

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0136  
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. CONTRACT 459
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name JICARILLA APACHE
2. Name of Operator MALLON OIL COMPANY Contact: ART CHILDERS E-Mail: artchilder@bhep.com		7. If Unit or CA Agreement, Name and No.
3a. Address 350 INDIANA STREET, SUITE 400 GOLDEN, CO 80401		8. Lease Name and Well No. JIC 459-20 34
3b. Phone No. (include area code) Ph: 505.382.9100		9. API Well No. 30-039-29303
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NESE 1870FSL 815FEL At proposed prod. zone		10. Field and Pool, or Exploratory EAST BLANCO PICTURED CLIFFS
14. Distance in miles and direction from nearest town or post office* 57 MILES EAST OF BLOOMFIELD, NM	12. County or Parish RIO ARRIBA	13. State NM
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 815' FEL	16. No. of Acres in Lease 2560.00	17. Spacing Unit dedicated to this well -00-00 160 SE 1/4 R-11858 in fill test
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 1,400' - JIC 459-20 #12	19. Proposed Depth 4000 MD	20. BLM/BIA Bond No. on file 1318288
21. Elevations (Show whether DF, KB, RT, GL, etc.) 7302 GL	22. Approximate date work will start 09/15/2004	23. Estimated duration 45-60 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the authorized officer.

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

25. Signature (Electronic Submission)	Name (Printed/Typed) KATHY L. SCHNEEBECK Ph: 303.820.4480	Date 08/16/2004
Title AGENT		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed)	Date 5-5-05
Title AFM	Office FFO	

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Additional Operator Remarks (see next page)

Electronic Submission #34353 verified by the BLM Well Information System  
For MALLON OIL COMPANY, sent to the Rio Puerco  
Committed to AFMSS for processing by ANGIE MEDINA-JONES on 08/17/2004

AFMSS

Adjud	<i>[Signature]</i>
Engr	
Geol	
Surf	
Appvl	



\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*

OPERATOR

DISTRICT I  
1626 N. French Dr., Hobbs, N.M. 88240

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

DISTRICT II  
611 South First, Artesia, N.M. 88210

DISTRICT III  
1000 Rio Brazos Rd., Artec, N.M. 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-29303		*Pool Code 72400	*Pool Name E. Blanco/Pictured Cliffs
*Property Code 24245 22862	*Property Name JICARILLA 459-20		*Well Number 34
*OGRD No. 013925	*Operator Name MALLON OIL CO. Black Hills		*Elevation 7302'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot ldn	Feet from the	North/South line	Feet from the	East/West line	County
1	20	30-N	3-W		1870	SOUTH	815	EAST	RIO ARRIBA

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot ldn	Feet from the	North/South line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres 160			<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No. R-118586(ii) infill pilot test		

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16

				<p>17 OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><u>Kathy L. Schneebeck</u> Signature</p> <p><u>Kathy L. Schneebeck</u> Printed Name</p> <p><u>Agent for Mallon Oil Company</u> Title</p> <p><u>August 13, 2004</u> Date</p>	
				<p>18 SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my knowledge and belief.</p> <p><u>JOHNA VUKOWICH</u> JANUARY 26 2005 14831 REGISTERED PROFESSIONAL SURVEYOR</p> <p><u>14831</u> Certificate Number</p>	

Mallon Oil Company  
Jicarilla 459-20 34  
1,870' FSL 815' FEL (NE/4 SE/4)  
Sec. 20 T30N R3W  
Rio Arriba County, New Mexico  
Lease: Contract 459

**DRILLING PROGRAM**  
(Per Rule 320)

This Application for Permit to Drill (APD) was initiated under the NOS process as stated in Onshore Order No. 1 and supporting Bureau of Land Management (BLM) documents. This NOS process includes an onsite meeting which was held on July 1, 2004 as determined by Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA) and Jicarilla Oil & Gas Administration (JOGA), and at which time the specific concerns of Mallon Oil Company (Mallon), BLM, BIA and JOGA were discussed.

