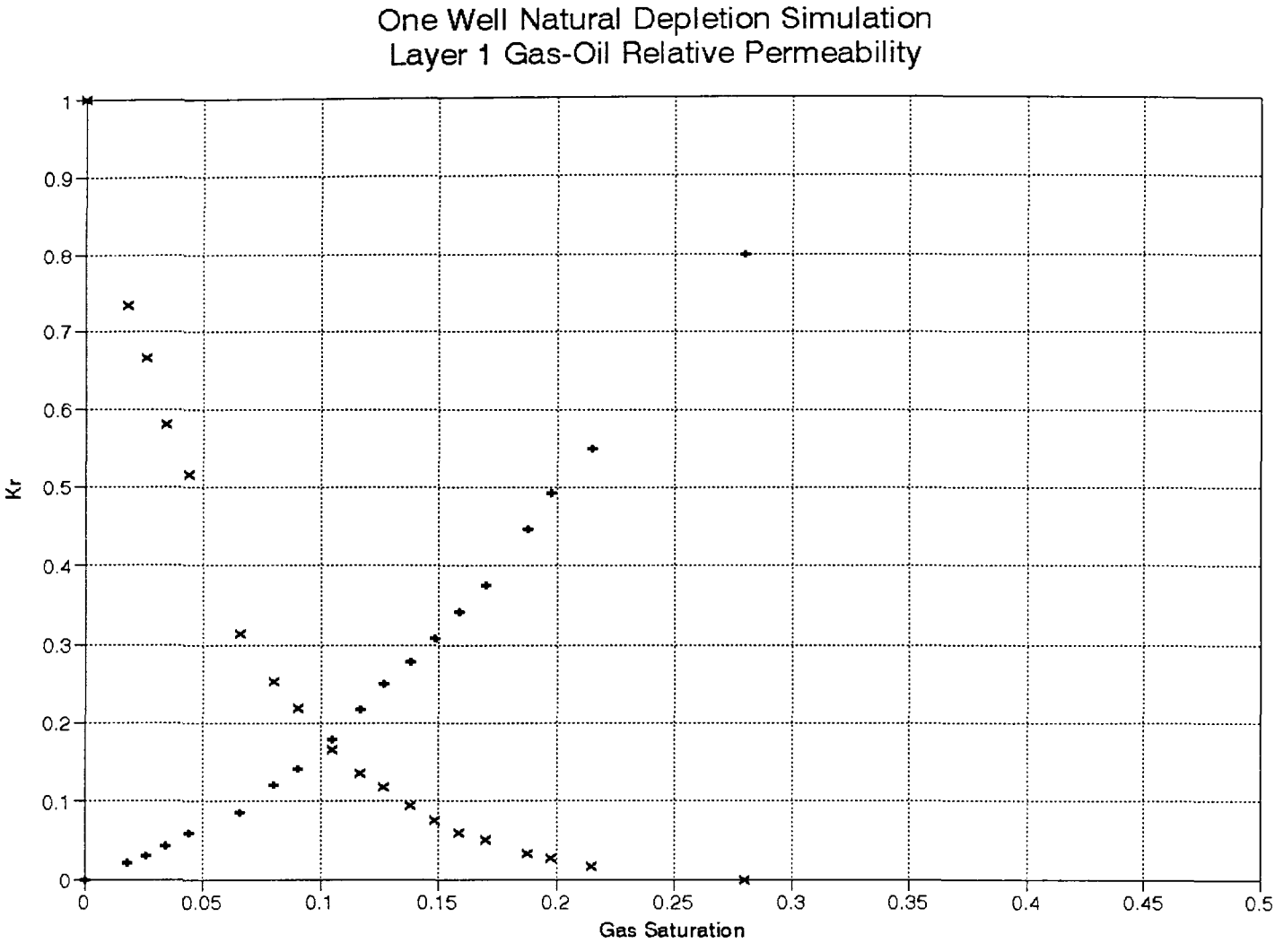

One Well Natural Depletion Simulation
Layer 1 Gas-Oil Relative Permeability
Kr
Gas Saturation
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0.05
0.15
0.25
0.35
0.45

FIGURE 3

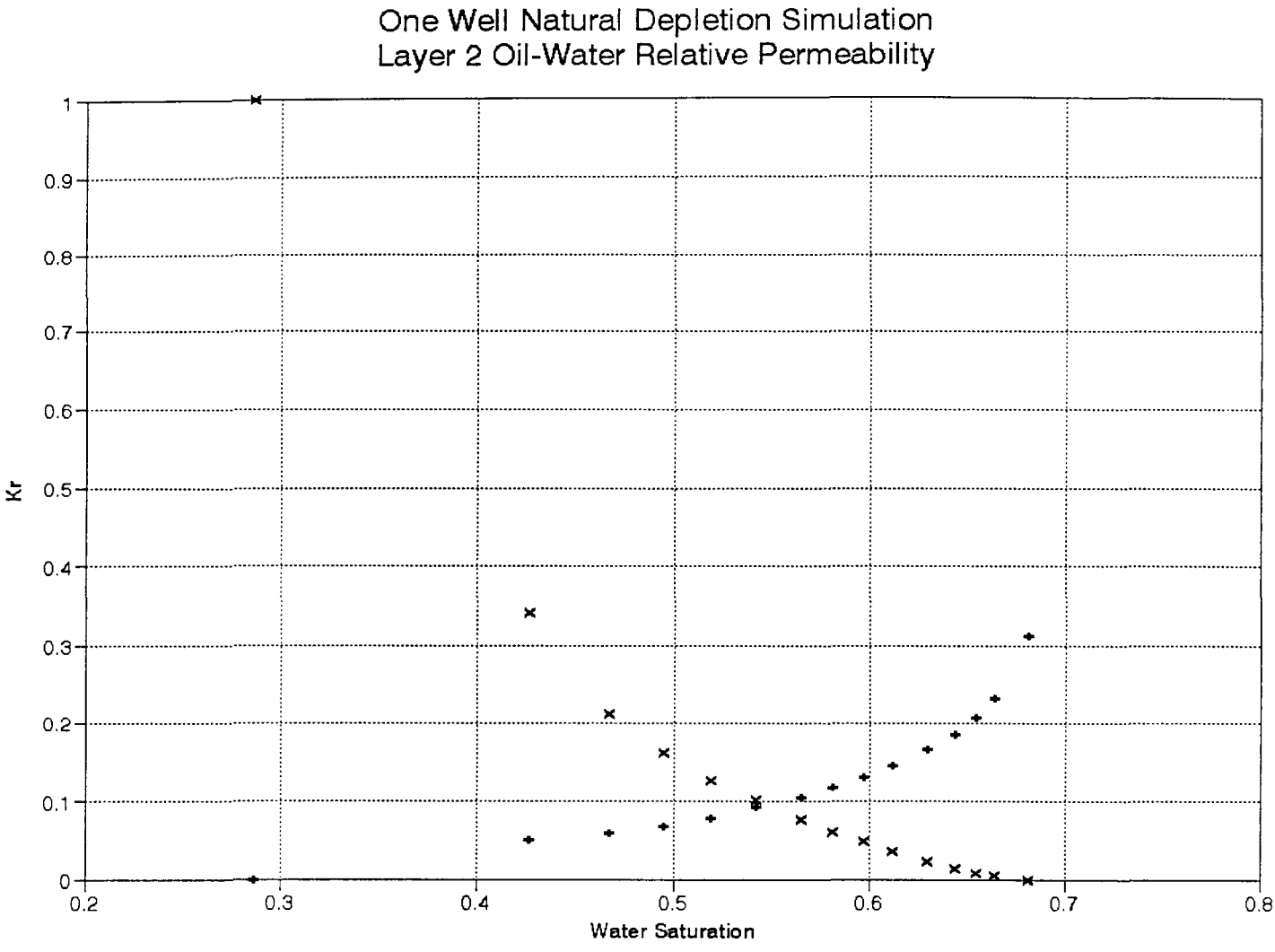

One Well Natural Depletion Simulation
Layer 2 Oil-Water Relative Permeability
Kr
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Water Saturation

FIGURE 4

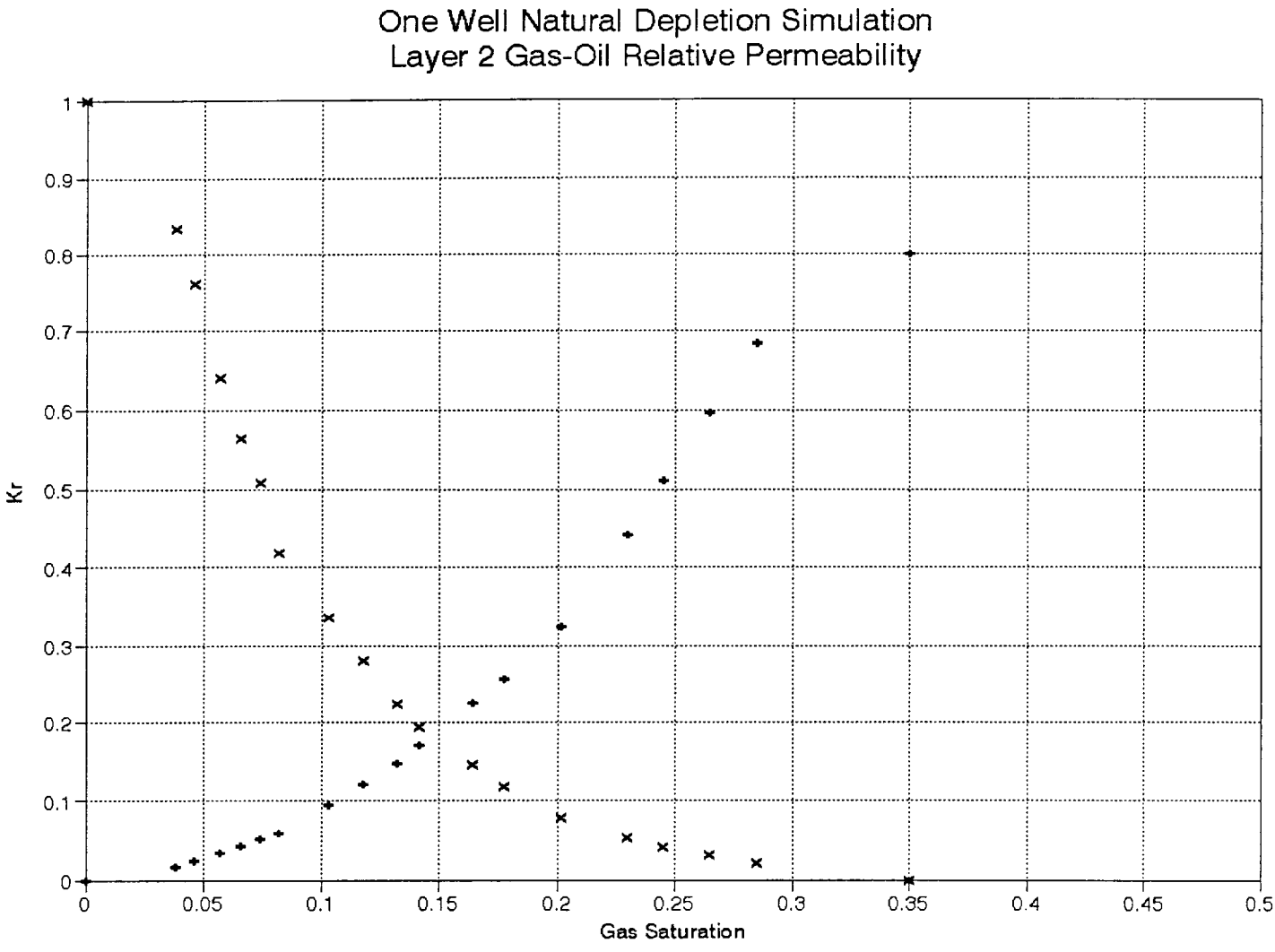

One Well Natural Depletion Simulation
Layer 2 Gas-Oil Relative Permeability
Kr
Gas Saturation
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0.05
0.15
0.25
0.35
0.45

