

SANDEL OPERATING COMPANY

P.O. Box 1917
Huntsville, Texas 77342-1917
(936) 291-1002
FAX: 936-295-6725
email: jbsandel@lcc.net

RECEIVED

MAR 1 2004

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505



J. BYRON SANDEL, PRESIDENT

February 25, 2004

New Mexico Oil Conservation Division
Engineering Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Downhole Commingling
Carlsbad Grace Well No. 1
Sec. 36-22S-26E
Eddy County, New Mexico
Oil and Gas Lease K-6290

Attention: Mr. William Jones

Gentlemen:

Attached is an application for the downhole commingling of the production from the Morrow and Strawn formations on the Carlsbad Grace well No. 1, located in the NE 1/4, SE 1/4 of Section 36, Township 22 South, Range 26 East, Eddy County, New Mexico.

Each zone is producing gas and liquids up it's string of 2 3/8" tubing. The gas is then commingled at the surface, and compressed before going into the gas pipeline. Each zone's production is erratic due to the low bottom hole pressures (<500 psi) and loading up of fluids. This causes compressor downtime and disrepair, which in turn reduces production (value) and increases expenses.

Producing the total gas and liquids from each zone up one string of tubing will minimize loading problems at the surface and will reduce downtime and increase production. In addition, costs will go down and ultimately result in more reserves being recovered.

Thank you for your time and effort. Please contact me at 936-291-1002 if you have any questions or desire additional information.

Sincerely,

Ricky W. Sledge
Petroleum Engineer

RWS/sv
Enclosure

DATE IN 3/1/04	SUSPENSE	ENGINEER WVS	LOGGED IN LR	TYPE DHC	APP NO. PLR0406149899
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☒ Notification and/or Concurrent Approval by BLM or SLO
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] CERTIFICATION: I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

<u>Ricky W. Sledge</u> Print or Type Name	<u>Ricky W. Sledge</u> Signature	<u>Petroleum Engineer</u> Title	<u>2/26/04</u> Date
			<u>jhsandel@lcc.net</u> e-mail Address

District I
1625 N. French Drive, Hobbs, NM 88240

District II
1301 W. Grand Avenue, Artesia, NM 88210

District III
1000 Rio Pecos Road, Aztec, NM 87410

District IV
1230 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-107A
Revised June 10, 2003

APPLICATION TYPE
☒ Single Well
☐ Establish Pre-Approved Pools
EXISTING WELLBORE
☒ Yes ☐ No

APPLICATION FOR DOWNHOLE COMMINGLING

Sandel Operating Company, P.O. Box 1917, Huntsville, TX 77342

Operator

Address

Grace Carlsbad #1

T-36-22S-26E

Eddy

Lease

Well No.

Unit Letter-Section-Township-Range

County

OGRID No. _____ Property Code 26664 API No. 30-015-20573 Lease Type: ☒ Federal ☐ State ☐ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	Carlsbad (Strawn South)		Carlsbad (Morrow, South)
Pool Code	74120		73960
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	10,270-10,492		11,486-11,526
Method of Production (Flowing or Artificial Lift)	Flowing		Flowing
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)	496 psig		241 psig
Oil Gravity or Gas BTU (Degree API or Gas BTU)	1158		1033
Producing, Shut-In or New Zone	producing		producing
Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.)	Date: 2-15-04 Rates: 45 MCFD 0 BOPD 0.5 BWPD	Date: Rates:	Date: 2-16-04 Rates: 122 MCFD 0 BOPD 0.5 BWPD
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil 88 % Gas 28 %	Oil % Gas %	Oil 12 % Gas 72 %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones?
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail?

Yes ☒ No ☐
Yes ☐ No ☐

Are all produced fluids from all commingled zones compatible with each other?

Yes ☒ No ☐

Will commingling decrease the value of production?

Yes ☐ No ☒

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands
or the United States Bureau of Land Management been notified in writing of this application?

Yes ☒ No ☐

NMOCD Reference Case No. applicable to this well: _____

Attachments:

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

- List of other orders approving downhole commingling within the proposed Pre-Approved Pools
- List of all operators within the proposed Pre-Approved Pools
- Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
- Bottomhole pressure data.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Ricky W. Sledge TITLE Petroleum Engineer DATE 2/26/04

TYPE OR PRINT NAME Ricky W. Sledge TELEPHONE NO. 936 291-1002

E-MAIL ADDRESS jbsandel@lcc.net

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

RECEIVED

Copy to SF
Form C-132
New Mexico Oil Conservation Commission
1-10-1968

All distances must be from the outer boundaries of the Section.

