

UTAH OIL AND GAS CONSERVATION COMMISSION

REMARKS: WELL LOG \_\_\_\_\_ ELECTRIC LOGS \_\_\_\_\_ FILE **X** WATER SANDS \_\_\_\_\_ LOCATION INSPECTED \_\_\_\_\_ SUB. REPORT/abd. \_\_\_\_\_

DATE FILED **8-3-90**

LAND: FEE & PATENTED \_\_\_\_\_ STATE LEASE NO. **ML-29282** PUBLIC LEASE NO. \_\_\_\_\_ INDIAN \_\_\_\_\_

DRILLING APPROVED: **8-27-90 (CAUSE 13-6(1))**

SPUDDED IN: \_\_\_\_\_

COMPLETED: **12-16-91 LA** PUT TO PRODUCING: \_\_\_\_\_

INITIAL PRODUCTION: \_\_\_\_\_

GRAVITY A.P.I. \_\_\_\_\_

GOR. \_\_\_\_\_

PRODUCING ZONES: \_\_\_\_\_

TOTAL DEPTH: \_\_\_\_\_

WELL ELEVATION: **LA'D 12-16-91 APD EXPIRED**

DATE ABANDONED: \_\_\_\_\_

FIELD: **BAR-X**

UNIT: \_\_\_\_\_

COUNTY: **GRAND**

WELL NO. **JO REVA #1** API NO. **43-019-31305**

LOCATION **1685' FSL** FT. FROM (N) (S) LINE. **393' FWL** FT. FROM (E) (W) LINE. **NW SW** 1/4 - 1/4 SEC. **16**

TWP.	RGE.	SEC.	OPERATOR	TWP.	RGE.	SEC.	OPERATOR
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<b>17S</b>	<b>25E</b>	<b>16</b>	<b>BURTON W. HANCOCK</b>				
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# Burton W. Hancock

402 Petroleum Building  
Billings, Montana 59101

RECEIVED  
AUG 03 1990

DIVISION OF  
OIL, GAS & MINING

August 1, 1990

State of Utah  
Division of Oil, Gas & Mining  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-1203

Attention: Ron Firth, Associate Director  
Division of Oil, Gas & Mining

Dear Ron:

Enclosed for your approval is an APD for Burton W. Hancock's Jo Reva No. 1 well (in triplicate). We hope to drill this well in early September, so your expedient approval is appreciated.

Should you have any questions or comments, please feel free to call.

Yours very truly,



James G. Routson

JGR/jlw  
Enclosures

cc: Joe Dyk  
Burton W. Hancock

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK  
 DRILL                       DEEPEN                       PLUG BACK

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

2. NAME OF OPERATOR  
 Burton W. Hancock

3. ADDRESS OF OPERATOR  
 P.O. Box 989, Billings, MT 59103

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*)  
 At surface  
 393' FWL, 1685' FSL  
 At proposed prod. zone  
 Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
 16 miles northwest of Mack, Colorado

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)  
 Drlg. unit: 392'  
 Lse line: 392'

18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.  
 3178'

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
 5500' GR, 5510' KB

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
8-3/4"	7"	17#, H40, STC	300'	140 sx 'G'
6 1/4"	4 1/2"	10.5#, J55, STC	3895'	175 sx 10-0 RFC

SEE ATTACHMENTS

TECHNICAL REVIEW  
 Engr. *[Signature]*  
 Geol. *[Signature]* 8/29/90  
 Surface *[Signature]* MIKE LANE

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 James G. Routson TITLE Petroleum Engineer DATE August 1, 1990  
 (This space for Federal or State office use)

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

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

\*See Instructions On Reverse Side

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK  
 DRILL       DEEPEN       PLUG BACK

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

2. NAME OF OPERATOR  
 Burton W. Hancock

3. ADDRESS OF OPERATOR  
 P.O. Box 989, Billings, MT 59103

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*)  
 At surface  
 393' FWL, 1685' FSL  
 At proposed prod. zone  
 Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
 16 miles northwest of Mack, Colorado

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)  
 Drlg. unit: 392'  
 Lse line: 392'

16. NO. OF ACRES IN LEASE  
 640 acres

17. NO. OF ACRES ASSIGNED TO THIS WELL  
 160 acres

18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.  
 3178'

19. PROPOSED DEPTH  
 3895' (Morrison)

20. ROTARY OR CABLE TOOLS  
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
 5500' GR, 5510' KB

22. APPROX. DATE WORK WILL START\*  
 September 1, 1990

5. LEASE DESIGNATION AND SERIAL NO.  
 ML-29282

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

7. UNIT AGREEMENT NAME  
 None

8. FARM OR LEASE NAME  
 State

9. WELL NO.  
 Jo Reva No. 1

10. FIELD AND POOL, OR WILDCAT  
 Bar-X 160

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA  
 NW 1/4 SW 1/4 Sec. 16-T17S-R25E

12. COUNTY OR PARISH  
 Grand

13. STATE  
 UT

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
8-3/4"	7"	17#, H40, STC	300'	140 sx 'G'
6 1/4"	4 1/2"	10.5#, J55, STC	3895'	175 sx 10-0 RFC

SEE ATTACHMENTS

OIL AND GAS	
DTN	4 RJF
2 JFB	GLH
DIS	SLS
1-TAS	
3-TAS	
5-TAS	
6	MICROFILM
7	FILE

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 James P. Routson TITLE Petroleum Engineer DATE August 1, 1990  
 (This space for Federal or State office use)

PERMIT NO. 43-019-31305 APPROVAL DATE APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_

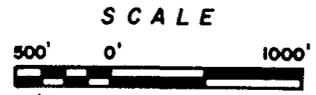
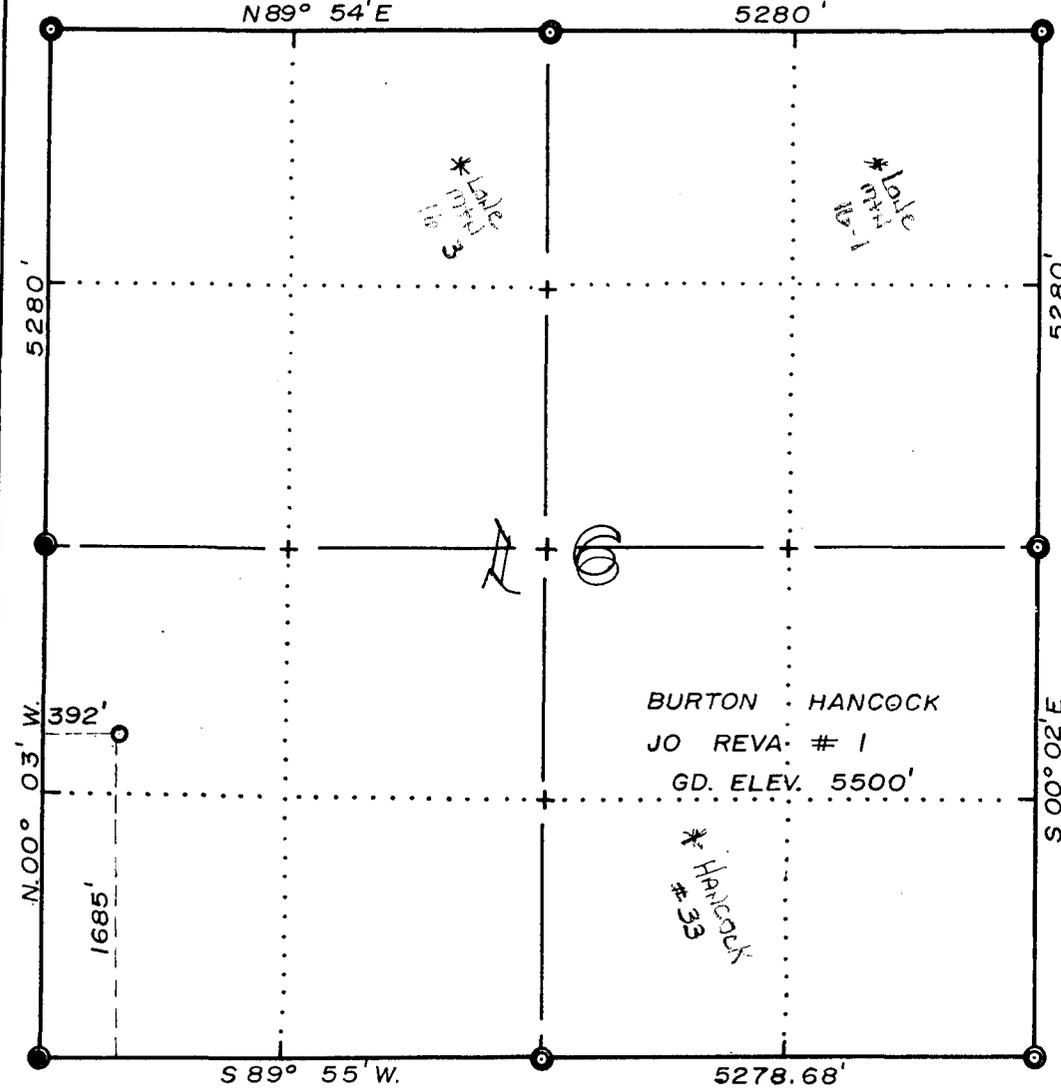
CONDITIONS OF APPROVAL, IF ANY:

DATE: 8-27-90  
 BY: John R. Day  
 WELL SPACING: 13-6(1) 9-20-80

\*See Instructions On Reverse Side

SEC. 16, T. 17S., R. 25E. OF THE S.L.M.

