

G. K. Ripley
(Name)

TECHNICAL ASSISTANT
(Title)

SUBSCRIBED AND SWORN TO before me this 22nd day of October, 1997



Maggie M. Bermea
Notary Public

My Commission expires: July 30, 2001

FOR OIL CONSERVATION DIVISION USE ONLY:

VIII. CERTIFICATION OF APPROVAL:

This Application for Qualification of Well Workover Project is hereby approved and the above referenced Well is designated as a Well Workover Project pursuant to the "Natural Gas and Crude Oil Production Incentive Act" (Laws 1995, Chapter 15, Sections 1 through 8). The Oil Conservation Division hereby verifies the Production Projection for the Well Workover Project attached to this application. By copy of this Application and Certification of Approval, the Division notifies the Secretary of the Taxation and Revenue Department of this Approval and certifies that this Well Workover Project has been completed as of 11-25-96 19 .

[Signature]
District Supervisor, District 1
Oil Conservation Division

Date: 10/23/97

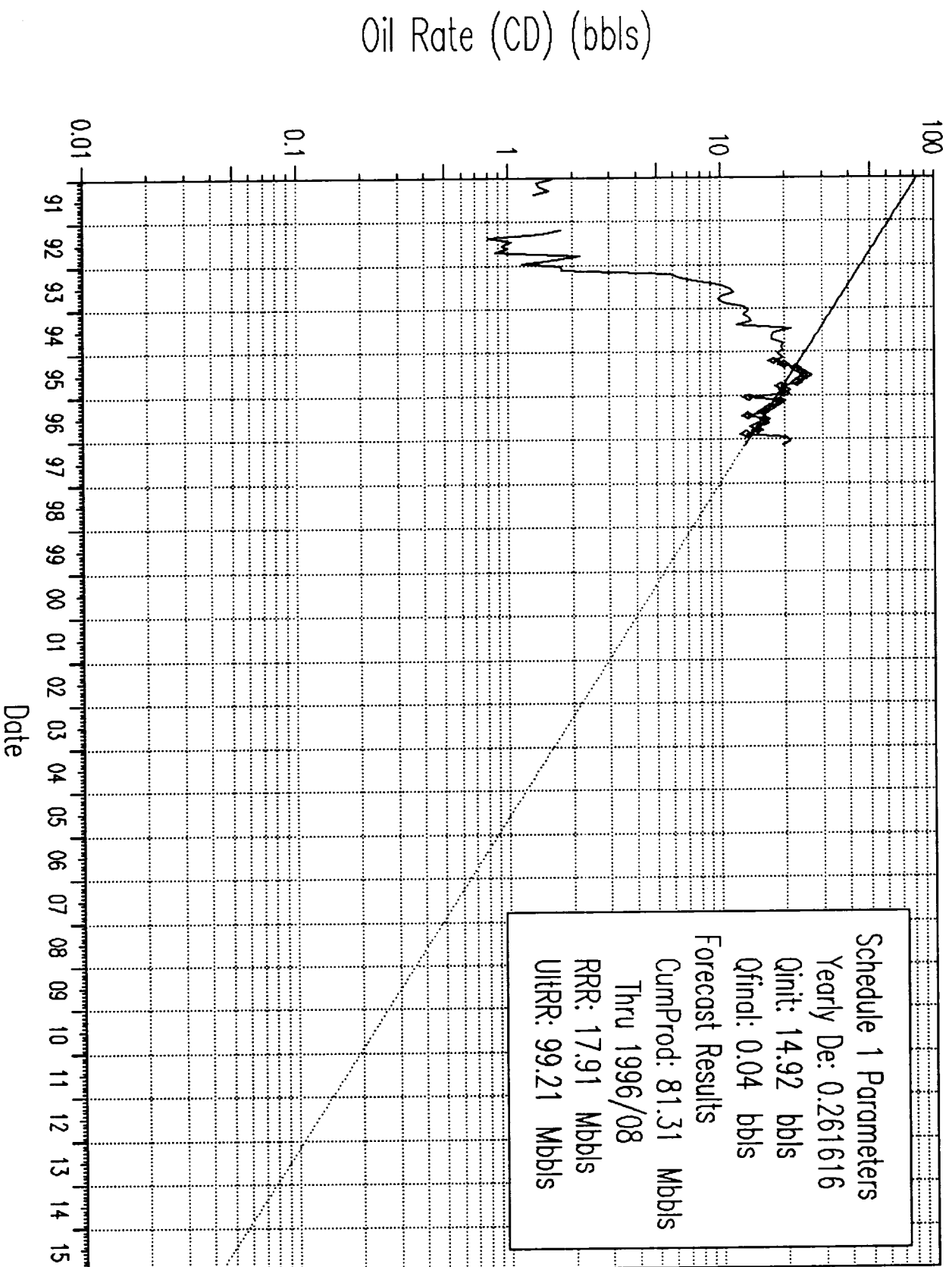
IX. DATE OF NOTIFICATION TO THE SECRETARY OF THE TAXATION AND REVENUE DEPARTMENT.