MAR 30 1973

Operator CORINNE GRACE			Lease GRACE-CARLSBAD, C.C.			Well No. 1		
Unit Letter I	Section 36	Township 22 SOUTH	Range 26 EAST	County ARTESIA, OFFICE				
Actual Footage Location of Well: 1980 feet from the SOUTH line and 660 feet from the EAST line								
Ground Level Elev. 3207.8	Producing Formation STRAWN		Pool Unders. South Carlsbad			Dedicated Acreage: 320 Acres		

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name *Douglas H. Miller*
Position
Agent
Company
Corinne Grace
Date
February 8, 1972

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
FEBRUARY 7, 1972
Registered Professional Engineer and/or Land Surveyor
John W. West
Certificate No. _____

NEW MEXICO OIL CONSERVATION COMMISS.
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-12
Effective 1-4-65

All distances must be from the outer boundaries of the Section.

Operator CORINNE GRACE			Lease GRACE-CARLSBAD		Well No. 1
Unit Letter I	Section 36	Township 22 SOUTH	Range 26 EAST	County EDDY	
Actual Footage Location of Well: 1980 feet from the SOUTH line and 660 feet from the EAST line					
Ground Level Elev. 3207.8	Producing Formation Morrow		Pool Undes. South Carlsbad		Dedicated Acreage: 320 Acres

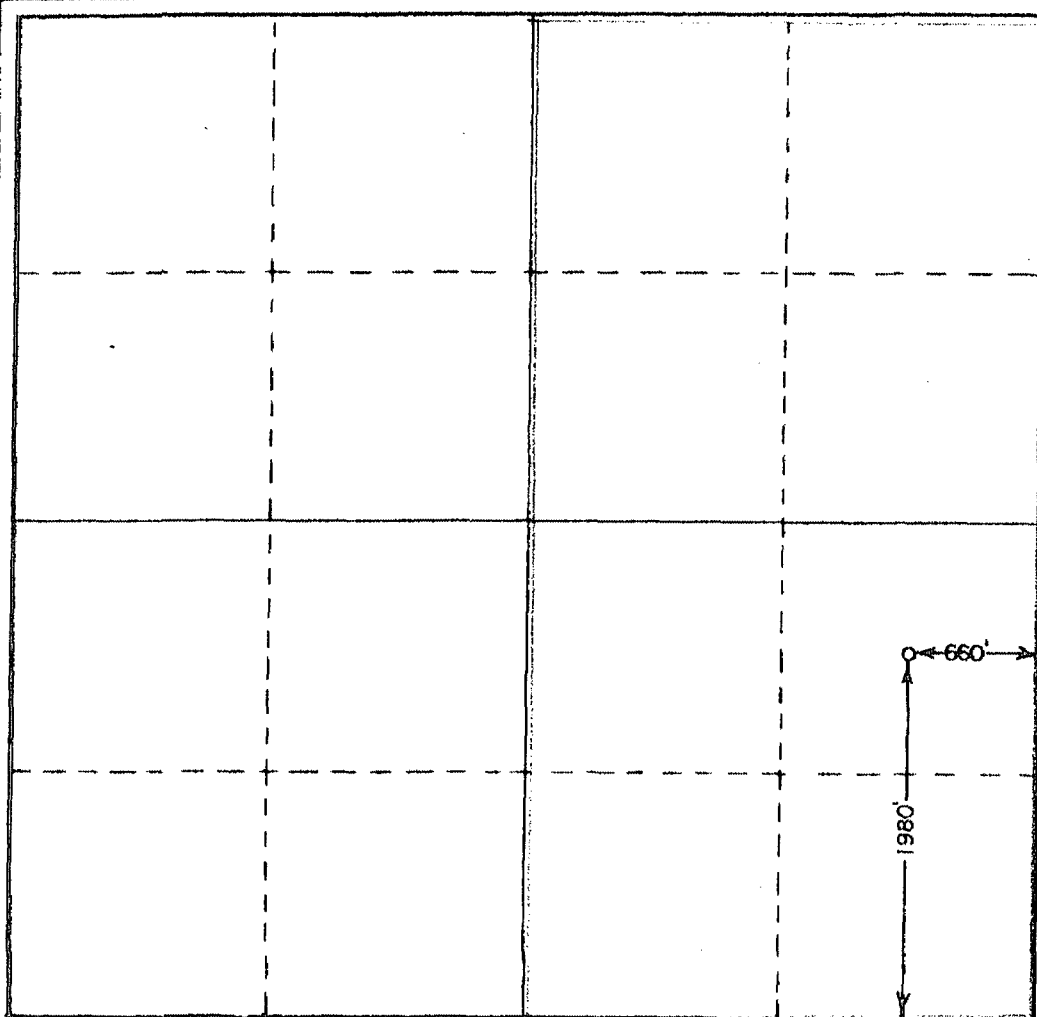
1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

