

Millard County Road Department
BOX 187
DELTA, UTAH 84624

November 16, 1981

Arco Oil and Gas Company
Western District
717 - 17th Street
P.O. Box 5540
Denver, Colorado 80217

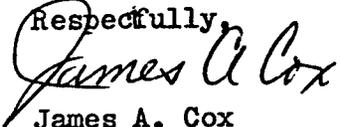
Re: Meadow Federal Unit #1 Well
SW/4 NE/4 Section 25, T 22S, R 7W
Millard County, Utah
Permission to use Millard County Maintained roads as access
Attn: Harry Engel

Dear Mr. Engel,

As per our telephone conversation and your letter, this is written to grant you permission to travel on county roads to reach the well location.

As conditions for this use we feel the roads should be left in the original condition and any damage, maintenance or rehabilitation required by county forces will be paid for at force account or actual expense prices.

Thank you for your cooperation in this matter.

Respectfully,

James A. Cox
County Engineer

**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. U-19521
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME ---
2. NAME OF OPERATOR ARCO Oil and Gas Company Division of Atlantic Richfield Company		7. UNIT AGREEMENT NAME Unit being formed
3. ADDRESS OF OPERATOR P. O. Box 5540, Denver, Colorado 80217		8. FARM OR LEASE NAME ---
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface 1860' FNL & 2140' FEL Sec 25-22S-7W At proposed prod. zone Approx the same <i>SW NE</i>		9. WELL NO. Meadow Federal #1
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* Approximately 20 miles southwest of Fillmore, Utah		10. FIELD AND POOL, OR WILDCAT Wildcat
16. NO. OF ACRES IN LEASE 2140'	17. NO. OF ACRES ASSIGNED TO THIS WELL NOT ASSIGNED	11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA 25-22S-7W
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. NONE	19. PROPOSED DEPTH 17000'	12. COUNTY OR PARISH 13. STATE Millard Utah
20. ROTARY OR CABLE TOOLS Rotary		22. APPROX. DATE WORK WILL START* January 1, 1982
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 4823' GR		

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
24"	20"	94#	600'	1000 sx "B" cmt to surface
17-1/2"	13-3/8"	68#, 72#	3500'	1250 sx "HCL" + 550 sx C1
17-1/2"	13-1/2"	81.2#	6600'	"H" cmt; 2000' column
12-1/4"	9-5/8"	40#, 43.5#, 47#	13750'	1150 sx
8-1/2"	7-5/8"	33.5#	17000'	As required based on completion intervals & hole caliper to over 500' above prospective zones

Propose to drill well to sufficient depth to test the Mississippian formations.

Pursuant to NTL-6, attached are:

- Certified Location Plat
- Drilling Plan with attachments
- Surface Use Plan with attachments

RECEIVED
NOV 27 1981

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present production 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.

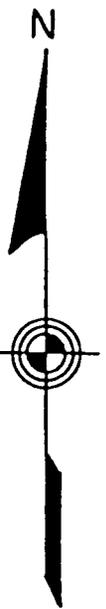
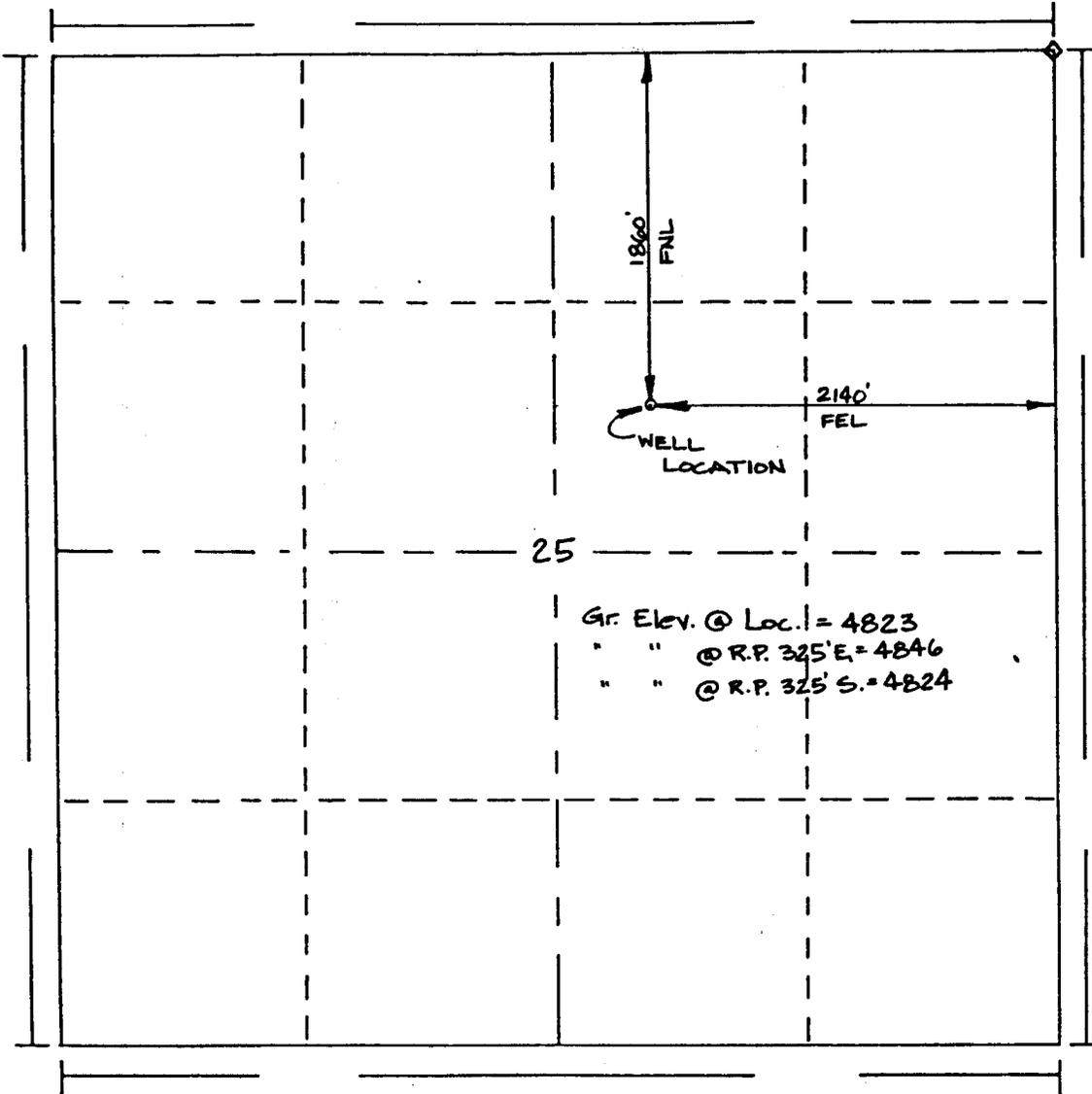
24. SIGNED *W.A. Walther, Jr.* TITLE District Manager of Production DATE November 23, 1981
(This space for Federal or State office use)

DIVISION OF
OIL, GAS & MINING

PERMIT NO. _____ APPROVAL DATE **APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING**
APPROVED BY _____ TITLE _____ DATE: 12-9-81
CONDITIONS OF APPROVAL, IF ANY: _____ BY: *M.T. Minder*



R. 7 W.



T. 22 S.

Scale... 1" = 1000'

Powers Elevation of Denver, Colorado has in accordance with a request from HARRY ENGLES for ARCO OIL & GAS Co. determined the location of MEADOW FEDERAL UNIT #1 to be 1860' FNL & 2140' FEL of Section 25 Township 22 South Range 7 West of the SALT LAKE Meridian MILLARD County, UTAH.

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

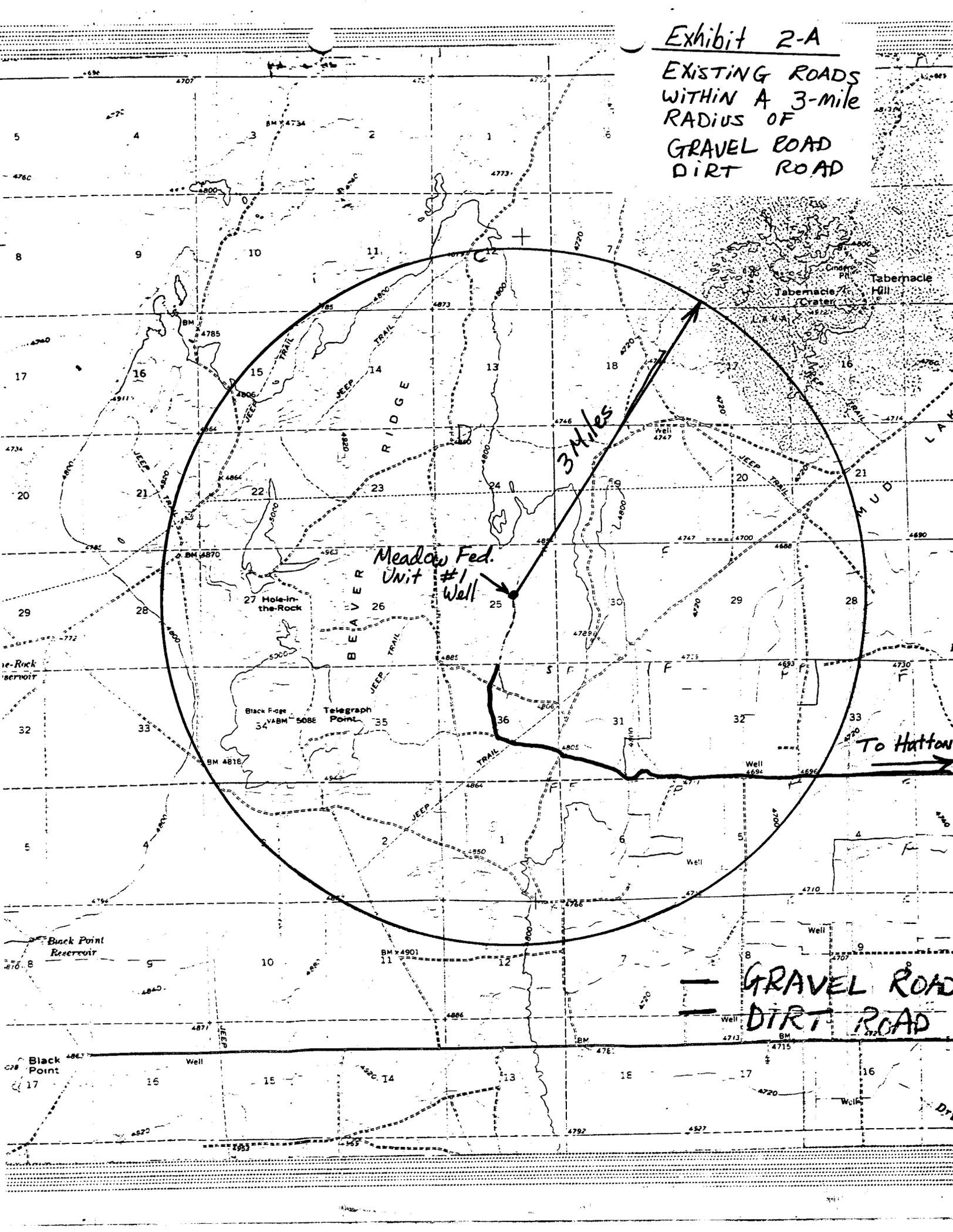
Date: Nov. 10, 1981

T. Nelson
 Licensed Land Surveyor No. 2711
 State of UTAH

EXHIBIT 1

Exhibit 2-A

EXISTING ROADS
WITHIN A 3-MILE
RADIUS OF
GRAVEL ROAD
DIRT ROAD



Meadow Fed.
Unit #1
Well

3 Miles

To Hattow

— GRAVEL ROAD
- - - DIRT ROAD

TEN POINT DRILLING PLAN

Attach to APD Form 9-331-C
ARCO Oil and Gas Company
Well Meadow Federal Unit #1
SW/4 NE/4, Section 28-22S-7W
Millard County, Utah

1. Surface Geological Formation: Tertiary

2. Estimated Tops of Geological Markers:

Cambrian Carbonates	- 6350'
Cambrian Pioche Shale	- 8100'
Cambrian Prospect Mtn Quartzite	- 8600'
Jurassic Navajo Sandstone	- 9650'
Triassic Moenkopi Fm	- 10450'
Permian Kaibab Fm	- 13650'
Permian Toroweap Fm	- 14400'
Mississippian Humbug	- 15500'
Mississippian Deseret	- 15900'
Mississippian Gardison	- 16800'

3. Estimated Tops of Possible Water, Oil, Gas or Minerals:

Oil @ Navajo	- 9650'
Oil @ Kaibab	- 15500'
Oil @ Deseret	- 15900'
Oil @ Gardison	- 16800'

4. Proposed Casing Program:

<u>Casing</u>	<u>Hole Size</u>	<u>Interval</u>	<u>Section Length</u>	<u>Size OD</u>	<u>Weight Grade and Joint</u>	<u>New Used</u>
Surface	24	0- 600'	600'	20"	94#, K-55 ST&C	New
Intermediate	17-1/2	0- 1600'	1600'	13-3/8"	68#, K-55 BT&C	New
	17-1/2	1600- 3500'	1900'	13-3/8"	72#, S-95 ST&C	New
	17-1/2	3500- 6600'	3100'	13-1/2"	81.4#, S-95 ST&C	New
Production	12-1/4	0- 4800'	4800'	9-5/8"	40#, N-80 BT&C	New
	12-1/4	4800-10500'	5700'	9-5/8"	43.5#, S-95 LT&C	New
	12-1/4	10500-13750'	3250'	9-5/8"	47#, S-95 LT&C	New

4. Proposed Casing Program Cont'd:

Liner: 8-1/2 13500-17000' 3500' 7-5/8" 33.5#, S-95 New
 LT&C

Cement
 Program

Surface 1000 sx "B" cmt, 15.6 ppg to surface w/100% excess.
 Intermediate 1250 sx "HLC" cmt, lead slurry 13.1 ppg, plus 550 sx
 Cl "H" cmt, tail slurry 15.6 ppg, 2000' column w/100%
 excess.
 Production 900 sx "Lite Poz 3" cmt, lead slurry 12.6 ppg plu s
 280 sx Cl "G" cmt, tail slurry 14.7 ppg, 3000' column
 w/100% excess. Thru DV @ 6500' 300 sx Cl "H" cmt,
 15.6 ppg, 1150' column w/no excess.
 Liner 400 sx Cl "G" cmt, 14.7 ppg, 3500' column w/100%
 excess.

5. Minimum Specifications for Pressure Control:

Exhibit "6" is a schematic diagram of the blowout preventer
 equipment. The BOPs will be hydraulically tested to 5000 psi after
 nippleing up and after any use under pressure. 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. Such
 checks of BOP will be noted on daily drilling reports.

Accessories to BOP will include a kelly cock, floor safety valve and
 a drill string BOP with pressure rating equivalent to the BOP
 stack.

6. Type and Characteristic of Proposed Drilling Fluids:

<u>Depth</u>	<u>Type</u>	<u>Weight #/gal.</u>	<u>Visc. sec/qt.</u>	<u>Fluid Loss cc</u>
0- 600'	Fresh H ₂ O spud mud	8.4-8.9		
600-2000'	Fresh H ₂ O gel mud	8.4-8.9	10-15	<15
2000-6500'	Saturated salt mud	9.7-10.2	10	10-15
6500- TD	Fresh H ₂ O dispersed mud	8.7-9.5	5	>10

7. Auxiliary Equipment:

- a) A kelly cock will be kept in the string.
- b) A float will not be used at the bit.
- c) A mud logging unit with gas detecting device will be monitoring the system.
- d) A stabbing valve will be on the floor to be stabbed into the drill pipe when kelly is not in the string.

8. Testing, Logging and Coring Programs:

Anticipated Coring:	Navajo Sandstone	-	9650- 9710'
	Kaibab	-	14300-14360'
	Deseret	-	15900-15960'
	Gardison	-	16940-17000'
Open Hole DST:	Navajo	-	9600- 9700'
	Kaibab	-	14260-14360'
	Deseret	-	15900-16000'
	Gardison	-	16900-17000'
Logging Program:	DLL-MSFL	-	Surf Csg - TD
	FDC-CNL	-	Surf Csg - TD
	BHC Sonic CST	-	Surf Csg - TD
	Dipmeter	-	Surf Csg - TD
	Fracture- Identification Log	-	6350- TD

9. Anticipated Abnormal Temperatures, Pressures or 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. Maximum bottom hole pressure expected is 7500.

No hydrogen sulfide or other hazardous fluids or gases have been found, reported or known to exist at these depths in the area.

10. Anticipated Starting Date and Duration of Operations:

The anticipated starting date is set for January 1, 1982, or as soon as possible after examination and approval of drilling requirements. Operations should be completed within 180 days after spudding the well and drilling to casing point.

** FILE NOTATIONS **

DATE: 12-4-81

OPERATOR: Arco Oil & Gas Co.

WELL NO: Meadow Federal #1

Location: Sec. 25 T. 22S R. 7W County: Millard

File Prepared:

Entered on N.I.D:

Card Indexed:

Completion Sheet:

API Number 43-027-30024

CHECKED BY:

Petroleum Engineer: M.J. Minder 12-9-81

Director: _____

Administrative Aide: as per Rule C-3,

APPROVAL LETTER:

Bond Required:

Survey Plat Required:

Order No. _____

O.K. Rule C-3

Rule C-3(c), Topographic Exception - company owns or controls acreage within a 660' radius of proposed site

Lease Designation Std.

Plotted on Map

Approval Letter Written

Hot Line

P.I.

December 10, 1981

Division of Atlantic Richfield Company
P. O. Box 5540
Denver, Colorado 80217

RE: Well No. Meadow Federal #1
Sec. 25, T. 22S, R. 7W,
Millard County, Utah

Insofar as this office is concerned, approval to drill the above referred to oil/gas well is hereby granted in accordance with Rule C-3, General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immedeately notify the following:

MICHAEL T. MINDER - Petroleum Engineer
Office: 533-5771
Home: 876-3001

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling. Your cooperation in completing this form will be appreciated.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-027-30028.

Sincerely,

DIVISION OF OIL, GAS AND MINING



Michael T. Minder
Petroleum Engineer

MTM/as
cc: State Lands



United States Department of the Interior

IN REPLY REFER TO

3100
U-057

BUREAU OF LAND MANAGEMENT
WARM SPRINGS RESOURCE AREA
Fillmore, Utah 84631

December 30, 1981

Mr. Edgar W. Guynn, District Supervisor
U.S. Geological Survey
2000 Administrative Building
1745 West 1700 South
Salt Lake City, Utah 84104

Dear Mr. Guynn:

On December 22, 1981 a joint on site inspection was held for the Meadow Federal #1, U-19521 as proposed by ARCO Oil and Gas Company. There were three representatives from ARCO, two from Southwest Drilling Company, one from Ross Construction Co., one from Millard County Road Dept., one from U.S.G.S. and two from BLM.

We approached the site from the Hatton, Warm Springs county road. This road was maintained by the county only until it reached the gate at the SW $\frac{1}{4}$ of Section 32, T. 22 S., R. 6 W. From there to the south $\frac{1}{4}$ corner of Sec. 31, T. 22 S., R. 6 W. was across private land. The proposed access route was across this private land then west along an exploration trail until it joined the county road going north and south. From this point the route is along county maintained roads until entering Section 25, T. 22 S., R. 7 W. where a trail along the west side of the lava ridge is followed to the proposed site.

We discussed this access route as we travelled.

The items discussed that should be considered along with stipulations are as follows:

1. Access across the private land owned by Mortensen Corp., must be approved by the private land owner.
2. Millard County must be a party to any use agreement along county maintained roads. This includes crossing several in-place cattleguards.
3. Use through Section 25 along BLM trail is acceptable but will be reclaimed at the end of use. The degree and type of reclamation to be determined by BLM at the end of use.
4. Road will be maintained in such a manner as to discourage seeking alternate paths adjacent to roadway.

5. Site location is to be turned 15 to 20 degrees to eliminate the deep cut out of the hill just east of drill hole. Soil will be stockpiled at the north of location. Sufficient top soil will be stockpiled to ensure a 4 to 6 inch cover over all disturbed areas.

6. Burning of non toxic combustible trash material will be allowed but all non-combustible trash material will be removed from the site.

7. Surface use will be restricted to the approved pad areas.

8. The site will be reclaimed as follows:

1) Site will be fenced around the exterior to restrict livestock entry. The fence will be 32 inch net with two barbs on top.

2) All disturbed area will be reshaped, top soil spread 4 to 6 inches overall, the entire area ripped to a depth of 12 inches, contour furrows made to restrict over land water flow, seed drilled and a mulch of straw spread over the entire seeded area.

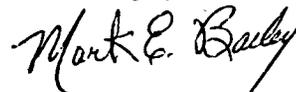
Seed mixture in lbs per acre
Indian ricegrass - 2 lbs.
Four-wing saltbrush - 4 lbs.
Crested wheatgrass - 4 lbs.

3) All toxic or undesirable material must be removed from pit prior to filling with earth.

9. All toxic or dangerous fluids, materials or conditions will be guarded to protect animals or people from sustaining injury.

10. Notify BLM of the company field representative and thereafter of changes in representatives.

Sincerely yours,



Area Manager



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

WARM SPRINGS RESOURCE AREA
Fillmore, Utah 84631

3100
U-057
ARCO-Meadow Fed. # 1

January 5, 1982

Mr. Edgar W. Gynn
District Supervisor
U.S. Geological Survey
2000 Adm. Bldg.
1745 West 1700 South
Salt Lake City, Utah 84104

Dear Mr. Gynn:

In reference to ARCO Oil and Gas Company's Meadow Federal #1 application to conduct exploration activities, we have received the cultural report from Powers Elevations.

The area is cleared for cultural resources and threatened or endangered species. Our letter of 12-30-81 carried our recommendations for stipulations.

Sincerely yours,

Mark E. Bailey
Area Manager



Save Energy and You Serve America!

