

VIRGINIA DIVISION OF MINERAL RESOURCES
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET

Page 1 of 2

Date rec'd: Date Processed:

PROPERTY: FRIDLEY CR-1 #1 Smith

COMPANY: ARCO EXPLORATION OIL & GAS

COUNTY: CRAIG COUNTY

Well Repository No.: W- 7202

Sample Interval: from 0 to 2960'

Number of samples: 272

Total Depth: 2961' (2961')

Oil or Gas: Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
170-80	520-30	890-900	1250-90	1640-50
80-90	30-40	900-10	90-1300	50-60
90-200	40-50	10-20	1300-10	60-70
200-10	50-60	20-30	20-30	70-80
10-20	60-70	30-40	30-40	80-90
20-30	70-80	40-50	40-50	90-1700
30-40	80-90	50-60	50-60	1700-10
40-50	90-600	60-70	60-70	10-20
50-60	600-10	70-80	70-80	20-30
60-70	10-20	80-90	80-90	30-40
70-80	20-30	1000-10	90-1400	40-50
80-90	30-40	10-20	1400-10	50-60
90-300	40-50	20-30	10-20	60-70
300-10	50-60	30-40	20-30	70-80
310-20	60-70	40-50	30-40	80-90
20-30	70-80	50-60	40-50	90-1800
30-40	80-90	60-70	50-60	1800-10
40-50	90-700	70-80	60-70	10-20
50-60	700-10	80-90	70-80	20-30
60-70	710-20	90-1100	80-90	30-40
70-80	20-30	1100-10	90-1500	40-50
80-90	30-40	10-80	1500-10	50-60
90-400	40-50	20-40	10-20	60-70
400-10	50-60	40-50	20-30	70-80
10-20	60-70	50-60	30-40	80-90
20-30	70-80	60-70	40-50	90-1900
30-40	80-90	70-80	50-60	1900-10
40-50	90-800	80-90	60-70	10-20
50-60	800-810	90-1200	70-80	20-30
60-70	10-20	1200-10	80-90	30-40
70-80	20-50	10-20	90-1600	40-50
80-90	50-60	20-30	1600-10	50-60
90-520	60-70	30-40	10-20	60-70
520-10	70-80	40-50	20-30	70-80
10-20	80-90	50-60	30-40	80-90

VIRGINIA DIVISION OF MINERAL RESOURCES
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET
 Continued

Page 2 of 2

Well Repository No.: W- 7202

From-To	From-To	From-To	From-To	From-To
1990-2000	2390-2400	90-2500	-	-
2000-10	2400-10	2800-10	-	-
10-20	10-20	10-20	-	-
20-30	20-30	20-30	-	-
30-40	30-40	30-40	-	-
40-50	40-50	40-50	-	-
50-60	50-60	50-60	-	-
60-70	60-70	60-70	-	-
70-80	70-80	70-80	-	-
80-90	80-90	80-90	-	-
90-2100	90-2500	90-2900	-	-
2100-10	2500-10	2900-10	-	-
10-20	10-20	10-20	-	-
20-30	20-30	20-30	-	-
30-40	30-40	30-40	-	-
40-50	40-50	40-50	-	-
50-60	50-60	50-60	-	-
60-70	60-70	-	-	-
70-80	70-80	-	-	-
80-90	80-90	-	-	-
90-2200	90-2600	-	-	-
2200-10	2600-10	-	-	-
10-20	10-20	-	-	-
20-30	20-30	-	-	-
30-40	30-40	-	-	-
40-50	40-50	-	-	-
50-60	50-60	-	-	-
60-70	60-70	-	-	-
70-80	70-80	-	-	-
80-90	80-90	-	-	-
90-2300	90-2700	-	-	-
2300-10	2700-10	-	-	-
10-20	10-20	-	-	-
20-30	20-30	-	-	-
30-40	30-40	-	-	-
40-50	40-50	-	-	-
50-60	50-60	-	-	-
60-70	60-70	-	-	-
70-80	70-80	-	-	-
80-90	80-90	-	-	-

ORIGINAL INVOICE



REMIT TO:
P.O. BOX 84737
DALLAS, TX 75281

3721K DEC85

INVOICE NO.	DATE
305383	11/20/1985

WELL LEASE NO.	WELL LOCATION	STATE	WELL OWNER		
SMITH HEIRS 1	CRAIG	VA	SAME		
SERVICE LOCATION	CONTRACTOR	JOB PURPOSE	TICKET DATE		
ELKVIEW WV.	DELTA DRILLING '85 DEC	PLUG TO ABANDON	11/20/1985		
ACCT. NO.	CUSTOMER AGENT	VENDOR NO.	CUSTOMER P.O. NUMBER	SHIPPED VIA	
035989	S. P. SANDERS, JR.			HALLIBURTON	13068

ARCO OIL & GAS
P O BOX 51408
LAFAYETTE, LA 70501

DIRECT CORRESPONDENCE TO:
SUITE 775
PARKWAY CENTER INN
PITTSBURGH, PA 15220

PRICE REF. NO.	DESCRIPTION	QUANTITY	U/M	UNIT PRICE	AMOUNT
000-117	MILEAGE	180	MI	2.10	378.00
090-910	MISCELLANEOUS PUMPING JOB	2	HR	570.00	570.00
090-928	MISCELLANEOUS PUMP JOB-ADD HRS	6	HR	84.00	504.00
504-043	STANDARD CEMENT	163	SK	6.04	984.52
506-105	POZMIX A	162	SK	3.03	490.86
506-121	HALLIBURTON-GEL 2X	5	SK	.00	N/C
509-408	CALCIUM CHLORIDE	5	SK	24.50	122.50
500-207	BULK SERVICE CHARGE	335	CFT	.95	318.25
500-306	MILEAGE	2555.28	TMI	.70	1,788.70
INVOICE SUBTOTAL					5,156.83
*-VIRGINIA STATE SALES TAX					47.95
*-CRAIG COUNTY SALES TAX					15.99
INVOICE TOTAL - PLEASE PAY THIS AMOUNT =====>					\$5,220.77

AFFIX JOB TKT

TERMS INVOICES PAYABLE NET BY THE 20TH OF THE FOLLOWING MONTH AFTER DATE OF INVOICE. UPON CUSTOMER'S DEFAULT IN PAYMENT OF CUSTOMER'S ACCOUNT BY THE LAST DAY OF THE MONTH FOLLOWING THE MONTH IN WHICH THE INVOICE IS DATED, CUSTOMER AGREES TO PAY INTEREST THEREON AFTER DEFAULT AT THE HIGHEST LAWFUL CONTRACT RATE APPLICABLE BUT NEVER TO EXCEED 18% PER ANNUM. IN THE EVENT IT BECOMES NECESSARY TO EMPLOY AN ATTORNEY TO ENFORCE COLLECTION OF SAID ACCOUNT, CUSTOMER AGREES TO PAY ALL COLLECTION COSTS AND ATTORNEY FEES IN THE AMOUNT OF 20% OF THE AMOUNT OF THE UNPAID ACCOUNT.