FIGURE 5a

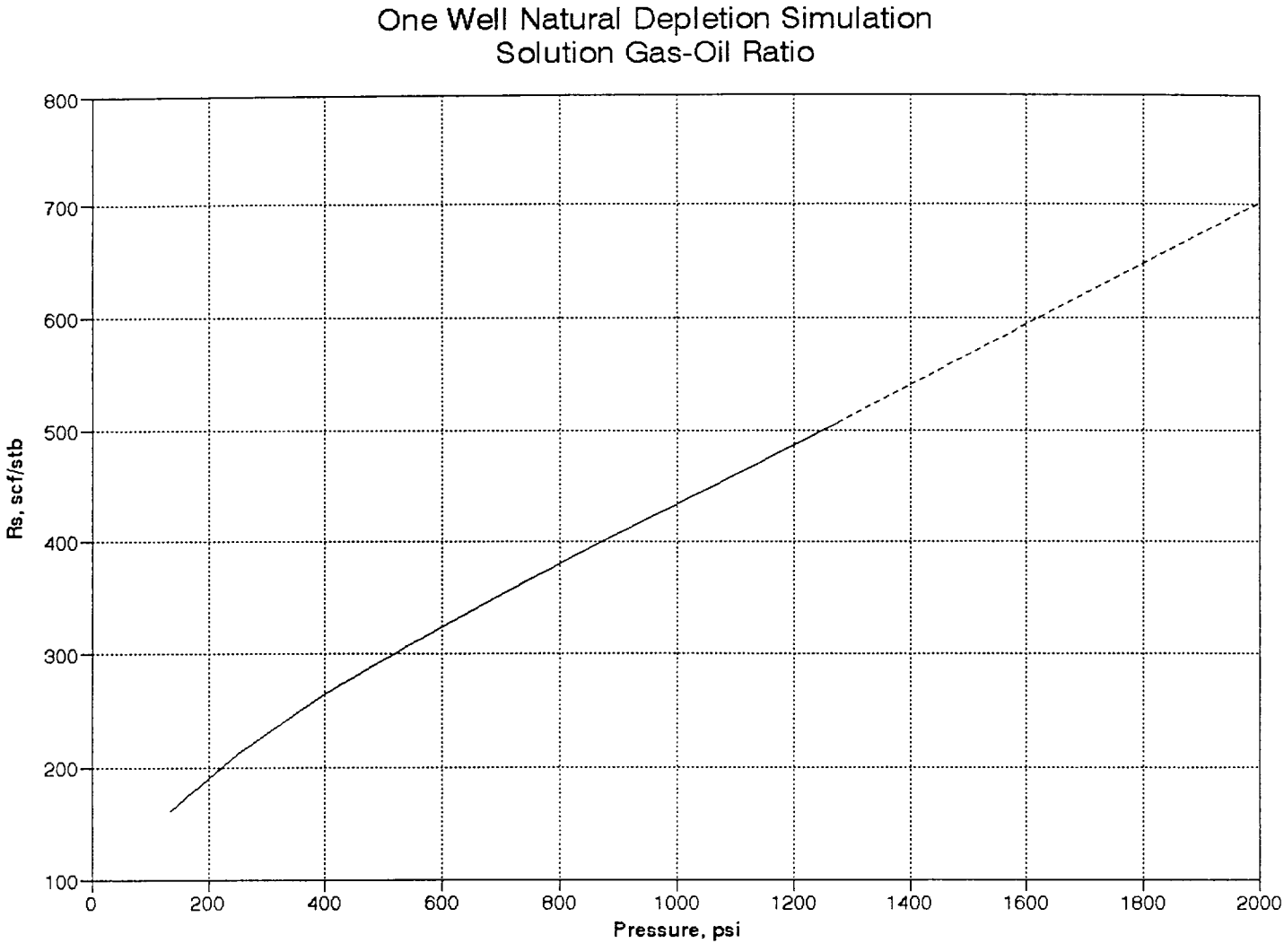

One Well Natural Depletion Simulation
Solution Gas-Oil Ratio
Rs, scf/stb
800
700
600
500
400
300
200
100
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Pressure, psi

FIGURE 5b

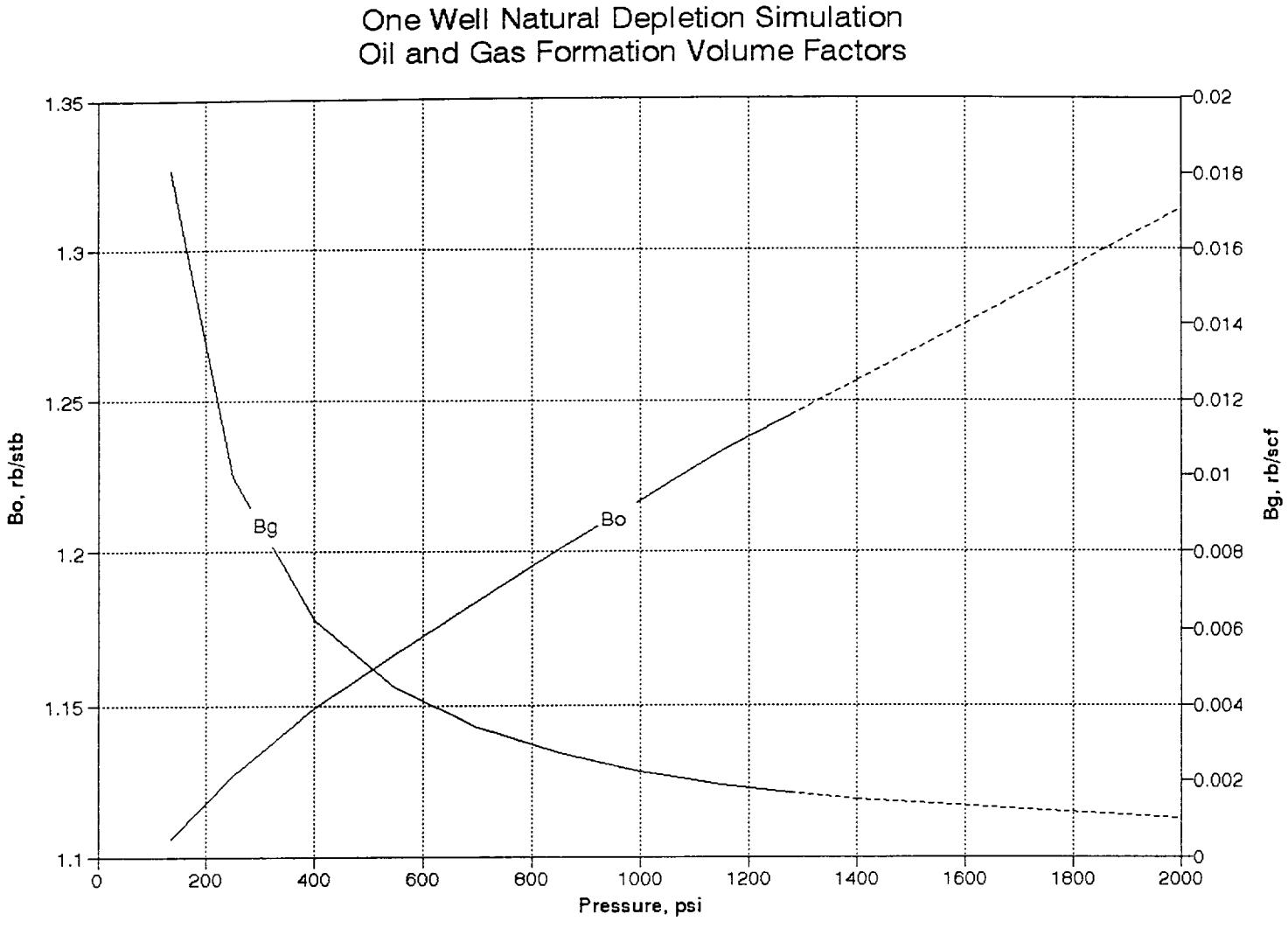

One Well Natural Depletion Simulation
Oil and Gas Formation Volume Factors
Bo, rb/stb
Bg, rb/scf
Pressure, psi
Bg
Bo
1.35
1.3
1.25
1.2
1.15
1.1
0.02
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000

