

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

API NO. 15- 095-20723-0001

County Kingman

NW - NW - NW - NE Sec. 29 Twp. 27S Rge. 10 E/W

250 Feet from S (circle one) Line of Section

2500 Feet from E (circle one) Line of Section

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

Lease Name McClellan Well # 29-21

Field Name Cunningham

Producing Formation Viola/Simpson

Elevation: Ground 1660 KB 1669

Total Depth 4264 PBDT 4252

Amount of Surface Pipe Set and Cemented at 1361 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 9/11-14-97
(Data must be collected from the Reserve Ppt)

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 S Rng. 7 E/W

County Garfield, OK Docket No. 284168

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 X Workover

Oil SWD SLOW Temp. Abd.

Gas ENHR SIGW

Dry X Other (Core, WSW, Expl., Cathodic, etc)

Gas Storage Observation Well

If Workover:

Operator: Northern Natural Gas

Well Name: McClellan 29-21

Comp. Date 7-15-78 Old Total Depth 4234

X Deepening X Re-perf. Conv. to Inj/SWD

Plug Back PBDT

XXX Commingled Docket No.

Dual Completion Docket No.

Other (SWD or Inj?) Docket No.

7-30-97 8-1-97 8-8-97

Spud Date OF START OF WORKOVER Date Reached TD Completion Date OF WORKOVER

STATE CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION
WICHITA, KANSAS
NOV 12 1997

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 11/5/97

Subscribed and sworn to before me this 5th day of November 19 97.

Notary Public Karen Elliot

Date Commission Expires January 23, 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)

NOTARY PUBLIC - State of Kansas
KAREN ELLIOT
My Appt. Exp. 1-23-99

SIDE TWO

Operator Name Northern Natural Gas Lease Name McClellan Well # 29-21

Sec. 29 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 (Attach Additional Sheets.)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input 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	4121	-2452
Electric Log Run (Submit Copy.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Simpson	4225	-2556

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

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	64	Common	125	-----
Surface	12.25"	8.625"	23.6#/ft	1361	50/50 Poz	650	3% CC
Production	7.875"	5.5"	15.5#/ft	4261	RegPoz	200	18% NaCL

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	4174-4264	Standard	25	5# Gi., 18% NaCL, .25 Flocele, 5% Calsea

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	
		Amount	Depth
4	4226 - 4246	1000 gal 15% HCL	4121"
4	4124 - 4134		
4	4142 - 4152		
4	4124 - 4144		

TUBING RECORD		Size	Set At	Packer At	Liner Run	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		2.375"	4195	4195		
Date of First, Resumed Production, SMD or Inj. Storage OB Well-Viola/Simpson			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 Other (Specify) _____

INJECTION Production Interval 4124'-4134'
4142'-4152'
4226'-4246'



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

ORIGINAL

INVOICE



HALLIBURTON ENERGY SERVICES, INC.

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

INVOICE NO.	DATE
307887	08/04/1997

WELL/LEASE NO./PROJECT <i>McClellan 29-21</i> PRENTICE 30-11		WELL/PROJECT LOCATION KINGMAN	STATE KS	OWNER SAME
SERVICE LOCATION PRATT	CONTRACTOR PRATT WELL SERVICE	JOB PURPOSE SHOWN BELOW		TICKET DATE 08/04/1997
ACCOUNT NO. 634280	CUSTOMER/AGENT W A MERRICK	VENDOR NO.	CUSTOMER ID/NO NUMBER L 4420 7 008	SHIPPED VIA/TYPE COMPANY TRUCK
			REFILING	28142

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	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		
000-119	MILEAGE FOR CREW	36	MI	1.95	70.20
		1	UNT		
009-407	CEMENTING LINERS/SHORT CASING	4264	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 60	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	110.00MN
JOB PURPOSE SUBTOTAL					3,279.95
INVOICE SUBTOTAL					3,279.95
DISCOUNT-(BID)					655.99-
INVOICE BID AMOUNT					2,623.96
*- KANSAS STATE SALES TAX					125.84
*- PRATT COUNTY SALES TAX					25.68
Simpson Project 573828 LF					
INVOICE TOTAL - PLEASE PAY THIS AMOUNT =====>					\$2,775.48

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NOV 12 1997

CONSERVATION DIVISION

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.



