

ORIGINAL

STATE CORPORATION COMMISSION OF KANSAS
OIL & GAS CONSERVATION DIVISION
WELL COMPLETION FORM
ACD-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
Wellsite Geologist: None

Designate Type of Completion
 New Well Re-Entry Workover
 Oil SWD SLOW Temp. Abd.
 Gas ENHR SIGW SIGW
 Dry Other (Core, WSW, Expl., Cathodic, etc)
Gas Storage

If Workover:
Operator: Northern Natural Gas
Well Name: Leiter 1-11
Comp. Date 11-13-78 Old Total Depth 4276'
 RAN LINER
 Deepening Re-perf. Conv. to Inj/SWD
Plug Back PBTB
 Commingled Docket No. _____
 Dual Completion Docket No. _____
 Other (SWD or Inj?) Docket No. _____

8-15-97 8-20-97 8-30-97
Date of START Date Reached TD Completion Date of
OF WORKOVER WORKOVER

API NO. 15- 151-20559-0001
County Pratt
N/2-NW - 1 Sec. 1 Twp. 28S Rge. 11 E
650 Feet from S (circle one) Line of Section
1150 Feet from E (circle one) Line of Section
Footages Calculated from Nearest Outside Section Corner:
NE, SE, NW or SW (circle one)
Lease Name Lieter Well # 1-11
Field Name Cunningham
~~Production~~ Formation Viola/Simpson
Elevation: Ground 1742 KB 1752
Total Depth 4380 PBTB 4367
Amount of Surface Pipe Set and Cemented at 1467 Feet
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set 2235 Feet
If Alternate II completion, cement circulated from _____
feet depth to _____ w/ _____ sx cmt.

Drilling Fluid Management Plan REWORK 8/11-25-97
(Data must be collected from the Reserve Pft)

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
15 Quarter Sec. 14N Twp. 7W Rng. 284168
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.

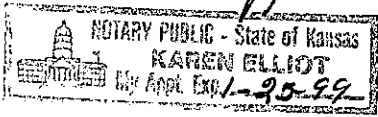
All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature War Dobbins
Title Sr. Reservoir Analyst Date 11-19-97
Subscribed and sworn to before me this 19th day of November
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 NGPA
 KGS Plug Other
(Specify)

RECEIVED
KANSAS CORPORATION COMMISSION

Form ACD-1 (7-91)



NOV 21 1997

SIDE TWO

Operator Name Northern Natural Gas Lease Name Lieter Well # 1-11
 Sec. 1 Twp. 28S Rge. 11 East West
 County Pratt

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.)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Viola	4199	-2449
Electric Log Run (Submit Copy.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Simpson	4311	-2561

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

CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> 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	18 1/2"	13 3/8"	48	154	Common	200	-----
Surface	12 1/4"	8 5/8"	24	1467	Reg Poz	650	3% CC 1/4# Flocele
Production	7 7/8"	5 1/2"	15.5	4276	Reg Poz	800	5# Gil, 3% CC 1/4# Flocele 18% Salt

ADDITIONAL CEMENTING/SQUEEZE RECORD				
Purpose: Set Liner	Depth Top Bottom	Type of Cement	#Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone	4249-4379	Standard	25	5# Gil. 18% Salt, .25# Flocele 5% 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	4311 - 4324	4000 gals 15% SGA	4200
4	4332 - 4341			
4	4200 - 4240			

TUBING RECORD				Liner Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Size	Set At	Packer At					
2 3/8"	4284	4247					
Date of First, Resumed Production, SWD or Inj. Viola I/W and Simpson OB Well			Producing Method <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input checked="" type="checkbox"/> Other (Explain)				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity		

Disposition of Gas: Vented Sold Used on Lease (If vented, submit ACO-18.)

METHOD OF COMPLETION: Open Hole Perf. Dually Comp. Commingled 4200-4240

Production Interval: Other (Specify) _____



Natural gas. Electricity.
Endless possibilities.™

September 26, 1997

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

RECEIVED
KANSAS CORP COM
1997 SEP 29 PM 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 that reads "Dan Dobbins".

Dan Dobbins
Sr. Reservoir Analyst

ORIGINAL

INVOICE



HALLIBURTON ENERGY SERVICES, INC.

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

INVOICE NO. 307899 DATE 08/25/1997

Table with 5 columns: WELL LEASE NO./PROJECT, WELL/PROJECT LOCATION, STATE, OWNER, SERVICE LOCATION, CONTRACTOR, JOB/PURPOSE, TICKET DATE, ACCT. NO., CUSTOMER AGENT, VENDOR NO., CUSTOMER P.O. NUMBER, SHIPPED VIA, FILE NO.

ORIGINAL

NORTHERN NATURAL GAS CO BOX 178 CUNNINGHAM, KS 67035

DIRECT CORRESPONDENCE TO: 1102 E. 8TH HAYS KS 67601 913-625-3431

Main pricing table with columns: REFERENCE NO., DESCRIPTION, QUANTITY, UOM, UNIT PRICE, AMOUNT. Includes subtotals and taxes.

RECEIVED KANSAS CORPORATION COMMISSION NOV 21 1997 CONSERVATION DIVISION WICHITA, KS

Simpson Project 543828 LF

INVOICE TOTAL - PLEASE PAY THIS AMOUNT \$2,775.48

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.



CHARGE TO: **Worthern Natural Gas Co**
 ADDRESS: **MAX WAIN STREET**
 CITY, STATE, ZIP CODE: **SEVENOK, OKLAHOMA 73062**

CUSTOMER COPY No. **825-97**
 TICKET **307899 - 9**
 PAGE **2**

SERVICE LOCATIONS: **Pratt KS**
 WELL/PROJECT NO.: **1-11**
 LEASE: **Heiter**
 COUNTY/PARISH: **Pratt**
 STATE: **KS**
 CITY/OFFSHORE LOCATION: **Pratt**
 OWNER: **Some**

TICKET TYPE: SERVICE SALES
 NITROGEN JOB? YES NO
 CONTRACTOR: **PWS**
 RIG NAME/NO.: **# 25**
 SHIPPED VIA: **Howe**
 DELIVERED TO: **Loc**

WELL TYPE: **OS**
 WELL CATEGORY: **02**
 JOB PURPOSE: **055**
 WELL PERMIT NO.: **heud**

REFERRAL LOCATION: **Pratt KS**
 INVOICE INSTRUCTIONS: **02**

QTY	UNIT	PRICE	AMOUNT
3387	RD 7P		115.20
40042	RD 7P		170.20
	Pump Charge / Trk		20.00
			1075.50

ORIGINAL

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.

DATE SIGNED: **825-99**
 TIME SIGNED: **1300**

do do not require IPC (Instrument Protection). Not offered

TYPE LOCK: SUB SURFACE SAFETY VALVE WAS: PULLED & RETURN PULLED

BEAN SIZE: **338305**

DEPTH: **2112**

SPACERS: **2**

TUBING SIZE: **2 1/2**

TUBING PRESSURE: **1497**

WELL DEPTH: **2112**

TREE CONNECTION: **2**

TYPE VALVE: **1**

PAGE TOTAL: **3279**

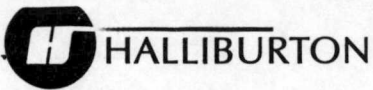
CONTINUATION PAGE(S): **9**

SUB-TOTAL: **1075.50**

APPLICABLE TAXES WILL BE ADDED ON INVOICE

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): **David L Scott**
 CUSTOMER OR CUSTOMER'S AGENT (SIGNATURE): **[Signature]**
 HALLIBURTON OPERATOR/ENGINEER: **David L Scott**
 EMP #: **B9475**
 HALLIBURTON APPROVAL: **[Signature]**



TICKET CONTINUATION CUSTOMER COPY

TICKET No. 307899

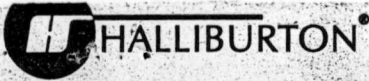
HALLIBURTON ENERGY SERVICES

CUSTOMER: Northern Natural Gas Co
 WELL: Keiter 1-11
 DATE: 7-25-97
 PAGE: 2 OF 2

FORM 1911 R-10

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		U/M		UNIT PRICE	AMOUNT	
		LOC	ACCT	DF								
504-308	516.00361	1			Standard Cement	50		SK		10.53	541.50	
508-291	516.00337	1			Gilsonite Pld 5#/SK	125		1/LS		50	62.50	
507-769	516.00151	1			Salt Pld 17%	300		1/LS		17	51.00	
507-775	516.00144	1			Haled-322 Pld .6%	14		1/LS		7.70	107.80	
507-970	890.15764	1			DAIR 1 Pld .25%	6		1/LS		3.65	21.90	
509-406	890.50812	1			Calcium Chloride Pld 17%	1		SK		46.90	46.90	
507-210	890.50811	1			Flocule Pld .25#/SK	6		1/LS		1.90	11.40	
508-127	890.50131	1			Calsool Pld 5%	1		SK		28.00	28.00	
					Loaded on TRK # 52530 - Front							
ORIGINAL												
					RECEIVED		KANSAS CORPORATION COMMISSION		NOV 21 1997		CONSERVATION DIVISION WICHITA, KS	
500-207		1			SERVICE CHARGE				CUBIC FEET	61	1.55	94.55
500-306		1			MILEAGE CHARGE	TOTAL WEIGHT	LOADED MILES	TON MILES	Minimum Charge			110.00
										CONTINUATION TOTAL		1075.55

No. B 338305



JOB LOG 9-5

TICKET #	3099	TICKET DATE	8/25/97
REGION	North America	NWA/COUNTRY	KS
MBU ID / EMP #	3175	EMPLOYEE NAME	DE SOUT
LOCATION	TRKS	PSL DEPARTMENT	3101
TICKET AMOUNT	0.62	COMPANY	WIG
WELL LOCATION	3-11	CUSTOMER REP / PHONE	3101
LEASE / WELL #	3-11	WELL TYPE	05
		API / UWI #	
		DEPARTMENT	3101
		JOB PURPOSE CODE	055
		SEC / TWP / RNG	1 25 11

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
D. SOUT 3175			

ORIGINAL

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL)(GAL)	PUMPS		PRESS. (psi)		JOB DESCRIPTION / REMARKS
				T	C	Tbg	Csg	
#	0900		36					Called Out
	1200		37					On loc w/Trks Safety mtg
	1230							TIH w/liner + flange Break Circ @ 70 std's Liner on Bottom Circ w/ Rig 45 min Liner In Set position Rig up Howco
	1550	3	18	✓		500		St 128 KCL PreFlush
	1559	3	3	✓		500		Fresh H2O Spacer
	1605	3	6.9	✓		300		mix + pump 2.5 sk's Cmt @ 14.7 ppg
	1610	0	10					Close In + wash pump + line Release D.P. Plug
	1611	2.2		✓		100		St Disp w/2% KCL H2O
	1618	2.2	14	✓		400		lifting Cmt 14 Bbl's Disp Out
	1618	2.2	19	✓		1100		Tbg Plug shared Liner Plug Continue Disp
	1619	0	20	✓		2000		Liner Plug Down
	1620			✓		0		Release psi Float Held Hang Liner TOH w/D.P.

KANSAS CORPORATION COMMISSION

NOV 21 1997

CONSERVATION DIVISION
WICHITA, KS
Job Complete
Thank you
Scotty