FIGURE 5c

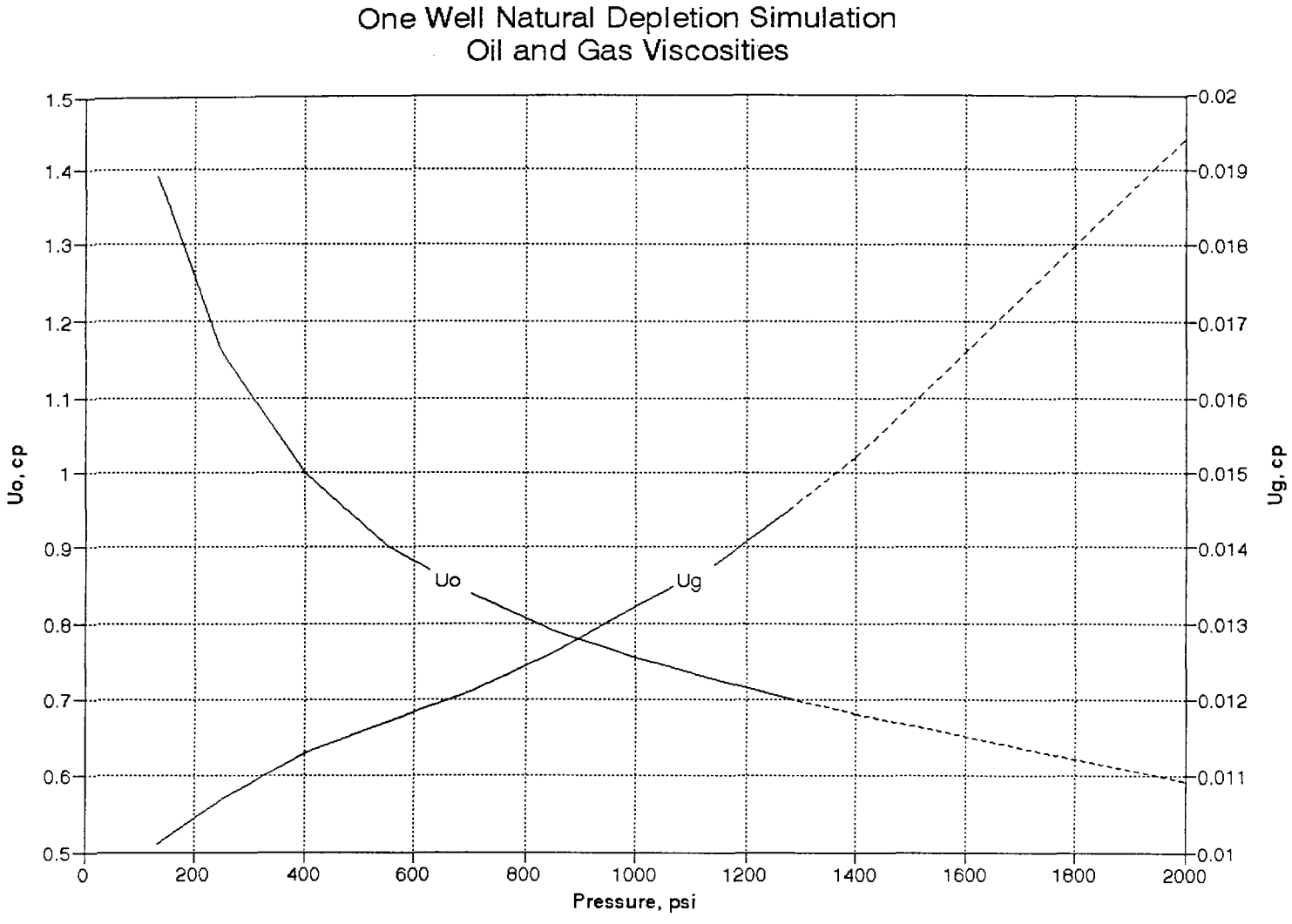

One Well Natural Depletion Simulation
Oil and Gas Viscosities
Uo, cp
Ug, cp
Pressure, psi
Uo
Ug
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.02
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
0.011
0.01
0
200
400
600
800
1000
1200
1400
1600
1800
2000

FIGURE 6

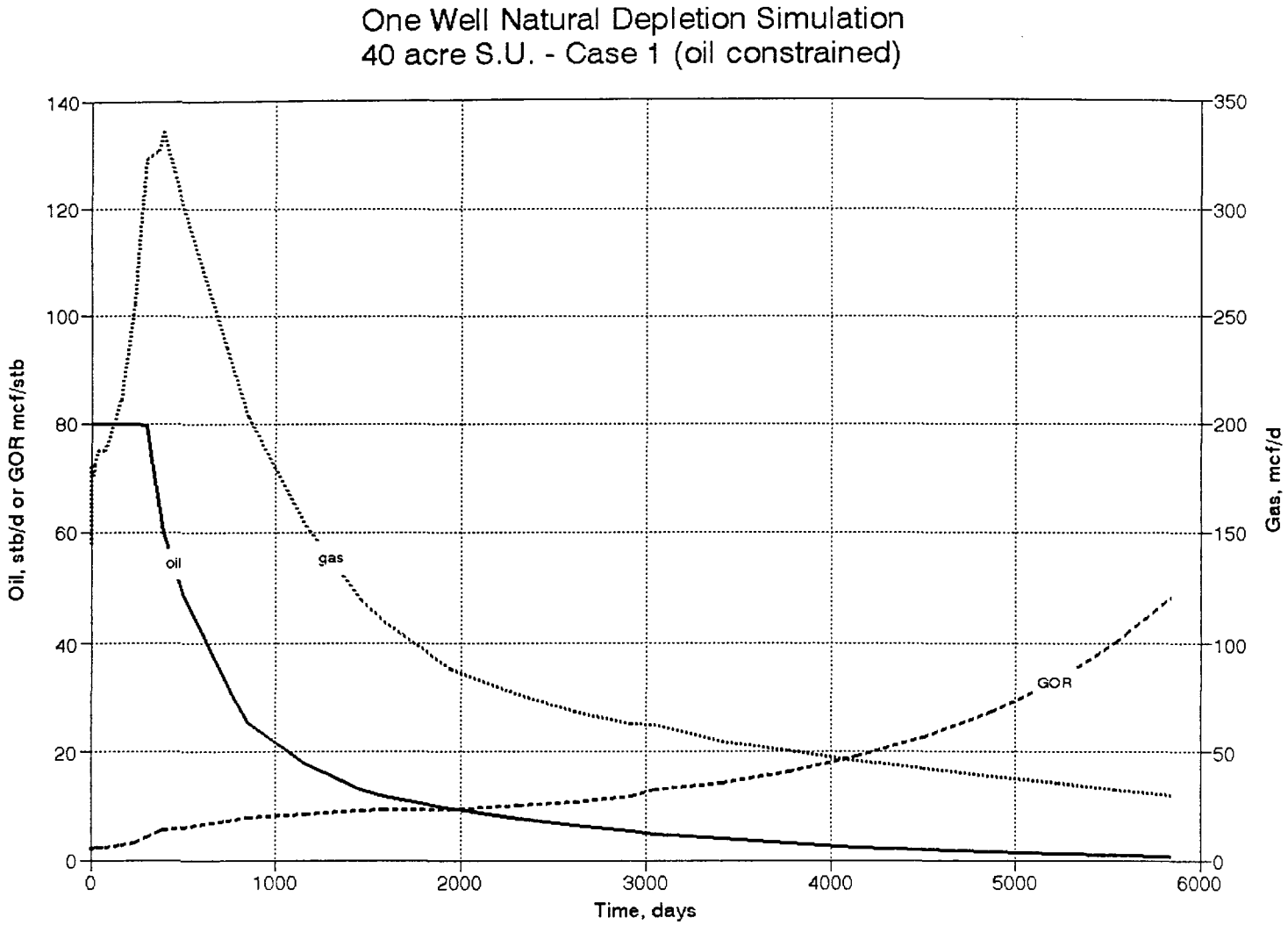

One Well Natural Depletion Simulation
40 acre S.U. - Case 1 (oil constrained)
Oil, stb/d or GOR mcf/stb
Gas, mcf/d
Time, days
oil
gas
GOR
0
20
40
60
80
100
120
140
0
50
100
150
200
250
300
350
0
1000
2000
3000
4000
5000
6000

FIGURE 7

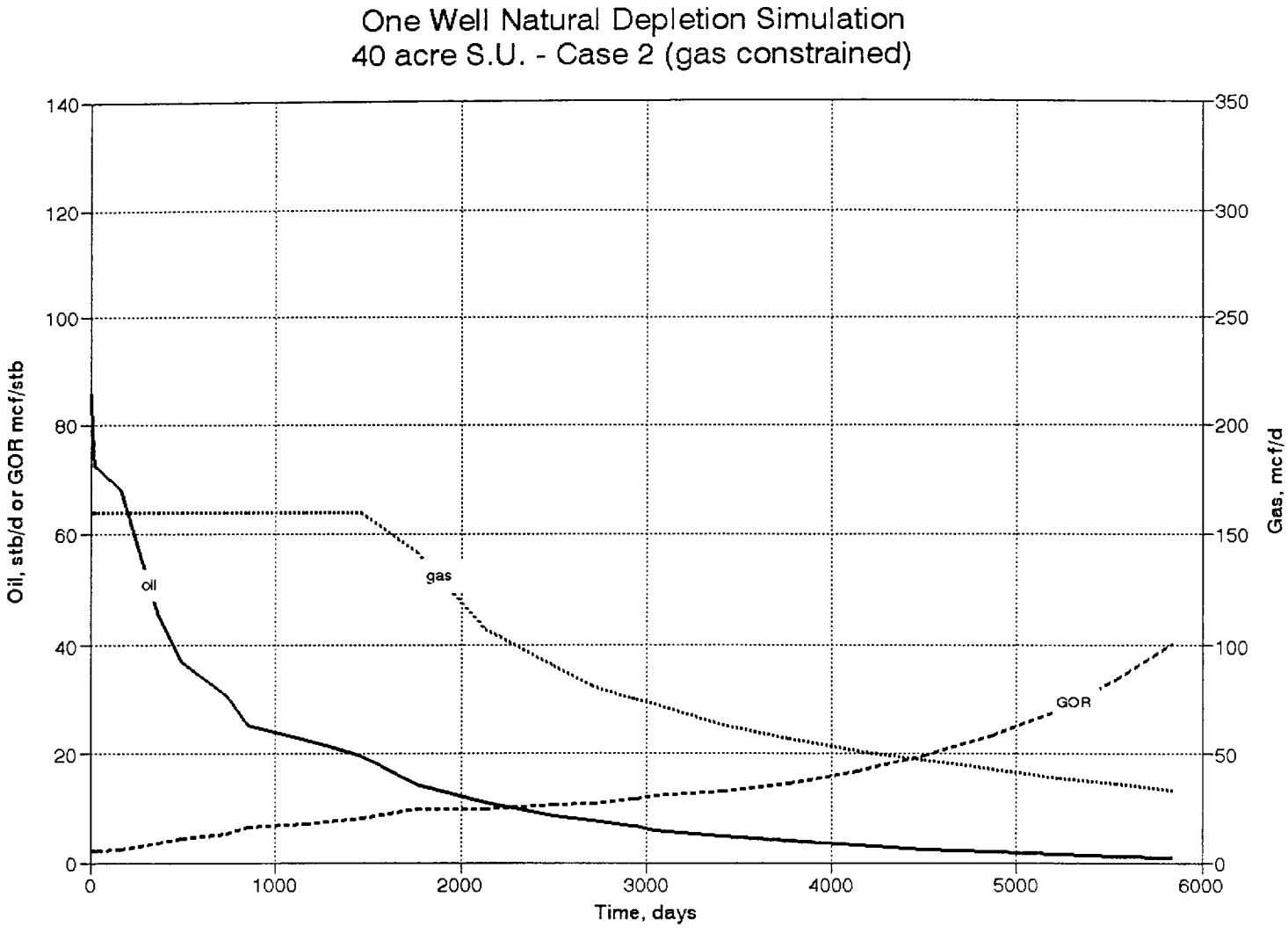

One Well Natural Depletion Simulation
40 acre S.U. - Case 2 (gas constrained)
Oil, stb/d or GOR mcf/stb
Gas, mcf/d
Time, days
oil
gas
GOR
0
20
40
60
80
100
120
140
0
50
100
150
200
250
300
350
0
1000
2000
3000
4000
5000
6000