DATE: _____

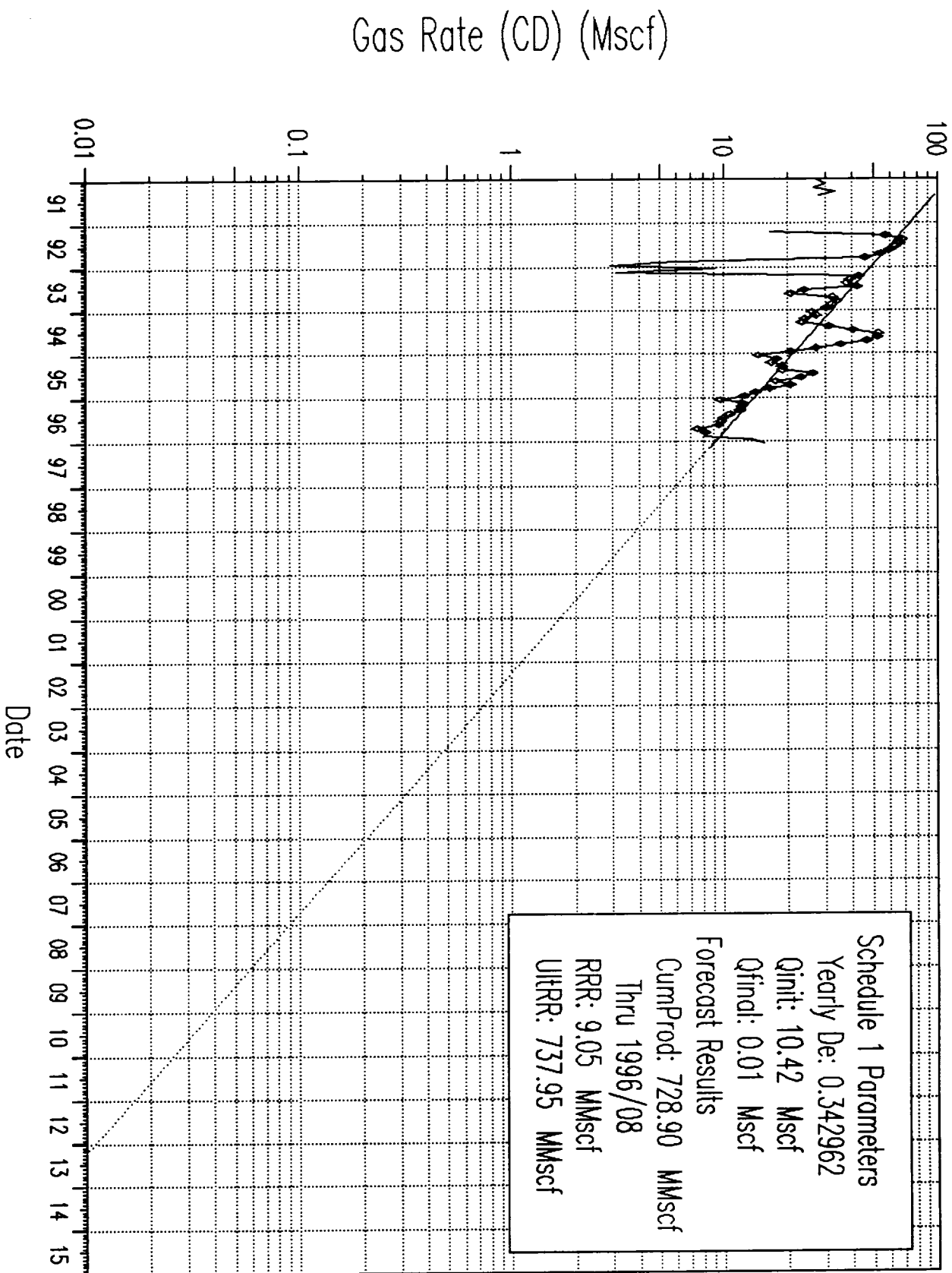
PROCEDURE TO ADD PERFORATIONS AND ACIDIZE:

1. MIRU PU. RU BOPE. GIH w/ tbg and tag for fill. Report results. POH w/ tbg.
 2. RU perf company. Tie into Welex Acoustic Velocity Log dated 1-31-66 (Gulf W.A. Ramsey-NCT B #4). Selectively perforate the following intervals with 4, deep penetrating JHPF @ 90 degree phasing:

3654'-3658'	Zone 1	3797'-3834'	Zones 4&5
3690'-3693'	Zone 2	3848'-3855'	Zone 5
3751'-3763'	Zone 3		
 3. RIH w/ 4 1/2" treating packer and set @ +/-3600'. Drop standing valve, open bypass, and pickle tubing with 500 gal 15% HCl* by pumping down @ 1/2 bpm displace out of tubing and reverse out @ 1/2 bpm. The slower the better. Record iron ppm at first, middle, and end of pickle acid.
 4. Acidize perfs w/ 5000 gals 15% Resisol II Plus** viscosified acid containing 20% toluene. Use the following pumping schedule @ 2-4 bpm max treating pressure of 1500 psi:
 - A. Drop 250# Trimix salt in 10 bbls gelled brine water***
 - B. Pump 500 gals Resisol II Plus**
 - C. Drop 500# Trimix salt in 10 bbls gelled brine water***
 - D. Repeat step B and C, adjusting block as necessary
 - E. Pump 1000 gals Resisol II Plus**
 - F. Drop 500# Trimix salt in 10 bbls gelled brine water***
 - G. Repeat step E and F, adjusting block as necessary
 - H. Pump 2000 gals Resisol II Plus**
 - I. Flush to top perf
 6. Shut well in and record ISIP, 15 min, & 30 min SI pressures.
 7. RIH and knock salt off. Report any excess drag indicating salt block locations.
 8. SI for 3 hrs, POOH, and run production equipment per field operations design. Hang well on.
 9. RD PU. Clean and clear location. Turn well over to production.
 10. Test well and report results to Midland office.
- * Pickle acid to contain 1 gal/1000 CI-25
- ** Resisol II Plus -- Iron control system to follow tapered concentration as follows:
Lead 2000 gal = 3 gal/1000 FE270 & 1 gal/1000 FE271
Mid 1500 gal = 1.5 gal/1000 FE270 & 1 gal/1000 FE271
Tail 2500 gal = 0.5 gal/1000 FE270 & 1 gal/1000 FE271
- ***All flush water and diverter GBW stages to contain appropriate dc-emulsifiers (NE agents = 1 gal/1000 NE-13)



