

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK  
 DRILL  DEEPEN  PLUG BACK

b. TYPE OF WELL  
 OIL WELL  GAS WELL  OTHER   
 SINGLE ZONE  MULTIPLE ZONE

2. NAME OF OPERATOR  
 ARCO Oil and Gas Co., A Division of Atlantic Richfield Company

3. ADDRESS OF OPERATOR  
 P.O. Box 5540, Denver, CO 80217

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*  
 1050' FNL & 2450' FWL (NE/4NW/4)

At proposed prod. zone approx. the same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
 Approx. 9.4 miles west of Loa, Utah

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)  
 1050'

16. NO. OF ACRES IN LEASE  
 3838.20

17. NO. OF ACRES ASSIGNED TO THIS WELL  
 Not assigned

18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.  
 none

19. PROPOSED DEPTH  
 5900'

20. ROTARY OR CABLE TOOLS  
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
 Ground elevation: 8280'

22. APPROX. DATE WORK WILL START\*  
 10-8-84

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
14-3/4"	10-3/4"	40.5# K-55, STC	1200'	Cmt to surf-approx 1100 sxs.
9-1/2"	5-1/2"	17.0#, K-55 LTC	5900'	Cmt to 500' above uppermost productive zone. Approx. 640 sx. estimated TOC at 3000'.

Propose to drill to 5900' to test the Dakota and Entrada formation below a thrust fault at ±3090'. This permit is being filed in accordance with Onshore Oil & Gas Order Number 1.

Attachments:

- Drilling Program with Exhibits
- Surface use program with Exhibits.
- ARCO Oil and Gas Company is the current lessee of record on the subject lease.
- The subject lease expires 2-28-94.

For any questions concerning this subject please call Mr. Harry Engel of our Drilling Department at (303) 293-7305.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED [Signature] TITLE Operations Manager DATE 7 SEPT. 1984  
 (The space for Federal or State office use)

PERMIT NO. \_\_\_\_\_  
 APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_  
 CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY THE STATE  
 OF UTAH DIVISION OF  
 OIL, GAS, AND MINING  
 DATE: 9/12/84  
 BY: [Signature]

5. LEASE DESIGNATION AND SERIAL NO.  
 U-53539A  
 6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
 N/A  
 7. UNIT AGREEMENT NAME  
 Deadman Hollow  
 8. FARM OR LEASE NAME  
 N/A  
 9. WELL NO.  
 Deadman Hollow Unit #1  
 10. FIELD AND POOL, OR WILDCAT  
 Wildcat  
 11. SEC. T., R., M., OR BLM. AND SURVEY OR BLM. SEC. 23 1275-31 S.L.M.  
 12. COUNTY OR PARISH  
 Wayne  
 13. STATE  
 Utah

RECEIVED

SEP 11 1984

DIVISION OF OIL  
 GAS & MINING

*Carroll*

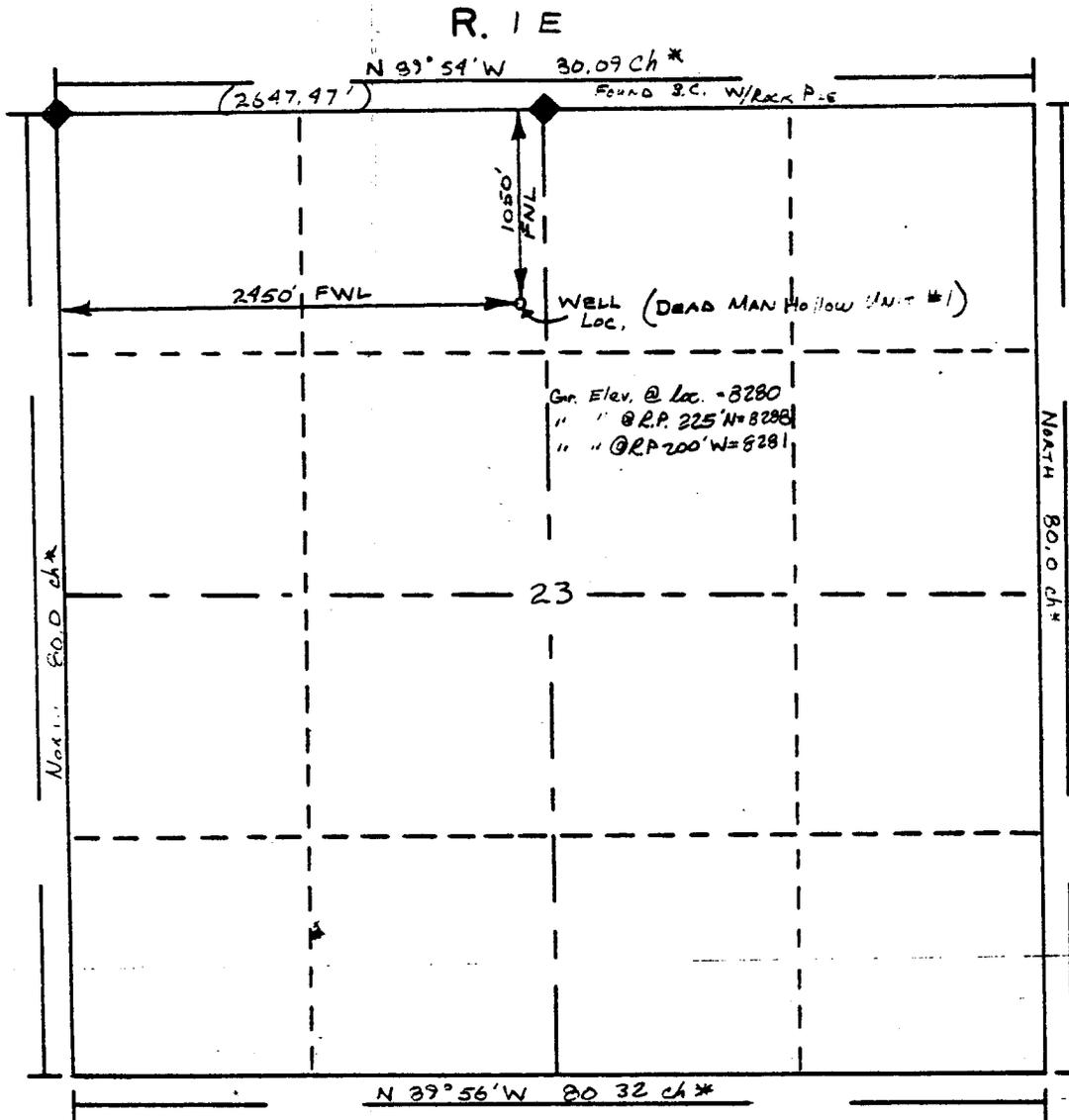


FORM F-106

GLO PLAT 1917  
CORNER FOUND  
( ) MEASURED IN FIELD

EXHIBIT "B"

FOUND B.C.  
WITH ROCK P.I.E



T. 27 S

Scale... 1" = 1000'

**Powers Elevation of Denver, Colorado**  
 has in accordance with a request from **HARRY ENGLE**  
 for **ARCO OIL & GAS**  
 determined the location of **DEAD MAN HOLLOW UNIT #1**  
 to be **1050' FNL & 2450' FNL** of **Section 23 Township 27 SOUTH**  
**Range 1 EAST of the Salt Lake Meridian**  
**WAYNE County, UTAH**

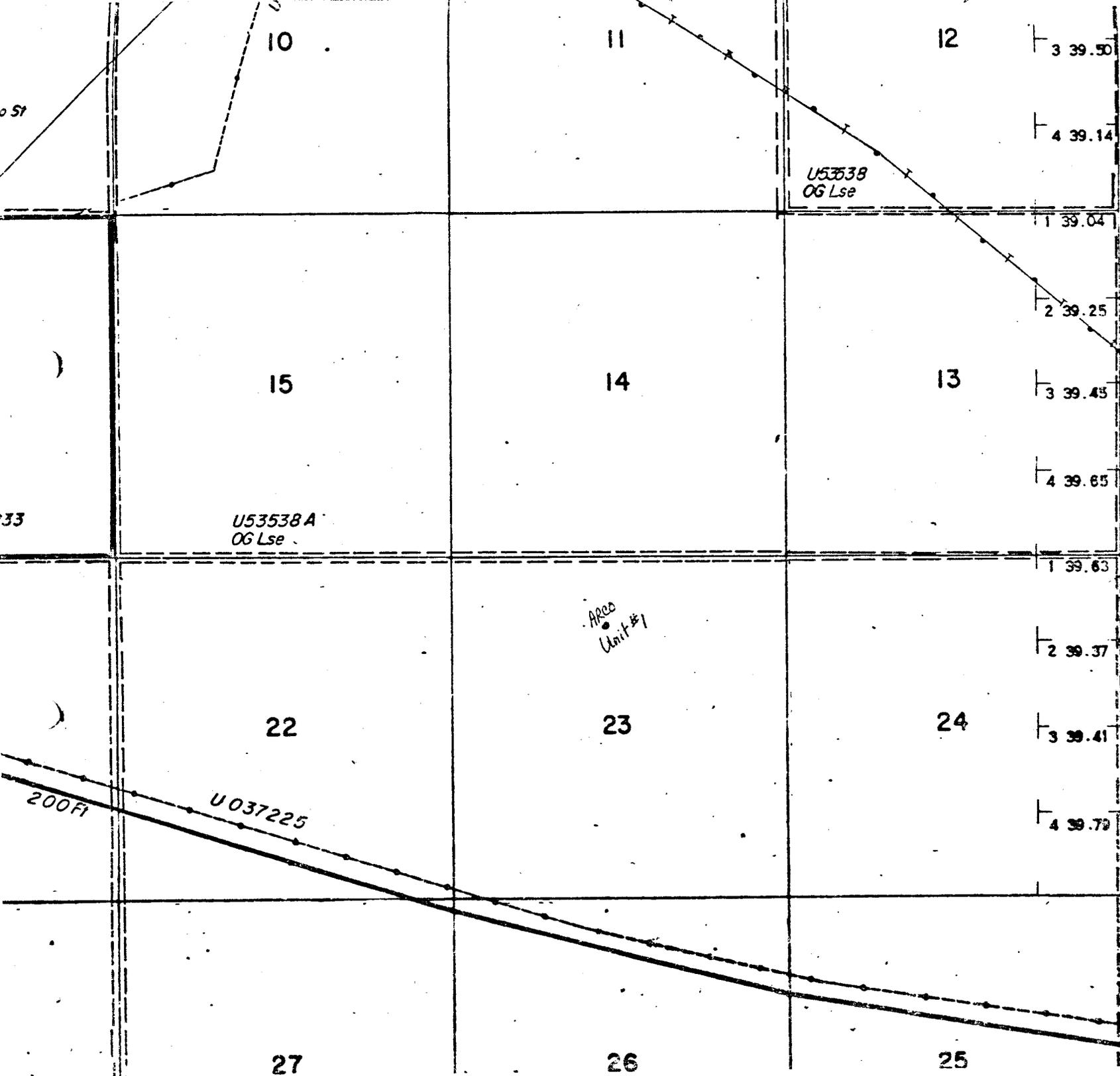
I hereby certify that this plat is an  
 accurate representation of a correct  
 survey showing the location of

Date: Aug. 4, 1984

Samuel Stegeman

Licensed ENGINEER No. 20596  
 State of Colorado





Section	Point	Bearing	Distance
Sec. 10	3	39.50	
	4	39.14	
	1	39.04	
	2	39.25	
Sec. 13	3	39.45	
	4	39.65	
	1	39.63	
	2	39.37	
Sec. 22	3	39.41	
	4	39.79	
	1	39.63	
	2	39.37	
Sec. 25	3	39.41	
	4	39.79	
	1	39.63	
	2	39.37	

## CONDITIONS OF APPROVAL

1. DRILLING REPORTS: A weekly progress report will be sent to the Richfield District Office. All reports submitted will be kept confidential.
2. WELL SIGN: All drilling wells must have a well sign in legible condition from spud date to final abandonment. The following information is required on the sign:

Lessee name or name of operator, lease serial No. (or communitization or unit agreement identification), and number and surveyed description of the well.
3. PLUGGING, SUSPENSION, OR PLAN CHANGE: Do not plug, plug back, suspend operations or change approved plan without prior BLM approval. Phone if urgent (see phone numbers below), followed immediately by written request on Form 3160-5.
4. REQUIRED DATA: Within 30 days after completion, submit two copies of Well Log (Form 3160-5), drill stem test data, core description and analysis, electric logs, directional survey, or any other data compiled during drilling of the well.
5. BLOWOUT PREVENTER: Blowout preventer and control valves must be installed prior to drilling below surface casing. The equipment should be pressure tested before drill-out and should be tested for mechanical proficiency at least once daily, and the information included in the daily drilling report.
6. SURFACE LOCATION APPROVAL: You are required to contact the Henry Mountain Resource Area Manager, prior to commencing construction or major reconstruction of any road to the location site. You may not appropriate sand, stone, gravel, caliche, or related minerals that are in Federal or Indian ownership for lease use without authorization from the Area Manager.
7. IMMEDIATE REPORT: Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be promptly reported in accordance with the requirements of NTL-3A or its revision.
8. EVALUATION OF SHOWS: All showings of oil and gas must be evaluated and, if commercial, must be depleted before abandonment. Any show not completed must be isolated behind pipe in any producing well, or isolated with cement plugs in abandoning the hole. All other minerals penetrated shall be reported to BLM and must be isolated in the same manner as oil and gas shows.
9. DRILLING DEADLINE: This approval will remain in effect for a period of 90 days from date of BLM authorization.

10. DRILLING PITS: If the well is suspended or abandoned, all pits will be fenced until they have been backfilled.
11. NOTIFICATION OF AUTHORIZED OFFICER: Notify the authorized officer, BLM sufficiently in advance so he may approve and witness plugging, plugging back, formation tests, water shutoff tests, and running and cementing casing, other than conductor string. Phone if urgent, followed immediately with written request on Form 3160-5.
12. REMOVAL OF EQUIPMENT: Do not remove drilling equipment from any abandoned or suspended well without consent of the authorized officer, BLM.
13. MULTIPLE ZONE OR ALTERNATE ZONE COMPLETIONS: All multiple or alternate zone completions must be approved in advance. Applications for these approvals must be accompanied by:
  - a. Electric log of well with separate zones clearly marked; and
  - b. Diagrammatic sketch of mechanical installation proposed.
14. SPACING AND UNORTHODOX UNIT: Approval of this well is not to be construed as approval of the unorthodox spacing unit. If the well becomes productive, a communitization agreement will be necessary, if more than a single Federal or Indian lease is within the lands committed to the well.
15. PRODUCTION FACILITIES: If the well becomes a producer, approval of this office will be required before installing on or off leasehold flow lines, tank batteries, measurement, or disposal facilities.
16. ARCHAEOLOGICAL OR HISTORICAL SITES: If any important archaeological or historical sites are uncovered during this operation, shut down all operations immediately, and notify this office at once.
17. BLOWOUT PREVENTER GUIDELINES:
  - a. After setting the surface casing string, and before drilling into the Dakota Formation, the blowout preventers and related control equipment must be pressure tested to 70% of the rated internal yield. Any equipment failing to test satisfactorily must be repaired or replaced. This office should be notified in sufficient time for a representative to witness the tests and shall be furnished a copy of the pressure test report.
  - b. Pipe rams and the annulus-type preventer must be actuated at least once each 24 hours and the blind rams each time the drill pipe is out of the hole.
  - c. The accumulator system must maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers.

- d. A full opening safety (stabbing) valve to fit the drillpipe in use, in the full open position, shall be available on the rig floor at all times to place in drill pipe if needed when the kelly is not in the drill string.
- e. Blowout prevention drills must be conducted as necessary to ensure that each drilling crew is properly trained to carry out emergency duties.

18. MUD RESERVE: Pits should contain a sufficient quantity of reserve fluids to ensure well control.

19. DRILLING OPERATION PRACTICES:

- a. Always condition hole before making trip.
- b. Watch fluid level in pits and in drill pipe-casing annulus; any change should be evaluated before continuing trip.
- c. Drilling fluid should be tested for viscosity, water loss, wall cake thickness, weight, and gel strength every eight (8) hours.
- d. Pressure test casing strings prior to drilling plugs each time a string is run and cemented. Test pressure must equal or exceed 0.2 psi/ft of depth or 1,000 psi, whichever is greater. A leak is indicated if pressure drop exceeds 10 percent in 30 minutes; if there is any indication of leak, corrective measures must be taken.

A successful pressure test must be obtained before proceeding to the next step in the drilling program.

- e. Test lines, separators, and tanks should be installed and operative before testing any potential hydrocarbon zones when fluid is expected to reach the surface.
20. SPUD DATE: The spud date must be reported to the authorized officer, BLM within 48 hours, and Form 3160-6, Monthly Report of Operations, will be filed starting with the month in which operations began.
21. SUBSEQUENT REPORT OF ABANDONMENT: If the drilling operations result in a dry hole, Form 3160-5 is to be filed within 15 days after the well is abandoned downhole. A subsequent letter is to be filed at the time that all surface restoration work, including revegetation, has been completed and the location is considered ready for inspection.
22. CASING REPORTS: Reports are to be furnished for each string of casing run and should show the dates of work; size hole drilled; size, grade, and weight of casing run; depth set; amount and kind of cement used; cement additions; cement tops behind casing and determination of them; date for each stage, if a multi-stage job; and method of pressure testing casing and test results.

23. USED CASING: Notify the authorized officer, BLM in sufficient time for a representative to inspect any used casing planned for use in a casing string.
24. RIG EQUIPMENT: Rig engines must have water-cooled exhausts. All rig heating stoves must be of the explosion-proof type.
25. MINERAL AND WATER SHOWS: All shows of fresh water and minerals will be reported and protected. A sample will be taken of any flows and furnished to this office for analysis. All oil and gas shows will be adequately tested for commercial possibilities, reported and protected.
26. REPLACEMENT RIG: If a replacement rig is contemplated for completion operations, a "Sundry Notice" (Form 3160-5) to that effect must be filed for prior approval of the District Supervisor, and all conditions of this approved plan are applicable during all operations conducted with the replacement rig.
27. The operator will have a copy of the approved APD and all conditions of approval on location.

Your contact with the Richfield District Office is:

John Branch - Office phone 896-8221  
 - Home phone 896-8583

Office Address: 150 East 900 North  
 Richfield, Utah 84701

Your contact with the Henry Mountain Resource Area Office is:

Pat Stong - Office phone 542-3461  
 - Home phone 542-1292

Larry Sip - Office phone 542-3461

Office Address: P.O. Box 99  
 Hanksville, Utah 84734

Your contacts with the BLM State Office are as follows:

Address: University Club Building,  
 136 East South Temple,  
 Salt Lake City, Utah 84111.

Office Phone: (801) 524-3029

District Drilling Engineer, W.P. Martens	Home Phone: (801) 466-2780
District Production Engineer, R.A. Henricks	Home Phone (801) 484-2294
Staff Engineer, A. Raffoul	Home Phone: (801) 484-2638.

BUREAU OF LAND MANAGEMENT  
RICHFIELD DISTRICT  
CONDITIONS OF APPROVAL FOR PERMIT TO DRILL

Company: ARCO Oil & Gas Company

Well No.: Deadman Hollow  
Unit #1

Location: NE/4NW/4 Sec. 23 T27S-R1E S.L.M.