PLAT # 1  
LOCATION PLAT



- LEGEND -

- ⊙ STANDARD LOCATION OF GLO SECTION CORNERS.
- GLO CORNERS FOUND.
- WELL LOCATION STAKED.

REFERENCE DOCUMENTS

- 1927 GLO PLAT
- BRYSON CANYON, UT QUADRANGLE, U.S.G.S.

THIS WELL LOCATION PLAT WAS PREPARED FOR: BURTON HANCOCK  
 TO LOCATE THE JO - REVA # 1, 1685' F.S. L. & 392' F.W. L. IN THE NW 1/4 SW 1/4, OF SECTION 16, T. 17S., R. 25E. OF THE S.L.M. GRAND COUNTY, UTAH

SURVEYOR'S CERTIFICATE

I, Larry D. Becker: a Registered Land Surveyor In The State Of UTAH Do Hereby Certify That This Survey Was Made Under My Direct Supervision, and That This Plat Represents Said Survey,

*Larry D. Becker*  
 UTAH LS # 4189

SURVEYED	7/90	ENERGY SURVEYS CORPORATION	381 PIKES PEAK DRIVE GRAND JUNCTION, CO. 81503 (303) 245-7221	SCALE: 1" = 1000'
DRAWN	7/90			JOB NO.
CHECKED	7/90			SHEET OF.

## SURFACE USE PLAN

Burton W. Hancock  
Jo Reva No. 1  
NWSW Section 10-T17S-R25E  
Grand County, Utah

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### 1. EXISTING ROADS

See maps #1 and #2 and Plat #1. This proposed well is located approximately 16 air miles northwest of Mack, Colorado. It is reached by going west of Mack on Old Highway 6&50 8.8 miles to 2 road. Turn right and go 4.1 miles to the state line fence. Continue northwesterly up 2 road 5.5 miles. Turn left and go 1.3 miles. Turn left and go southwest 0.9 miles to the beginning of the new road. All of the existing roads used for access are county roads. The existing roads are colored green on the reference map.

### 2. ACCESS ROADS TO BE CONSTRUCTED

The proposed 0.2 miles of access road will be constructed with an 18 foot travel width. See Map #1 and Plat #2.

### 3. LOCATION OF EXISTING WELLS

7 producing wells, 2 abandoned wells, 2 dryholes are within one mile radius. See Map #3.

### 4. LOCATION OF PRODUCTION FACILITIES

All production facilities will be on the pad. Everything will be painted nonreflective dark green.

### 5. LOCATION AND TYPE OF WATER SUPPLY

The source of water for this well is West Salt Creek. The pickup point is on Old Highway 6 & 50 out 2.5 miles west of Mack, Colorado.

### 6. SOURCE OF CONSTRUCTION MATERIALS

No construction materials will be used other than native materials. Soil from cuts will be used in fills. No outside material will be brought in.

### 7. METHODS FOR HANDLING WASTE MATERIAL

Cuttings will be buried in the reserve pit at cleanup. Garbage and other waste material will be contained in a trash cage. This cage will be dumped at an approved sanitary

landfill. Human waste will be contained in chemically treated sanitary holes.

Drilling fluids will be contained in the reserve pit and left to evaporate. Any fluids produced during testing operations will be collected in a test tank. If a test tank is not available, the fluids will be contained in the reserve pit. Any spills of oil, gas, saltwater, or noxious fluid will be cleaned up and removed.

If the well is productive, produced water will be disposed of on site for 30 days only or 90 days with the permission of the State Petroleum Engineer. After that time application will be made for approval of permanent disposal method in compliance with the rules and regulations of the State of Utah.

#### 8. ANCILLARY FACILITIES

No ancillary facilities are planned.

#### 9. WELLSITE LAYOUT

See Plat #2 - Pit and Pad Layout  
See Plat #3 - Cross Sections of Pit and Pad  
See Plat #4 - Rig Layout

The location will be constructed large enough to accommodate the drilling rig and associated equipment with allowance made for future completion and production equipment.

Topsoil will be stripped to a depth of 6 - 8 inches and stockpiled on the south edges of the location. No topsoil stripping will be done when soils are moisture saturated to a depth of 3 inches, or frozen below the stripping depth.

The reserve pit will be fenced on three sides prior to drilling activity and closed off on the fourth side after drilling is finished. Fencing will be four strands of barb wire or 48 inch woven wire with one strand of barb wire above the woven wire. All corners will be braced. The fence construction will be on cut or undisturbed surface. The backslope of the location will not exceed 1/2:1.

All construction activities will be confined to the minimum area necessary. The exterior boundaries of the construction area will be clearly flagged prior to any surface disturbing activities or vegetation removal.

Burton W. Hancock will clear all brush prior to construction. Brush will be stockpiled on the south edge of the location and will be kept separate from the soil stockpiles. The brush will be used for mulch after the disturbed area has been seeded.

## 10. PLANS FOR RECLAMATION OF THE SURFACE

A biodegradable mulch may be required if soil erosion or vegetation establishment is determined to be a problem by the authorized officer on the access or location reclamation.

All disturbed areas will be seeded with the approved seed mixture. Application rates are for pure, live seed (PLS). Seed tags will be submitted to the area manager within 30 days of seeding.

Burton W. Hancock will prepare seedbed by contour cultivating 4 - 6 inches deep and drilling seed  $\frac{1}{2}$  to 1 inch deep following the contour. In areas that cannot be drilled, seed will be broadcast at 1.5 times the application rate and covered  $\frac{1}{2}$  to 1 inch deep with a harrow or drag bar.

Seeding will be completed after August 15/September 1 and prior to October 1 of the fall of 1990, if feasible, but not later than the fall of 1991.

If the well is a producer:

Burton W. Hancock will upgrade and maintain access roads as necessary to prevent soil erosion and accomodate year-round traffic. Burton W. Hancock will reshape areas unnecessary to operation, rip or disk on the contour, and seed all disturbed areas outside the work area according to the above seed mixture. The top soil will be saved for use during final reclamation unless the site can be recontoured to blend with the natural topography as required for final abandonment. Perennial vegetation will be established. Additional work will be required in case of seeding failures. All permanent facilities placed on the location will be painted dark green to blend with the natural environment.

If the well is abandoned/dryhole:

Burton W. Hancock will restore the access road and location to blend with the natural topography. During reclamation of the site, fill material will be pushed into cuts and up over the backslope. No depressions will be left that could trap water or form ponds. Topsoil will be distributed evenly over the location and seeding according to the above seed mixture. The access road and location will be ripped or disked prior to seeding.

The area is considered to be satisfactorily reclaimed when:

- A) Soil erosion resulting from the operation has been stabilized.

- B) A vegetative cover at least equal to that present prior to disturbance and a plant species composition at least as desirable as that present prior to disturbance has been established. Establishment of seeded species in the approved seed formula will be considered as acceptance.

Additional work will be required until these conditions are satisfied.

11. SURFACE OWNERSHIP

The surface is owned by McIntyre Livestock Corporation. Hancock will secure an agreement with McIntyre prior to beginning of construction.

12. OTHER INFORMATION

The vegetation includes sagebrush, greasewood, shadscale, juniper, prickly pear cactus, cheatgrass, Indian rice grass, and Colorado wild rye.

13. LESSEE'S OR OPERATOR'S REPRESENTATIVES AND CERTIFICATION

James G. Routson  
Consulting Petroleum Engineer  
P.O. Box 3394  
Billings, MT 59103  
Office Phone: 406-245-5077  
Home Phone: 406-245-8797

Joe Dyk  
Consulting Petroleum Engineer  
777 Valley Court  
Grand Junction, CO 81505  
Office Phone: 303-243-5906  
Home Phone: 303-245-7907

I hereby certify that I, or persons under my supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Burton W. Hancock and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Aug 1, 1990  
Date

James G. Routson  
James G. Routson

## WELL CONTROL PLAN

1. Surface casing: 7" O.D., 20.0# or 23.0#, used, STC (to meet new pipe specifications for bodywall thickness on 7 inch, 17.0 lb/ft, H-40 casing) set at 300' and cemented back to surface with 140 sx Standard cement + 2% CaCl<sub>2</sub> (yield = 1.15 ft<sup>3</sup>/sk; compressive strength = 650 psi in 6 hours.
2. Casinghead Flange: 7" x 4½" 600 series casinghead with two 2", 2000 psi L.P. outlets.
3. Blowout Preventer: The rig is equipped with a 10" 3000 psi W.P. double gate hydraulic Shaffer BOP (or equivalent) with drill pipe rams and blind rams to meet requirements for a 2000 psi stack in Onshore Order No. 2. All fill, kill and choke lines will be a minimum of 2" 2000 psi W.P. A Grant rotating head will be used while air and mist drilling. A new rubber will be installed before drilling through the Dakota. BOP's will be worked daily. Blind rams will be checked during trips. BOP's will be tested to 2000 psi but not more than 70% of casing burst pressure prior to drilling the shoe joint on intermediate casing.
4. Auxiliary Equipment: (a) Drill pipe floats will be allowed at contractor's discretion. (b) Visual monitoring of air returns will be maintained. (c) Upper kelly cock will be used. (d) Stabbing valve will be kept on the floor.
5. Anticipated bottom hole pressure is less than 900 psi at 3895' or 0.23 psi/ft. No abnormal temperatures or hydrogen sulfide gas are anticipated.