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1. TYPE OF WORK: DRILL [X], DEEPEN [], PLUG BACK []
2. NAME OF OPERATOR: ARCO Oil and Gas Company
3. ADDRESS OF OPERATOR: P. O. Box 5540, Denver, Colorado 80217
4. LOCATION OF WELL: 1860' FNL & 2140' FEL Sec 25-22S-7W
15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT.: 2140'
16. NO. OF ACRES IN LEASE: 2560
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: 17000'
20. ROTARY OR CABLE TOOLS: Rotary
21. ELEVATIONS: 4823' GR
22. APPROX. DATE WORK WILL START*: January 1, 1982

5. LEASE DESIGNATION AND SERIAL NO.: U-19521
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: ---
7. UNIT AGREEMENT NAME: Unit being formed
8. FARM OR LEASE NAME: ---
9. WELL NO.: Meadow Federal #1
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 25-22S-7W
12. COUNTY OR PARISH: Millard
13. STATE: Utah

PROPOSED CASING AND CEMENTING PROGRAM

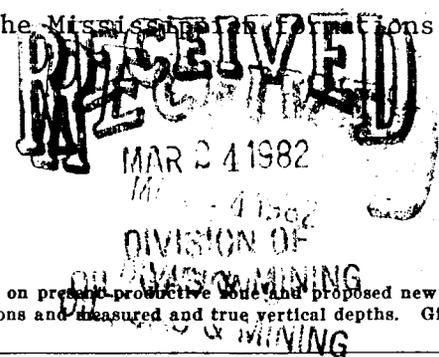
Table with 5 columns: SIZE OF HOLE, SIZE OF CASING, WEIGHT PER FOOT, SETTING DEPTH, QUANTITY OF CEMENT. Rows include hole sizes from 24" to 8-1/2" and casing sizes from 20" to 7-5/8".

As required based on completion intervals & hole caliper to over 500' above prospective zones

Propose to drill well to sufficient depth to test the Mississippi formation.

Pursuant to NTL-6, attached are:

- Certified Location Plat
Drilling Plan with attachments
Surface Use Plan with attachments



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: W.A. Walther, Jr. TITLE: District Manager of Production DATE: November 23, 1981

PERMIT NO. APPROVAL DATE: FOR E.W. QUERN DATE: MAR 23 1982
APPROVED BY: [Signature] TITLE: DISTRICT OIL & GAS SUPERVISOR DATE:
CONDITIONS OF APPROVAL, IF ANY:

NOTICE OF APPROVAL CONDITIONS OF APPROVAL ATTACHED TO OPERATOR'S COPY

FLARING OR VENTING OF GAS IS SUBJECT TO TITLE 16

State of CO

United States Department of the Interior
Geological Survey
2000 Administration Bldg.
1745 West 1700 South
Salt Lake City, Utah 84104

NEPA CATEGORICAL EXCLUSION REVIEW

PROJECT IDENTIFICATION

Operator ARCO Oil and Gas Company
Project Type Oil and Gas Well - Wildcat
Project Location 1860' FNL & 2140' FEL - Sec. 25-225-7W
Well No. Meadow Federal #1 Lease No. U-19521
Date Project Submitted November 25, 1981

FIELD INSPECTION

Date December 22, 1981

Field Inspection
Participants

George Diwachak - USGS, Salt Lake City
Harry Engel - ARCO Oil and Gas Company
Peter Tibbitts ARCO Oil and Gas Company
Dick Owear - ARCO Oil and Gas Company
Jim Cox - Millard Company
Joe Leisek - Southwest Drilling

Related Environmental Documents: _____

I have reviewed the proposal in accordance with the categorical exclusion review guidelines. This proposal would not involve any significant effects and, therefore, does not represent an exception to the categorical exclusions.

1-4-82
Date Prepared

I concur
FEB 02 1982
Date

George Diwachak
Environmental Scientist

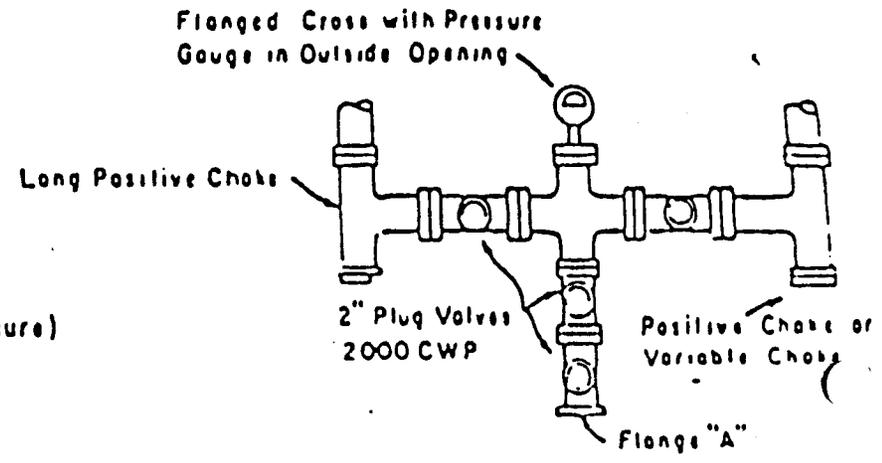
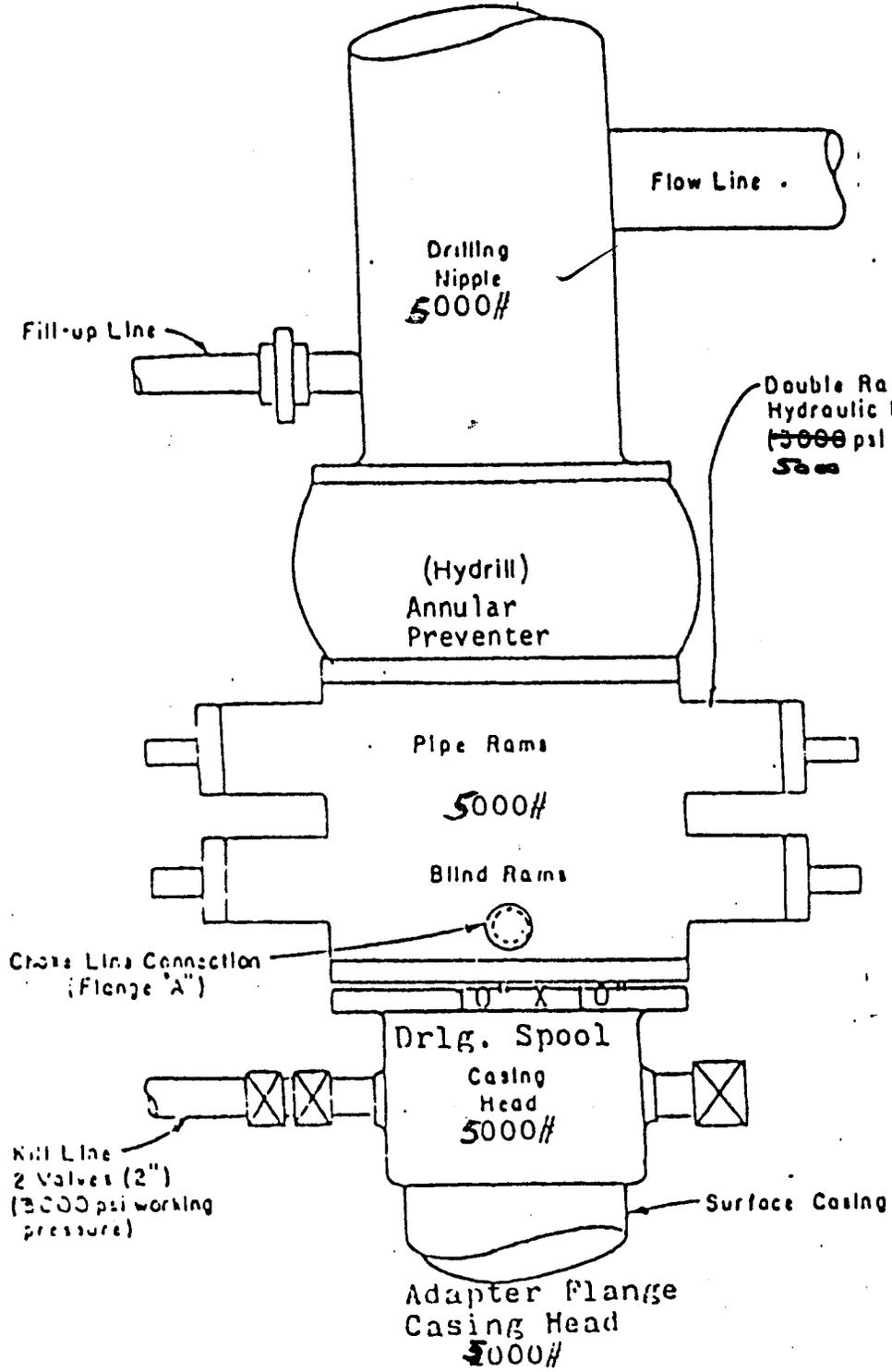
W.P. Mouton
FOR E. W. GUYNN
DISTRICT OIL & GAS SUPERVISOR
District Supervisor

CATEGORICAL EXCLUSION REVIEW COMMON REFERENCE LEGEND

1. Surface Management Agency Input
2. Reviews Reports, or information received from Geological Survey
(Conservation Division, Geological Division, Water Resource Division,
Topographic Division)
3. Lease Stipulations/Terms
4. Application Permit to Drill
5. Operator Correspondence
6. Field Observation
7. Private Rehabilitation Agreement
8. *Recommended Stipulations*

COMMENTS:

The well will be drilled to 1500' and a temperature gradient test will be performed to see if the well is feasible to drill. No geothermal lease has been obtained for this well.



PLAN VIEW-CHOKE MANIFOLD

13-POINT PLAN SURFACE USE PLAN

Attached to Form 9-331C
ARCO Oil and Gas Company
Well Meadow Federal Unit #1
SW/4 NE/4 Section 25-22S-7W
Millard County, Utah

1. Existing Roads:

- A. The proposed location is staked as shown in the Certified Location Plat, Exhibit 1. The corners of the drilling pad area are also staked and a north directional stake was also placed.
- B. The location is reached as shown in Exhibit 2. From Fillmore, Utah go south on Interstate 15 approximately 7 miles and take the Meadow, Utah exit. From Meadow take US 91 south approximately 3.5 miles and turn right (west) on State Route 141 toward Hatton approximately 3.5 miles (going over the overpass of I-15). Continue west about 1/4 mile and the road will turn right (north). Go north about 3/4 mile and turn left (west) at the Hot Spring. Go west about 3 miles and the road will become a dirt road. Continue west about 1 mile (passing two water wells on your right). As you approach the incline, go to the right and follow the dirt road up the incline and continue for approximately 1.2 miles and take the right in the fork. Go approximately 0.6 mile where you will see the flagging leading to the location. Follow the flagging approximately 0.6 mile to the location.
- C. The roads near the location are shown in Exhibit 2-a. The existing roads shown in green are gravel surfaced roads which should be adequate for access and the roads shown in red are dirt. These roads are county roads maintained by the Millard County Highway Department.
- D. This is an exploration well and all roads are shown on Exhibit 2 and 2-a.
- E. The existing roads are county roads which are currently in good condition and which will be maintained in existing condition in cooperation with the Millard County Road Supervisor.

2. Planned Access Roads:

Map showing the necessary access road to be constructed is shown as Exhibit "2" for the following:

A. Drilling Operations.

- (1) The maximum width of the new access required for drilling will be 18'.
- (2) The grade will be 0%.
- (3) No turnouts are planned.

2. Planned Access Roads Cont'd:

- (4) No drainage design is planned during drilling operations. Brush will be cleared and a temporary road will be prepared by grader.
- (5) No culverts are needed.
- (6) No surfacing material will be required.
- (7) No gates or fence cuts and cattleguards will be installed.
- (8) The new access road to be constructed was centerline flagged during staking. This road does cross BLM lands, as shown on Exhibit "2".

B. Production

- (1) If production is obtained, new road will be graded and surfaced, and drainage will be constructed. If accumulated material is not sufficient, additional materials will be provided by dirt contractor.

3. Location of Existing Wells:

For all existing wells within a three-mile radius of exploratory well, see Exhibit "2-a".

- (1) There are 3 known water wells within a three-mile radius.
- (2) There are no abandoned wells in this three-mile radius.
- (3) There are no temporarily abandoned wells.
- (4) There are no disposal wells.
- (5) There are no wells presently being drilled.
- (6) There are no producing wells within this three-mile radius.
- (7) There are no shut-in wells.
- (8) There are no injection wells.
- (9) There are no monitoring or observation wells for other uses.

4. Location of Existing and/or Proposed Facilities:

- A. Within a one-mile radius of location the following existing facilities are owned or controlled by ARCO Oil and Gas Company or other lessee/operator:

4. Location of Existing and/or Proposed Facilities Cont'd:

- (1) Tank Batteries: None
 - (2) Production Facilities: None
 - (3) Oil Gathering Lines: None
 - (4) Gas Gathering Lines: None
 - (5) Injection Lines: None
 - (6) Disposal Lines: None
- B. If production is found, plans for required production facilities will be submitted under Sundry Notice.
- C. Rehabilitation, whether well is productive or dry, will be made on all unused areas in accordance with B.L.M. stipulations.

5. Location and Type of Water Supply:

- A. The source of water will be a well drilled on location. Appropriate water permits have been applied with the State of Utah by ARCO Oil and Gas Company. Exhibit 4 is a copy of the State permit.

6. Construction Materials:

- A. No construction materials are needed for drilling well or constructing access roads into the location during drilling phase. The surface soil materials will be sufficient.
- B. No construction materials will be taken off Federal land.
- C. All surface soil materials for construction of access roads for drilling phase are sufficient. If well is productive, and material from road and pad grading is not sufficient, surfacing materials will be provided by Ross Construction Company, Vernal, Utah.
- D. All major access roads presently exist as shown on Exhibit "2".

7. Handling of Waste Materials and Disposal:

- (1) Drill cuttings will be buried in the reserve pit.
- (2) Drilling fluids will be handled in the reserve pit.

7. Handling of Waste Materials and Disposal Cont'd:

- (3) Any fluids produced during drilling test or while making production test will be collected in a test tank. If a test tank is not available during drilling, fluids will be handled in reserve pit. Any spills of oil, gas, salt water or other noxious fluids will be cleaned up and removed. If well is productive, produced water will be disposed of on-site for 30 days only, or 90 days with permission of District Engineer. After that time application will be made for approval of permanent disposal methods in compliance with NTL-2b.
- (4) Chemical toilet facilities will be provided for human waste.
- (5) Garbage and non-flammable waste and salts and other chemicals produced during drilling or testing will be handled in trash pit. Flammable waste will be disposed of in burn pit. Drill fluids, water, drilling mud and tailings will be kept in reserve pit, as shown on EXHIBIT "5". The trash and/or burn pit will be totally enclosed with small mesh wire to prevent wind scattering trash before being burned or removed. Reserve pit will be fenced on three sides during drilling and the fourth side fenced upon removal of the rig.
- (6) 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:

No air strip, camp or other facilities will be built during drilling of this well.

9. Well Site Layout:

- (1) EXHIBIT "5" is the Drill Pad Layout as staked, with elevations by Powers Elevation of Richfield, Utah. Cuts and fill have been drafted to visualize the planned cut across the location spot and the deepest part of the pad. 6" topsoil will be stockpiled per BLM specifications determined at time of pre-drill inspection.
- (2) EXHIBIT "7" is a plan diagram of the proposed rig and equipment, reserve pit, trash/burn pit, pipe racks and mud tanks. No permanent living facilities are planned. There will be a trailer on site.
- (3) EXHIBIT "7" shows rig orientation and access road.
- (4) The reserve pits will not be lined.

10. Plans for Restoration:

- (1) If well is abandoned, site will be restored to original condition as nearly as possible. Backfilling, leveling and contouring are planned as soon as all pits have dried. Waste disposal and spoils materials will be buried or hauled away immediately to an approved sanitary land fill after drilling is completed. If production is obtained, the unused area will be restored as soon as possible.
- (2) The soil banked material will be spread over the area. Revegetation will be accomplished by planting mixed grasses as per formula provided by the BLM. Revegetation is recommended for road area, as well as around drill pad.
- (3) Three sides of the reserve pit will be fenced during drilling operations. Prior to rig release, the reserve pit will be fenced on the fourth side to prevent livestock or wildlife from entering; and the fencing will be maintained until leveling and cleanup are accomplished.
- (4) If any oil is on the pits and is not immediately removed or burned after operations cease, the pit containing the oil or other adverse substances will be flagged overhead or covered with wire mesh.
- (5) The rehabilitation operations will begin immediately after the drilling rig is removed. Removal of oil or other adverse substances will begin immediately or area will be flagged and fenced. Other cleanup will be done as needed. Planting and revegetation will be done as recommended by surface management agency.

11. Other Information:

- (1) The soil is a sandy-clay alkali loam. No distinguishing geological features are present. The area is covered with sagebrush, cheat grass and native grass. There are livestock, rabbits and rodents in the area. The topography is flat.
- (2) The primary surface use is for grazing. The surface is owned by the U. S. Government. BLM ownership of access roads is shown on Exhibit "2".
- (3) There is no live water in the vicinity. The closest occupied dwellings are in Meadow, Utah, as shown on Exhibit "2".

There were no archaeological, historical, or cultural artifacts observed during staking of this location. An archaeological survey was conducted by a qualified archaeologist and a report will be submitted to BLM prior to any surface disturbance.

11. Other Information Cont'd:

- (4) There are no reported restrictions or reservations noted on the oil and gas lease.
- (5) Drilling is planned for on or about January 1, 1982. It is anticipated that the casing point will be reached with 180 days after commencement of drilling.

12. Lessee's or Operator's Representative:

W. A. Walther, Jr.
ARCO Oil and Gas Company
P. O. Box 5540
Denver, Colorado 80217
Bus. Tele: (303) 575-7031
Res. Tele: (303) 575-7153

C. E. Latchem
ARCO Oil and Gas Company
P. O. Box 5540
Denver, Colorado 80217
Bus. Tele: (303) 575-7127
Res. Tele: (303) 575-7152

13. 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 presently 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.

11-23-1981
Date

W. A. Walther, Jr.
W. A. Walther, Jr.
District Manager of Production
ARCO Oil and Gas Company

HE/ps

TEMPORARY

**APPLICATION TO APPROPRIATE WATER
STATE OF UTAH**

NOTE:—The information given in the following blanks should be free from explanatory matter, but when necessary, a complete supplementary statement should be made on the following page under the heading "Explanatory."

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, for uses indicated by (X) in the proper box or boxes, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

1. Irrigation Domestic Stockwatering Municipal Power Mining Other Uses

2. The name of the applicant is ARCO Oil and Gas Company, Attn: W. A. Walther, Jr.

3. The Post Office address of the applicant is P. O. Box 5540, Denver, Colorado 80217

4. The quantity of water to be appropriated 0.1 cfs second-feet and/or _____ acre-feet

5. The water is to be used for oil well drilling from 1-1-82 to 6-30-82
(Major Purpose) (Month) (Day) (Month) (Day)

other use period _____ from _____ to _____
(Minor Purpose) (Month) (Day) (Month) (Day)

and stored each year (if stored) from _____ to _____
(Month) (Day) (Month) (Day)

6. The drainage area to which the direct source of supply belongs is _____
(Leave Blank)

7. The direct source of supply is* underground water
(Name of stream or other source)

which is tributary to _____, tributary to _____

*Note.—Where water is to be diverted from a well, a tunnel, or drain, the source should be designated as "Underground Water" in the first space and the remaining spaces should be left blank. If the source is a stream, a spring, a spring area, or a drain, so indicate in the first space, giving its name, if named, and in the remaining spaces, designate the stream channels to which it is tributary, even though the water may sink, evaporate, or be diverted before reaching said channels. If water from a spring flows in a natural surface channel before being diverted, the direct source should be designated as a stream and not a spring.

8. The point of diversion from the source is in Millard County, situated at a point*
S49°W & 2835 feet from the northeast corner of Section 25-T22S-R7W

*Note.—The point of diversion must be located definitely by course and distance or by giving the distances north or south, and east or west with reference to a United States land survey corner or United States mineral monument, if within a distance of six miles of either, or if at a greater distance, to some prominent and permanent natural object. No application will be received for filing in which the point of diversion is not defined definitely.

9. The diverting and carrying works will consist of a water well cased with 7" OD casing -
total depth estimated between 100' to 500'

10. If water is to be stored, give capacity of reservoir in acre-feet _____ height of dam _____
area inundated in acres _____ legal subdivision of area inundated _____

11. If application is for irrigation purposes, the legal subdivisions of the area irrigated are as follows:

_____ Total _____ Acres

12. Is the land owned by the applicant? Yes _____ No X If "No," explain on page 2.

13. Is this water to be used supplementally with other water rights? Yes _____ No _____
If "yes," identify other water rights on page 2.

14. If application is for power purposes, describe type of plant, size and rated capacity. _____

15. If application is for mining, the water will be used in _____ Mining District at
the _____ mine, where the following ores are mined _____

16. If application is for stockwatering purposes, number and kind of stock watered _____

17. If application is for domestic purposes, number of persons _____, or families _____

18. If application is for municipal purposes, name of municipality _____

19. If application is for other uses, include general description of proposed uses the water will be
used for oil well drilling purposes

20. Give place of use by legal subdivision of the United States Land Survey for all uses described in paragraphs 14 to 19, incl. SW 1/4 NE 1/4 Section 25-T22S-R7W, Millard County, Utah

21. The use of water as set forth in this application will consume 0.215 cfs second-feet and/or acre-foot of water and None second feet and/ or acre feet will be returned to the natural stream or source at a point described as follows: See Page 2, Item 21

Exhibit A

EXPLANATORY

The following additional facts are set forth in order to define more clearly the full purpose of the proposed application:

Item 12: The land is owned by U.S.A., administered by the B.L.M.

Item 21: The water will not be returned. The Applicant will use only what is needed for oil well purposes.

The water will be pumped at a rate of 0.1 cfs average daily rate for approximately 180 days of drilling during the period January 1, 1982 through June 30, 1982.

(Use page 4 if additional explanatory is needed.)

The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purpose herein described

[Handwritten Signature]

Signature of Applicant*

*If applicant is a corporation or other organization, signature must be the name of such corporation or organization by its proper officer, or in the name of the partnership by one of the partners, and the names of the other partners shall be listed. If a corporation or partnership, the affidavit below need not be filled in. If there is more than one applicant, a power of attorney, authorizing one to act for all, should accompany the Application.

DECLARATION OF CITIZENSHIP

STATE OF UTAH, }
County of..... } ss

On the day of, 19....., personally appeared before me, a notary public for the State of Utah, the above applicant who, on oath, declared that he is a citizen of the United States, or has declared his intention to become such a citizen.

