

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-55

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 1-5-81			
Company Cities Service Company				To Air		JAN 16 1981	
Pool Burton Flat <i>Morcu</i>				Morrow		Unit O.C.D. ARTESIA, OFFICE	
Completion Date 1-5-81		Test Depth 11,645		Flowback P 11,330		Elevation 3223 KB	
Form or Lease Name Simpson "B" <i>Com</i>							
Csq. Size 5 1/2	Wt. 17#	d 4.892	Set At 11,645	Perforations: From 11,112 To 11,123		Well No. 1	
Tbg. Size 2 7/8	Wt. 6.5#	d 2.441	Set At 10,971	Perforations: From To		Unit Sec. Twp. Rm. G 20 21S 27E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 10,967		County Eddy	
Producing Thru Tubing		Reservoir Temp. °F 190 @ 11,118'		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
State New Mexico							
L 10971	H 10,971	G _g .5911	% CO ₂ .68	% N ₂ 1.4	% H ₂ S -0-	Prover	Meter Run 4"
						Flange	

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI							3715		Pkr.	Choke	72 hours
1.	4"	X	1.5"	500	8"	63	3427	50		6/64	1 hour
2.	4"	X	1.5"	510	12"	63	3256	56		9/64	1 hour
3.	4"	X	1.5"	520	36"	80	2787	59		12/64	1 hour
4.	4"	X	1.5"	520	59"	90	2175	61		15/64	1 hour
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Penaure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{spv}	Rate of Flow Q, Mcfd
1	10.84	64.08	513.2	.9971	1.296	1.040	933.5
2	10.84	79.23	523.2	.9971	1.296	1.041	1155.4
3	10.84	138.50	533.2	.9813	1.296	1.042	1989.5
4	10.84	177.37	533.2	.9723	1.296	1.042	2524.5
5.							

NO.	P _i	Temp. °R	T _i	Z	Gas Liquid Hydrocarbon Ratio T.S.T.M.	Mcfd/obl.
					A.P.I. Gravity of Liquid Hydrocarbons 56	Eq.
1	.763	523	1.499	.924	Specific Gravity Separator Gas .5911	X X X X X X X X
2	.777	523	1.499	.923	Specific Gravity Flowing Fluid X X X X X	.7587
3	.792	540	1.547	.921	Critical Pressure 673	P.S.I.A.
4	.792	550	1.576	.921	Critical Temperature 349	R
5.						

* $P_c = 3728.2$ $P_c^2 = 13,899$

NO	P_i^2	P_w^2	$P_w^2 - P_i^2$	$P_c^2 - P_w^2$
1		3478.4	12.099	1800
2		3309	10.949	2950
3		2876	8.271	5628
4		2276	5.180	8719
5				

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.5941$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.3567$$

$$\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3425$$

Absolute Open Flow	3425	Mcfd @ 15.025	Angle of Slope	56°48'	Slope, n	.6542
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Remarks: * Calculated from known Bottom Hole Pressures.