HALLIBURTON SERVICES JOB SUMMARY

HALLIBURTON DIVISION PITTSBURGH

HALLIBURTON LOCATION EIKVIEW

BILLED ON TICKET NO. 305383

FORM 2025

WELL DATA

FIELD Paint Bank SEC. _____ TWP. _____ RNG. _____ COUNTY _____ STATE Virginia

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

INITIAL PROD: OIL _____ BPD, WATER _____ BPD, GAS _____ MCFD _____

PRESENT PROD: OIL _____ BPD, WATER _____ BPD, GAS _____ MCFD _____

COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____

PACKER TYPE _____ SET AT _____

BOTTOM HOLE TEMP. _____ PRESSURE _____

MISC. DATA _____ TOTAL DEPTH 2967' 85

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING						
LINER						
<u>2 1/2" ID</u>	<u>4</u>	<u>155</u>	<u>4 1/2</u>	<u>15.13</u>	<u>2967</u>	
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLER OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE <u>11-19-85</u>	DATE <u>11-19-85</u>	DATE <u>11-19-85</u>	DATE <u>11-19-85</u>
TIME <u>0400</u>	TIME <u>1130</u>	TIME <u>1745</u>	TIME <u>1900</u>

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
<u>Time Vay</u>	<u>35877</u>	<u>EIKVIEW</u>
<u>R. Castro</u>	<u>9788</u>	
<u>S Douglas</u>	<u>51129</u>	
<u>M. Fields</u>	<u>51130</u>	
<u>M.</u>	<u>2 1/2" ID</u>	

DEPARTMENT Cement

DESCRIPTION OF JOB _____

JOB DONE THRU: TUBING CASING ANNULUS TBG./ANN.

CUSTOMER REPRESENTATIVE X S.P. Sanders Jr.

HALLIBURTON OPERATOR Smithy J. McCoy COPIES REQUESTED 1

CEMENT DATA

STAGE	NUMBER OF SACKS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.
<u>1</u>	<u>300</u>	<u>32</u>	<u>4</u>		<u>300</u>		<u>120</u>	<u>110</u>

PRESSURES IN PSI

CIRCULATING _____ DISPLACEMENT _____

BREAKDOWN _____ MAXIMUM _____

AVERAGE _____ FRACTURE GRADIENT _____

SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____

HYDRAULIC HORSEPOWER

ORDERED _____ AVAILABLE _____ USED _____

AVERAGE RATES IN BPM _____

CEMENT LEFT IN PIPE

TREATING _____ DISPL. _____ OVERALL _____

FEET _____ REASON _____

SUMMARY

PRESLUSH: BBL.-GAL. _____ TYPE _____

LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____

TREATMENT: BBL.-GAL. _____ DISPL: BBL.-GAL. 35

CEMENT SLURRY: BBL.-GAL. 76

TOTAL VOLUME: BBL.-GAL. _____

REMARKS

CUSTOMER

CUSTOMER ARCO
LEASE South Hills
WELL NO. 41
JOB TYPE

DATE 11-19-85

well location has been
plugged and is on the
hillside, south side of Rt.
603 which runs along Paint
Bank Branch, Key to gate
across entrance road can be
obtained from Paint Bank
Fish Hatchery office.

- well drilled to 2700' and
abandoned, reclaimed area.

- plan to return

- drilling mud appeared in spring
& steam causing fish kill at
hatchery.

(FOR OFFICE USE ONLY: API Well No. 45 - - - State County Permit

Date: _____, 19__

Operator's Well No. _____

VIRGINIA OIL AND GAS INSPECTOR
DEPARTMENT OF LABOR AND INDUSTRY
DIVISION OF MINES
219 Wood Avenue
Big Stone Gap, Virginia 24219-1799
Phone 703-523-0335

WELL PLAT

+ Denotes location of well on United States Topographic Maps, scale 1 to 24,000. Latitude and longitude lines are represented by border lines as shown.

This plat is new / updated


This plat is / is not based on a mine coordinate system established for the areas of the well location.

Well operator ATLANTIC RICHFIELD CO.

Address P.O. BOX 521, TULSA, OKLAHOMA 74102
Farm FRIDLEY-KEFFER
Tract _____ Acres 78.21 Lease No. _____
Elevation 2755.29
Quadrangle POTTS CREEK, VA - W.VA.
County CRAIG District NEW CASTLE
Registered Engineer _____ Registration No. _____
Certified Land Surveyor VA Cert. No. 1177
File No. _____ Drawing No. _____
Date 5-16-85 Scale 1" = 200'

Certification of Well Plat

I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief, and shows all the information required by law and the regulations of the Virginia Well Review Board.

