

PLATFORM GINA

DEVELOPMENT AND PRODUCTION PLAN REVISION

APPENDIX VOLUME 1

MMS
POCSR

UNOCAL ENERGY SERVICES

FO 5037

UNOCAL 76

APPENDIX VOLUME 1
ITEM A

Gas Analysis



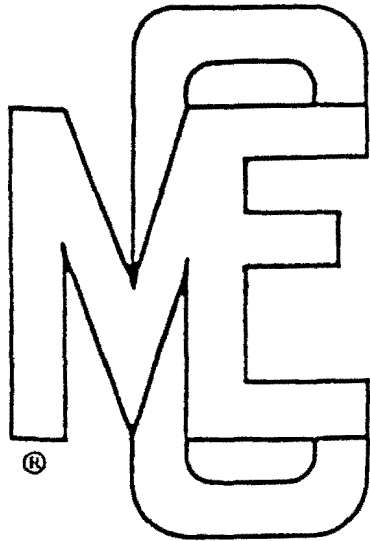
APPENDIX VOLUME 1
ITEM A

Gas Analysis

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MCE TEST REPORT



COMPANY: UNOCAL

LOCATION: PLATFORM GINA

WELL NO.: H-14

DATE: NOVEMBER 21, 1988 - December 3, 1988

MEASUREMENT AND CONTROL ENGINEERING

P. O. Box 987 Ventura, California 93002

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MEASUREMENT AND CONTROL ENGINEERING

Date: 11/21/88 - 12/3/88
Company: BNQCAL
Location: PLATFORM GINA
Well No.: H-14
Test No.:
MCE Technician: BC & JF

WELL TEST DATA RECORD

Table with columns: TIME, CHOKESIZE, PRESSURE (TBG, CSG), Trap Press., Trap Temp., Meter Rdg., Cumul. Total Barrels, BPD Gross, BPD Net, % BS&W, % Wtr., Cumul. Wtr., % Oil, Cumul. Oil, TANK MEASUREMENT (TANK GAUGE, TOTAL BBL, INCR. BBL), Chlorides Res. Tit. PPM, API Grav. 60/60, Orif. Size, Coeff. 24 Hr., Static Ditt., Temp. °F., Sp. Gr., Gas MCFD, Cumul. Gas C.F., GOR, GLR, REMARKS.



MEASUREMENT AND CONTROL ENGINEERING

WELL TEST DATA RECORD

Continuation Form
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TIME	CHOKE SIZE 64ths	PRESSURE		Trap Press.	Trap Temp.	Meter Rdg.	Cummul. Total Barrels	BPD Gross	BPD Net	% BS&W	% Wtr.	Cumul. Wtr.	% Oil	Cumul. Oil	TANK MEASUREMENT			Chlorides Res. Tit. PPM, GPG	API Grav. 60/60	Orif. Size	Coeff. 24 Hr.	Static		Temp. °F.	Sp. Gr.	Gas MCFD	Cumul. Gas M C.F.	GOR	GLR	REMARKS
		TANK GAUGE	TOTAL BBLs												INCR. BBLs	Diff.	Diff.													
11/21 2030	60	680		202	76	486.0	486.0	1747	0	100	100	431.6	TRACE	54.4			20,000		1.500	81961	3.8	5.6	77	.573	1744	353.3	--	1.0		
2100	60	680		202	76	522.0	522.0	1728	0	100	100	467.6	TRACE	54.4	C02 H2S	500 0	PPM PPM	20,000		1.500	81961	3.8	5.7	77	.573	1775	390.3	--	1.0	
2130	60	690		202	76	556.9	556.9	1675	0	100	100	502.5	TRACE	54.4			20,000		1.750	114967	3.8	4.4	77	.573	1922	430.3	--	1.1		
2200	64	700		202	76	591.5	591.5	1661	0	100	100	537.1	TRACE	54.4	C02 H2S	500 0	PPM PPM	20,000		1.750	114967	3.8	4.8	77	.573	2097	473.9	--	1.3	
2300	64	710		202	76	657.7	657.7	1589	0	100	100	603.3	TRACE	54.4	C02 H2S	500 0	PPM PPM	20,000		1.750	114967	3.8	5.0	77	.573	2184	564.9	--	1.4	
2400	64	700		208	76	720.4	720.4	1505	0	100	100	666.0	TRACE	54.4	C02 H2S	500 0	PPM PPM	22,000		1.750	115054	3.85	5.2	77	.573	2303	660.9	--	1.5	
11/22 0100	64	700		208	76	780.8	780.8	1450	0	100	100	726.4	TRACE	54.4	C02 H2S	500 0	PPM PPM	22,000		1.750	114939	3.85	5.4	77	.573	2390	760.5	--	1.6	
0200	64	710		208	76	840.0	840.0	1421	0	100	100	785.6	TRACE	54.4	C02 H2S	300 0	PPM PPM	22,000		1.750	114747	3.85	5.6	78	.575	2474	863.6	--	1.7	
0300	64	710		208	76	898.9	898.9	1414	141	90	90	838.6	10	60.3	C02 H2S	300 0	PPM PPM	22,000		1.750	114747	3.85	5.8	78	.575	2562	970.4	--	1.8	
0400	64	720		208	75	956.9	956.9	1392	139	90	90	890.8	10	66.1	C02 H2S	300 0	PPM PPM	21,000		1.750	114747	3.85	5.9	78	.575	2606	1079	--	1.9	
0500	64	720		208	75	1014.0	1014.0	1370	27	98	98	946.8	2	67.2	C02 H2S	300 0	PPM PPM	21,000		1.750	114631	3.85	6.0	79	.575	2648	1189	--	1.9	
0600	64	750		208	75	1076.0	1076.0	1488	0	100	100	1008.8	TRACE	67.2	C02 H2S	300 0	PPM PPM	21,000		1.750	114631	3.85	6.3	79	.575	2780	1305	--	1.9	
0700	64	780		208	75	1137.3	1137.3	1471	0	100	100	1070.1	TRACE	67.2	C02 H2S	300 0	PPM PPM	21,000		1.750	114516	3.85	6.6	80	.575	2910	1426	--	2.0	
0800	64	775		208	75	1199.3	1199.3	1488	0	100	100	1132.1	TRACE	67.2	C02 H2S	500 0	PPM PPM	21,000		1.750	114477	3.85	6.6	80	.575	2909	1547	--	2.0	
0900	64	780		231	75	1260.8	1260.8	1476	0	100	100	1193.6	TRACE	67.2	C02 H2S	500 0	PPM PPM	21,000		1.750	114664	4.05	6.6	80	.575	3065	1675	--	2.1	
1000	64	775		231	75	1320.4	1320.4	1430	0	100	100	1253.2	TRACE	67.2	C02 H2S	500 0	PPM PPM	21,000		1.750	114664	4.05	6.6	80	.575	3065	1803	--	2.1	
1100	64	775		231	75	1378.2	1378.2	1387	0	100	100	1311.0	TRACE	67.2	C02 H2S	500 0	PPM PPM	20,000		1.750	114664	4.05	6.6	80	.575	3065	1931	--	2.2	
1200	64	780		231	75	1434.7	1434.7	1356	0	100	100	1367.5	TRACE	67.2	C02 H2S	500 0	PPM PPM	21,000		1.750	114664	4.05	6.5	80	.575	3019	2057	--	2.2	
1300	64	780		231	75	1491.7	1491.7	1368	0	100	100	1424.5	TRACE	67.2	C02 H2S	500 0	PPM PPM	21,000		1.750	114664	4.05	6.85	80	.575	3131	2190	--	2.3	
11/23 1230	24	900		250	50	1494.0	1494.0	74	64	13	13	1424.8	87	69.2			21,000		1.750	121513	4.2	6.2	30	.574	3164	2289	49.4	43.7		
0300	24	1190		263	53	1510.7	1510.7	802	425	47	47	1432.6	53	78.1			21,000		1.750	117160	4.3	2.4	63	.574	1209	2314	2.8	1.5		
0400	42	910		256	65	1561.4	1561.4	1217	122	90	90	1478.2	10	83.2			21,000		1.750	115493	4.25	3.8	76	.574	1855	2392	15.2	1.5		