Approved By Commission:	Conducted By: W.S.	Calculated By: M.K.	Checked By: M.K.
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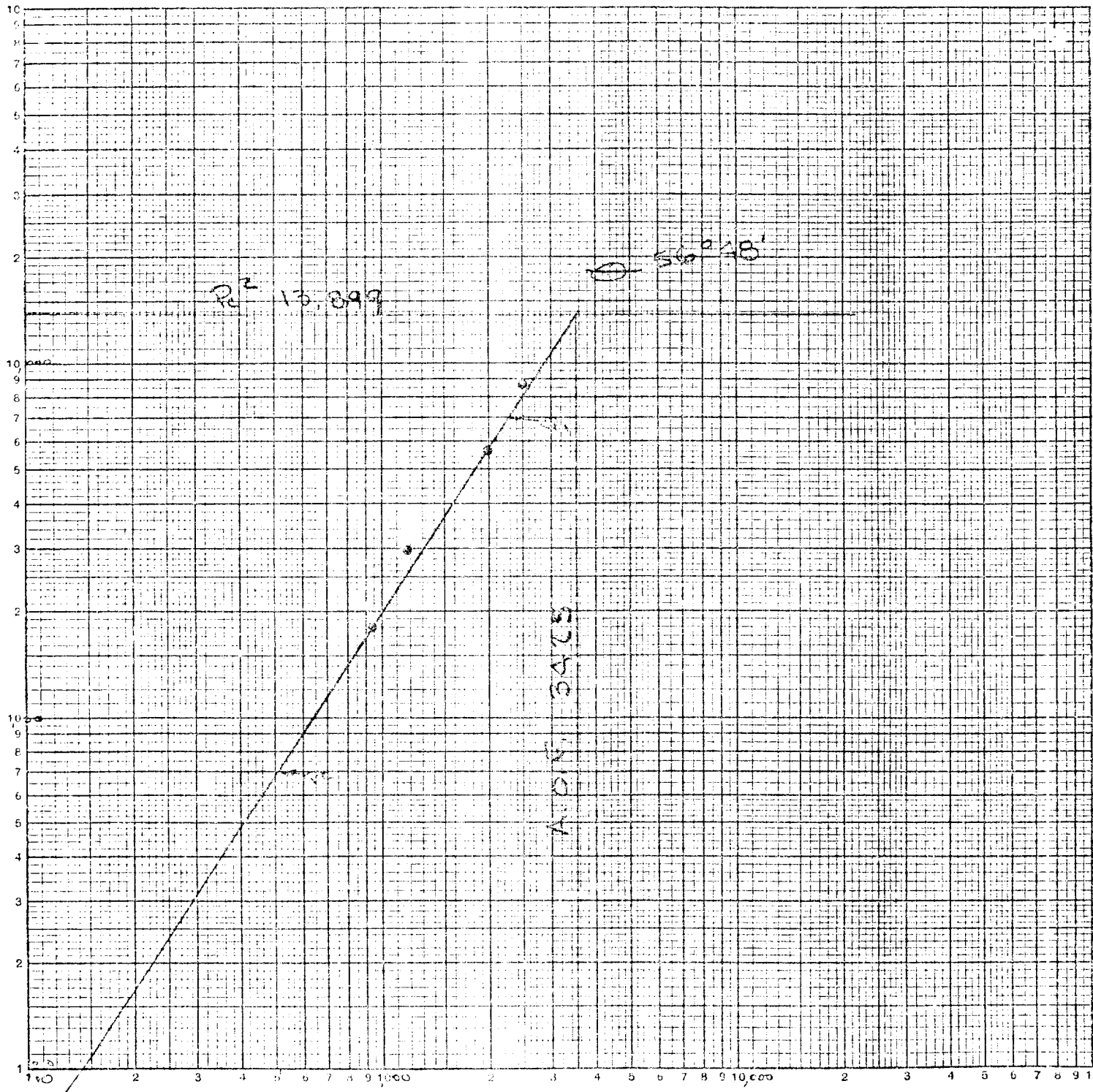
CITIES SERVICE

ABS (N) Q 2300 33617
Q2 510 2.7076
N = .6542

$$2524.5 \left(\frac{13,899}{8719} \right)^{.6542}$$

20 - 23

LOG LOGARITHMIC
SCALE
NEUFEL & JOSEPH CO.



Q. McF/DAY.

NEW-TEX
LAB

P. O. BOX 1161
HOBBS, N.M. 88240

No. 4341
Run No.
Date of Run 1-5-81
Date Secured 1-5-81

CERTIFICATE OF ANALYSIS

A Sample of Cities Service oil CO
Secured from West Engineering
At 412 N. Dal Paso
Hobbs, NM 88240

Simpson "B" #1

Secured by
Time Date

Sampling conditions Press
Temp.

FRACTIONAL ANALYSIS

Percentage Composition

MOL % LIQ. % G.P.M.