 _____ L.S.
Registered Engineer or Certified Land Surveyor
in Chapter 3 (A) 1177

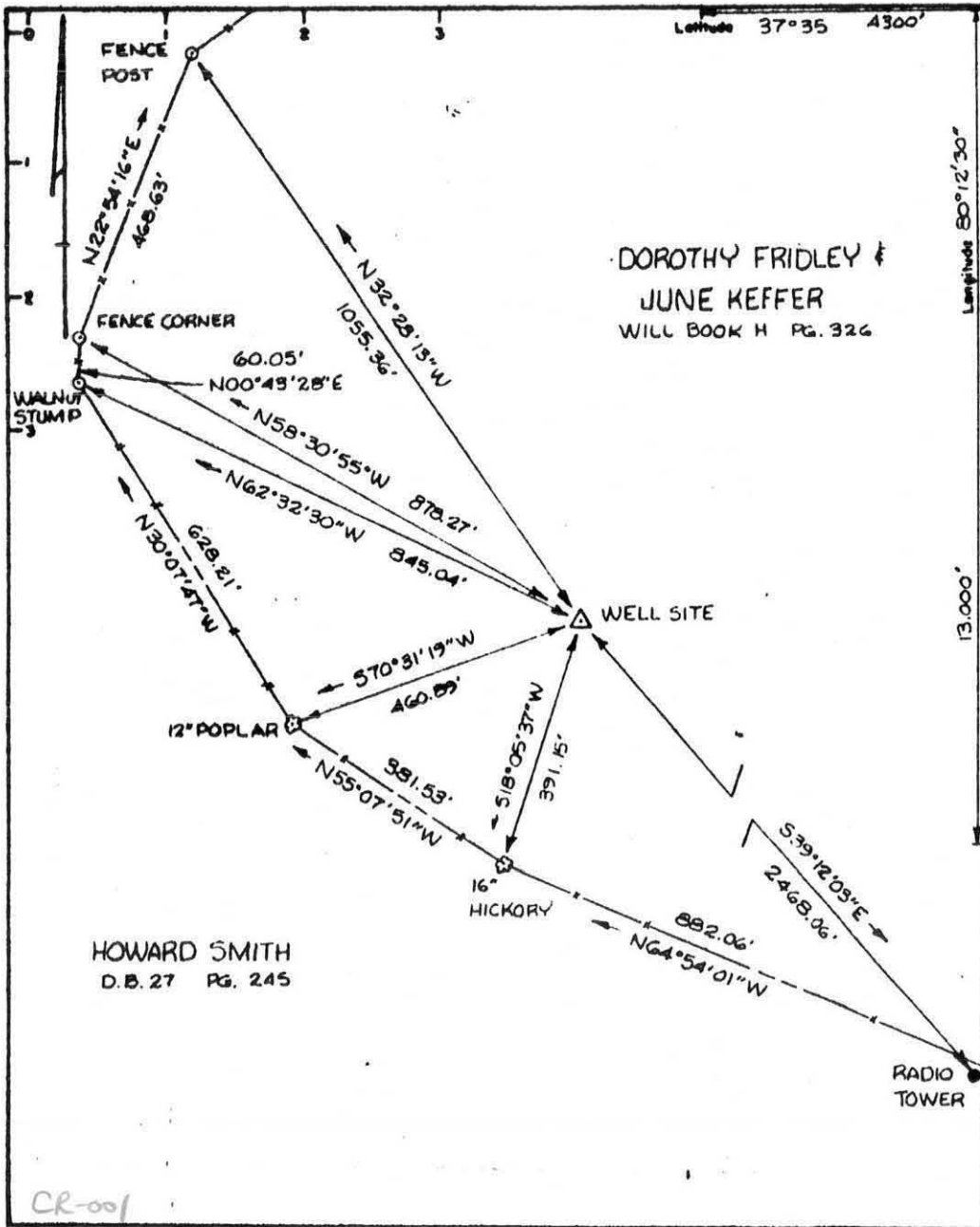


FIGURE 2

ORIGINAL
INVOICE



REMIT TO:
P. O. BOX 84737
DALLAS, TX 75287

3721K DEC85

INVOICE NO.	DATE
305383	11/20/1985

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035989	S. P. SANDERS, JR.			HALLIBURTON	13068

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HALLIBURTON SERVICES JOB SUMMARY

HALLIBURTON DIVISION PITTSBURGH

HALLIBURTON LOCATION EIKVIEW

BILLED ON TICKET NO. 305383

FORM 2025

WELL DATA

FIELD Paint Bank SEC. _____ TWP. _____ RNG. _____ COUNTY _____ STATE Virginia

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

INITIAL PROD: OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD _____

PRESENT PROD: OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD _____

COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____

PACKER TYPE _____ SET AT _____

BOTTOM HOLE TEMP. _____ PRESSURE _____

MISC. DATA _____ TOTAL DEPTH 2967' 85 BEH-2 PT:35

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING						
LINER						
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD <u>DRILL PIPE</u>		<u>Halliburton</u>
PACKER		
OTHER		

MATERIALS

TREAT. FLUID _____ DENSITY _____ LB/GAL. API _____

DISPL. FLUID _____ DENSITY _____ LB/GAL. API _____

PROP. TYPE _____ SIZE _____ LB. _____

PROP. TYPE _____ SIZE _____ LB. _____

ACID TYPE _____ GAL. _____ % _____

ACID TYPE _____ GAL. _____ % _____

ACID TYPE _____ GAL. _____ % _____

SURFACTANT TYPE _____ GAL. _____ IN _____

NE AGENT TYPE _____ GAL. _____ IN _____

FLUID LOSS ADD. TYPE _____ GAL.-LB. _____ IN _____

GELLING AGENT TYPE _____ GAL.-LB. _____ IN _____

FRIC. RED. AGENT TYPE _____ GAL.-LB. _____ IN _____

BREAKER TYPE _____ GAL.-LB. _____ IN _____

BLOCKING AGENT TYPE _____ GAL.-LB. _____

PERFPAC BALLS TYPE _____ QTY. _____

OTHER _____

OTHER _____

CALLER OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE <u>11-19-85</u>	DATE <u>11-19-85</u>	DATE <u>11-19-85</u>	DATE <u>11-19-85</u>
TIME <u>0400</u>	TIME <u>1130</u>	TIME <u>1745</u>	TIME <u>1900</u>

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
<u>TIME VAY</u>	<u>35877</u>	<u>EIKVIEW</u>
<u>R. CASTO</u>	<u>9788</u>	
<u>S. DOUGLAS</u>	<u>51129</u>	
<u>M. FIELDS</u>	<u>51130</u>	
<u>M.</u>	<u>PK TP</u>	

DEPARTMENT Cement

DESCRIPTION OF JOB _____

JOB DONE THRU: TUBING CASING ANNULUS TBC./ANN.

CUSTOMER REPRESENTATIVE X S.P. Sanders Jr.