Lease No.: U-53539-A

Onsite Inspection Date: August 30, 1984

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Order No. 1, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished the field representative to ensure compliance.

A. DRILLING PROGRAM

1. Surface Formation and Estimated Formation Tops:

Volcanics	- Surface	Thrust Fault	- 3160'
Ferron	- 150'	Dakota	- 3550'
Tunnick	- 620'	Morrison	- 3790'
Dakota	- 1500'	Summerville	- 4050'
Morrison	- 1740'	Entrada	- 4460'
Summerville	- 3005'	Carmel	- 5700'
Entrada	- 2410'	TD	- 5900'
Carmel	- 3090'		

2. Estimated depth at which oil, gas, water or other mineral-bearing zones are expected to be encountered:

	<u>Formation &amp; Depth</u>
Expected oil zones:	Dakota @ 3550', Entrada @ 4460'
Expected gas zones:	Dakota @ 3550', Entrada @ 4460'
Expected water zones:	None anticipated
Expected mineral zones:	None anticipated

No oil or gas is expected in the Dakota or Entrada fms. above the thrust fault at ±3160'.

All fresh water and prospectively valuable minerals (as described by BLM at onsite) encountered during drilling will be recorded by depth, cased and cemented. All oil and gas shows will be tested to determine commercial potential.

3. Minimum Specifications for Pressure Control:

Exhibit "A" is a schematic diagram of the blowout preventer equipment. The annular preventer will be tested to 1500 psi and the pipe and blind rams will be tested to 3000 psi upon nipple up. Pipe rams will be operationally checked each 24-hour period, as will blind rams and annular preventer each time pipe is pulled out of the hole. All checks of BOP will be noted on Daily Drilling Reports. Accessories to BOP equipment will include an upper and lower kelly cock, a floor safety valve, a drill string BOP, and a choke manifold with pressure rating equipment equal to the BOP stack.

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 Deadman Hollow Unit #1  
 NE/4NW/4, Sec. 23, T27S-R1E  
 Wayne County, Utah

Choke manifold and safety valves will be pressure tested to 3000 psi upon nipple-up. Exhibit "A" also shows the proposed Accumulator Unit and Choke Manifold. Hydraulic controls for BOPE will be located at the Accumulator Unit with hand wheel back-up.

BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs. The Resource Area will be notified 48 hours in advance when pressure tests are to be conducted.

4. Proposed Casing Program:

<u>Casing</u>	<u>Size</u>	<u>Hole</u>			<u>OD</u>	<u>Section Size Weight, Grade Connection</u>	<u>New/ Used</u>
		<u>Interval</u>	<u>Length</u>				
<u>Conductor</u>							
18" conductor will be set at 60' G.L. with a dry hole digger and cemented to surface with approximately 5.0 yd <sup>3</sup> of redimix.							
Surface	14-3/4"	0 - 1200'	1200'		10-3/4"	40.5#, K-55, STC	New
Production	9-1/2"	0 - 5900'	5900'		5-1/2"	17#, K-55, LTC	New

Cement Program:

Surface Casing: Cmt to surface w/approx 1100 sx Cl "H" w/2% CaCl<sub>2</sub>, + additives Cmt to be circulated to surface. Mixed at 14.5 ppg. Yield: 1.54 ft<sup>3</sup>/sx.

Production Casing: Mix & pump approx. 90 sx. lite cmt. mixed at 12.7 ppg, yield 1.84 ft<sup>3</sup>/sx. followed by 550 sx. Cl "H" w/2% CaCl<sub>2</sub> & additives mixed at 15.5 ppg, yield 1.22 ft<sup>3</sup>/sx. Estimated top of cement at 3000'.

Note: Hole conditions will dictate type and percentage of additives to be used.

All potentially productive hydrocarbon zones will be cemented to prevent communication. Actual production casing cement volumes will be based upon caliper log plus 15%-20% excess.

Anticipated cement tops will be reported as to depth, not the expected number of sacks. The Resource Area will be notified 48 hrs in advance when running casing strings and cement.

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 Deadman Hollow Unit #1  
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5. Type and Characteristic of Proposed Drilling Fluids:

Mud system will be gel-chemical for the surface hole with adequate stocks of sorptive agents on site to handle possible spills of fuel and oil on the surface. Adequate mud materials will be stockpiled on location to completely rebuild entire mud system volume (surface volume + hole volume). Surface volume estimated at ±500 bbls. An Air-Airmist system will be used below the surface casing and may be converted to a Low Solids non-dispersed mud if hole conditions dictate.

<u>Depth</u>	<u>Type</u>	<u>Weight #/gal.</u>	<u>Visc. sec/qt.</u>	<u>Fluid Loss</u>
0'-1200'	Fresh water gel, lime, spud mud	8.3-8.6	30-40	No control
1200'-TD	Air-Airmist; maybe converted to LSND if hole conditions dictate	8.8-9.0	35-45	15 cc

A shale shaker, desander, and desilter will be utilized to aid in solids control when drilling with mud.

Bloolie line will be misted to reduce fugitive dust when air drilling.

6. Coring, Logging, and Testing Program:

- a. Coring: One 60' core in Dakota, One 60' core in Entrada.
- b. DSTs: One open hole DST is planned in the Dakota and one in Entrada.
- c. Logging as follows:

<u>Open Hole</u>				<u>Cased Hole</u>	
BHCS/GR	-	TD to base of surf	csg	CBL/CCL/GR/VDL	- TD to TOC
FDC/CNL/GR/Cal	-	"	"	"	"
DLL/DIL/SP/GR	-	"	"	"	"
Dipmeter	-	"	"	"	"

Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted to the District Office not later than thirty (30) days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analyses, well test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the Richfield District Manager.

7. Abnormal Conditions, Bottom Hole Pressures and Potential Hazards:

No abnormal pressures or temperatures have been noted or reported in wells drilled in the area nor at the depths anticipated in this well. H<sub>2</sub>S is not anticipated at any depths in this well.

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Deadman Hollow Unit #1  
NE/4NW/4, Sec. 23, T27S-R1E  
Wayne County, Utah

8. Anticipated Starting Dates and Notifications of Operations:

The operator will contact the Henry Mountain Resource Area at (801)542-3461, forty-eight (48) hours prior to beginning any dirt work on this location.

No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the District Manager. If operations are to be suspended, prior approval of the District Manager will be obtained and notification given before resumption of operations.

The spud date will be reported orally to the Area Manager (Richfield District at 801-896-8221) within a minimum of twenty-four (24) hours prior to spudding. Written notification in the form of a Sundry Notice (Form 3160-5) will be submitted to the District Office within twenty-four (24) hours after spudding. If the spudding occurs on a weekend or holiday, the written report will be submitted on the following regular work day.

In accordance with Onshore Oil and Gas Order No. 1, this well will be reported on Form 9-329, "Monthly Report of Operations", starting with the month in which operations commence and continue each month until the well is physically plugged and abandoned. This report will be filed directly with the BLM Richfield District Office, 150 E. 900 N., Richfield, Utah 84701.

Immediate Report: Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be promptly reported to the Resource Area in accordance with requirements of NTL-3A.

If a replacement rig is contemplated for completion operations, a "Sundry Notice" (Form 3160-5) to the effect will be filed for prior approval of the District Manager, all conditions of this approval plan are applicable during all operations conducted with the replacement rig. In emergency situations, verbal approval to bring on a replacement rig will be approved by the District Petroleum Engineer.

Should the well be successfully completed for production, the District Manager will be notified when the well is placed in a producing status. Such notification will be sent by telegram or other written communication, not later than five (5) business days following the date on which the well is placed on production.

A first production conference will be scheduled within fifteen (15) days after receipt of the first production report. The Resource Area Office will coordinate the field conference.

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NE/4NW/4, Sec. 23, T27S-R1E  
Wayne County, Utah

No well abandonment operations will be commenced without the prior approval of the District Manager. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the District Petroleum Engineer. A "Subsequent Report of Abandonment" (Form 3160-5) will be filed with the District Manager within thirty (30) days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the Area Manager or his representative, or the appropriate surface managing agency.

Approval to vent/flare gas during initial well evaluation will be obtained from the District Office. This preliminary approval will not exceed 30 days or 50 MCF gas. Approval to vent/flare beyond this initial test period will require District Office approval pursuant to guidelines in NTL-4A.

Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR 3162.6. The marker will be constructed as follows: According to regulations.  
The top of the marker will be closed or capped.

The following minimum information will be permanently placed on the marker with a plate, cap or beaded-on with a welding torch:

"Fed" or "Ind", as applicable. "Well number, location by 1/4 1/4 section, township and range". "Lease number". "Operator".

Other: The anticipated spud date is October 8, 1984. ARCO Oil & Gas Company has in effect a \$150,000 Nation Wide Drilling Bond (#7943391) to cover drilling operations on all Federal lands. ARCO Oil & Gas Company is the current lessee of record on the subject lease.

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Deadman Hollow Unit #1  
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Wayne County, Utah

B. SURFACE USE PLAN

1. Existing Roads:

- a. The location is approximately 9.4 miles west of Loa, Utah. The proposed wellsite and elevation plat are shown as Exhibit "B". Staking included two directional reference stakes.
- b. Exhibit "C" describes the route to location. From Loa, Utah take Hwy 24 7.5 miles west to mile marker 45, turn right and go 1.6 miles to access road on left side of road.
- c. There will not be any improvements or maintenance to existing roads. Exhibit "D" shows all roads near the location.

2. Planned Access Roads to be Constructed:

1. Width will be 18' (top surface).
2. Maximum grade will be 8%.
3. There are no major cuts or fills.
4. Turnouts are not required.
5. The access road will be designed to ensure proper drainage, it is centerline flagged from the county road.
6. One 20" culvert is required coming off the county road at access road junction.
7. There will not be any fence cuts.
8. All surfacing material will be from materials located at the access road. No additional surface material will be required.
9. There are no existing facilities on the proposed location.
10. Road construction will be in conformance to Class III road standards.

Surface disturbance and vehicular travel will be limited to the approved location and access road. Any additional area needed will be approved by the Area Manager in advance.

The access road will be rehabilitated or brought to Resource (Class III) Road Standards within sixty (60) days of dismantling of the drilling rig. If this time frame cannot be met, the Area Manager will be notified so that temporary drainage control can be installed along the access road.

The operator will prevent surface run off on the old road adjacent to the county road.

Sage brush on the access route will be stockpiled.

Surfacing material will not be placed on the access road or location without prior BLM approval.

Drainages shall not be plugged by road bed. Drainage crossings shall be constructed so as not to cause siltation or accumulation of debris. Where siltation or accumulation of debris occurs the drainage crossing shall be reworked or relocated.

Trees on the location will be stockpiled in the NW/4 of the location.

3. Location of Existing Wells:

1. Water wells - none.
2. Injection wells - None
3. Disposal wells - None
4. Producing wells - None
5. Drilling wells - None
6. Temporarily abandoned wells - None
7. Abandoned wells - None
8. Shut-in wells - None
9. Monitoring or observation wells - None

4. Location of Tank Batteries and Production Facilities:

All permanent (onsite for six (6) months or longer) structures constructed or installed (including oil well pump jacks) will be painted a flat, nonreflective, earth tone color to match the standard environmental colors, as determined by the Rocky Mountain Five-State Interagency Committee. All facilities will be painted within six (6) months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) may be excluded. Colors will be as follows:

per Rocky Mountain Five State Interagency Committee

If a tank battery is constructed on this lease, it will be surrounded by a dike of sufficient capacity to contain 1-1/2 times the storage capacity of the battery.

All loading lines and valves will be placed inside the berm surrounding the tank battery.

All site security guidelines identified in 43CFR 3162.7 regulations will be adhered to.

All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the District Manager.

All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.

Gas meter runs for each well will be located within five hundred (500) feet of the wellhead. The gas flowline will be buried from the wellhead to the the meter along with any other sections occurring on the pad. Meter runs will be housed and/or fenced.

The oil and gas measurement facilities will be installed on the well location. The oil and gas meters will be calibrated in place prior to any deliveries. Tests for meter accuracy will be conducted monthly for the first three (3) months on new meter installations and at least quarterly thereafter. The Area Manager will be provided with a date and time for the initial meter calibration and all future meter-proving schedules. A copy of the meter calibration reports will be submitted to the Resource Area Office. All meter measurement facilities will conform with the API standards for liquid hydrocarbons and the AGA standard for natural gas measurement.

ARCO Oil & Gas Company does not own or operate any facilities within a one-mile radius of the proposed location. This well is a wildcat. If the well is a producer, a Sundry Notice will be filed describing all proposed production facilities.

5. Location and Type of Water Supply:

A. All water needed for drilling purposes will be obtained from:

Fremont Irrigation Company  
Contact: Dudley Brian at (801) 836-2775  
Water location is at the Spring Creek, approx. 1 block west of Loa, Utah.

A temporary water use permit for this operation will be obtained from the Utah State Engineer & Fremont Irrigation Company. Water obtained on private land, or land administered by another agency, will require approval from the owner or agency for use of the land. An approved temporary water use permit will be filed under a separate letter.

B. Water trucks will be used to haul water to location.

C. No water well will be drilled.

D. No water will be taken off Federal lands.

6. Source of Construction Material:

Pad construction material will be obtained from cut material located onsite. No material will be taken from lands other than the proposed location.

The use of materials under BLM jurisdiction will conform to 43 CFR 3610.2-3. Source of construction material will be located on lease.

7. Methods of Handling Waste Disposal:

The reserve pit will be lined with a 15-20 mil PVC liner during construction. The reserve pit banks will be 2.0 feet above the pad and constructed in 8" lifts, compartmented and be sufficiently wide to allow passage of equipment. Key Way, if required, will be trenched to a depth of 4-1/2 feet and have a width of 6 feet.

Three sides of the reserve pit will be fenced before drilling starts. The fourth side will be fenced as soon as the drilling is completed. The fence will be kept in good repair while the pit is drying. The fence will be four strands of barb wire.

All trash must be contained in a portable wire cage and disposed of at a sanitary landfill. No burning will take place. Operator will be responsible for trash and roadside litter generated by their operation along their access route; from the main highway to the location. In the event a burn permit is acquired, the operator will dispose of non-burnable items by using the portable trash cage.

Produced waste water will be confined to a lined pit for a period not to exceed ninety (90) days after initial production. During the ninety (90) day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted for the District Manager's approval pursuant to Onshore Oil and Gas Order No. 3 (NTL-2B).

Drill cuttings will be buried in the reserve pit. Drilling fluids will be handled and disposed of in the reserve pit. Any fluids produced during drilling test or while making production test will be collected in a test tank. Any spills of oil gas, salt water or other noxious fluids will be cleaned up and removed.

Chemical toilet facilities will be provided for human waste. Garbage and non-flammable waste will be handled in a closed wire cage. Drill fluids, water, drilling mud and tailings will be kept in reserve pit.

After the rig moves out, all materials will be cleaned up and no adverse materials will be left on location. All dangerous open pits will be fenced during drilling and kept closed until such time as the pit is leveled.

8. Ancillary Facilities:

Living facilities will be required. They will be located onsite. Three (3) or four (4) trailers will be on location, they will be equipped with concrete septic tanks (closed system). The septic tanks will be pumped as required. No waste will be disposed of on location. The closed concrete septic tank will conform to local health regulations.

9. Well Site Layout:

The reserve pit will be located on the north side of location. Exhibit "E" is drillsite location as staked. Exhibit "F" shows planned cuts and fills.

The top 12" of soil material will be removed from the location and stockpiled separately off the location on the North, or West sides. This stockpile will contain approximately 3422 yds<sup>3</sup>. Topsoil along the access road will be reserved in place adjacent to the road. If inadequate topsoil is stockpiled, the operator will bring in suitable material from outside sources at his expense.

Access to the well pad will be from the county road to the south side of the location. The access road is centerline flagged from the county road.

A trash pit will not be allowed on location.

Exhibit "G" is a diagram of the rig and equipment.

10. Plans for Restoration of Surface

Immediately upon completion of drilling, the location and surrounding area will be cleared of all remaining debris, materials, trash and junk not required for production. Before any dirt work to restore the location takes place, the reserve pit must be completely dry.

The operator or his contractor will notify the Henry Mountain Resource Area (Hanksville) at (801)542-3461 forty-eight (48) hours before starting reclamation work that involves earthmoving equipment and upon completion of restoration measures.

Before any earthwork to restore the location takes place, the reserve pit will be dry and all trash (barrels, metal, etc.) it contains must be removed from public lands. Any dispersal of clarified drilling mud/drilled fluids over the drill location is subject to the approval of the authorized officer.

The pit will be drained into a network of trenches 2" to 3" feet wide and a minimum of 4' deep and covered with earth (not the stockpiled topsoil). All trash contained in the pit (barrels, metal, etc.) must be removed from public lands. Recontouring of the location and pit can be started immediately. Or disperse clarified mud over pad prior to earth work reclamation.

All disturbed topsoil will be evenly distributed over the disturbed area.

The stockpiled topsoil will be evenly distributed over the disturbed areas.

ARCO Oil and Gas Company  
Deadman Hollow Unit #1  
NE/4NW/4, Sec. 23, T27S-R1E  
Wayne County, Utah  
Page 6

All disturbed areas will be scarified with the contour to a depth of 8-12 inches. Do not smooth pads out, leave a roughened surface.

Seed will be broadcast or drilled during the period of September 15 to November 30, or as specified by the BLM authorized officer with the attached seed prescription. Seeding will be repeated until vegetation is successfully established. Seeding will be done in presence of the authorized officer.

After seeding is complete, the stockpiled sagebrush will be scattered evenly over the disturbed area and walked down with a dozer. The access will be blocked to prevent ingress and egress of vehicular traffic.

The following seed mixture will be used on the access road and location:

- |                         |            |
|-------------------------|------------|
| 1. Indian Recegrass     | 2 lbs/acre |
| 2. Crested Wheatgrass   | 2 lbs/acre |
| 3. Western Wheatgrass   | 2 lbs/acre |
| 4. Antelope Bitterbrush | 2 lbs/acre |
| 5. Russian Wild Rye     | 3 lbs/acre |
| 6. Blue Gramma          | 5 lbs/acre |
| 7. Louis Flax           | 2 lbs/acre |

The reserve pit and that portion of the location and access road not needed for production or production facilities will be reclaimed. The time required to complete the reclamation will depend upon the area to be reclaimed. ARCO Oil and Gas Company agrees to begin reclamation as soon as weather conditions are suitable and further agrees to complete the project in a timely manner.

11. Surface and Mineral Ownership:

The location surface and mineral rights are both Federal, administered by the BLM.

12. Other Information:

For any questions regarding this permit, please contact Mr. Harold Engel of our Drilling Department at (303)293-7305.

ARCO Oil and Gas Company  
Deadman Hollow Unit #1  
NE/4NW/4, Sec. 23, T27S-R1E  
Wayne County, Utah  
Page 7

There will be no deviation from the proposed drilling and/or workover program without prior approval from the District Manager. Safe drilling and operating practices must be observed. All wells, whether drilling, producing, suspended, or abandoned, will be identified in accordance with 43 CFR 3162.2.

"Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3164.

The dirt contractor will be provided with an approved copy of the surface use plan.

A cultural resource clearance will be required before any construction begins. If any cultural resources are found during construction, all work will stop and the Area Manager will be notified. A copy of the cultural resource report prepared by Powers Elevation will be filed under a separate cover.