My commission expires:

(SEAL)

Notary Public

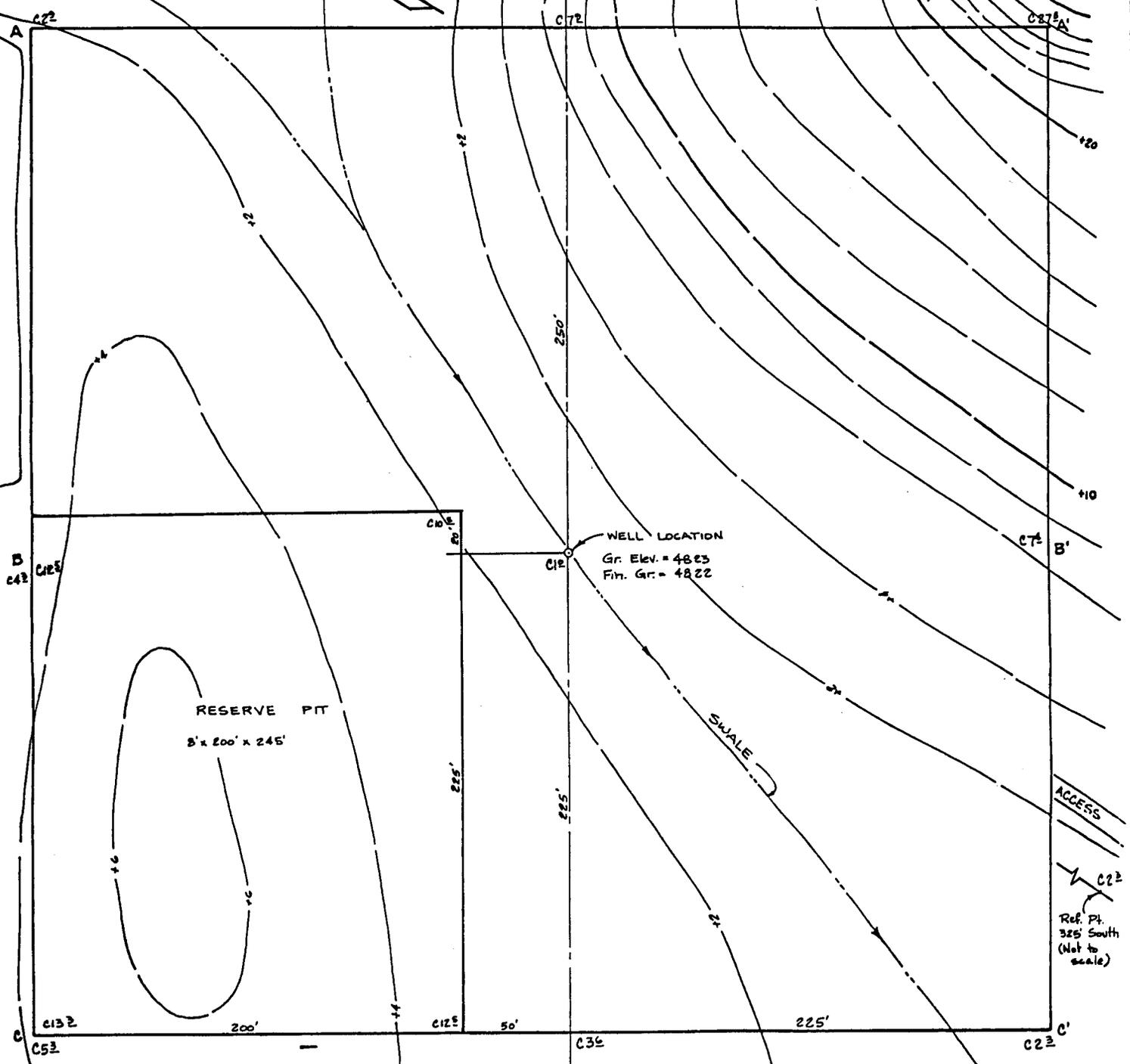
EXHIBIT 4

TOPOGRAPHIC MAP

ARCO OIL & GAS CO.
Meadow Federal Unit #1
1840 PNL, Sec 25-26S-7W
2140 FEL, Millard Co., Utah

Gr. Elev. @ Loc. = 4823
" R.P. 325' E. = 4846
" R.P. 325' E. = 4824

1" = 50'



WELL LOCATION
Gr. Elev. = 4823
Fin. Gr. = 4822

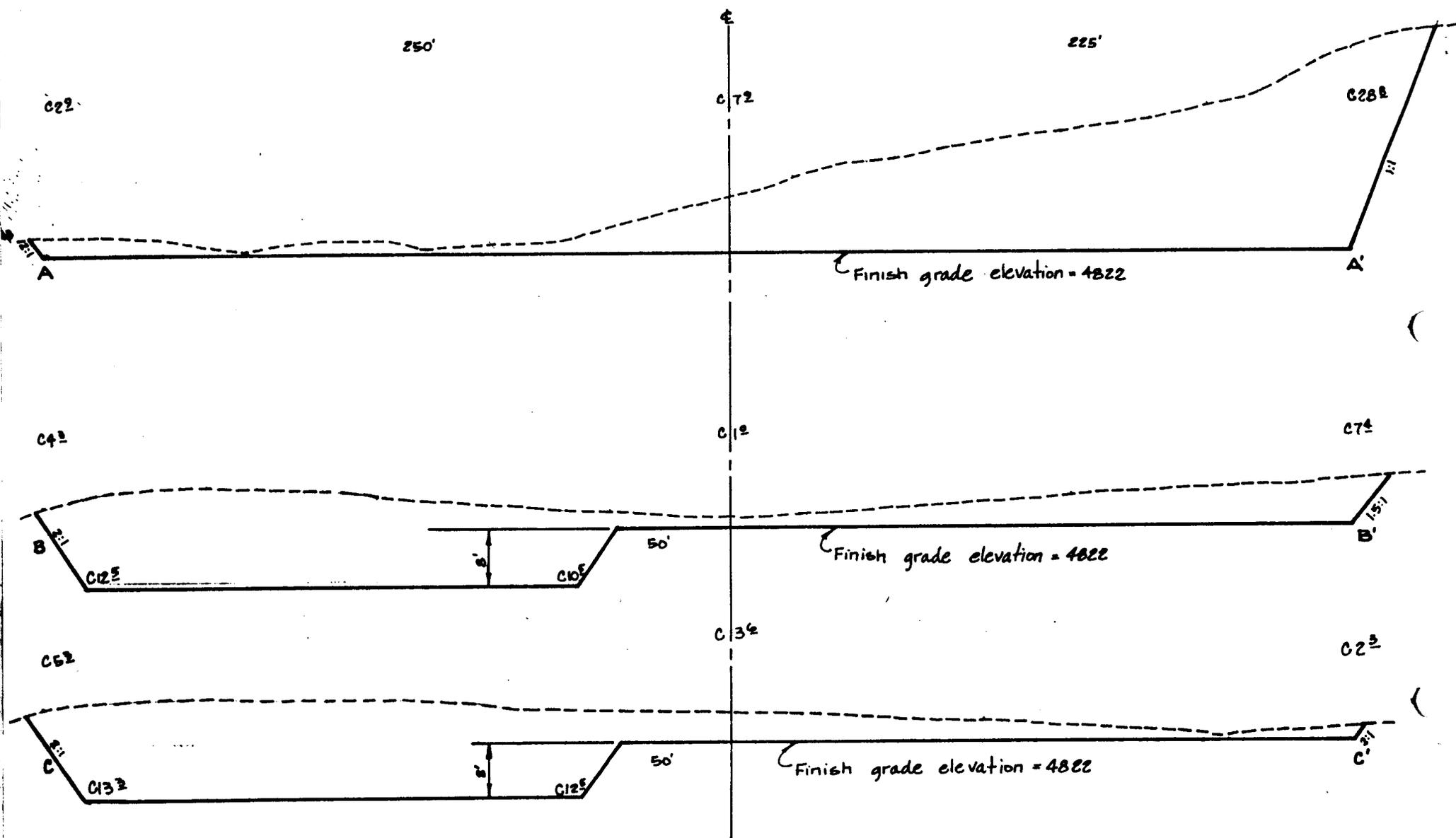
RESERVE PIT
8' x 200' x 245'

STOCKPILE EXCESS MATERIAL

C or F is Cut or Fill
from existing surface
to finish grade.

TWO FOOT CONTOUR
INTERVALS RELATIVE
TO LOCATION (2820)

Exhibit 5



± 63,300 yd³ CUT
 NEGLIGABLE FILL

Scales: Horiz. 1" = 50'
 Vert. 1" = 20'

--- Existing surface
 — Proposed grade

Exhibit 5-A

CUT-FILL & CROSS SECTIONS
 ARCO OIL & GAS CO.
 Meadow Federal Unit #1
 SW-NE Sec 25-22E-7W

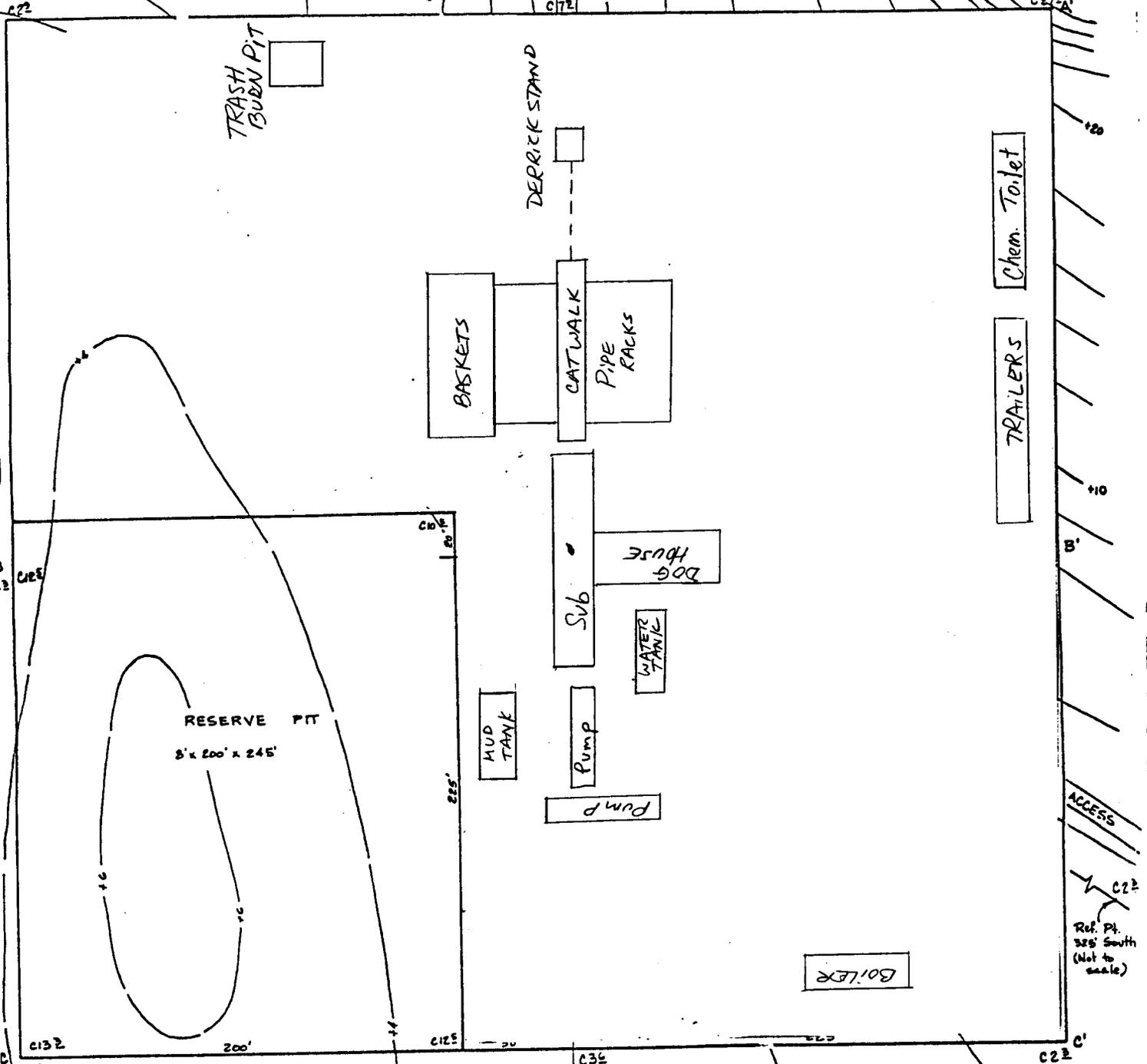
POWERS ELEVATION CO.
 RICHFIELD, UTAH
 11-10-81

TOPOGRAPHIC MAP

ARCO OIL & GAS CO.
Meadow Federal Unit #1
1860 F&L Sec 25-225-7W
E140 F&L
Millard Co., Utah

Gr. Elev. @ Loc. = 4823
" R.P. 325 E. = 4846
" R.P. 325 S. = 4824

1" = 50'



C or F is Cut or Fill
from existing surface
to finish grade.

STOCKPILE EXCESS MATERIAL

TWO FOOT CONTOUR
INTERVALS RELATIVE
TO LOCATION (2880)

Note: Not to Scale

Exhibit 7

ARCO Oil and Gas Company
Western District
717-17th Street
Mailing address: P.O. Box 5540
Denver, Colorado 80217
Telephone 303 575 7000



March 30, 1982

U.S.G.S.
Salt Lake City, Utah
Attn: George Diwachak

Re: Sundry Notice of Proposal to use a camp for the
Meadow Federal #1 drilling operation.

Dear Mr. Diwachak:

As discussed with yourself and Gerry Muhlestein, we have decided (partly due to our rig selection) that we will have a more efficient operation if a camp is utilized for temporary living quarters. Such a camp is to be located next to the southern corner of the wellsite location (see exhibits 1 & 2), and is meant to house the people associated with this drilling operation. Thus our intent at this time is to request a permit to allow us to set up this camp as discussed.

The camp is comprised of six units with up to 20 beds and a galley serving 40 to 60 meals per day on the average. In back of the camp units will be a water storage tank and the sewage system. On the side of the units will be two propane tanks, and in front, parking. (See Exhibit #2). Total area required for the camp will be $\pm 95'$ by $\pm 110'$. Also, when the camp is moved in, we may have to extend the area a few feet here or there for unforeseen space problems.

On the original permit application it was included to stockpile excess material (dirt). It is our intent to place this stockpile on the right side of the access road and place the camp on this stockpile (i.e., place the stockpile in the area marked for the camp on Exhibit 2). In this way the camp will cause no additional surface disruption.

As far as sewage disposal, our intent is to bury two or three septic tanks with leach lines for widespread dissipation. If the leach lines don't allow the waste to be dissipated adequately or rapidly enough, then a vacuum truck will be called to empty the septic tanks as required.

U.S.G.S
Mr. George Diwachak
March 30, 1982
Page 2

Please try to process this sundry request as soon as possible, as we are already in the process of building the location. Also, please excuse our tardiness in this matter, however it was a result of our final rig selection that convinced us to utilize a camp.

Your help is appreciated.



Peter J. Tibbitts
Drilling Engineer

PJT:glc

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil well gas well other well to be drilled

2. NAME OF OPERATOR
ARCO Oil and Gas Company

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

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1860' FNL & 2140' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

5. LEASE
U-19521

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Unit being formed

8. FARM OR LEASE NAME

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Meadow Federal

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 25-22S-7W

12. COUNTY OR PARISH | 13. STATE
Millard | Utah

14. API NO.
43-027-30028

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4823' GR

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF	<input type="checkbox"/>	<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>	<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>	<input type="checkbox"/>
ABANDON*	<input type="checkbox"/>	<input type="checkbox"/>

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

(other) locate camp for rig related personnel in approximate vicinity of well's surface location.

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.)*

Propose to locate rig camp at southern most corner of constructed location for Meadow Federal #1 well. See attached drawing and map. Camp is to hold 20 beds and a galley serving 40 to 60 meals per day. See attached letter for further detail.

Note: This sundry is a slight change from the original NTL-6, 13 pt. surface use plan item 8.

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

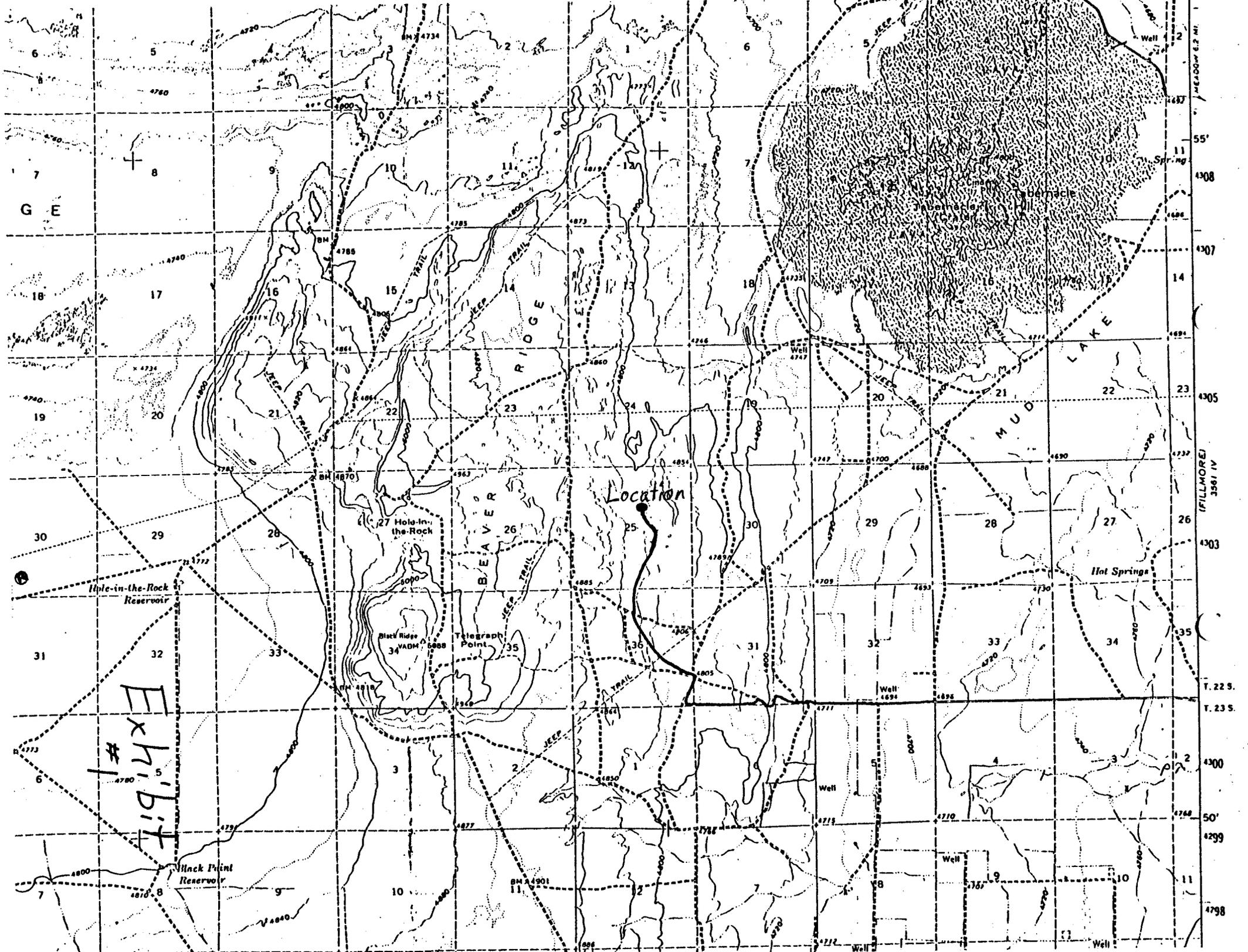
DATE: 4-2-82
BY: Original Signed by C. B. Feight

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED B. J. Santana TITLE District Manager DATE March 30, 1982
W. A. Walker, Jr. of Production

(This space for Federal or State office use)
APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:



Scale
1" = ± 67'

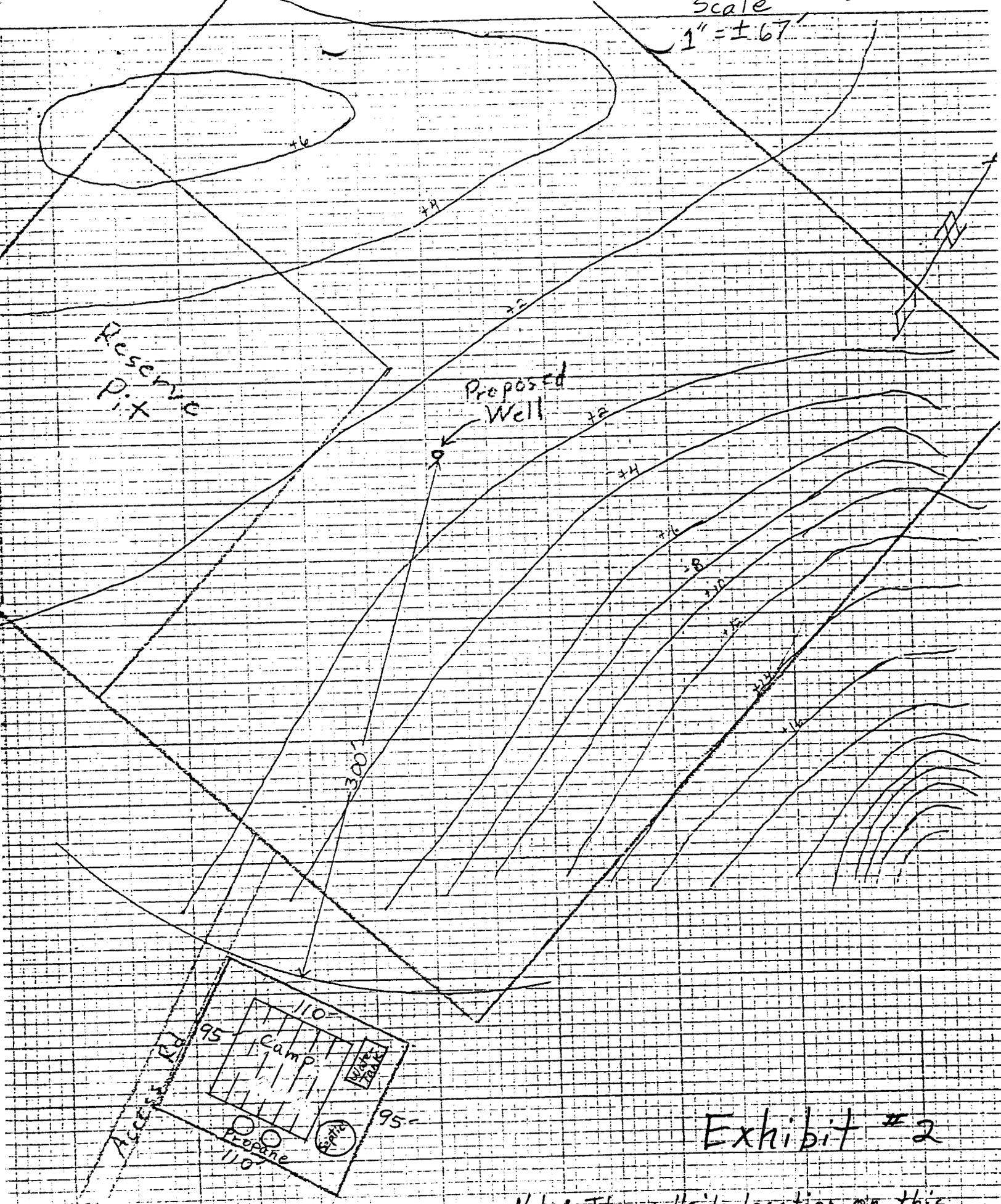


Exhibit #2

Note: The wellsite location on this drawing is rotated as discussed in the onsite meeting.