RECEIVED
FEB 9 1972
O. C. C.
ARTESIA, OFFICE



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name Donna Holles
Position
Agent
Company
Corinne Grace
Date
February 8, 1972

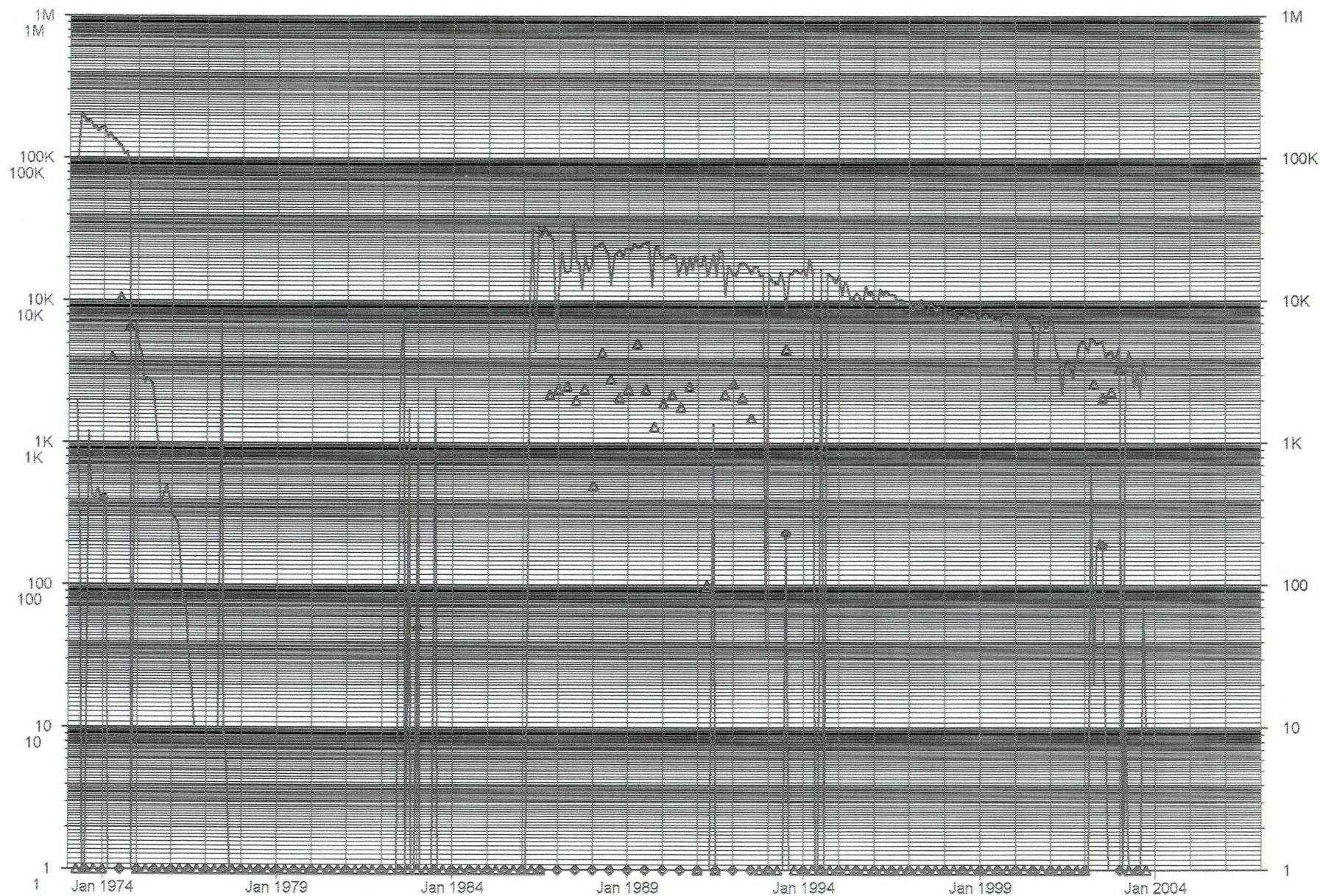
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
FEBRUARY 7, 1972
Registered Professional Engineer
and/or Land Surveyor