CUSTOMER COPY TICKET
No. 307887 - 8

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

PAGE 1 OF 2

1. SERVICE LOCATIONS Pia # KS	2. WELL/PROJECT NO. 29-21 30-11	3. LEASE McClellan	4. COUNTY/PARISH Kingman	5. STATE KS	6. CITY/OFFSHORE LOCATION	7. DATE 8-4-97	8. OWNER Same
9. TICKET TYPE <input type="checkbox"/> SERVICE <input type="checkbox"/> SALES	10. NITROGEN JOB? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	11. CONTRACTOR PWS	12. RIG NAME/NO	13. SHIPPED VIA Hwy	14. DELIVERED TO Loc	15. ORDER NO.	
16. WELL TYPE	17. WELL CATEGORY	18. JOB PURPOSE	19. WELL PERMIT NO.	20. WELL LOCATION Land			
21. REFERRAL LOCATION	22. INVOICE INSTRUCTIONS						

JOB PURPOSE	PRICE REFERENCE	SECONDARY REFERENCE	ACCOUNTING	DESCRIPTION	QTY	UNIT	PRICE	AMOUNT
	600419			MILEAGE 53387# RD TP	36	mi	3.20	115.20
	600419			Creo mileage 40042# RDTP	36	mi	1.95	70.20
	600407	009-019		Pump Charge / Trk	4264	ft	2019	2019

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RESERVATION DIVISION

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: 8.4.97
TIME SIGNED: 1100
A.M. P.M.

TYPE LOCK	SUB SURFACE SAFETY VALVE WAS: <input type="checkbox"/> PULLED & RETURN <input type="checkbox"/> PULLED <input type="checkbox"/> RUN		PAGE TOTAL 3279.95
BEAN SIZE	TYPE OF EQUALIZING SUB.	CASING PRESSURE	-FROM CONTINUATION PAGE(S)
DEPTH	TUBING SIZE	TUBING PRESSURE	WELL DEPTH
SPACERS	TREE CONNECTION	TYPE VALVE	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 EMP # David I. Scott B9475	HALLIBURTON APPROVAL D.L. Scott
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TICKET CONTINUATION CUSTOMER COPY

TICKET No. 307887

HALLIBURTON ENERGY SERVICES

FORM 1911 R-10

CUSTOMER: Northern Natural Gas Co. WELL: McClellan 29-21 DATE: 8-4-97 PAGE 2 OF 2

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			10.83	541.50	
508-291	516.00337	1			Gilsonite Bld 5#/SK	125	1/BS			50	62.50	
509-968	516.00158	1			Salt Bld 18%	300	1/BS			17	51.00	
507-775	516.00144	1			Halad-327 Bld .6%	14	1/BS			7.70	107.80	
507-970	70.15764	1			D-Air 1 Bld .25%	6	1/BS			3.65	21.90	
509-406	890.50912	1			Calcium Chloride Bld 1%	1	SK			46.90	46.90	
507-210	890.50271	1			Fluocel Bld .25#/SK	6	1/BS			1.90	11.40	
508-127	890.50131	1			Calceol Bld 5%	1	SK			28.00	28.00	
Loaded on TRK # 52530 - Front												
<p>RECEIVED</p> <p>STATE COMMISSION</p> <p>NOV 12 1997</p> <p>CONSERVATION DIVISION</p> <p>Wichita, Kansas</p>												
500-207		1			SERVICE CHARGE			CUBIC FEET	61	1.55	94.55	
507-306		1			MILEAGE CHARGE	TOTAL WEIGHT	LOADED MILES	TON MILES	5270	18	Minimum Charge	110.00

ORIGINAL

No. B 338372

CONTINUATION TOTAL 1075.55



JOB LOG 4239-5

TICKET #	188	TICKET DATE	7-17
REGION	North America	BDA / STATE	
MBU ID / EMP #		PSL DEPARTMENT	
LOCATION		CUSTOMER REP / PHONE	
TICKET AMOUNT		API / UWI #	
WELL LOCATION		JOB PURPOSE CODE	
LEASE / WELL #	29-21		