Burton W. Hancock

By James G. Routson  
James G. Routson  
Petroleum Engineer

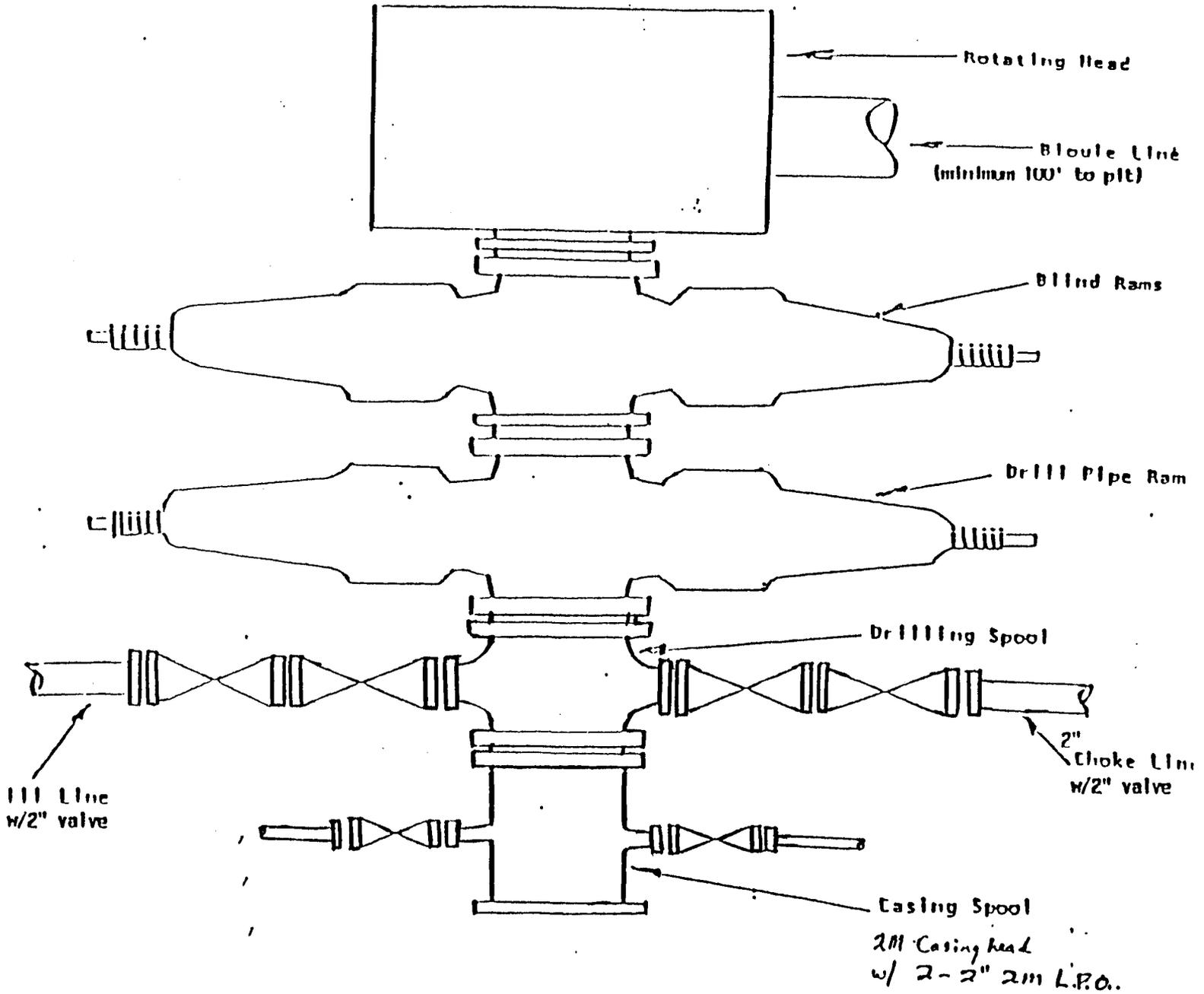
Application for Permit to Drill  
Jo Reva No. 1  
NWSW Section 16-T17S-R25E  
Grand County, Utah

- 
1. The surface formation is the Mancos.
  2. Anticipated geologic markers are: Dakota Silt 3493', Dakota Sand 3568', Morrison 3717'.
  3. Gas is anticipated in the Dakota and Morrison. No oil or other minerals are anticipated. No water sands are expected.
  4. Proposed casing program: See item no. 23.
  5. Pressure control equipment: See attached well control plan and schematic of Drilling Contractor's BOP stack. BOP's will be tested before drilling out from under surface casing and checked daily.
  6. The well will be air drilled from under surface casing to total depth.
  7. Auxiliary equipment: See Well Control Plan.
  8. The logging program will consist of a DIL log from total depth to base of surface casing and GR-FDC-CNL logs from total depth to above the Frontier. No cores of drill stem tests are planned.
  9. No abnormal pressures or temperatures are anticipated. No poisonous gas is anticipated.
  10. Anticipated spud date is September 1, 1990. Completion operations should commence within 30 days of rig release.
  11. Survey plats are attached.
  12. The gas is not dedicated.
  13. The completion program will be designed after the logs have been evaluated.
  14. This is under Lease #ML29282. Burton W. Hancock's Bond No. CA7107844.

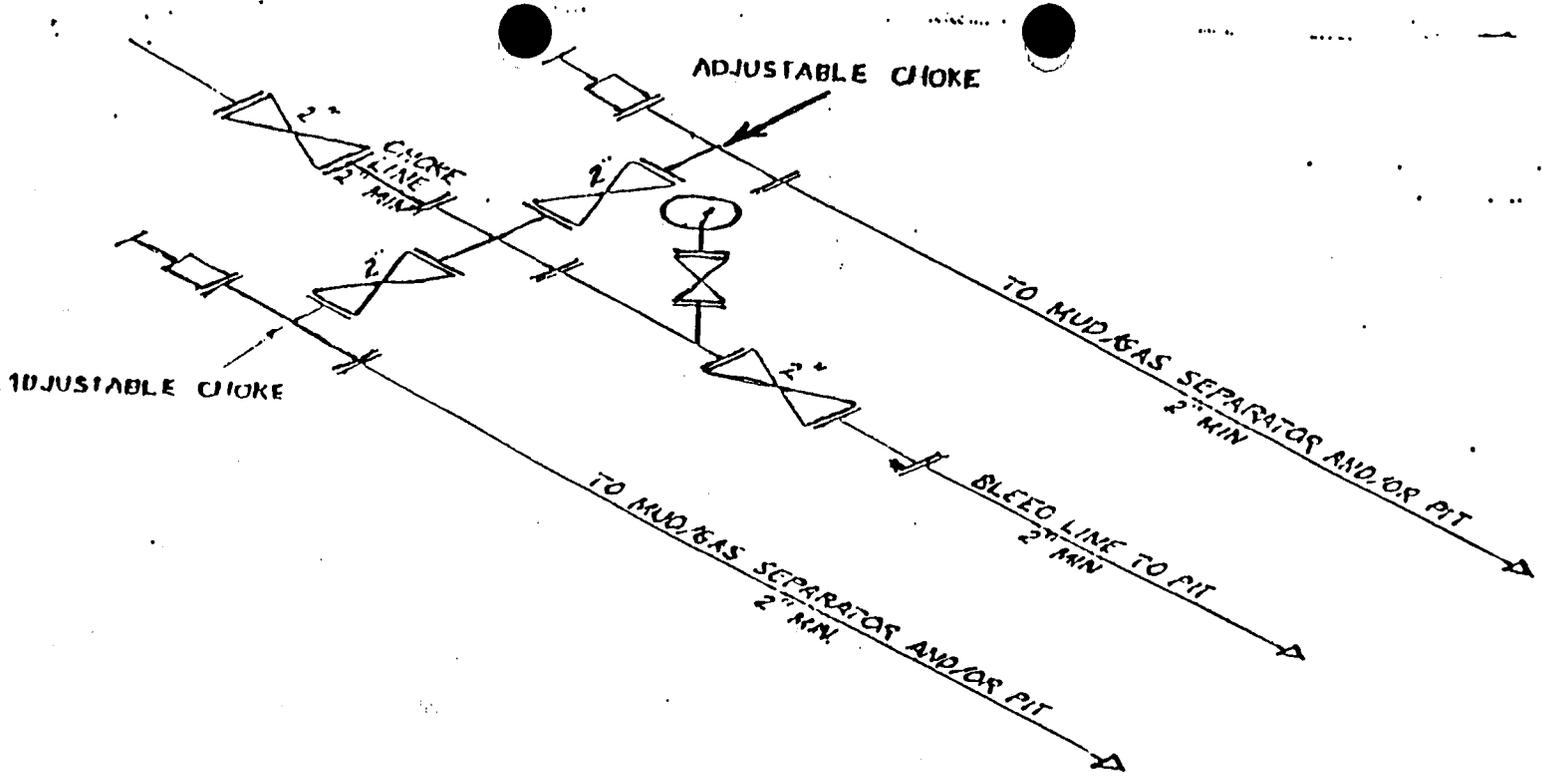
SCHEMATIC OF BOP STACK

Air drilled wells using 900 Series wellhead equipment to meet 2000 psi stack requirement.

Interval from 300' to total depth.