All employees working in the area will be informed by the operator that they will be subject to prosecution for disturbing archaeological sites or picking up artifacts. Salvage or excavation of identified archaeological sites will only be done if damage occurs.

This permit will be valid for a period of one (1) year from the date of approval. After permit termination, a new application will be filed for approval for any future operations.

Exhibit "H" is a copy of the proposed Deadman Hollow Unit Area. This well is the first proposed well within the unit area.

13. Lessee's or Operator's Representative and Certification:

Larry Morse  
ARCO Oil and Gas Company  
P. O. Box 5540  
Denver, Colorado 80217  
Bus. Tele: (303) 293-7031

J. M. McCarthy  
ARCO Oil and Gas Company  
P. O. Box 5540  
Denver, Colorado 80217  
Bus. Tele: (303) 293-7127  
Res. Tele: (303) 293-1339

ARCO Oil & Gas Company  
Deadman Hollow Unit #1  
NE/4NW/4, Sec. 23, T27S-R1E  
Wayne County, Utah  
Page 7

Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by ARCO Oil and Gas Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

7 SEPT. 1984  
Date

*Larry Morse* RUP  
Larry Morse  
Operations Manager  
ARCO Oil and Gas Company

ARCO Oil & Gas Company  
Deadman Hollow Unit #1  
NE/4NW/4, Sec. 23, T27S-R1E  
Wayne County, Utah

The onsite inspection was held 8/30/84

PARTICIPANTS:

Harold R. Engel

Leonard Henney

Patrick Stong  
Ray Blaisdell  
Verl Christenson

TITLES:

Drilling Engineer, ARCO Oil & Gas  
Company

Ross Construction Company

BLM  
BLM  
BLM

District Office contact is John Branch

Office phone: (801)896-8221

City: Richfield

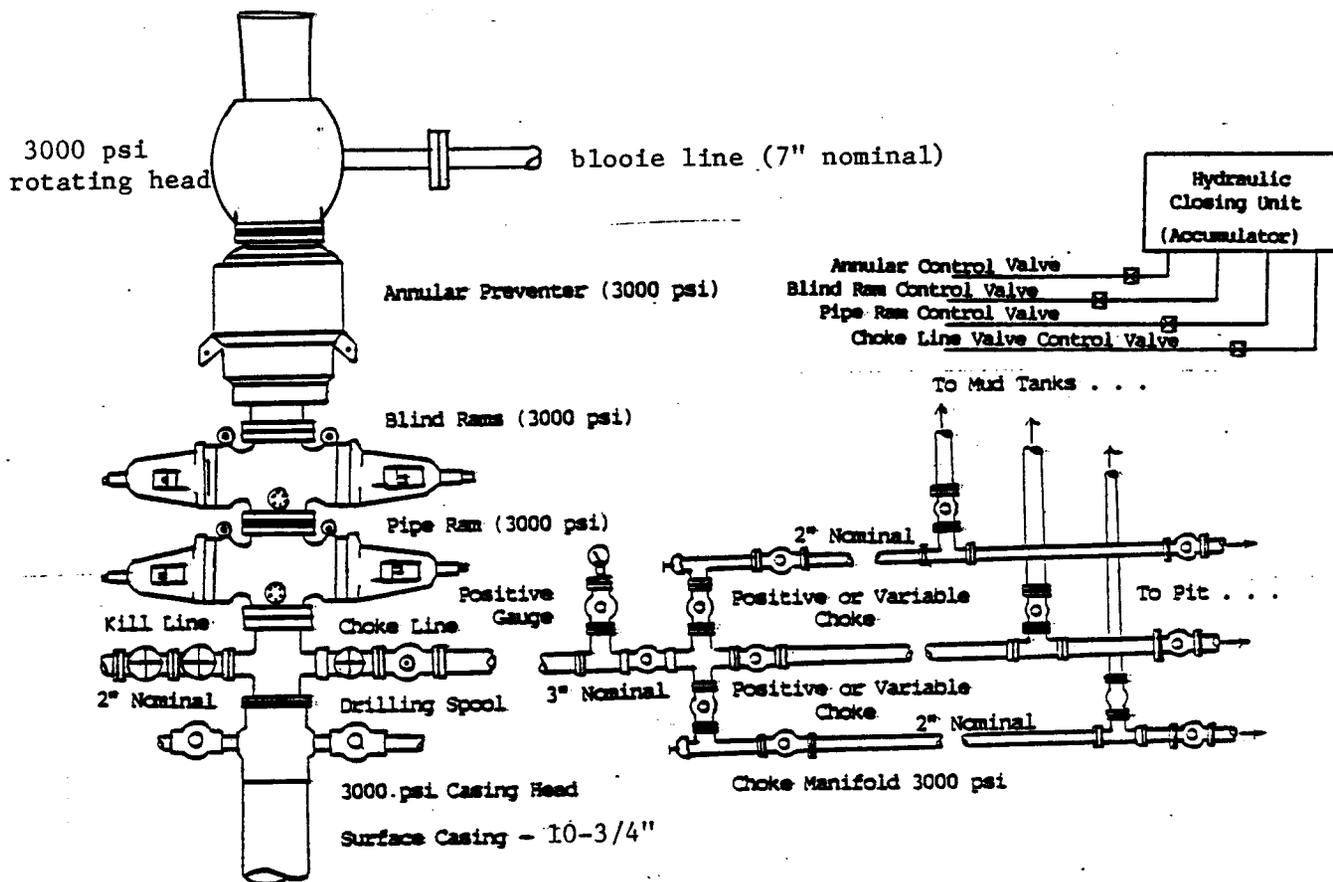
State: Utah

Resource Area Manager's address and contacts are:

Address: P.O. Box 99, Hanksville, Utah 84734

Your contact is: Patrick Stong  
Office phone: (801)542-3461

EXHIBIT "A"  
Well Control Equipment  
3M-10-SRRA



1. All BOP equipment shall be fluid and/or mechanically operated.
2. BOP's and all fittings will be in good working condition and rated at 3000 psi W.P. minimum.
3. Equipment through which bit must pass shall be at least as large as casing size being drilled.
4. Nipple above BOP shall be at least same size as casing being set.
5. Upper Kelly Cock and lower Kelly Cock shall be 3000 psi W.P. minimum.
6. Floor safety valve (full opening) and drill string BOP with appropriate rated pressure shall be available on rig floor with connections or subs to fit any tool joint in string.
7. Minimum size for choke line shall be 3 inches nominal diameter, minimum size for vent lines downstream of chokes shall be 2 inches nominal, and vent line which by-passes shall be a minimum of 3 inches nominal and shall be as straight as possible.
8. Fluid lines from accumulator to BOP's and all remote control fluid lines shall be steel and rated at or above maximum accumulator pressure. Lines shall be bundled and protected from damage.
9. Rams will be used in following positions: (ARCO Dri. Supv. may reverse ram location)

	<u>Drilling</u>	<u>Running Casing</u>
Upper Ram	Blind	Blind
Lower Ram	Drillpipe	Casing Rams

10. Minimum size for kill line is 2 inches nominal.
11. Extensions and hand wheels shall be installed.

ALL SPECIFICATIONS LISTED ARE PER API-RP53

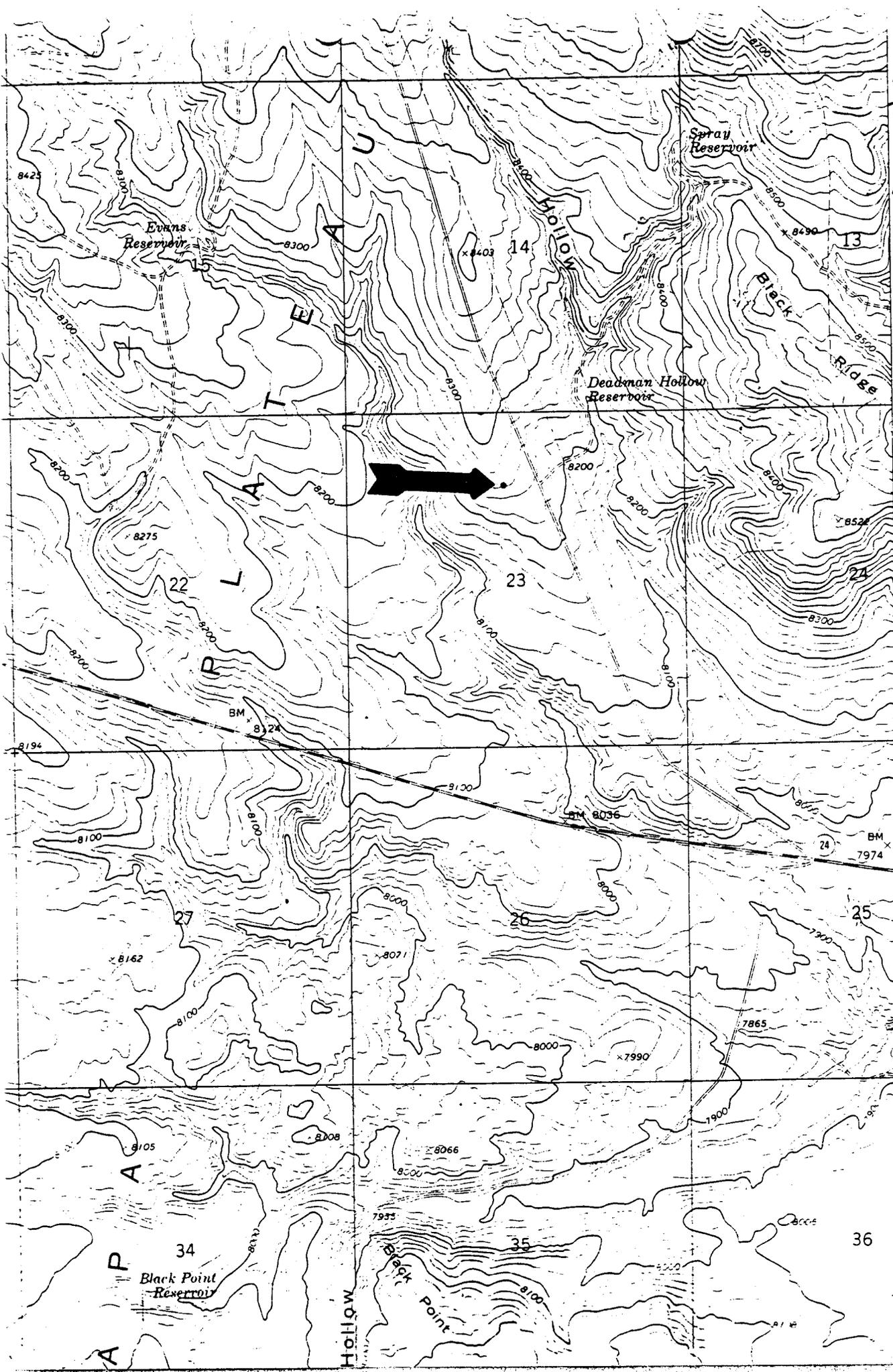
Exhibit "C"  
1/4  
"D"

DEADMAN  
HOLLOW UNIT  
#1,  
NEW SEC. 23  
T27S  
R1E  
WAYNE COUNTY

S. 23  
1050' x L  
2450' x L

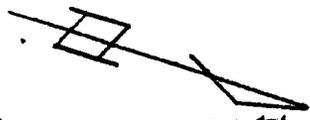
(LOAI)  
3660' NW  
LOA (UTAH 72) 7 MI.

ABES KNOLL  
UTAH  
QUAD



4258  
4257  
27'30"  
4256  
4255  
4253  
4252

-25



ARCO OIL & GAS  
 DEAD MAN HOLLOW UNIT #1  
 1030 FNL 2 SEC. 23-27S-1E  
 2450 FNL 3  
 WAYNE CO., UTAH

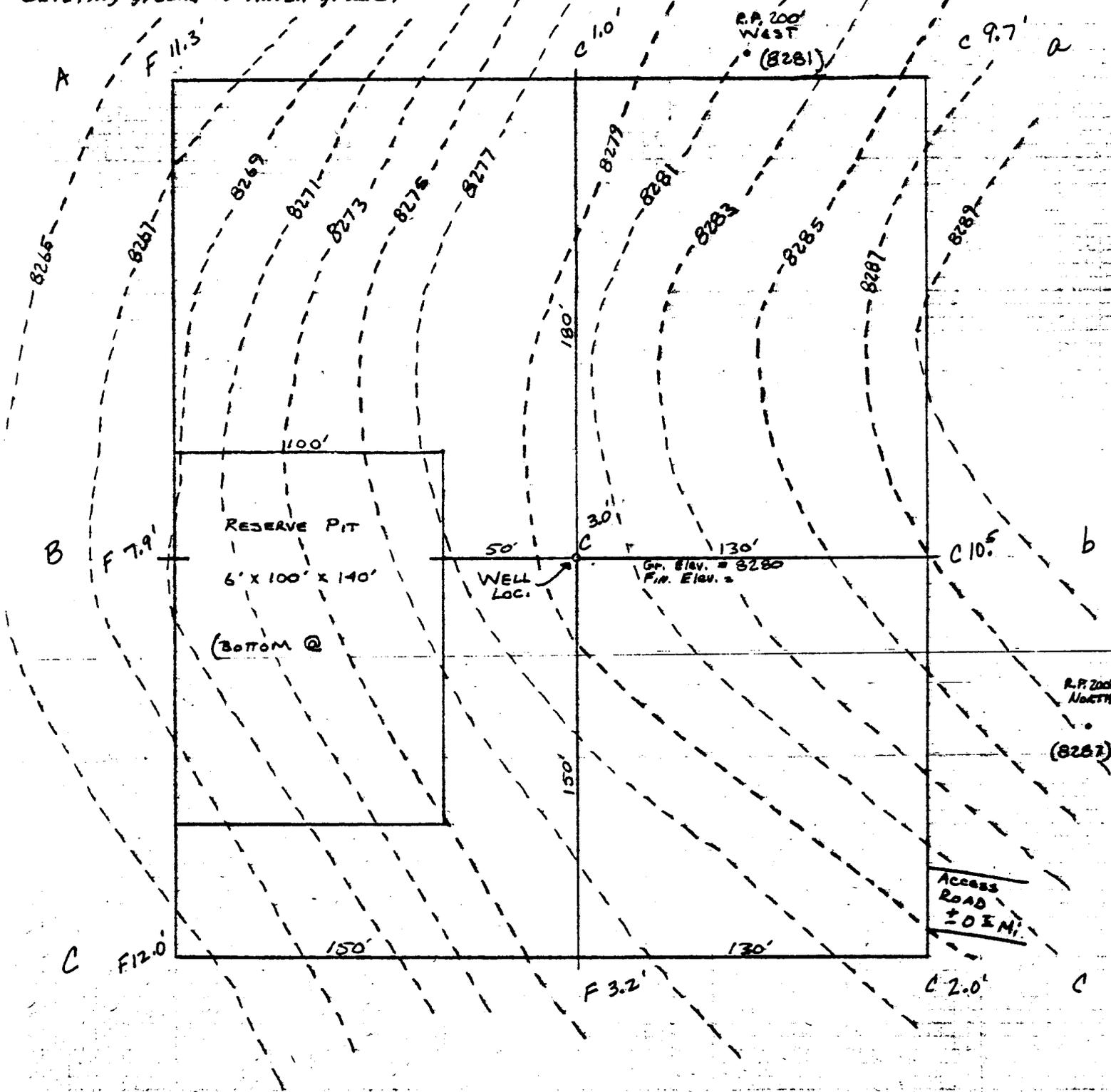
EXHIBIT "E"

V-DROP ANGLE = 251° 40'

1" = 50 feet

CI = 2 foot

Cor F is CUT or FILL from  
 EXISTING ground to finish grade.



R.P. 200  
 NORTH  
 (8287)

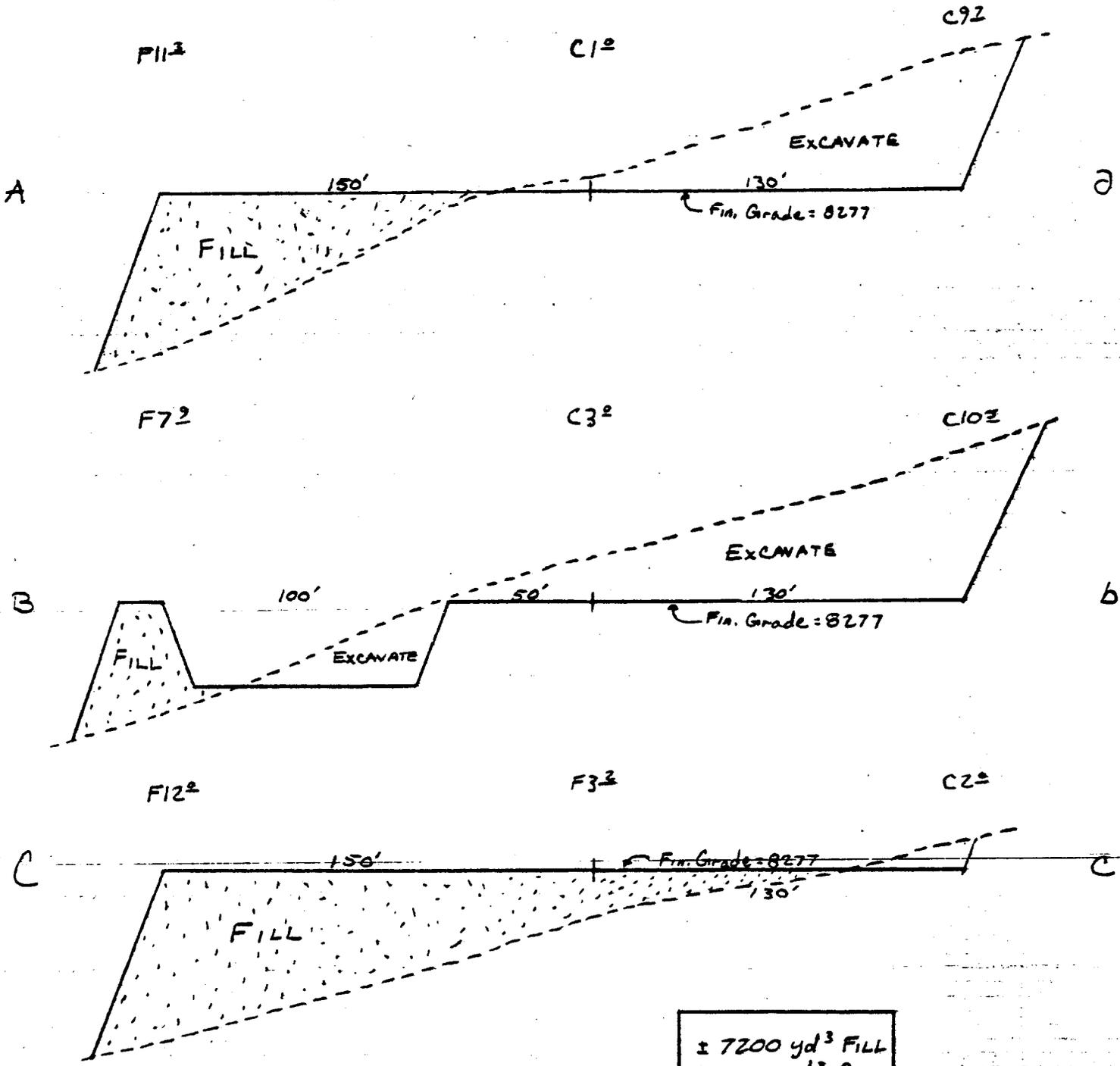
Access  
 ROAD  
 ± 0.5 MI.