**MALLON RESPECTFULLY REQUESTS THAT ALL INFORMATION REGARDING THIS WELL BE KEPT CONFIDENTIAL.**

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,302'

ESTIMATED FORMATION TOPS - (Water, oil, gas and/or other mineral-bearing formations)

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	1,977'	Sandstone, shales & siltstones
Ojo Alamo	3,185'	Sandstone, shales & siltstones
Fruitland	3,611'	Sandstone, shales & siltstones
Pictured Cliffs	3,700'	Sandstone, shales & siltstones
Lewis	3,808'	Sandstone, shales & siltstones

TOTAL DEPTH 4,000'

Estimated depths of anticipated fresh water, oil, or gas:

Tertiary

San Jose	surface	Gas
Nacimiento	1,977'	Gas
Ojo Alamo	3,185'	Gas
Fruitland	3,611'	Gas
Pictured Cliffs	3,700'	Gas

CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' - 250'	12-1/4"	8-5/8"	J-55 24# ST&C New	To surface ( $\pm 175$ sxs Class B)
0' - T.D.	7-7/8"	5-1/2"	J-55 15.5# LT&C New	TD to surface ( $\pm 630$ sxs lite or 65:35 poz and $\pm 270$ sxs 50:50 poz)*

\* Actual cement volume to be determined by caliper log.

Yields: Class B yield =  $1.18 \text{ ft}^3/\text{sx}$   
 65:35 Poz yield =  $1.62 \text{ ft}^3/\text{sx}$   
 50:50 Poz yield =  $1.26 \text{ ft}^3/\text{sx}$

All fresh water and prospectively valuable minerals encountered during drilling, will be recorded by depth and protected.

PRESSURE CONTROL

BOPs and choke manifold will be installed and pressure tested before drilling out under surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOP's will be pressure tested at least once every 30 days. Ram type preventors and related pressure control equipment will be pressure tested to 1,000 psi. Annular type preventor will be pressure tested to 50% of the rated working pressure, not to exceed 1,000 psi. All casing strings will be pressure tested to 0.22 psi/ft. or 1,000 psi, whichever is greater, not to exceed 70% of internal yield.

BOP to be either double gate rams or an annular preventor as per Onshore Order No. 2.

Statement on Accumulator System and Location of Hydraulic Controls

The drilling rig has not yet been selected for this well. Selection will take place after approval of this application. Manual and/or hydraulic controls will be in compliance with Onshore Order No. 2 for 2M systems.

A remote accumulator will be used. Pressures, capacities, location of remote hydraulic and manual controls will be identified at the time of the BLM supervised BOP test.

MUD PROGRAM

0' -	250'	Fresh water - M.W. 8.5 ppg, Vis 30-33
250' -	TD	Fresh water - Low solids non-dispersed
		M.W. 8.5 - 9.2 ppg
		Vis - 28 - 50 sec
		W.L. 15cc or less

Sufficient mud materials to maintain mud properties, control lost circulation and to contain "kick" will be available at wellsite.

AUXILIARY EQUIPMENT

- A) A Kelly cock will be kept in the drill string at all times.
- B) Inside BOP or stab-in valve (available on rig floor)
- C) Mud monitoring will be visually observed

LOGGING, CORING, TESTING PROGRAM

- A) Logging: DIL- CNL-FDC-GR - TD - BSC (GR to surface)  
Sonic (BSC to TD)
- B) Coring: None
- C) Testing: Possible DST – None anticipated. Drill stem tests may be run on shows of interest

ABNORMAL CONDITIONS

- A) Pressures: No abnormal conditions are anticipated  
Bottom hole pressure gradient – 0.31 psi/ft
- B) Temperatures: No abnormal conditions are anticipated
- C) H<sub>2</sub>S: None is anticipated.
- D) Estimated bottomhole pressure: 1,240 psi

ANTICIPATED START DATE

September 15, 2004

COMPLETION

The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2-3/8" J-55 4.7#/ft tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.