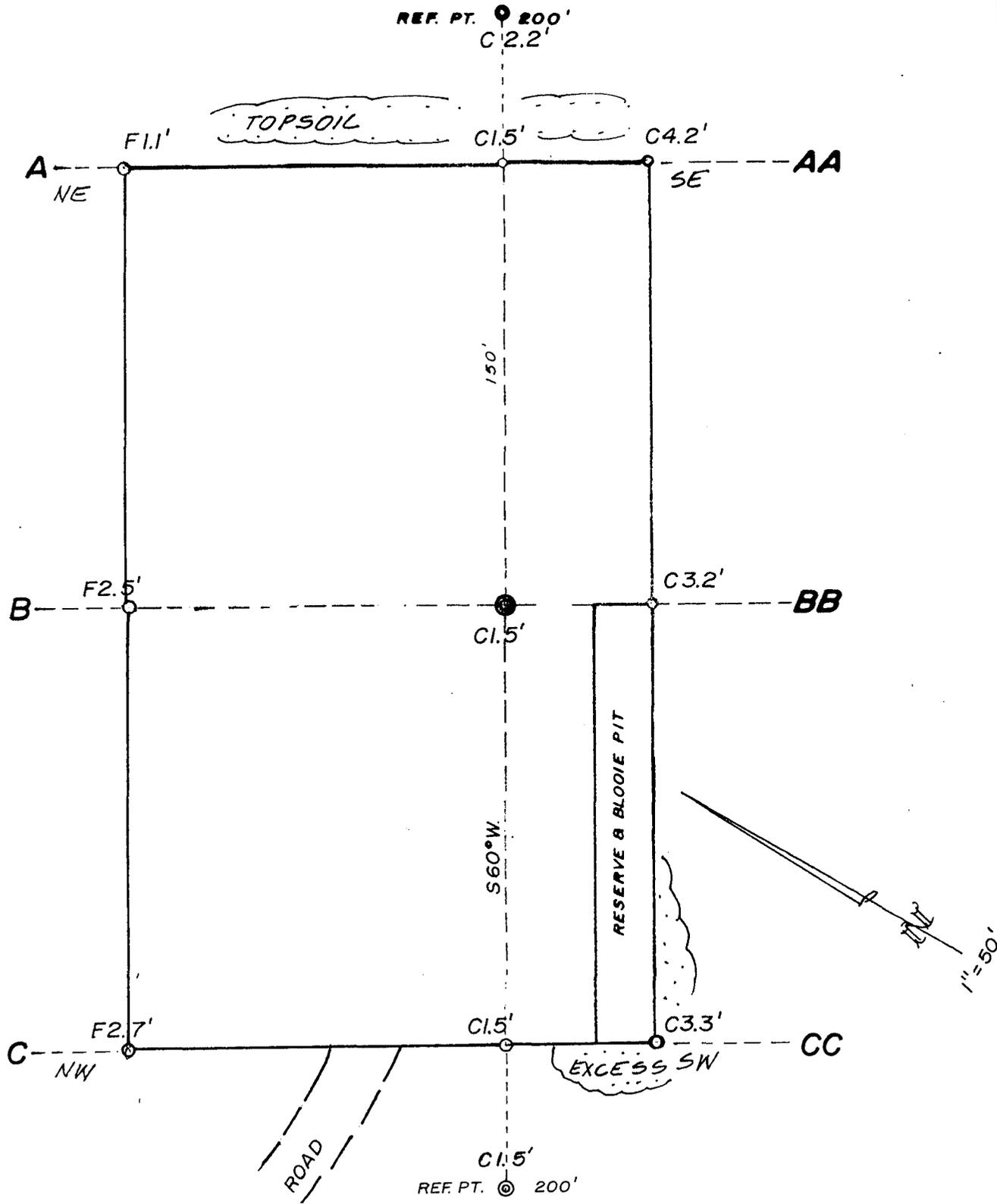


\*



2M CHOKER MANIFOLD EQUIPMENT — CONFIGURATION MAY VARY

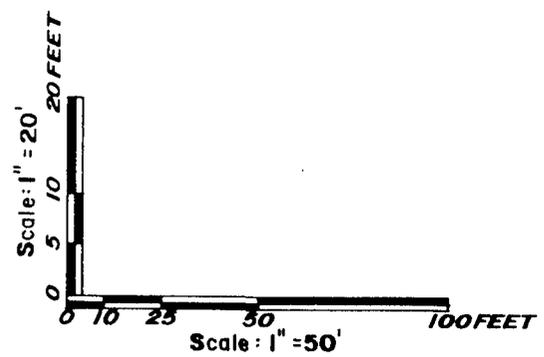
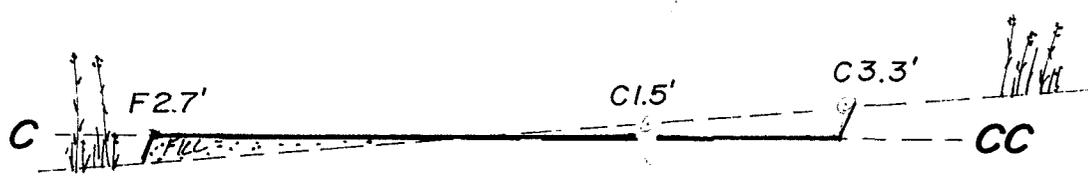
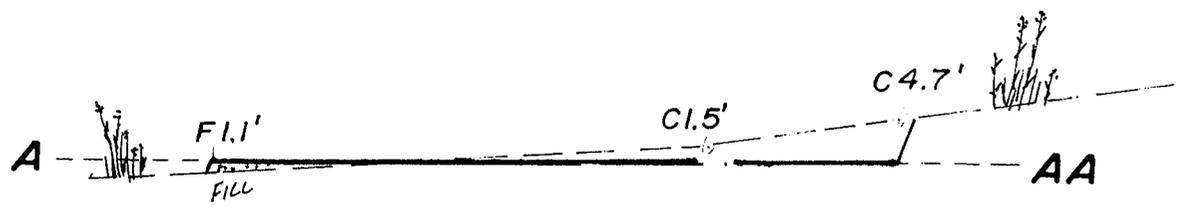
**PLAT NO. 2  
PIT & PAD LAYOUT**



ESTIMATED DIRT QUANTITIES				
ITEM	CUT	FILL	TOPSOIL	EXCESS
PAD	2600	1000	1000	
PIT	700			
				1300

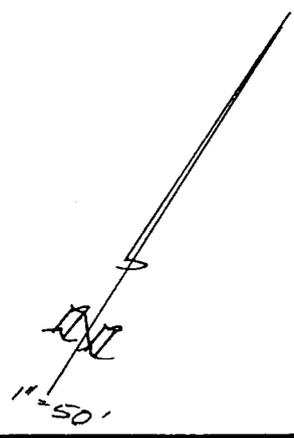
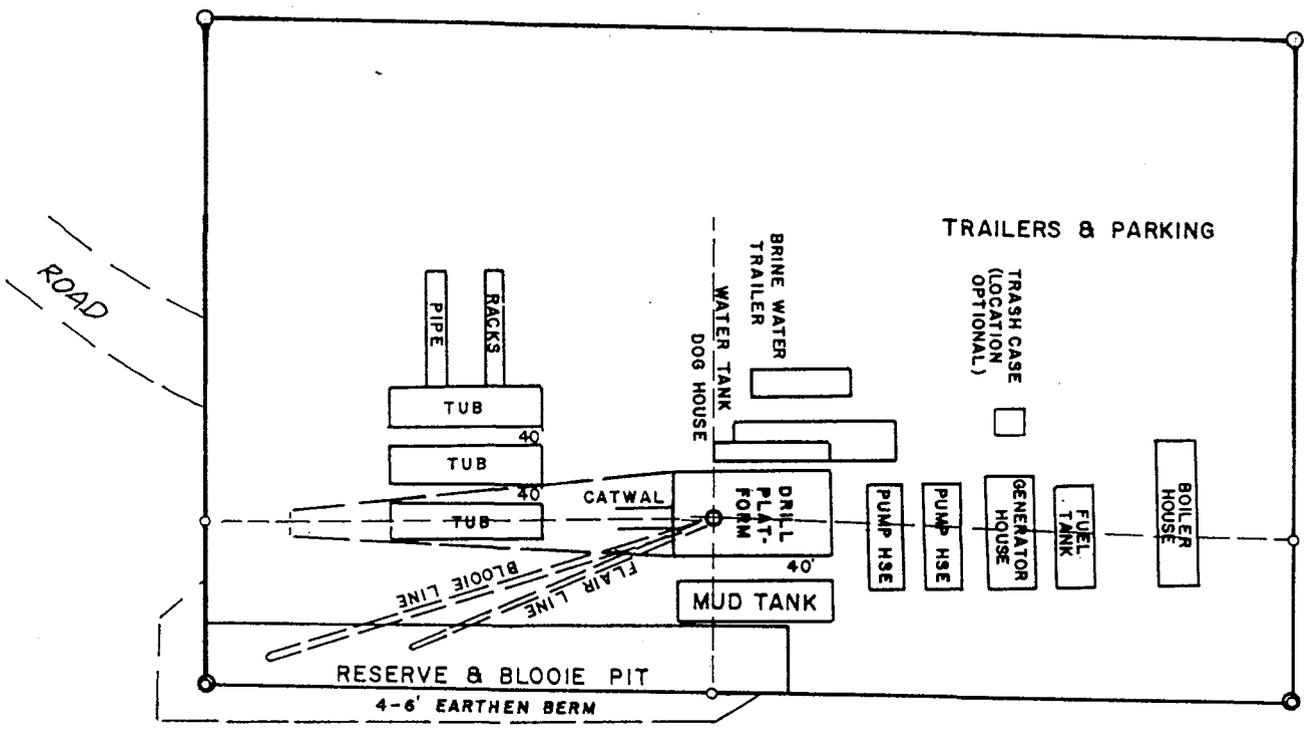
**JO REVA # 1  
PIT & PAD LAYOUT**

