

STATE CORPORATION COMMISSION OF KANSAS
OIL & GAS CONSERVATION DIVISION
WELL COMPLETION FORM
ACO-1 WELL HISTORY
DESCRIPTION OF WELL AND LEASE

Operator: License # 32119

Name: Northern Natural Gas

Address P.O. Box 178

City/State/Zip Cunningham, KS 67035

Purchaser: Storage Well

Operator Contact Person: Dan Dobbins

Phone (316) 257-5146

Contractor: Name: Pratt Well Service

License: 5893 KANSAS CORPORATION COMMISSION

Wellsite Geologist: None

Designate Type of Completion
 New Well Re-Entry X Workover

 Oil SWD SIGW CONSERVATION DIVISION
 Gas ENHR SIGW WICHITA, KS
 Dry X Other (Core, WSW, Expl., Cathodic, etc)

If Workover: OBSERVATION - SIMPSON
INJECTION - VIOLA

Operator: Northern Natural Gas

Well Name: Steffen 24-32

Comp. Date 7-18-78 Old Total Depth 4220'

XXX RAN SHORT LENGTH OF LINER
 X Deepening X Re-perf. Conv. to Inj/SWD
 Plug Back PBDT
 Commingled Docket No.
XXX Dual Completion Docket No.
 Other (SWD or Inj?) Docket No.

6-28-97 7-7-97 7-19-97

 Date of START Date Reached TD Completion Date of
 OF WORKOVER WORKOVER

API NO. 15- 151-20501-0001

ORIGINAL

County Pratt

App. C-SE Sec. 24 Twp. 27S Rge. 11 X X W

1430 Feet from SE (circle one) Line of Section

1290 Feet from EW (circle one) Line of Section

Footages Calculated from Nearest Outside Section Corner:
NE, SE NW or SW (circle one)

Lease Name Steffen Well # 24-32

Field Name Cunningham

Producing Formation Viola/Simpson

Elevation: Ground 1721 KB 1730

Total Depth 4315 PBDT 4305

Amount of Surface Pipe Set and Cemented at 1518 Feet

Multiple Stage Cementing Collar Used? Yes X No

If yes, show depth set Feet

If Alternate II completion, cement circulated from

feet depth to w/ sx cmt.

Drilling Fluid Management Plan REWORK 8-9-97
(Data must be collected from the Reserve Pit)

Chloride content 14,000 ppm Fluid volume 220 bbls

Dewatering method used N/A

Location of fluid disposal if hauled offsite:

Operator Name Geary Mud Disposal

Lease Name Gray License No. 284168

 Quarter Sec. 15 Twp. 14N Rng. 7W

County Garfield, OK Docket No. 284168

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information on side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature Dan Dobbins

Title Sr. Reservoir Analyst Date 9/16/97

Subscribed and sworn to before me this 16th day of September 19 97.

Notary Public Karen Elliot

Date Commission Expires January 25, 1999

K.C.C. OFFICE USE ONLY			
F	☒	Letter of Confidentiality Attached	
C	☒	Wireline Log Received	
C	☒	Geologist Report Received	
Distribution			
☒	KCC	☐	SWD/Rep
☐	KGS	☐	Plug
		☐	NGPA
			Other
			(Specify)



SIDE TWO

Operator Name Northern Natural GasLease Name SteffenWell # 24-32Sec. 24 Twp. 27S Rge. 11☐ EastCounty Pratt☒ West

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all drill stem tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface during test. Attach extra sheet if more space is needed. Attach copy of log.