Carbon Dioxide	.681	
Air		
Nitrogen	1.446	
Oxygen		
Hydrogen sulfide		
Hydrogen	94.244	
Methane	2.718	.725
Ethane	.589	.162
Propane		
Butanes		
Iso-Butane	.076	.025
N-Butane	.107	.034
Pentanes		
iso-Pentane	.044	.016
N-Pentane	.030	.011
Hexanes	.030	.014
Heptanes	Plus .035	.016
Octanes		
TOTAL	100.000	1.003

Calc. Sp. Gr. 0.5911
Calc. A.P.I.
Calc. Vapor Press. PSIA
Sp. Gr.
Mol. Wt. 17.13

LIQUID CONTENT (G./L./MCF)

Propane Calc. G.P.M.	.162
Butanes Calc. G.P.M.	.059
Pentanes Plus. G.P.M.	.057
Ethane Calc. G.P.M.	.725
RVP Gasoline G.P.M.	
B.T.U. Cu. Ft. @ 14.696 P.S.I.A.	
Dry Basis	1027
Wet Basis	1009

Sulfur Analysis by Titration
Gr./100 Cu. Ft.
Hydrogen Sulfide
Mercaptans
Sulfides
Residual Sulfur
Total Sulfur

Run by Deane Simpson

Checked by

Approved by

Additional Data and Remarks

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LAND OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.
USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL ☐ GAS WELL ☒ OTHER-	5a. Indicate Type of Lease State ☐ Fee ☒
2. Name of Operator Cities Service Company	5. State Oil & Gas Lease No.
3. Address of Operator Box 1919, Midland, Tx 79702	7. Unit Agreement Name
4. Location of Well UNIT LETTER <u>G</u> <u>1980</u> FEET FROM THE <u>North</u> LINE AND <u>1980</u> FEET FROM <u>East</u> <u>20</u> <u>21S</u> <u>27E</u> THE <u>East</u> LINE, SECTION <u>20</u> TOWNSHIP <u>21S</u> RANGE <u>27E</u> NMPM.	8. Farm or Lease Name SIMPSON B COM
	9. Well No. 1
	10. Field and Pool, or Wildcat Und. Burton Flat Morrow
15. Elevation (Show whether DF, RT, GR, etc.) 3208.3' GR	12. County Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐
PULL OR ALTER CASING ☐	OTHER ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐	ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
CASING TEST AND CEMENT JOB ☐	
OTHER <u>Well Completion Data</u> ☒	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

December 9, 1980 - TD 11,645, PBTD 11,603 Spotted 100 gallons 10% acetic acid 11,603,- 11,503. Perforated Morrow w/12 holes from 11,574 - 11579. Entrance holes 0.50" w/23" penetration; Acidized Morrow zone w/500 gallons 7½% MSR-100 acid w/additives. Used 1000 SCF N₂/bbl. Used 12 - 7/8" RCNC balls with no action. Pressured annulus to 3000# - OK. Maximum 5100#, Minimum 4400#, ISIP 4300#, AIR 1.5 bpm(1.0 ac & 0.5 N₂), 15 min SIP 3750# Flowed 40 BLW in 2 hrs & died. December 16 Swabbed 25 Bbl water in 2 hours.

December 16, 1980 - Set CIBP at 11,550' - Dumped 4 sx cmt on top of CIBP for new PBTD of 11,500'. Perforated 11360,- 11462 with 20 - 0.50 holes with 23" penetration. Acidized Morrow w/3000 gallons of 7 1/2% MSR-100 acid w/additives. Used 30 - 7/8" RCNCB's with good action but did not ball out. Used 1000 SCF N₂/bbl. Pressured annulus to 3000# - OK. Max Press 6500#, Min Press 6200#, ISIP 5200#, AIR 6.4 BPM, (4.3 ac & 2.1 N₂). Flow to pit on 1" choke, rec 8 BW in 5 hrs, FTP 6#. Put well on 30/64 choke for 5 hrs, FTP 16 #. Gas Rate 91 MCFD.