**PLAT NO. 3**  
**CROSS SECTIONS OF PIT & PAD**

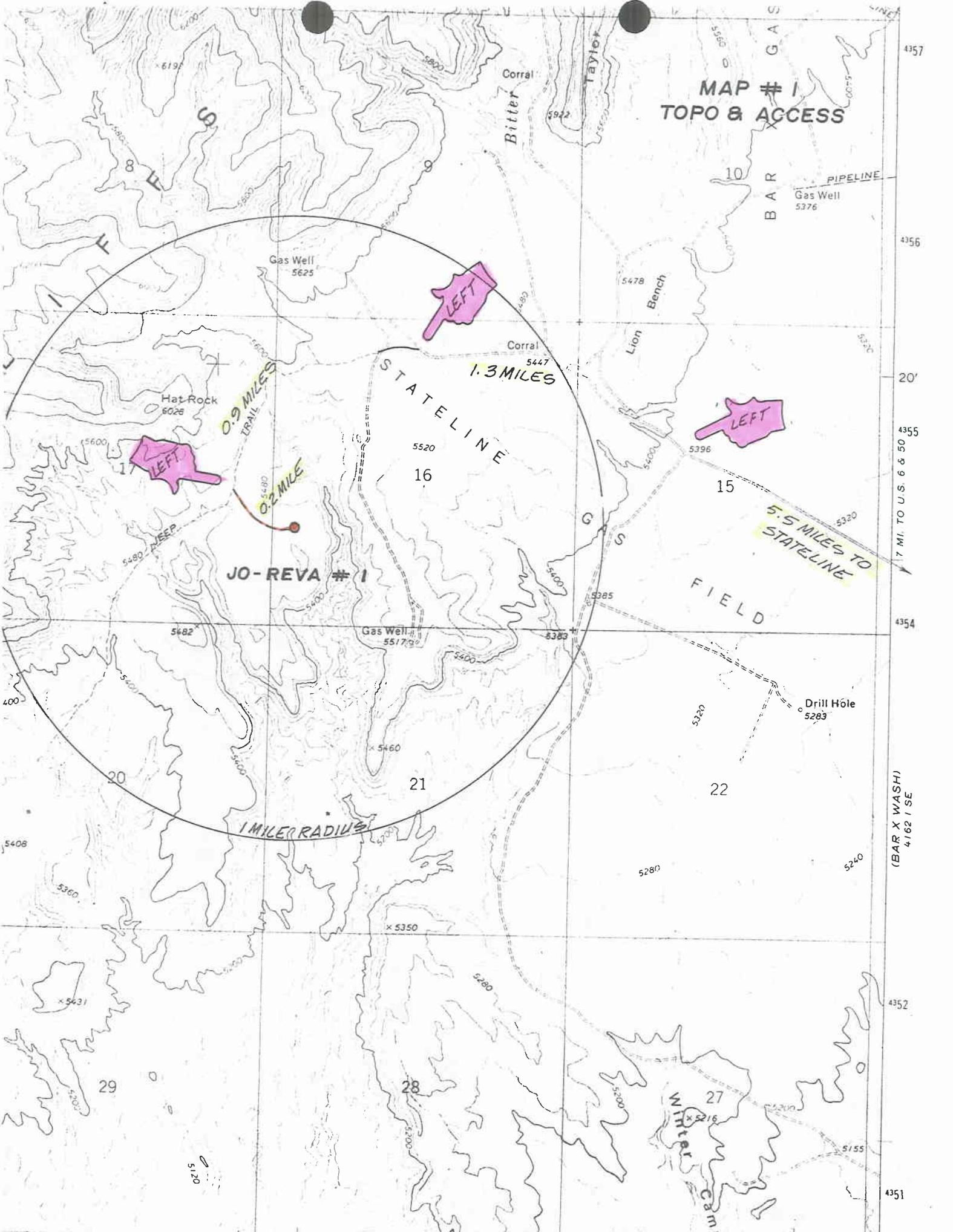


JO REVA #1  
 BURTON HANCOCK LOCATION

SURVEYED	7/90		ENERGY SURVEYS & ENGINEERING CORP.
DRAWN	7/90		
CHECKED	7/90		



# MAP # 1 TOPO & ACCESS



(BAR X WASH)  
4162 I SE

4351

MAR NO. 2

VICINITY MAP

GARFIELD MESA

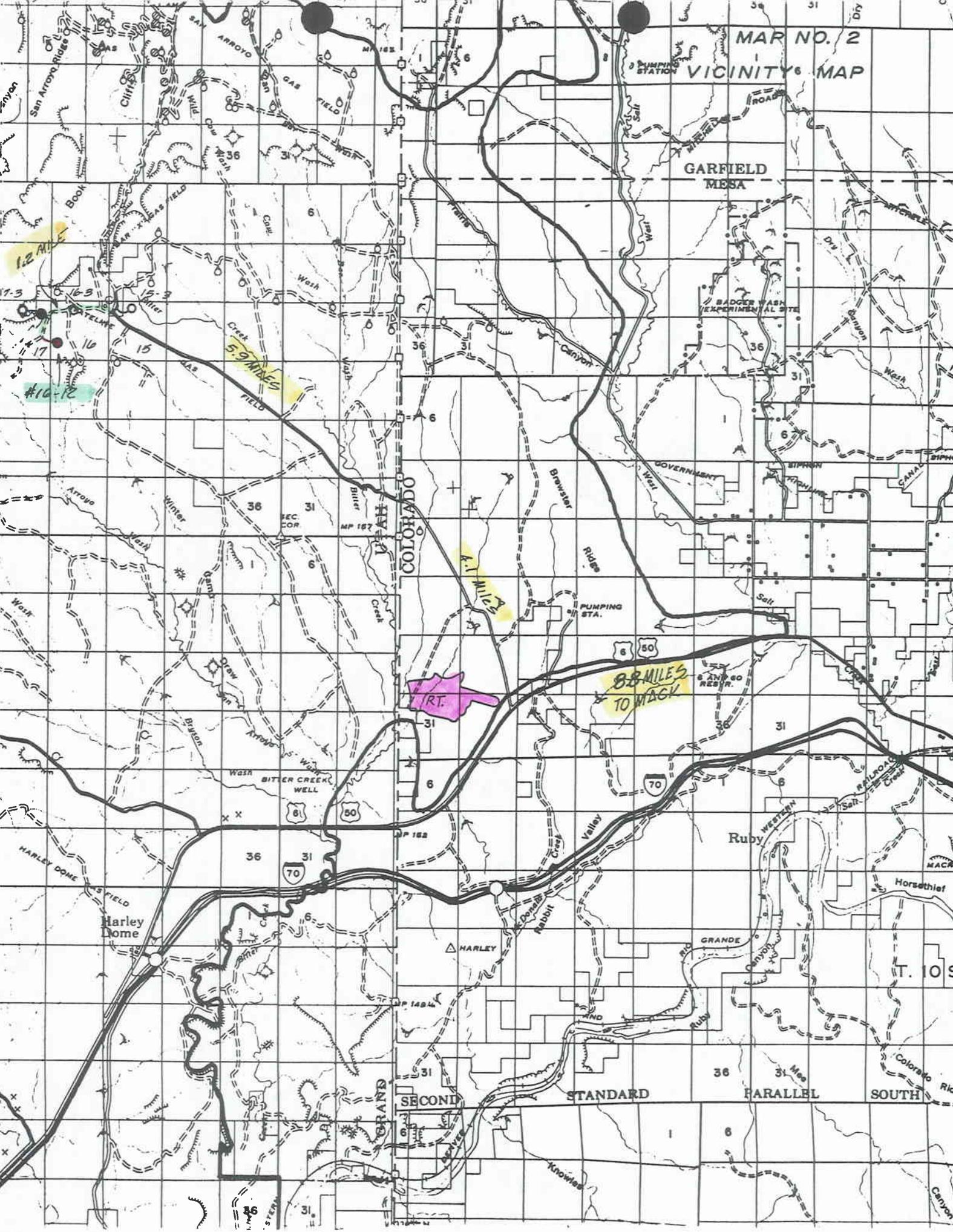
COLORADO

GRAND SECOND

STANDARD

PARALLEL

SOUTH



1.2 MILE

#10-12

5.9 MILES

1.1 MILE

8.8 MILES TO WAGY

IRT.

Harley Dome

Ruby

T. 10 S

GRANDE

Knowles

Canyon

6 50

70

36 31

31

36

31

31

17-3

16-3

15-3

10

15

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PUMPING STATION

SADDER WASH EXPERIMENTAL SITE

PUMPING STA.