NOTICE OF SPUD

Right Hole

Company: Arco Oil & Gas Co

Caller: Kathy

Phone: 303-575-7036

Well Number: Medow Fed #1

Location: SW 1/4 25-22S-7W

County: Millard State: Utah

Lease Number: 71-19521

Lease Expiration Date: _____

Unit Name (If Applicable): _____

Date & Time Spudded: 12:00 PM 4/23/82

Dry Hole Spudded/Rotary: _____

Details of Spud (Hole, Casing, Cement, etc.) _____

17 1/2" hole 30" pipe set at 76' 76

Rotary Rig Name & Number: Montgomery Mountain Drilling #31

Approximate Date Rotary Moves In: 4-22-82

FOLLOW WITH SUNDRY NOTICE

Call Received By: DeLois

Date: 4-26-82

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

TIGHT HOLE

NAME OF COMPANY: ARCO OIL AND GAS

WELL NAME: Meadow Federal #1

SECTION SWNE 25 TOWNSHIP 22 S RANGE 7 W COUNTY Millard

DRILLING CONTRACTOR Montgomery Mountain Drilling

RIG #31

SPUDDED: DATE 4-23-82

TIME 12:00 PM

HOW Rotary

DRILLING WILL COMMENCE _____

REPORTED BY Kathy

TELEPHONE # 303-575-7036

DATE 4-26-82 SIGNED DB

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil well gas well other

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. See space 17 below.)
AT SURFACE: 1860' FNL & 2140' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Approx the same

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF REPORT, OR OTHER DATA.

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	<input type="checkbox"/>		<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>		<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>		<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
ABANDON*	<input type="checkbox"/>		<input type="checkbox"/>
(other) N.O. spud and set surface casing			

5. LEASE
U-19521

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Unit being formed

8. FARM OR LEASE NAME

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Meadow Federal

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
25-22S-7W

12. COUNTY OR PARISH
Millard

13. STATE
Utah

14. API NO.
43-027-30028

15. ELEVATIONS (SHOW DF, KDB, AND WD)
762B, GR

CONFIDENTIAL

RECEIVED

MAY 10 1982

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

DIVISION OF OIL, GAS & MINING

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 Montgomery Mountain Drilling Rig 31. Spud 17½" hole @ 12:00 noon 4-23-82; 30" conductor pipe set @ 76'. Drilled to 630'. Reamed 17½ hole to 26". RU & ran 16 jts 20", 94#, H-40, Rge 3 casing and set @ 615'. Cemented with 885 sx Class "H", 4% gel, 2% CaCl₂, ¼# celloflake, followed by 350 sx Class "H" + 2% CaCl₂. Cement to surface before start in with tail cement. Float held. Job complete @11:30pm.

Tested blind and pipe rams to 800# - held OK.

Drilling ahead.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED W.A. Walther, Sr. TITLE District Manager of Production DATE 5-5-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331.4 for such proposals.)

1. oil well gas well other

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. See space 17 below.)
AT SURFACE: 1860' FNL & 2140' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Approx the same

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF	<input type="checkbox"/>	<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>	<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>	<input type="checkbox"/>
ABANDON*	<input type="checkbox"/>	<input type="checkbox"/>
(other) <u>N.O.I. TO PLUGBACK AND TEST</u>		

5. LEASE
U-19521

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Unit Being Formed

8. FARM OR LEASE NAME

9. WELL NO.
Meadow Federal #1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
25-22S-7W

12. COUNTY OR PARISH
Millard

13. STATE
Utah

14. API NO.
43-027-30028

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4823' GR

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

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.)*

Propose to set following plugs to plugback and test:

Set balanced plugs from:

- 13,500' to 13,300'
- 9,500' to 9,300'
- 8,400' to 8,200'

Then run 9-5/8" liner 5900' to 8150' and circulate cement around liner.

Asad Raffoul with MMS in Salt Lake City dictated this plugging plan with concurrence from Ron Firth of Utah Oil and Gas.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED W A Walther, Jr. TITLE Acting District Manager DATE 9-28-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

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

*See Instructions on Reverse

DATE: _____
BY: _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil gas well other

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. See space 17 below.)
AT SURFACE: 1860' FNL & 2140' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Approx the same

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:	SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF <input type="checkbox"/>	<input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	<input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	<input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE <input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES <input type="checkbox"/>	<input type="checkbox"/>
ABANDON* <input type="checkbox"/>	<input type="checkbox"/>
(other) <input type="checkbox"/>	<input type="checkbox"/>

Sub Report of Plugback and Running Liner

5. LEASE
11-19521

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Unit Being Formed

8. FARM OR LEASE NAME

9. WELL NO.
Meadow Federal #1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
25-22S-7W

12. COUNTY OR PARISH
Millard

13. STATE
Utah

14. API NO.
43-027-30028

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4823' GR

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

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.)*

Circl and cond hole. Set cement plugs as follows:

- 13500' 150 sx 50/50 poz, 6% gel, .2% HR-4, displ with 211 bbls mud, pulled 6 sts and circl out pipe
- 9500' 180 sx 50/50 poz, 6% gel, displ with 142 bbls mud, POH 10 stds circl out pipe
- 8400' 350 sx neat cement, POH 7 stds, circl out pipe

Job complete 9-29-82. WOC. Tag cement @ 8057', drld to 8150'. Circl and cond hole. RU & ran liner - 8jts 53.50#, S-95 and 47 jts 47.00#, S-95 and set with top @ 5844' and bottom @ 8149'. Cemented - 1000 sx lead, 50/50 poz, 2% gel, 1/4#/bbl flocele, 10#/sx gilsonite, .5% CFR-2; tail in with 220 sx neat Class "H", 15.8 ppg. Displ with 268 bbl mud. Bumpd plug with 700 psi (OVER)

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED W. A. Walther, Jr. TITLE Acting District Manager DATE 11-2-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL IF ANY:

APPROVED BY THE STATE
OF UTAH DIVISION OF

*See Instructions on Reverse Side

DA BY: [Signature]

CONFIDENTIAL

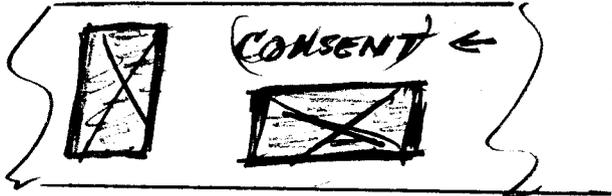
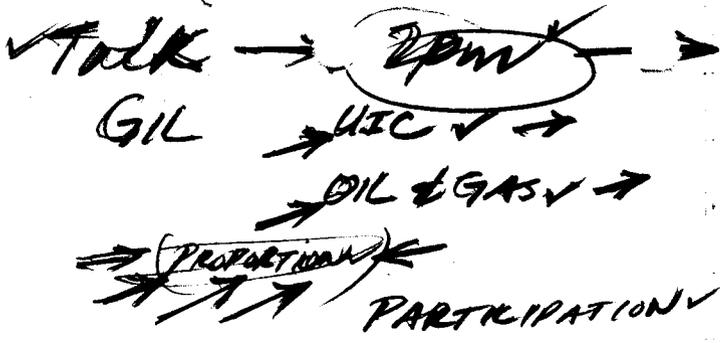
CONFIDENTIAL

CONFIDENTIAL

above displ pressure of 950 psi, bled back 2 bbls, float held. Job complete 10-1-82. WOC. Tag cement @ 5530'. Drilled to top of liner @ 5844'. Circl and clean hole. Test liner top 1000#, check OK. Drilled cement 5844'-5993'. RIH to landing collar @ 8063', circl. Test casing and liner to 1000 psi - OK. NU wellhead. Put on dry hole cap. Released rig 10-4-82.

MI & RU Gamache WS Rig #12 on 10-25-82.

STATE JHT YB
TO HOUSTON
SERVING



after
Noted +
Spud

RON,

JEFF HUBBARD (ARCO EXPLORATION)

ADVISES THAT THEY ARE IMPLEMENTING
FEDERALLY APPROVED
PLUGGING PROGRAM FOR

MEADOW FED #1, 25, 225, 7W

IN MILLARD COUNTY. THEY WILL

BE PULLING 4300' OF $13 \frac{3}{8}$

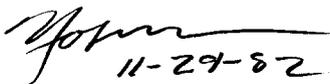
CASING, AND CEMENT WORK

SHOULD COMMENCE WED

MORNING.

JEFF CAN BE REACHED AT

1-842-7112.



11-29-82

1110

T I G H H O L E
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.

1. oil well gas well other

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. See space 17 below.)
AT SURFACE: 1860' FNL & 2140' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Approx the same

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	<input type="checkbox"/>		<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>		<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>		<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
ABANDON*	<input checked="" type="checkbox"/>		<input type="checkbox"/>
(other)			

5. LEASE
U-19521

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Unit Being Formed

8. FARM OR LEASE NAME

9. WELL NO.
Meadow Federal #1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
25-22S-7W

12. COUNTY OR PARISH | 13. STATE
Millard | Utah

14. API NO.
43-027-30028

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4823' GR

RECEIVED
DEC 29 1982

(NOTE: Report results of multiple completions zone change on Form 9-330.)

DIVISION OF
OIL, GAS & MINING

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 Unit. RIH with casing scraper and bit. Tagged liner top @ 5849'. Displ hole. Tested BOP. Ran CBL. Ran 9-5/8", 40.0#, S-95 casing and landed @ 5890'. Mixed and pumped 200 sx Class "H", .2% HR-8. Displ with 441.5 bbls fresh water. Cut off casing. NU BOP. Tag top of cement @ 5722'. Drilled cement. Circ clean. Perf'd 4 holes @ 7733'. Set pkr. Mixed and pumped 100 sx Class "H", 16.4 ppg, cement. Re-set pkr. Mixed and pumped 75 sx Class "H" neat. Re-set pkr. Mixed and pumped 75 sx Class "H" neat. Tag cement @ 7685' and drilled to 7752'. Perf'd 7975'-7990' with 4 JSPF. Set pkr. Spot 600 gals 15% HCL acid. Set DST tools @ 7958' to test perms 7975'-7990'. POH with tools. Swabbed. Prep to P & A as follows:

1. Set retainer @ + 7730'. Squeeze perforations with 100 sx cmt. Spot 25 sx on top of retainer.

(OVER)

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED J. M. McCarthy TITLE District Drilling Superintendent DATE 11-29-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

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

DATE: 12/31/82
BY: [Signature]

*See Instructions on Reverse Side

BA: _____
DYIE _____
OIL GAS AND MINING
OF PLAIN DIVISION OF
BUREAU OF LAND MANAGEMENT

2. Change over fluid to 8.9 ppg fresh water mud.
3. Cut 9-5/8" casing tie-back @ \pm 4300'.
4. Displace 9-5/8" x 13-3/8" annulus with 8.9 ppg fresh water mud.
5. POH & LD 9-5/8" casing.
6. Spot 200' cmt plug inside 9-5/8" stub, 100' and above top of stub in 13-3/8" csg 100'.
7. Perforate 4 holes in 13-3/8" csg @ 2000'. Squeeze 50 sx through perforations @ 2000' and spot 200' plug f/2000' to 1800'. (If cmt top in 17-1/2" x 13-3/8" annulus is above 2000', do not perforate.)
8. Spot 200' plug f/204' - 4'.
9. Set regulation abandonment marker and cement in place.
10. Clean location of all trash and debris.
11. When pit is dry, fill in and reshape. Rehabilitate location and roads as per APD Stipulations. Coordinate with BLM.

Per A.M. Raffoul, MMS, to J.M. McCarthy, ARCO, 4:10 pm 11-26-82.

ARCO Oil and Gas Company
Rocky Mountain District
717-17th Street
Mailing address: P.O. Box 5540
Denver, Colorado 80217
Telephone 303 575 7000



December 17, 1982

Minerals Management Service
1745 W. 1700 S
Ste 2000
Salt Lake City, Utah 84104

RE: MEADOW FEDERAL WELL #1
SW NE Section 25-22S-7W
Millard County, Utah

Gentlemen:

Enclosed please find FORM 9-330 WELL COMPLETION LOG for
the above referenced well. Final prints for this TIGHT
HOLE are not available at this time, but will be forwarded
to your office as soon as received.

Very truly yours,

K. L. Flinn
Operations Information Assistant

Encl.

TIGHT HOLE UNIT STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE

Form approved. Budget Bureau No. 42-R355.5

(See other instructions on reverse side)

5. LEASE DESIGNATION AND SERIAL NO.

U-19521

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. NAME OF LEASEE

9. WELL NO.

Meadow Federal 1

10. FIELD AND POOL, OR WILDCAT

11. T. & M., OR BLOCK AND SURVEY

12. COUNTY OR PARISH

Millard

13. STATE

Utah

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL [] GAS WELL [] DRY [X] Other []

b. TYPE OF COMPLETION: NEW WELL [X] WORK WELL [] PLUG BACK [] DIFF. RESVR. [] Other []

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): At surface 1860' FNL & 2140' FEL; At top prod. interval reported below; At total depth Approx the same

14. PERMIT NO. A. Raffoul; DATE ISSUED 3-23-82

15. DATE SPUNDED 4-23-82; 16. DATE T.D. REACHED 9-27-82; 17. DATE COMPL. (Ready to prod.) P & A 12-4-82

18. ELEVATIONS (DF, REB, RT, GR, ETC.)* 4830' GL 4861' KB; 19. ELEV. CASINGHEAD 4830'

20. TOTAL DEPTH, MD & TVD 15,520'; 21. PLUG, BACK T.D., MD & TVD P & A Surface; 22. IF MULTIPLE COMPL., HOW MANY* P & A; 23. INTERVALS DRILLED BY 0-15,520'

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 FDC-CNL BHC-ITT HDT DLL-MSFL HRT Cyberlook

27. WAS WELL CORED YES

28. CASING RECORD (Report all strings set in well)

Table with columns: CASING SIZE, WEIGHT, LB./FT., DEPTH SET (MD), HOLE SIZE, CEMENTING RECORD, AMOUNT PULLED. Rows: 20" 94# 615' 26" SEE ATTACHED; 13-3/8" 72# 6119' 17-1/2" SEE ATTACHED

29. LINER RECORD: SIZE 9-5/8" TOP (MD) 5844' BOTTOM (MD) 8149' SACKS CEMENT* SEE ATTACHED SCREEN (MD) SEE ATTACHED

30. TUBING RECORD: SIZE 9-5/8" DEPTH SET (MD) Surface 5850' TIE BACK SEE ATTACHED PACKER SET (MD) NONE

31. PERFORATION RECORD (Interval, size and number) SEE ATTACHED

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL (MD) AMOUNT AND KIND OF MATERIAL USED SEE ATTACHED

33.* PRODUCTION: DATE FIRST PRODUCTION; PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) Plugged and Abandoned; WELL STATUS (Producing or shut-in) Plugged and Abandoned

Table with columns: DATE OF TEST, HOURS TESTED, CHOKE SIZE, PROD'N. FOR TEST PERIOD, OIL—BBL., GAS—MCF., WATER—BBL., GAS-OIL RATIO. Row: Plugged and Abandoned

Table with columns: FLOW. TUBING PRESS., CASING PRESSURE, CALCULATED 24-HOUR RATE, OIL—BBL., GAS—MCF., WATER—BBL., OIL GRAVITY-API (CORR.). Row: Plugged and Abandoned

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

35. LIST OF ATTACHMENTS: 2 of #26 above and Daily Well History

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

SIGNED W.A. Walther, Jr. TITLE Acting District Manager DATE 12-13-82

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

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either as shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

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.	GEOLOGIC MARKERS	
				NAME	MEAS. DEPTH
	7946'	7958'	Opened tool @ 1410. Had strong blow. Closed tool @ 1416.	Alluvium	0'
CORE	5311'	5317'	Recovered 5'	Tertiary undivided Cambrian carbonates undivided	15'
				Cambrian Pioche Shale	12,006'
				Cambrian Propsect Mountain Quartzite	12820'
				TD	15520'

28. CEMENTING RECORD:

20" casing cemented with 885 sx Class "H", 4% gel, 2% CaCl₂, ¼# celloflake (14.1#/gal); followed by 350 sx Class "H" + 2% CaCl₂ (15.6#/gal). Cement to surface just before start in with tail cement. Displace 8.5 bbls. Float held OK.

13-3/8" casing cemented with 2700 sx 65/35 nat-lite cement, 10% salt, .5% NFR-1, 3% CDR-7. Mixed @ 15.7 ppg. Tailed with 100 sx Class "H", .5% NFR-1, .3% CDR-7. Mixed @ 15.7 ppg. Displaced @ 1000#. Bumped plug. Float held OK.

29. CEMENTING RECORD:

9-5/8" liner cemented with 1000 sx lead 50/50 poz, 2% gel, ¼#/bbl flocele, 10#/sx gilsonite, .5% CFR-2. Tail in with 220 sx neat Class "H", 15.8 ppg. Displace with 268 bbls mud. Bumped plug. Float held OK.

9-5/8" tie-back cemented with 200 sx Class "H", .2% HR-8. Displaced with 441.5 bbl fresh water.

31. PERFORATION RECORD:

7733' 4 holes
7975'-7990' 4 JSPF
7915'-7780' 4 JSPF
2000'-2001' 4 holes

32. ACID, SHOT, FRAC AND CEMENT SQUEEZE:

7733' 100 sx Class "H"
7733' 75 sx Class "H"
7733' 75 sx Class "H"
7975'-7990' 600 gal 15% HCL acid
7975'-7990' 125 sx Class "H"
7930'-7771' 10 bbls acid
7915'-7780' 66 bbls acid
7915'-7780' 100 sx Class "H"
7742' 25 sx cement on top of retainer
2000'-2001' 50 sx cement

PLUGS FOR P & A:

13,500' 150 sx cement
9,500' 180 sx cement
8,400' 350 sx cement
7975'-7990' perfs squeezed with 125 sx cement
7915'-7780' perfs squeezed with 100 sx cement
4432'-4232' 107 sx cement
4200'-4129' 50 sx cement
2010'-1810' 190 sx cement
218'-Surface 150 sx cement