ORIGINAL

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 (C)	PRESS (psi)	JOB DESCRIPTION / REMARKS
# 155	0800					Called Out
	1200					On loc w/TRK's safety mtg TIT w/liner & Hanger Liner on Bottom Circ w/Rig +/- 45 min Liner In set position Rig up Howco
	1616	3	18	✓	600	Pump 12% KCL preflush
	1621	3	2	✓	600	Fresh H2O Spacer
	1628	3	6.9	✓	200	Mix + pump 255k's Cmt @ 14.7 ppg
	1631	5	10	✓	0	Close In + wash pump + line Release Tbg Plug
	1632	2.0		✓	100	St Disp w/2% KCL H2O
	1637	2.0	13.5	✓	400	Lifting Cmt
	1640	2.0	18.8	✓	700	Sheared Liner Plug
	1641	0	19.3	✓	2000	Liner Plug Down
	1642			✓	0	Release psi Float OK T.O.H w/D.P.
						Good mud Circ
						Job Complete
						Thank you
						Scotty

NOV 12 1997

CONSERVATION DIVISION



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 11:52

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,

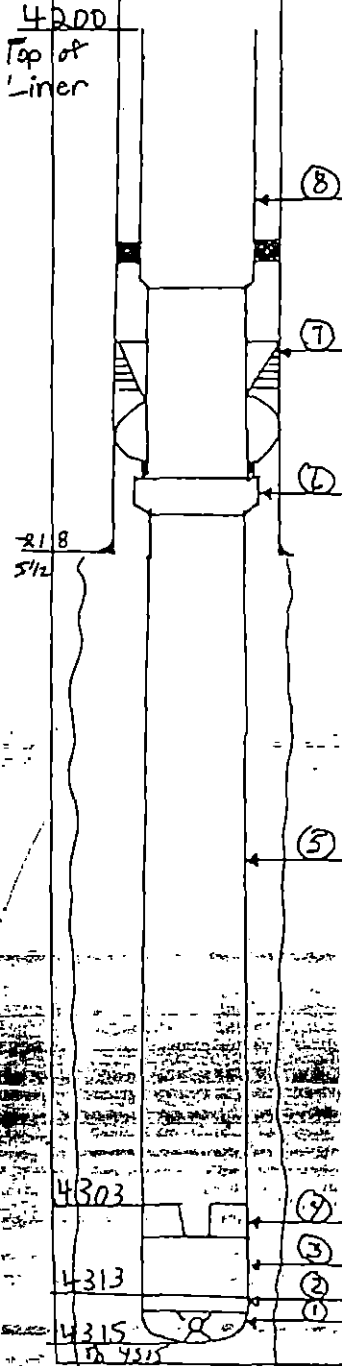
A handwritten signature in cursive script that reads "Dan Dobbins".

Dan Dobbins
Sr. Reservoir Analyst

ORIGINAL

COMPANY Northern Natural Gas Co.	SIZE 5 1/2	LINEAR 3 1/2	UPPER TUBING	LOWER TUBING
WELL NAME & NUMBER STEFFAN 24-32	WEIGHT 15.50	GRADE J-55		
FIELD Cunningham Gas Storage	THREAD (CS Hydri.)			
COUNTY PRATT	DEPTH 4218			
STATE KANSAS				
DATE 07-12-97	<input type="checkbox"/> NEW <input checked="" type="checkbox"/> W.O.			

ITEM	DESCRIPTION	MAX. O.D. INCHES	MIN. I.D. INCHES	LENGTH FEET	DEPTH FEET
1	3 1/2 Halliburton Float Shoe	4.465	3.375	1.16	4315
2	X-over sub	4.250	3"	.37	4313.84
3	3 1/2 9.3# Tubing Sub	3.870	2.925	9.90	4313.47
4	Baker 3 1/2 (CS Hydri) Landing Collar	3 15/16	2 15/16	.74	4303.57
5	(3) Jts 3 1/2 9.3# (CS Hydri) Tubing	3.870	2.925	89.54	4252.83
6	X-over sub w/ 3 1/2 CS Hydri Pin	4 1/2	2 15/16	.78	4213.28
7	Baker 3 1/2 by 5 1/2 Hyflo III Hanger	4 11/16	3.50	3.77	4212.51
8	Baker Hyflo III Liner Top Packer w/ 4" 6' setting sleeve	4 11/16 PKR 10	4" 3.50	8.72	4208.74
					4200.02



PREPARED FOR: Mr. Art MERTZ

PREPARED BY: John Drumm
OFFICE: OKLA-CITY, OK
PHONE: (405) 672-5552



6023 NAVIGATION BOULEVARD HOUSTON TEXAS 77011-1131
P.O. BOX 3048 HOUSTON TEXAS 77253-3048
Telephone (713) 923-9351 Telex 76-2833