MEASUREMENT AND CONTROL ENGINEERING

WELL TEST DATA RECORD

Continuation Form
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TIME	CHOKE SIZE 64ths	PRESSURE		Trap Press.	Trap Temp.	Meter Rcg.	Cumm. Total Barrels	BPD		% BS&W	% Wtr.	Cumm. Wtr.	% Oil	Cumm. Oil	TANK MEASUREMENT			Chlorides Res. Tit. PPM - GPG	API Grav. 60/60	Orif. Size	Coeff. 24 Hr.	Static		Temp. °F.	Sp. Gr.	Gas MCFD	Cumm. Gas C.F.	GOR	GLR	REMARKS
		TBG	CSG					Net	Gross						TANK GAUGE	TOTAL BBLs	INCR. BBLs					Diff.	Diff.							
0500	48	840		244	71	1620.9	1620.9	1428	143	90	90	1531.8	10	89.1				19,000		1.750	114904	4.15	4.2	80	.574	2003	2475	14.0	1.4	
0553	48			250	71	1688.8	1688.8	1630	163	90	90	1592.9	10	95.9				19,000		1.750	114954	4.2	5.1	80	.574	2462	2566	15.7	1.6	
11/24 0130	16	1840		225	43	1688.8	1688.8	0	0	--	--	1592.9	--	95.9				--		1.750	121931	4.0	3.4	25	.574	1658	2581	--	--	
0200	16	1780		219	35	1688.8	1688.8	0	0	--	--	1592.9	--	95.9				--		1.750	122874	3.95	3.5	18	.575	1699	2616	--	--	
0300	16	1100		219	45	1694.0	1694.0	125	103	18	18	1593.8	82	100.2				18,000		1.750	118063	3.95	2.7	52	.575	1259	2668	12.2	10.1	
0400	25	840		225	54	1718.6	1718.6	590	460	22	22	1599.2	78	119.4				18,000		1.750	116349	4.0	2.1	66	.575	977	2708	2.1	1.7	
0500	28	820		202	66	1759.3	1759.3	977	147	85	85	1633.8	15	125.5				19,000		1.750	115417	3.8	3.4	72	.575	1491	2770	10.1	1.5	
0600	28	880		191	67	1799.1	1799.1	955	96	90	90	1669.6	10	129.5				19,000		1.750	115193	3.7	3.2	73	.575	1364	2827	14.2	1.4	
0609	28			202	67	1805.9	1805.9	1088	109	90	90	1675.7	10	150.2				19,000		1.750	115289	3.8	3.35	73	.575	1468	2836	13.5	1.3	
12/2 2100	51	280		213	57	1808.3	1808.3	58	58	0	0	1675.7	100	132.6				--		1.750	117611	3.9	1.2	55	.575	550	2859	9.5	9.5	
2200	51	230		191	57	1812.0	1812.0	89	85	5	5	1675.9	95	156.1				19,000	15.4	.625	13912	3.7	0.9	55	.575	46	2861	0.5	0.5	
2300	51	250		196	57	1815.2	1815.2	77	77	0	0	1675.9	100	139.3				19,000		.625	13919	3.75	0.8	55	.575	42	2863	0.5	0.5	
2400	51	220		196	57	1818.1	1818.1	70	67	5	5	1676.0	95	142.1				19,000		.625	13919	3.75	0.9	55	.575	47	2865	0.7	0.7	
12/3 0100	51	170		103	58	1825.3	1825.3	173	171	1	1	1676.1	99	149.2	CO2 H2S	100 0	PPM PPM	--		.625	13737	2.8	1.2	57	.579	46	2867	0.3	0.3	
0200	51	165		95	58	1831.0	1831.0	137	137	0	0	1676.1	100	154.9	CO2 H2S	100 0	PPM PPM	--		.625	13728	2.7	1.0	57	.579	37	2869	0.3	0.3	
0300	51	165		95	58	1837.2	1837.2	149	149	0	0	1676.1	100	161.1	CO2 H2S	100 0	PPM PPM	--		.625	13728	2.7	0.9	57	.579	33	2870	0.2	0.2	
0400	51	155		87	57	1841.2	1841.2	96	96	0	0	1676.1	100	165.1	CO2 H2S	100 0	PPM PPM	--		.625	13746	2.6	0.6	55	.579	21	2871	0.2	0.2	
0500	51	120		79	57	1842.5	1842.5	31	31	0	0	1676.1	100	166.4	CO2 H2S	100 0	PPM PPM	--		.625	13737	2.5	0.5	55	.579	17	2872	0.5	0.5	
0600	51	125		87	57	1845.8	1845.8	79	43	45	45	1677.6	55	168.2				18,000		.625	13746	2.6	0.8	55	.579	29	2873	0.7	0.4	
550	51	120		87	57	1847.1	1847.1	47	20	45	45	1678.2	55	168.9				18,000		.625	13746	2.6	0.8	55	.579	29	2873	1.5	0.8	
1315	20			79	58	1847.6	1847.6	STARTING METER READING		--	--	1678.2	--	168.9							--	--	--	--	--	--	2873	--	--	
1330	51			79	58	1847.6	1847.6	0.0	0.0	0	--	1678.2	--	168.9							--	--	--	--	--	--	2873	--	--	