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 4/24/82 153 Day-1, Ftg-153. LD Rmr & PU 11" BHA. Mud: 8.8#, vis 37, WL 14.7
RU. Mix spud mud & PU BHA - the 11" DC would not go thru National 27-1/2"
rot table. PU 9" DCs to spud with while waiting on 13-3/8" spider &
elevator to handle 11" DCs. SPUD WELL AT 12:00 NOON 4/23/82. Drlg. Pulled
1 std 9" DCs & tried to break xo sub (8-5/8" X 6-5/8" reg) & tore up
tongs. Waited on tongs f/oilfield. PU tongs - heated xo w/welder but still
couldn't break out xo sub - LD the 6 pt & xo sub in it. Pick up 11" DC.
- 4/25/82 390 Day-2, Ftg-237. Drlg. Mud: 8.9#, vis 50, WL 10.0
PU BHA & 3 11" DCs - changed subs. Drlg. Circ & running sweeps - Red beds
& gravel. Drlg. Survey. Drlg. (Lost 350 bbls mud up to midnight but none
since midnight.) 1/4° @ 147'.
- 4/26/82 630 Day-3, Ftg-240. Opng 17-1/2" to 26" @ 160'. Mud: 9.0#, vis 51, WL 11.7
Drlg. Circ & survey. Drlg. Circ. Survey. TO. LD 17-1/2" bit - PU 26" HO &
chg NRS boot to 26". Opng 17-1/2" hole to 26". 1/4° @ 472', 1/4° @ 630'.
- 4/27/82 630 Day-4, Ftg-0. Rng 20" csg. Mud: 8.9#, vis 55, WL 10.4
Opng 17-1/2" hole to 26". LD 2 jts wt pipe. RI 1 std DCs. Opng 17-1/2"
hole to 26". LD 2 jts wt pipe. RI 1 std DCs. Opng 17-1/2" hole to 26".
Circ. Pmp sweep f/TO. TOH. LD 6 pt rmr & 26" HO. RU & run 16 jts 20", 94#,
H-40, R3 csg. Weld strap on-shoe & FC. Shoe 2.12', shoe jt 38.60', FC
2.35', 15 jts 20" - 572.43' set @ 615'.
- 4/28/82 630 Day-5, Ftg-0. WOC. Mud: 8.9#, vis 72, WL 10.1
Fin run 20" csg. Drpd 2# hammer in hole by Baker hand while installing
centralizer on DP to run stinger. WO 14" magnet. TIH w/magnet, 5" DP &
back out. Rec'd hammer. TI w/pipe to cmt. Circ to cmt. Cmtd w/885 sx Cl
"H", 4% gel, 2% CaCl₂, 1/4# 1 cello flake (14.1#/gal), foll'd by 350 sx Cl
"H" & 2% CaCl₂ (15.6#/gal). Cmt to surf just before strt in w/tail cmt.
Displcd 8.5 bbls. Float held. JC @ 11:30 PM. POH. Wash up cond & flwline.
WOC. Cut off cond. Make ready to cut off 20" to NU.
- 4/29/82 630 Day-6, Ftg-0. NU 20" BOPs. Mud: 8.8#, vis 64, WL 11.3
WOC. Cut off 20". Weld on head. Let cool & press test to 250#. Tstd OK.
Cmtd btm of cellar to base plate w/2-1/2 yards ready-mix cmt. NU BOPs. RU
fillup line. Kill line & rig lines to manifold.
- 4/30/82 701 Day-7, Ftg-71. TOH f/BHA & new bit. Mud: 8.9#, vis 45, WL 11.9
NU 20" BOPs. Tst blind rams to 800# - chk OK. Tighten up turn buckles on
BOPs. PU BHA. TIH. Tag FC @ 572'. Drld FC. Drld cmt to 10' f/shoe. Tst
pipe rams & manifold to 800# - chkd OK. Drld cmt & shoe. Drld 15' cmt
under shoe to 630'. Circ. RU National cmtrs. Run leak off tst - no success
- equipment failure. Drld. Circ. TOH.
- 5/1/82 1389 Day-8, Ftg-759. Drlg. Mud: 9.1#, vis 47, WL 10.2
Trip & PU BHA. Wash 30' to btm. Drlg. Survey. Drlg. Service rig. Drlg.
Survey. Drlg. 1/2° @ 954', 3/4° @ 1155'.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 5/2/82 1952 Day-9, Ftg-563. Drlg. Mud: 9.0#, vis 42, WL 14.8
Drlg. Survey. Drlg. Rig service. Drlg. Survey. Drlg. 50% volcanics, 50%
claystone & siltstone, tr limestone v/hard. 3/4° @ 1417', 1-1/4° @ 1692',
1° @ 1965'.
- 5/3/82 2268 Day-10, Ftg-316. Drlg. Mud: 9#, vis 40, WL 10.6
Drlg. Survey. Drlg. Wrk tite conn. Pmp sweep. 100% sand. Drlg. Hard sand.
Drop survey. Trip f/new bit. (No tite holes on trips.) Wsh & rm 65' to
btm. Drlg. Lithology: 80% SS - hard, 10% LS - hard, 10% quartz - silty,
very hard. 1° @ 1965', 1-1/4° @ 2199'.
- 5/4/82 2812 Day-11, Ftg-544. Trip f/new bit. Mud: 9.1#, vis 41, WL 10.6
Drlg. Survey. Drlg. Survey. Drlg. TOH. Lithology: 100% quartz sandstone,
30% volcanic - very hard, 10% limestone - very hard. 1° @ 2486', 1° @
2730'.
- 5/5/82 3380 Day-12, Ftg-568. Drlg. Mud: 9.1#, vis 40, WL 10.6
Trip f/new bit. PU 3 - 8" DCs. Drlg. Survey. Drlg. Survey. Drlg.
Lithology: 50-60% dolomite firm to hard, fair porosity; 30-40% limestone
hard & dense; 10% sandstone - hard medium grained, sub-angular to
sub-rounded. 1-3/4° @ 3002', 1-1/2° @ 3247'.
- 5/6/82 3557 Day-13, Ftg-177. 17-1/2" NRS rubber & sleeve in hole, WO fishing tools.
Mud: 9.1". vis 42, WL 11.2
Drlg. Survey. Drlg. Pent rate slowed to 4'/hr, no rot torque. TOH. Found
17-1/2" NRS rubber & sleeve gone. Bit & 6 pt was scarred w/iron marks. WO
17" mill, junk sub & magnet (on way to loc f/Vernal, Utah). Lithology: 20%
ss, fine to coarse, dense & hard; 50% dolo, brn in color & very hard; 30%
ls, lgt to brn & very hard. 1-1/2° @ 3519'.
- 5/7/82 3566 Day-14, Ftg-9. Drlg. Mud: 9.0#, vis 38, WL 11.6
WO fishing tools. PU 17" mill, 10-3/4" junk basket & TIH. Milling. Made 4'
of new hole. Had no indication of drlg on junk. No torque. POH. LD mill,
junk sub. Rec'd 6 or 8 pieces of small iron about the size of a pea and
flat. No sign of any rubber. Mill had no indication of drlg on junk - like
new. PU BHA. TIH. Rmg f/3471-3561' (90'). Had 23' of hard reaming. Made 5'
of new hole to 3566'. Lithology: 20% ss, fine to coarse-grained, annular,
hard. 50% dolomite, brown, dense & hard. 30% ls, light to brn & very
hard. BGG = 2 units. No conn or trip gas.
- 5/8/82 3638 Day-15, Ftg-85. Drlg. Mud: 8.9+, vis 43, WL 10.8
Drlg. Circ. Trip SLM corrected 3566 to 3553 & change bits. Circ & work on
#1 engine. Drlg. Circ & work on #1 engine. Drlg. Change out lower kelly
cock valve. Drlg w/2 engines on generators. Reduced pump rate. Lithology:
50% ls buff brn platey & soft, 10% dolo brn & hard, 40% ss fn - med - sub
angular to sub rounded - firm. No mud loss last 24 hrs.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 5/9/82 3758 Day-16, Ftg-120. Drlg. Mud: 9.0#, vis 43, WL 11.2
Drlg w/bit #6 - one engine down. POH. W0 shock sub. PU BHA & TI. Drlg
w/bit #7 - one engine down. Lithology: 3730 - 50% ls slty & soft; 30% ss
vy fn to med gr soft to firm; 20% siltstone soft. No mud loss. 1-1/2° @
3649', 1-1/2° @ 3758'.
- 5/10/82 3944 Day-17, Ftg-186. Mud: 9.0#, vis 47, WL 14
Drlg. Drop survey. Trip f/new bit. Drlg. Lithology: 70% claystone - very
limey, soft & gume; 10% sandstone - fine to medium grained; 10% siltstone
- medium hard; 10% limestone - hard. No trip gas. No mud loss in last 24
hrs. 1° @ 3891'.
5% ls - dk grey to dk brwn, hard. Trc of volcanics - firm to hard. Trc of
BGG. No trip gas.
- 5/11/82 4033 Day-18, Ftg-89. Drlg. Mud: 9.0#, vis 44, WL 12.5
Drlg. POH. Cut drlg ling, cln suction pits - 3 sand traps. LD shock sub.
String up new cat line. Chg out chock sub. TIH. Wsh 60' to btm. No
out-of-gauge hole. Drlg w/bit #8. Lithology: 65% ls - buff to brwn & soft
to firm. No visibility of porosity. 20% ss - coarse to vy coarse, soft &
unconsolidated. 10% ss - fn grn, firm to hard. No porosity. 1° @ 3891'
(last survey).
- 5/12/82 4249 Day-19, Ftg-216. Drlg. Mud: 9.1#, vis 40, WL 14
Drlg. Survey. Drld. Lithology: 83% claystone, siltstone, limy & soft; 15%
sandstone, fine grain, quartzite; 2% anhydrite. Lost no mud in last 24
hrs. 3/4° @ 4193'.
- 5/13/82 4460 Day-20, Ftg-211. Drlg. Mud: 9.0#, vis 36, WL 19.3
Drlg. Short trip - 12 stds - no tite hole. Drlg. Lithology: 70% siltstone
claystone - soft. 30% sandstone - fine grain quartzite very hard. Tr of
volcanics. Tr of limestone & dolomite - very hard. Tr of BGG & no trip gas
No mud loss in last 24 hrs.
- 5/14/82 4664 Day-21, Ftg-204. Drlg. Mud: 9.0#, vis 36, WL 18.1
Drlg - 50M# on bit. Survey. Went off 2-1/2° & 338'. Drlg - 40M# on bit.
Survey. Went off 1° & 91'. Drlg - 25M# on bit. 8' per hr penetration.
Lithology: 80% claystone & ls; 20% siltstone. No mud loss in 24 hrs.
2-1/2° @ 4531', 3-1/2° @ 4622'.
- 5/15/82 4748 Day-22, Ftg-84. Drlg. Mud: 8.9#, vis 36, WL 18.2
Drlg. Survey - 2 runs - clock stopped. Circ & pill f/trip. Trip & change
out 2 - 3 pt string rmrs. Wash 60' to btm - no out of gauge hole. Drlg
w/25M & 75 rpm. Lithology: 40% ss quartzite, 30% siltstone, 30% claystone.
No mud loss last 24 hrs. 3-3/4° @ 4683'; 3-1/2° @ 4748'.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

5/16/82 4897 Day-23, Ftg-149. Drlg. Mud: 8.9#, vis 37, WL 18.3
Survey. Drlg w/18-20M#. Survey. Drlg w/12M#. Survey. Drlg w/12M#.
Lithology: 40% qrtz ss; 30% siltstone; 20% claystone; 10% ls. Cuttings
pretty clean. No mud loss in 24 hrs. 4° @ 4810'; 3-1/2° @ 4871'.

5/17/82 5045 Day-24, Ftg-148. Drlg. Mud: 8.9#, vis 36, WL 18.6
Drlg 12M#. Survey. Drlg 18M#. Survey. Drlg 18M#. Rig service. Drlg 18M#.
Lithology: 40% ss; 40% siltstone; 10% ls; 10% cs. No mud loss in last 24
hrs. 3-1/4° @ 4932'; 3-1/2° @ 4992'.

5/18/82 5112 Day-25, Ftg-67. Drlg. Mud: 8.9#, vis 36, WL 18.1
Drlg. Survey. Drlg. Drop survey, TO. Magnaflux all DC & BHA, Kelly & Kelly
sabre sub. Found 1 bad 9" DC w/cracked pin. PU 6 pt rmr, short DC & 3 pt
rmr & finished TIH. Rm & wsh 40' to btm. Drlg w/bit #10. Lithology: 50%
sandstone w/quartz; 30% siltstone; 10% carbonates; 10% claystone. No mud
loss last 24 hrs. 3-1/4° @ 3055'; 3-1/2° @ 5072' - dropped survey.

5/19/82 5253 Day-26, Ftg-141. Drlg. Mud: 9.1#, vis 37, WL 19.2
Drlg, 35-40M# on bit. Survey. Drlg, 30M#. Survey. Drlg, 30M#. Lithology:
50% quartz ss - vy hd; 30% quartz siltstone - hd; 20% claystone - very
soft & gummy. No mud loss last 24 hrs. 3° @ 5137'; 3-3/4° @ 5198'.

5/20/82 5311 Day-27, Ftg-58. PU core bbl to core. Mud: 9.2#, vis 35, WL 19.2
Drlg 25M# on bit. Survey. Drlg. Circ f/samples @ 5311'. Circ. W0 core
bbl. Drop survey. TOH. W0 core bbl. PU core bbl. Lithology: 75% dk crystal
LS w/oil show; 15% siltstone; 10% ss w/quartz grain. 4-1/4° @ 5259';
Dropped - got no picture @ 5311'.

5/21/82 5317 Day-28, Ftg-6. PU new BHA f/TIH to drl. Mud: 9.1#, vis 37, WL 17.5
Fin PU core bbl. TIH slow. Circ to core. Coring. Cored f/5311-5317'. Core
bbl jammed. TOH. LD core. Rec'd 5'. LD old BHA. St PU new BHA. Core shows
to be in Cambrian fm.

5/22/82 5427 Day-29, Ftg-110. Drlg. Mud: 9.2#, vis 36, WL 16.8
Finish PU BHA. TIH. Wash 40' to btm. Drlg. Survey. Drlg. Survey. Drlg.
Lithology: 80% limestone, dark gray; 10% siltstone; 5% claystone & 5% sdst
w/quartz. 4° @ 5352'; 4° @ 5413'.

5/23/82 5540 Day-30, Ftg-113. TIH w/bit. Mud: 9.2#, vis 43, WL 15.8
Drlg. Survey. Drlg. Dropped survey before TOH. Trip f/bit. Lithology: 60%
lls, crystalline; 20% sandstone; 20% siltstone. 3-1/2° @ 5505'; 3° @ 5540'.

5/24/82 5660 Day-31, Ftg-120. Drlg. Mud: 9.3#, vis 40, WL 15.6
Fin TIH. Ream 14' to btm. Drlg. Lithology: 50% quartz sandstone; 30%
siltstone; 20% shale. 2-1/4° @ 5660'.

MEADOW FEDERAL #1
 SW NE Section 25-22S-7W
 Millard County, Utah

- 5/25/82 5725 Day-32, Ftg-65. TIH w/new bit (#12). Mud: 9.4#, vis 43, WL 11.2
 Drlg. Survey. Drlg. TOH. Chg out 2 - 3 pt rmrs, 3/4" out of gauge.
 Re-arrange BHA & TIH. Lithology: 50% siltstone; 35% shale; 15% quartz ss -
 fine grain. No mud loss last 24 hrs. 2° @ 5720'.
- 5/26/82 5846 Day-33, Ftg-121. Drlg. Mud: 9.0#, vis 38, WL 15.8
 Fin TIH. Wash & rm f/5600-5680' - very soft rmg; f/5680-5725' (45'), very
 hard rmg. Back rmg 24' till free. Drlg. Instal new diaphragm on wgt
 indicator. Drlg. Survey. Drlg. Lithology: 70% ss; 15% ls; 12% siltstone.
 2° @ 5787'.
- 5/27/82 6017 Day-34, Ftg-171. Drlg. Mud: 9.1#, vis 38, WL 16.6
 Drlg. Survey. Drlg. Survey. Drlg. Survey. Drlg. Lithology f/5850-5980':
 65% dolomite, 35% ls; @ 5980': 90% ls, 10% green shale. 2-1/2° @ 5880', 2°
 @ 5942', 1-3/4° @ 6002'.
- 5/28/82 6027 Day-35, Ftg-10. TIH w/OS. Mud: 9.0#, vis 36, WL 17.1
 Drlg. Lost 30M# wgt; lost 2000# pump press. Chained out of hole. Found the
 top shock sub, mandrel pld out of body. Left 125.59' of fish in hole. Top
 of fish @ 5902'. Left in hole: bit, 6 pt, short DC, 3 pt, 11" DC, 3 pt,
 11" DC, short sub, part of 2nd shock sub (11-1/8" body up in hole). WO
 fishing tools f/Vernal, Utah. Truck broke dn, had fuel pmp problems. PU
 12-3/4" OS w/11-3/8" guide, dressed w/11-1/8" grapples. PU bumper sub &
 jars. TIH (hydramatic will not dump). Run pipe 4-5 min to the stand. Tool
 pusher has been asked to fix it. Has not been done as yet w/35 days on
 location. Lithology: 90% ls; 10% shale.
- 5/29/82 6027 Day-36, Ftg-0. POH w/plugged bit. Mud: 9.0#, vis 37, WL 17.2
 Finish RIH w/OS. Catch fish. POH. LD fish & tools. Load out tools. Rec all
 of fish. PU bit, SS, 3 pt & 1 - 11" DC. RIH. Attempt to unplug bit. POH to
 unplug bit. Make another 100' & prep to log.
- 5/30/82 6130 Day-37, Ftg-103. Circ to log. Mud: 9.0#, vis 41, WL 15.3
 Pull 15 stds & unplug bit. RIH. Wash 60' to btm. Drlg. Rig service. Drlg.
 Circ & cond to log. 90% LS; 10% SS.
- 5/31/82 6130 Day-38, Ftg-0. RIH. Mud: 8.8#, vis 41, WL 15.1
 Circ to log. Short trip - no fill. Circ to log. Drop survey w/temp plate
 (150-300°). POH - SLM @ 6129.80. No corr. No color on temp plate. RU
 Schlumberger to log. Logging LTD 6124'. Ran DLL 130°F, 6 hrs; FDC/CNL/GR
 132°, 8-1/2 hrs; BHC-S/GR 133°, 11-1/2 hrs. Temp 134° on btm. $\nabla = 1^\circ/100'$
 general. 1100-1200 had grad break gained 3°. RD Schlumberger. RIH.
 615 - 2000' 18"
 2000 - 3000' 20"
 3000 - 4000' 19"
 4000 - 6100' 18"
 2-1/4° @ 6130'..