FIGURE 8

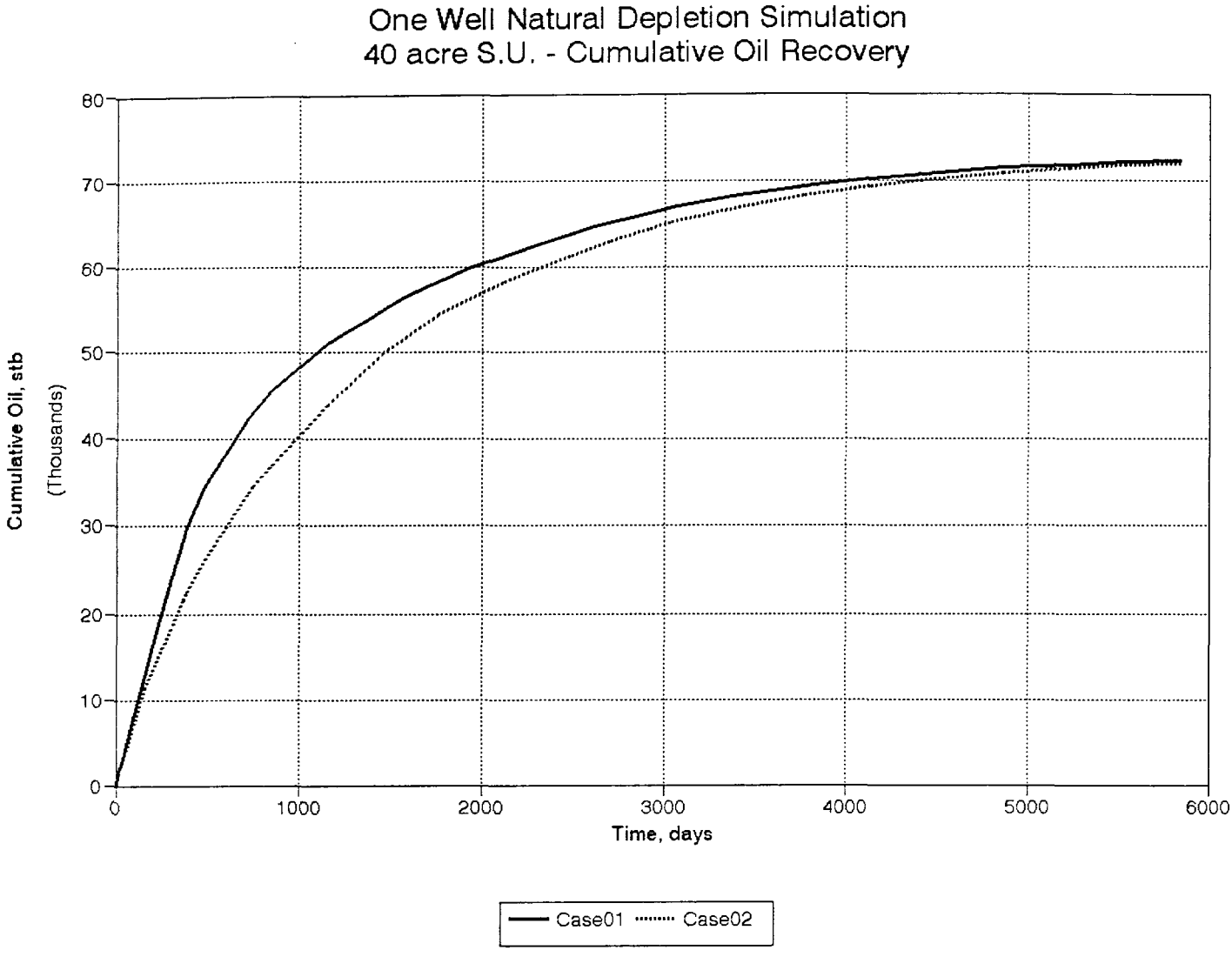
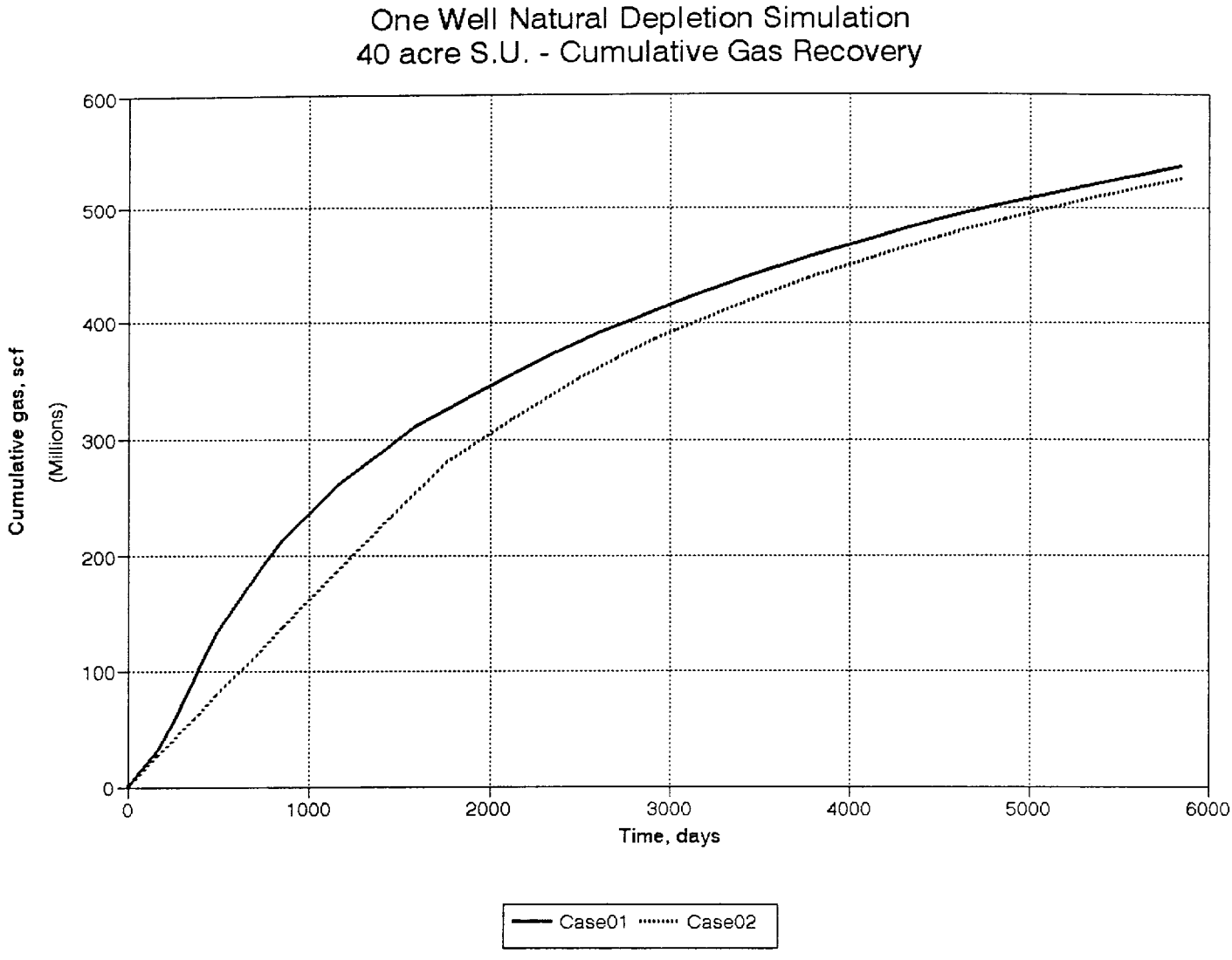

One Well Natural Depletion Simulation
40 acre S.U. - Cumulative Oil Recovery
Cumulative Oil, stb
(Thousands)
80
70
60
50
40
30
20
10
0
0
1000
2000
3000
4000
5000
6000
Time, days
Case01
Case02

FIGURE 9


One Well Natural Depletion Simulation
40 acre S.U. - Cumulative Gas Recovery
Cumulative gas, scf
(Millions)
600
500
400
300
200
100
0
0
1000
2000
3000
4000
5000
6000
Time, days
Case01
Case02

APPENDIX A

IMEX NEW GENERATION BLACK-OIL SIMULATOR TECHNICAL FACT SHEET

TECHNICAL FACT SHEET

IMEX

NEW GENERATION BLACK-OIL SIMULATOR

Geomechanical Model | **Management of Wells** | **Flexible Grids**
Comprehensive Graphics | **Horizontal Wells** | **Dual Porosity/Permeability**

FIELD SIMULATIONS

MODELLING FEATURES

- Naturally fractured reservoirs
- Hydraulically fractured reservoirs
- Dynamic fracturing
- Flexible gridding
- Horizontal well modelling
- Well inter-layer cross-flow modelling
- Wellbore dynamics modelling
- Capable of 200,000 + cells
- Runs on all modern computers

PRIMARY DEPLETION

- Undersaturated reservoirs
- Saturated reservoirs
- Performance below bubble point
- Coning studies
- Recovery predictions

SECONDARY RECOVERY

- Water injection
- Dry gas injection
- Miscible gas injection
- Pseudo-miscible model
- WAG processes
- Slug sizing

PREDICTION

- Comprehensive well management
- Field-group-platform-well-layer hierarchy
- Well hydraulic tables

INPUT AND OUTPUT FEATURES

GRAPHICAL INPUT

- Digitizing
- Digital files from geological models
- Contour editing
- Grid generation
- Grid editing
- Reservoir model data generation
- Keyword format files
- History matching alteration diary
- Template screens
- Tutorials
- Model graphics display
- Error checking
- Help aides

GRAPHICAL OUTPUT

- Animation of grid properties
- Colour contour maps
- Production/injection curves and plots
- Comparison with history
- Superimpose multiple run results
- Interface to spreadsheet systems
- Report generator
- User selected summaries
- Summaries

OUTPUT AT PRESCRIBED TIME

- Grid maps
- Pressure, saturations, densities, viscosities, etc.
- Comprehensive well outputs
- Injection, production rates and accumulations
- Bottom hole and wellhead pressures
- Gas-oil-ratio (GOR) and water cuts

IMEX : NEW GENERATION BLACK-OIL SIMULATOR

OTHER OUTPUT
- Recovery factors by sector
- Average reservoir pressure
- Water influx from aquifers
- Transmissibility modifiers
- Volume modifiers
- Multiple rock types
- Net pay
- Null (inactive) blocks
- Rock compressibility
- Tilted reservoir
- Faults
- Van Everdingen and Hurst aquifer model
- Pinchouts (non-neighbour connections)

FEATURES
- Restart capability from any timestep
- Field, SI, or lab units
- Date and day from start of simulation
- Summary of performance reported during simulation
- Termination at specified time, timesteps, or CPU seconds

RESERVOIR DESCRIPTION

GRIDDING OPTIONS
- Radial grids
- Cartesian grids
- Refined grids
- Flexible finite-element grids
- Wellbore grids
- Hybrid mixed grid types
- 1, 2, or 3 dimensional system
- Variable thickness
- Variable depth

RESERVOIR MODEL
- Transmissibility modifiers (I,J,K)
- Relative permeability tables
- Gas and water capillary pressure tables
- Saturations
- Pressure
- Bubble point pressure
- Residual oil, gas and water saturations

NATURALLY FRACTURED RESERVOIRS
- Dual porosity, dual permeability
- Single matrix block per fracture block
- Multiple matrix blocks per fracture block (MINC and subdomain)
- Improved modelling of imbibition and drainage processes
- Efficient storage and robust computational methods

FAULTS
- Partial overlapping areas
- Pinchouts
- Non-neighbour block connection

GEOMECHANICAL MODEL

DYNAMIC FRACTURE
- Dynamic injection-induced fractures
- Hysteresis

ELASTIC/PLASTIC DEFORMATION
- Stress/strain coupled to fluid flow
- Shear dilatancy/failure
- Volume and permeability changes
- Compaction drive
- Surface subsidence