Jicarilla 459-20 34  
 1,870' FSL 815' FEL ( NE /4 SE /4)  
 Sec. 20 T 30N R 3W  
 Rio Arriba County, New Mexico  
 Contract 459

### SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 4,000 '  
 Proposed Depth of Surface Casing: 250 '  
 Estimated Pressure Gradient: 0.31 psi/ft  
 Bottom Hole Pressure at 4,000 ' = 1,240 psi  
 $0.31 \text{ psi/ft} \times 4,000' = 1,240 \text{ psi}$   
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft  
 $0.22 \text{ psi/ft} \times 4,000' = 880 \text{ psi}$

#### Maximum Design Surface Pressure

Bottom Hole Pressure - Hydrostatic Head =  
 $( 0.31 \text{ psi/ft} \times 4,000' ) - ( 0.22 \text{ psi/ft} \times 4,000' ) =$   
 $1,240 \text{ psi} - 880 \text{ psi} = 360 \text{ psi}$

#### Casing Strengths 8-5/8" J-55 24# ST&C

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
24 #	244,000	2,950	1,370
32 #	372,000	3,930	2,530

#### Safety Factors

Tension (Dry): 1.8 Burst: 1.0 Collapse: 1.125

Tension (Dry): 24 # / ft x 250 ' = 6,000 #  
 Safety Factor =  $\frac{244,000}{6,000} = 40.67$  ok

Burst: Safety Factor =  $\frac{2,950 \text{ psi}}{360 \text{ psi}} = 8.19$  ok

Collapse: Hydrostatic =  $0.052 \times 9.0 \text{ ppg} \times 250' = 117 \text{ psi}$   
 Safety Factor =  $\frac{1,370 \text{ psi}}{117 \text{ psi}} = 11.71$  ok

Use 250' 8-5/8" J-55 24# ST&C

Use 2,000 psi minimum casinghead and BOP's but will test to 1,000 psi

#### Centralizers

8 Total  
 1 near surface at 160'  
 3 middle of bottom joint, second joint, third joint  
 4 every other joint  $\pm 80'$

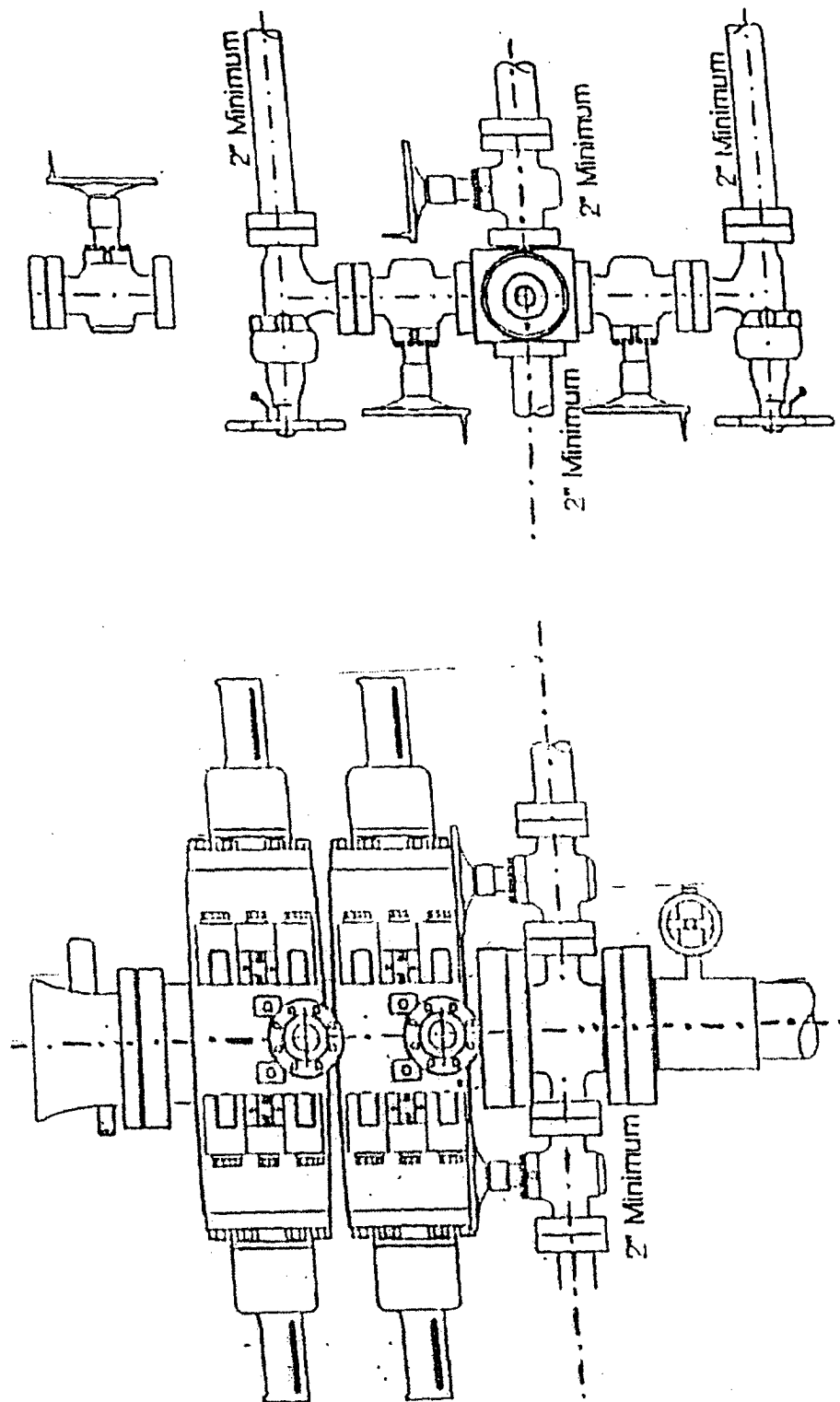
Total centralized  $\pm 440' ( -190' - 250' )$