John W. West
Certificate No.

Field: CARLSBAD (MORROW, SOUTH (PRO GAS)) 73960
Operator: Sandel Operating Company
Lease Name: GRACE CARLSBAD 001
LPD ID: 300152057373960
Location: 22S26E36I

County, State: EDDY, NM
Status and Date: ACT 0
District: 2, Phase: GAS
Gas Cum: 5575862, Oil Cum: 906



— Monthly Gas (Mcf)
◆ Monthly Oil (Bbls)

Monthly Water (Bbls) ▲ ▲

Rate Vs Time Graph All Data- Gas, Oil, Water

CD Date: 200310

Copyright 16:39:17 02/24/04, Lasser, Inc.

LPD One Page Summary Report

Field: CARLSBAD (MORROW, SOUTH (PRO GAS)) 73960
Operator: Sandel Operating Company
Lease Name: GRACE CARLSBAD 001
LPD ID: 300152057373960

County, State: EDDY, NM
Status and Date: ACT 0
District: 2, Phase: GAS

	Gatherer Name	Code	Number	Cum Since	Cum	Gravity
Gas	HIGHLANDS GATHERING AND PROCESSI		139633	1973/04	5575882	0.000
Oil	NAVAJO REFINING CO. PIPELINE DIV		015694	1973/04	906	0.000

Location: 22S26E36I Latitude: 32.34663 Longitude: -104.23942
API: 3001520573 Completion Date: 0 Depth: 0 Upper Perf: 0 Lower Perf: 0

Yearly Production Detail --- 1973 Thru 2003

Year	Gas Produced	Gas Cumulative	Oil Produced	Oil Cumulative	Water Produced	Water Cumulative	Num Flow Wells	Num Other Wells	Gas Daily Avg.	Oil Daily Avg.	Gas Yearly Decline	Oil Yearly Decline
1973	1508754	1508754	508	508	0	0	1	0	5526.57	1.86		
1974	1283099	2791853	83	591	440	440	1	0	3515.34	0.23	15.0%	83.7%
1975	24407	2816260	0	591	0	440	1	0	66.87	0.00	98.1%	100.0%
1976	1265	2817525	0	591	0	440	1	0	3.47	0.00	94.8%	
1977	8745	2826270	0	591	0	440	1	0	23.96	0.00		
1978	0	2826270	0	591	0	440	1	0	0.00	0.00	100.0%	
1979	0	2826270	0	591	0	440	1	0	0.00	0.00		
1980	0	2826270	0	591	0	440	1	0	0.00	0.00		
1981	0	2826270	0	591	0	440	1	0	0.00	0.00		
1982	14248	2840518	10	601	0	440	1	0	39.04	0.03		
1983	3760	2844278	5	606	0	440	1	0	10.30	0.01	73.6%	50.0%
1984	0	2844278	0	606	0	440	1	0	0.00	0.00	100.0%	100.0%
1985	0	2844278	0	606	0	440	1	0	0.00	0.00		
1986	233382	3077660	0	606	147	587	1	0	639.40	0.00		
1987	222966	3300626	0	606	258	845	1	0	610.87	0.00	4.5%	
1988	265983	3566609	0	606	262	1107	1	0	728.72	0.00		
1989	278001	3844610	0	606	352	1459	1	0	761.65	0.00		
1990	228539	4073149	0	606	190	1649	1	0	626.13	0.00	17.8%	
1991	216021	4289170	135	741	212	1861	1	0	591.84	0.37	5.5%	
1992	184370	4473540	0	741	121	1982	1	0	505.12	0.00	14.7%	100.0%
1993	173957	4647497	23	764	46	2028	1	0	476.59	0.06	5.6%	
1994	142706	4790203	0	764	0	2028	1	0	390.98	0.00	18.0%	100.0%
1995	139657	4929860	0	764	0	2028	1	0	382.62	0.00	2.1%	
1996	128282	5058142	0	764	0	2028	1	0	351.46	0.00	8.1%	
1997	109899	5168041	0	764	0	2028	1	0	301.09	0.00	14.3%	
1998	99112	5267153	0	764	0	2028	1	0	271.54	0.00	9.8%	
1999	93337	5360490	0	764	0	2028	1	0	255.72	0.00	5.8%	
2000	75855	5436345	0	764	0	2028	1	0	207.82	0.00	18.7%	
2001	52304	5488649	0	764	0	2028	1	0	143.30	0.00	31.0%	
2002	56670	5545319	132	896	235	2263	1	0	155.26	0.36		
2003	30563	5575882	10	906	33	2296	1	0	100.54	0.03	35.2%	90.9%