SINGLE-WELL BOUNDARY UNLOADING
- Prediction of tensile and shear failure
- Primary recovery of unconsolidated sand
- Oil-sand modelling

FLUID DESCRIPTION

THREE-PHASE OIL/GAS/WATER FORMULATION
- Two phase oil-water option for CPU savings
- Variable bubble point
- Oil expansion under re-pressurization
- Compressible water phase
- Pressure dependent capillary pressure
- Multiple PVT regions

PSEUDO-MISCIBLE FORMULATION

- Solvent solubility in water phase
- Chase gas injection
- First contact miscible
- Todd and Longstaff mixing parameter

POLYMER MODELLING

- Aqueous phase viscosity increase
- Polymer adsorption on rock surface
- Absolute permeability reduction
- Relative permeability reduction
- Inaccessible pore volume

INITIALIZATION

USER SPECIFIED PRESSURES AND BUBBLE-POINT PRESSURES

- Reservoir
- Regions
- Layers
- Individual blocks
- Bubble point pressure vs. depth table

VERTICAL EQUILIBRIUM INITIALIZATION

- Pressure at reference depth
- Depth to water-oil and gas-oil contacts
- Variable bubble-point pressure
- Automatic calculation of pressures and saturations
- Multiple water-oil and gas-oil contacts

USER INITIALIZATION

- Pressure input
- Saturation input

WELL MANAGEMENT

FIVE-LEVEL CONTROL

- Field-group-platform-well-layer hierarchical control
- Specification of production and targets at any level
- Constraints on production and injection rates
- Constraints on produced GOR and water cut
- Resolution of conflicting controls
- Addition of new wells to platforms at any time
- Voidage replacement
- Gas recycling

REMEDIAL ACTIONS AUTOMATIC

- Shut-in most offending well
- Shut-in most offending layer in most offending well
- Automatic drilling of new wells to meet targets
- Automatic well recompletions

WELLS

SOURCE-SINK WELL MODEL

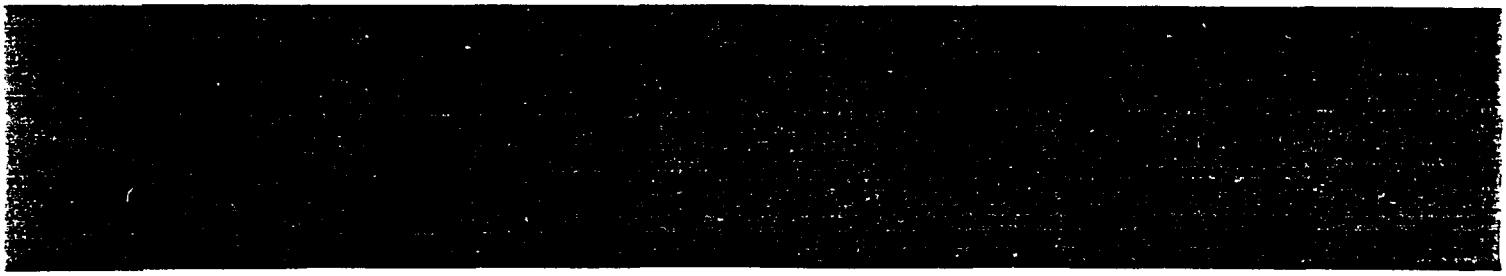
- Single or multi-block wells
- Vertical wells
- Horizontal wells
- Deviated wells
- Implicit formulation
- Fully coupled to the reservoir
- Well injectivity/productivity input
- Well injectivity/productivity from geometric
- Well injectivity/productivity from KH
- Total mobility weighted and unweighted injectors

WELLBORE DYNAMICS MODEL

- Wellbore gridded and coupled to reservoir simulation
- Peaceman or hybrid grid model for near well flow
- Pressure loss in wellbore modelled with multi-phase correlations
- Horizontal wells
- Deviated wells
- Vertical wells
- Comprehensive inter-layer well cross-flow

WELL CONSTRAINTS

- Wellhead pressure
- Bottom hole pressure
- Oil, gas, water and solvent rates
- Total liquid rate
- Reservoir or surface rates
- Water cut, gas-oil ratio, solvent-oil ratio



REMEDIAL ACTION AUTOMATIC

- Proceed with new constraint
- Recomplete the well
- Workover the well to improve productivity index
- Shut-in well
- Repeat timestep with new constraint
- Repeat timestep with well shut-in
- Terminate the simulation

NUMERICAL TECHNIQUES

AIMSOL SOLUTION PACKAGE

- Packed storage
- Inactive blocks are ignored
- Iterative and direct solution methods

FULLY COUPLED WELLS

- Simultaneous solution of reservoir and well equations

ADAPTIVE IMPLICIT FORMULATION

- Optimum between implicit and explicit formulation
- Automatic switching explicit/implicit/explicit
- Threshold or numerical stability switching criterion
- User specified initial implicit/explicit regions

NEWTON'S METHOD FOR SOLVING FLOW EQUATIONS

- Quadratic convergence
- Residual reduction convergence criterion

MIXED NUMERICAL AND ANALYTICAL DERIVATIVES

- Less roundoff
- Better convergence
- Better handling of permeability contrast

DOMAIN DECOMPOSITION

- Local time stepping
- Multi-grid solution methods
- Faster convergence
- Better breakthrough predictions

Computer Modelling Group
3512 - 33 Street N.W.
Calgary, Alberta, Canada
Postal Code T2L 2A6
Phone: (403) 531-1300
Telex: 03826726
Fax: (403) 282-6495

APPENDIX B

RELATIVE PERMEABILITY DATA:

OIL/WATER SAMPLES D940, D973
GAS/OIL SAMPLES D940, D973

WATER-OIL RELATIVE PERMEABILITY

Devon Energy Corporation
Cactus State No. 3 Well
E. Cat Claw Draw Field
Eddy County, New Mexico
SRS 1939/RSH 3130

Sample:	D 940	Porosity, (%BV):	16.4
Depth (ft):	3151.9	Initial Water Sat. (%PV):	38.6
Perm. to Gas (md):	3.84	Perm. to Oil @ Swi (md):	1.24

Water Saturation (%PV)	Relative Permeability (Fraction)		Water-Oil Ratio (Kw/Ko)
	Water(Krw)	Oil (Kro)	
38.6	0.0000	1.0000	0.00
49.4	0.0622	0.4267	0.15
53.5	0.0851	0.2824	0.30
56.7	0.1120	0.2052	0.55
59.0	0.1435	0.1607	0.89
60.8	0.1677	0.1291	1.30
62.8	0.1938	0.0932	2.08
64.4	0.2218	0.0695	3.19
65.9	0.2620	0.0521	5.03
67.1	0.2939	0.0422	6.97
68.3	0.3245	0.0325	9.99
69.9	0.3563	0.0223	16.0
71.2	0.3788	0.0140	27.0
72.0	0.4026	0.0103	39.1
72.5	0.4191	0.0085	49.3
76.0	0.5226	-	-

WATER-OIL RELATIVE PERMEABILITY

Devon Energy Corporation
Cactus State No. 3 Well
E. Cat Claw Draw Field
Eddy County, New Mexico
SRS 1939/RSH 3130

Sample:	D 973	Porosity, (%BV):	18.4
Depth (ft):	3269.7	Initial Water Sat. (%PV):	28.6
Perm. to Gas (md):	1.06	Perm. to Oil @ Swi (md):	0.355

Water Saturation (%PV)	Relative Permeability (Fraction)		Water-Oil Ratio (Kw/Ko)
	Water(Krw)	Oil (Kro)	
28.6	0.0000	1.0000	0.00
42.6	0.0501	0.3419	0.15
46.7	0.0594	0.2133	0.28
49.5	0.0676	0.1608	0.42
51.9	0.0792	0.1261	0.63
54.2	0.0923	0.1020	0.90
56.5	0.1049	0.0765	1.37
58.1	0.1174	0.0609	1.93
59.7	0.1319	0.0485	2.72
61.2	0.1459	0.0367	3.98
63.0	0.1665	0.0226	7.38
64.4	0.1865	0.0137	13.6
65.5	0.2079	0.0078	26.5
66.4	0.2322	0.0037	63.1
68.1	0.3127	--	--

GAS-OIL RELATIVE PERMEABILITY

Devon Energy Corporation
Cactus State No. 3 Well
E. Cat Claw Draw Field
Eddy County, New Mexico
SRS 1939/RSH 3130

Sample:	D 940	Porosity, (% BV):	16.4
Depth (ft):	3151.9	Initial Water Sat. (%PV):	38.6
Perm. to Gas (md):	3.84	Perm. to Oil @ Swi (md):	1.24

Gas Saturation (% PV)	Relative Permeability (Fraction)		Gas-Oil Ratio (Kg/Ko)
	Gas (Krg)	Oil (Kro)	
0.0	0.0000	1.0000	0.000
1.8	0.0202	0.7342	0.027
2.6	0.0299	0.6648	0.045
3.4	0.0441	0.5797	0.076
4.4	0.0598	0.5142	0.12
5.3	0.0737	0.4349	0.17
6.0	0.0800	0.3550	0.23
6.6	0.0864	0.3143	0.27
7.2	0.1005	0.2929	0.34
8.0	0.1203	0.2528	0.48
9.0	0.1423	0.2206	0.64
10.5	0.1785	0.1667	1.07
11.7	0.2180	0.1354	1.61
12.7	0.2504	0.1171	2.14

GAS-OIL RELATIVE PERMEABILITY (Continued)

Devon Energy Corporation
Cactus State No. 3 Well
E. Cat Claw Draw Field
Eddy County, New Mexico
SRS 1939/RSH 3130

Sample:	D 973	Porosity, (% BV):	18.4
Depth (ft):	3269.7	Initial Water Sat. (%PV):	28.6
Perm. to Gas (md):	1.06	Perm. to Oil @ Swi (md):	0.355

Gas Saturation (% PV)	Relative Permeability (Fraction)		Gas-Oil Ratio (Kg/Ko)
	Gas (Krg)	Oil (Kro)	
16.4	0.2259	0.1458	1.55
17.8	0.2572	0.1183	2.17
19.1	0.2855	0.0934	3.06
20.2	0.3234	0.0781	4.14
21.2	0.3794	0.0720	5.27
23.0	0.4432	0.0538	8.24
24.5	0.5123	0.0421	12.2
26.5	0.5961	0.0304	19.6
28.5	0.6853	0.0208	32.9

APPENDIX C

SIMULATOR PVT INPUT DATA

APPENDIX C - SIMULATOR PVT INPUT DATA

(basis: gas saturated fluid @ 85 deg F)

pressure psi	Rs scf/stb	Bo rb/stb	Bg rb/scf	oil visc. cp	gas visc. cp
134	161	1.106	0.01808	1.390	0.0101
250	212	1.127	0.00998	1.160	0.0107
400	264	1.149	0.00622	1.000	0.0113
550	310	1.167	0.00445	0.903	0.0117
700	353	1.184	0.00342	0.838	0.0121
850	394	1.201	0.00275	0.790	0.0126
1000	435	1.217	0.00227	0.754	0.0132
1150	474	1.232	0.00191	0.724	0.0138
1277	508	1.245	0.00168	0.701	0.0145
1400*	541	1.257	0.00151	0.680	0.0152
2000*	702	1.313	0.00101	0.594	0.0194