HALLIBURTON OPERATOR Smithy J. McCoy COPIES REQUESTED 1

CEMENT DATA

STAGE	NUMBER OF SACKS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.
<u>1</u>	<u>300</u>	<u>32</u>	<u>H</u>		<u>3</u>	<u>2967' - 20' 24</u>	<u>126</u>	<u>11</u>

PRESSURES IN PSI

SUMMARY

VOLUMES

CIRCULATING _____ DISPLACEMENT _____ PRESLUSH: BBL.-GAL. _____ TYPE _____

BREAKDOWN _____ MAXIMUM _____ LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____

AVERAGE _____ FRACTURE GRADIENT _____ TREATMENT: BBL.-GAL. _____ DISPL: BBL.-GAL. 35

SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____ CEMENT SLURRY: BBL.-GAL. 76

ORDERED _____ AVAILABLE _____ USED _____ TOTAL VOLUME: BBL.-GAL. 111

HYDRAULIC HORSEPOWER

REMARKS

AVERAGE RATES IN BPM _____

TREATING _____ DISPL. _____ OVERALL _____

CEMENT LEFT IN PIPE

FEET _____ REASON _____

CUSTOMER

CUSTOMER ARCO
LEASE HALLIBURTON
WELL NO. 1
JOB TYPE
DATE 11-19-85

HALLIBURTON SERVICES
JOB LOG

WELL # 1 LEASE Smith Heirs MET NO. 305383
 CUSTOMER ARCO PAGE NO.
 JOB TYPE Plugging Job DATE 11-19-85

FORM 2013 R-2

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
11-19-85	1130							ON location
								Salty Meeting
11-19-85	1130							'85 DEC -2 P1:35 ARRIVED ON location & was put on stand-by until notification of Plugging or logging of well Released until notification
11-20-85	1000							ON location Salty Meeting
	1715							Pumped SPACCP. MIX 325K - 50-50 P02 - Displace Balance Pulling Drill Pipe
11-20-85	1800							Released from job
								THANKS AGAIN
								Tim & Crew

CUSTOMER

BULK MATERIALS DELIVERY AND TICKET CONTINUATION



A Division of Halliburton Company
DUNCAN, OKLAHOMA 73838

FOR INVOICE AND TICKET NO. **305383**

DATE 11-19-85	CUSTOMER ORDER NO.	WELL NO. AND FARM #1 Smith Heirs	COUNTY CRAIG	STATE VA.
CHARGE TO ARCD	OWNER SADME	CONTRACTOR DELTA Drilling		No. B 547220
MAILING ADDRESS P.O. Box 51408		DELIVERED FROM EIKVICW, WV	LOCATION CODE 10825	PREPARED BY
CITY & STATE LaFayette, La. 70505		DELIVERED TO Wellsite	TRUCK NO. -2 P135	RECEIVED BY

PRICE REFERENCE	SECONDARY REF. OR PART NO.	CODE		DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT
		L	D		QTY.	MEAS.	QTY.	MEAS.		
504043				Standard Bulk Cement	163	SK			6.04	984.52
506105				W/POZmix A	162	SK			3.03	490.86
506121				W/2% Halliburton Gel	5	SK			NC	NC-
509408				W/2% Calcium Chloride	5	SK			24.50	122.50
Returned Mileage Charge					TOTAL WEIGHT	LOADED MILES	TON MILES			
SERVICE CHARGE ON MATERIALS RETURNED							CU. FEET			
500207				SERVICE CHARGE			CU. FEET 335.95			318.25
500306				Mileage Charge	28392	180	TON MILES 2555.28		.70	1788.70
No. B 547220					CARRY FORWARD TO INVOICE				SUB-TOTAL	3704.83

THIS IS NOT AN INVOICE



WORK ORDER CONTRACT AND PRE-TREATMENT DATA

FORM 1908 R-4

A Division of Halliburton Company
DUNCAN, OKLAHOMA 73538

ATTACH TO INVOICE & TICKET NO. 305383

DISTRICT EIKVIEW

DATE 11-19-85

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE

THE SAME AS AN INDEPENDENT CONTRACTOR TO: ARCO (CUSTOMER)
AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. #1 LEASE Smith Heirs SEC. _____ TWP. _____ RANGE _____

FIELD Paint Bank COUNTY CRAIG STATE OKLAHOMA OWNED BY ARCO

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME	TYPE	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
FORMATION THICKNESS	FROM	TO					
PACKER: TYPE	SET AT						
TOTAL DEPTH	MUD WEIGHT						
BORE HOLE							SHOTS/FT.
INITIAL PROD: OIL _____ BPD, H ₂ O _____ BPD, GAS _____ MCF							
PRESENT PROD: OIL _____ BPD, H ₂ O _____ BPD, GAS _____ MCF							

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ANNULUS CASING TUBING/ANNULUS HYDRAULIC HORSEPOWER

Pump 6BBL H₂O - Mix 325stk CMT
Displace 35BBLS

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

As consideration, the above-named Customer agrees:

- (a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists.
- (b) Halliburton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer and of the well owner (if different from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface damage and surface damage arising from subsurface damage.
- (c) Customer shall be responsible for and secure Halliburton against any liability for reservoir loss or damage, or property damage resulting from subsurface pressure, losing control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconduct or gross negligence of Halliburton.
- (d) Customer shall be responsible for and secure Halliburton against any and all liability of whatsoever nature for damages as a result of subsurface trespass, or an action in the nature thereof, arising from a service operation performed by Halliburton hereunder.
- (e) Customer shall be responsible for and secure Halliburton against any liability for injury to or death of persons, other than employees of Halliburton, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.
- (f) Halliburton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service.
- (g) Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for maintenance operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of the above items, subject to the terms of the contract, which require that any such items be returned to the customer at the landing, and returned to the landing, unless such items are damaged by the Halliburton personnel.
- (h) Because of the uncertainty of variable well conditions and the difficulty of making judgments of reservoir pressure, wellbore conditions, and the possibility of gas migration, Halliburton does not warrant or guarantee the results of its research, analysis, job recommendations, or other work performed by its personnel, and the customer shall be responsible for any damage, injury or loss of property, including but not limited to, gas migration, wellbore damage, or other damage, which may result from the use of the products, supplies or materials furnished by Halliburton.
- (i) Halliburton warrants only title to the products, supplies or materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.
- (j) Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.
- (k) This contract shall be governed by the law of the state where services are performed or equipment or materials are furnished.
- (l) Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED SR Sanders CUSTOMER
DATE 11-19-85

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and/or with respect to services furnished under this contract.

TIME _____ A.M. P.M.