December 24, 1980.- Set CIBP at 11,330' for new PBTD. Perf Morrow from 11,112 - 11,123' (total of 14 holes 0.50 dia & 23" penetration. Set Pkr at 10,967'. Press annulus to 500# - OK. Swabbed 50 BW in 5 hrs. (Over)

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

SIGNED E. P. Miller TITLE Region Operation Manager DATE 1-14-81
APPROVED BY W. A. Gressett TITLE Supervisor, Production DATE JAN 20 1981
CONDITIONS OF APPROVAL, IF ANY:

6-4
Az Morrow zone 11,112 - 11 '23' with 3000 gal 7 1/2% MS ac with additives. Used 1000 SCF N₂/Bbl. Used 21 - 7/8" RC balls w/fair action. Press ar lus to 3000# - OK. Max press 8000#, min 5500#, ISIP 4400#, AIR 7.7 bpm (5.5 ac & 2.2 N₂). Tested on 21/64" choke for 4 hrs. Rec a total of 11 BLW w/GR 1800 MCFD, FTP 875#.

January 5, 1981. 72 SITP 3715# DW.

Flowed 4 pt. tst:

<u>Time</u>	<u>Gas rate-MCFD</u>	<u>Choke</u>	<u>FTP</u>	<u>BP</u>
1 hr	840	6/64	3470#	500#
1 hr	1005	9/64	3256#	510#
1 hr	1803	12/64	2787#	520#
1 hr	2290	15/64	2175#	520#

Rec 13 gal wtr during 4 hr test. SI @ 1430 MST 1-5-81.

The Morrow flowed on a C.A.O.F. @3,245 MCFD.

Az Morrow zone 11,112 - 11,123' with 3000 gal 7 1/2% MS ac with additives. Used 1000 SCF N₂/Bbl. Used 21 - 7/8" RCNC balls w/fair action. Press annulus to 3000# - OK. Max press 8000#, min 5500#, ISIP 4400#, AIR 7.7 bpm (5.5 ac & 2.2 N₂). Tested on 21/64" choke for 4 hrs. Rec a total of 11 BLW w/GR 1800 MCFD, FTP 875#.

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LAND OFFICE	
OPERATOR	

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NEW MEXICO OIL CONSERVATION COMMISSION

DEC - 1 1980

O. C. D.
ALBUQUERQUE OFFICE

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease	
State ☐	Fee ☒
5. State Oil & Gas Lease No.	
7. Unit Agreement Name	
8. Farm or Lease Name SIMPSON B COM	
9. Well No. 1	
10. Field and Pool, or Wildcat Unit Burton Flat Mor	
12. County Eddy	

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL ☐ GAS WELL ☒ OTHER-
2. Name of Operator
Cities Service Company
3. Address of Operator
Box 1919, Midland, TX 79702
4. Location of Well
UNIT LETTER G 1980 FEET FROM THE North LINE AND 1980 FEET FROM East THE LINE, SECTION 20 TOWNSHIP 21S RANGE 27E NMPM.
15. Elevation (Show whether DF, RT, GR, etc.)
3208.3' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐	OTHER ☐	CASING TEST AND CEMENT JOB ☒	OTHER ☐

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

T.D. 11,645' Shale. Waiting on completion unit. Drilled a 7-7/8" hole to a T.D. of 11,645' in Shale. Ran & set 37 Jts (1590.20') 5 1/2" OD 20# N80 & 244 1/2 Jts (10,039.80') 5 1/2" OD 17# N80 casing @ 11,645' & cemented with 950 sacks Class H w/3/4 of 1% CFR-2 & 5# KCl/sack. Plug down @ 0045 MST on 11/20/80 with 3200# - held ok. Ran temp survey. Top of cement @ 7910'. NU spool & tree.

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

SIGNED W. A. Gressett TITLE Region Oper. Mgr. DATE 11/24/80

APPROVED BY W. A. Gressett TITLE SUPERVISOR, DISTRICT II DATE DEC 3 1980

CONDITIONS OF APPROVAL, IF ANY:

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION

RECEIVED

OCT 0 1980

O.C.D.