* data for these pressures have been extrapolated

Supplementary fluid data:

Density, #/ft3 at standard conditions,

oil	51.31	(40.5 deg API)
gas	.0702	(average flashed gas SG = .919)
water	64.	(assumed)

Undersaturated compressibility, v/v/psi,

oil	9.46E-6	(PVT study 1277-2000 psig)
water	2.78E-6	(calc for gas saturated 10% brine)

Undersaturated viscosity slope, cp/psi

oil	6.50E-5	(PVT study 1277-1400 psig)
water	0.0	(constant viscosity assumed)

Water formation volume factor

Bw	1.003	(calc for gas saturated 10% brine)

Water viscosity, cp

Uw	.999	(calc for gas saturated 10% brine)

Rock compressibility

Cfr	4.00E-6	(Hall correlation for 16% porosity)

APPENDIX D

SIMULATION RESULTS

PROJECT: DEVON ENERGY CORPORATION
One Well Natural Depletion Simulation Study
Forty Acre Spacing Unit
CASE: 01 - constrained by maximum oil rate

TIME	OIL RATE	GAS RATE	GAS OIL RATIO	WATER CUT
days	STB /days	SCF /days	SCF /STB	PERCENT
2.500E-04	8.000E+01	1.453E+05	1.817E+03	2.093E+01
1.095E-03	8.005E+01	1.524E+05	1.904E+03	2.046E+01
3.797E-03	7.995E+01	1.545E+05	1.932E+03	1.997E+01
1.498E-02	7.994E+01	1.617E+05	2.023E+03	1.991E+01
5.548E-02	7.997E+01	1.632E+05	2.040E+03	1.952E+01
1.862E-01	7.999E+01	1.591E+05	1.989E+03	1.934E+01
6.752E-01	8.000E+01	1.554E+05	1.942E+03	1.929E+01
1.745E+00	8.000E+01	1.635E+05	2.044E+03	1.910E+01
3.885E+00	8.000E+01	1.630E+05	2.037E+03	1.907E+01
6.943E+00	8.000E+01	1.798E+05	2.248E+03	1.948E+01
1.000E+01	8.000E+01	1.765E+05	2.206E+03	1.939E+01
1.000E+01	8.000E+01	1.765E+05	2.206E+03	1.938E+01
1.000E+01	8.000E+01	1.765E+05	2.206E+03	1.940E+01
1.001E+01	8.000E+01	1.765E+05	2.206E+03	1.939E+01
1.004E+01	8.000E+01	1.764E+05	2.205E+03	1.939E+01
1.019E+01	8.000E+01	1.762E+05	2.203E+03	1.939E+01
1.098E+01	8.000E+01	1.753E+05	2.191E+03	1.937E+01
1.488E+01	8.000E+01	1.749E+05	2.186E+03	1.934E+01
2.000E+01	8.000E+01	1.811E+05	2.263E+03	1.942E+01
2.000E+01	8.000E+01	1.811E+05	2.263E+03	1.943E+01
2.000E+01	8.000E+01	1.811E+05	2.263E+03	1.943E+01
2.001E+01	8.000E+01	1.811E+05	2.263E+03	1.943E+01
2.004E+01	8.000E+01	1.811E+05	2.264E+03	1.943E+01
2.019E+01	8.000E+01	1.809E+05	2.261E+03	1.942E+01
2.098E+01	8.000E+01	1.833E+05	2.291E+03	1.944E+01
2.488E+01	8.000E+01	1.889E+05	2.361E+03	1.957E+01
4.000E+01	8.000E+01	1.874E+05	2.343E+03	1.956E+01
4.000E+01	8.000E+01	1.874E+05	2.343E+03	1.955E+01
4.000E+01	8.000E+01	1.874E+05	2.343E+03	1.957E+01
4.001E+01	8.000E+01	1.874E+05	2.343E+03	1.956E+01
4.004E+01	8.000E+01	1.874E+05	2.343E+03	1.956E+01
4.019E+01	8.000E+01	1.884E+05	2.355E+03	1.958E+01
4.098E+01	8.000E+01	1.849E+05	2.311E+03	1.954E+01
4.488E+01	8.000E+01	1.704E+05	2.130E+03	1.922E+01
6.244E+01	8.000E+01	1.692E+05	2.115E+03	1.915E+01
8.000E+01	8.000E+01	1.873E+05	2.341E+03	1.949E+01
8.000E+01	8.000E+01	1.873E+05	2.341E+03	1.952E+01
8.000E+01	8.000E+01	1.873E+05	2.341E+03	1.952E+01
8.001E+01	8.000E+01	1.873E+05	2.342E+03	1.951E+01
8.004E+01	8.000E+01	1.873E+05	2.342E+03	1.950E+01

TIME	OIL RATE	GAS RATE	GAS OIL RATIO	WATER CUT
days	STB /days	SCF /days	SCF /STB	PERCENT
8.019E+01	8.000E+01	1.871E+05	2.338E+03	1.948E+01
8.098E+01	8.000E+01	1.885E+05	2.357E+03	1.947E+01
8.488E+01	8.000E+01	1.961E+05	2.451E+03	1.971E+01
1.044E+02	8.000E+01	2.038E+05	2.547E+03	1.993E+01
1.600E+02	8.000E+01	2.113E+05	2.641E+03	2.034E+01
1.600E+02	8.000E+01	2.113E+05	2.641E+03	2.035E+01
1.600E+02	8.000E+01	2.113E+05	2.641E+03	2.035E+01
1.600E+02	8.000E+01	2.113E+05	2.642E+03	2.035E+01
1.600E+02	8.000E+01	2.112E+05	2.640E+03	2.035E+01
1.602E+02	8.000E+01	2.098E+05	2.622E+03	2.037E+01
1.610E+02	7.999E+01	2.142E+05	2.678E+03	2.040E+01
1.649E+02	8.000E+01	2.367E+05	2.958E+03	2.050E+01
1.844E+02	8.000E+01	2.398E+05	2.997E+03	2.100E+01
2.296E+02	8.000E+01	2.565E+05	3.206E+03	2.165E+01
2.974E+02	7.972E+01	3.230E+05	4.052E+03	2.334E+01
3.652E+02	6.558E+01	3.273E+05	4.991E+03	2.598E+01
3.652E+02	6.555E+01	3.273E+05	4.992E+03	2.597E+01
3.652E+02	6.557E+01	3.273E+05	4.992E+03	2.597E+01
3.653E+02	6.557E+01	3.273E+05	4.992E+03	2.598E+01
3.653E+02	6.557E+01	3.273E+05	4.992E+03	2.598E+01
3.655E+02	6.556E+01	3.273E+05	4.993E+03	2.598E+01
3.662E+02	6.561E+01	3.278E+05	4.997E+03	2.598E+01
3.701E+02	6.471E+01	3.326E+05	5.140E+03	2.613E+01
3.897E+02	6.005E+01	3.362E+05	5.598E+03	2.709E+01
4.873E+02	4.912E+01	3.025E+05	6.159E+03	2.934E+01
7.305E+02	3.251E+01	2.355E+05	7.242E+03	3.402E+01
7.305E+02	3.255E+01	2.356E+05	7.238E+03	3.405E+01
7.305E+02	3.253E+01	2.356E+05	7.241E+03	3.404E+01
7.305E+02	3.252E+01	2.355E+05	7.242E+03	3.403E+01
7.305E+02	3.252E+01	2.355E+05	7.242E+03	3.403E+01
7.307E+02	3.250E+01	2.354E+05	7.243E+03	3.403E+01
7.315E+02	3.239E+01	2.353E+05	7.264E+03	3.406E+01
7.354E+02	3.179E+01	2.333E+05	7.339E+03	3.412E+01
7.549E+02	3.061E+01	2.231E+05	7.287E+03	3.512E+01
8.526E+02	2.549E+01	2.028E+05	7.954E+03	3.840E+01
1.157E+03	1.766E+01	1.530E+05	8.665E+03	4.328E+01
1.461E+03	1.316E+01	1.199E+05	9.108E+03	4.760E+01
1.461E+03	1.319E+01	1.200E+05	9.098E+03	4.762E+01
1.461E+03	1.318E+01	1.200E+05	9.106E+03	4.762E+01
1.461E+03	1.317E+01	1.199E+05	9.108E+03	4.762E+01

TIME	OIL RATE	GAS RATE	GAS OIL RATIO	WATER CUT
days	STB /days	SCF /days	SCF /STB	PERCENT
1.461E+03	1.317E+01	1.199E+05	9.108E+03	4.761E+01
1.461E+03	1.316E+01	1.199E+05	9.108E+03	4.761E+01
1.462E+03	1.314E+01	1.196E+05	9.104E+03	4.763E+01
1.466E+03	1.306E+01	1.187E+05	9.089E+03	4.771E+01
1.485E+03	1.282E+01	1.168E+05	9.113E+03	4.800E+01
1.583E+03	1.172E+01	1.099E+05	9.382E+03	4.929E+01
1.948E+03	9.456E+00	8.820E+04	9.328E+03	5.170E+01
2.313E+03	7.587E+00	7.703E+04	1.015E+04	5.405E+01
2.617E+03	6.420E+00	6.890E+04	1.073E+04	5.569E+01
2.922E+03	5.320E+00	6.323E+04	1.188E+04	5.783E+01
2.922E+03	5.354E+00	6.354E+04	1.187E+04	5.785E+01
2.922E+03	5.334E+00	6.341E+04	1.189E+04	5.787E+01
2.922E+03	5.326E+00	6.335E+04	1.189E+04	5.787E+01
2.922E+03	5.324E+00	6.331E+04	1.189E+04	5.786E+01
2.922E+03	5.323E+00	6.329E+04	1.189E+04	5.785E+01
2.923E+03	5.321E+00	6.326E+04	1.189E+04	5.785E+01
2.927E+03	5.324E+00	6.314E+04	1.186E+04	5.782E+01
2.946E+03	5.271E+00	6.311E+04	1.197E+04	5.798E+01
3.044E+03	4.790E+00	6.234E+04	1.301E+04	5.937E+01
3.409E+03	3.885E+00	5.529E+04	1.423E+04	6.167E+01
3.774E+03	3.096E+00	5.065E+04	1.636E+04	6.459E+01
4.139E+03	2.419E+00	4.645E+04	1.920E+04	6.788E+01
4.504E+03	1.862E+00	4.252E+04	2.284E+04	7.137E+01
4.869E+03	1.414E+00	3.884E+04	2.746E+04	7.493E+01
5.234E+03	1.060E+00	3.547E+04	3.345E+04	7.845E+01
5.539E+03	8.204E-01	3.289E+04	4.009E+04	8.136E+01
5.844E+03	6.293E-01	3.045E+04	4.840E+04	8.411E+01

PROJECT: DEVON ENERGY CORPORATION
One Well Natural Depletion Simulation Study
Forty Acre Spacing Unit
CASE: 02 - constrained by maximum gas rate