Note that field experience indicates that additional centralizers greatly increase the chance of "sticking" the surface casing prior to reaching surface casing total depth.

## 2-M SYSTEM

MALLON OIL COMPANY

ANNULAR PREVENTOR MAY BE SUBSTITUTED FOR DOUBLE GATE PREVENTORS  
BOP PRESSURE TEST TO 1,000 PSI



## MALLON OIL COMPANY

### C. H<sub>2</sub>S detection and monitoring equipment:

1. Two portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H<sub>2</sub>S levels of 10 ppm are reached.

### D. Visual warning systems:

1. Wind direction indicators as shown on well site diagram.
2. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate. See example attached.

### E. Mud program:

1. The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.

### F. Metallurgy:

1. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
2. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.

### G. Communication:

1. Cellular telephone communications in company vehicles.

### H. Well testing:

1. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.



## Hydrogen Sulfide Drilling Operations Plan

### I. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide ( $H_2S$ ).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of  $H_2S$  detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of  $H_2S$  on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the  $H_2S$  Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable  $H_2S$  zone (within 3 days or 500 feet) and weekly  $H_2S$  and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific  $H_2S$  Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

### II. $H_2S$ Safety Equipment and Systems

Note: All  $H_2S$  safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above or three days prior to penetrating the first zone containing or reasonably expected to contain  $H_2S$ .

#### A. Well control equipment:

1. Choke manifold with a minimum of one remote choke.
2. Blind rams and pipe rams to accomodate all pipe sizes with properly sized closing unit.

#### B. Protective equipment for essential personnel:<sup>1</sup>

1. Mark II Surviveair 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

COMPANY: MALLON OIL COMPANY

LEASE: JICARILLA 459-20 No. 34

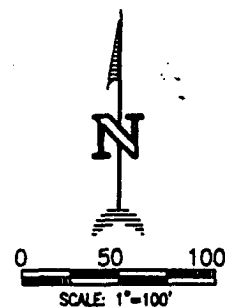
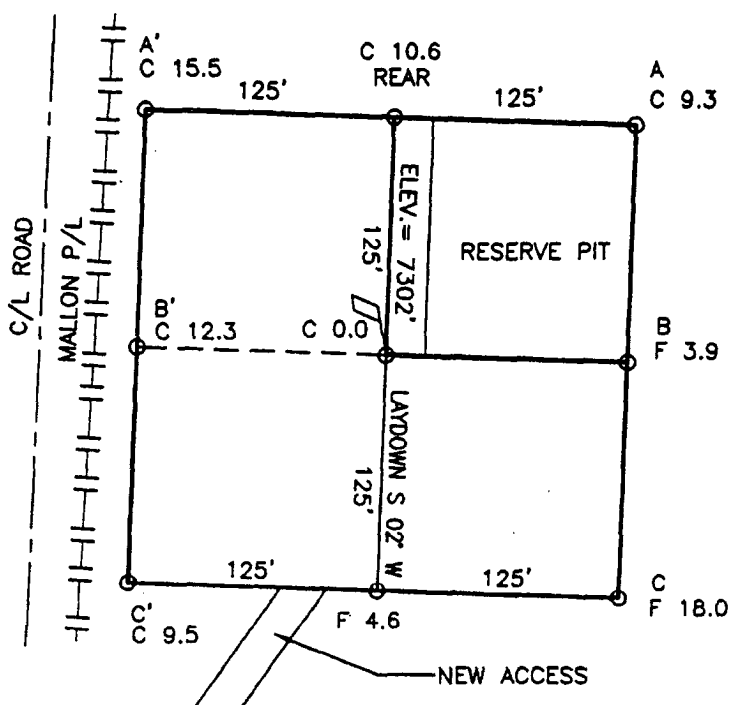
FOOTAGE: 1870' FSL, 815' FEL