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 6/1/82 6130 Day-39, Ftg-0. Rng 13-3/8" csg. Mud: 8.9#, vis 44, WL 15.7
TIH. Circ & cond hole to run 13-3/8" csg. Sht trip - 12 stds - no fill.
Circ. POH. LD BHA & 11" DCs. RU csg tongs & tools. Chg rams f/5" to
13-3/8". Ran 150 jts 72#, S-95, 13-3/8" csg. (Lacked 6 jts of being on btm
@ 0600.) Shoe 2.02', shoe jt 41.55', FC 2.50' = 46.07'. Ran 149 jts 72#
S-95 13-3/8" = 6074.67'. Total of 6120.74'. Set @ 6119'.
- 6/2/82 6130 Day-40, Ftg-0. Trying to set slips on 13-3/8" csg. Mud: 9.0#, vis 45, WL
16.3
Fin rng 13-3/8" csg. RD csg tools. Try to set 350 ton elevators on 12 X 12
seals. Seals broke, would not hold 380M#. Rec'd permission to cmt
conventional f/top. WOC head & plugs. Rig cmt head to cmt. Circ 92° @
strt; btms up 114°; circ w/flwline temp @ 115°. Cmtd 2700 sx 65/35
Nat-Lite cmt, 10% salt, .5% NFR-1, 3% CDR-7 - mixed @ 15.7 ppg. Tailed
w/100 sx Cl "H", .5% NFR-1, .3% CDR-7 - mixed @ 15.7 ppg. Displcd @
1000#. Bmpd plug @ 8:15 pm @ 1500#. Held f/3 min flt holding. WOC. Hung
20" BOP to set slips. Trying to set slips. Slips wouldn't set. Called FMC
f/new set slips. Coming in on airplane within 2 hrs.
- 6/3/82 6130 Day-41, Ftg-0. Press tstg BOP. Mud: 9.0#, vis 45. WL 16.8
Trying to set slips on 13-3/8" csg. Set new slips. 510,000 string on csg.
Cut off 13-3/8" csg - rough cut. Set out 20" BOPs. Made final cut on
13-3/8". Set in FMC spool. Tst to 5000# psi f/10 min - tst OK. NU 13-5/8,
5000 BOPs & Hydril. Tstd BOPs. Tstd manifold & blind rams, 5000 psi - tstd
OK.
- 6/4/82 6160 Day-42, Ftg-30. Drlg 12-1/4" hole. Mud: 9.2#, vis 48, WL 16
NU. Tst BOPs to 5000# on blind rams, pipe rams & manifold; 2000# on
hydril. Set wear ring. RU flw nipple & hook up flwline. PU 3 - 6-3/4" DC &
GIH. Put ext on flwline (was too short). TIH. Tagged cmt @ 6057' - 14' cmt
on top of shoe @ 4607'. Drld cmt & shoe @ 6120'. Drld 12-1/4" hole.
Lithology: 100% lite gry limestone.
- 6/5/82 6287 Day-43, Ftg-127. Circ samples @ 6287'. Mud: 9.1#, vis 40, WL 16.0
Drlg. Survey & pump pill. TOH. PU BHA & TIH w/DCs. TIH & installing DP
rubber every other jt. Wash & ream f/6104-6211' of out of gage hole.
Drlg. Circ samples @ 6287'; drlg break 6277-6287' @ 35 to 40 sec per ft -
no gas. Formation: 100% limestone (Cambrian). 1-3/4° @ 6211'.
- 6/6/82 6665 Day-44, Ftg-378. Drlg. Mud: 9.1#, vis 43, WL 9.8
Circ samples. Drlg. Circ samples; chloride in mud increased to 6400 ppm.
Survey. Drlg. Circ & survey; DP drag increased. Circ & working tite pipe.
Reduced wtr loss from 19.0 to 7.0 cc. Drlg & reducing wtr loss in mud.
Made 5 std short trip - hole not tite - washed 60' to btm. Drlg w/o
problems. At 6665' - 100% limestone; 6250-6600' - salt & lls. At 6250' -
Cl - 6400'; @ 6665' - Cl - 3800 ppm. 3° @ 6300'; 2-3/4° @ 6512'; 2-3/4° @
6665'.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 6/7/82 6865 Day-45, Ftg-200. Wshg to btm w/bit. Mud: 9.1#, vis 41, WL 8.4
Survey. Drlg. Survey. Drlg. Repair Totco pump gauge & mud line. Drlg. Lost
300# pmp press. Ck'd both pmps. POH. Pull wet string. Did not find wsh
out. Gauged 6 pt rmrs, 3 pt rmrs. Ck'd OK. PU kelly. Ck pmp press. Ck'd
OK. TIH. Wsh 2 jts to btm. Had no fill. Lithology: 100% dolomite @ 6700'.
No tite spots on trips. No mud loss last 24 hrs. 2-3/4° @ 6665'; 2-3/4° @
6787'.
- 6/8/82 7147 Day-46. Ftg-282. Drlg. Mud: 9.1#, vis 43, WL 9.2
Wshg to btm w/bit #16. Drlg. Survey - misrun - no picture. Drlg. Circ
samples @ 6998'. Drlg break f/6978-6998' - 1 to 2 mins/ft. Survey. Drlg.
Survey. Drlg. Lithology: 70% limestone; 30% dolomite. Lost 120 bbls mud in
last 24 hrs in drlg breaks @ 6998' & 7080'. 2° @ 7004'; 2° @ 7128'.
- 6/9/82 7512 Day-47, Ftg-365. Drlg. Mud: 9.1#, vis 42, WL 9.2
Drlg. Survey. Drlg. Lithology: 100% LS. Lost no mud in last 24 hrs. 1-1/2°
@ 7282'.
- 6/10/82 7636 Day-48, Ftg-124. Drlg. Mud: 9.0#, vis 41, WL 9.7
Drlg. Survey. Drlg. Circ & cond hole. POH. Ran base line csg inspection
log. PU bit, gauge reamers - checked OK. Ran DCs in hole. Repair line
guide. TIH to 6119' (btm of shoe). Cut drlg line. Fin TIH. Wsh 60' to btm
- no fill. Drlg w/bit #17. Lithology: 100% dolomite. No mud loss in last
24 hrs. Baseline inspection log: @ 3427' - appears to be 1 jt of lighter
grade pipe 81 jts f/btm up & 69 jts f/top dn. 72# Buttress SS 95 (US
Steel). 3/4° @ 7526'.
- 6/11/82 7826 Day-49, Ftg-190. Drlg. Mud: 8.9#, vis 39, WL 9.1
Drlg. Survey. Drlg. Lithology: 100% dolomite. No mud loss in last 24 hrs.
1-1/2° @ 7804'.
- 6/12/82 7952 Day-50, Ftg-126. Drlg. Mud: 9.0#, vis 42, WL 9.0
Drlg - lost complete returns @ 7836'. Pld 10 std & mixed LCM & gel.
Regained returns @ 1330'. 1st pill: 100 bbl 35-40% LCM w/no ret. Set 2 hr,
mixed 2nd pill & PI 200 bbl 35-45% LCM & regained ret while displacing.
Total 300 bbl pmpd. Ran 5 std & broke circ OK. WIH to 60' off btm. Circ
OK. Washed dn last 60' to btm. Had 15' fill. Drlg - 1st 15-20' badly
fractured - drlg w/800-1200 psi & 5-10M# wt. After 60' drlg torque
smoothed out. Continued mud loss @ 45 BPH to 0400. Loss reduced to 10 BPH
0400 to 0600. Total loss in 14 hrs = 500 bbl. Lithology: 90% dolo; 10%
lime. Mixing Milgard @ 1/2#/bbl. Mixing extra caustic.
2° @ 7956'.
- 6/13/82 7956 Day-51, Ftg-4. Spot LCM to regain circ. Mud: 8.8#, vis 50, WL 15.8
Drlg to 7956'. Survey & plugged bit. Lost comp returns @ 7956'. POH 5 std
partly unplugged bit. POH. 1 jet plugged. Rig service. TIH remove DP
rubbers 10 stds. Mix mud & LCM (vis 50) 45% LCM to 20% in main system. GIH
to 200' off btm. Spot pill to regain circ. Regained circ after pmpg DP
capacity. Total loss yest 800 bbl. Cum total = 1600 bbl. Lithology: 90%
dolo; 10% lime. 2° @ 7556'.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 6/14/82 8083 Day-52, Ftg-127. Drlg. Mud: 9.0#, vis 40, WL 11.2
Regained circ. Wshd 60' to btm. Had 15' of fill. Drld w/1200# pmp press & 20M# WOB. Rig service. Drld w/1800# pmp press & 30M# WOB. Currently drlg w/40M# WOB & 2700# pmp press, 1 jet plugged & making 11'/hr. Lithology: 100% dolo, clr, white & v cln. 2 PPB of milgaard in mud, sulphites in mud = 0. Circ regained @ btms up - 13 PPM of CO₂ gas, 40 PPM of H₂S & tr of methane. At 6 am, no gas. Lost 50 BM in first 2 hrs & no loss since.
- 6/15/82 8153 Day-53, Ftg-70. TIH w/new bit. Mud: 9.0#, vis 41, WL 12.3
Drld. Jets plugging w/LCM. Lost 70 BM @ 8142'. Drop survey & POH. Install Grant rotating hd. Make flwline fit w/welder. Chg out 6 pt rmr, SS & TIH. Lithology: 70% dolo; 30% quartzite. Hole stayed full on entire trip. 2-1/4° @ 8153'.
- 6/16/82 8240 Day-54, Ftg-87. Drlg. Mud: 9.0#, vis 40, WL 11.0
Fin TIH. Rm 60' to btm - 30' of hard rmg. Drlg. Lithology: 90% dolomite; 10% quartz. Btms up after trip no H₂S gas & no methane. 500 ppm of CO₂ gas. Lost no mud in 24 hrs. 1 ppb of milguard in mud for H₂S gas.
- 6/17/82 8354 Day-55, Ftg-114. Drlg. Mud: 9.1+, vis 42, WL 10.0
Drlg. Rig service. Drlg. Lithology: 90% dolo; 10% quartz. Remarks: RU solids ctrl equip to remove solids & retain LCM. Ran equip 1-3/4 hrs, lost 100 bbls mud to pit thru centrifuge - shut off solids ctrl equip. At 6 am, 6/17/82, plugged 1 jet while drlg. Lost 30 BM dn hole trying to unplug bit. Now drlg w/516 GPM & 2000 psi. No mud loss. One charging pump still dn. Can only run one mud pump.
- 6/18/82 8401 Day-56, Ftg-47. Mxg mud. Mud: 8.9+, vis 44
Drlg. Plugged 1 jet @ 6:00 am, lost 175 bbls mud. Slugged well twice w/LCM pills. Lost almost complete returns @ 8401'. Slugged well w/175 bbls LCM pill. Circ w/30-40% returns. Pld into csg (26 stnds). Attempted to fill hole w/60 bbls of mud w/o success. Mix LCM pill in slug tank. RIH w/25 stnds DP (1 stdn off btm). Dmp 175 bbls LCM pill. Displace LCM pills w/77 bbls of mud @ 4.8 BPM w/450 psi. Had returns last ±10 bbls. Pull into csg (25 stnds). Clean shale pit & mix mud.
- 6/19/82 8401 Day-57, Ftg-0. Circ. Mud: 8.9#, vis 46
RIH 25 stds (1 std off btm). Circ & mix mud. Circ @ 3-1/2 BPM w/550 psi. Pmpd 1600 bbl mud. Lost 750 bbl. Avg 53% returns. Slugged hole 5 times w/45#/bbl LCM pills while circ. Spotted last pill on btm. POH 25 stds into csg. Mix mud w/47#/bbl LCM. RIH 18 stds. Bit @ 7640' (8 stds off btm). Circ 3-1/4 BPM w/250 psi ±50% returns. Lost 950 bbl mud last 24 hrs.
- 6/20/82 8409 Day-58, Ftg-8 (corr). Circ. Mud: 9.1#, vis 43
Circ w/50% returns - lost 250 bbl mud. POH SLM. +8' correction - 8401-8409'. RIH OE DP. PU 31 jts - tag @ 8409' - no fill. Pull to csg - WO National cementers. RIH to 8406'. RU National. Pmp 50 bbl mud, 20 bbl wtr. Mix 110 sx "H" w/10% TH (-60, 5#/sx gilsonite. 1/4#/sx celloflake, 0.3% NFL-1, 0.75% NFR-1). Yield 1.52 cu ft/sx @ 14.6 ppg. Disp w/3 bbl wtr 140 bbl mud. WOC @ 2100 hrs. Well filled up & circ after 80 bbls pmpd. Pull 26 stds to csg. Well flowed back ±2 bbls - first std wet, then dry. WOC & mix mud. RIH to TD - no fill up small bridges. 170 & 150' off btm. Pull 3 stds. PU Kelly & lead hole @ 3-1/4 BPM. Lost 370 bbl mud last 24 hrs.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 6/21/82 8409 Day-59, Ftg-0. TIH. Mud: 9.1+#, vis 43, WL 13.6
Load hole. Brk circ w/124 BM. Pmpd 1 hr - 3-1/4 bbls per minute. Lost 86 BM in 1 hr. Ran 3 stds DP to 8406'. RU National cmtrs. Pmpd 20 BW. Mixed 110 sx Class H cmt w/10% THC-60, 5#/sx gilsonite, 1/4#/sx celloflake, 0.3% NFL-1, 0.75% NFR-1. Yield 1.52 cu ft/sx. Slurry wt: 14.8 to 15.0 ppg. Displaced w/3 BW & 140 BM. WOC @ 8.45 am. Pulled 26 stds to csg. Flwd bk 1/2 bbl. 1st std wet, 2nd std partially wet, remainder dry. WOC. Cut drlg lines - mix mud. RIH. Tag @ 8276'. Pull 1 jt, PU Kelly. Brk circ w/20 bbls. Circ 1/2 hr @ 3-1/2 BP minute w/no mud loss. Incr'd pmp rate to 6 BPM. After 1-1/2 hrs, lwr'd Kelly & tagged @ 8257'. Set 10000# on plug. Would not pmp off. PU circ & pre-treat mud f/cmt contamination. No mud lost. POH. Make up bit, start in hole. Magnafluxing BHA. Have ld dwn 1 - 9" DC w/cracked pin. Chg out 1 out-of-gauge 3 pt rmr.
- 6/22/82 8409 Day-60, Ftg-0. WOC & Mix Mud. Mud: 8.9+#, vis 41, WL 15.2
Fin trip chkg BHA & HWDP. TI w/bit. Took wgt @ 7740'. Wash & rmd to 7930' w/full returns. Very light rmg. Wrk on pmps. Kick pmp in. Took 80 bbls to load hole & brk circ. Slug w/100 bbls 45# LCM pill. Pmp @ 3.25 BPM w/400#. Had ±50% returns. Pld 3 stds DP. Circ out thick cmt contaminated mud w/50% returns. RIH. Tag soft fill @ 7983'. POH w/bit - SLM - no corr. RIH w/OE DP to 7846'. Load hole & brk circ w/61 bbls. Circ 1/2 hr @ 3.25 BPM & 300#. Lost est 48 BM. RU National cmtrs. Pmp 10 bbls mud flush. Mix & pmp 110 sx Cl "H" w/10% THC-60, 2% gel, 5# gilsonite/sk, 1/4# celloflake/sk, .75% NFR-1, .3% NFL-1, 14.1 ppg. Yield 1.45 cu ft/sk. Mix & pmp 40 sx Cl "H" Neat cmt 14.8 ppg, 1.18 yield. Displc w/3 BW & 125 BM. WOC @ 5 am. Pld 19 stds to csg. Well on small vacuum initially. Pld dry. WOC. Cln mud pits. Lost est 600 BM in 24 hrs.
- 6/23/82 8409 Day-61, Ftg-0. TI w/bit. Mud: 8.6#, vis 40, WL 13.3
WOC. Cln mud pits. Mix mud. Load hole thru fill up line w/60 bbls. Mud level in annulus dropped 5' in 5 min. Refilled. Dropped 1/2' in 5 min. Brk circ w/7 bbls. Circ'd 1/2 hr @ 3 BPM w/300# - full returns. POH. Chg out BHA & RIH w/bit. Brk circ @ 6044'. Circ w/full returns. RIH.
- 6/24/82 8500 Day-62, Ftg-91. Drlg. Mud: 9.0#, vis 40, WL 19.4
RIH to 7610'. Circ @ 7610'. RIH. Brk circ ea std. Tag mushy fill @ 7858'. Wash & rm to 8219'. Drl out cmt 8219-8409'. Drlg. LD 2 jts DP, rn 1 std. Drlg. No mud loss.
- 6/25/82 8671 Day-63, Ftg-171. Trip f/new bit. Mud: 8.9+#, vis 38; WL 14.1
Drlg. Rig service. Drlg. Prep pill & POH. Chg bits. Chg out 6 pt rmr. PU short DC & shock sub. Lithology: 100% dolomite - shows more dense & little more hard in last 2 samples. No mud loss in last 24 hrs. 2-3/4" @ 8671'.
- 6/26/82 8815 Day-64, Ftg-144. Drlg. Mud: 9.1#, vis 41, WL 14.8
PU new BHA. TIH to 5 stds off btm. Attempt to break circ - bit plugged w/LCM. Pulled 21 stds to csg & broke circ. RIH 5 stds at a time breaking circ each time (LCM in mud 40-50%). Wash & ream 45' to btm. Drlg & shaking LCM out to 20%. Rig service. Drlg. Lithology: 100% dolomite, fractured filled w/calcite. No mud loss.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 6/27/82 9035 Day-65, Ftg-220. Drlg. Mud: 8.9#, vis 42, WL 12.2
Drlg. Circ samples @ 8938'; had a 10' drlg break. Drlg. At 9000' had 200 ppm CO₂ (3 am). At 6 am, CO₂ reading was 100 ppm. Cambrian lithology: 60% limestone, fractured w/calcite filling; 10% dolomite, fractured w/calcite filling. No mud loss last 24 hrs.
- 6/28/82 9145 Day-66, Ftg-110. TIH w/bit #22. Mud: 8.9#, vis 40, WL 12.2
Drlg. Drop survey & pump pill. POH. Work BOP - OK. TIH to shoe @ 6119'. Cut drlg line. TIH. No mud loss last 24 hrs. Lithology: 70% LS, firm to grey, fractured w/calcite fill; 30% dolomite, vy hard, fractured w/calcite fill. 100 ppm CO₂ w/2 units methane & NO H₂S. Try to maintain vis @ 40-42. 3-1/4° @ 9145'.
- 6/29/82 9305 Day-67, Ftg-160. Drlg. Mud: 8.8#, vis 42, WL 12.0
TIH. Remove DP rubbers off 1st 10 stds. Drlg. Survey. Drlg. Lithology: 70% lime; 30% dolomite. No mud lost last 24 hrs. 3° @ 9239'.
- 6/30/82 9545 Day-68, Ftg-240. Drlg. Mud: 8.8#, vis 41, WL 12
Drlg. 100% dolomite. 100 ppm CO₂. 1 unit total gas on hot wire. No mud loss in last 24 hrs.
- 7/1/82 9610 Day-69, Ftg-65. TOH for Totco survey tool. Mud: 8.7#, vis 43, WL 12.2
Drlg. Lost 300 psi pmp press. COH w/hole full. XO sub washed out between 8" DC & 6-3/4" DC. Checked BOP. TIH. Drlg. Survey - wireline broke 3500'. TOH to recover Totco instr & wireline. Lithology: 90% dolomite; 10% limestone. No mud loss last 24 hrs. 2-3/4° @ 9600'.
- 7/2/82 9865 Day-70, Ftg-255. Drlg. Mud: 8.7#, vis 42, WL 12.8
TOH 80 stds to grab Totco line. Tied wire to survey machine & pulled Totco barrel out. TIH. Drlg to PD. Lithology: 100% dolomite. No mud loss last 24 hrs.
- 7/3/82 9964 Day-71, Ftg-99. Mix mud & LCM. Mud: 8.7#, vis 42, WL 12.8
Drlg. Lost 75% returns @ 9941'. Pmpd 60 bbl 10-15% LCM - still 75% lost ret. Pull 10 stds. Stirred 200 bbl 45% LCM mud f/storage pit. Built mud system to 10-15#/bbl. Pmpd 260 bbl in hole & got full returns. Ran 10 stds to btm. Drlg w/1200 psi & 35000# wt - full returns. Bit torqued - bad fracture - lost complete returns @ 9964'. PI 250 bbl w/hi LCM w/no returns. POH & set BHA in derrick & change to 3- 20 jets. Charger pmp on fill up line while POH. No sign of any gas. PI 250 bbl. Trip in hole to about 9100'. Mix mud & LCM. Total lost 750 bbl. Lithology: 100% dolomite - no sign of gas.
- 7/4/82 9981 Day-72, Ftg-17. Drlg w/partial returns. Mud: 8.9#, vis 43, WL 13.7
Mix mud LCM & build volume. 250 bbl w/40% LCM & 300 bbl mud. Pmpd 100 bbl in annulus - did not fill. Ran 5 stds broke circ w/full returns @ 9930' w/100 bbl 40% LCM. Drlg - started losing mud while drlg. Had 50-75% returns torqueing & bouncing. Mix LCM in pill pit to 45%. Spot 200 bbl 45% LCM on btm - no ret. Let pill set on btm mix mud & build vol. Broke circ w/full ret. Started drlg - losing part returns. Total mud lost 1200 bbl.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 7/5/82 9981 Day-73, Ftg-0. WO bit @ 6119 - Hole full. Mud: 8.8#, vis 42, WL 15.7 POH. Strap in hole open ended to 6119'. Cut drlg line. Fin strap in hole. PU 24 jts DP. Mix mud & build pit mud volume. Circ @ 9978' w/both pmps 120 spm, 1600 psi. Lost 50 bbl mud in 20 min. Pulled up to 9941'. Spotted cmt plug w/10 BW, 130 sx Cl H cmt w/10% cal seal, 15#/sx gillsonite, 1/2#/sk Flocele-mixed 13.2#/gal foll by 50 sx Cl H w/.2% HR-4 @ 15.8#/gal. Disp w/158 bbl mud. Had 50-60% returns while spotting cmt. POH. WOC. Trip in hole slowly to 6119'.
- 7/6/82 10080 Day-74, Ftg-99. Drlg. Mud: 8.8#, vis 40, WL 17.2 Circ. No mud loss. WOC. TIH to BT. Tag cmt @ 9941'. Drill 2-3' cmt. Open hole to 9981'. No cmt. Drlg to 10000. Start losing mud, added 200 bbl 45% LCM. Continued losing mud. PU of btm. Spotted 200 bbl fill on btm. Pulled 10 stds. Let pill sit on btm. Mixed 200 bbl pill. RIH 5 stds. Broke circ. Took 45 bbl to fill hole. RIH to btm. Drlg w/no mud loss f/last 23' of hole. Last 23' torque 40% bit bouncing on btm. Circ btm up to check for formation change. Lithology: 100% dolomite.
- 7/7/82 10080 Day-75, Ftg-0. Breaking circ - 5 stds off btm. Mud: 8.8#, vis 43, WL 16.9 Circ btms up - fm - 100% dolomite - same. Run survey - wireline broke 30' f/btm. POH. Hole took 275 bbls to keep hole full. PU BHA. TIH slow. Hole did not displace stopped 18 stds off btm to mix mud. Mix & build 400 bbls mud. RIH to 9990' - hole tite. Broke circ. Ream f/9990-10048'. Lost all returns. Spot 200 bbls 45% to 60% LCM on btm. Pulled 10 stds. Let pill set - mixed 200 bbls in storage pit. RIH to 10048' - broke circ. Began reaming w/full returns. Lithology: 100% dolomite.
- 7/8/82 10226 Day-76, Ftg-146. Drlg. Mud: 8.9#, vis 42, WL 17.6 Brk circ 5 stds off btm. RIH 5 stds & brk circ. Drlg w/partial returns. TOH 3 stds - mix 200 bbl pill 45-60% LCM. RIH 3 stds. Att to brk circ - could not circ. TOH 3 stds. Mix 200 bbl pill 45-60% LCM. RIH 3 stds - brk circ. Drlg. Losing mud. Added 25 bbl slugs of 45-60% LCM every 2 hrs fr 1800-0400. 0400-0600, no mud lost. Total mud lost - 800 bbls. Lithology: 60% dolomite, 40% limestone. 100 ppm CO₂ gas/no H₂S in hole. 1 unit gas on HW.
- 7/9/82 10249 Day-77, Ftg-23. TIH w/bit #25. Mud: 8.9#, vis 42, WL 14.3 Drlg 10220-10225'. Drlg brk 2-3 min/ft. Circ up samples - 80% dolomite, 20% limestone, no shows. Spot 200 bbl 45-60% LCM pill on btm. Drop survey. POH slow. SLM pipe @ 10250, TD 10249, no corr. Hole took 180 bbls, normal, standing full. Rem rtg head & spool, tst plug would not go thru. Pull wear ring, quick test - Vernal - good eq. Test BOPs, rams & blinds 5000#, hydril 2000#, manifold, upper & lower kelly cock 5000# - all tstd OK. Mixed pill tank of LCM. Inst rtg head & spool, set wear ring. TIH. PU Dailey jars. Hole is displacing OK. Lithology: 80% dolo; 20% lime. 100 ppm CO₂. 0 H₂S. 2 units gas on HW.
- 7/10/82 10414 Day-78, Ftg-165. Drlg. Mud: 9.0#, vis 40, WL 12 TIH slow - broke @ shoe (6119') & 5 stds off btm. Wash & rm 60' to btm - had 20' hard reaming. Drlg w/no loss of mud. Cambrian lithology: 100% dolomite, Trip gas 1600 ppm CO₂, no H₂S. Regular drlg 250 ppm CO₂, no H₂S, 1 unit on hot wire.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