TIME	CUMULATIVE OIL	CUMULATIVE GAS	AVERAGE RESERVOIR PRESSURE	BOTTOM HOLE PRESSURE
days	STB	SCF	psia	psia
2.500E-04	2.142E-02	4.000E+01	1.321E+03	1.178E+03
1.025E-03	8.444E-02	1.640E+02	1.321E+03	1.123E+03
3.622E-03	2.972E-01	5.795E+02	1.321E+03	1.071E+03
1.380E-02	1.094E+00	2.209E+03	1.321E+03	1.020E+03
3.394E-02	2.680E+00	5.431E+03	1.321E+03	9.859E+02
7.421E-02	6.109E+00	1.187E+04	1.321E+03	9.394E+02
1.749E-01	1.408E+01	2.798E+04	1.321E+03	9.141E+02
3.763E-01	2.617E+01	6.021E+04	1.321E+03	9.386E+02
3.964E-01	2.841E+01	6.342E+04	1.321E+03	7.827E+02
4.344E-01	3.269E+01	6.950E+04	1.321E+03	7.894E+02
6.244E-01	4.765E+01	9.994E+04	1.321E+03	8.680E+02
1.380E+00	1.040E+02	2.208E+05	1.320E+03	8.446E+02
5.159E+00	4.222E+02	8.254E+05	1.319E+03	7.512E+02
7.579E+00	6.009E+02	1.213E+06	1.318E+03	7.769E+02
1.000E+01	7.832E+02	1.600E+06	1.317E+03	7.627E+02
1.000E+01	7.832E+02	1.600E+06	1.317E+03	7.626E+02
1.000E+01	7.833E+02	1.600E+06	1.317E+03	7.627E+02
1.001E+01	7.838E+02	1.601E+06	1.317E+03	7.626E+02
1.004E+01	7.861E+02	1.606E+06	1.317E+03	7.624E+02
1.019E+01	7.979E+02	1.631E+06	1.317E+03	7.616E+02
1.098E+01	8.565E+02	1.756E+06	1.317E+03	7.608E+02
1.488E+01	1.144E+03	2.381E+06	1.315E+03	7.536E+02
2.000E+01	1.515E+03	3.200E+06	1.313E+03	7.467E+02
2.000E+01	1.515E+03	3.200E+06	1.313E+03	7.467E+02
2.000E+01	1.515E+03	3.200E+06	1.313E+03	7.468E+02
2.001E+01	1.516E+03	3.201E+06	1.313E+03	7.467E+02
2.004E+01	1.518E+03	3.206E+06	1.313E+03	7.467E+02
2.019E+01	1.529E+03	3.231E+06	1.313E+03	7.464E+02
2.098E+01	1.586E+03	3.356E+06	1.313E+03	7.462E+02
2.488E+01	1.865E+03	3.981E+06	1.311E+03	7.424E+02
4.000E+01	2.953E+03	6.400E+06	1.306E+03	7.188E+02
4.000E+01	2.953E+03	6.400E+06	1.306E+03	7.188E+02
4.000E+01	2.954E+03	6.400E+06	1.306E+03	7.188E+02
4.001E+01	2.954E+03	6.401E+06	1.306E+03	7.188E+02
4.004E+01	2.956E+03	6.406E+06	1.306E+03	7.187E+02
4.019E+01	2.967E+03	6.431E+06	1.306E+03	7.187E+02
4.098E+01	3.024E+03	6.556E+06	1.305E+03	7.142E+02
4.488E+01	3.317E+03	7.181E+06	1.304E+03	6.971E+02
6.244E+01	4.649E+03	9.990E+06	1.297E+03	6.784E+02
8.000E+01	5.944E+03	1.280E+07	1.291E+03	6.796E+02

TIME	CUMULATIVE OIL	CUMULATIVE GAS	AVERAGE RESERVOIR PRESSURE	BOTTOM HOLE PRESSURE
days	STB	SCF	psia	psia
8.000E+01	5.944E+03	1.280E+07	1.291E+03	6.796E+02
8.000E+01	5.944E+03	1.280E+07	1.291E+03	6.796E+02
8.001E+01	5.945E+03	1.280E+07	1.291E+03	6.796E+02
8.004E+01	5.947E+03	1.281E+07	1.291E+03	6.796E+02
8.019E+01	5.958E+03	1.283E+07	1.291E+03	6.790E+02
8.098E+01	6.015E+03	1.296E+07	1.291E+03	6.892E+02
8.488E+01	6.275E+03	1.358E+07	1.289E+03	7.181E+02
1.044E+02	7.589E+03	1.671E+07	1.282E+03	7.005E+02
1.600E+02	1.139E+04	2.560E+07	1.262E+03	6.632E+02
1.600E+02	1.139E+04	2.560E+07	1.262E+03	6.632E+02
1.600E+02	1.139E+04	2.560E+07	1.262E+03	6.632E+02
1.600E+02	1.139E+04	2.560E+07	1.262E+03	6.632E+02
1.600E+02	1.139E+04	2.561E+07	1.262E+03	6.632E+02
1.602E+02	1.140E+04	2.563E+07	1.262E+03	6.625E+02
1.610E+02	1.145E+04	2.576E+07	1.262E+03	6.751E+02
1.649E+02	1.169E+04	2.638E+07	1.261E+03	7.137E+02
1.844E+02	1.274E+04	2.951E+07	1.254E+03	7.364E+02
2.296E+02	1.540E+04	3.674E+07	1.239E+03	6.839E+02
2.974E+02	1.834E+04	4.759E+07	1.216E+03	7.317E+02
3.313E+02	2.005E+04	5.301E+07	1.205E+03	6.752E+02
3.652E+02	2.158E+04	5.844E+07	1.194E+03	6.857E+02
3.652E+02	2.158E+04	5.844E+07	1.194E+03	6.857E+02
3.652E+02	2.158E+04	5.844E+07	1.194E+03	6.857E+02
3.653E+02	2.158E+04	5.844E+07	1.194E+03	6.857E+02
3.653E+02	2.159E+04	5.845E+07	1.194E+03	6.857E+02
3.655E+02	2.159E+04	5.847E+07	1.194E+03	6.857E+02
3.662E+02	2.163E+04	5.860E+07	1.194E+03	6.862E+02
3.701E+02	2.180E+04	5.922E+07	1.192E+03	6.900E+02
3.897E+02	2.260E+04	6.235E+07	1.186E+03	6.999E+02
4.873E+02	2.619E+04	7.797E+07	1.156E+03	6.657E+02
7.305E+02	3.374E+04	1.169E+08	1.084E+03	5.746E+02
7.305E+02	3.374E+04	1.169E+08	1.084E+03	5.747E+02
7.305E+02	3.374E+04	1.169E+08	1.084E+03	5.748E+02
7.305E+02	3.374E+04	1.169E+08	1.084E+03	5.748E+02
7.305E+02	3.374E+04	1.169E+08	1.084E+03	5.747E+02
7.307E+02	3.374E+04	1.169E+08	1.084E+03	5.747E+02
7.315E+02	3.377E+04	1.170E+08	1.084E+03	5.752E+02
7.354E+02	3.389E+04	1.177E+08	1.083E+03	5.768E+02
7.549E+02	3.445E+04	1.208E+08	1.077E+03	5.834E+02
8.526E+02	3.691E+04	1.364E+08	1.050E+03	5.574E+02
1.157E+03	4.377E+04	1.851E+08	9.653E+02	4.128E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.633E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.635E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.635E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.635E+02

TIME	CUMULATIVE OIL	CUMULATIVE GAS	AVERAGE RESERVOIR PRESSURE	BOTTOM HOLE PRESSURE
days	STB	SCF	psia	psia
1.157E+03	4.377E+04	1.851E+08	9.653E+02	4.128E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.633E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.635E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.635E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.635E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.635E+02
1.461E+03	4.980E+04	2.338E+08	8.857E+02	2.633E+02
1.462E+03	4.982E+04	2.339E+08	8.855E+02	2.615E+02
1.466E+03	4.990E+04	2.345E+08	8.845E+02	2.610E+02
1.485E+03	5.024E+04	2.377E+08	8.794E+02	2.856E+02
1.583E+03	5.165E+04	2.533E+08	8.540E+02	2.566E+02
1.766E+03	5.427E+04	2.792E+08	8.136E+02	2.000E+02
2.131E+03	5.829E+04	3.184E+08	7.516E+02	2.000E+02
2.496E+03	6.139E+04	3.514E+08	6.998E+02	2.000E+02
2.709E+03	6.299E+04	3.688E+08	6.726E+02	2.000E+02
2.922E+03	6.439E+04	3.849E+08	6.470E+02	2.000E+02
2.922E+03	6.439E+04	3.849E+08	6.470E+02	2.000E+02
2.922E+03	6.439E+04	3.849E+08	6.470E+02	2.000E+02
2.922E+03	6.439E+04	3.849E+08	6.470E+02	2.000E+02
2.922E+03	6.439E+04	3.849E+08	6.470E+02	2.000E+02
2.922E+03	6.439E+04	3.849E+08	6.470E+02	2.000E+02
2.923E+03	6.439E+04	3.850E+08	6.469E+02	2.000E+02
2.927E+03	6.442E+04	3.853E+08	6.465E+02	2.000E+02
2.946E+03	6.455E+04	3.867E+08	6.442E+02	2.000E+02
3.044E+03	6.513E+04	3.939E+08	6.328E+02	2.000E+02
3.409E+03	6.689E+04	4.169E+08	5.958E+02	2.000E+02
3.774E+03	6.831E+04	4.376E+08	5.625E+02	2.000E+02
4.139E+03	6.943E+04	4.563E+08	5.327E+02	2.000E+02
4.504E+03	7.030E+04	4.735E+08	5.055E+02	2.000E+02
4.869E+03	7.096E+04	4.892E+08	4.809E+02	2.000E+02
5.234E+03	7.146E+04	5.035E+08	4.585E+02	2.000E+02
5.539E+03	7.179E+04	5.145E+08	4.415E+02	2.000E+02
5.844E+03	7.205E+04	5.247E+08	4.259E+02	2.000E+02

PROJECT: DEVON ENERGY CORPORATION
One Well Natural Depletion Simulation Study
Forty Acre Spacing Unit
CASE: 02 - constrained by maximum gas rate