GAS SALES AND PURCHASE AGREEMENT

This expresses the agreement entered into and effective this thirty-first day of August, 1981, by and between UNION OIL COMPANY OF CALIFORNIA (hereinafter referred to as "Seller"), and PACIFIC LIGHTING GAS SUPPLY COMPANY (hereinafter referred to as "Buyer").

W I T N E S S E T H :

WHEREAS, Seller presently owns an interest in certain oil and natural gas to be produced from Federal Leases #OCS-P-0216, #OCS-P-0202 and #OCS-P-0203 located on federal submerged lands offshore the State of California, such leases hereinafter called "Said Leases"; and

WHEREAS, Seller will gather natural gas produced from Said Leases to an oil and gas treating facility located onshore Ventura County, California; and

WHEREAS, Seller desires to sell to Buyer such natural gas that is surplus to Seller's own needs from time to time and Buyer desires to purchase same from Seller, subject to the terms, conditions and limitations set forth herein; and

WHEREAS, it will be necessary for Buyer to install or cause to be installed certain pipeline and related facilities to receive gas hereunder for redelivery into the facilities of its affiliate, the Southern California Gas Company ("SoCal") and SoCal intends to install certain facilities to provide additional gas service to the Southern California Edison Company ("Edison") at its Mandalay power generating plant:

NOW THEREFORE, the parties hereto agree as follows:

I.

TERM

1.1 This agreement shall be effective from the date hereof and shall continue and remain in effect for fifteen (15) years, at which time it shall terminate.

1.2 This agreement is conditioned upon Seller receiving from the Federal Energy Regulatory Commission a producer's certificate which is, in the sole discretion of Seller, acceptable and the receipt of all permits necessary for the aforementioned facilities to be installed by Buyer and SoCal on terms acceptable to Buyer.

II

DEFINITIONS

Except where the context indicates another or different meaning or intent, the following terms as used herein shall be construed to have the following meanings:

2.1 "day" shall mean the period beginning at 7:00 a.m. local time and ending at 7:00 a.m. local time the following day. Such period shall be twenty-four (24) consecutive hours except on the days when changing to or from Daylight Savings Time.

2.2 "month" shall mean a period beginning at 7:00 a.m. on the first day of a calendar month and ending at 7:00 a.m. on the first day of the next succeeding calendar month.

2.3 "cubic foot" shall mean the volume of gas which occupies one cubic foot of space measured at fourteen and seventy-three one hundredths pounds per square inch absolute (14.73 psia) at a temperature of sixty degrees (60°) Fahrenheit.

2.4 "Mcf" shall mean one thousand (1000) cubic feet of gas.

2.5 "Btu" shall mean one (1) British thermal unit, and is defined as the amount of heat required to raise the temperature of one (1) pound of water from fifty-eight and one-half degrees (58.5°) Fahrenheit to fifty-nine and one-half degrees (59.5°) Fahrenheit at a standard pressure of fourteen and seventy-three one hundredths pounds per square inch absolute (14.73 psia).

2.6 "decatherm" shall mean one million (1,000,000) Btu's.

2.7 "heating value" shall mean the gross heating value of waterfree gas determined as the quantity of heat in Btu's liberated by the complete combustion, at constant pressure, of one (1) cubic foot of gas with air at a temperature of sixty degrees (60°) Fahrenheit, and at an absolute pressure equivalent to thirty (30) inches of mercury at thirty-two degrees (32°) Fahrenheit and shall include the heat of condensation of the water formed by combustion.

2.8 "FO Indicator" shall mean that value calculated from the number six (6) fuel oil cost as reported by Southern California Edison Company and San Diego Gas and Electric Company on the Federal Energy Regulatory Commission's Form No. 423 (Monthly Report of Cost and Quality of Fuels for Electric Plants) as converted using the Btu content of such oil to obtain cents per decatherm. The cents per

decatherm for each applicable cost listed in Column eleven (11) of Form No. 423 will be weighted by the oil volume associated with that cost, shown in Column seven (7) of Form No. 423, in order to calculate the FO Indicator as the weighted average cost on a monthly basis in cents per decatherm.

III

DELIVERY CONDITIONS

3.1 Effective with the completion and testing of all pipelines and facilities required hereunder, Seller shall commence delivery of and sell and Buyer agrees to take delivery of and purchase on a daily basis all gas available from Seller in excess of Seller's current requirements up to a maximum of fifteen thousand (15,000) Mcf per day or such greater volumes as Buyer is able to take into its facilities, subject to the following:

(a) In order to effectuate the earliest possible delivery and receipt of gas hereunder Buyer intends to install, or cause to be installed, the necessary facilities to take such gas in two phases: The first phase to consist of a pipeline between the point of delivery hereunder and a point within or in close proximity to Edison's Mandalay plant where SoCal will provide Edison with gas service; the second phase to consist of a pipeline and related facilities, including compression necessary to connect with existing facilities of SoCal.

(b) Buyer will use its best efforts to complete the first phase so that delivery may be commenced hereunder by November 1, 1981 and to complete the second phase by January 1, 1982. Until completion of the second phase, Buyer's obligation to take and purchase gas hereunder shall be limited to those volumes Edison is willing and able to purchase from SoCal at its Mandalay plant.

3.2 It is recognized that Seller's delivery rate will vary or may change from time to time and Seller will inform Buyer within a reasonable time prior to any significant change in delivery rate that Seller has planned or has knowledge of.

3.3 For gas sold by Seller to Buyer hereunder the delivery point shall be a mutually agreed point at Seller's onshore treating facility.