Drill Stem Tests Taken
(Attach Additional Sheets.)☐ Yes ☒ No

Samples Sent to Geological Survey

☐ Yes ☒ No

Cores Taken

☐ Yes ☒ NoElectric Log Run
(Submit Copy.)☒ Yes ☐ No☒ Log

Formation (Top), Depth and Datums

☐ Sample

Name

Top

Datum

Viola

4144

-2414

Simpson

4254

-2524

List All E.Logs Run: Cement Bond Log
Compensated Density Dual Spaced Neutron Log
Dual Induction Laterlog

CASING RECORD

☒ New ☐ Used

Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs./Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Conductor	20"	13 3/8	448	132	Common	125	
Surface	12 1/4"	8 5/8	24	1516	Reg Poz	650	18% NaCL
Production	7 7/8	5 1/2	15.5	4278	Reg Poz	200	2% Gel

ADDITIONAL CEMENTING/SQUEEZE RECORD

Purpose: Set Liner	Depth Top Bottom	Type of Cement	#Sacks Used	Type and Percent Additives
☐ Perforate ☐ Protect Casing ☐ Plug Back TD ☐ Plug Off Zone	4200-4305	Standard	25	5# Gtl. 18% NaCL, Floclie, Calseal

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
4	4146 - 4186	1,000 Gal. 15% HCL	4146
4	4256 - 4262		
TUBING RECORD		Liner Run ☒ Yes ☐ No	
Size	Set At	Packer At	
2 3/8	4235	4197	
Date of First, Resumed Production, SWD or Inj. Storage Well		Producing Method ☐ Flowing ☐ Pumping ☐ Gas Lift ☒ Other (Explain)	
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls. Gas-Oil Ratio Gravity

Disposition of Gas:

METHOD OF COMPLETION

Production Interval

☐ Vented ☐ Sold ☐ Used on Lease
(If vented, submit ACO-18.)

☐ Open Hole ☒ Perf. ☐ Dually Comp. ☐ Commingled
☐ Other (Specify) _____4146 - 41864256 - 4262



Natural gas. Electricity.
Endless possibilities.™

ORIGINAL

September 26, 1997

Jim Hemmen
Kansas Corporation Commission
130 South Market #2078
Wichita, KS 67202-3802

RECEIVED
KANSAS CORP COMM
1997 SEP 29 1:52

RE: Schematic for Liners at Cunningham

Please find enclosed a schematic for a typical completion in the Cunningham Storage field on our deepening project. If you need more information please call me at 316-257-5146 or 316-298-5111.

Thanks,

A handwritten signature in cursive script, appearing to read "Dan Dobbins".

Dan Dobbins
Sr. Reservoir Analyst

COMPANY	NORTHERN NATURAL Gas Co.		C NG.	LINER	UPPER TUBING	LOWER TUBING
WELL NAME & NUMBER	STEFFAN 24-32		SIZE	5 1/2	3 1/2	
FIELD	Cunningham Gas Storage		WEIGHT	15.50	9.3 ⁴	
COUNTY	PRATT		GRADE		T-55	
STATE	KANSAS		THREAD		(S Hydri.)	
DATE	07-12-97	☐ NEW ☒ W.O.	DEPTH	4218	4	

[illegible]

ORIGINAL

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KANSAS CORP
SEP 29 1997
CLMAY
1:52

PREPARED FOR <u>Mr. Roy MERRICK</u>		
PREPARED BY <u>John Drumm</u>	OFFICE <u>OKla. C.R. Div.</u>	PHONE <u>(905) 672-5557</u>



6023 NAVIGATION BOULEVARD HOUSTON TEXAS 77011-1131

P.O. BOX 3048-HOUSTON-TEXAS 77253-3048

Telephone (713) 923-9351 Telex 76-2833

NOTICE: REV 224

ORIGINAL

INVOICE



HALLIBURTON ENERGY SERVICES, INC.

 REMIT TO:
 P.O. BOX 951046
 DALLAS, TX 75395-1046
 Corporate FIN 73-0271280

INVOICE NO.	DATE
219285	07/12/199

WELL LEASE NO./PROJECT		WELL PROJECT LOCATION		STATE	OWNER
STEFFEN 24-32		PRATT		KS	SAME
SERVICE LOCATION	CONTRACTOR		JOB PURPOSE	TICKET DATE	
PRATT	PRATT WELL SERVICE		SHOWN BELOW	07/12/199	
AGCT NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER PROJ. NUMBER	SHIPPED VIA	FILE NO.
634280	ART MERRICK		L 4420 7 008	COMPANY TRUCK	2705

RECEIVED

KANSAS CORPORATION COMMISSION

DIRECT CORRESPONDENCE TO:

 NORTHERN NATURAL GAS CO
 BOX 176
 CUNNINGHAM, KS 67035

SEP 22 1997

 1102 E. 8TH
 HAYS KS 67601
 913-625-3431

CONSERVATION DIVISION

ORIGINAL

REFERENCE NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
PRICING AREA - MID CONTINENT					
JOB PURPOSE - CEMENT PRODUCTION LINER					
000-117	MILEAGE CEMENTING ROUND TRIP	36 MI		3.20	115.20
		1 UNT			
009-407	CEMENTING LINERS/SHORT CASING	4218 FT		2,019.00	2,019.00
009-019		1 UNT			
504-308	CEMENT - STANDARD	50 SK		10.83	541.50
508-291	GILSONITE BULK	125 LB		.50	62.50
509-968	SALT	300 LB		.17	51.00
507-775	HALAD-322	14 LB		7.70	107.80
507-970	D-AIR 1, POWDER	6 LB		3.65	21.90
509-406	ANHYDROUS CALCIUM CHLORIDE	1 SK		46.90	46.90
507-210	FLOCELE	6 LB		1.90	11.40
508-127	CAL SEAL GO	1 SK		28.00	28.00
500-207	BULK SERVICE CHARGE	61 CFT		1.55	94.55
500-306	MILEAGE CMTG MAT DEL OR RETURN	47.43 TMI		1.18	110.00MM
JOB PURPOSE SUBTOTAL					3,209.75
INVOICE SUBTOTAL					3,209.75
DISCOUNT- (BID)					641.95--
INVOICE BID AMOUNT					2,567.80
*-KANSAS STATE SALES TAX					125.84
*-PRATT COUNTY SALES TAX					25.68
Simpson Project 543828 LF					
INVOICE TOTAL - PLEASE PAY THIS AMOUNT =====					\$2,719.32

TERMS: If Customer does not have an approved open account with Halliburton, all sums due are payable in cash at the time of performance of services or delivery of equipment, products or materials. If customer has an approved open account, invoices are payable on the twentieth day after date of invoice. Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event Halliburton employs an attorney for collection of any account, Customer agrees to pay attorney fees of 20% of the unpaid account, plus all collection and court costs.



HALLIBURTON ENERGY SERVICES

HAL-1906-P

CHARGE TO:

NORTHERN NATURAL GAS CO

ADDRESS

CITY, STATE, ZIP CODE

CUSTOMER COPY

TICKET

No.

219285 - 0

PAGE 1 OF 2

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY/OFFSHORE LOCATION	DATE	OWNER
1. PRAT	24-32	STEFFED	PRAT	FE		7-12-97	SAME
2.	TICKET TYPE ☒ SERVICE ☐ SALES	NITROGEN JOB? ☐ YES ☒ NO	CONTRACTOR PRAT WELL SERVO	RIG NAME/NO.	SHIPPED D.T.	DELIVERED TO WELL SITE	ORDER NO.
3.	WELL TYPE	WELL CATEGORY	JOB PURPOSE	WELL PERMIT NO.	WELL LOCATION		
4.	05	02	050				
REFERRAL LOCATION	INVOICE INSTRUCTIONS	Simpson Project 543828 LF					

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING	DESCRIPTION	QTY.	U/M	UNIT PRICE	AMOUNT
000-117		1	MILEAGE ROUND TRIP	36 MI.		3.20	115.20
009-407	009-019	1	Pump CHARGE	6 HRS.		2019.00	2019.00
ORIGINAL RECEIVED KANSAS CORPORATION COMMISSION SEP 2 2 1997 CONSERVATION DIVISION WICHITA, KS							

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.		SUB SURFACE SAFETY VALVE WAS: ☒ PULLED & RETURN ☐ PULLED ☐ RUN		SURVEY AND CALCULATIONS ☐ AGREE ☐ UN-DECIDED ☐ DIS-AGREE		PAGE TOTAL	
MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS		TYPE LOCK DEPTH		OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?		FROM CONTINUATION PAGE(S)	
		BEAN SIZE SPACERS		WE UNDERSTOOD AND MET YOUR NEEDS?		1075 5	
		TYPE OF EQUALIZING SUB. CASING PRESSURE		OUR SERVICE WAS PERFORMED WITHOUT DELAY?		1678 6	
		TUBING SIZE TUBING PRESSURE WELL DEPTH		WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			
DATE SIGNED: 7-12-97		TIME SIGNED: 12:30		ARE YOU SATISFIED WITH OUR SERVICE? ☐ YES ☐ NO		SUB-TOTAL APPLICABLE TAXES WILL BE ADDED ON INVOICE	
☐ do ☐ do not require IPC (Instrument Protection). ☐ Not offered		TREE CONNECTION TYPE VALVE		☐ CUSTOMER DID NOT WISH TO RESPOND		3209 7	

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

CUSTOMER OR CUSTOMER'S AGENT (PLEASE PRINT)	CUSTOMER OR CUSTOMER'S AGENT (SIGNATURE)	HALLIBURTON OPERATOR/ENGINEER	HALLIBURTON APPROVAL
Art McRICK	X	Michael R. Johnson	

**TICKET CONTINUATION**

CUSTOMER COPY

No. 217285

CUSTOMER

WELL

DATE

PAGE

OF

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KANSAS CORPORATION COMMISSION

SEP 22 1997

CONSERVATION DIVISION
WICHITA, KS

No. B 338367

CONTINUATION TOTAL

10755

TICKET #	7-12-97
TICKET DATE	7-12-97
REGION	North America
MBU ID (EMP #)	50248
LOCATION	STEFFEN
TICKET AMOUNT	2212.50
WELL LOCATION	24-82
LEASE / WELL	24-82 STEFFEN
NW/COUNTRY	USA
EMPLOYEE NAME	THOMAS R. COLYARD
COMPANY	NORTHERN NATURAL GAS
WELL TYPE	CEMENT
SEC / TWP / RNG	
BDA / STATE	KANSAS
PSL DEPARTMENT	
CUSTOMER REF / PHONE	
API / UWI #	
JOB PURPOSE CODE	

HES EMP NAME/EMP#/(EXPOSURE HOURS) :HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS) :HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS) :HRS	HES EMP NAME/EMP#/(EXPOSURE HOURS) :HRS

ORIGINAL

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL)(GAL)	PUMPS (T/C)	PRESS (psi) (T/C)	JOB DESCRIPTION / REMARKS
	0630					CALLED OUT
	1145					ON LOCATION
						SAFETY MEETING
						RIG RUNNING LINGER
						Hook up to BAKER HEAD ON 2 3/4 U.P.
	1715	2 1/2	0		400	Pump PRE FLUSH
			20			FLUSH IN
						MIXING CMT. (25 DCS EA-2)
	1735	2 1/2	0		500	Pumping Cmt.
	1738		6.99			FINISH Pump Cmt.
						SHUT IN WELL
						FLUSH LINES
	1743	2 1/2	0		250	PLUG RELEASED
						PUMPING DISP
	1753		19.78		500	SITUT DOWN MAX VOL.
						RELEASE PSI. KNOCK LOOSE
						WASH UP TRK.
						RACK UP
	19:30					OFF LOC.

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KANSAS CORPORATION COMMISSION

SEP 22 1987

CONSERVATION DIVISION
WICHITA, KS