CUSTOMER



A DIVISION OF HALLIBURTON COMPANY

REM TO
P.O. BC 737
DALLAS, TEXAS 75284
DIRECT ANY CORRESPONDENCE TO
P.O. DRAWER 1431
DUNCAN, OKLAHOMA 73536

NO. 305383-1

FORM 1906 R9

PAGE 1 OF 2 PAGES

WELL NO. - FARM OR LEASE NAME #1 Smiths Hairs	COUNTY CRATER	STATE VIRGINIA	CITY/OFFSHORE LOCATION	DATE 11-20-85
CHARGE TO ARCO	OWNER SAME	TICKET TYPE (CHECK ONE) SERVICE <input checked="" type="checkbox"/> SALES <input type="checkbox"/>		NITROGEN JOB YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
ADDRESS P.O. Box 51408	CONTRACTOR Delta Drilling	LOCATION 1 EIKVIEW		CODE 10825
CITY, STATE, ZIP LA FAYETTE, LA 70506	SHIPPED VIA Halco	FREIGHT CHARGES <input type="checkbox"/> PPD <input type="checkbox"/> COLLECT	LOCATION 2	CODE
	DELIVERED TO SAME		LOCATION 3	CODE
	ORDER NO.	REFERRAL LOCATION		
	WELL TYPE Gas 02	WELL CATEGORY Development-01	WELL PERMIT NO. B-547220	
	TYPE AND PURPOSE OF JOB Plug to Abandon - 115			

DUNCAN USE ONLY

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATE PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	L O C.	ACCOUNT	DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT
					QTY	MEAS	QTY	MEAS		
000-147				MILEAGE	180	mi			2.10	378.00
090-910				Pump in Charge	2	hr.			520.00	570.00
090-928				ADDITIONAL HOURS	6	hr.			84.00	504.00

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. B-547220

WAS JOB SATISFACTORILY COMPLETED? _____
 WAS OPERATION OF EQUIPMENT SATISFACTORY? _____
 WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____
 X **S.P. Sanders Jr.**
 CUSTOMER OR HIS AGENT (PLEASE PRINT)
 X **S.P. Sanders Jr.**
 CUSTOMER OR HIS AGENT (SIGNATURE)

TAX REFERENCES		SUB TOTAL
		TAX
		TAX
		TAX
		TOTAL

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

HALLIBURTON OPERATOR

Handwritten initials

Form 16, Appendix C

File _____
API Number 45 - 045 - 20804

ARCO #1 Smith Heirs
PLUGGING AFFIDAVIT

STATE OF Louisiana
Parish of Lafayette, TO-wit:
Doug Chester AND W. R. Worthington
being first duly sworn, depose and say that:

They are both experienced in the plugging of wells and participated in the plugging work which is the subject of this Affidavit on the referenced well.

THE PLUGGING WORK WAS FOR THE PURPOSE CHECKED BELOW:

- At the end of production or other use
- After drilling, redrilling or deepening was unsuccessful, so that the well was plugged on the verbal permission of the Inspector or his designated representative under Code of Virginia Section 45.1-311.C.9.
- Partial plugging from the bottom of the hole to _____ feet below the surface, and continued operation by the well operator.
- Partial plugging from the bottom of the hole to _____ feet below the surface, for development as a water well under Section 45.1-350.
- Replug

THE MANNER OF PLUGGING OR REPLUGGING WHICH WAS COMMENCED ON 10/6/87 WAS IN THE MANNER PROVIDED BY LAW AS CHECKED BELOW

- 45.1-342 (Plugging a well that does not penetrate a coal seam)
- 45.1-343 (Plugging well penetrating coal seam without coal protection string provided in Section 45.1-344)
- 45.1-344 (Plugging wells with coal protection strings installed as provided in Section 45.1-344*)
- 45.1-345 (Special plugging at the coal owner's request)
- 45.1-346 (Replugging a well previously plugged)

CHANGES IN THE PLUGGING AS PERMITTED

The well operator did _____ did not make any change(s) in the plugging as specified in the well work permit, which changes were verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the plugging work.

Note: The nature and purpose of each such change, if any, are set out below, or on additional sheets if such are required.

PLUGGING DETAILS

INTERVAL		REMARKS	TYPES OF MATERIALS USED					
FROM	TO		PLUGGING	FILLING	BRIDGE	WON HOLE	CASING SIZE	STRENGTH
25'	5' below ground level		Class 'A' Cement				13-3/8"	

ATTACH PLUGGING DETAILS IN THIS FORM

Finally, if this affidavit concerns a well that was abandoned after plugging, respondents have verified that, in accordance with Section 45.1-347 of the Code of Virginia, a permanent marker of _____ concrete or concrete and iron had been erected over the location.

Doug Chester
First Signature Doug Chester, EST Coordinator
W. R. Worthington
Second Signature W. R. Worthington, Dist Dir, Supv

Subscribed and sworn to before me a notary public, in and for the Lafayette Parish, Louisiana
Date: this 5th day of November, 19 87

John Maxie Brown, Jr. My Commission Expires at death
Notary Public John Maxie Brown, Jr.

Form 16
Appendix C, Sheet 1 (Reverse)

CHANGES IN THE PLUGGING AS PERMITTED

The well operator did ___ / did not ^x ___ / make any changes(s) in the plugging as specified in the well work permit, which changes were verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil & Gas Act, for the purpose of insuring successful completion of the plugging work.

NOTE: The nature and purpose of each such change, if any, are set out below, or on additional sheets if such are required.

OIL AND GAS WELL
SUMMARY REPORT

API No. 45-045-20804 VDMR Well
Rep. No. W-7202
DMQ File No. CR-1

Operator ARCO OIL AND GAS COMPANY
Farm FRIDLEY
Co. Well No. #1 SMITH

County CRAIG Quadrangle POITTS CREEK - 7-1/2'
Location (UTM) N4,156,000; E568,430 UTM Zone 17
(Lat. and Long.) _____

Field _____ Province VALLEY AND RIDGE
Elev. (specify) 2755.29' GR TD 2961 Form. at TD KNOX
Age ORDOVICIAN

Date compl. or abandoned NOVEMBER 23, 1985
Result DRY HOLE, PLUGGED AND ABANDONED

Gas Shows _____
Gas Pays _____
Main Production _____ Prod. Form. _____
Age _____

Treatment: _____

Initial Production _____

Oil shows _____
Water FW YES at 0' TO 2961' at _____ at _____
SW _____ at _____ at _____ at _____