3.4 Seller shall deliver gas to Buyer at the delivery point at the pressure existing in Buyer's pipeline up to a maximum of seventy-five (75) pounds per square inch; provided, however, if Edison is unable to accept such gas or if SoCal has a special need in their higher pressure distribution system, Seller will deliver the gas at sufficient pressure, up to a maximum of two hundred (200) pounds per square inch, so that Buyer using a compression ratio of three to one (3:1) can deliver such gas at the pressure required by SoCal. Buyer will inform Seller within a reasonable time prior to any significant changes in delivery pressure that Buyer has knowledge of.

3.5 Title to and ownership of gas shall pass to and absolutely vest in Buyer at the point of delivery and the risk of loss shall follow title.

IV

PRICE

4.1 (a) Subject to the other provisions hereof, Buyer shall pay Seller monthly for each decatherm delivered hereunder, a price, rounded to the nearest one tenth (0.1) of a cent, equal to the highest of the following prices:

- (i) Eighty-five percent (85%) of the FO Indicator for that month.
- (ii) The average of the two highest prices being paid in a first sale for gas (except under Buyer's so-called "Long Term Border Price" agreements or the ARCO Oil and Gas Company sale to Edison at its Mandalay power generating plant) by any company, except Seller or its majority owned subsidiaries but including Buyer and its affiliates, purchasing gas in the "Santa Barbara Channel Area", as shown within the dashed line on Exhibit A, attached hereto and made a part hereof. Such price shall be appropriately adjusted to reflect delivery conditions and Seller's point of delivery to Buyer's onshore pipeline system or the pipeline system of Buyer's affiliate. If Buyer and Seller are unable to agree upon the amount of such

price adjustment, then either party may request arbitration and said adjustment shall be determined by arbitration in accordance with the provisions of Article XII hereof.

(iii) Where neither (i) nor (ii) above is applicable or allowable, five dollars (\$5.00) per decatherm. Commencing on July 1, 1981, and on the first day of each succeeding calendar quarter during the term or any extensions thereof, of this agreement, the price under this subparagraph (iii) shall be increased by an amount equal to one and one-half percent (1 1/2%) above the price then in effect.

(b) The FO Indicator for each month shall be calculated using the data recorded for that month. It is recognized there may be a delay in obtaining the data for the computation of the current month's FO Indicator. Therefore, until the data has been obtained and the FO Indicator has been determined for the current month, Buyer shall pay Seller at a price equal to eighty-five percent (85%) of the most recently determined FO Indicator. When the FO Indicator for such month is determined, as herein provided, Seller will adjust the current month's invoice to effect a retroactive price adjustment equal to the difference, if any, in the price previously paid for gas for such month and the price payable based upon the then determined FO Indicator for such month. Seller shall assemble the data, make the determination, and advise Buyer of each month's FO Indicator

not later than fifteen (15) days following the receipt by Seller of the data required for such determination. All data used in making such determination shall be available to Buyer, upon Buyer's request. If in any month there is no number six (6) fuel oil used by either of the companies listed in the definition of FO Indicator under Section 2.8 the price for the latest month where number six (6) fuel oil was used shall be the price for such month, as adjusted for the delay in data as provided in this Subsection 4.1(b).

If required data for the determination of the FO Indicator ceases to be published, Buyer and Seller shall choose by mutual agreement a new index or new indices which most nearly approximates the prior index in terms of content and operation. In the event the parties are unable to so agree, then either party may request that a new index or indices be determined by arbitration and said new index shall be determined by arbitration in accordance with the provisions of Article XII hereof.

(c) The price of all or a part of the gas sold hereunder may be subject to a maximum lawful price under the Natural Gas Policy Act of 1978 or under amendatory or superceding laws (the "Act"). In such event, and for so long as the Act so controls the price of all or a portion of the gas sold hereunder, the price paid for such controlled portion shall be the maximum lawful price, plus all escalations and allowances permitted under the Act.

In the event any gas sold hereunder qualifies for incentive or adjusted price treatment under Section 107 of the Act, Buyer agrees

to purchase such gas at the maximum prices allowed under the incentive pricing system established by the Federal Energy Regulatory Commission or other governmental entity under the authority granted by said Section 107 of the Act.

(d) If at any time when maximum lawful prices are being paid under Subsection 4.1(c) above, the Federal Energy Regulatory Commission, or any successor governmental authority, including the U.S. Congress, or any other governmental authority having jurisdiction over the sales price hereunder shall permit, authorize or prescribe, or allow to be collected, even though subject to refund, a higher applicable price for the purchase of gas to be delivered hereunder, or applicable to other similar gas in the same area, then the price to be paid by Buyer to Seller for gas sold under the provisions of this Agreement shall be increased, as of the date such higher price is effective, to equal such higher price, including all subsequent price adjustments authorized, prescribed or allowed by such authority.

(e) The production-related amounts, allocations, costs, or add-ons assigned or designated to be collected by Seller by the Federal Energy Regulatory Commission or any other government, regulatory, administrative, legislative, executive agency or body, authorize to so establish relevant costs, allowances and add-ons shall be in addition to the maximum lawful price provided under Subsections 4.1(c) or (d) herein. These allowances, allocations and add-ons for production related costs shall include but not be limited to costs incurred for compression and gathering, established pursuant to Section 110 of the Act or any subsequent or additional enabling law, regulation,

order or similar authority, as well as all price adjustments deemed just and reasonable, established pursuant to the Act or any subsequent or additional enabling law, regulation, order or similar authority. All applicable allowances and adjustments as stipulated above shall be payable as of the effective date of the law, regulation or order establishing the allowance.

(f) Anything in Subsections 4.1(c), (d) and (e) notwithstanding, Buyer and Seller each reserve the right, at its option, to intervene in any area, national or other rate proceeding held to give consideration to any rate, price or allowance that may be applicable to the gas sold hereunder, to fully participate in any such proceeding and to seek relief therefrom in any regulatory agency or court having jurisdiction.

(g) If at any time, when the gas committed under the Agreement is not subject to regulation and a maximum lawful price, Buyer determines in good faith using prudent business judgment that the price payable for gas under Subsection 4.1(a) hereunder renders such gas unmarketable in the market area of Buyer or SoCal, then Buyer may notify Seller in writing of such determination and stipulate the maximum price payable by Buyer hereunder, called the "Alternate Price", which would allow such gas to be marketed by Buyer or SoCal. Such Alternate Price shall apply to the continued sale and purchase of such gas by Buyer hereunder for one year commencing on the date Buyer's notice of such alternate price was received by Seller. Buyer will provide to Seller, prior to the time such notice is given, any data,

information and analysis used by Buyer to determine such Alternate Price.