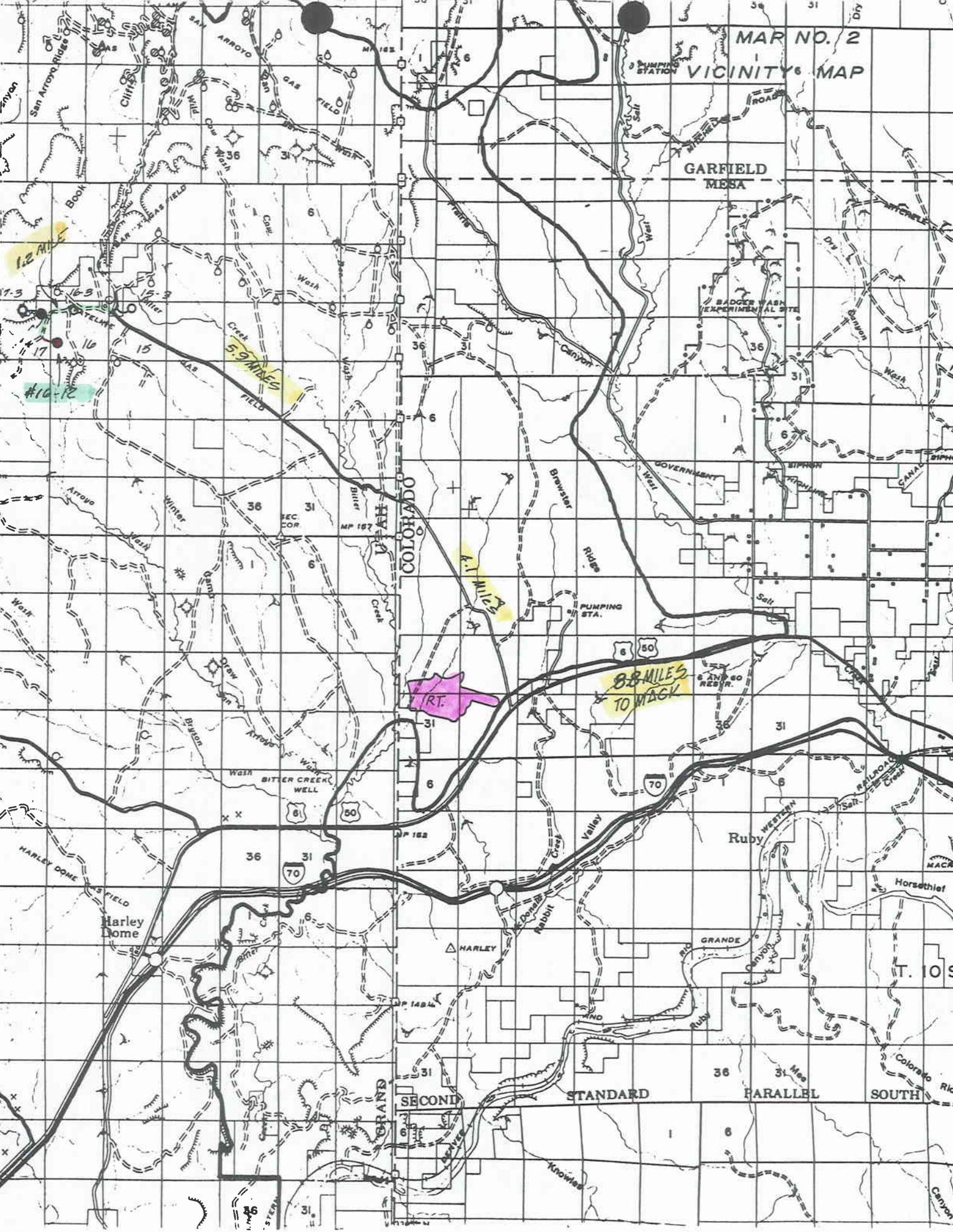
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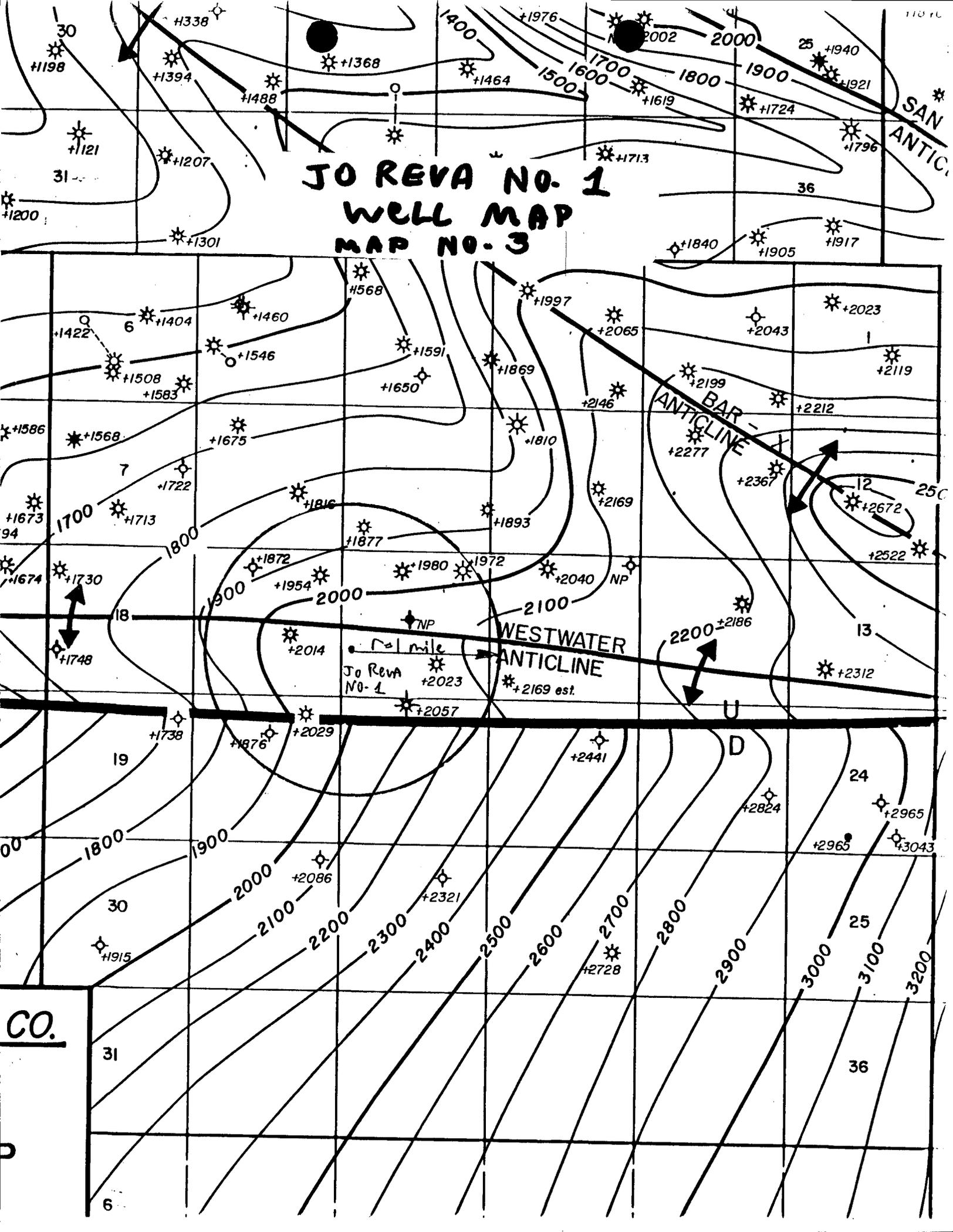
MP 167

MP 162

MP 148 1/4



# JO REVA NO. 1 WELL MAP MAP NO. 3



CO.

BEFORE THE BOARD OF OIL, GAS AND MINING  
DEPARTMENT OF NATURAL RESOURCES  
IN AND FOR THE STATE OF UTAH

IN THE MATTER OF THE PETITION * OF LONE MOUNTAIN PRODUCTION * COMPANY, TXO PRODUCTION * CORPORATION, AND BURTON W. * HANCOCK FOR AN ORDER MODIFYING * PREVIOUS SPACING ORDERS TO * ALLOW INFILL DRILLING UPON * ESTABLISHED DRILLING UNITS * AND ESTABLISHING OTHER * DRILLING/SPACING UNITS FOR THE * DAKOTA AND MORRISON FORMATIONS * UNDERLYING CERTAIN ENUMERATED * LANDS IN GRAND COUNTY, UTAH *	FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER  Docket No. 86-009 Cause No. 13-6
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Pursuant to the Petition of Lone Mountain Production Corporation, TXO Production Corporation, and Burton W. Hancock, this cause initially was heard before the Board of Oil, Gas and Mining, Department of Natural Resources, State of Utah, on Friday, May 9, 1986, at 10:30 a.m. in the Board Room of the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 301, Salt Lake City, Utah. The following Board members were present:

- Gregory P. Williams, Chairman
- James W. Carter
- John M. Garr
- Charles R. Henderson
- Richard B. Larsen
- Judy F. Lever
- E. Steele McIntyre

The Board was represented by Mark C. Moench, Esq.,  
Assistant Attorney General for the State of Utah.

Appearances for the Division Of Oil, Gas & Mining were  
made by:

Dr. Dianne Nielson, Director  
Division of Oil, Gas & Mining

Ronald J. Firth, Associate  
Director, Oil & Gas

John R. Baza, Petroleum Engineer

The Division was represented by Barbara W. Roberts,  
Assistant Attorney General for the State of Utah.

The Petitioners were represented by John A. Harja of  
Hugh C. Garner & Associates, 310 South Main Street, Suite 1400,  
Salt Lake City, Utah 84101.

Testimony was given by:

A. John Davis, Attorney at Law, for Petitioners  
James G. Routson, Geologist, for Petitioners

Mr. Assad M. Raffoul, Petroleum Engineer with the Salt  
Lake City Office of the Bureau of Land Management was present and  
gave a presentation and statement for the record.

Statements were made for the record in this matter at  
the regularly scheduled Board hearings on May 22, June 26 and  
July 31, 1986. Petitioners filed an Amended Petition on August  
5, 1986, which requested relief essentially based upon the  
findings of the Board as stated at the July 31 meeting.