Last 12 Months Production Detail

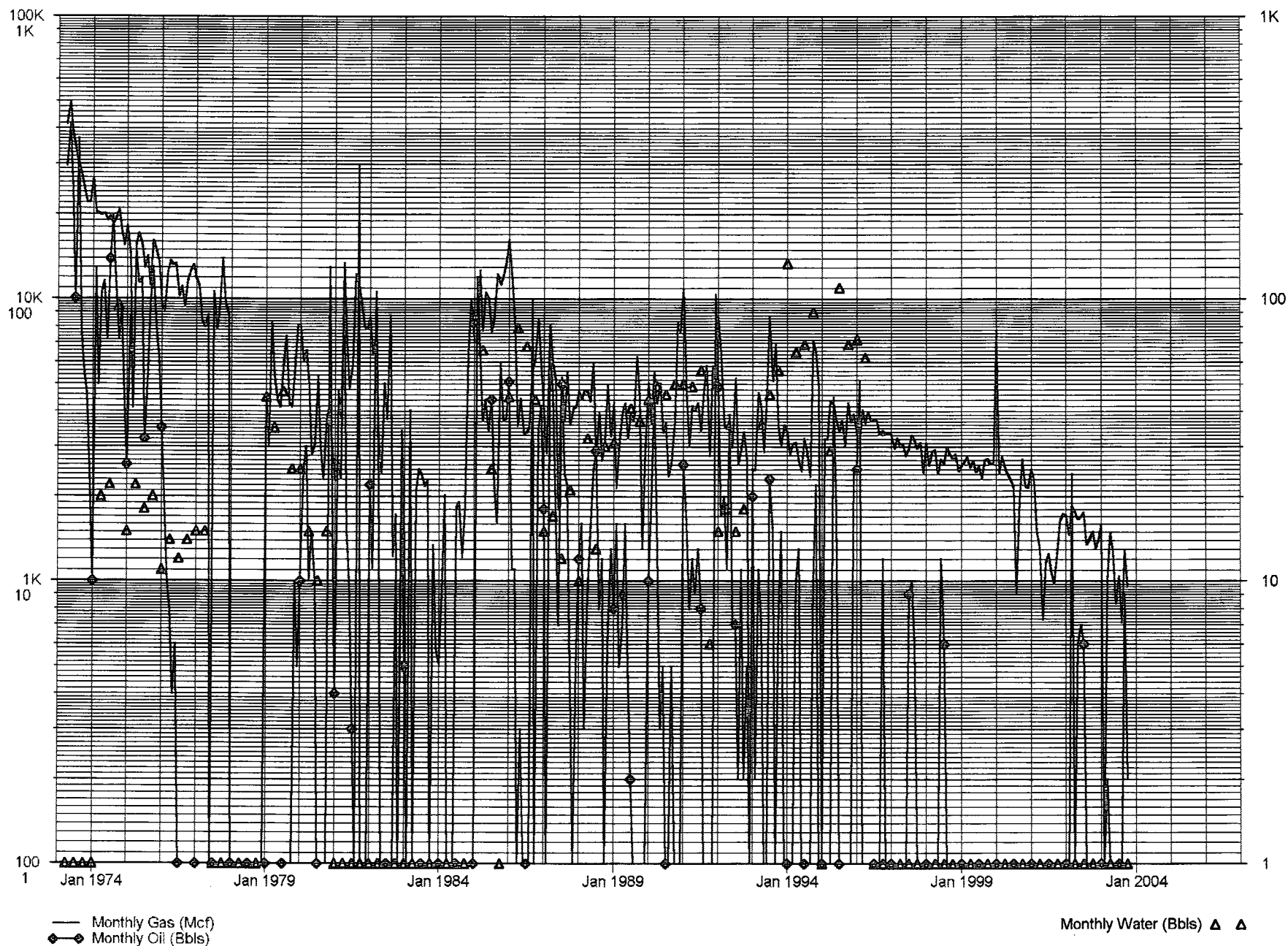
Date	Gas Produced	Gas Cumulative	Oil Produced	Oil Cumulative	Water Produced	Water Cumulative	Num Flow Wells	Num Other Wells	Gas Daily Avg.	Oil Daily Avg.
2002/11	3953	5541129	0	896	25	2235	1	0	131.77	0.00
2002/12	4190	5545319	0	896	28	2263	1	0	135.16	0.00
2003/01	4760	5550079	0	896	33	2296	1	0	153.55	0.00
2003/02	0	5550079	0	896	0	2296	1	0	0.00	0.00
2003/03	3018	5553097	1	897	0	2296	1	0	97.35	0.03
2003/04	4478	5557575	0	897	0	2296	1	0	149.27	0.00
2003/05	3825	5561400	0	897	0	2296	1	0	123.39	0.00
2003/06	2503	5563903	0	897	0	2296	1	0	83.43	0.00
2003/07	3124	5567027	0	897	0	2296	1	0	100.77	0.00
2003/08	2143	5569170	0	897	0	2296	1	0	69.13	0.00
2003/09	3843	5573013	8	905	0	2296	1	0	128.10	0.27
2003/10	2869	5575882	1	906	0	2296	1	0	92.55	0.03