Gr. Elev. = 8280  
 Fin. Elev. =

RESERVE PIT  
 6' x 100' x 140'  
 (BOTTOM @

WELL  
 LOC.

EXHIBIT "F"



--- EXISTING GROUND  
 ——— PROPOSED GRADE

SCALES: 1" = 50' Horiz.  
 1" = 10' Vert.

± 7200 yd<sup>3</sup> FILL  
 ± 7700 yd<sup>3</sup> CUT

NOTE: QUANTITIES MAY VARY  
 WITH FINAL PAD SIZE.

All sideslopes @ 2:1

ARCO OIL & GAS  
 DEAD MAN Hollow UNIT #1  
 NE-NW Sec. 23-27S-1E  
 WAYNE Co., UTAH

AUG. 4, 1984  
 BROOKS UTLEY

POWEAS ELEVATION Co.  
 RICHFIELD, UTAH

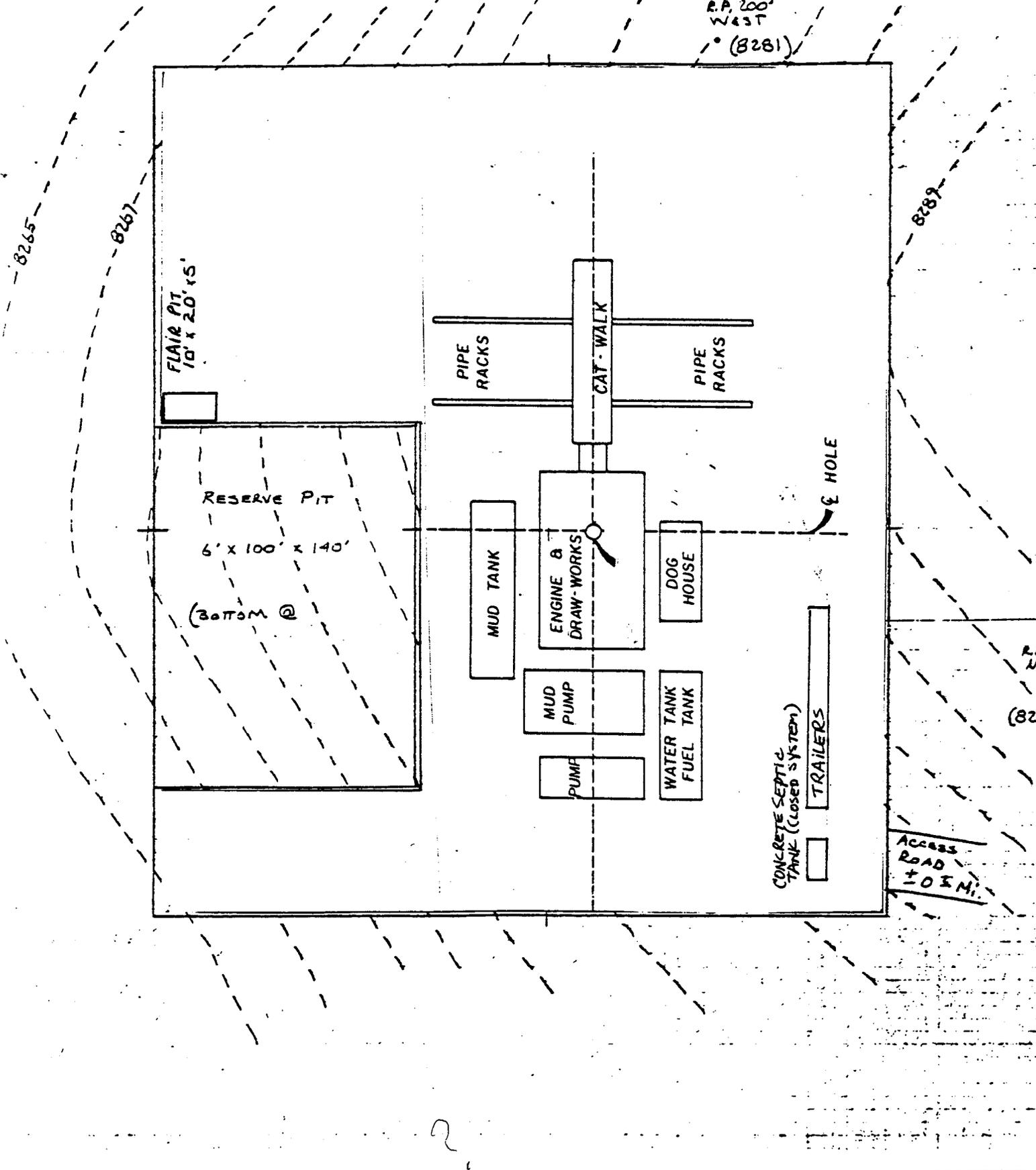
Exhibit "G"

ARCO OIL & GAS  
DEAD MAN HOLLOW UNIT #1  
1050 FNL 300.23-275-1E  
2450 FNL  
WAYNE Co., UTAH

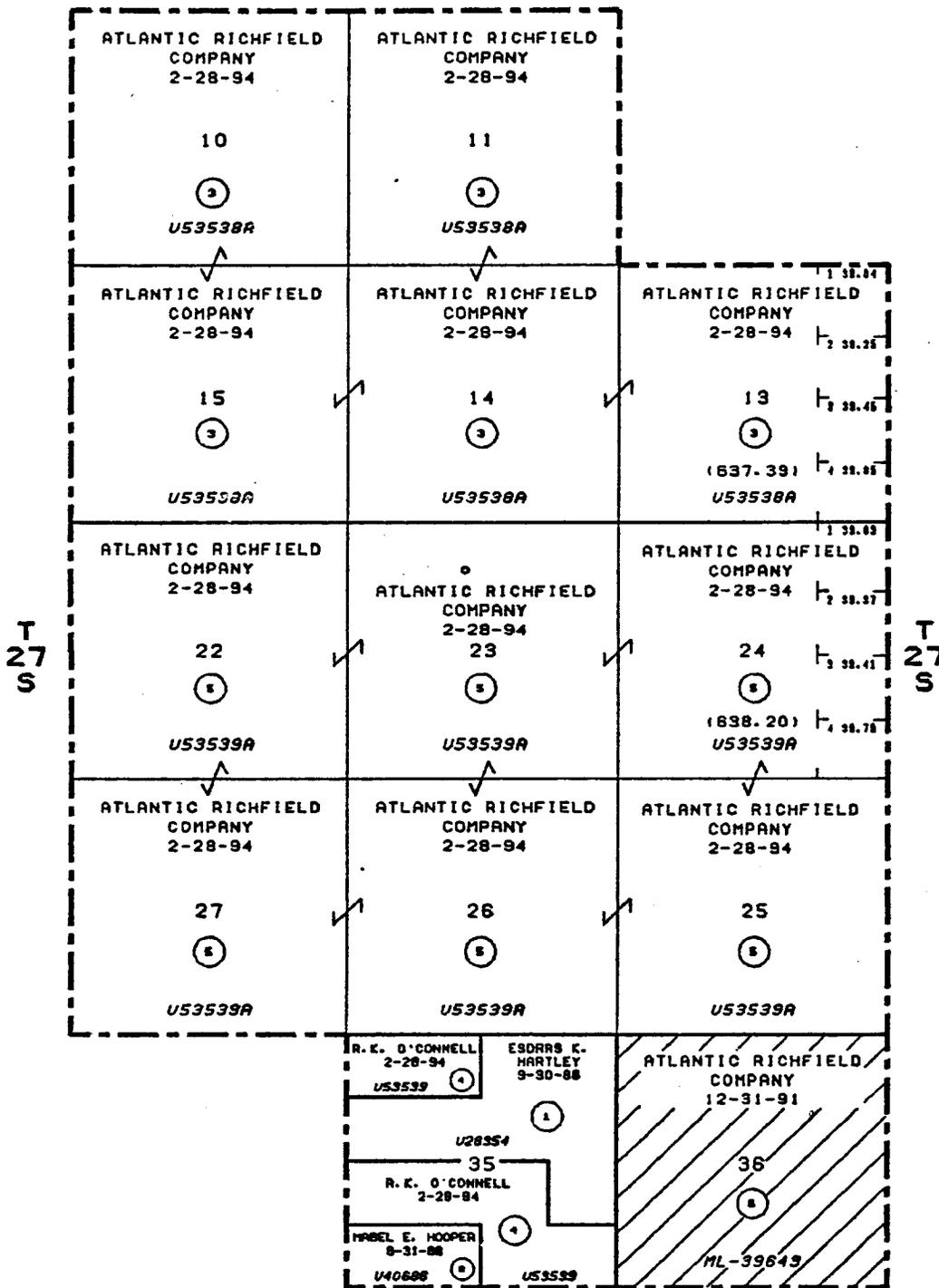
V-D002 Az = 251° 40'  
1" = 50 feet  
CI = 2 foot

Cor F is CUT or FILL from  
EXISTING ground to finish grade.

R.P. 200'  
WEST  
(8281)



R 1 E



R 1 E

ACREAGE	PERCENTAGE
7,675.59	87.01%
640.00	12.99%
<b>TOTAL</b>	<b>100.00%</b>

 FEDERAL LANDS  
 STATE LANDS

 TRACT NUMBER  
 UNIT BOUNDARY



NOTE: ALL SECTIONS ARE 640.0 ACRES UNLESS OTHERWISE NOTED

**ARCO Exploration Company**   
 Division of Atlantic Richfield Company  
 WESTERN U.S. OPERATIONS  
 DENVER, COLORADO

**EXHIBIT "H"**  
**DEADMAN HOLLOW UNIT AREA**  
**WAYNE COUNTY, UTAH**

LAND BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CAD BY: \_\_\_\_\_ FILE NO. \_\_\_\_\_  
 HORIZ. SCALE: \_\_\_\_\_ APPR'D BY: \_\_\_\_\_  
 VERT. SCALE: \_\_\_\_\_

OPERATOR Arco Oil & Gas Co. DATE 9-11-84

WELL NAME Deadman Hollow Unit #1

SEC NE NW 23 T 27S R 1E COUNTY Wayne

43 055-30036  
API NUMBER

Lease  
TYPE OF LEASE

POSTING CHECK OFF:

<input type="checkbox"/> INDEX	<input type="checkbox"/> MAP	<input type="checkbox"/> HL
<input type="checkbox"/> NID	<input type="checkbox"/>	<input type="checkbox"/> PI

PROCESSING COMMENTS:

Unit well  
Need water permit (Will obtain water from Fremont Despatch Co / Water Rights)

~~CHIEF PETROLEUM ENGINEER REVIEW:~~

APPROVAL LETTER:

SPACING:  A-3 Deadman Hollow  c-3-a \_\_\_\_\_ CAUSE NO. & DATE

c-3-b  c-3-c

SPECIAL LANGUAGE:

1- Water

RECONCILE WELL NAME AND LOCATION ON APD AGAINST SAME DATA ON PLAT MAP.

AUTHENTICATE LEASE AND OPERATOR INFORMATION

VERIFY ADEQUATE AND PROPER BONDING

AUTHENTICATE IF SITE IS IN A NAMED FIELD, ETC.

APPLY SPACING CONSIDERATION

ORDER \_\_\_\_\_

UNIT Deadman Hollow

c-3-b

c-3-c

CHECK DISTANCE TO NEAREST WELL.

CHECK OUTSTANDING OR OVERDUE REPORTS FOR OPERATOR'S OTHER WELLS.

IF POTASH DESIGNATED AREA, SPECIAL LANGUAGE ON APPROVAL LETTER

IF IN OIL SHALE DESIGNATED AREA, SPECIAL APPROVAL LANGUAGE.

VERIFY LEGAL AND SUFFICIENT DRILLING WATER



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

September 12, 1984

Arco Oil and Gas Company  
A Division of Atlantic Richfield Company  
P. O. Box 5540  
Denver, Colorado 80217

Gentlemen:

RE: Well No. Deadman Hollow Unit #1 - NENW Sec. 23, T. 27S, R. 1E  
1050' FNL, 2450' FWL - Wayne County, Utah

Approval to drill the above referenced oil well is hereby granted in accordance with Section 40-6-18, Utah Code Annotated, as amended 1983; and predicated on Rule A-3, General Rules and Regulations and Rules of Practice and Procedure, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification to the Division within 24 hours after drilling operations commence.
2. Submittal to the Division of completed Form OGC-8-X, Report of Water Encountered During Drilling.
3. Prompt notification to the Division should you determine that it is necessary to plug and abandon this well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 533-5771, (Home) 298-7695 or R. J. Firth, Associate Director, (Home) 571-6068.
4. Compliance with the requirements and regulations of Rule C-27, Associated Gas Flaring, General Rules and Regulations, Oil and Gas Conservation.

Page 2  
Arco Oil and Gas Company  
Well No. Deadman Hollow Unit #1  
September 12, 1984

5. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-055-30036.

Sincerely,



R. Firth  
Associate Director, Oil & Gas

as  
Enclosures  
cc: Branch of Fluid Minerals

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK  
DRILL  DEEPEN  PLUG BACK

b. TYPE OF WELL  
OIL WELL  GAS WELL  OTHER   
SINGLE ZONE  MULTIPLE ZONE

2. NAME OF OPERATOR  
ARCO Oil and Gas Co., A Division of Atlantic Richfield Company

3. ADDRESS OF OPERATOR  
P.O. Box 5540, Denver, CO 80217

4. LOCATION OF WELL (Report location clearly and in accordance with any State regulations)  
1050' FNL & 2450' FWL (NE/4NW/4)

At proposed prod. zone approx. the same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
Approx. 9.4 miles west of Loa, Utah

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)  
1050'

18. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.  
none

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
Ground elevation: 8280'

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
--------------	----------------	-----------------	---------------	--------------------

5. LEASE DESIGNATION AND SERIAL NO.  
U-53539A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
N/A

7. UNIT AGREEMENT NAME  
Deadman Hollow

8. FARM OR LEASE NAME  
N/A

9. WELL NO.  
Deadman Hollow Unit #1

10. FIELD AND POOL, OR WILDCAT  
Wildcat

11. SEC. T. R. M. OR BLK. AND SURVEY OR AREA  
Sec. 23 T27S-R1E S.L.M.

12. COUNTY OR PARISH  
Wayne

13. STATE  
Utah

PROCUREMENT			
ADMIN.			
PERSONNEL			
TRAINING			

16. NO. OF ACRES IN LEASE  
38320

17. NO. OF ACRES ASSIGNED TO THIS WELL  
Not assigned

19. PROPOSED DEPTH  
5900'

20. ROTARY OR CABLE TOOLS  
Rotary

22. APPROX. DATE WORK WILL START\*  
10-8-84

RECEIVED

SEP 17 1984

DIVISION OF OIL  
GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED Larry Morse TITLE Operations Manager DATE 7 SEPT. 1984  
(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

O/G



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
RICHFIELD DISTRICT OFFICE  
150 EAST 900 NORTH  
RICHFIELD, UTAH 84701

RECEIVED

SEP 28 1984

DIVISION OF OIL  
GAS & MINING

IN REPLY  
REFER TO:

3100  
U-53539A  
(U-052)

September 25, 1984

Utah State Division of Oil, Gas and Mining  
4241 State Office Building  
Salt Lake City, Utah 84114

RE: Oil and Gas Well  
Lease No. U-53539A  
Deadman Hollow Unit #1  
Section 23, T. 27 S., R. 1 E., SLB&M  
Wayne County, Utah

Dear Gentlemen:

Enclosed is your copy of the approved APD and the Conditions of Approval.

Sincerely,

*Donald L. Pendleton*  
Donald L. Pendleton  
District Manager

Enclosures:  
APD  
Conditions of Approval

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

**APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK**

5. LEASE DESIGNATION AND SERIAL NO.  
U-53539A

6. IF INDIAN ALLOTTEE OR TRIBE NAME  
N/A

7. UNIT AGREEMENT NAME  
Deadman Hollow

8. FARM OR LEASE NAME  
N/A

9. WELL NO.  
Deadman Hollow Unit #1

10. FIELD AND POOL, OR WILDCAT  
Wildcat

11. SEC., T., R., M., OR BLM. AND SURVEY OF AREA  
Sec. 23 T27S-R1E S.L.M.

12. COUNTY OR PARISH  
Wayne

13. STATE  
Utah

1a. TYPE OF WORK  
DRILL  DEEPEN  PLUG BACK

b. TYPE OF WELL  
OIL WELL  GAS WELL  OTHER  SINGLE ZONE  MULTIPLE ZONE

2. NAME OF OPERATOR  
ARCO Oil and Gas Co., A Division of Atlantic Richfield Company

3. ADDRESS OF OPERATOR  
P.O. Box 5540, Denver, CO 80217

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
1050' FNL & 2450' FWL (NE/4NW/4)  
At proposed prod. zone approx. the same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
Approx. 9.4 miles west of Loa, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drilg. unit line, if any)	1050'	16. NO. OF ACRES IN LEASE	3838.20	17. NO. OF ACRES ASSIGNED TO THIS WELL	Not assigned
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	none	19. PROPOSED DEPTH	5900'	20. ROTARY OR CABLE TOOLS	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
Ground elevation: 8280'

22. APPROX. DATE WORK WILL START\*  
10-8-84

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT

RECEIVED

SEP 28 1984

DIVISION OF OIL  
GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED [Signature] TITLE Operations Manager DATE 7 SEPT. 1984  
(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

APPROVED BY [Signature] TITLE Assistant Director DATE 9/27/84  
CONDITIONS OF APPROVAL, IF ANY:

NOTICE OF APPROVAL

FLARING OR VENTING OF  
GAS IS SUBJECT TO NPL 4-A  
DATED 1/1/82

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

API #43-055-30036

NAME OF COMPANY: ARCO OIL & GAS

WELL NAME: DEADMAN HOLLOW UNIT #1

SECTION NE NW 23 TOWNSHIP 27S RANGE 1E COUNTY Wayne

DRILLING CONTRACTOR \_\_\_\_\_

RIG # \_\_\_\_\_

SPUDED: DATE 11-14-84

TIME 4:00 PM

HOW \_\_\_\_\_

DRILLING WILL COMMENCE \_\_\_\_\_

REPORTED BY Ray Still

TELEPHONE # 303-293-7033

DATE 11-16-84

SIGNED Verna/AS

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT**

Form 3160-6  
(November 1983)  
(Formerly 9-329)

**MONTHLY REPORT  
OF  
OPERATIONS**

Lease No. U-53539A  
 Communitization Agreement No. \_\_\_\_\_  
 Field Name Utah High Plateau  
 Unit Name \_\_\_\_\_  
 Participating Area \_\_\_\_\_  
 County Wayne State UT  
 Operator Atlantic Richfield Company  
 Amended Report (Deadman Hollow Unit #1)

The following is a correct report of operations and production (including status of all unplugged wells) for the month of November, 1984

(See Reverse of Form for Instructions)

This report is required by law (30 U.S.C. 189, 30 U.S.C. 359, 25 U.S.C. 396d), regulation (43 CFR 3162.4-3), and the terms of the lease. Failure to report can result in the assessment of liquidated damages, (43 CFR 3160), penalties, shutting down operations, or basis for recommendation to cancel the lease and forfeit the bond (43 CFR 3160).