The Amended Petition was heard at the regularly  
scheduled Board meeting on August 28, 1986. All Board members

stated above were present and all appearances were identical except that the Bureau of Land Management was represented by Mr. Robert Hendricks of the Salt Lake City office.

NOW, THEREFORE, the Board having considered the testimony adduced and the exhibits reviewed in said hearing, and being fully advised in the premises, now makes and enters the following:

#### FINDINGS OF FACT

1. Due and regular notice of the time, place and purpose of the May 9 and August 28 hearings was given to all interested parties as required by law and the rules and regulations of the Board. The parties specifically served with notice are listed in Exhibit "1" attached to the Petition, which names represent all persons who own the right to explore for and produce hydrocarbons from the subject lands and all lands immediately adjacent to and cornering upon the subject lands.

2. The Board has jurisdiction over the subject matter of the Amended Petition and over all parties interested therein and has jurisdiction to make and promulgate the order hereinafter set forth.

3. The Amended Petition in this matter is a request to modify previously existing drilling/spacing units for the Dakota and Morrison formations in parts of Grand County, Utah to permit additional wells to be drilled, both by downspacing some of the existing units and by authorizing additional wells within the other of the existing units (increased well density or infill).

The Amended Petition requests that existing wells be designated the current initial production well for infill units, or be the current designated production well for the new smaller units, as appropriate. New wells would be drilled, at the operator's option, within the opposite government quarter section from the existing well, or in the new smaller units (whichever is appropriate), at a point not less than 500 feet from the unit boundaries and 2,000 feet from other wells producing from the same formation, with a 200 foot tolerance to each requirement to be administratively approved pursuant to Rule 302.1 of the General Oil and Gas Rules for Utah.

In addition, the Amended Petition requests that other lands in Grand County be spaced (primarily upon a 160 acre basis) for production from the Dakota and Morrison formations. One well would be authorized for each unit with existing wells designated as the current production well. New wells would be drilled at a point not less than 500 feet from the unit boundaries and not less than 2,000 feet from other wells producing from the same formations with a 200 foot tolerance to each requirement to be administratively approved pursuant to Rule 302.1 of the General Oil and Gas Rules for Utah.

In addition, the Amended Petition also requests various other small drilling spacing units be established or modified.

4. An Interim Order was entered in this matter, effective May 22, 1986, which allowed Petitioners to drill 3

wells upon the subject lands. The terms of the Interim Order are hereby incorporated into this final Order.

5. The Board has previously entered Orders in Cause Nos. 4-2, 13-3, 149-1, 149-2B, 149-3B, 149-5, 149-9, 165-2, 165-3, 165-4, 165-6, 165-7, and 165-10 establishing the following drilling/spacing units for the production of hydrocarbons from the Dakota and Morrison formations underlying Grand County, Utah (among other lands):

A. 320 acre units (more or less)

i) Township 16 South, Range 24 East, S.L.M.

Section 25: All  
 Section 35: All  
 Section 36: All

ii) Township 16 South, Range 25 East, S.L.M.

Section 19: All  
 Section 21: 1/2  
 Section 29: All  
 Section 30: All  
 Section 31: All  
 Section 32: All  
 Section 33: All  
 Section 34: All  
 Section 35: 1/2

iii) Township 16 South, Range 26 East, S.L.M.

Section 32: All  
 Section 33: All

iv) Township 17 South, Range 24 East, S.L.M.

Section 1: All  
 Section 2: All  
 Section 3: All  
 Section 11: All  
 Section 12: All  
 Section 14: All

v) Township 17 South, Range 25 East, S.L.M.

Section 5: All  
Section 6: All

vi) Township 17 South, Range 26 East, S.L.M.

Sections 4 & 5: All  
Sections 8 & 9: N1/2

B. 280 acre units (more or less)

i) Township 16 South, Range 25 East, S.L.M.

Section 28: SE1/4, S1/2 NE1/4, NW1/4 NE1/4  
Section 35: NW1/4, S1/2 NE1/4, NW1/4 NE1/4

C. 400 acre unit (more or less)

i) Township 17 South, Range 25 East, S.L.M.

Section 13: SE1/4, SW1/4, S1/2 NW1/4

6. Geologic evidence indicates that the Dakota and Morrison formations also extend under the following unspaced lands, and, as such, constitute a common source of supply of (principally) natural gas:

i) Township 16 South, Range 24 East, S.L.M.

Section 26: All

ii) Township 17 South, Range 24 East, S.L.M.

Section 5: SE1/4  
Section 8: NW1/4 NE1/4, NW1/4  
Section 13: All

iii) Township 17 South, Range 25 East, S.L.M.

Section 2: W1/2 W1/2  
Section 3: All  
Section 4: All  
Section 8: S1/2, E1/2 NE1/4  
Section 9: All  
Section 10: All  
Section 14: All

Section 15: All  
Section 16: All  
Section 17: All  
Section 18: All

7. The San Arroyo, Winter Camp, Bar-X, Bar Creek, Bryson Canyon, Westwater and Horse Point "B" operational units exist upon lands contiguous with the above stated lands. The shape of these operational units prevents the establishment of uniform drilling units upon all of the above stated lands.

8. Currently available geologic evidence indicates that one well will not drain the natural gas reserves underlying a spaced area 280 acres in size or larger. The geologic evidence indicates that one well will drain approximately 160 acres, and that a 160 acre drainage area is not smaller than the maximum area that can be efficiently and economically drained by one well.

9. Due to the presence of existing communitization agreements and other factors, and in order to protect the correlative rights of the various interest owners, the geographic extent of several of the existing drilling/spacing units can not be altered. Increased well density authorization is appropriate for these units. Additional wells upon existing units are authorized to be drilled only at the option of the operator of each separate unit, such drilling decision to be based upon geologic and engineering data indicating that the well will recover additional hydrocarbons in an economically feasible manner. Economically feasible means that a prudent operator

would have a reasonable opportunity to recover the costs of drilling, completing, producing and operating the well, plus a reasonable profit.

10. It is not the intent of this Order to change, amend or otherwise alter any existing contractual rights or relationships, express or implied, between any parties who share in the production (or proceeds therefrom) from previously spaced drilling units or tracts pooled or unitized for purposes of developing and producing wells (upon the lands not spaced at the date of hearing on this matter). It is not the intent of this Order to alter any interests based on previously existing communitization or participation agreements.

11. The various types of relief ordered by the Board in this matter will prevent the drilling of unnecessary wells, prevent waste, and protect correlative rights.

#### CONCLUSIONS OF LAW

1. The Dakota and Morrison formations underlying the subject lands are a "common source of supply" as that term is defined in U.C.A. §40-6-2(a) (1953, as amended).

2. The Board has the authority, pursuant to U.C.A. §40-6-6(3), (1953, as amended) to modify previous spacing orders to include additional areas which are underlaid by a common source of supply.

3. The Board has the authority, pursuant to U.C.A. §40-6-6(4), (1953, as amended) to modify existing drilling/

spacing units to decrease the size of the unit or permit additional wells to be drilled within established units.

4. The various types of relief ordered by the Board in this matter will prevent the drilling of unnecessary wells, prevent waste, and protect correlative rights.

Sufficient evidence now being available upon which to reach a decision, the Board issues the following:

ORDER

IT IS HEREBY ORDERED THAT:

A. INTERIM ORDER

The terms of the Interim Order entered effective May 22, 1986 in this matter are incorporated into this final Order.

B. INFILL AUTHORIZATION

1) Two production wells are authorized for production from the Dakota and Morrison formations within the following established drilling/spacing units:

i) Township 16 South, Range 24 East, S.L.M.

Section 25: S1/2  
Section 35: E1/2  
Section 36: All

ii) Township 16 South, Range 25 East, S.L.M.

Section 28: SE1/4, S1/2 NE1/4, NW1/4 NE1/4 (280 acre unit)  
Section 29: All  
Section 30: All  
Section 31: All  
Section 32: All  
Section 33: S1/2  
Section 34: All  
Section 35: NW1/4, S1/2 NE1/4, NW1/4 NE1/4 (280 acre unit)  
Section 35: S1/2

- iii) Township 16 South, Range 26 East, S.L.M.  
Section 32: All
- iv) Township 17 South, Range 24 East, S.L.M.  
Section 2: All  
Section 11: N1/2  
Section 12: S1/2  
Section 14: S1/2
- v) Township 17 South, Range 25 East, S.L.M.  
Section 5: N1/2  
Section 13: SE1/4, SW1/4, S1/2 NW1/4 (400 acre unit)
- vi) Township 17 South, Range 26 East, S.L.M.  
Sections 4 & 5: N1/2

2) Existing wells capable of production from the Dakota/Morrison formations in the units stated in paragraph "B(1)" above are the authorized current initial well per unit. Additional wells shall be located no less than 500 feet from the unit boundaries and no less than 2,000 feet from other wells producing from the same formations (with a 200 foot tolerance for each distance requirement to be administratively granted pursuant to Rule 302.1 for geological, topographical, cultural or other reasons) so long as only one well is located within each of the governmental quarter sections (or lots or approximate acreage corresponding thereto) which comprise each unit.

3) Said additional wells shall be permitted to be drilled only at the option of the operator of each separate

drilling unit. Said drilling decision shall be based upon the criteria stated in Finding of Fact No. 9 above.

4) It is not the intent of this Order that existing contractual rights or relationships, express or implied, between all parties who share in the production, or proceeds therefrom, from any of the established drilling units stated in paragraph "B(1)" above be altered by virtue of this order.