If the Alternate Price stipulated in Buyer's notice is not acceptable to Seller, Seller shall have the right at any time, within a period of one hundred eighty (180) days following receipt of Buyer's notice, to terminate this Agreement by giving Buyer thirty (30) days prior written notice and deliveries of gas hereunder shall cease upon such termination date. In the event the Agreement is so terminated by Seller, Buyer shall make payment to Seller for all gas delivered during the period from receipt of Buyer's notification until the effective termination date at the Alternate Price. Buyer shall apply for and support any authorization or abandonment procedures that may be necessary for the release of gas sales under this agreement.

In the event Seller does not terminate this Agreement as provided herein within said one hundred eighty (180) day period, this Agreement shall continue and remain in full force and effect with all the terms hereof except that the price payable hereunder shall be the Alternate Price during the one year alternate price period, whereupon the price will again be as provided under this Article IV.

V

TAXES

5.1 In the event any taxes are lawfully imposed on and paid by Seller with respect to the gas sold to Buyer, Buyer shall reimburse Seller a sum sufficient to cover one hundred percent (100%)

of any such taxes paid by Seller irrespective of the mode of imposition. As used herein the term "taxes" shall mean (1) any production-related tax (other than income, sales, real property, capital stock, or franchise taxes) or (2) similar charges now and hereafter levied, assessed or made by any governmental authority on the gas itself or on the act, right or privilege of production, severance, gathering, transportation or delivery of gas which is measured by the volume, value, or sales price to Buyer of the gas in question; provided, however, that Buyer's obligation to reimburse Seller for such taxes is subject to the ability of Buyer or its affiliates to recover tax reimbursement costs in their rates in any contract entered into by Buyer or its affiliates after January 1, 1981.

VI

QUALITY

6.1 All gas delivered hereunder shall be free of sand, water, and liquid hydrocarbons, shall have a minimum heating value of eight hundred fifty (850) Btu's per cubic foot, shall not contain more than three tenths (0.3) grains per one hundred (100) cubic feet of hydrogen sulfide and shall not have a water dew-point of more than forty-five degrees (45°) Fahrenheit at the delivery pressure provided herein; provided, however, if Edison is unable to accept redelivery of the gas hereunder by SoCal the following specifications shall apply for gas delivered to Buyer for SoCal's higher pressure distribution system:

(a) Have a total heating value of not less than one thousand (1000) Btu's per cubic foot nor more than twelve hundred fifty (1250) Btu's per cubic foot.

(b) Not contain more than three-tenths (0.3) grain of hydrogen sulfide per one hundred (100) cubic feet.

(c) Not contain more than three-tenths (0.3) grain per one hundred (100) cubic feet of organic sulfur.

(d) Not contain more than one (1.0) grain per one hundred (100) cubic feet total of all sulfur compounds.

(e) Not contain more than three percent (3%) by volume of carbon dioxide, and not more than four percent (4%) by volume total nitrogen and carbon dioxide; provided, however, if the heating value of the gas is one thousand fifty (1050) Btu's or over the volume of carbon dioxide may be four percent (4%) and the total volume of nitrogen and carbon dioxide may be six percent (6%).

(f) Be as free of oxygen as Seller can keep it through the exercise of all reasonable precautions, and shall not in any event contain more than two-tenths of one percent (0.2%) by volume of oxygen.

(g) Not exceed one hundred degrees (100°) Fahrenheit nor be less than forty degrees (40°) Fahrenheit in temperature at the point of delivery.

(h) Not have a water dew-point of more than forty-five degrees (45°) Fahrenheit at the delivery pressure provided herein.

(i) Not contain solid matter, sand, dust, gums, liquid hydrocarbons or other liquid or solid impurities which might be injurious to Buyer's pipeline.

(j) Buyer shall not be obligated to accept delivery of any gas under Subsections 6.1(a) through (i) hereunder which does not meet the specifications set out above, but may do so without prejudice to its rights hereunder.

VII

RESERVATIONS OF SELLER

7.1 Seller reserves the following prior rights and sufficient gas to satisfy such rights:

(a) To operate its property free from any control by Buyer in such a manner as Seller, in its sole discretion, may deem advisable.

(b) To use gas produced from Said Leases, for repressuring, pressure maintenance or cycling operations.

(c) To process or cause to be processed all or any portion of the gas, before delivery to Buyer hereunder, for the extraction of liquid hydrocarbons and any other constituents of the raw gas stream.

(d) To use gas produced from Said Leases which Seller shall from time to time require and take for its own use, inclusive of but not limited to, use by Seller's subsidiaries and affiliates and in joint operations in which Seller has an interest with others.

(e) To unitize its leases with other properties of Seller and of others in the same field.

(f) To deliver to Seller's lessor such quantities of Seller's gas as the lessor may be entitled and requests to take in kind pursuant to the provisions of Seller's leases.

VIII

MEASUREMENT

8.1 Buyer shall install and maintain at its own cost and expense a suitable meter for the purpose of measuring the volume of all gas delivered by Seller to Buyer hereunder.

8.2 All measurements of gas shall be corrected from the observed pressures and temperatures to a pressure of fourteen and seventy-three one-hundredths pounds per square inch absolute (14.73 psia), and a temperature of sixty degrees (60°) Fahrenheit, and shall be computed in accordance with the Pacific Energy Association's Bulletin's No. TS-461, No. TS-561 and TS-661-77 as revised from time to time.

8.3 Buyer shall calibrate such meter each month and Seller may have its representative present at such calibration. In the event a calibration of the meter does not register within one percent (1%) accuracy, the amount of gas measured by such meter shall be properly corrected, but no correction shall be made for any period preceding the current calendar month. Seller shall have the right to request calibration of such meter at any reasonable time; however, if any such requested calibration shows that the meter was registering within one percent (1%) accuracy, then the cost of such requested calibration shall be borne by Seller.

8.4 Buyer shall take spot samples and determine the heating value of all gas delivered in accordance with generally accepted practices in the industry. Seller shall have the right to request

Buyer to take additional samples for redetermination of such heating value at any reasonable time. However, if any such requested redetermination shows that the heating value so determined is within one percent (1%) of the heating value then being reported by Buyer, then the cost of such requested sampling and redetermination of heating value shall be borne by Seller.