LEASE : ARROWHEAD GRAYBURG UNIT 107
BEATAREA : RICHARD LOCKE



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DATE	Oil Vol Prod bbls	FORECASTED OIL VOLUME bbls	Gas Vol Prod Mscf	FORECASTED GAS VOLUME Mscf
9401	421	0.00	811	0.00
9402	360	0.00	765	0.00
9403	421	0.00	752	0.00
9404	421	0.00	706	0.00
9405	370	0.00	973	0.00
9406	647	0.00	1222	0.00
9407	548	0.00	1657	0.00
9408	541	0.00	1644	0.00
9409	523	0.00	1417	0.00
9410	612	0.00	1107	0.00
9411	581	0.00	821	0.00
9412	603	0.00	648	0.00
9501	576	0.00	456	0.00
9502	547	0.00	501	0.00
9503	556	0.00	524	0.00
9504	599	0.00	569	0.00
9505	704	0.00	590	0.00
9506	721	0.00	791	0.00
9507	787	0.00	721	0.00
9508	748	0.00	550	0.00
9509	690	0.00	623	0.00
9510	599	0.00	517	0.00
9511	606	0.00	427	0.00
9512	619	0.00	392	0.00
9601	424	0.00	302	0.00
9602	558	0.00	356	0.00
9603	563	0.00	380	0.00
9604	513	0.00	362	0.00
9605	497	0.00	335	0.00
9606	407	0.00	302	0.00
9607	505	0.00	305	0.00
9608	496	0.00	296	0.00
9609	442	441.99	228	307.19
9610	467	445.33	258	306.51
9611	398	420.20	244	286.42
9612	634	423.37	421	285.79
9701	658	412.81	483	275.96
9702	547	363.55	0	240.68
9703	0	392.46	0	257.30
9704	0	370.32	0	240.44
9705	0	373.11	0	239.91
9706	0	352.07	0	224.18
9707	0	354.72	0	223.69
9708	0	345.87	0	215.99
9709	0	326.36	0	201.84
9710	0	328.82	0	201.39
9711	0	310.27	0	188.19
9712	0	312.61	0	187.78
9801	0	304.81	0	181.32
9802	0	268.44	0	158.14

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DATE	Oil Vol Prod bbls	FORECASTED OIL VOLUME bbls	Gas Vol Prod Mscf	FORECASTED GAS VOLUME Mscf
9803	0	289.79	0	169.06
9804	0	273.44	0	157.98
9805	0	275.50	0	157.63
9806	0	259.96	0	147.30
9807	0	261.92	0	146.97
9808	0	255.38	0	141.92
9809	0	240.98	0	132.61
9810	0	242.80	0	132.32
9811	0	229.10	0	123.65
9812	0	230.83	0	123.38
9901	0	225.07	0	119.13
9902	0	198.21	0	103.90
9903	0	213.97	0	111.08
9904	0	201.90	0	103.80
9905	0	203.43	0	103.57
9906	0	191.95	0	96.78
9907	0	193.40	0	96.57
9908	0	188.57	0	93.24
9909	0	177.93	0	87.13
9910	0	179.28	0	86.94
9911	0	169.16	0	81.24
9912	0	170.44	0	81.06
10001	0	166.19	0	78.27
10002	0	151.58	0	70.71
10003	0	157.99	0	72.98
10004	0	149.08	0	68.20
10005	0	150.21	0	68.05
10006	0	141.73	0	63.59
10007	0	142.80	0	63.45
10008	0	139.24	0	61.27
10009	0	131.38	0	57.25
10010	0	132.38	0	57.12
10011	0	124.91	0	53.38
10012	0	125.85	0	53.26
10101	0	122.71	0	51.43
10102	0	108.07	0	44.85
10103	0	116.66	0	47.95
10104	0	110.08	0	44.81
10105	0	110.91	0	44.71
10106	0	104.65	0	41.78
10107	0	105.44	0	41.69
10108	0	102.81	0	40.25
10109	0	97.01	0	37.62
10110	0	97.74	0	37.53
10111	0	92.23	0	35.07
10112	0	92.93	0	34.99
10201	0	90.61	0	33.79
10202	0	79.80	0	29.47
10203	0	86.14	0	31.51
10204	0	81.28	0	29.44

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DATE	Oil Vol Prod bbls	FORECASTED OIL VOLUME bbls	Gas Vol Prod Mscf	FORECASTED GAS VOLUME Mscf
10205	0	81.89	0	29.38
10206	0	77.27	0	27.45
10207	0	77.86	0	27.39
10208	0	75.91	0	26.45
10209	0	71.63	0	24.71
10210	0	72.17	0	24.66
10211	0	68.10	0	23.04
10212	0	68.61	0	22.99
10301	0	66.90	0	22.20
10302	0	58.92	0	19.36
10303	0	63.60	0	20.70
10304	0	60.02	0	19.34
10305	0	60.47	0	19.30
10306	0	57.06	0	18.04
10307	0	57.49	0	18.00
10308	0	56.05	0	17.38
10309	0	52.89	0	16.24
10310	0	53.29	0	16.20
10311	0	50.28	0	15.14
10312	0	50.66	0	15.11
10401	0	49.40	0	14.59
10402	0	45.06	0	13.18
10403	0	46.96	0	13.60
10404	0	44.32	0	12.71
10405	0	44.65	0	12.68
10406	0	42.13	0	11.85
10407	0	42.45	0	11.82
10408	0	41.39	0	11.42
10409	0	39.05	0	10.67
10410	0	39.35	0	10.65
10411	0	37.13	0	9.95
10412	0	37.41	0	9.93
10501	0	36.48	0	9.58
10502	0	32.12	0	8.36
10503	0	34.68	0	8.94
10504	0	32.72	0	8.35
10505	0	32.97	0	8.33
10506	0	31.11	0	7.79
10507	0	31.34	0	7.77
10508	0	30.56	0	7.50
10509	0	28.84	0	7.01
10510	0	29.05	0	6.99
10511	0	27.42	0	6.54
10512	0	27.62	0	6.52
10601	0	26.93	0	6.30
10602	0	23.72	0	5.49
10603	0	25.61	0	5.87
10604	0	24.16	0	5.49
10605	0	24.34	0	5.47
10606	0	22.97	0	5.12