Well No.	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod.	*Barrels of Oil	*MCF of Gas	*Barrels of Water	Remarks
1	Sec. 23	27S	1E	DRG	0	0	0	0	This well was spudded on 11/14/84. Please see the attached drilling report.

**RECEIVED**  
 DEC 14 1984  
 DIVISION OF  
 OIL, GAS & MINING

\*If none, so state.

**DISPOSITION OF PRODUCTION (Lease, Participating Area, or Communitized Area basis)**

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
*On hand, Start of Month	0	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*Produced	0	0	0
*Sold	0	0	XXXXXXXXXXXXXXXXXXXX
*Spilled or Lost	0	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*Flared or Vented	XXXXXXXXXXXXXXXXXXXX	0	XXXXXXXXXXXXXXXXXXXX
*Used on Lease	0	0	XXXXXXXXXXXXXXXXXXXX
*Injected	0	0	0
*Surface Pits	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	0
*Other (Identify)	0	0	0
*On hand, End of Month	0	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*API Gravity/BTU Content	0	0	XXXXXXXXXXXXXXXXXXXX

Authorized Signature: B. R. Hill Address: P.O. Box 5540, Denver, CO 80217  
 Title: Supervisor, Operations Info. Group Page 1 of 1

District	County or Parish	State
Rocky Mountain	Wayne	Utah
Field	Lease or Unit	Well no.
Utah High Plateau	Deadman Hollow Unit	#1

11/6/84		Day -1 Loc complete, except f/reserve pit lnr. Rig in transit to loc. (PTD: 5900')
11/7/84	82	Day -2 GL (0') - MI rig loads. Fac'd 7 of 32 rig loads.
11/8/84	82	Day -3 GL (0') - RU. Set matting boards & sub. Have rec'd 18 loads out of 33. Expect to spud 11/10/84.
11/9/84	82	Day -4 KB (0') - RU. (16" @ 82' KB) Cont RU. Rec'd 14 loads (balance of rig). WO crane - will arrive today. Hauled 4000 BW to reserve pit.
11/10-13	82	Day -8 KB (0') - RU. (16" @ 82' KB) Hauled 5400 BW to reserve pit. RU. Expect to spud today.
11/14/84	82	Day -9. KB (0') - Cont RU. (16" @ 82' KB) NU rotating hd, flwline and mud & steam lines. Expect to spud today.
11/15/84	130	Day-1 (48') - Drlg. (16" @ 82' KB) MW: 8.6# Vis: 37 Pv/Yp: NR Fin MI RU. Mix mud. <u>SPUD 1600 hrs 11/14/84.</u> Drl'd 14-3/4" hole to PD. Survey: 1/2° @ 90'.
11/16/84	284	Day-2 (154') - Drlg. (16" @ 82' KB) MW: 8.7# Vis: 41 Pv/Yp: 5/25 Drl'd 14-3/4" hole to 218'. POH. PU 6 pt mmr. RIH. Rnd 160-218'. Drl'd to PD. Survey: 1/4° @ 176'.
11/17-19	884	Day-5 (600') - Drlg. (16" @ 82' KB) MW: 8.9# Vis: 48 Pv/Yp: 8/43 Drl'd 14-3/4" hole to 350'. Losing returns. Mix & pmp LCM sweeps. Drl'd to 540' w/partial returns. Pmp 75 bbl LCM pill. POH. Chg bits. RIH. Drl'd to PD w/full returns. Surveys: 1/2° @ 276', 1° @ 402', 3/4° @ 525', 1° @ 618', 3/4° @ 712'.

District	County or Parish	State
Rocky Mountain	Wayne	Utah
Field	Lease or Unit	Well no.
Utah High Plateau	Deadman Hollow Unit	#1

Date and depth as of 8:00 a.m.	Complete record for each day while drilling or workover in progress
11/20/84 1089	Day-6 (205') - Drlg. (16" @ 82' KB) MW: 9.1# Vis: 41 Pv/Yp: 13/8 Drl'd 14-3/4" hole to PD. Surveys: 1° @ 864', 1-1/4° @ 989'.
11/21/84 1210	Day-7 (121') - RU to run csg. (16" @ 82' KB) MW: 9.0# Vis: 46 Pv/Yp: 19/12 Drl'd 14-3/4" hole to PD. Sht trip. POH. RU to run csg. Survey: 3/4° @ 1112'.
11/22-26 2045	Day-12 (835') - Drlg. (10-3/4" @ 1199') MW: 8.8# Vis: 42 Pv/Yp: 12/11 Ran 30 jts 10-3/4", 40.5#, K-55, ST&C csg. Lnd'd @ 1199'. Howco cmt'd w/470 sx Howco Lite w/add & 500 sx Cl "H" w/add. WOC. Cut 10-3/4" csg & NU csghd & BOPE. Press tst BOPE. TIH. DO cmt. Tst csg. Drl'd shoe & drld 9-7/8" hole to PD. Surveys: 1/2° @ 1666', 1° @ 1944'.
11/27/84 2595	Day-13 (550') - Drlg. (10-3/4" @ 1199') MW: 8.8# Vis: 47 Pv/Yp: 16/16 Drl'd 9-7/8" hole to PD. Surveys: 1° @ 2217', 1-1/2° @ 2554'.
11/28/84 3065	Day-14 (470') - Drlg. (10-3/4" @ 1199') MW: 8.9# Vis: 42 Pv/Yp: 12/9 Drl'd 9-7/8" hole to PD. Survey: 1° @ 2861'.
11/29/84 3484	Day-15 (420') - Drlg. (10-3/4" @ 1199') MW: 9.0# Vis: 41 Pv/Yp: 12/10 Drl'd 9-7/8" hole to PD. Survey: 1/2° @ 3169'.
11/30/84 3592	Day-16 (108') - Drlg. (10-3/4" @ 1199') MW: 9.0# Vis: 41 Pv/Yp: 12/10 Drl'd 9-7/8" hole to 3588'. TOH. Inspect BHA. PU B#4 & TIH. Drl'd to PD. Surveys: 1/2° @ 3482', 3/4° @ 3538'.

ARCO Oil and Gas Company  
Rocky Mountain District  
707 17th Street  
Mailing address: P.O. Box 5540  
Denver, Colorado 80217  
Telephone 303 293 4600



December 10, 1984

State of Utah  
Department of Natural Resources  
Division of Oil, Gas & Mining  
4241 State Office Building  
Salt Lake City, Utah 84114

Re: Monthly Report of Operations  
Well No. Deadman Hollow Unit #1  
NE NW Sec. 23-27S-1E  
Wayne County, Utah

Gentlemen:

Attached, in duplicate is the Monthly Report of Operations for the month of November, 1984, on the subject well.

This well was spudded on November 14, 1984.

Very truly yours,

A handwritten signature in cursive script that reads "B. R. Still".

B. R. Still  
Supervisor, Operations Info. Group

BRS:af

TIC HOLE  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE\*  
(Other instructions on re-  
verse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

**SUNDRY NOTICES AND REPORTS OF ~~CONFIDENTIAL~~**  
(Do not use this form for proposals to drill or to deepen or plug back to a different location.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. U-53539A
2. NAME OF OPERATOR ARCO Oil and Gas Company, Division of Atlantic Richfield Company		6. IF INDIAN, ALLOTTEE OR TRIBE NAME NA
3. ADDRESS OF OPERATOR P.O. Box 5540, Denver, Colorado 80217		7. UNIT AGREEMENT NAME Deadman Hollow
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface 1050' FNL & 2450' FWL		8. FARM OR LEASE NAME NA
14. PERMIT NO. 43-055-30036		9. WELL NO. Deadman Hollow Unit #1
15. ELEVATIONS (Show whether DP, RT, GR, etc.) 8280' GL		10. FIELD AND POOL, OR WILDCAT Wildcat
		11. SEC., T., R., M., OR BLM. AND SURVEY OR AREA 23-27S-1E
		12. COUNTY OR PARISH Wayne
		13. STATE Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>SPUD &amp; SURF CASING</u>	

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

MI & RU Rio Grande Rig #27; 16" conductor pipe set @ 82'KB. SPUD 14-3/4" hole 11-14-84. Drilled ahead to 1210'. RU and ran 30 jts 10-3/4", 40.5#, K-55, STC casing and set @ 1199'KB. Cemented as follows: 10 bbl water, 470 sx lite, 2% CaCl<sub>2</sub> + 1/4#/sx flocele. Floats held. Good cement returns to pit. Tested BOP to 3000 psi for 15 mins - held OK. Drilled cement and drilling ahead 11-25-84.

**RECEIVED**  
DEC 12 1984

DIVISION OF  
OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct  
SIGNED L.B. MOISE TITLE Operations Manager DATE 12-7-84  
(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

TIGHT HOLE  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIP DATE  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

**SUNDRY NOTICES AND REPORTS ON WELLS**

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. U-53539A
2. NAME OF OPERATOR ARCO Oil and Gas Company, Division of Atlantic Richfield Company		6. IF INDIAN, ALLOTTEE OR TRIBE NAME NA
3. ADDRESS OF OPERATOR P.O. Box 5540, Denver, Colorado 80217		7. UNIT AGREEMENT NAME Deadman Hollow
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface 1050' FNL & 2450' FWL		8. FARM OR LEASE NAME NA
14. PERMIT NO. 43-055-30036		9. WELL NO. Deadman Hollow Unit #1
15. ELEVATIONS (Show whether DF, ST, CR, etc.) 8280' GL		10. FIELD AND POOL, OR WILDCAT Wildcat
		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA 23-27S-1E
		12. COUNTY OR PARISH Wayne
		13. STATE Utah

**CONFIDENTIAL**

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANE <input type="checkbox"/>	(Other) <input type="checkbox"/>	(Other) <input type="checkbox"/>

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Permission is hereby requested to hold this well in a CONFIDENTIAL status.

18. I hereby certify that the foregoing is true and correct

SIGNED LB Morse TITLE Operations Manager DATE 12-14-84  
L.B. MORSE

(This space for Federal or State office use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

ORAL APPROVAL TO PLUG AND ABANDON WELL

Operator ARCO Representative Suzanne Barnes  
Deadman Hollow Unit (303) 293-1077  
 Well No. #1 Location 1/4 1/4 Section 23 Township 27S Range 1E

County Wyal Field \_\_\_\_\_ State \_\_\_\_\_

Unit Name and Required Depth \_\_\_\_\_ Base of fresh water sands \_\_\_\_\_

T.D. 7200 Size hole and Fill per sack \_\_\_\_\_ " \_\_\_\_\_ Mud Weight and Top \_\_\_\_\_ #/gal. \_\_\_\_\_

Casing Size	Set At	Top of Cement	To Be Pulled	Plugging Requirements		
				From	To	Sacks Cement
<u>10 3/4</u>	<u>1199</u>	<u>surf.</u>		<u>① 5400</u>	<u>5200</u>	
				<u>② 2500</u>	<u>2300</u>	
				<u>③ 1250</u>	<u>1050</u>	
				<u>④ 30"</u>	<u>surf.</u>	
<u>Formation</u>	<u>Top</u>	<u>Base</u>	<u>Shows</u>			
<u>Volcanics</u>	<u>surf.</u>	<u>5390</u>				
<u>Carnal</u>	<u>5390</u>					

REMARKS

DST's, lost circulation zones, water zones, etc., None

Approved by IRB Date 12/14/84 Time 1130 a.m. p.m.

- TD tomorrow, plug possibly Mon. & Tues.

12/23/82  
2000 hrs.

ARCO (836 - 2407)  
Deadman Hollow Unit #1

Wayne Co.

PxA program

- ① 7918 - 7700
- ② 5400 - 5200
- ③ 2500 - 2300
- ④ 1250 - 1050
- ⑤ 20 sk surf.

Start plugging @ 8 or 9 am  
tomorrow.

TIG HOLE  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPlicate  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

LEASE DESIGNATION AND SERIAL NO.

U-53539A

IF INDIAN, ALLOTTEE OR TRIBE NAME

NA

UNIT AGREEMENT NAME

Deadman Hollow

FARM OR LEASE NAME

NA

WELL NO.

Deadman Hollow Unit #1

FIELD AND POOL, OR WILDCAT

Wildcat

SEC. T., R., M., OR B.L. AND SURVEY OR AREA

23-27S-1E

COUNTY OR PARISH STATE

Wayne

Utah

1. OIL WELL  GAS WELL  OTHER X

2. NAME OF OPERATOR

ARCO Oil and Gas Company, Division of Atlantic Richfield Company

3. ADDRESS OF OPERATOR

P.O. Box 5540, Denver, Colorado 80217

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)  
At surface

1050' FNL & 2450' FWL

14. PERMIT NO.

43-055-30036

15. ELEVATIONS (Show whether of, ft., in, etc.)

8280' GL

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDISE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON\*

CHANGE PLANE

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Finished running DST #2. Plugged and abandoned as follows:

Plug #2	5400'-5200'	115 sx	Class "H" cement
Plug #3	2500'-2300'	115 sx	Class "H" cement
Plug #4	1250'-1050'	115 sx	Class "H" cement
Plug #5	Surface	20 sx	Class "H" cement

Released rig 1-2-85.

RECEIVED  
JAN 17 1985

DIVISION OF  
OIL, GAS & MINING

13. I hereby certify that the foregoing is true and correct

SIGNET

L. R. Morse

TITLE

Operations Manager

DATE

1-14-85

(This space for Federal or State office use)

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

ACCEPTED  
APPROVED BY THE STATE  
OF UTAH DIVISION OF  
OIL, GAS, AND MINING

DATE

1/25/85

\*See instructions on reverse side

DEADMAN HOLLOW UNIT #1  
NE NW Section 23-27S-1E  
Wayne County, Utah

CONFIDENTIAL

- 12/28/84 7922 | Day-44 TD PBD: 7720' - TIH f/DST #1. (10-3/4" @ 1199')  
MW: 9.5# Vis: 61 Pv/Yp: 16/29  
Wsh to 7702' (TOC). Drld cmt to 7720'. Circ & cond mud. PU tools f/DST #1  
& RIH (tst int. 7658-7720').
- 12/29-31 7922 | Day-47 TD PBD: 7720' - TIH f/DST #2. (10-3/4" @ 1199')  
MW: 9.4# Vis: 58 Pv/Yp: 13/25  
Fin TIH & ran DST #1, 7658-7720', 15-45-90-150 min: IHP 3955 & FHP 3852,  
IFP 397-453, ISIP 2355, FFP 453-1222, FSIP 2355. DP recovery: 2668' WCM.  
Smpl Chmbr recovery: 2150 cc WCM. TIH to 7450'. Circ & cond. TOH to PU DST  
tools. WO proper tools. PU DST tools & TIH.
- 1/1-2/85 7922 | Day-49 TD PBD: Surf - Clng mud tks & ND BOPs. (10-3/4" @ 1199')  
MW: NR Vis: NR Pv/Yp: NR  
Ran DST #2, 7290-7365', 15-45-90-90 mins: IHP 3643 & FHP 3629, IFP 55-69,  
ISIP 222, FFP 69-69, FSIP 83. DP recovery: 95' sli WCM. Smpl Chmbr  
recovery: 450 cc sli WCM. POH, LD tst tools. RIH w/OE DP. Pmpd Plug #2  
5400-5200', Plug #3 2500-2300', Plug #4 1350-1050', Plug #5 38-Surf. ND  
BOPs.
- 1/3/84 7922 | Day-50 TD PBD: Surf - FINAL REPORT - WELL P & A 1/2/85.  
(10-3/4" @ 1199')  
Clnd mud pits. Rel'd rig 1200 hrs 1/2/85. Began RD.

WELL HOLE  
**UNITED STATES**  
**DEPARTMENT OF THE INTERIOR**  
**BUREAU OF LAND MANAGEMENT**

SUBMIT IN DUPLICATE\*

(See other instructions on reverse side)

Form approved.  
Budget Bureau No. 1004-0137  
Expires August 31, 1985

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG\***

1. TYPE OF WELL: OIL WELL  GAS WELL  DRY  Other \_\_\_\_\_

2. TYPE OF COMPLETION: NEW WELL  WORK OVER  DEEP-EN  PLUG BACK  DIFF. REVENR  Other \_\_\_\_\_

3. NAME OF OPERATOR  
ARCO Oil and Gas Company, Division of Atlantic Richfield Company

4. ADDRESS OF OPERATOR  
P.O. Box 5540, Denver, Colorado 80217

5. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)\*

At surface 1050' FNL & 2450' FWL **NENW**

At top prod. interval reported below

At total depth

API #43-055-30036

14. PERMIT NO. <b>BLM</b>	DATE ISSUED <b>9-25-84</b>
------------------------------	-------------------------------

12. COUNTY OR PARISH <b>Wayne</b>	13. STATE <b>Utah</b>
--------------------------------------	--------------------------

15. DATE SPUNDED <b>11-4-84</b>	16. DATE T.D. REACHED <b>12-24-84</b>	17. DATE COMPL. (Ready to prod.) <b>P&amp;A 1-2-85</b>	18. ELEVATIONS (DF, RKB, RT, OR, ETC.)* <b>8280' GL 9302' KB</b>	19. ELEV. CASINGHEAD <b>8280'</b>
------------------------------------	--	---	---	--------------------------------------

20. TOTAL DEPTH, MD & TVD <b>7922'</b>	21. PLUG. BACK T.D., MD & TVD <b>Surface P&amp;A</b>	22. IF MULTIPLE COMPL., HOW MANY* <b>P&amp;A</b>	23. INTERVALS DRILLED BY <b>→ 0-7922'</b>	ROTARY TOOLS <b>---</b>	CABLE TOOLS <b>---</b>
---	---	---	--	----------------------------	---------------------------

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\*  
**PLUGGED AND ABANDONED**

25. WAS DIRECTIONAL SURVEY MADE  
**NO**

26. TYPE ELECTRIC AND OTHER LOGS RUN  
**MSFL/SP/DLL/GR FDC/CNL BHS/GR**

27. WAS WELL CORRED  
**NO**

**CASING RECORD (Report all strings set in well)**

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
16"	---	82' KB	---	Conductor	---
10-3/4"	40.5#	1199' KB	14-3/4"	970 SX	---

29. LINER RECORD					30. TUBING RECORD		
SIZE	TOP (MD)	BOTTOM (MD)	BACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
---	NONE	---	---	---	---	NONE	---

31. PERFORATION RECORD (Interval, size and number)  
**NONE**

**JAN 17 1985**

**DIVISION OF OIL, GAS & MINING**

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.  
DEPTH INTERVAL (MD) AMOUNT AND KIND OF MATERIAL USED  
**NONE**

**33. PRODUCTION**

DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) <b>PLUGGED AND ABANDONED</b>				WELL STATUS (Producing or shut-in)	
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
---	---	PLUGGED AND	ABANDONED	---	---	---	---
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
---	---	PLUGGED AND	ABANDONED	---	---	---	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) TEST WITNESSED BY

35. LIST OF ATTACHMENTS  
**Daily Well History**

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED L.B. Morse TITLE Operations Manager DATE 1-15-85

\*(See Instructions and Spaces for Additional Data on Reverse Side)

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
NO CORES			
DST #1	7658'	7720'	Recovery 2268' WCM
DST #2	7290'	7365'	Recovery 95' SWCM
PLUGGED AND ABANDONED		AS FOLLOWS	
PLUG #1	7922'	7700'	110 sx Class "H" cement
PLUG #2	5400'	5200'	115 sx Class "H" cement
PLUG #3	2500'	2300'	115 sx Class "H" cement
PLUG #4	1250'	1050'	115 sx Class "H" cement
PLUG #5	Surface		20 sx Class "H" cement

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Volcanics Carmel	Surface 5390'	

~~CONFIDENTIAL~~

ARCO Oil and Gas Company  
Rocky Mountain District  
707 17th Street  
Mailing address: P.O. Box 5540  
Denver, Colorado 80217  
Telephone 303 293 4600



RECEIVED  
JAN 23 1985

January 18, 1985

OIL, GAS & MINING

State of Utah  
Department of Natural Resources  
Division of Oil, Gas & Mining  
4241 State Office Building  
Salt Lake City, Utah 84114

Re: Monthly Report of Operations  
Well No. Deadman Hollow Unit #1  
NE NW Sec. 23-27S-1E  
Wayne County, Utah

Gentlemen:

Attached, in duplicate is the Monthly Report of Operations for the month of December, 1984, on the subject well.