7/11/82	10624	Day-79, Ftg-210. Drlg. Mud: 8.9#, vis 41, WL 12.8 Drlg. Lithology: 100% dolomite, f/10380-10400' picked up 5-10' shale, then back to 100% dolomite. BGG 100 ppm CO ₂ , no H ₂ S. 1 unit on hot wire.
7/12/82	10783	Day-80, Ftg-159. TOH f/bit. Mud: 9.0#, vis 40, WL 12.0 Drlg. Service rig. Drlg. Drop survey & TOH. Bit slowed - not torque. No mud loss last 24 hrs. Lithology: 100% dolomite. Magnafluxing BHA on this trip.
7/13/82	10814	Day-81, Ftg-31. Drlg. Mud: 9.0#, vis 40, WL 11.8 Fin TOH to HWDP. Magnaflux & chk HWDP & DCs - chg out all BHA & SS - found 1 - 9" DC w/crk'd pin, kelly saver sub had thds. Pulled. TIH to shoe @ 6119'. Cut drlg line. TIH slowly, brk circ 5 stds off btm. Wash & rm 70' to btm. Drlg - lost no mud on trip - no mud loss last 24 hrs. 15% LCM throughout mud. Lithology: 100% dolomite - same. 1-3/4° @ 10783.
7/14/82	10966	Day-82, Ftg-152. Drlg. Mud: 8.8#, vis 41, WL 12 Drlg. Rig service. Drlg. Lithology: 90% lm stn; 10% dolomite. Change - 10850' - trace of shale - no shale since 200 ppm - CO ₂ . 0 - H ₂ S. 1 unit - hot wire.
7/15/82	11144	Day-83, Ftg-178. Drlg. Mud: 8.8#, vis 38, WL 12.2 Drlg. Lithology: 80% dolomite (fine grain); 20% lm stn. 200 ppm CO ₂ , no H ₂ S, 1 unit BBG. No mud loss last 24 hrs.
7/16/82	11330	Day-84, Ftg-186. Drlg. Mud: 8.9#, vis 39, WL 12.7 Drlg. Lithology: 80% dolo; 20% lm stn. 200 ppm CO ₂ , no H ₂ S, 1 unit on hot wire. No mud loss in last 24 hrs.
7/17/82	11437	Day-85, Ftg-107. Drlg. Mud: 8.8+#, vis 40, WL 11.3 Drlg. Survey - drop. POH. Work BOP - OK. Trip in slow to 6119'. Broke circ. Trip in slow to within 5 stds btm. Broke circ. Fin in hole. Wash 60' to btm. Drlg. No mud loss last 24 hrs. Lithology: 80% limestone, 20% dolomite. 1-1/4° @ 11340'.
7/18/82	11629	Day-86, Ftg-192. Drlg. Mud: 8.9#, vis 40, WL 11.5 Drlg. No mud loss last 24 hrs. Lithology: 90% dolo w/trace pyrite, 10% limestone.
7/19/82	11695	Day-87, Ftg-66. Drlg. Mud: 8.9+#, vis 42, WL 11.7 Drlg. Drop survey, pmp pill. POH. Work BOPs - OK. TIH to 6119'. Broke circ, chng out rotating head rubber. TIH slow to 5 stds off btm. Broke circ. RIH to btm. Drlg. No mud loss in last 24 hrs, including trip. Lithology: 90% dolomite, fine grain, microcrystal, firm to hard, silty & calcareous; 10% limestone, firm, microcrystal w/pyrite traces. Trace of green shale silty & phritic.
7/20/82	11850	Day-88, Ftg-155. Drlg. Mud: 8.8#, vis 40, WL 11.6 Drlg. Weld flange on rotating head spool. Drlg. No mud loss in last 24 hrs. Lithology: 100% dolomite.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 7/21/82 12034 Day-89, Ftg-184. Drlg. Mud: 8.8#, vis 41, WL 11.1
Drlg. Lith: 80% Dolo, wht to dk grey, firm to hard, microcrystal; 20% limestone, grey to dk grey, soft to firm, flakey & microcrystal.
- 7/22/82 12139 Day-90, Ftg-105. TIH w/Overshot. Mud: 8.8#, vis 40, WL 11.5
Drlg, lost 60M# weight & 1000 psi press. COH to csg @ 6119'. Cut drlg line. FCOH. Found jars broke off in lower case w/7-3/4" OD looking up. LD jars, PU fishing tools & 2 - 9" DC. TIH slow. Lithology: 40% dolomite, 30% limestone, 30% green shale. Came in @ 10% @ 12080' and 30% by 12139'. No mud loss last 24 hrs.
- 7/23/82 12147 Day-91, Ftg-8. Drlg. Mud: 8.8#, vis 39, WL 12.8
Circ over fish. COH w/wet string. LD fish & tools. LD 2 X 8" DC & clean tools & floor. Change out 3 pt & shock sub. MU bit & TIH w/BHA. PU Kelly & pmpd thru bit - bit not plugged. TIH slow. Wash 30' to btm. Drlg. No mud loss last 24 hrs. Lithology: 40% dolomite, 30% limestone, 30% green shale.
- 7/24/82 12374 Day-92, Ftg-227. Drlg while bypassing shakers. Mud: 8.9#, vis 51, WL 12.
Drlg. After trip @ 12,147' gained 120 bbls hvy LCM mud & then @ 9:30 am 7/23 strtd losing mud to hole @ 10-20 BPH rate unil 9:30 pm. Mixed fine mica & nut plug sweeps (80 bbls) & circ'd same & stopped losing mud - bypassing shale shakers. Lost total 320 BM last 24 hrs. At 6:00 am 7/24 CO₂ was 500 ppm - no H₂S. Lith: 40% Green Sh & 60% LS.
- 7/25/82 12554 Day-93, Ftg-180. TOH f/bit. Mud: 9.1#, vis 42, WL 11.2.
Drlg while bypassing sh shaker. Drop survey & pmp pill. TOH - will inspect DCs, kelly, BHA & subs this TOH. No mud loss last 24 hrs - will shake out the 10% LCM when back on btm drlg. Lith: 90% Green Sh & 10% LS. 200 ppm CO₂ & tr of BGG.
- 7/26/82 12645 Day-94, Ftg-91. Drlg. Mud: 9.0#, vis 50, WL 10.4.
Magnaflex & chk all BHA & DCs. LD 1 - 9" DC w/cracked pin. Also chk'd kelly saver sub & kelly. TIH. PU 1 - 9" DC. Brk circ @ shoe (6119') & 5 stds off btm. Wsh & rmd 45' to btm. Drld. At 2100 hrs strt shaking out LCM. No mud loss last 24 hr - no mud loss on trip. Lith: 90% Quartzite & 10% Green Sh. 50 ppm CO₂ - tr of BGG - 0 H₂S. 3-3/4° @ 12,554'.
- 7/27/82 12747 Day-95, Ftg-102. TOH f/new bit. Mud: 9.0#, vis 41, WL 11.2
Drlg. BOP drill. PU off btm, close pipe rams, pull full API drill. Drlg. Rig service. Drlg. Drop survey & pmp pill. TOH. LD 27 jts 26.5# DP to replace 9 stds in derrick used to cmt uphole. No mud loss last 24 hrs. Lithology: 100% quartzite. FL temp while drlg: out 138°F, in 133°F. 6° @ 12737'.
- 7/28/82 12797 Day-96, Ftg-50. Drlg. Mud: 9.0#, vis 70, WL 10.2
Finish TOH. API BOP drill. LD old BHA, PU new BHA. TIH slow to 6119', brk circ. Cut drlg line. TIH slow, brk circ 5 stds off btm. Ream 12637-12747', rmg w/2M-3M# WOB. Drlg. No mud loss last 24 hrs. Lithology: 100% quartzite - vy hd.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

7/29/82	12902	Day-97, Ftg-105. TOH f/bit. Mud: 8.9#, vis 48, WL 10.7 Drlg. Wireline survey. Drlg. Wireline survey - made 2 runs - new wire did not spool properly - ran out of time on 1st trip. Drlg. Pmp pill & TOH. No mud loss last 24 hrs. Lithology: 100% quartzite. 6° @ 12826', 6° @ 12889'.
7/30/82	12926	Day-98, Ftg-24. Drlg. Mud: 8.9#, vis 37, WL 11.2 Finish TOH. Change of 3 6 pt reamers to nobby cutters. Change out shock sub. TIH to csg shoe @ 6119' & broke circ. TIH slow to 5 stds off btm & broke circ. TIH to 12749' - tight hole. Ream 12749-12902' - hard reaming. Drlg. Lost 200 bbls mud on trip. Have not lost any since trip. 100% quartzite, 200 ppm CO ₂ , trace of background gas.
7/31/82	12928	Day-99, Ftg-2. Reaming out of gage hole to btm. Mud: 8.9#, vis 40, WL 10.9 Drlg. Rig service. Drlg - bit started torquing. LD 3 jts & reamed same back to btm. Trying to drill - bit torquing badly. TOH. Change bit, PU 6 pt reamer, changed out 2-3 pts & TIH to shoe @ 6119'. Break circ at shoe. TIH to 12726'. Reaming 12726-12868' & wash & ream w/1-2 pts of wt - reached hard reaming @ 12868'. Lithology: 100% hard quartzite.
8/1/82	12928	Day-100. Ftg-0. Ream to btm. Mud: 8.9#, vis 38, WL 10.1 Temp out 129°, in 117°. Ream to btm w/bit #33. POH. LD BHA & PU new BHA. RIH to shoe @ 6119'. Cut drlg line. Break circ. RIH to 12742'. Ream 12742-12920'. Some hard reaming @ 12900-12920'. Ream w/2000# WOB @ 38-40 RPM. Lost 80 bbl mud on trip. Lithology: 100% quartzite, 200 ppm CO ₂ , 1 u bgg.
8/2/82	12947	Day-101, Ftg-19. Drlg. Mud: 8.9#, vis 39, WL 9.8 Rmg to btm. Drop survey & pmp pill. POH. Change out 6 pt & 23 pts in BHA. TIH to csg shoe & break circ. Finish TIH very slow. Rmg 12868-12928' - 60' light rmg. Drlg. Lithology: 100% quartzite - very hard & abrasive. Gas: 200 ppm CO ₂ , 1 unit methane. Lost 60 bbls mud on trip. 6° @ 12928'.
8/3/82	12968	Day-102, Ftg-21. Drlg. Mud: 8.9#, vis 38, WL 10.3 Drlg. Drop survey & pmp pill. TOH. Work rams - OK. Cut drlg line. TIH to csg shoe @ 6119'. Broke circ. Fin TIH. Rmg 60' to btm - vy light rmg. Drlg 20-30M# on bit to break in. Lithology: 100% quartzite. Gas 200 ppm CO ₂ , 1 unit CH ₄ . 6° @ 12965'.
8/4/82	13024	Day-103, Ftg-56. Drlg hard quartzite. MudL 8.9#, vis 39, WL 10.1 Drlg. No mud loss last 24 hrs. Begin TOH @ 0615 8/4/82. Lithology: 100% quartzite w/trace of black shale. 300 ppm CO ₂ , 0 H ₂ S, tr CH ₄ .
8/5/82	13040	Day-104, Ftg-16. Drlg hd quartzite. Mud: 8.8+#, vis 38, WL 9.4 Drlg. Drop survey & pmp pill. POH. Change out 6 pt & btm 3 pt - out of gauge. TIH to 7153'. Tight @ 7153'. Wash past tight spot - 7153-63' - approx 10'. Fin TIH. Wshg & rmg 40' to btm w/1000-2000#. Drlg. No mud loss in last 24 hrs. Lithology: 90% quartz, 10% black shale. 200 ppm CO ₂ , tr CH ₄ , 0 H ₂ S.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

8/6/82 13068 Day-105, Ftg-28. TIH w/bit #38. Mud: 8.8#, vis 39, WL 8.7
Drlg. Rig service. Drlg. Drop survey & POH. Change out BHA: 6 pt & 2 - 3
pt rmrs. TIH. Hole not tight @ 7153'. No mud loss in last 24 hrs.
Lithology: 100% clear crystalline qtzite w/tr of black shale. Gas: 200 ppm
CO₂, tr CH₄, 0 sulf. 6° @ 13068'.

8/7/82 13076 Day-106, Ftg-8. TIH w/#39. Mud: 8.8#, vis 38, WL 8.2
TIH to shoe @ 6119'. TIH changing DP rubbers. Wshd 84' & rmd 6' hard to
btm. Drlg @ 1'/hr. TOH. Worked BOPs - OK. Changed out 6 pt, 3 pt & shock
sub. The buttons on the 6 pt & 3 pt rmrs were worn flat & 1/4" out of
gauge. TIH. Lithology: 100% hd quartzite, 200 ppm CO₂.

8/8/82 13112 Day-107, Ftg-36. TOH. Mud: 8.8#, vis 38, WL 8.2
TIH. Cut drlg line. Rig service. TIH to 8700' & broke circ. Finish TIH
slowly. Wash & ream 40' to btm w/20' of light reaming. Drlg - had 5% shale
1st drlg on btm, then back to quartzite. Drop survey to TOH. No mud loss.
Lithology: 100% quartzite, white to light grey, brittle & granular. 200
ppm CO₂ w/tr of BGG.

8/9/82 13112 Day-108, Ftg-0. WO rental DC. Mud: 8.8#, vis 38, WL 8.2
POH. Magnaflux & check BHA & DC. LD 4 9" DCs, 3 w/cracked pins & 1
w/cracked box. LD & changed out 1 6-3/4" DC w/pulled threads. Change out
BHA: 2 3 pts & 1 6 pt out of gauge. WO rental 9" DC (f/Evanston - J&H
Services - should have left @ 11 pm). No mud loss in last 24 hrs.
Lithology: 100% quartzite. No gas. Hole standing full. DC coming
f/Evanston f/J&H Services. 6° @ 13112'.

8/10/82 13128 Day-109, Ftg-16. TOH f/bit #41. Mud: 8.8+#, vis 39, WL 8.2
WO rental 9" DC f/Evanston, WY. Measure caliper & PU 4 9" DC. TIH to 7500'
& break circ. Fin TIH - slow. Wash 30' & rmg 15' to btm (light rmg).
Drlg. Drop survey & TOH f/new bit. No tite spots on TIH & no mud loss last
24 hrs. Lithology: 100% quartzite. 300 ppm CO₂ w/tr CH₄ & no H₂S.

8/11/82 13153 Day-110, Ftg-25. Drlg very hard quartzite. Mud: 8.8#, vis 38, WL 8.2
Fin TOH. Work BOPs - OK. Rig service. TIH. PU 2 4" DC. Break circ @
7500'. Fin TIH slow. Wsh 60' to btm - no out of gauge hole & no fill.
Drlg. No mud loss in last 24 hrs. No tite spots on trip. Lithology: 100%
quartzite. Getting harder. Gas: 300 ppm CO₂, trace CH₄, no H₂S.

8/12/82 13197 Day-111, Ftg-44. Drlg. Mud: 8.8#, vis 38, WL 8.2
Drlg w/bit #41. POH. Work BOPs - OK. Service rig. Cut drlg line. TIH to
7500'. Break circ. Fin TIH slow. Wsh 45' to btm. No fill. Drlg. No mud in
24 hrs. Lithology: 100% quartzite, granier. 200 ppm CO₂ w/tr CH₄. No tite
hole on trip.

8/13/82 13230 Day-112, Ftg-33. TOH f/bit #44. Mud: 8.8#, vis 37, WL 8.2
Drlg to 13204'. Circ pill. TOH f/bit #43. Work BOP - OK. Change bit,
change out 6 pt & 2 3 pt rmrs. TIH to 7500'. Break circ @ 7500'. Fin TIH
to 13144'. Wshg 60', rmg 3' out of gauge hole. Drlg to 15230'. Bit
torquing. Pmp pill & begin TIH f/bit #44. Lithology: 100% quartzite. No
mud loss or tite spots in last 24 hrs. 6° @ 13154'.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

8/14/82	13257	Day-113, Ftg-27. Drlg. Mud: 8.8#, vis 38, WL 8.8 Trip out. Ck BOP & gauge rmrs. Change bit & trip in to 3000'. Cut 80' drlg line. Trip in to 11000'. Break circ. Trip in to 13170'. Rm & wsh 60' to btm. Drlg. Repair wt indicator (Totco). Drlg. No mud loss, 200 ppm CO ₂ . Lithology: 100% quartzite.
8/15/82	13295	Day-114, Ftg-38. Start out f/bit. Mud: 8.8#, vis 37, WL 8.1 Trip out. Chk BOP gauge rmrs. Ser rig. Repair wt ind (Totco repairman). Chg bit. PU junk sub. Trip in to 10375'. Break circ. Trip in to 13197'. Wsh & rm 60' to btm. Drlg. Bit torquing. Start trip out. No mud loss. Lithology: 100% quartzite. Up to 400 ppm CO ₂ .
8/16/82	13295	Day-115, Ftg-0. Rmg @ 13288'. Mud: 8.8#, vis 39, WL 8.2 TOH (recovered 1 pt sm end, pieces of bit in junk). Remove rotating head bowl. Pull wear bushing. Tst BOP rams, choke lines & valves @ 5000 psi - OK. Tst Hydril @ 2000 psi - OK. Reset wear bushing & rotating head bowl. Change out rmrs - 1 - 6 pt & 2 - 3 pt - all 1/2" out of gauge. TIH to 5900'. Cut 80' drlg line. TIH to 11500'. Break circ. Fin TIH to 13235'. Wshg & rmg out of gauge hole to 13288'.
8/17/82	13327	Day-116, Ftg-32. TIH w/bit #47. Mud: 8.8#, vis 38, WL 8.0 Rmg 13288-13295'. Drlg. TOH. RU Dialog & csg profile caliper in 13-3/8". Change out bit & 6 pt rmr. LD SS & PU Christ jars. Csg log showed some DP wear f/4200-4500'. Lithology: 100% quartzite. No CO ₂ . No tite hole or mud loss on trip.
8/18/82	13348	Day-117, Ftg-21. TIH w/bit #48. Mud: 8.8#, vis 39, WL 7.8 TIH. Break circ @ 10530'. TIH to 13267'. Rmg & wshg 60' to btm. Drlg. TOH f/bit #48. Change bit & TIH to 5000'. Rmrs in gauge. Cut drlg line. TIH. Lithology: 100% vy hd quartzite. No CO ₂ . No H ₂ S. No mud loss last 24 hrs. No tite spots on trips.
8/19/82	13,368	Day-118, Ftg-20. Rmg @ 13,364'. Mud: 8.9#, vis 40, WL 7.9. TIH. Rmd & wshd 60' to btm. Drld. TOH. Chk BOP. OK. Chg out 3 pt. PU B#49. TIH to 10,500'. Brk circ. TIH to 13,308'. Rmd & wshd 35' to 13,364'. No mud loss or tite spts. Lith: 100% Quartzite. 6° @ 13,368'.
8/20/82	13389	Day-119, Ftg-21. TIH w/bit #50. Mud: 8.8#, vis 39, WL 8.0 Rmg to btm. Drlg. POH. Change out 6 pt & btm 3 pt (both 1/4" out). Cut drlg line. Ran in DC. Change out 2 - 9" DC w/pulled threads. Rig serv. TIH to ±7800'. Break circ. TIH. No mud loss or tite spots. Lithology: 90% qtz, 10% LS (13360-13370'). 300 PPM CO ₂ , tr BGG, no H ₂ S.
8/21/82	13403	Day-120, Ftg-14. Drlg. Mud: 8.8#, vis 38, WL 8.0 Rmg to btm - 36' of hard rmg. TOH. Note this round trip with bit was a rmg trip only. Changed out 6 pt & 3 pt & PU shock sub (1/8" out of gauge). TIH to 7000'. Break circ. F.T.I.H. Wsh 30' to btm to break bit in to drl. Drlg. Lithology: 100% quartzite. 400 ppm CO ₂ .
8/22/82	13411	Day-121, Ftg-8. TIH. Mud: 8.8#, vis 38, WL 8.0 Drlg. TOH. Magnaflux & checking DCs. LD 3 6-3/4" DCs w/pulled thds. XO sub bad in box (didn't have another). LD 1 9" DC w/pulled thds. LD 2 9" DCs w/crack box & pulled thds. Short DC & btm 3 pt had pulled thds. TIH. LD total 3 6-3/4" DCs, 3 9" DCs, 1 3 pt rmr, 1 short DC. Lithology: 100% quartzite. 200 ppm CO ₂ . 6° @ 13411'.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

8/23/82	13439	Day-122, Ftg-28. LD 9" DC to PU rental DC. Mud: 8.8#, vis 38, WL 8.0 TIH. Break circ. Cut drlg line. Fin TIH. Wshg 30' to btm in gauge hole. Drlg. POH. LD 9" DC to PU rental DC. No mud loss or tite spots on trips or drlg. Lithology: 100% quartzite. Gas: 400 ppm CO ₂ , tr BGG, no H ₂ S.
8/24/82	13459	Day-123, Ftg-20. Drlg. Mud: 8.8#, vis 38, WL 7.5 LD 7 9" DCs. PU 7 9" DCs (spirals) f/J & H Services, Evanston, WY. Change out 6 pt & 2 3 pts & SS (leaking oil). Rmrs 1/4" out of gauge. TIH. Break circ @ 6800'. Wshg & rmg (20' light rmg) to btm & broke bit in to drl. Drlg (w/40000# added little more at 6°). No mud loss last 24 hrs. No tite spots on trips. Lithology: 100% quartzite. 400 ppm CO ₂ , no H ₂ S.
8/25/82	13461	Day-124, Ftg-2. POH w/junk sub. Mud: 8.8#, vis 38, WL 8.0 Drlg. Bolts came loose f/rotating head rubber. Rubber dropped dwn in bowl & stuck. Pulled 4 stands of DP. Tryed to get rubber out w/o success. POH. Rubber came out on 1st std of 9" DC. Dropped 4 - 1/2" bolts w/8 lock washers in hole. Head had 8 bolts & found 4 bolts @ shaker. Assumed 4 bolts in hole. Change out 6 pt reamer w/btm cutters out of gauge. PU junk sub. TIH to shoe @ 6119'. Cut drlg line. FIH. Wshd 30' to btm. Worked junk sub. Could not feel junk on btm. Made approx 8" of hole. POH. Lithology: 100% quartzite. No mud loss.
8/26/82	13501	Day-125, Ftg-40. POH f/bit. Mud: 8.8#, vis 38, WL 7.8 TOH. TIH - brk circ @ 6800'. Wsh 30' to btm. No out of gauge hole. Drlg. Drop survey & pmp pill. POH. No mud loss last 24 hrs. Lithology: 100% quartzite.
8/27/82	13488 (corr)	Day-126, Ftg-25. POH. Mud: 8.8#, vis 38, WL 8.4 POH. Strapped out. Chng out 6 pt & 2 - 3 pts & TIH to 6119'. Cut drlg line. FIH, SLM pipe 38' correction. Rmg w/1M to 5M# @ 35 rpm to btm. Drlg. Lithology: 100% quartzite. No mud loss last 24 hrs. 5-1/4° @ 13463' (corrected).
8/28/82	13510	Day-127, Ftg-22. Drlg. Mud: 8.8#, vis 38, WL 8.5 Pmp pill & POH. Rig serv. Fin trip out. Change out BHA (6 pt 1/8" out gauge, 2 - 3 pts 1/8" out gauge) & trip in to shoe. Broke circ. Fin trip in hole. Wsh 60' to btm - light rmg last 30' to btm. Drlg. Lithology: 100% quartzite. CO ₂ 300 ppm, BGG trace. No mud loss last 24 hrs.
8/29/82	13542	Day-128, Ftg-32. Drlg. Mud: 8.8#, vis 39, WL 8.3 Drlg. Pmp pill & POH. Change 6 pt 1/8" out & 2 - 3 pts 1/8" out. Trip in to shoe. Cut drlg line & break circ. Fin trip in hole. Wsh 30' & ream 28' to btm. Light rmg 1-2000# wt. Drlg. Lithology: 100% quartzite. 300 ppm CO ₂ , tr background gas.
8/30/82	13582	Day-129, Ftg-40. Drlg. Mud: 8.8#, vis 41, WL 7.1 Drlg w/bit #57. Pmp pill & POH. Change out 6 pt & 2 - 3 pts: 1/8" out of gauge. TIH to shoe w/bit #58. Break circ. Fin TIH. Wshg 30' & lgt rmg 20' to btm. Drlg w/bit #58. Lithology: 100% quartzite. 400 ppm CO ₂ , 0 H ₂ S, tr BGG. No mud loss or tite spots.