Coal _____
Plat _____ Plotted _____ Completion Report X
Drillers Log X Geologic Log _____
Samples X Interval Sheet X
Sample Interval 0-2960

Remarks _____
Geophysical Logs S.P. _____ Res _____ Gamma _____ Neutron _____
Density _____ Sonic _____ Other _____

Stratigraphic Data Source DIANE CATT

<u>Formation.</u>	<u>Top.</u>	<u>Datum (Subsea)</u>	<u>Thickness</u>
TRENTON	0	+ 2755.29	1630
KNOX	1630	+ 1125.29	1331
		- 205.71	

Remarks _____

References _____

Released to Open File: Completion NOVEMBER 23, 1987

Sampled YES

(Note: UTM measurements in meters, all others in feet)

API WELL No. 45 - 045 - 20804
State County Permit

ARCO OIL AND GAS CO.
CR-1 FRIDLEY
POTTS CREEK 7 1/2'
EL. 2755.29
ARCO #1 (#1SMITH)

Date: 12/2/85
Operator's Well
Name ARCO #1 Smith Heirs

VIRGINIA OIL AND GAS INSPECTOR
P. O. BOX 1416
ABINGDON, VA 24210
703-628-8115



REPORT OF COMPLETION OF WELL WORK

Pursuant to Regulation 4.06 of the Regulations under the Virginia Oil and Gas Act, the undersigned well operator reports completion of the type(s) of well work specified below on the referenced well in _____ District, Craig County, Virginia on 23 day, November month, 19 85.

WELL TYPE: Oil X / Gas X / Enhanced recovery ___ / Waste Disposal ___ / If "Gas", Production ___ / Underground Storage ___
Exempt by Code Section 45.1-300.B.1. from general oil and gas conservation law: yes ___ / no ___
WELL WORK: Drill X / Deepen ___ / Redrill ___ / Stimulate ___ / Plug off old formation ___ / Perforate new formation ___ / Plug X / Replug ___ / Other physical change in well (specify Temporarily Abandon)

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA SECTION 45.1-332.

____ Ninety days from the filing of this report
OR
X Two years from November 23, 1985, the date on which the referenced well was COMPLETED, the well being an exploratory well as defined in Code of Virginia Section 45.1-288.21.

APPLICANT: ARCO Oil and Gas Company
BY D. R. Vuillemont
ITS District Drilling Supervisor
ADDRESS P. O. Box 51408, Lafayette, LA 70505
TELEPHONE (318) 264-4000

Form 16
Appendix A, Sheet 1 (Reverse)
Continued from Obverse side

OTHER GENERAL INFORMATION

An electric log survey was ___/ was not X/ conducted pursuant to Code of Virginia Section 45.1-333.B.2, at the coal owner's or operator's request.

An electric log survey was X/ was not ___/ run for other purposes. This survey did ___/ did not X/ disclose the vertical location of a coal seam.

Note: If a coal seam was located, the part of the survey from the surface through the coal is attached in accordance with Code of Virginia Section 45.1-333.B.3.

Deviation surveys were ___/ were not X/ required under Code of Virginia Section 45.1-333.C "to the bottom of the lowest published coal seam depth."

Note: If deviation surveys were required, the survey results are attached.

A continuous survey was ___/ was not X/ required under Code of Virginia Section 45.1-333.C.

Note: If a continuous directional survey was required, the survey results are attached.

CHANGES IN THE PERMITTED WELL WORK

The well operator did ___/ did not X/ make any change(s) in the permitted well work, verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the well work.

Note: The nature and purpose of each such change, if any, is set out below or on additional sheets if such are required.

FORM 16
APPENDIX A,
SHEET 1, (OBVERSE)

API WELL NO. 45 - 045 - 20804
State County Permit
Date: 12/2/85
Operator's Well
Name ARCO #1 Smith Heirs

REPORT OF COMPLETION OF WELL WORK
IF DRILLING, REDRILLING, OR DEEPENING IS INVOLVED

DRILLING CONTRACTOR ARCO Oil and Gas Company
ADDRESS P. O. Box 51408, Lafayette, LA 70505
TELEPHONE (318) 264-4000

GEOLOGICAL TARGET FORMATION Knox
DEPTH OF COMPLETED WELL 2961 FEET
DATE DRILLING COMMENCED 9/13/85
DATE DRILLING COMPLETED 11/18/85
DRILLING RIG: ROTARY X / CABLE TOOL /

GEOLOGICAL DATA	Depth		Thickness
	Top	Bottom	
Fresh Water	0	- 2961	2961
Salt water	N/A		
Coal Seams	None		Name MINING IN AREA Yes No Mined Out
Oil	None		Formation
Gas	None		Formation

The data on depth of strata is based on the source(s) checked below:

- Applicant's own drilling experience in the area
 Information supplied by the coal operator in the area
 Information already in possession of the Inspector
 Other (as follows) _____

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

Is the subject well underlaid by the red shales? Yes ___/ No X /
If Yes, was a coal protection string set to the red shales? Yes ___/ No ___/

SIZE	TOP	BOTTOM	LENGTH	PERFORATIONS	
				FROM	TO

CONDUCTOR:

<u>CASING CIRCULATED AND</u>	20" GL	170' GL	170'
<u>CEMENTED IN TO SURFACE:</u>	13-3/8" GL	1256' GL	1256'

COAL PROTECTION CASING
SET UNDER SPECIAL RULE OF
CODE OF VIRGINIA 45.1-334.B:

OTHER CASING AND TUBING
LEFT IN WELL;

LINERS LEFT IN WELL UNDER
CODE OF VIRGINIA SECTION
45.1-336 OR OTHERWISE:

<u>PACKERS OR BRIDGE PLUGS:</u>	<u>KIND</u>	<u>SIZE</u>	<u>SET AT</u>
---------------------------------	-------------	-------------	---------------

REMARKS: SHUT DOWN DEPTHS, DATES; FISHING JOB DEPTHS, DATES; CAVING;
ETC.)

SAMPLES AND CUTTINGS

WILL X WILL NOT ___ BE AVAILABLE FOR EXAMINATION BY A MEMBER OF THE
VIRGINIA DIVISION OF MINERAL RESOURCES
WILL ___ WILL NOT X BE FURNISHED THE VIRGINIA DIVISION OF MINERAL
RESOURCES UPON REQUEST
WILL ___ WILL NOT X REQUIRE SACKS TO BE FURNISHED BY THE VIRGINIA
DIVISION OF MINERAL RESOURCES.