This well was spudded on November 14, 1984.

Very truly yours,

*B. R. Still*

B. R. Still  
Supervisor, Operations Info. Group

BRS:af

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT**

Form 3160-6  
(November 1983)  
(Formerly 9-329)

**MONTHLY REPORT  
OF  
OPERATIONS**

Lease No. U-53539A  
 Communitization Agreement No. \_\_\_\_\_  
 Field Name Utah High Plateau  
 Unit Name \_\_\_\_\_  
 Participating Area \_\_\_\_\_  
 County Wayne State UT  
 Operator Atlantic Richfield Company  
 Amended Report (Deadman Hollow Unit #1)

The following is a correct report of operations and production (including status of all unplugged wells) for the month of December, 1984

(See Reverse of Form for Instructions)

This report is required by law (30 U.S.C. 189, 30 U.S.C. 359, 25 U.S.C. 396d), regulation (43 CFR 3162.4-3), and the terms of the lease. Failure to report can result in the assessment of liquidated damages, (43 CFR 3160), penalties, shutting down operations, or basis for recommendation to cancel the lease and forfeit the bond (43 CFR 3160).

Well No.	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod.	*Barrels of Oil	*MCF of Gas	*Barrels of Water	Remarks
1	Sec. 23	27S	1E	P&A	0	0	0	0	This well was spudded on 11/14/84.  Final Report- Well P&A 12/6/84

**RECEIVED**  
 JAN 23 1985  
 DIVISION OF  
 OIL, GAS & MINING

\*If none, so state.

**DISPOSITION OF PRODUCTION (Lease, Participating Area, or Communitized Area basis)**

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
*On hand, Start of Month	0	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*Produced	0	0	0
*Sold	0	0	XXXXXXXXXXXXXXXXXXXX
*Spilled or Lost	0	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*Flared or Vented	XXXXXXXXXXXXXXXXXXXX	0	XXXXXXXXXXXXXXXXXXXX
*Used on Lease	0	0	XXXXXXXXXXXXXXXXXXXX
*Injected	0	0	0
*Surface Pits	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	0
*Other (Identify)	0	0	0
*On hand, End of Month	0	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*API Gravity/BTU Content	0	0	XXXXXXXXXXXXXXXXXXXX

Authorized Signature: B. P. Still Address: P.O. Box 5540, Denver, CO 80217  
 Title: Supervisor, Operations Info. Group Page 1 of 1

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DEADMAN HOLLOW UNIT #1  
NE NW Section 23-27S-1E  
Wayne County, Utah

CONFIDENTIAL

- 4
- 12/15-17 7109 Day-33 (267') - TIH w/fishing tools. (10-3/4" @ 1199')  
MW: 9.4# Vis: 51 Pv/Yp: 14/23  
Drl'd to 7032'. Circ f/smpls. Drl'd to 7087'. Changed over to a salt mud.  
Drl'd to 7109'. Lost 600 psi pmp press. POH. Twisted off @ SS 30" f/top.  
TOF @ 7065' (9-7/8" bit, bit sub, 1-8" DC, 7' of SS). Total length of fish  
= 43'. PU DOTCO fishing tools & TIH. Survey: 3° @ 6922'.
- 12/18/84 7109 Day-34 (0') - POH w/fish. (10-3/4" @ 1199')  
MW: 9.4# Vis: 51 Pv/Yp: 16/18  
Circ on top of fish. Work overshot over fish. POH. No fish. Chng grapple  
f/7-7/8" to 7-3/4". TIH. Wrk pipe thru tite spt @ 6250'. Wash  
f/6250'-6370'. Set dwn on fish. Press inc f/1300-1900 psi. POH w/fish.
- 12/19/84 7242 Day-35 (133') - Drlg. (10-3/4" @ 1199')  
MW: 9.5# Vis: 43 Pv/Yp: 14/14  
POH w/fish. LD fishing tools. TIH (brk circ @ 3950'). Drl'd 9-7/8" hole to  
PD.
- 12/20/84 7413 Day-37 (171') - Drlg. (10-3/4" @ 1199')  
MW: 9.5# Vis: 39 Pv/Yp: 10/8  
Drl'd 9-7/8" hole to PD. Circ smpls @ 7299' (no shows). Survey: 3-3/4° @  
7252'.
- 12/21/84 7572 Day-37 (159') - Drlg. (10-3/4" @ 1199')  
(corr'd) MW: 9.5# Vis: 43 Pv/Yp: 11/10  
Drl'd 9-7/8" hole to PD. Drlg brk (7449'-7461'). Circ smpls (no shows).  
Survey: 4° @ 7560'.
- 12/22-26 7922 Day-42 (350') - TIH to P & A. (10-3/4" @ 1199')  
MW: 9.4# Vis: 62 Pv/Yp: 18/27  
Drl'd 9-7/8" hole to PD. TOH. RU Schl & run DLL/MSFL/GR-Cal,  
FDC/CNL/GR/Cal, BHC Sonic/GR, Dipmeter (tool didn't wrk). Run VSP. TIH  
w/OE DP. Survey: 2-3/4° @ 7900'.
- 12/27/84 7922 Day-43 TD PBD: 7678' - Wsh to TOC. (10-3/4" @ 1199')  
MW: 9.4# Vis: 62 Pv/Yp: 18/27 (12/26/84)  
Circ & RU Howco. Spt Plug #1 7922-7700' w/110 sx Cl "H" cmt. LD DP & WOO.  
RD Howco. TOH. PU B#3 RR & BHA. TIH & PU DP. Brk circ @ 3642' & 7500'. Wsh  
f/7500-7678'.

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12/4/84 5108 Day-20 (423') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 41 Pv/Yp: 12/8  
Drl'd 9-7/8" hole to PD. Surveys: 1/2° @ 4651', 3/4° @ 4833'.

12/5/84 5391 Day-21 (283') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 41 Pv/Yp: 11/7  
Drl'd 9-7/8" hole to PD. Surveys: 1-1/4° @ 5140', 1-3/4° @ 5298'.

12/6/84 5515 Day-22 (124') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 46 Pv/Yp: 11/12  
Drl'd 9-7/8" hole to PD w/TFNB @ 5467'. Survey: 1-3/4° @ 5451'.

12/7/84 5700 Day-23 (185') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 45 Pv/Yp: 14/13  
Drl'd 9-7/8" hole to PD. Survey: 2° @ 5603'.

12/8-10 6171 Day-26 (471') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 45 Pv/Yp: 11/9  
Drl'd 9-7/8" hole to PD. Surveys: 2-1/4° @ 5757', 2-3/4° @ 5910', 2° @ 5971', 2-1/4° @ 6063' & 6153'.

12/11/84 6318 Day-27 (147') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 44 Pv/Yp: 11/8  
Drl'd 9-7/8" hole to PD. Survey: 2-3/4° @ 6278'.

12/12/84 6422 Day-28 (104') - Inspecting BHA. (10-3/4" @ 1199')  
MW: 9.0# Vis: 46 Pv/Yp: 13/12  
Drl'd 9-7/8" hole to PD. POH, inspect BHA. Survey: 1-3/4° @ 6402'.

12/13/84 6593 Day-29 (171') - Drlg. (10-3/4" @ 1199')  
MW: 9.1# Vis: 46 Pv/Yp: 12/9  
Inspect BHA. Chg bit. RIH. Wsh 52' to btm. 6565-6572'. Survey: 2° @ 6556'

12/14/84 6842 Day-30 (249') - Drlg. (10-3/4" @ 1199')  
MW: 8.9# Vis: 42 Pv/Yp: 9/12  
Drl'd 9-7/8" hole to PD. Circ samples @ 6626-6634'. Survey: 2° @ 6738'.

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- 11/20/84 1089 | Day-6 (205') - Drlg. (16" @ 82' KB)  
MW: 9.1# Vis: 41 Pv/Yp: 13/8  
Drl'd 14-3/4" hole to PD. Surveys: 1° @ 864', 1-1/4° @ 989'.
  
- 11/21/84 1210 | Day-7 (121') - RU to run csg. (16" @ 82' KB)  
MW: 9.0# Vis: 46 Pv/Yp: 19/12  
Drl'd 14-3/4" hole to PD. Sht trip. POH. RU to run csg. Survey: 3/4° @ 1112'.
  
- 11/22-26 2045 | Day-12 (835') - Drlg. (10-3/4" @ 1199')  
MW: 8.8# Vis: 42 Pv/Yp: 12/11  
Ran 30 jts 10-3/4", 40.5#, K-55, ST&C csg. Lnd'd @ 1199'. Howco cmt'd w/470  
sx Howco Lite w/add & 500 sx Cl "H" w/add. WOC. Cut 10-3/4" csg & NU csghd  
& BOPE. Press tst BOPE. TIH. DO cmt. Tst csg. Drl'd shoe & drl'd 9-7/8" hole  
to PD. Surveys: 1/2° @ 1666', 1° @ 1944'.
  
- 11/27/84 2595 | Day-13 (550') - Drlg. (10-3/4" @ 1199')  
MW: 8.8# Vis: 47 Pv/Yp: 16/16  
Drl'd 9-7/8" hole to PD. Surveys: 1° @ 2217', 1-1/2° @ 2554'.
  
- 11/28/84 3065 | Day-14 (470') - Drlg. (10-3/4" @ 1199')  
MW: 8.9# Vis: 42 Pv/Yp: 12/9  
Drl'd 9-7/8" hole to PD. Survey: 1° @ 2861'.
  
- 11/29/84 3484 | Day-15 (420') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 41 Pv/Yp: 12/10  
Drl'd 9-7/8" hole to PD. Survey: 1/2° @ 3169'.
  
- 11/30/84 3592 | Day-16 (108') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 41 Pv/Yp: 12/10  
Drl'd 9-7/8" hole to 3588'. TOH. Inspect BHA. PU B#4 & TIH. Drl'd to PD.  
Surveys: 1/2° @ 3482', 3/4° @ 3538'.
  
- 12/1-3 4685 | Day-19 (1093') - Drlg. (10-3/4" @ 1199')  
MW: 9.0# Vis: 45 Pv/Yp: 14/10  
Drl'd 9-7/8" hole to PD. Surveys: 1-3/4° @ 3852', 1-1/4° @ 4003' & 4156',  
1-1/2° @ 4310', 3/4° @ 4492'.

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11/6/84		Day -1 Loc complete, except f/reserve pit lnr. Rig in transit to loc.
11/7/84	82	Day -2 GL (0') - MI rig loads. Rec'd 7 of 32 rig loads.
11/8/84	82	Day -3 GL (0') - RU. Set matting boards & sub. Have rec'd 18 loads out of 33. Expect to spud 11/10/84.
11/9/84	82	Day -4 KB (0') - RU. (16" @ 82' KB) Cont RU. Rec'd 14 loads (balance of rig). WO crane - will arrive today. Hauled 4000 BW to reserve pit.
11/10-13	82	Day -8 KB (0') - RU. (16" @ 82' KB) Hauled 5400 BW to reserve pit. RU. Expect to spud today.
11/14/84	82	Day -9. KB (0') - Cont RU. (16" @ 82' KB) NU rotating hd, flwline and mud & steam lines. Expect to spud today.
11/15/84	130	Day-1 (48') - Drlg. (16" @ 82' KB) MW: 8.6# Vis: 37 Pv/Yp: NR Fin MI RU. Mix mud. SPUD 1600 hrs 11/14/84. Drl'd 14-3/4" hole to PD. Survey: 1/2° @ 90'.
11/16/84	284	Day-2 (154') - Drlg. (16" @ 82' KB) MW: 8.7# Vis: 41 Pv/Yp: 5/25 Drl'd 14-3/4" hole to 218'. POH. PU 6 pt mtr. RIH. Rnd 160-218'. Drl'd to PD. Survey: 1/4° @ 176'.
11/17-19	884	Day-5 (600') - Drlg. (16" @ 82' KB) MW: 8.9# Vis: 48 Pv/Yp: 8/43 Drl'd 14-3/4" hole to 350'. Losing returns. Mix & pmp LCM sweeps. Drl'd to 540' w/partial returns. Pmp 75 bbl LCM pill. POH. Chg bits. RIH. Drl'd to PD w/full returns. Surveys: 1/2° @ 276', 1° @ 402', 3/4° @ 525', 1° @ 618', 3/4° @ 712'.

FLOPETROL JOHNSTON

Schlumberger

# WELL PERFORMANCE TEST REPORT

A Production Systems Analysis (NODAL)  
Based On  
Drillstem Test Data

Test Date  
12-28-84

Report No.:  
36609 E

COMPANY

## ARCO OIL & GAS

WELL

## DEADMAN HOLLOW #1

TEST IDENTIFICATION

Test Type ..... OPEN HOLE  
Test Number ..... 1  
Formation ..... NAVAJO  
Test Interval ..... 7658 - 7720 FT.  
Reference Depth ..... KELLY BUSHING

WELL LOCATION

Field ..... WILD CAT  
County ..... WAYNE  
State ..... UTAH  
Sec / Twn / Rng ..... S23 T77S R1E  
Elevation ..... NOT GIVEN

HOLE CONDITIONS

Total Depth (MVD/TVD) ..... 7720 FT.  
Hole Size / Deviation Angle ..... 9 7/8" / STRAIGHT  
Csg / Liner ID ..... NA  
Perf'd Interval ..... NA  
Shot Density / Phasing ..... NA  
Gun Type / Perf Cond ..... NA

MUD PROPERTIES

Mud Type ..... SALT GEL MUD  
Mud Weight ..... 9.5 LB/GAL  
Mud Resistivity ..... .3 OHM -M @ 72°F  
Filtrate Resistivity ..... NOT GIVEN  
Filtrate Chlorides ..... 64000 PPM  
Filtrate Nitrates ..... NOT GIVEN

INITIAL TEST CONDITIONS

Gas Cushion Type ..... NONE  
Surface Pressure ..... NA  
Liquid Cushion Type ..... NONE  
Height Above DST Valve ..... NA

TEST STRING CONFIGURATION

Pipe Length / ID ..... 7135 FT. / 3.826 IN.  
Collar Length / ID ..... 472 FT. / 2.5 IN.  
Packer Depth(s) ..... 7651 & 7658 FT.  
BH Choke Size ..... 15/16 IN.

NET PIPE RECOVERY

Volume	Fluid Type	Physical Properties
2.52 BBL	WATER	14K PPM CL.
22.70 BBL	MUD	

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Physical Properties
.773 SCF	GAS	CORRECTED TO PWF
2150 CC	WATER	14000 PPM CL.

Pressure: 25 PSIG | GOR: — | GLR: 57.14

INTERPRETATION RESULTS

Reservoir Pressure @ Gauge Depth: NA  
Gauge Depth ..... 7638 FT.  
Hydrostatic Gradient ..... NA  
Potentiometric Surface ..... NA  
Effective Permeability to ..... NA  
Transmissibility ..... NA  
Skin Factor / Damage Ratio ..... NA  
Omega / Lambda (2φ System) ..... NA  
Radius of Investigation ..... NA  
Measured Wellbore Storage ..... NA

ROCK / FLUID / WELLBORE PROPERTIES

Reservoir Temperature ..... 168°F  
Analysis Fluid Type ..... NA  
Formation Volume Factor ..... NA  
Viscosity ..... NA  
Z-Factor (gas only) ..... NA  
Net Pay ..... NOT GIVEN  
Porosity ..... NOT GIVEN  
Total System Compressibility ..... NA  
Wellbore Radius ..... .411 FT.  
Expected Wellbore Storage ..... NA