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DATE	Oil Vol Prod bbls	FORECASTED OIL VOLUME bbls	Gas Vol Prod Mscf	FORECASTED GAS VOLUME Mscf
10607	0	23.14	0	5.10
10608	0	22.57	0	4.93
10609	0	21.29	0	4.61
10610	0	21.45	0	4.60
10611	0	20.24	0	4.29
10612	0	20.40	0	4.29
10701	0	19.89	0	4.14
10702	0	17.51	0	3.61
10703	0	18.91	0	3.86
10704	0	17.84	0	3.61
10705	0	17.97	0	3.60
10706	0	16.96	0	3.36
10707	0	17.09	0	3.35
10708	0	16.66	0	3.24
10709	0	15.72	0	3.03
10710	0	15.84	0	3.02
10711	0	14.95	0	2.82
10712	0	15.06	0	2.82
10801	0	14.68	0	2.72
10802	0	13.39	0	2.46
10803	0	13.96	0	2.53
10804	0	13.17	0	2.37
10805	0	13.27	0	2.36
10806	0	12.52	0	2.21
10807	0	12.62	0	2.20
10808	0	12.30	0	2.13
10809	0	11.61	0	1.99
10810	0	11.70	0	1.98
10811	0	11.04	0	1.85
10812	0	11.12	0	1.85
10901	0	10.84	0	1.79
10902	0	9.55	0	1.56
10903	0	10.31	0	1.67
10904	0	9.73	0	1.56
10905	0	9.80	0	1.55
10906	0	9.25	0	1.45
10907	0	9.32	0	1.45
10908	0	9.08	0	1.40
10909	0	8.57	0	1.31
10910	0	8.64	0	1.30
10911	0	8.15	0	1.22
10912	0	8.21	0	1.22
11001	0	8.01	0	1.17
11002	0	7.05	0	1.02
11003	0	7.61	0	1.09
11004	0	7.18	0	1.02
11005	0	7.24	0	1.02
11006	0	6.83	0	0.95
11007	0	6.88	0	0.95
11008	0	6.71	0	0.92

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DATE	Oil Vol Prod bbls	FORECASTED OIL VOLUME bbls	Gas Vol Prod Mscf	FORECASTED GAS VOLUME Mscf
11009	0	6.33	0	0.86
11010	0	6.38	0	0.86
11011	0	6.02	0	0.80
11012	0	6.06	0	0.80
11101	0	5.91	0	0.77
11102	0	5.21	0	0.67
11103	0	5.62	0	0.72
11104	0	5.30	0	0.67
11105	0	5.34	0	0.67
11106	0	5.04	0	0.63
11107	0	5.08	0	0.63
11108	0	4.95	0	0.60
11109	0	4.67	0	0.56
11110	0	4.71	0	0.56
11111	0	4.44	0	0.53
11112	0	4.48	0	0.52
11201	0	4.36	0	0.51
11202	0	3.98	0	0.46
11203	0	4.15	0	0.47
11204	0	3.92	0	0.44
11205	0	3.95	0	0.44
11206	0	3.72	0	0.41
11207	0	3.75	0	0.41
11208	0	3.66	0	0.40
11209	0	3.45	0	0.37
11210	0	3.48	0	0.37
11211	0	3.28	0	0.35
11212	0	3.31	0	0.34