C. DOWNSPACED UNITS

1) The existing 320 acre units within the following lands are downspaced to two 160 acre (more or less) drilling and spacing units, with any existing wells to be the authorized current production well within the new unit boundaries:

- i) Township 16 South, Range 24 East, S.L.M.  
Section 35: W1/2
- ii) Township 16 South, Range 25 East, S.L.M.  
Section 19: All  
Section 33: N1/2
- iii) Township 16 South, Range 26 East, S.L.M.  
Section 33: All
- iv) Township 17 South, Range 24 East, S.L.M.  
Section 1: All  
Section 3: All  
Section 11: S1/2  
Section 12: N1/2  
Section 14: N1/2
- v) Township 17 South, Range 25 East, S.L.M.  
Section 6: All

vi) Township 17 South, Range 26 East, S.L.M.

Sections 4 and 5: S1/2

Sections 8 and 9: N1/2

2) Each drilling unit shall be composed of and equivalent to a regularly surveyed quarter section or lots corresponding thereto.

3) Well locations within the new units that do not currently contain a well are authorized as follows:

i) not less than 500 feet from the established unit boundaries, with a 200 foot tolerance to be administratively granted pursuant to Rule 302.1 for geological, topographical, cultural or other reasons; and

ii) not less than 2,000 feet from other wells producing from the same formations, with a 200 foot tolerance to be administratively approved pursuant to Rule 302.1 for geological, topographical, cultural or other reasons.

D. NEW DRILLING/SPACING UNITS

1) The following drilling/spacing units are hereby established for production from the Dakota and Morrison formations:

i)  160 acre units

Township 16 South, Range 24 East, S.L.M.

Section 26: All

Township 17 South, Range 24 East, S.L.M.

Section 13: All

Township 17 South, Range 25 East, S.L.M.

Section 4: W1/2  
 Section 8: SW1/4  
 Section 9: E1/2  
 Section 14: All  
 Section 15: All  
 Section 16: All  
 Section 17: All  
 Section 18: All

ii) Other units (acreage approximate)Township 17 South, Range 24 East, S.L.M.

Section 5: SE1/4 (160 acres)  
 Section 8: NW1/4, NW1/4 NE1/4 (200 acres)

2) Each such 160 acre unit shall be composed of and equivalent to a regularly surveyed quarter section or lots corresponding thereto.

3) One well is authorized upon each of the units so established (with existing wells to be the authorized current production well), said well to be located anywhere within the unit that is not less than 500 feet from the unit boundaries (with a 200 foot tolerance to be administratively granted pursuant to Rule 302.1 for geologic, topographic, cultural or other reasons) and not less than 2,000 feet from other wells producing from the same formations (with a 200 foot tolerance to be administratively approved pursuant to Rule 302.1 for geologic, topographic, cultural or other reasons).

E. Cause No. 149-1 is amended to alter the drilling/spacing unit composed of the S1/2 of Section 21, Township 16 South, Range 25 East, S.L.M. (320 acres) to the S1/2 SW1/4, NW1/4

SW1/4 of Section 21 (120 acres). One production well is authorized for this unit, to be located no less than 500 feet from the unit boundaries, and no less than 2,000 feet from other Dakota/Morrison wells, with a 200 foot tolerance to the distance requirements to be administratively approved pursuant to Rule 302.1 for geologic, topographic, cultural or other reasons.

F. The SE1/4 of Section 8 and SW1/4 of Section 9, both in Township 17 South, Range 25 East, S.L.M., are hereby established as 160 acre drilling/spacing units for production from the Dakota and Morrison formations, provided that the Communitization Agreement presently in effect covering the W1/2 of Section 9 and E1/2 E1/2 of Section 8, Township 17 South, Range 25 East, S.L.M. shall be terminated prior to production of any well drilled in the SE1/4 of Section 8. Termination of the Agreement shall require the written assent of all parties to the Agreement. The well presently producing in the SW1/4 of Section 9 shall be the authorized well for that new unit. The authorized well location for the SE1/4 of Section 8 shall be as stated in paragraph "D(3)" above.

G. A hearing on the Amended Petition, insofar as it covers the W1/2 W1/2 of Section 2, Section 3, E1/2 Section 4, NW1/4 Section 9, E1/2 NE1/4 Section 8, and Section 10, all in Township 17 South, Range 25 East, S.L.M. is continued without date.

H. It is not the intent of this Order to change, amend or otherwise alter any existing contractual rights or relationships, express or implied, between any parties who share in the production (or proceeds therefrom) from previously spaced

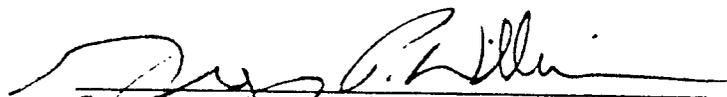
drilling units or tracts pooled or unitized for purposes of developing and producing wells (upon the lands not spaced at the date of hearing on this matter). It is not the intent of this Order to alter any interests based on previously existing communitization or participation agreements.

I. This Order is effective as of August 28, 1986.

J. The Board retains exclusive and continuing jurisdiction over all matters covered by this Order and over all parties affected thereby and particularly reserves exclusive and continuing jurisdiction to make further orders as appropriate and as authorized by statute and regulation.

DATED this 26<sup>th</sup> day of September, 1986.

STATE OF UTAH  
BOARD OF OIL, GAS & MINING

  
Gregory P. Williams, Chairman

Approved as to form:

  
Mark C. Moench  
Assistant Attorney General





# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter  
Governor

Dee C. Hansen  
Executive Director

Dianne R. Nielson, Ph.D.  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

August 27, 1990

Burton W. Hancock  
P. O. Box 989  
Billings, Montana 59103

Gentlemen:

Re: Jo Reva #1 - NW SW Sec. 16, T. 17S, R. 25E - Grand County, Utah  
1685' FSL, 393' FWL

Approval to drill the referenced well is hereby granted in accordance with the Order of Cause No. 13-6 (1) dated September 26, 1986.

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

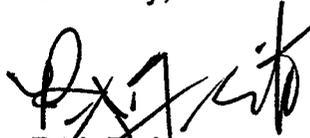
1. Spudding notification within 24 hours after drilling operations commence.
2. Submittal of an Entity Action Form within five working days following spudding and whenever a change in operations or interests necessitates an entity status change.
3. Submittal of the Report of Water Encountered During Drilling, Form 7.
4. Prompt notification if it is necessary to plug and abandon the well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 538-5340, (Home) 298-7695, or Jim Thompson, Lead Inspector, (Home) 298-9318.
5. Compliance with the requirements of Rule R615-3-20, Gas Flaring or Venting, Oil and Gas Conservation General Rules.

Page 2  
Burton W. Hancock  
Jo Reva #1  
August 27, 1990

6. Prior to commencement of the proposed drilling operations, plans for facilities for disposal of sanitary wastes at the drill site shall be submitted to the local health department. These drilling operations and any subsequent well operations must be conducted in accordance with applicable state and local health department regulations. A list of local health departments and copies of applicable regulations are available from the Division of Environmental Health, Bureau of General Sanitation, telephone (801) 538-6121.
7. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-019-31305.

Sincerely,



R.J. Erth  
Associate Director, Oil & Gas

tas  
Enclosures  
cc: Bureau of Land Management  
Division of State Lands  
J. L. Thompson  
WE14/1-2

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING  
OIL AND GAS INSPECTION RECORD

OPERATOR: HANCOCK, BURTON W. LEASE: ML29282  
WELL NAME: JO REVA #1 API: 43-019-31305  
SEC/TWP/RNG: 16 17.0 S 25.0 E CONTRACTOR:  
COUNTY: GRAND FIELD NAME: BAR X

DRILLING/COMPLETION/WORKOVER:

- APD	- WELL SIGN	- HOUSEKEEPING	- BOPE
- SAFETY	- POLLUTION CNTL	- SURFACE USE	- PITS
- OPERATIONS	- OTHER		

SHUT-IN \_ / TA \_:

- WELL SIGN	- HOUSEKEEPING	- EQUIPMENT *	- SAFETY
- OTHER			

ABANDONED:

- MARKER	- HOUSEKEEPING	- REHAB	- OTHER
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PRODUCTION:

- WELL SIGN	- HOUSEKEEPING	- EQUIPMENT *	- FACILITIES *
- METERING *	- POLLUTION CNTL	- PITS	- DISPOSAL
- SECURITY	- SAFETY	- OTHER	

GAS DISPOSITION:

- VENTED/FLARED	- SOLD	- LEASE USE
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LEGEND: Y = YES/SATISFACTORY N = NO/UNSATISFACTORY A = NOT APPLICABLE

\*FACILITIES INSPECTED:  
LOC.

REMARKS:

DRL- NOTHING ON GROUND YET.

ACTION:

INSPECTOR: CHRIS KIERST

DATE: 11/19/91



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter  
Governor

Dee C. Hansen  
Executive Director

Dianne R. Nielson, Ph.D.  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

December 16, 1991

Burton W. Hancock  
P.O. Box 989  
Billings, Montana 59103

Gentlemen:

Re: Jo Reva #1, Sec. 16, T. 17S, R. 25E, Grand County, Utah  
API No. 43-019-31305

Due to excessive time delay in commencing drilling operations, approval to drill the subject well is hereby rescinded, effective immediately.

Please note that a new Application for Permit to Drill must be filed with this office for approval prior to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division of Oil, Gas and Mining immediately.

Sincerely,

Don Staley  
Administrative Supervisor  
Oil and Gas

DME/lc  
cc: R.J. Firth  
Well file  
WOI219