Selected well tests

Test Date	Gas Cum	BHP	BHP/Z M/C	Poten	SiPres	FlwPres	Gas	Oil	Water	GOR	GGrav	OGrav
1985/07/22	2844278	0	0	0	322	0	0	0	0	0	0.00	0.00
1986/09/15	3015540	0	0	0	500	0	0	0	0	0	0.00	0.00

Field: CARLSBAD (STRAWN, SOUTH (GAS)) 74120
Operator: Sandel Operating Company
Lease Name: GRACE CARLSBAD 001
LPD ID: 300152057374120
Location: 22S26E36I

County, State: EDDY, NM
Status and Date: ACT 0
District: 2, Phase: GAS
Gas Cum: 2113220, Oil Cum: 6962



LFD One Page Summary Report

Field: CARLSBAD (STRAWN, SOUTH (GAS)) 74120
Operator: Sandel Operating Company
Lease Name: GRACE CARLSBAD 001
LFD ID: 300152057374120

County, State: EDDY, NM
Status and Date: ACT 0
District: 2, Phase: GAS

Gatherer Name	Code	Number	Cum Since	Cum	Gravity
Gas DUKE ENERGY FIELD SERVICES, LP		036785	1973/04	2113220	0.000
Oil NAVAJO REFINING CO. PIPELINE DIV		015694	1973/04	6962	0.000

Location: 22S26E36I Latitude: 32.34663 Longitude: -104.23942
API: 3001520573 Completion Date: 0 Depth: 0 Upper Perf: 0 Lower Perf: 0