DRILLER'S LOG

Compiled by Diane Catt

Geolo- gical Age	Formation	General Lithology	Color	Depth (feet)		Thickness	Remarks
				Top	Bottom		
Upper Ordovician	Trenton	limestone	Lt.gray- med.brn.	Surface-	1630'	1630'	
Cambo- Ordovician	Knox	dolomite	Lt./med. gray	1630' base of knox not reached		1331'	

Complete on supplemental sheet as necessary

APPENDIX TO REPORT OF COMPLETION OF WELL WORK
IF THE WELL WORK INCLUDED PLUGGING OR REPLUGGING

AFFIDAVIT

STATE OF Virginia,
COUNTY OF Craig, TO-WIT:

P. S. Pierce and D. R. Vuillemont
being first duly sworn, depose and say that:

They are both experienced in the plugging of wells and participated in the plugging work which is the subject of this Affidavit on the referenced well.

THE PLUGGING WORK WAS FOR THE PURPOSE CHECKED BELOW;

- at the end of production or other use
- after drilling, redrilling or deepening was unsuccessful, so that the well was plugged on the verbal permission of the Inspector or his designated representative under Code of Virginia Section 45.1-311.C.9.
- replugging to permit the safe mining through a well
- partial plugging from the bottom of the hole to _____ feet below the surface, and continued operation by the well operator or
- partial plugging from the bottom of the hole to _____ feet below the surface, for development as a water well under Section 45.1-350

THE MANNER OF PLUGGING OR REPLUGGING WHICH WAS COMMENCED ON
November 20 _____, 19⁸⁵, WAS IN THE MANNER PROVIDED BY LAW AS
CHECKED BELOW:

- 45.1-342 ("Plugging a well that does not penetrate a coal seam")
- 45.1-343 ("Plugging a well penetrating a coal seam without a coal protection string as provided in Section 45.1-334")
- 45.1-344 ("Plugging wells with coal protection strings installed as provided in Section 45.1-334")
- 45.1-345 ("Special plugging at the coal owner's request") or
- 45.1-346 ("Replugging a well previously plugged")

CHANGES IN THE PLUGGING AS PERMITTED

The well operator did ___ / did not^X / make any changes(s) in the plugging as specified in the well work permit, which changes were verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil & Gas Act, for the purpose of insuring successful completion of the plugging work.

NOTE: The nature and purpose of each such change, if any, are set out below, or on additional sheets if such are required.

API No. 45 - 045 - 20804

PLUGGING DETAILS (FROM BOTTOM OF HOLE)

INTERVAL (From GL)		FORMATIONS	TYPES OF MATERIALS USED			FILLED	NEW	OPEN
From or at	To		Plugging	Filling	BRIDGE	LINER	CASING	HOLE
2939'(TD)	to	1128'	Knox Black River Trenton	Cement			128'	1683'
1128'	to	30'	Knox		Freshwater		1098'	
30'	to	GL	--	Cement				30'

API WELL NO. 45 - 045 - 20804

State County Permit

Date: 12/2/85

Operator's Well

Name ARCO #1 Smith Heirs

VIRGINIA OIL AND GAS INSPECTOR
P. O. BOX 1416
ABINGDON, VA 24210
703-628-8115



REPORT OF COMPLETION OF WELL WORK

Pursuant to Regulation 4.06 of the Regulations under the Virginia Oil and Gas Act, the undersigned well operator reports completion of the type(s) of well work specified below on the referenced well in _____ District, Craig County, Virginia on 23 day, November month, 19 85.

WELL TYPE: Oil / Gas / Enhanced recovery ___ / Waste Disposal ___ / If "Gas", Production ___ / Underground Storage ___ / Exempt by Code Section 45.1-300.B.1. from general oil and gas conservation law: yes ___ / no ___ /

WELL WORK: Drill / Deepen ___ / Redrill ___ / Stimulate ___ / Plug off old formation ___ / Perforate new formation ___ / Plug / Replug ___ / Other physical change in well (specify Temporarily Abandon)

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA SECTION 45.1-332.

___ Ninety days from the filing of this report
OR
X Two years from November 23, 1985, the date on which the referenced well was COMPLETED, the well being an exploratory well as defined in Code of Virginia Section 45.1-288.21.

APPLICANT: ARCO Oil and Gas Company
BY D. R. Vuillemont
ITS District Drilling Supervisor
ADDRESS P. O. Box 51408, Lafayette, LA 70505
TELEPHONE (318) 264-4000

Form 16
Appendix A, Sheet 1 (Reverse)
Continued from Obverse side

OTHER GENERAL INFORMATION

An electric log survey was ___/ was not X/ conducted pursuant to Code of Virginia Section 45.1-333.B.2, at the coal owner's or operator's request.

An electric log survey was X/ was not ___/ run for other purposes. This survey did ___/ did not X/ disclose the vertical location of a coal seam.

Note: If a coal seam was located, the part of the survey from the surface through the coal is attached in accordance with Code of Virginia Section 45.1-333.B.3.

Deviation surveys were ___/ were not X/ required under Code of Virginia Section 45.1-333.C "to the bottom of the lowest published coal seam depth."

Note: If deviation surveys were required, the survey results are attached.

A continuous survey was ___/ was not X/ required under Code of Virginia Section 45.1-333.C.

Note: If a continuous directional survey was required, the survey results are attached.

CHANGES IN THE PERMITTED WELL WORK

The well operator did ___/ did not X/ make any change(s) in the permitted well work, verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the well work.

Note: The nature and purpose of each such change, if any, is set out below or on additional sheets if such are required.