IX

PAYMENT

9.1 On or before the fifth (5th) working day of each month Buyer will furnish Seller a statement for the preceding month showing the volume of gas, heating value and decatherms delivered hereunder. On or before the tenth (10th) day of the month, Seller shall render an invoice to Buyer showing the amount due therefore. Payment by Buyer to Seller for the invoiced amount shall be made by deposit in the United States Post Office to arrive at Seller's office by the twentieth (20th) day of such month, or as to invoices rendered after the tenth (10th) day of such month, within ten (10) days.

X

EXCESS ROYALTIES

10.1 Buyer agrees to reimburse Seller for all "excess royalty payments" which Seller shall be lawfully required to pay under the terms of Said Leases with respect to gas sold and deliv-

ered to Buyer hereunder. The term "excess royalty payments" as used herein is defined as the amount by which actual payments by Seller to the United States government or other government authority as Lessor of the respective oil and gas leases subject to this Agreement, exceed the amount such payment would have been if the royalty value thereunder had been calculated upon the price received by Seller as provided for in Article IV of this Agreement.

XI

NON-UTILITY STATUS

11.1 Seller's agreement to sell gas upon the terms and conditions herein contained shall be its sole undertaking and it is mutually understood that Seller is not a public utility and that no lands or properties in which it may have an interest of any nature, is or are sold or offered for sale by Seller to the public or dedicated to public uses or purposes. Neither this Agreement nor service by Seller shall be deemed to create, by implication or otherwise, any obligation or duty to continue or to reinstate gas service upon the expiration of this Agreement.

11.2 If any court or regulatory body enters a final and legally binding order that Seller as a result of the sale of gas hereunder, is a public utility or subject to regulation as such,

or that such regulatory body may prevent Buyer from complying with this Agreement in any respect then by thirty (30) days written notice to Buyer from Seller this Agreement may be terminated by Seller.

XII

ARBITRATION

Any controversy arising under those terms providing for arbitration in Section 4.1 of this Agreement which is not resolved by mutual agreement of the parties shall be determined by a board of arbitration upon notice of submission given either by Buyer or Seller, which request shall also name one (1) arbitrator. The party receiving such notice, shall, within thirty (30) days thereafter, by notice to the other, name the second arbitrator, or failing to do so, the party giving notice of submission shall name the second. The two (2) arbitrators so appointed shall name the third, or failing to do so within thirty (30) days, the third arbitrator shall be appointed by the person who is at the time the Senior (in service) Judge of the Federal District Court having jurisdiction over the area in which the property covered by this Agreement is situated.

The arbitrators selected to act hereunder shall be qualified by education, experience and training to pass upon the issue in question.

The arbitrators so appointed shall promptly hear and determine (after giving the parties due notice of hearing and a reasonable opportunity to be heard) the question submitted and shall render

their decision within sixty (60) days after appointment of the third arbitrator. If within said period a decision is not rendered by a majority of the board, Buyer and Seller shall name new arbitrators who shall act hereunder in like manner as if none had been previously named.

The decision of a majority of the arbitrators, made in writing, shall be final and binding upon the parties hereto as to the questions submitted, and the parties will abide by and comply with such decision. Each party shall bear the expenses of its arbitrator, and the expenses of the third arbitrator shall be borne equally by Buyer and Seller, except that each party shall bear the compensation and expense of its counsel, witnesses and employees.

XIII

INDEMNIFICATION

13.1 Each of the parties hereto indemnifies and saves harmless the other party from any and all liability and expense on account of all damages, claims or actions, including damages to deaths of persons, arising from any act or accident, including an omission to act, in connection with the installation, maintenance and operation of the property, equipment, and facilities of the indemnifying party.

XIV

EXCUSABLE NON-PERFORMANCE

14.1 Except for the payment hereunder of money due, the non-performance of any of the obligations of the parties hereto shall be deemed excused if and to the extent that such nonperformance is caused by any act of God, unavoidable accident, labor disturbances, interference by governmental authority or any other cause whether or not similar to the foregoing, beyond the reasonable control of the party so unable to perform.

XV

ASSIGNMENT

15.1 All of the provisions, covenants, agreements and stipulations contained herein by which either of the parties hereto is bound shall in like manner be binding upon the successors and assigns of the parties so bound, and those which are for the benefit of either of the parties hereto shall in like manner inure to the benefit of the successors and assigns of the parties so benefited; provided, however, that neither party hereto shall assign this agreement nor any interest herein without first obtaining the written consent of the other party hereto, which consent shall not be unreasonably withheld.

XVI

CONFORMITY WITH LAWS

Both parties shall observe and comply with all applicable laws, rules, orders, ordinances, codes and regulations of governmental agencies, including federal, state, municipal and local government and judicial bodies, having jurisdiction over this Agreement.

XVII

NOTICES

17.1 Any notice to be given hereunder by either Buyer or Seller to the other shall be deemed received by the other on the second business day following the date of deposit thereof in a United States Post Office enclosed in a sealed envelope, with requisite postage thereon respectively addressed as follows:

If to Buyer:

Pacific Lighting Gas Supply Company
Attn: Contract Administrator
720 W. Eight Street
Los Angeles, California 90017

If to Seller:

Union Oil Company of California
Attn: Regional Gas Manager
Western Region
P. O. Box 7600
Los Angeles, California 90051

unless and until either party shall change the place of notice by written communication sent to the other by mail.