FLOW RATE DURING DST

### 333.3 BHPD avg. / 361.3 BHPD RECOVERED rate

MAXIMUM FLOW RATE POTENTIAL AFTER COMPLETION

MAR 20 1985

DIVISION OF OIL  
GAS & MINING

# BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 36609E

COMPANY : ARCO OIL & GAS COMPANY

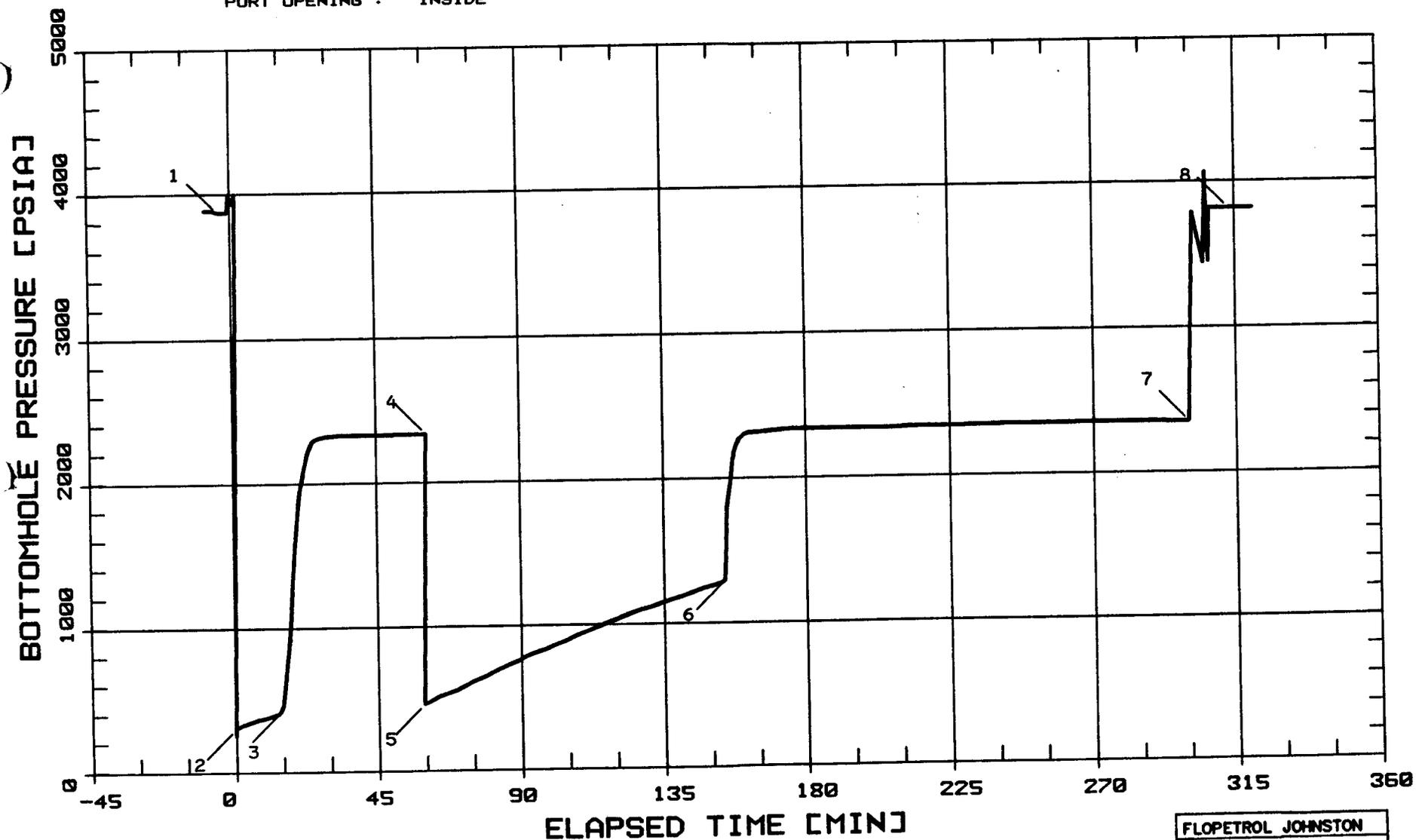
INSTRUMENT NO. J-1036

WELL : DEADMAN HOLLOW #1

DEPTH : 7638 FT

CAPACITY : 4700 PSI

PORT OPENING : INSIDE



FLOPETROL JOHNSTON  
SCHLUMBERGER

**BOTTOM HOLE PRESSURE AND TIME DATA**

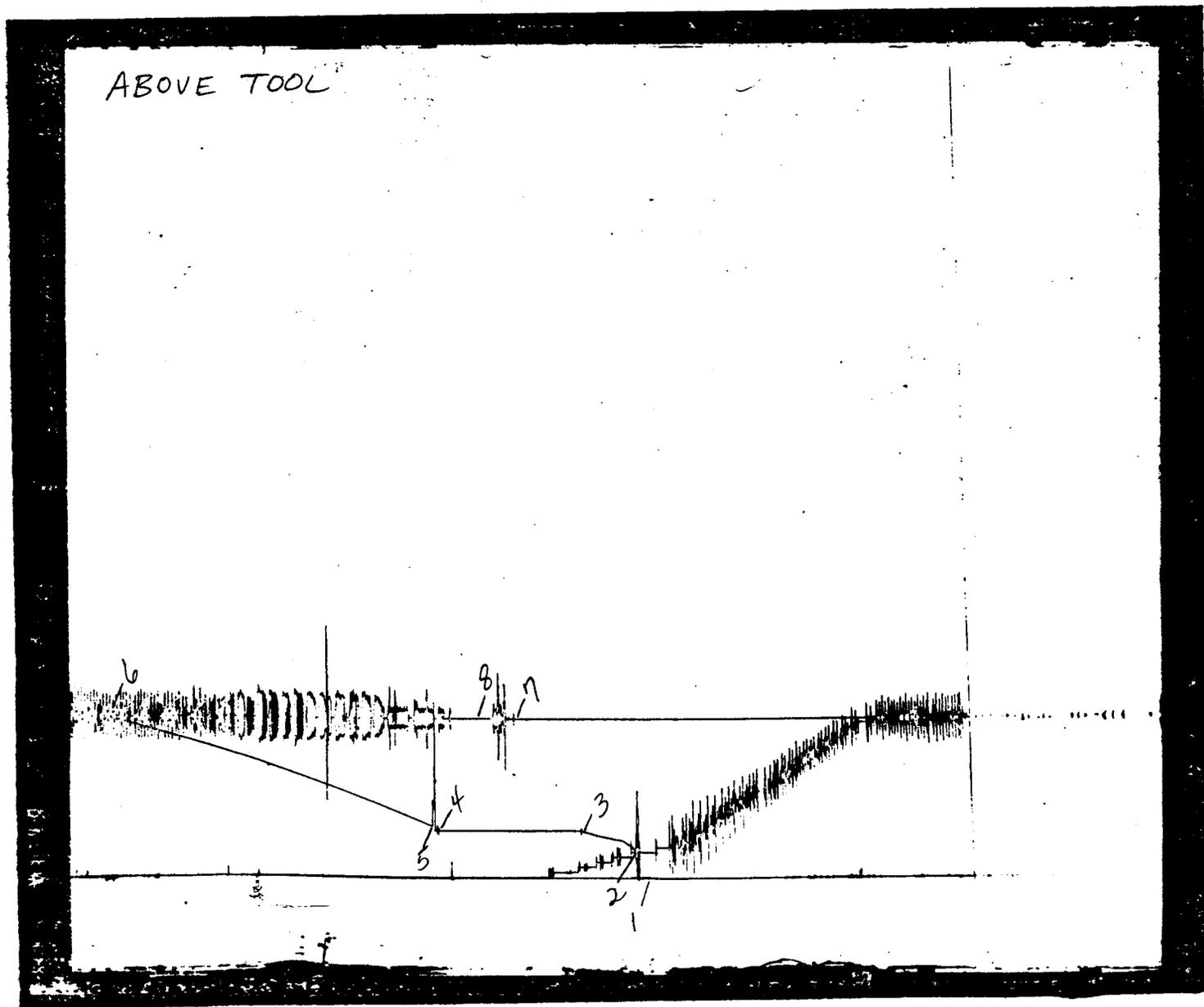


INSTRUMENT NUMBER <b>J-036</b>		CAPACITY (P.S.L.) <b>4700#</b>	DEPTH <b>7562 FT.</b>
PORT OPENING <b>ABOVE</b>		BOTTOM HOLE TEMPERATURE <b>168°F</b>	FIELD REPORT NUMBER <b>36609 E</b>

DESCRIPTION	LABELED POINTS	PRESSURE (PSIA)	GIVEN TIME	COMPUTED TIME
INITIAL HYDROSTATIC MUD	1	19		
INITIAL FLOW (1)	2	180		
INITIAL FLOW (2)	3	307		
INITIAL SHUT-IN	4	309		
SECOND FLOW (1)				
SECOND FLOW (2)				
SECOND SHUT-IN				
FINAL FLOW (1)	5	336		
FINAL FLOW (2)	6	999		
FINAL SHUT-IN	7	990		
FINAL HYDROSTATIC MUD	8	994		

REMARKS:

INSTRUMENT RUN ABOVE TOOL - PIPE FILL-UP RECORDER





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 \* WELL TEST DATA PRINTOUT \*  
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FIELD REPORT # : 36609E

COMPANY : ARCO OIL & GAS COMPANY  
 WELL : DEADMAN HOLLOW #1

INSTRUMENT # : J-1036  
 CAPACITY [PSI] : 4700.  
 DEPTH [FT] : 7638.0  
 PORT OPENING : INSIDE  
 TEMPERATURE [DEG F] : 168.0

LABEL POINT INFORMATION  
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#	TIME OF DAY HH:MM:SS	DATE DD-MM	EXPLANATION	ELAPSED TIME, MIN	BOT HOLE PRESSURE PSIA
1	6:26:12	28-DC	HYDROSTATIC MUD	-3.80	3873
2	6:30:00	28-DC	START FLOW	0.00	304
3	6:44:10	28-DC	END FLOW & START SHUT-IN	14.17	423
4	7:30:41	28-DC	END SHUT-IN	60.68	2333
5	7:29:22	28-DC	START FLOW	59.37	464
6	9:04:10	28-DC	END FLOW & START SHUT-IN	154.16	1292
7	11:30:00	28-DC	END SHUT-IN	300.00	2348
8	11:42:56	28-DC	HYDROSTATIC MUD	312.93	3814

SUMMARY OF FLOW PERIODS  
 \*\*\*\*\*

PERIOD	START ELAPSED TIME, MIN	END ELAPSED TIME, MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA
1	0.00	14.17	14.17	304	423
2	59.37	154.16	94.79	464	1292

SUMMARY OF SHUTIN PERIODS  
 \*\*\*\*\*

PERIOD	START ELAPSED TIME, MIN	END ELAPSED TIME, MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	14.17	60.68	46.51	423	2333	423	14.17
2	154.16	300.00	145.84	1292	2348	1292	108.96

TEST PHASE : FLOW PERIOD # 1

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA
HH:MM:SS	DD-MM	*****	*****	*****
6:30: 0	28-DC	0.00	0.00	304
6:35: 0	28-DC	5.00	5.00	352
6:40: 0	28-DC	10.00	10.00	381
6:44:10	28-DC	14.17	14.17	423

TEST PHASE : SHUTIN PERIOD # 1  
 FINAL FLOW PRESSURE [PSIA] = 423  
 PRODUCING TIME [MIN] = 14.17

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MM	*****	*****	*****	*****	*****
6:44:10	28-DC	14.17	0.00	423	0	
6:45:10	28-DC	15.17	1.00	506	82	1.181
6:46:10	28-DC	16.17	2.00	704	280	0.908
6:47:10	28-DC	17.17	3.00	902	478	0.758
6:48:10	28-DC	18.17	4.00	1257	833	0.657
6:49:10	28-DC	19.17	5.00	1564	1141	0.584
6:50:10	28-DC	20.17	6.00	1806	1383	0.527
6:51:10	28-DC	21.17	7.00	1980	1557	0.481
6:52:10	28-DC	22.17	8.00	2099	1676	0.443
6:53:10	28-DC	23.17	9.00	2197	1773	0.411
6:54:10	28-DC	24.17	10.00	2250	1827	0.383
6:56:10	28-DC	26.17	12.00	2304	1881	0.339
6:58:10	28-DC	28.17	14.00	2316	1893	0.304
7: 0:10	28-DC	30.17	16.00	2321	1898	0.275
7: 2:10	28-DC	32.17	18.00	2324	1900	0.252
7: 4:10	28-DC	34.17	20.00	2327	1903	0.233
7: 6:10	28-DC	36.17	22.00	2328	1904	0.216
7: 8:10	28-DC	38.17	24.00	2329	1906	0.202
7:10:10	28-DC	40.17	26.00	2329	1906	0.189
7:12:10	28-DC	42.17	28.00	2329	1906	0.178
7:14:10	28-DC	44.17	30.00	2329	1906	0.168
7:19:10	28-DC	49.17	35.00	2329	1906	0.148
7:24:10	28-DC	54.17	40.00	2333	1910	0.132
7:29:10	28-DC	59.17	45.00	2333	1910	0.119
7:30:41	28-DC	60.68	46.51	2333	1910	0.115

TEST PHASE : FLOW PERIOD # 2

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA
HH:MM:SS	DD-MM	*****	*****	*****
7:29:22	28-DC	59.37	0.00	464
7:34:22	28-DC	64.37	5.00	517
7:39:22	28-DC	69.37	10.00	557
7:44:22	28-DC	74.37	15.00	611
7:49:22	28-DC	79.37	20.00	661
7:54:22	28-DC	84.37	25.00	713
7:59:22	28-DC	89.37	30.00	761
8: 4:22	28-DC	94.37	35.00	812
8: 9:22	28-DC	99.37	40.00	849
8:14:22	28-DC	104.37	45.00	895
8:19:22	28-DC	109.37	50.00	941
8:24:22	28-DC	114.37	55.00	986
8:29:22	28-DC	119.37	60.00	1028
8:34:22	28-DC	124.37	65.00	1070
8:39:22	28-DC	129.37	70.00	1105
8:44:22	28-DC	134.37	75.00	1141
8:49:22	28-DC	139.37	80.00	1177
8:54:22	28-DC	144.37	85.00	1215
8:59:22	28-DC	149.37	90.00	1252
9: 4:10	28-DC	154.16	94.79	1292

TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 1292

PRODUCING TIME [MIN] = 108.96

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MM	*****	*****	*****	*****	*****
9: 4:10	28-DC	154.16	0.00	1292	0	
9: 5:10	28-DC	155.16	1.00	1797	505	2.041
9: 6:10	28-DC	156.16	2.00	1962	670	1.744
9: 7:10	28-DC	157.16	3.00	2158	867	1.572
9: 8:10	28-DC	158.16	4.00	2228	936	1.451
9: 9:10	28-DC	159.16	5.00	2272	980	1.358
9:10:10	28-DC	160.16	6.00	2291	999	1.282
9:11:10	28-DC	161.16	7.00	2304	1013	1.219
9:12:10	28-DC	162.16	8.00	2312	1020	1.165
9:13:10	28-DC	163.16	9.00	2313	1022	1.117
9:14:10	28-DC	164.16	10.00	2315	1023	1.075
9:16:10	28-DC	166.16	12.00	2316	1024	1.003
9:18:10	28-DC	168.16	14.00	2320	1028	0.944
9:20:10	28-DC	170.16	16.00	2325	1033	0.893
9:22:10	28-DC	172.16	18.00	2330	1036	0.848
9:24:10	28-DC	174.16	20.00	2333	1041	0.809
9:26:10	28-DC	176.16	22.00	2334	1042	0.775
9:28:10	28-DC	178.16	24.00	2334	1043	0.744

TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 1292

PRODUCING TIME [MIN] = 108.96

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MM	*****	*****	*****	*****	*****
9:30:10	28-DC	180.16	26.00	2334	1043	0.715
9:32:10	28-DC	182.16	28.00	2334	1043	0.689
9:34:10	28-DC	184.16	30.00	2334	1043	0.666
9:39:10	28-DC	189.16	35.00	2334	1043	0.614
9:44:10	28-DC	194.16	40.00	2334	1043	0.571
9:49:10	28-DC	199.16	45.00	2334	1043	0.534
9:54:10	28-DC	204.16	50.00	2335	1043	0.502
9:59:10	28-DC	209.16	55.00	2335	1043	0.474
10: 4:10	28-DC	214.16	60.00	2340	1048	0.450
10: 9:10	28-DC	219.16	65.00	2340	1048	0.428
10:14:10	28-DC	224.16	70.00	2342	1050	0.408
10:19:10	28-DC	229.16	75.00	2343	1051	0.390
10:24:10	28-DC	234.16	80.00	2345	1053	0.373
10:29:10	28-DC	239.16	85.00	2346	1054	0.358
10:34:10	28-DC	244.16	90.00	2348	1056	0.345
10:39:10	28-DC	249.16	95.00	2348	1056	0.332
10:44:10	28-DC	254.16	100.00	2348	1056	0.320
10:49:10	28-DC	259.16	105.00	2348	1056	0.309
10:54:10	28-DC	264.16	110.00	2350	1058	0.299
10:59:10	28-DC	269.16	115.00	2351	1059	0.289
11: 4:10	28-DC	274.16	120.00	2351	1059	0.281
11: 9:10	28-DC	279.16	125.00	2351	1059	0.272
11:14:10	28-DC	284.16	130.00	2351	1059	0.264
11:19:10	28-DC	289.16	135.00	2351	1059	0.257
11:24:10	28-DC	294.16	140.00	2348	1056	0.250
11:29:10	28-DC	299.16	145.00	2348	1056	0.243
11:30: 0	28-DC	300.00	145.84	2348	1056	0.242

Contractor <u>Rio Grande</u>	Top Choke <u>1/2"</u>	Flow No. 1 <u>15</u> Min.
Rig No. <u>27</u>	Bottom Choke <u>3/4"</u>	Shut-in No. 1 <u>45</u> Min.
Spot <u>--</u>	Size Hole <u>9 7/8"</u>	Flow No. 2 <u>90</u> Min.
Sec. <u>23</u>	Size Rat Hole <u>--</u>	Shut-in No. 2 <u>90</u> Min.
Twp. <u>27S</u>	Size & Wt. D. P. <u>4 1/2" XH 16.6#</u>	Flow No. 3 <u>--</u> Min.
Rig. <u>1F</u>	Size Wt. Pipe <u>4 1/2" 25#</u>	Shut-in No. 3 <u>--</u> Min.
Field <u>Wildcat</u>	I. D. of D. C. <u>2 3/8"</u>	Bottom
County <u>Wayne</u>	Length of D. C. <u>452 ft</u>	Hole Temp. <u>220<sup>o</sup>F</u>
State <u>Utah</u>	Total Depth <u>7708 ft</u>	Mud Weight <u>9.4</u>
Elevation <u>8387 ft</u>	Interval Tested <u>7290-7365 ft</u>	Gravity <u>--</u>
Formation <u>Carmel</u>	Type of Test <u>Inflate</u>	Viscosity <u>58</u>
	<u>Straddle</u>	Tool opened @ <u>7:30 am</u>

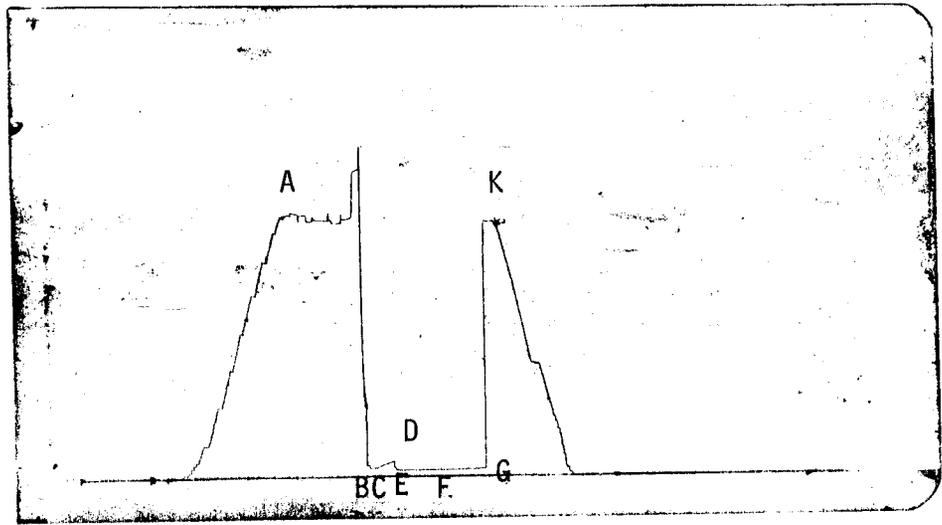
Operator Arco Oil & Gas  
 P.O. Box 5540  
 Denver, CO 80217

Outside Recorder

PRD Make Kuster K-3  
 No. 24523 Cap. 6650 @ 7294'

	Press	Corrected
Initial Hydrostatic	A	3707
Final Hydrostatic	K	3673
Initial Flow	B	116
Final Initial Flow	C	125
Initial Shut-in	D	224
Second Initial Flow	E	97
Second Final Flow	F	91
Second Shut-in	G	114
Third Initial Flow	H	--
Third Final Flow	I	--
Third Shut-in	J	--

Lynes Dist. Rock Springs, WY  
 Our Tester: Bryan Scott  
 Witnessed By: Kenny Hayes



Well Name and No. Deadman Hollow #1  
 Ticket No. 21278  
 Date 12-31-84

Did Well Flow - Gas No Oil No Water No  
 RECOVERY IN PIPE: 95 ft slight water cut drilling mud = .52 bbl.

Blow Description:  
 1st flow: Tool opened with a 1/2" underwater blow decreasing to a surface blow in 5 minutes through the end of the flow.  
 2nd flow: Tool opened with a weak surface blow decreasing to nil in 10 minutes and remaining throughout the flow.

Comments: The test results indicate a mechanically successful test. The flow and shut-in curves suggest virtually no permeability within the zone tested.