FORM 16
APPENDIX A,
SHEET 1, (OBVERSE)

API WELL NO. 45 - 04 - 20804
State County Permit
Date: 12/2/85
Operator's Well
Name ARCO #1 Smith Heirs

REPORT OF COMPLETION OF WELL WORK
IF DRILLING, REDRILLING, OR DEEPENING IS INVOLVED

DRILLING CONTRACTOR ARCO Oil and Gas Company
ADDRESS P. O. Box 51408, Lafayette, LA 70505
TELEPHONE (318) 264-4000

GEOLOGICAL TARGET FORMATION Knox
DEPTH OF COMPLETED WELL 2961 FEET
DATE DRILLING COMMENCED 9/13/85
DATE DRILLING COMPLETED 11/18/85
DRILLING RIG: ROTARY X / CABLE TOOL /

GEOLOGICAL DATA	Depth		Thickness
	Top	Bottom	
Fresh Water	0	- 2961	2961
Salt water	N/A		
Coal Seams	None		Name MINING IN AREA Yes No Mined Out
Oil	None		Formation
Gas	None		Formation

The data on depth of strata is based on the source(s) checked below:

- Applicant's own drilling experience in the area
 Information supplied by the coal operator in the area
 Information already in possession of the Inspector
 Other (as follows) _____

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

Is the subject well underlaid by the red shales? Yes ___/ No X/
If Yes, was a coal protection string set to the red shales? Yes ___/ No ___/

SIZE	TOP	BOTTOM	LENGTH	PERFORATIONS	
				FROM	TO

CONDUCTOR:

<u>CASING CIRCULATED AND</u>	20" GL	170' GL	170'
<u>CEMENTED IN TO SURFACE:</u>	13-3/8" GL	1256' GL	1256'

COAL PROTECTION CASING
SET UNDER SPECIAL RULE OF
CODE OF VIRGINIA 45.1-334.B:

OTHER CASING AND TUBING
LEFT IN WELL;

LINERS LEFT IN WELL UNDER
CODE OF VIRGINIA SECTION
45.1-336 OR OTHERWISE:

<u>PACKERS OR BRIDGE PLUGS:</u>	<u>KIND</u>	<u>SIZE</u>	<u>SET AT</u>
---------------------------------	-------------	-------------	---------------

REMARKS: SHUT DOWN DEPTHS, DATES; FISHING JOB DEPTHS, DATES; CAVING;
ETC.)

SAMPLES AND CUTTINGS

WILL X WILL NOT ___ BE AVAILABLE FOR EXAMINATION BY A MEMBER OF THE
VIRGINIA DIVISION OF MINERAL RESOURCES
WILL ___ WILL NOT X BE FURNISHED THE VIRGINIA DIVISION OF MINERAL
RESOURCES UPON REQUEST
WILL ___ WILL NOT X REQUIRE SACKS TO BE FURNISHED BY THE VIRGINIA
DIVISION OF MINERAL RESOURCES.

FORM 16
Appendix A, Sheet 2 (Reverse)

DRILLER'S LOG

Compiled by Diane Catt

Geolo- gical Age	Formation	General Lithology	Color	Depth (feet)		Thickness	Remarks
				Top	Bottom		
Upper Ordovician	Trenton	limestone	Lt.gray- med.brn.	Surface-1630'	1630'		
Cambo- Ordovician	Knox	dolomite	Lt./med. gray	1630' base of knox not reached		1331'	

Complete on supplemental sheet as necessary

APPENDIX TO REPORT OF COMPLETION OF WELL WORK
IF THE WELL WORK INCLUDED PLUGGING OR REPLUGGING

AFFIDAVIT

STATE OF Virginia,
COUNTY OF Craig, TO-WIT:

P. S. Pierce and D. R. Vuillemont
being first duly sworn, depose and say that:

They are both experienced in the plugging of wells and participated in the plugging work which is the subject of this Affidavit on the referenced well.

THE PLUGGING WORK WAS FOR THE PURPOSE CHECKED BELOW;

- at the end of production or other use
- after drilling, redrilling or deepening was unsuccessful, so that the well was plugged on the verbal permission of the Inspector or his designated representative under Code of Virginia Section 45.1-311.C.9.
- replugging to permit the safe mining through a well
- partial plugging from the bottom of the hole to _____ feet below the surface, and continued operation by the well operator or
- partial plugging from the bottom of the hole to _____ feet below the surface, for development as a water well under Section 45.1-350

THE MANNER OF PLUGGING OR REPLUGGING WHICH WAS COMMENCED ON
November 20, 1985, WAS IN THE MANNER PROVIDED BY LAW AS
CHECKED BELOW:

- 45.1-342 ("Plugging a well that does not penetrate a coal seam")
- 45.1-343 ("Plugging a well penetrating a coal seam without a coal protection string as provided in Section 45.1-334")
- 45.1-344 ("Plugging wells with coal protection strings installed as provided in Section 45.1-334")
- 45.1-345 ("Special plugging at the coal owner's request") or
- 45.1-346 ("Replugging a well previously plugged")

CHANGES IN THE PLUGGING AS PERMITTED

The well operator did ___/ did not^X___/ make any changes(s) in the plugging as specified in the well work permit, which changes were verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil & Gas Act, for the purpose of insuring successful completion of the plugging work.

NOTE: The nature and purpose of each such change, if any, are set out below, or on additional sheets if such are required.

API No. 45 - 045 - 20804

PLUGGING DETAILS (FROM BOTTOM OF HOLE)

INTERVAL (From GL)		FORMATIONS	TYPES OF MATERIALS USED			FILLED	NEW	OPEN
From or at	To		Plugging	Filling	BRIDGE	LINER	CASING	HOLE
2939' (TD)	to	1128'	Knox Black River Trenton	Cement			128'	1683'
1128'	to	30'	Knox		Freshwater		1098'	
30'	to	GL	--	Cement				30'

OIL AND GAS WELL
SUMMARY REPORT

API No. 45-045-20804 VDMR Well Rep. No. _____

DMQ File No. CR-1

Operator Arco Oil and Gas Company

Farm Fridley

Co. Well No. #1 Smith

County Craig Quadrangle Potte Creek - 7 1/2'

Location (UTM) N4,156,000 ; E 568,430 UTM Zone 17

(Lat. and Long.) _____

Field _____ Province Valley and Ridge

Elev. (specify) 2755.29' GR TD 2961 Form. at TD Knox

Age Ordovician

Date compl. or abandoned November 23, 1985

Result Dry Hole, plugged and abandoned

Gas Shows _____

Gas Pays _____

Main Production _____ Prod. Form. _____

Age _____

Treatment: _____

Initial Production _____

Oil shows _____

Water FW yes at 0' to 2961' at _____ at _____

SW _____ at _____ at _____ at _____

Coal _____

Plat _____ Plotted _____ Completion Report

Drillers Log Geologic Log _____

Samples _____ Interval Sheet _____

Sample Interval _____

Remarks _____

Geophysical Logs S.P. _____ Res _____ Gamma _____ Neutron _____

Density _____ Sonic _____ Other _____