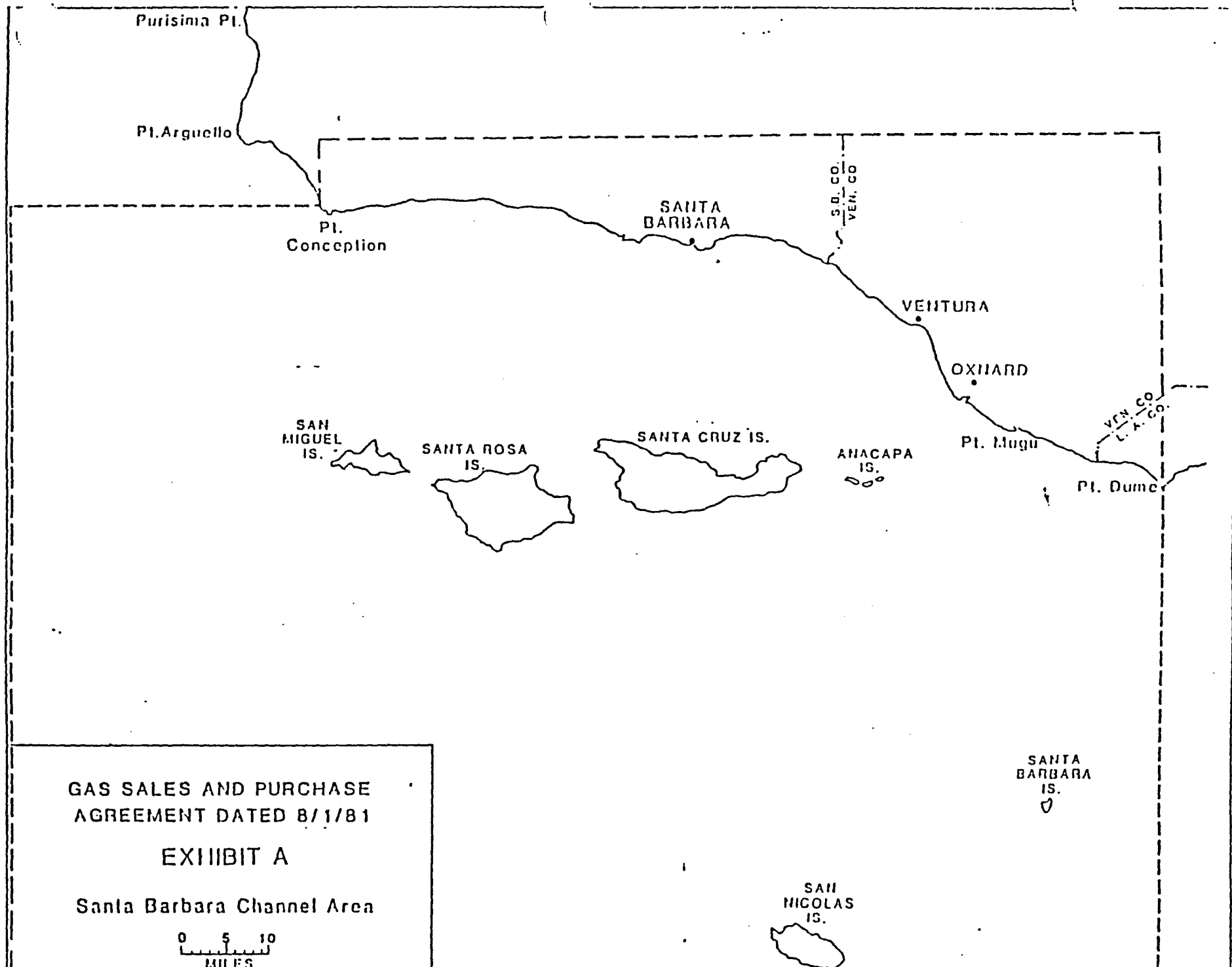
IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date first hereinabove written.

UNION OIL COMPANY OF CALIFORNIA

By Charles M. Schwartz
Charles M. Schwartz, Vice President

PACIFIC LIGHTING GAS SUPPLY COMPANY

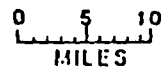
By William H. Owens
William H. Owens, Vice President



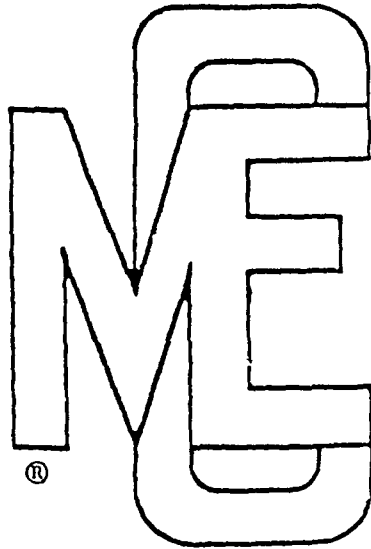
GAS SALES AND PURCHASE
AGREEMENT DATED 8/1/81

EXHIBIT A

Santa Barbara Channel Area



MCE TEST REPORT



COMPANY: Union Oil

LOCATION: Giant Beaver Prospect

WELL NO.: OCS-P-0203 #6 DST 2A

DATE: January 15 thru January 16, 1985

MEASUREMENT AND CONTROL ENGINEERING

P. O. Box 987 Ventura, California 93002

Phone: (805) 653-7282

Bakersfield, Calif. (805) 327-2394



MEASUREMENT AND CONTROL ENGINEERING

Date: January 15 thru January 16, 1985
 Company: Union Oil
 Location: Giant Beaver Prospect
 Well No.: DCS-P-0203 #6
 Test No.: DST 2A
 MCE Technician: R. Hilgerman, R. Walker, B. Newham, & S. Remo