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**MAR 20 1985**

**DIVISION OF OIL GAS & MINING**

DST No. 2  
 No. Final Copies 9

ARCO OIL & GAS  
DST#: 2  
DEADMAN HOLLOW #1  
7290 - 7365ft.

Location: 23-278-1E  
Test Type: INFLATE STRADDLE  
Formation: CARMEL

Recorder Number: 24552  
Recorder Depth: 7294

SAMPLE DATA  
\*\*\*\*\*

SAMPLE CHAMBER:  
\*\*\*\*\*

Capacity of sample chamber	2250	cc
Volume of sample.....	450	cc
Pressure in sampler.....	15	psig
Where sampler was drained...	on location	

Sampler contained:  
Mud 450 cc

RESISTIVITY DATA:  
\*\*\*\*\*

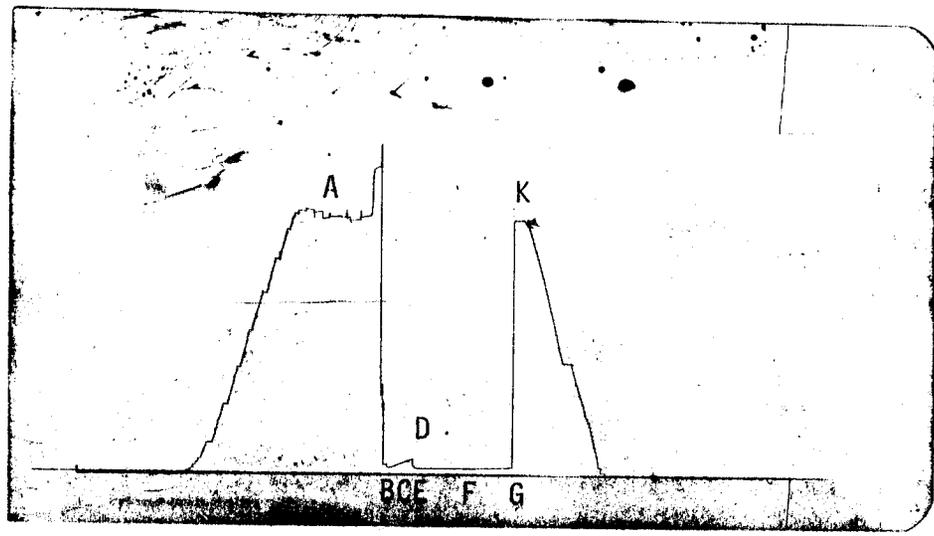
Top.....	75 000 PPM NACL
Middle.....	
Bottom.....	110 000 PPM NACL
Sampler.....	120 000 PPM NACL
Mud pit.....	125 000 PPM NACL
Make-up Water..	

PRESSURE RECORDER NUMBER : 24552

DEPTH : 7294.00ft. LOCATION : OUTSIDE  
TYPE : K-3 CAPACITY : 6625.00psi

PRESSURE  
psi

- A)Initial Hydro : 3697.0
- B)1st Flow Start: 157.0
- C)1st Flow End : 115.0
- D)END 1st Shutin: 228.0
- E)2nd Flow Start: 135.0
- F)2nd Flow End : 93.0
- G)END 2nd Shutin: 121.0
- Q)Final Hydro. : 3669.0



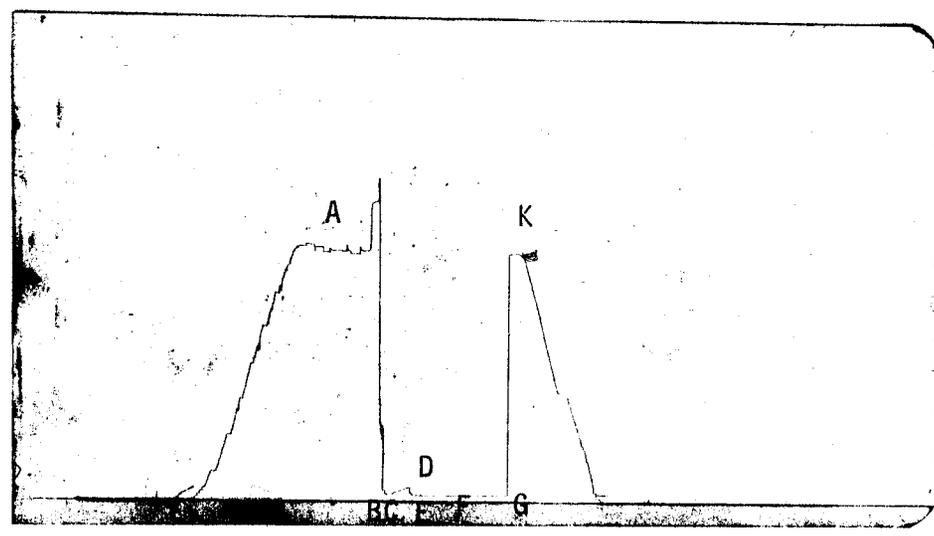
- TEST TIMES(MIN)
- 1st FLOW : 15
  - SHUTIN: 45
  - 2nd FLOW : 90
  - SHUTIN: 90

PRESSURE RECORDER NUMBER : 24521

DEPTH : 7294.00ft. LOCATION : OUTSIDE  
TYPE : K-3 CAPACITY : 6625.00psi

PRESSURE  
psi

- A)Initial Hydro : 3649.0
- B)1st Flow Start: 123.0
- C)1st Flow End : 132.0
- D)END 1st Shutin: 234.0
- E)2nd Flow Start: 107.0
- F)2nd Flow End : 99.0
- G)END 2nd Shutin: 113.0
- Q)Final Hydro. : 3646.0



# CORE LABORATORIES, INC.

## ANALYTICAL REPORT

LAB #: W85005-1      DATE: 1/4/85

OPERATOR: Arco Oil & Gas

WELL #: Deadman Hollow #1

FIELD:

COUNTY:                      STATE:

LOCATION:

FORMATION:

INTERVAL: 7658-7720

SAMPLE ORIGIN:

REMARKS: DST #1 Top 2668

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	29305	1274.76	SULFATE	5600	116.48
POTASSIUM	169	4.33	CHLORIDE	43000	1212.60
CALCIUM	1120	55.89	CARBONATE	168	5.59
MAGNESIUM	1	0.08	BICARBONATE	24	0.39
			HYDROXIDE		
TOTAL CATIONS = 1335.06			TOTAL ANIONS = 1335.06		

CALCULATED TDS MG/L = 79375  
 NACl. EQUIVALENTS MG/L = 77767  
 OBSERVED PH = 10.7

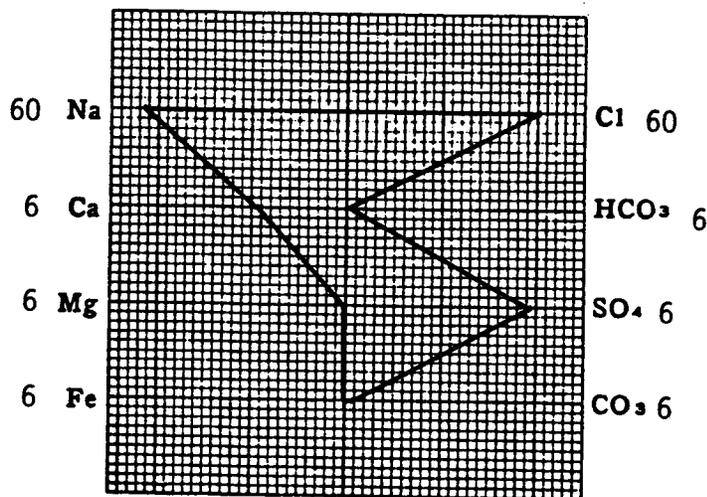
SPECIFIC RESISTANCE AT 68F (OHM-M):  
 OBSERVED = 0.11  
 CALCULATED = 0.096

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MAR 20 1985

DIVISION OF OIL  
 GAS & MINING

WATER ANALYSIS PATTERN  
 Scale  
 MEQ per Unit



(Na value in above graph includes Na and K)

NOTE: Mg/l = milligrams per liter  
 Meq/l = milligram equivalent per liter

Sodium chloride equivalent =  
 by Dunlap & Hawthorne  
 calculation from components

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitability of any oil, gas, coal or other mineral, property, well or sand in connection with which such report is used or relied upon.

# CORE LABORATORIES, INC.

## ANALYTICAL REPORT

LAB #: W85005-2      DATE: 1/4/85

OPERATOR: Arco Oil & Gas

WELL #: Deadman Hollow #1

FIELD:

COUNTY:

STATE:

LOCATION:

FORMATION:

INTERVAL: 7658-7720

SAMPLE ORIGIN:

REMARKS: DST #1 Middle 1660

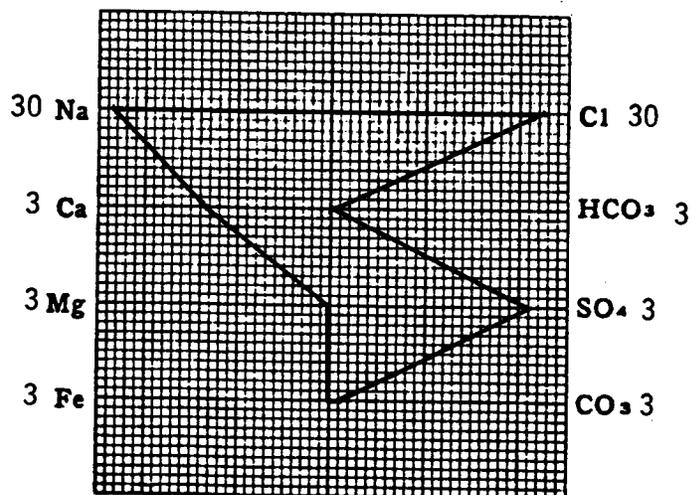
CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	16126	701.48	SULFATE	3040	63.23
POTASSIUM	150	3.84	CHLORIDE	24000	676.80
CALCIUM	790	39.42	CARBONATE	96	3.20
MAGNESIUM	1	0.08	BICARBONATE	-	-
			HYDROXIDE	27	1.59
TOTAL CATIONS = 744.82			TOTAL ANIONS = 744.82		

CALCULATED TDS MG/L = 44230  
 NACl. EQUIVALENTS MG/L = 43344  
 OBSERVED PH = 10.8

SPECIFIC RESISTANCE AT 68F (OHM-M):  
 OBSERVED = 0.18  
 CALCULATED = 0.16

### WATER ANALYSIS PATTERN

Scale  
MEQ per Unit



(Na value in above graph includes Na and K)

NOTE: Mg/l = milligrams per liter  
 Meq/l = milligram equivalent per liter

Sodium chloride equivalent = by Dunlap & Hawthorne calculation from components

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# CORE LABORATORIES, INC.

## ANALYTICAL REPORT

LAP #: W85005-3      DATE: 1/4/85

OPERATOR: Arco Oil & Gas

WELL #: Deadman Hollow #1

FIELD:

COUNTY:

STATE:

LOCATION:

FORMATION:

INTERVAL: 7658-7720

SAMPLE ORIGIN:

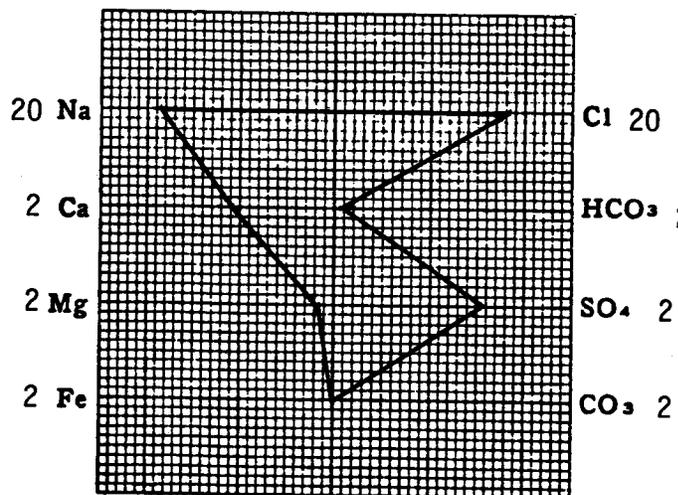
REMARKS: DST #1 Top of Collars 550

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	8529	370.99	SULFATE	1480	30.78
POTASSIUM	112	2.87	CHLORIDE	13000	366.60
CALCIUM	440	21.96	CARBONATE	6	0.20
MAGNESIUM	36	2.96	BICARBONATE	73	1.20
			HYDROXIDE		
TOTAL CATIONS = 398.78			TOTAL ANIONS = 398.78		

CALCULATED TDS MG/L = 23639  
 NACl EQUIVALENTS MG/L = 23208  
 OBSERVED PH = 8.5

SPECIFIC RESISTANCE AT 68F (OHM-M):  
 OBSERVED = 0.30  
 CALCULATED = 0.29

WATER ANALYSIS PATTERN  
 Scale  
 MEQ per Unit



(Na value in above graph includes Na and K)

NOTE: Mg/l = milligrams per liter  
 Meq/l = milligram equivalent per liter

Sodium chloride equivalent =  
 by Dunlap & Hawthorne  
 calculation from components

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# CORE LABORATORIES, INC.

## ANALYTICAL REPORT

LAB #: W85005-4      DATE: 1/4/85

OPERATOR: Arco Oil & Gas

WELL #: Deadman Hollow #1

FIELD:

COUNTY:

STATE:

LOCATION:

FORMATION:

INTERVAL: 7658-7720

SAMPLE ORIGIN:

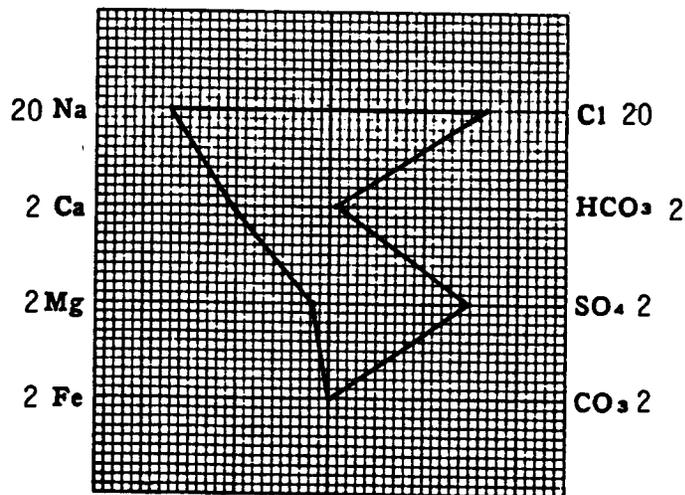
REMARKS: DST #1 Bottom

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	7760	337.56	SULFATE	1420	29.54
POTASSIUM	104	2.66	CHLORIDE	11800	332.76
CALCIUM	410	20.46	CARBONATE	6	0.20
MAGNESIUM	39	3.21	BICARBONATE	85	1.39
			HYDROXIDE		
TOTAL CATIONS = 363.89			TOTAL ANIONS = 363.89		

CALCULATED TDS MG/L = 21581  
 NACl EQUIVALENTS MG/L = 21170  
 OBSERVED PH = 8.4

SPECIFIC RESISTANCE AT 68F (OHM-M):  
 OBSERVED = 0.33  
 CALCULATED = 0.34

WATER ANALYSIS PATTERN  
 Scale  
 MEQ per Unit



(Na value in above graph includes Na and K)

NOTE: Mg/l = milligrams per liter  
 Meq/l = milligram equivalent per liter

Sodium chloride equivalent =  
 by Dunlap & Hawthorne  
 calculation from components

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# CORE LABORATORIES, INC.

## ANALYTICAL REPORT

LAB #: W85005-5      DATE: 1/4/85

OPERATOR: Arco Oil & Gas

WELL #: Deadman Hollow #1

FIELD:

COUNTY:                      STATE:

LOCATION:

FORMATION:

INTERVAL: 7658-7720

SAMPLE ORIGIN:

REMARKS: DST #1 Sampler

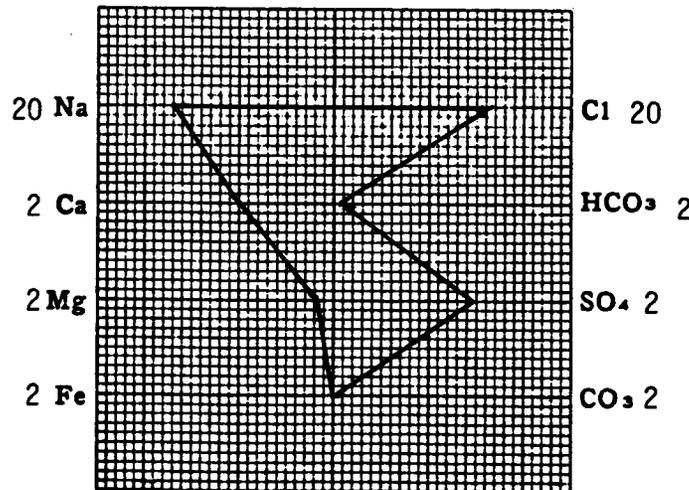
CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	7759	337.53	SULFATE	1400	29.12
POTASSIUM	102	2.61	CHLORIDE	11800	332.76
CALCIUM	400	19.96	CARBONATE	6	0.20
MAGNESIUM	41	3.37	BICARBONATE	85	1.39
			HYDROXIDE		
TOTAL CATIONS = 363.47			TOTAL ANIONS = 363.47		

CALCULATED TDS MG/L = 21550  
 NACl. EQUIVALENTS MG/L = 21147  
 OBSERVED PH = 8.4

SPECIFIC RESISTANCE AT 68F (OHM-M):  
 OBSERVED = 0.33  
 CALCULATED = 0.34

### WATER ANALYSIS PATTERN

Scale  
MEQ per Unit



(Na value in above graph includes Na and K)

NOTE: Mg/l = milligrams per liter  
 Meq/l = milligram equivalent per liter

Sodium chloride equivalent = by Dunlap & Hawthorne calculation from components

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District

To: State of Utah - Natural Resources  
Oil Gas & Mining Commission  
300 State Center, Ste 350  
Salt Lake City - UT 84180-1203

From: ARCO Exploration - G.S. Wise  
P.O. Box 5540  
Denver CO 80217

Enclosed  Under separate cover  Via

Subject: Completion Data -

Quantity	Map number & description
15	#1 Buck Knoll (1) Dual Laterlog-MSFL; (1) Borehole Compensated Sonic; (1) Litho Density Compensated Neutron; (5) Drill Stem Test Reports; (1) Core Analysis Report; (5) Water Analysis Reports; (1) Mudlogging Summary
8	#1 Chambers (1) Dual Laterlog-MSFL; (1) Borehole Compensated Sonic; (1) Compensated Neutron Formation Density; (4) Drill Stem Test Reports; (1) Core Analysis Report.
11	#1 Deadman Hollow (1) Dual Laterlog-MSFL; (1) Borehole Compensated Sonic; (1) Litho Density-Compensated Neutron; (2) Drill Stem Test Reports; (1) Core Analysis Report; (5) Water Analysis Reports

Note—Please verify and acknowledge receipt, by signing and returning the second copy of this transmittal.

Signed by C. Hayes for G.S. Wise

Received by

**RECEIVED**

Date 3/18/85

Remarks

MAR 20 1985

Page 1 of 2

DIVISION OF OIL  
 GAS & MINING

Please sign, date +  
 return 2nd copy.