MEADOW FEDERAL #1
 SW NE Section 25-22S-7W
 Millard County, Utah

8/31/82	13594	Day-130, Ftg-12. Logging w/Schlum. Mud: 8.8#, vis 44, WL 6.4 Drlg. Circ f/logs. Short trip: 15 stds - no fill. Circ f/logs. Drop survey & pmp pill. POH. SLM corr 13596' to 13594' (-2'). RU Schlum. Run dual laterolog - log failed. RU & run FDC/CNL. Logger TD @ 13575' - to check. Lithology: 100% quartzite - close to ss but not sharp - Metamorphosed ss, 200-400 ppm CO ₂ , tr BGG, 0 H ₂ S. 6° @ 13594'.
9/1/82	13594	Day-131, Ftg-0. Logging w/Schlum. Mud: 8.8+#, vis 45, WL 6.5 Run density-neutron log. Run sonic log. Run DLL. Hole staying full.
9/2/82	13594	Day-132, Ftg-0. Circ f/logs. Mud: 8.8#, vis 46, WL 6.3 Run dual laterolog, run dip meter - hole stood full. RD loggers. TIH to shoe @ 6119'. Cut drlg line. Circ hole. TIH to 9900'. Circ hole. Fin TIH. Wshd 1 jt to btm. Circ & condition hole f/logs. Short trip - 15 stds - no fill on btm. Circ to log. No mud loss last 24 hrs. No tite spots on trip. Hole in good shape.
9/3/82	13594	Day-133, Ftg-0. Logging w/Schlum VSP. Mud: 8.8#, vis 43, WL 6.5 Circ & cond hole. TOH. RU schlum to log. Logging - Running VSP. No mud loss - hole standing full.
9/4-7/82	13727	Day-137. (133') - Drlg. (13-3/8" @ 6119') MW: 8.8# Vis: 38 Pv/Yp: 13/9 Schl ran VSP & drld to PD w/survey 5-3/4° @ 13,671'.
9/8/82	13,818	Day-138. (91') - POH f/bit. (13-3/8" @ 6119') MW: 8.8# Vis: 37 Pv/Yp: 11/7 Drld to PD w/drlg brk @ 13,781-13,796'. Circ btms up f/samples.
9/9/82	13901	Day-139. (83') - Drlg. (13-3/8" @ 6119') MW: 8.8# Vis: 38 Pv/Yp: 13/7 Made bit trip @ 13,818' & drld to PD. Survey: 5-3/4° @ 13,818'.
9/10/82	14020	Day-140. (119') - TOH f/B#62. (13-3/8" @ 6119') MW: 8.8# Vis: 38 Pv/Yp: 13/8 Drld & surveyed to PD. TOH f/bit.
9/11- 13/82	14257	Day-143. (237') - TIH w/B#63. (13-3/8" @ 6119') MW: 8.8# Vis: 38 Pv/Yp: 12/8 Chk BOPs. Chg out 2-3 pt rmrs. TIH. Drld & survey to PD. TOH. Chk BOPs, rams & blinds - OK. Chg out 6 pt rmr. Strt TIH & chg out DP rubbers. Survey: 8° @ 14,275'.
9/14/82	14387	Day-144. (106') - Drlg. (13-3/8" @ 6119') MW: 8.8# Vis: 39 Pv/Yp: 12/9 FIH & drld to PD.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

9/15/82	14500	Day-145. (119') - Drlg. MW: 8.8# Vis: 38 Pv/Yp: 13/9 Drld to PD & prep to POH.	(13-3/8" @ 6119')
9/16/82	14500	Day-146. (0') - GIH. MW: 8.8# Vis: 38 Pv/Yp: 12/8 POH inspecting BHA & chg out as required. Tstd BOPs & GIH instl'g DP rubbers.	(13-3/8" @ 6119')
9/17/82	14590	Day-147. (90') - POH f/bit. MW: 8.8# Vis: 38 Pv/Yp: 13/9 FIH & drld to PD.	(13-3/8" @ 6119')
9/18- 20/82	14828	Day-150. (238') - Drlg. MW: 8.8# Vis: 39 Pv/Yp: 14/9 Drld to PD w/bit trip @ 14,704'. Lost ± 60 BM in 15 min @ 14,800'.	(13-3/8" @ 6119')
9/21/82	14954	Day-151. (126') - TFB. MW: 8.8# Vis: 38 Pv/Yp: 11/9 Drld to PD & POH f/bit.	(13-3/8" @ 6119')
9/22/82	15012	Day-152. (58') - Drlg. MW: 8.8# Vis: 39 Pv/Yp: 14/9 Fin bit trip & drld to PD. Survey: 5-1/2° @ 14,954'.	
9/23/82	15124	Day-153. (112') - Drlg. MW: 8.8# Vis: 39 Pv/Yp: 13/9 Drld f/24 hrs.	(6-5/8 @ 165)
9/24/82	15173	Day-154. (49') - Drlg. MW: 8.8# Vis: 38 Pv/Yp: 12/9 Drld to PD w/bit trip @ 15,154'. Survey: 5-3/4° @ 15,152'.	(6-5/8 @ 165)
9/25- 27/82	15435	Day-157 (262') - Drlg. MW: 8.8# Vis: 39 Pv/Yp: 11/8 Drld & surveyed. TFB #68 @ 15,347'. Drld to PD. Survey: 5-1/2° @ 15,347'.	(13-3/8 @ 6119)
9/28/82	15537	Day-158 (102') - Sht trip & cond f/logs. MW: 8.8# Vis: 39 Pv/Yp: 12/9 Drld to PD. Circ & cond mud. Sht trip 15 stds.	(13-3/8 @ 6119)

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

9/29/82 15520 Day-159 - RIH w/OE to set plugs. (13-3/8 @ 6119)
(corr) MW: 8.8# Vis: 41 Pv/Yp: 15/8
Circ & cond mud f/logs. POH & corr depth by SLM. LD BHA. Schl ran
BHC/Sonic/GR 15,511-13,557'. Plan to PB to 8150', run & cmt 9-5/8" lnr &
tst zones f/7836-7992'.

9/30/82 15520 Day-160 PBD: 8000' - WOC w/bit @ 6000'. (13-3/8 @ 6119)
MW: 8.8# Vis: 42 Pv/Yp: 13/7
RIH removing DP rubbers & circ hole cln. Set opn hole plugs @
13,500-13,250', 9500-9200' & 8400-8000'. POH w/OE DP. RIH w/bit to 6000' &
WOC.

10/1/82 15520 Day-161 PBD: 8150' - Rng 9-5/8" lnr. (13-3/8 @ 6119)
MW: 8.8# Vis: 40 Pv/Yp: 13/7
Brk circ & tagged top cmt @ 8057'. Drld to 8150' & tstd plug w/95M# wt.
Circ & cond hole. POH. Chgd to 9-5/8" rams & strtd rng 9-5/8" lnr.

10/2- 15520 Day-164 PBD: 8149' - Clng mud pits. (9-5/8" @ 8149)
4/82 MW: 8.8# Vis: 40 Pv/Yp: 13/8
Fin rng 9-5/8" lnr - total 8 jts, 53.5#, S-95 + 47 jts, 47.0#, S-95. Btm
lnr @ 8149', top lnr @ 5844', FC @ 8105'. Cmt'd w/1000 sx 50/50 poz w/2%
gel, 1/4#/bbl flocele, 10#/sx gils, 1/2% CFR-2, foll'd by 220 sx neat Cl
"H". Float held. Cmt in place 2045 hrs 10/1/82. WOC. TIH & tag cmt @
5530'. Drl cmt f/5530-5844' top lnr. Tst top lnr 1000 psi. Drl cmt
f/5844-5993'. RIH to LC @ 8063'. Tst csg & lnr 1000 psi. POH & LD DP &
DC's. ND BOP's. NU well hd, instl dry hole cap. Clng mud pits.

10/5/82 15520 Day-165 PBD: 8149' - WO tst & WO unit. (9-5/8 @ 8149)
RR 1200 hrs 10/4/82. Cld mud pits & returned all rental equip. (Drop
f/report until further test w/WO unit.)

10/27/82 15520 Day-1 PBD: 8149' - Prep to fin rng tbg.
NU BOP. RIH w/8-1/2" bit, csg scraper, 2-7/8", C-75, EUE, 8rd tbg. Wrkd
thru lnr top @ 5849' tbg meas. Cont'd in hole PU tbg. SDON.

10/28/82 15520 Day-2 PBD: 8149' - Prep to fin displace.
FIH w/ 2-7/8" tbg to 8037' & strtd displacing mud w/8.8 ppg brine wtr.

10/29/82 15520 Day-3 PBD: 8149' - Tstg BOPs.
Fin displ'g mud w/8.8 ppg brine wtr & POH. ND 10", 5000 psi BOP & NU
13-5/8", 5000 psi BOP. Instl'd tst plug & tstg BOPs.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

10/30- 11/1/82	15520	Day-6 PBD: 8063' - SD & WOO. Attempt to tst BOPs 3 times - no gd. RU Dialog & run 13-3/8" csg inspection log. Jt #107 - 22% wall remaining. RD Dialog. Set tst plug in csg bowl. Tstd BOPs - OK. RU Schl. Ran CBL/VDL/GR/CCL f/8061-5773' w/1M# on csg/lnr. PI 38 BSW during logging to maintain 1M#. RIH w/ 8-1/2" bit & csg scraper & CO to 8053'. Clsd pipe rams & press tst csg to 1M# - could pmp 1-1/2 BPM @ 1M#. Cont'd press up csg & record bleed-off rates. CO cellar & opn 13-5/8" x 20" ann valve - ann on vac. Chg out accum. TOH w/bit & scraper. MU 13-3/8" RTTS pkr & TIH, set dn solid @ 4358'. Wrk pkr & attempt to RIH thru tite spt - no gd. PU w/o drag & set dn same depth. Set pkr @ 4290'. Press ann to 1100# - held press OK. Attempt press up below pkr - pmp @ 1.8 BPM & 1100#. Bled off press & POH 25 stds. SI & SDON.
11/2/82	15520	Day-7 PBD: 8063' - Prep to RIH w/ 12-1/4" bit. FOH w/RTTS & found no marks on pkr. RIH w/ 12-1/4" bit & csg scraper; unable to pass 4358'. Rotated thru 2' (4360') & unable to go deeper. POH & found chipped teeth on gauge row. Scraper had 1 blade w/sml chip & crack. SWIFN.
11/3/82	15520	Day-8 PBD: 8063' - Prep to POH w/11" OD mill. RIH w/ 12-1/4" & tagged tite spt @ 4360'; unable to go deeper. POH. RIH w/11" OD gauge mill to TOL @ 5844' - OK. Circ btms up & filled hole w/35 bbls 8.8 ppg brine wtr. PU to 4240' & SWIN.
11/4/82	15520	Day-9 PBD: 8063' - Prep to PU BOT polishing mill. POH w/11" OD gauge tool & found no marks. SWIFN.
11/5/82	15520	Day-10 PBD: 8063' - Prep to FIH w/tst seal assy. RIH w/BOT polishing mill to TOL @ 5844', rotated thru tie-back sleeve w/o problems. POH & LD mill. RIH w/tst seal assy to 4360' & SWIFN.
11/6- 8/82	15520	Day-13 PBD: 8063' - Prep to run tie-back string. FIH w/tst seal assy & unsuccessfully attempted to tst tie-back sleeve twice. POH. RIH w/BOT polishing mill press tstg tbg string internally. Stung into sleeve & repolished w/indication of torque. POH. RIH again w/tst seal assy, tagged top of sleeve. Stung into tie-back sleeve & strtd press tst; press built to 500 psi, then strtd circ. Shipped tie-back stem to Vernal to machine 2 add'l ring grooves for extra O-rings & prep to run csg.
11/9/82	15520	Day-14 PBD: 8053' - Prep to fin rng 9-5/8" csg. Restrung blocks to 8 lines. RU csg crew. MU BOT seal assy. Run 9-5/8" csg to 3487'. SI & SDON.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

- 11/10/82 15520 Day-15 PBD: 8053' - Prep to set WH slips. Fin RIH w/9-5/8" tie-back string as folls: BOT seal assy, 1 jt 9-5/8", 40#, SS-95, LTC csg, BOT orifice clr, 134 jts 9-5/8", 40#, SS-95, LTC csg. Tag lnr & set dn w/30M#. RU HOWCO & circ hole. PU 6' & rot 1/2 rd. RIH & set dn 6' deeper w/30M#. Press up to 450# & hld 25 min. Rel press. PU 4-1/2 & circ hole. Mix & pmp 200 sx Cl "H" w/0.2% HR-8. Disp w/441.5 BW. Did not bmp plug. Lwr seal assy into tie-back slv. Lnd csg @ 5890' KB w/20M# on tie-back slv. Hang csg on csg crew slips.
- 11/11-12/82 15520 Day-17 PBD: 8053' - Prep to drill cmt. Released press & set csg slips w/120,000# wt. Cut-off 9-5/8" csg & 13-5/8" BOP's. RIH w/8-1/2" RR bit & csg scraper on 2-7/8" tbg, tagged TOC @ 5722'. Drld cmt & rubber wiper plug to 5833', circ hole cln & SWIFN.
- 11/13-15/82 15520 Day-20 PBD: 8053' - Prep to CO cmt. Drld out cmt 5833-5895'. TIH to 8053'. Circ hole cln. POH. Tst BOP. Perf 4 holes @ 90° rotation @ 7733'. RIH w/RTTS pkr. Pmp into perfs @ 2 BPM @ 2100 psi. Sqz'd w/100 sx Cl "H", 16.4 ppg, w/cmt @ perfs slowed rate to 1 BPM @ 700 psi. W/1 bbl cmt remaining in csg, press fell to 0. Waited 30 min & pmpd into perfs @ 2 BPM @ 1000 psi. Sqz not successful. Established inj rate @ 1-1/2 BPM @ 2600 psi. Sqz'd w/75 sx Cl "H" neat. Strtd pmpg cmt into perfs @ 1 BPM w/2300 psi. SD w/ 3-1/2 bbls cmt inside csg, pressure 0, could not establish sqz press. Sqz not successful. Mixed 75 sx Cl "H" neat. W/4 bbls cmt outside perfs strtd hesitation sqz. Sqz press established @ 2500 psi. Held f/15 min. Rel'd pkr. Rev out - no cmt. Reset pkr. Press tbg to 1000 psi.
- 11/16/82 15520 Day-21 PBD: 8053' - Fin CO cmt. CP 700#, TP 0#. Rel'd pkr. Press'd tbg & csg to 1500 psi f/15 min - held OK. POH w/pkr. RIH w/ 8-1/2" bit, csg scraper, 4 - DCs & 2-7/8" tbg. Drld out cmt 7685-7752'. (Sqz perfs @ 7733').
- 11/17/82 15520 Day-22 PBD: 8053' - Prep to PU tst tools. CO to PBD. POH. Perf 7975-7990'. RIH w/RTTS to 7942'. Acidized perfs w/600 gals 15% HCl acid. Avg trtg rate 3 BPM @ 350 psi. Well went on vac. Strt POH.
- 11/18/82 15520 Day-23 PBD: 8053' - Prep to attempt to open DST tools. Rel'd pkr. Well on vac. POH. PU Johnston SPRO DST tolls. RIH w/tools. RIH w/WL data tools. Attempt to set pkr (swivel not wrkg properly).
- 11/19/82 15520 Day-24 PBD: 8053' - Prep to PU new DST tools. Cont'd attempt to set pkr w/SPRO swivel on tbg. POH w/WL tools. RD SPRO surf equip. Attempt to set pkr - no gd. POH w/tbg & pkr. Pkr Mandrel jammed - could not repair. Rec'd new swivel. WO new pkr. SDON.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

11/20- 22/82	15520	Day-27 PBD: 8053' - Prep to sqz perfs 7975-7990'. PU new Johnston pkr & DST tools. RIH. Dn hole mech failure of Johnston DST tools. POH. RD & rel Johnston Tstrs & SPRO tools. PU Howco RTTS. RIH. Set pkr @ 7932'. Swbd 46 BL & 352 BFW in 10-1/2 hrs. No gas or oil. FL @ 500-800' ea run. Rel'd pkr & POH.
11/23/82	15520	Day-28 PBD: 8053' - Prep to drl up cmt retainer. PU Howco EZ-SV sqz cmt retainer on tbg. RIH. Retainer set prematurely @ 5669'. POH. PU 8-1/2" bit & 4 - 6" DCs. RIH w/tbg. Drld on retainer 5669-5670.5'. Lost returns f/1 hr. Gained returns. PU 1 std.
11/24/82	15520	Day-29 PBD: 8053' - Prep to RIH w/tbg stgr to sqz. Fin drlg cmt retainer. Pushed to 8053'. Ran Howco cmt retainer on WL. Set @ 7945'.
11/25- 29/82	15520	Day-34 PBD: 7682' - Prep to FOH. RIH w/EZSV stinger & estab'd inj rate @ 5 BPM w/1200 psi. Mixed & pmpd total 125 sx Cl "H" @ 16.1 ppg, & staged cmt into perfs w/700 psi final press. PU out of EZSV & rev circ out. POH. Perf'd 7915-7780' @ 4 SPF. RIH w/RTTS to 7930', sptd 10 bbls acid. PU & set RTTS @ 7744'. Filled annulus w/32 BSW (510' equiv). Estab'd inj rate @ 8 BPM w/2M psi & acidized perfs w/2772 gals 15% HCl. SWI f/2 hrs. RU & swbd well to pit rec'g total 468 BF; 8.3-8.4 ppg, 5M-8M ppm Cl, 5M ppm of max H ₂ S & 250M ppm CO ₂ . No hydrocarbons. RIH w/EZSV on tbg & set @ 7742'. Estab'd inj rate @ 5 BPM w/900 psi & sqz'd perfs w/100 sx Cl "H" neat. PU out of EZSV & dmpd 25 sx atop the EZSV. Displ'd hole w/8.9 ppg fresh wtr mud as per MMS & POH to 4500'. SWIFN.
11/30/82	15520	Day-35 PBD: 7682' - Prep to LD 9-5/8" csg. RIH & cut 9-5/8" csg @ 4332'. Circ hole w/8.9 ppg fresh wtr mud. RIH w/ 9-5/8" csg spear & pld csg free w/160M# pull. RIH & LD 2-7/8" wrk string.
12/1/82	15520	Day-36 PBD: 7682' - Prep to cont POH w/ 9-5/8" csg. RU Mtn States csg crew. Pld 200M# to move csg. POH & LD 55 jts 9-5/8" csg-tite conn's & cutting approx 1 of 4 jts w/torch. Make up spear on 1 jt DP. Caught csg & lwr thru stack. SI w/ann BOP & DP safety valve.
12/2/82	15520	Day-37 PBD: 7682' - Prep to spt cmt plug. FOH, LD 101 jts (total) cutting 25 conns w/torch. RIH w/ 2-7/8" tbg w/mule shoe to 4839' & LD excess tbg. SWIFN w/mule shoe @ 4419'.

MEADOW FEDERAL #1
SW NE Section 25-22S-7W
Millard County, Utah

12/3/82	15520	Day-38 PBD: Surf - Prep to fin RD rig. Set cmt plug f/4432-4232' (9-5/8" csg stub @ 4332') & 4200-4129'. Gearhardt perf'd 4 holes @ 2000-2001', sptd cmt f/2010-1810' (190 sx) & sqz'd 50 sx into perfs @ 1 BPM w/375 psi. POH LD 2-7/8" tbg to 218' & set surf plug f/218' to surf. ND BOP & strtd RD rig.
12/4- 6/82	15520	Day-39 - <u>FINAL REPORT - WELL P & A, 12/3/82.</u> P & A completed. RD & RR 12/3/82.

UNIT STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use for proposals to drill or to deepen or plug back to a different assignment Form 9-331-0 for such proposals.

CONFIDENTIAL

CONFIDENTIAL

1. Oil well gas well other

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. See space 17 below.)
AT SURFACE: 1860' FNL & 2140' FEL
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH: Approx the same

5. L. U-19521

6. IF INDIAN ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Unit Being Formed

8. FARM OR LEASE NAME

9. WELL NO.
Meadow Federal #1

10. FIELD OR WILDCAT NAME
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
25-22S-7W

12. COUNTY OR PARISH Millard 13. STATE Utah

14. API NO.
43-027-30028

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4823' GR

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF	<input type="checkbox"/>	<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>	<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>	<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>	<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>	<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>	<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>	<input type="checkbox"/>
ABANDON*	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(other)		

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

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.)*

Set retainer @ 7945. Squeezed perfs 7975'-7990' with 75 sx neat cement followed by 50 sx Class "H" with 0.4% Halad-9 (yield 1.06 cu.ft./sx) total 23½ bbls slurry, wt 16.1#/gal. Perf'd 7915'-7780' w/4 holes/ft. Acidized and swabbed. Set retainer @ 7742'. Squeezed perfs 7915'-7780' with 100 sx Class "H" neat cement below retainer. Mixed cement @ 16.4 ppg 1.06 cu.ft./sx yield. Unsting from retainer and spotted 25 sx cement (as above) on top of retainer. Reversed out ± 1 bbl cmt. RIH with tubing to 7676'. Pumped 50 bbls fresh water flush, displaced hole w/8.9 ppg fresh water mud from 7676' to surface. RU casing cutter and cut 9-5/8" casing @ 4332'. Displaced salt water in 9-5/8" x 13-3/8" with 8.9# fresh water mud. Caught casing and casing came free. Laid down 101 jts 9-5/8" casing. Spotted 200' cement plug f/4432'-4232' (100' in and 100' out of 9-5/8" stub) with 107 sx Class "G" cement + 2% CaCl2, yield 1.18 c ft./sx + 15.8#/gal. Spotted 50 more sx Class "G" + 2% CaCl2 from 4200'-4129'. Perf'd 4 holes @ 2000'-2001'. Spotted cement plug from 2010'-1810'

(OVER)
Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED W. A. Walther, Jr. TITLE Acting District Manager DATE 12-14-82
 W. A. Walther, Jr. Manager
 (This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

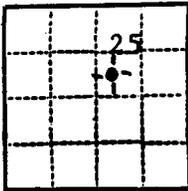
**APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING**
 DATE: 12/14/82
 BY: [Signature]

*See Instructions on Reverse Side

with 190 sx Class "G" cement. Squeezed 50' sx into perfs. PU 13-3/8" top rubber plug with slotted fins and pushed in hole to 218' with tubing. Spotted cement plug from 218' to surface with 150 sx Class "G" cement + 2% CaCl₂. Released rig 12-4-82.

12-4-82
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43-027-30028



**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION**

Sec. 25
T. 22S
R. 7W
SLB& Mer.

INDIVIDUAL WELL RECORD

PUBLIC LAND: _____ **Date:** December 27, 1982 **Ref. No.** _____

Land office Utah **State** Utah
Serial No. 19521 **County** Millard
ARCO, Pan Canadian Petro,
Lessee Columbia Gas, et al **Field** Unnamed (Black Rock Unit)
Operator ARCO Oil & Gas Co. **District** Salt Lake City
Well No. Meadow #1 **Subdivision** SW NE

Location 1860' ENL & 2140' EEL

Drilling approved March 23, 19 82 **Well elevation** 4823' GR, 4861' KB feet

Drilling commenced April 23, 19 82 **Total depth** _____ feet

Drilling ceased September 27, 19 82 **Initial production** _____
Oral to Abandon

Completed for production Nov. 26, 19 82 **Gravity A. P. I.** _____

Abandonment approved _____, 19 _____ **Initial R. P.** _____

Geologic Formations		Productive Horizons		
Surface	Lowest tested	Name	Depths	Contents

WELL STATUS

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.

REMARKS _____

FOR U.S. GOVERNMENT USE ONLY

EWL