TIME	OIL RATE	GAS RATE	GAS OIL RATIO	WATER CUT
days	STB /days	SCF /days	SCF /STB	PERCENT
2.500E-04	8.569E+01	1.600E+05	1.867E+03	2.099E+01
1.025E-03	8.130E+01	1.600E+05	1.968E+03	2.066E+01
3.622E-03	8.194E+01	1.600E+05	1.953E+03	1.996E+01
1.380E-02	7.829E+01	1.601E+05	2.044E+03	1.995E+01
3.394E-02	7.875E+01	1.600E+05	2.032E+03	1.963E+01
7.421E-02	8.516E+01	1.600E+05	1.879E+03	1.914E+01
1.749E-01	7.919E+01	1.600E+05	2.020E+03	1.930E+01
3.763E-01	6.002E+01	1.600E+05	2.666E+03	2.057E+01
3.964E-01	1.113E+02	1.600E+05	1.437E+03	1.898E+01
4.344E-01	1.129E+02	1.600E+05	1.417E+03	1.809E+01
6.244E-01	7.867E+01	1.602E+05	2.036E+03	1.903E+01
1.380E+00	7.461E+01	1.600E+05	2.144E+03	1.936E+01
5.159E+00	8.421E+01	1.600E+05	1.900E+03	1.883E+01
7.579E+00	7.380E+01	1.600E+05	2.168E+03	1.926E+01
1.000E+01	7.532E+01	1.599E+05	2.124E+03	1.917E+01
1.000E+01	7.533E+01	1.600E+05	2.124E+03	1.917E+01
1.000E+01	7.533E+01	1.600E+05	2.124E+03	1.918E+01
1.001E+01	7.533E+01	1.600E+05	2.124E+03	1.917E+01
1.004E+01	7.535E+01	1.600E+05	2.123E+03	1.917E+01
1.019E+01	7.541E+01	1.600E+05	2.122E+03	1.917E+01
1.098E+01	7.497E+01	1.600E+05	2.134E+03	1.918E+01
1.488E+01	7.364E+01	1.600E+05	2.173E+03	1.922E+01
2.000E+01	7.253E+01	1.600E+05	2.205E+03	1.923E+01
2.000E+01	7.254E+01	1.600E+05	2.206E+03	1.923E+01
2.000E+01	7.254E+01	1.600E+05	2.206E+03	1.924E+01
2.001E+01	7.254E+01	1.600E+05	2.206E+03	1.924E+01
2.004E+01	7.253E+01	1.600E+05	2.206E+03	1.924E+01
2.019E+01	7.253E+01	1.600E+05	2.206E+03	1.923E+01
2.098E+01	7.228E+01	1.600E+05	2.214E+03	1.923E+01
2.488E+01	7.151E+01	1.600E+05	2.237E+03	1.926E+01
4.000E+01	7.198E+01	1.600E+05	2.223E+03	1.926E+01
4.000E+01	7.198E+01	1.600E+05	2.223E+03	1.925E+01
4.000E+01	7.198E+01	1.600E+05	2.223E+03	1.927E+01
4.001E+01	7.198E+01	1.600E+05	2.223E+03	1.926E+01
4.004E+01	7.198E+01	1.600E+05	2.223E+03	1.926E+01
4.019E+01	7.183E+01	1.600E+05	2.227E+03	1.927E+01
4.098E+01	7.227E+01	1.600E+05	2.214E+03	1.927E+01
4.488E+01	7.499E+01	1.600E+05	2.134E+03	1.918E+01
6.244E+01	7.584E+01	1.600E+05	2.110E+03	1.912E+01
8.000E+01	7.378E+01	1.600E+05	2.169E+03	1.916E+01

TIME	OIL RATE	GAS RATE	GAS OIL RATIO	WATER CUT
days	STB /days	SCF /days	SCF /STB	PERCENT
8.000E+01	7.378E+01	1.600E+05	2.169E+03	1.915E+01
8.000E+01	7.378E+01	1.600E+05	2.169E+03	1.917E+01
8.001E+01	7.378E+01	1.600E+05	2.169E+03	1.916E+01
8.004E+01	7.379E+01	1.600E+05	2.168E+03	1.916E+01
8.019E+01	7.421E+01	1.600E+05	2.156E+03	1.914E+01
8.098E+01	7.278E+01	1.600E+05	2.198E+03	1.913E+01
8.488E+01	6.636E+01	1.600E+05	2.411E+03	1.935E+01
1.044E+02	6.728E+01	1.600E+05	2.378E+03	1.949E+01
1.600E+02	6.834E+01	1.600E+05	2.341E+03	1.961E+01
1.600E+02	6.834E+01	1.600E+05	2.341E+03	1.961E+01
1.600E+02	6.834E+01	1.600E+05	2.341E+03	1.962E+01
1.600E+02	6.834E+01	1.600E+05	2.341E+03	1.961E+01
1.600E+02	6.836E+01	1.600E+05	2.341E+03	1.961E+01
1.602E+02	6.888E+01	1.600E+05	2.323E+03	1.951E+01
1.610E+02	6.760E+01	1.601E+05	2.368E+03	1.942E+01
1.649E+02	6.006E+01	1.600E+05	2.664E+03	2.004E+01
1.844E+02	5.364E+01	1.600E+05	2.983E+03	2.069E+01
2.296E+02	5.885E+01	1.600E+05	2.719E+03	2.051E+01
2.974E+02	4.335E+01	1.600E+05	3.691E+03	2.241E+01
3.313E+02	5.042E+01	1.600E+05	3.173E+03	2.193E+01
3.652E+02	4.538E+01	1.600E+05	3.525E+03	2.277E+01
3.652E+02	4.538E+01	1.600E+05	3.526E+03	2.276E+01
3.652E+02	4.539E+01	1.600E+05	3.525E+03	2.277E+01
3.653E+02	4.538E+01	1.600E+05	3.525E+03	2.277E+01
3.653E+02	4.538E+01	1.600E+05	3.526E+03	2.277E+01
3.655E+02	4.536E+01	1.600E+05	3.527E+03	2.277E+01
3.662E+02	4.529E+01	1.600E+05	3.533E+03	2.278E+01
3.701E+02	4.445E+01	1.600E+05	3.599E+03	2.289E+01
3.897E+02	4.076E+01	1.600E+05	3.926E+03	2.360E+01
4.873E+02	3.683E+01	1.600E+05	4.344E+03	2.522E+01
7.305E+02	3.101E+01	1.600E+05	5.160E+03	2.851E+01
7.305E+02	3.107E+01	1.600E+05	5.150E+03	2.860E+01
7.305E+02	3.104E+01	1.600E+05	5.155E+03	2.857E+01
7.305E+02	3.102E+01	1.600E+05	5.157E+03	2.855E+01
7.305E+02	3.102E+01	1.600E+05	5.158E+03	2.854E+01
7.307E+02	3.102E+01	1.600E+05	5.158E+03	2.853E+01
7.315E+02	3.107E+01	1.600E+05	5.150E+03	2.850E+01
7.354E+02	3.102E+01	1.600E+05	5.158E+03	2.850E+01
7.549E+02	2.899E+01	1.600E+05	5.519E+03	2.917E+01
8.526E+02	2.517E+01	1.600E+05	6.357E+03	3.143E+01
1.157E+03	2.254E+01	1.600E+05	7.098E+03	3.542E+01
1.461E+03	1.982E+01	1.600E+05	8.073E+03	4.053E+01
1.461E+03	1.988E+01	1.600E+05	8.048E+03	4.059E+01
1.461E+03	1.985E+01	1.600E+05	8.060E+03	4.058E+01
1.461E+03	1.983E+01	1.600E+05	8.067E+03	4.056E+01

TIME	OIL RATE	GAS RATE	GAS OIL RATIO	WATER CUT
days	STB /days	SCF /days	SCF /STB	PERCENT
1.157E+03	2.254E+01	1.600E+05	7.098E+03	3.542E+01
1.461E+03	1.982E+01	1.600E+05	8.073E+03	4.053E+01
1.461E+03	1.988E+01	1.600E+05	8.048E+03	4.059E+01
1.461E+03	1.985E+01	1.600E+05	8.060E+03	4.058E+01
1.461E+03	1.983E+01	1.600E+05	8.067E+03	4.056E+01
1.461E+03	1.983E+01	1.600E+05	8.069E+03	4.055E+01
1.461E+03	1.983E+01	1.600E+05	8.070E+03	4.055E+01
1.462E+03	1.994E+01	1.600E+05	8.025E+03	4.058E+01
1.466E+03	2.021E+01	1.600E+05	7.918E+03	4.076E+01
1.485E+03	1.738E+01	1.600E+05	9.207E+03	4.194E+01
1.583E+03	1.451E+01	1.600E+05	1.102E+04	4.480E+01
1.766E+03	1.432E+01	1.419E+05	9.907E+03	4.704E+01
2.131E+03	1.101E+01	1.074E+05	9.753E+03	5.021E+01
2.496E+03	8.510E+00	9.058E+04	1.064E+04	5.311E+01
2.709E+03	7.510E+00	8.137E+04	1.083E+04	5.443E+01
2.922E+03	6.541E+00	7.544E+04	1.153E+04	5.595E+01
2.922E+03	6.549E+00	7.550E+04	1.153E+04	5.595E+01
2.922E+03	6.544E+00	7.548E+04	1.153E+04	5.596E+01
2.922E+03	6.542E+00	7.546E+04	1.153E+04	5.596E+01
2.922E+03	6.541E+00	7.545E+04	1.153E+04	5.595E+01
2.922E+03	6.541E+00	7.545E+04	1.153E+04	5.595E+01
2.923E+03	6.537E+00	7.540E+04	1.153E+04	5.596E+01
2.927E+03	6.536E+00	7.523E+04	1.151E+04	5.595E+01
2.946E+03	6.466E+00	7.495E+04	1.159E+04	5.610E+01
3.044E+03	5.926E+00	7.308E+04	1.233E+04	5.725E+01
3.409E+03	4.848E+00	6.316E+04	1.303E+04	5.926E+01
3.774E+03	3.885E+00	5.658E+04	1.457E+04	6.188E+01
4.139E+03	3.057E+00	5.148E+04	1.684E+04	6.496E+01
4.504E+03	2.375E+00	4.705E+04	1.981E+04	6.832E+01
4.869E+03	1.822E+00	4.293E+04	2.356E+04	7.182E+01
5.234E+03	1.381E+00	3.910E+04	2.832E+04	7.536E+01
5.539E+03	1.073E+00	3.621E+04	3.376E+04	7.846E+01
5.844E+03	8.319E-01	3.350E+04	4.027E+04	8.133E+01

WEDGE WIRELINE INC.

Wedge Energy Group

P . R . A . L .

FILING NO.

COMPANY DEVON ENERGY CORP.

WELL CACTUS STATE NO. 1

FIELD

COUNTY EDDY STATE NEW MEXICO

LOCATION
960' FNL & 1860' FWL
UNIT C
SEC 16, TWP 21-S, RGE 26 E

OTHER SERVICES

PERMANENT DATUM: GROUND LEVEL	ELEV.	ELEV: K.B.
LOG MEASURED FROM GL	FT. ABOVE PERM. DATUM	D.F.
DRILLING MEASURED FROM		G.L.

DATE	09/18/93	
RUN NO.	ONE	
TYPE LOG	P.R.A.L.	
DEPTH DRILLER	4325'	
DEPTH LOGGER	N/A	
LOGGED INTERVAL	3400' TO 2750'	TO
OPERTING RIG TIME	MAST	
TYPE FLUID IN HOLE	OIL, GAS, WATER	
SALINITY, PPM CL	N/A	
DENSITY VISCOSITY	N/A	
LEVEL	FULL	
MAX. REC. TEMP., DEG. F	90	
EQUIPMENT LOCATION	6408 5042	210
RECORDED BY	B. MCCLAINE	
WITNESSED BY	MR. D. DALLY	

RUN NO.	BIT	BORE HOLE RECORD FROM	TO	CASING RECORD SIZE	WGT.	FROM	TO
				5.5"		SURF	TP
				2.38		SURF	2946
						PACKER	2946

THIS HEADING CONFORMS TO API STANDARD PRACTICE RP 33