REGIONAL OFFICE

5a. Indicate Type of Lease
State ☐ Fee ☒
5. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

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USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. ☐ OIL WELL ☒ GAS WELL ☐ OTHER		7. Unit Agreement Name
2. Name of Operator Cities Service Company ✓		8. Farm or Lease Name SIMPSON "B" COM
3. Address of Operator Box 1919, Midland, TX 79702		9. Well No. 1
4. Location of Well UNIT LETTER <u>G</u> <u>1980</u> FEET FROM THE <u>North</u> LINE AND <u>1980</u> FEET FROM THE <u>East</u> LINE, SECTION <u>20</u> TOWNSHIP <u>21S</u> RANGE <u>27E</u> NMPM.		10. Field and Pool, or Wildcat Und Burton Flat Mor
15. Elevation (Show whether DF, RT, GR, etc.) 3208.3' GR		12. County Eddy

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TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐	OTHER ☐	CASING TEST AND CEMENT JOB ☒	OTHER ☐

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

T.D. 3005' LM. Prep to drill ahead. Drilled a 12¼" hole to a T.D. of 3005' in Lime. Ran & set 29 Jts (1113.78') 8-5/8" OD 32# K-55 & 46½ Jts (1876.22') 8-5/8" OD 24# K-55 casing @ 3005' & cemented W/300 sacks Thickset W/10# Gilsonite, ¼# Flocele & 2% CaCl₂/sack + 1236 sacks Howco Lite w/5# Gilsonite & ¼# Flocele & 200 sacks Class C w/2% CaCl₂ cement. Did not land plug. Circulated 250 sacks of cement to pit. NMOC D was notified but did not witness cementing job. WOC 36 hrs. NU BOP. Tested 8-5/8" casing & BOP to 1000# - held ok.

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

SIGNED [Signature] TITLE Region Operations Mgr. DATE 10/8/80
APPROVED BY [Signature] TITLE SUPERVISOR, DISTRICT II DATE OCT 15 1980
CONDITIONS OF APPROVAL, IF ANY:

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

RECEIVED
NEW MEXICO OIL CONSERVATION COMMISSION

OCT 3 1980

O.C.D.
ARTESIA, NEW MEXICO

5a. Indicate Type of Lease
State ☐ Fee ☒
5. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.
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1. OIL WELL ☐ GAS WELL ☒ OTHER ☐	7. Unit Agreement Name
2. Name of Operator Cities Service Company ✓	8. Farm or Lease Name SIMPSON "B" COM
3. Address of Operator Box 1919, Midland, TX 79702	9. Well No. 1
4. Location of Well UNIT LETTER <u>G</u> <u>1980</u> FEET FROM THE <u>North</u> LINE AND <u>1980</u> FEET FROM THE <u>East</u> LINE, SECTION <u>20</u> TOWNSHIP <u>21S</u> RANGE <u>27E</u> NMPM.	10. Field and Pool, or Wildcat <u>MOR.</u> <u>W.D. Burton Flat.</u>
15. Elevation (Show whether DF, RT, GR, etc.) 3208.3' GR	12. County Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data
NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☒	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐	OTHER ☐	CASING TEST AND CEMENT JOB ☒	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

T.D. 598' Surf rock. Prep to drill ahead. MIRU rotary & spudded a 17½" hole @ 1000 MDT on 9/25/80 & drld to a T.D. of 598' in Surf rock. Ran & set 14½ jts (581.95') 13-3/8" OD, 48# H-40 csg @ 597' & cmtd w/600 sx Cl C w/2% CaCl cmt. Cmt circ. PD @ 1500 MDT on 9/26/80. Bumped FC w/700# - held ok. NMOCD was notified but did not witness cmtng job. WOC 20 hrs. NU BOP. Tested csg to 500# for 30 min. - held ok.

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

SIGNED E. J. Hinder TITLE Region Oper. Mgr. DATE 10/1/80
APPROVED BY W. A. Gressett TITLE SUPERVISOR, DISTRICT II DATE OCT 6 1980
CONDITIONS OF APPROVAL, IF ANY: