

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

Wellsite Geologist: None

Designate Type of Completion

New Well  Re-Entry  Workover

Oil  SWD  SLOW  Temp. Abd.  
 Gas  ENHR  SIGW  
 Dry  Other (Core, WSW, Expl., Cathodic, etc)  
Gas Storage

If Workover:

Operator: Northern Natural Gas

Well Name: Glenn 19-11

Comp. Date 4-18-80 Old Total Depth 4405

Deepening  Re-perf.  Conv. to Inj/SWD  
 Plug Back  PBSD  
 Commingled  Docket No. \_\_\_\_\_  
 Dual Completion  Docket No. \_\_\_\_\_  
 Other (SWD or Inj?)  Docket No. \_\_\_\_\_

7-24-97 8-12-97 8-20-97

~~7-24-97~~ Date of START Date Reached TD Completion Date of WORKOVER  
of WORKOVER

API NO. 15- 095-20950 0001

County Kingman

NW - NW - NW -      Sec. 19 Twp. 27S Rge. 10 X W

100 Feet from S (N) (circle one) Line of Section

100 Feet from E (D) (circle one) Line of Section

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

Lease Name Glenn Well # 19-11

Field Name Cunningham

Producing Formation Viola/Simpson

Elevation: Ground 1739 KB 1747

Total Depth 4480 PBSD 4466

Amount of Surface Pipe Set and Cemented at 1523 Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set 2188 Feet

If Alternate II completion, cement circulated from \_\_\_\_\_

feet depth to \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan REWORK 11-14-97  
(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 X Rng. 7 E/W

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 confidentially 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 11/5/97

Subscribed and sworn to before me this 5<sup>th</sup> day of November 1997.

Notary Public Karen Elliott

Date Commission Expires January 23, 1999

NOT PUBLIC - State of Kansas  
KAREN ELLIOT  
My Comm. Exp. 1-23-99

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)

SIDE TWO

ORIGINAL

Operator Name Northern Natural Gas Lease Name Glenn Well # 19-11

Sec. 19 Twp. 27S Rge. 10  East  West  
 County Kingman

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  Yes  No  
 (Attach Additional Sheets.)

Samples Sent to Geological Survey  Yes  No

Cores Taken  Yes  No

Electric Log Run  Yes  No  
 (Submit Copy.)

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

Log Formation (Top), Depth and Datum  Sample

Name	Top	Datum
Viola	4312	-2565
Simpson	4418	-2671

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	20"	13.375"	48#/ft	173'	Common	150	-----
Surface	12.25"	8.625"	24#/ft	1524'	Reg Poz	650	.25# Flocele
Production	7.875"	5.5"	15.5#/ft	4409'	Howco Lite	475 450	.5% Halad 9 .10% Gilsonite

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	4365-4479	Standard	25	5# Gil., 18% NaCl, .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	4420-4440
4	4314-4322		
4	4328-4358		
4	4314-4354		

TUBING RECORD		Size	Set At	Packer At	Liner Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		2.375"	4380	4380	

Date of First, Resumed Production, SWD or Inj.	Producing Method <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input checked="" type="checkbox"/> Other (Explain)
Storage Well Viola/Simpson OB	

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  Other (Specify) \_\_\_\_\_

INJECTION Production Interval 4314'-4322'  
4328'-4337'  
4354'-4358'



Natural gas. Electricity.  
Endless possibilities.™

November 7, 1997

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

RE: Form AC0-1

Please find enclosed the completion reports for the Glenn 19-11, McClellan 29-21, Prentice 30-24, and Goyen 8-41 in our storage field. The cementing tickets and electrical logs are also included. There will not be any geologist well report filed as we did not have a geologist on site for the well deepening.

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

RECEIVED  
STATE CORPORATION COMMISSION

NOV 12 1997

CONSERVATION DIVISION  
Wichita, Kansas



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 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

CUSTOMER COPY



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

INVOICE

HALLIBURTON ENERGY SERVICES, INC.

INVOICE NO.	DATE
307892	08/13/1997

WELL LEASE NO./PROJECT		WELL/PROJECT LOCATION		STATE	OWNER
GLENN 19-11		KINGMAN		KS	SAME
SERVICE LOCATION		CONTRACTOR	JOB PURPOSE		TICKET DATE
PRATT		PRATT WELL SERVICE	SHOWN BELOW		08/13/1997
ACCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	FILE NO.
534280	W A MERRICK		4420 7 008	COMPANY TRUCK	28565

ORIGINAL

NORTHERN NATURAL GAS CO  
BOX 178  
CUNNINGHAM, KS 67035

DIRECT CORRESPONDENCE TO:

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

REFERENCE NO.	DESCRIPTION	QUANTITY	UM	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	4420	FT	2,019.00	2,019.00 *
009-019		1	UNT		
000-119	MILEAGE FOR CREW	36	MI	1.95	70.20
		1	UNT		
009-027	PLUGGING BK SPOT CEMENT OR MUD	2	HR	291.00	582.00 *
		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 *
508-177	CAL SEAL 50	1	SK	28.00	28.00 *
500-207	BULK SERVICE CHARGE	61	CFT	1.55	94.55 *
500-306	MILEAGE CNTG MAT DEL OR RETURN	47.43	THI	1.18	110.00MM*
JOB PURPOSE SUBTOTAL					3,861.95
INVOICE SUBTOTAL					3,861.95
DISCOUNT - (BID)					772.39-
INVOICE BID AMOUNT					3,089.56
* - KANSAS STATE SALES TAX					148.65
* - PRATT COUNTY SALES TAX					30.34
Simpson Project 543828 LF					
INVOICE TOTAL - PLEASE PAY THIS AMOUNT					\$3,268.55

RECEIVED  
STATE CORPORATION COMMISSION

NOV 12 1997

CONSERVATION DIVISION  
Wichita, Kansas

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

HALLIBURTON ENERGY SERVICES

1806-Q

20

CHARGE TO: Northern Natl Gas Co  
 ADDRESS:  
 CITY, STATE, ZIP CODE:

CUSTOMER COPY

TICKET

No.

307892 - 2

PAGE 1 OF 2

SERVICE LOCATIONS: Perm # KS  
 WELL/PROJECT NO.: 19-11  
 LEASE: G/PHN  
 COUNTY/PARISH: Kingman  
 STATE: KS  
 CITY/OFFSHORE LOCATION: Loc  
 DATE: 8/13/97  
 OWNER: Same  
 TICKET TYPE: SERVICE JOB? YES  
 CONTRACTOR: PWS  
 RIG NAME/NO: #31  
 SHIPPED VIA: Heavy  
 DELIVERED TO: Loc  
 ORDER NO.:  
 WELL TYPE: OS  
 WELL CATEGORY: OZ  
 JOB PURPOSE: OSS  
 WELL PERMIT NO.:  
 WELL LOCATION: hand  
 REFERRAL LOCATION:  
 INVOICE INSTRUCTIONS:

JOB PURPOSE	PRICE REFERENCE	SECONDARY REFERENCE PART NUMBER	ACCOUNTING	DESCRIPTION	QTY	UNIT	PRICE	AMOUNT	
	000-119			MILEAGE 53387# RD TP	36	mi	3.20	115.20	
	009-407	009-019		Pump Charge 1 Trk	4480	\$1	2019	2019	
	000-119			Crew mileage 40042# RDTP	36	mi	1.95	70.20	
	007-029			Additional hrs 1 Trk	2	hrs	291	582	
RECEIVED STATE CORPORATION COMMISSION NOV 12 1997 REGISTRATION DIVISION Topeka, Kansas					ORIGINAL				
				BANK TXR #B-338375				1095.55	

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: 8/08/97  
 TIME SIGNED: 1400  
 A.M.  P.M.

TYPE LOCK  
 SUB SURFACE SAFETY VALVE WAS:  
 PULLED & RETURN  PULLED  RUN  
 BEAN SIZE  
 TYPE OF EQUALIZING SUB. CASING PRESSURE  
 DEPTH  
 TUBING SIZE TUBING PRESSURE WELL DEPTH  
 SPACERS  
 TREE CONNECTION TYPE VALVE  
 PAGE TOTAL: 3861.95  
 - FROM CONTINUATION PAGE(S)  
 SUB-TOTAL 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):  
 CUSTOMER OR CUSTOMER'S AGENT (SIGNATURE):  
 HALLIBURTON OPERATOR/ENGINEER: David L Scott B9495  
 HALLIBURTON APPROVAL: D L Scott





JOB LOG 4239-5

REGION North America	NW/COUNTRY	TICKET #	TICKET DATE
MBU ID / EMP #	EMPLOYEE NAME	BDA / STATE	COUNTY
LOCATION	COMPANY	PSL DEPARTMENT	
TICKET AMOUNT	WELL TYPE	CUSTOMER REP / PHONE	
WELL LOCATION	DEPARTMENT	API / UWI #	
LEASE / WELL #	SEC / TWP / RNG	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

CHART NO.	TIME	RATE (BPM)	VOLUME (GAL)	PUMPS		PRESS: (psi)		JOB DESCRIPTION / REMARKS
				T	C	Tbg	Csg	
	0800							Called Out
	1130							On Loc w/ Trk's Safety mtg T.I.H. w/ Liner & Hanger Liner on Bottom Circ 45 min w/ Rig Prepare Liner Hanger In Set position Rig up Howco
	1530	3	18	✓		500		Pump 12% KCL preflush
	1537	3	3	✓		500		Fresh H2O spacer
	1543	3	6.9	✓		300		mix & pump 25sk's (mt @ 14.7 ppq)
	1545	3	8			0		Close In & wash pump & line
	1546	2.0		✓		100		Release Tbg Plug & st Disp w/ 2% KCL H2O
	1543	2.0	15.5	✓		500		Lifting Lmt
	1555	2.0	19.6	✓		100		Tbg Plug Shore Liner Plug (continue pumping)
	1566	0	20.4	✓		1500		Plug Down
	1557			✓		0		Release psi Held Hang Liner & T.O.H. w/D.P.

Job Complete  
Thank you  
Scotty

ORIGINAL