SEC.: 20, TWN: 30-N, RNG: 3-W, NMPM

ELEVATION: 7302'

NOTE:

DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.



ELEV. A-A'

C/L

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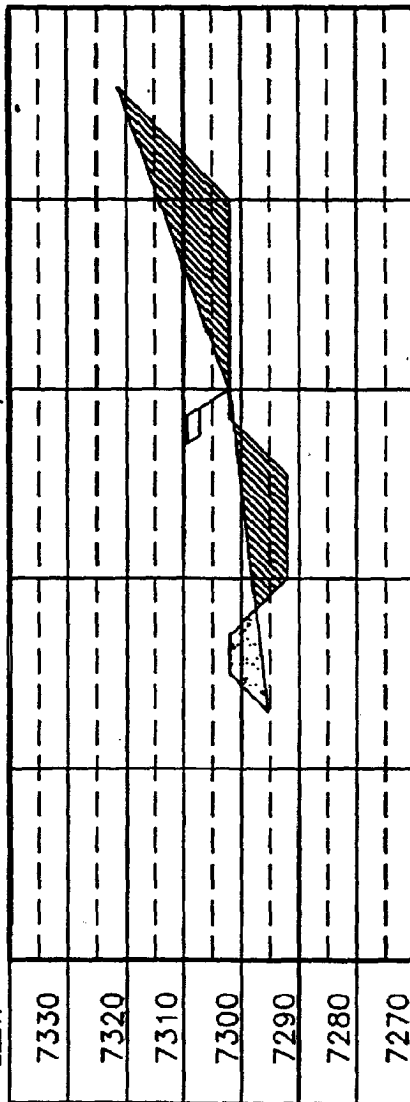
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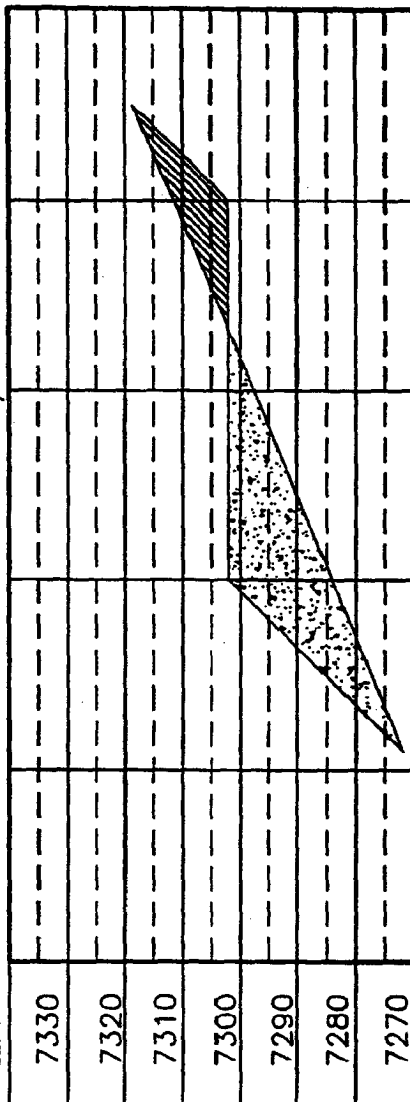
ELEV. B-B'


C/L



ELEV. C-C'

C/L



	
Daggett Enterprises, Inc. Surveying and Oil Field Services P. O. Box 15068 • Farmington, NM 87401 Phone (505) 326-1772 • Fax (505) 326-6019 NEW MEXICO L.S. No. 14831 CIRCLE: M0280578	
DRAWN BY: A.L. DATE: 08/8/04	REVISIONS BY: _____ DATE: _____