WELL TEST DATA RECORD

TIME	CHOKE SIZE 64ths	PRESSURE		Trap Press.	Trap Temp.	Meter Rdg.	Cummul. Total Barrels	BPD Gross	BPD Net	% BS&W	% Wtr.	Cumm. Wtr.	% OH	Cumm. Oil	TANK MEASUREMENT			Chlorides Res. Tit. PPM, GPG	API Grav. 60/60	Drift. Size	Coeff. 24 Hr.	Static	DIL.	Temp. °F.	Sp. Gr.	Gas MCFD	Cumm. Gas C.F.	GOR	GLR	REMARKS
		TANK GAUGE	TOTAL BBLs												INCR. BBLs															
1-15-85 0900	12	1517	1497	61											1 1/4"	74.4	Start on board STBD			1.250	21234	3.9	5.3	82	.647	439			0853 Gas to surface T8G @ 1515 CSG @ 1527	
	12	1517	1427	61															1.250	20497	3.9	5.4	100	.572	432					
0927	—																												0927 Shut in at surface 0934 Opened on 16/64" choke	
0945	16	1472	1417	171															1.750	42792	6.1	7.7	107	.654	2010			50 ppm H ₂ S		
0949	16	1467	1426																									Close BHTT Shut in at surf.		
1152	16	1453																										Opened at surface 16/64"		
1158	16	1196																										Open BHTT		
215	16	1423		203															1.750	42132	6.6	5.6	122	.652	1557	51343		Increase choke to 24/64" 180 ppm H ₂ S		
1230	24	1340	1576	210															2.125	68448	6.7	7.9	90	.654	3623	89083		Increase choke to 32/64" 700 ppm H ₂ S		
1245	32	1160	1517	267															2.250	82454	7.5	9.2	50	.654	5589	145343		60,000 ppm CO ₂ 300 ppm H ₂ S		
1300	32	1159	1425	305															2.250	86100	8.0	9.2	37	.654	6337	211353		200 ppm H ₂ S		
1315	32	1164	1649	322															2.250	86266	8.2	9.0	37	.654	6356	277666		38,000 ppm CO ₂ 250 ppm H ₂ S		
1330	32	1131	1551	322															2.250	86174	8.2	8.8	38	.654	6218	342437		300 ppm H ₂ S		
1345	32	1132	1490	322															2.250	86004	8.2	8.8	40	.654	6206	407083		70,000 ppm CO ₂ 450 ppm H ₂ S		
1400	32	1127	1398	322															2.250	86004	8.2	8.7	40	.654	6136	47100		750 ppm H ₂ S		
1415	32	1141	1552	322															2.250	86004	8.2	8.6	40	.654	6055	534177		825 ppm H ₂ S		
1445	12	1529	1568	313															1.250	21721	8.1	4.3	75	.654	757	545212		Decrease choke to 12/64" @ 1419 800 ppm H ₂ S		
1500	12	1528	1436	313															1.250	21317	8.1	3.3	90	.654	570	551150		700 ppm H ₂ S		
1530	12	1517	1439	297															1.250	20858	7.9	3.0	110	.654	494	551442		1000 ppm H ₂ S		
1600	12	1502	1555	297															1.250	20462	7.9	5.4	130	.654	873	529630		1555 start injection of methanol 950 ppm H ₂ S		
1630	12	1488	1612	297															1.375	25779	7.9	6.4	135	.654	1303	606776		54,000 ppm CO ₂ 900 ppm H ₂ S		
1700	12	1488	1612	297																	7.9		130							



MEASUREMENT AND CONTROL ENGINEERING

Date: January 15 and January 16, 1985
 Company: Union Oil
 Location: Giant Beaver Prospect
 Well No.: OCS-P-0203 /6
 Test No.: DST 2A
 MCE Technician: R. Hilgerman, R. Walker, B. Neunham, & S. Romp

WELL TEST DATA RECORD

Page 3 of 3

TIME	CHOKE SIZE 64ths	PRESSURE		Trap Press. Trap Temp.	Meter Rdg.	Cummul. Total Barrels	BPD Gross	BPD Net	% BS&W	% Wtr.	Cumul. Wtr.	% Oil	Cumul. Oil	TANK MEASUREMENT			Chlorides Res. - TH - PPM - GPG	API Grav. 60/60	Orif. Size	Coeff. 24 Hr.	Static		Temp. °F.	Sp. Gr.	Gas MCFD	Cumul. Gas C.F.	GOR	GLR	REMARKS	
		TANK GAUGE	TOTAL BBLs											INCR. BBLs	Diff.	Diff.														
0400	24	1229	1432	293														2.250	73133		7.85	6.9	48	.654	3561	1986724			Increased to 32/64" choke 1600 ppm H ₂ S	
0430	32	1129	1529	289														2.250	85505		7.8	8.2	42	.654	5469	2100662			1600 ppm H ₂ S	
0500	32	1130	1428	267														2.250	85673		7.5	8.85	40	.654	5914	2223870			1600 ppm H ₂ S	
0530	32	1132	1381	286														2.250	85673		7.75	8.9	40	.654	5909	2346974			1600 ppm H ₂ S	
0600	32	1140	1484	286														2.250	85757		7.75	8.95	39	.654	5948	2470891			1700 ppm H ₂ S	
0630	32	1135	1534	286	3.4	3.4			100		3.4	0	0					2.250	85757		7.75	8.95	39	.654	5948	2594808			1600 ppm H ₂ S	
0700	32	1136	1626	282	3.9	3.9	24	0	100		3.9	0	0			82,000		2.250	85757		7.7	8.95	39	.654	5910	2717933	0	246250	1700 ppm H ₂ S	
0730	32	1133	1397	282	4.5	4.5	29	0	100		4.5	0	0					2.250	85757		7.7	8.95	39	.654	5910	2841058	0	203793	70000 ppm CO ₂ 2000 ppm H ₂ S	
0800	32	1139	1429	282	4.9	4.9	19	0	100		4.9	0	0			79,000		2.250	85757		7.7	8.95	39	.654	5910	2964183	0	311053	1800 ppm H ₂ S	
0830	32	1141	1500	282	5.6	5.6	34	0	100		5.6	0	0					2.250	85757		7.7	.654	39	.654	5910	3087038	0	173824	1600 ppm H ₂ S	
0900	32	1143	1433	282	6.6	6.6	4.8	0	100		6.6	0	0			86,000		2.250	85757		7.7	8.9	38	.654	5677	3209746	0	122438	1400 ppm H ₂ S	
0930	32	1146	1365	282	7.6	7.6	48	0	100		7.6	0	0					2.250	85851		7.7	8.85	37	.654	5850	331621	0	121875		
1000	32	1143	1458	282	8.3	8.3	34	0	100		8.3	0	0					2.250	85851		7.7	8.85	37	.654	5850	3453496	0	172058	1600 ppm H ₂ S	
																														• 1002 close BHTT

UNOCAL 76

G. LEYENDECKER
MAR - 9 1989

March 3, 1989

TO: Greg Leyendecker
FROM: Jill E. Ryer-Powder *JEP*
SUBJECT: Hydrogen Sulfide

This memo is written in response to a request for information regarding hydrogen sulfide.

The following information concerns the most current standards for air levels in the workplace.

ACGIH

- TLV-TWA = 10ppm
- TLV-STEL = 15ppm

OSHA PEL

- Acceptable ceiling concentration = 20ppm
- Acceptable maximum peak above the acceptable ceiling concentration for an 8 hour shift = 50ppm for 10 minutes once only if no other measureable exposure occurs.

NIOSH

- 10ppm 10 minute ceiling

The IDLH (Immediately Dangerous to Life and Health) (This level represents the maximum concentration from which one can escape within 30 minutes any escape impairing symptoms or any irreversible health effects) is equal to 300ppm.