Yearly Production Detail --- 1973 Thru 2003

Year	Gas Produced	Gas Cumulative	Oil Produced	Oil Cumulative	Water Produced	Water Cumulative	Num Flow Wells	Num Other Wells	Gas Daily Avg.	Oil Daily Avg.	Gas Yearly Decline	Oil Yearly Decline
1973	289823	289823	1626	1626	0	0	1	0	1061.62	5.96		
1974	237183	527006	1148	2774	359	359	1	0	649.82	3.15	18.2%	29.4%
1975	167708	694714	985	3759	216	575	1	0	459.47	2.70	29.3%	14.2%
1976	139742	834456	83	3842	156	731	1	0	382.85	0.23	16.7%	91.6%
1977	108788	943244	0	3842	52	783	1	0	298.05	0.00	22.2%	100.0%
1978	0	943244	0	3842	0	783	1	0	0.00	0.00	100.0%	
1979	65371	1008615	15	3857	452	1235	1	0	179.10	0.04		
1980	52937	1061552	250	4107	195	1430	1	0	145.03	0.68	19.0%	
1981	87719	1149271	519	4626	2	1432	1	0	240.33	1.42		
1982	51766	1201037	191	4817	0	1432	1	0	141.82	0.52	41.0%	63.2%
1983	18753	1219790	5	4822	0	1432	1	0	51.38	0.01	63.8%	97.4%
1984	26665	1246455	0	4822	0	1432	1	0	73.05	0.00		100.0%
1985	120907	1367362	517	5339	366	1798	1	0	331.25	1.42		
1986	80170	1447532	251	5590	676	2474	1	0	219.64	0.69	33.7%	51.5%
1987	54230	1501762	260	5850	233	2707	1	0	148.58	0.71	32.4%	
1988	49555	1551317	147	5997	329	3036	1	0	135.77	0.40	8.6%	43.5%
1989	43561	1594878	60	6057	352	3388	1	0	119.35	0.16	12.1%	59.2%
1990	55183	1650061	107	6164	453	3841	1	0	151.19	0.29		
1991	58164	1708225	196	6360	399	4240	1	0	159.35	0.54		
1992	45681	1753906	170	6530	155	4395	1	0	125.15	0.47	21.5%	13.3%
1993	52158	1806064	100	6630	628	5023	1	0	142.90	0.27		41.2%
1994	44431	1850495	55	6685	1214	6237	1	0	121.73	0.15	14.8%	45.0%
1995	40872	1891367	88	6773	704	6941	1	0	111.98	0.24	8.0%	
1996	42759	1934126	88	6861	402	7343	1	0	117.15	0.24		
1997	36254	1970380	25	6886	0	7343	1	0	99.33	0.07	15.2%	71.6%
1998	33077	2003457	18	6904	0	7343	1	0	90.62	0.05	8.8%	28.0%
1999	31112	2034569	0	6904	0	7343	1	0	85.24	0.00	5.9%	100.0%
2000	32133	2066702	0	6904	0	7343	1	0	88.04	0.00		
2001	17436	2084138	0	6904	0	7343	1	0	47.77	0.00	45.7%	
2002	18892	2103030	45	6949	0	7343	1	0	51.76	0.12		
2003	10190	2113220	13	6962	0	7343	1	0	33.52	0.04	35.2%	65.3%

Last 12 Months Production Detail

Date	Gas Produced	Gas Cumulative	Oil Produced	Oil Cumulative	Water Produced	Water Cumulative	Num Flow Wells	Num Other Wells	Gas Daily Avg.	Oil Daily Avg.
2002/11	1318	2101633	0	6949	0	7343	1	0	43.93	0.00
2002/12	1397	2103030	0	6949	0	7343	1	0	45.06	0.00
2003/01	1587	2104617	0	6949	0	7343	1	0	51.19	0.00
2003/02	0	2104617	0	6949	0	7343	1	0	0.00	0.00
2003/03	1006	2105623	2	6951	0	7343	1	0	32.45	0.06
2003/04	1493	2107116	0	6951	0	7343	1	0	49.77	0.00
2003/05	1275	2108391	0	6951	0	7343	1	0	41.13	0.00
2003/06	835	2109226	0	6951	0	7343	1	0	27.83	0.00
2003/07	1041	2110267	0	6951	0	7343	1	0	33.58	0.00
2003/08	715	2110982	0	6951	0	7343	1	0	23.06	0.00
2003/09	1281	2112263	9	6960	0	7343	1	0	42.70	0.30
2003/10	957	2113220	2	6962	0	7343	1	0	30.87	0.06

Selected well tests

Test Date	Gas Cum	BHP	BHP/Z M/C	Poten	SiPres	FlwPres	Gas	Oil	Water	GOR	GGrav	OGrav
1985/07/22	1309288	0	0	0	478	0	0	0	0	0	0.00	0.00