

KELLAHIN AND KELLAHIN

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN*

*NEW MEXICO BOARD OF LEGAL SPECIALIZATION
RECOGNIZED SPECIALIST IN THE AREA OF
NATURAL RESOURCES-OIL AND GAS LAW

JASON KELLAHIN (RETIRED 1991)

TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

July 25, 1994

HAND DELIVERED

Mr. Michael E. Stogner
Chief Hearing Examiner
Oil Conservation Division
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

Re: Application of Meridian Oil Inc.
for Approval of its Allison Unit
CO2 Injection Pilot Project,
San Juan County, New Mexico

Dear Mr. Stogner:

On behalf of Meridian Oil Inc., please find enclosed the completed Division Form C-108 which constitutes our referenced application which we request be set for hearing on the next available Examiner's docket now scheduled for August 18, 1994.

By copy of this letter and application, sent certified mail, we are notifying all interested parties of their right to appear at the hearing and participate in this case, including the right to present evidence either in support of or in opposition to the application and that failure to appear at the hearing may preclude them from any involvement in this case at a later date

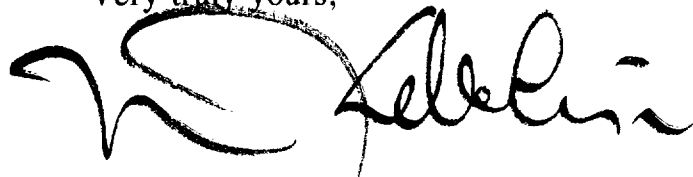
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NMOCD Application
July 25, 1994
Page 2

Pursuant to the Division's Memorandum 2-90, all parties are hereby informed that if they appear in this case, then they are requested to file a Pre-Hearing Statement with the Division not later than 4:00 PM on Friday, August 12, 1994, with a copy delivered to the undersigned.

Also enclosed is our proposed advertisement of this case for the NMOCD docket.

Very truly yours,

A handwritten signature in black ink, appearing to read 'W. Thomas Kellahin', written in a cursive style.

W. Thomas Kellahin

Enclosure

cc: **By Certified Mail - Return Receipt**
All Parties Entitled to Notice
cc: OCD-Aztec (w/ encl.)
cc: Alan Alexander
Meridian Oil Inc. (Farmington)

PROPOSED NOTICE FOR NMOCD DOCKET

CASE: Application of Meridian Oil Inc. for a CO2 injection pilot project, San Juan County, New Mexico. Applicant, in the above styled cause, seeks approval of its Allison Unit CO2 injection pilot project including the following 4 injection wells:

Allison Unit #140: 600' FSL & 785' FEL (Unit P) Sec. 19-32N-6W

Allison Unit #141: 1070' FSL & 800' FEL (Unit P) Sec. 24-32N-7W

Allison Unit #142: 1920' FNL & 850' FWL (Unit E) Sec. 19-32N-6W

Allison Unit #143: 1205' FNL & 1880' FWL (Unit E) Sec. 30-32N-6W

Applicant further seeks authority for an injection pilot project area within the Allison Unit consisting of Sections 19 and 30, T32N, R6W, and Section 24, T32N, R7W, NMPM, San Juan County, New Mexico. This project is located approximately 4 miles southwest of the intersection of the San Juan and Rio Arriba County lines with the border between the states of New Mexico and Colorado.

APPLICATION FOR AUTHORIZATION TO INJECT

766152

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no
- II. Operator: Meridian Oil Inc.
Address: 3535 E. 30th Street, P.O. Box 4289, Farmington, NM 87402
Contact party: Alan Alexander Phone: (505) 326-9757
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- * VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Craig McCracken, P.E. Title Sr. Staff Engineer
Signature: C.A. McCracken Date: July 21, 1994
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

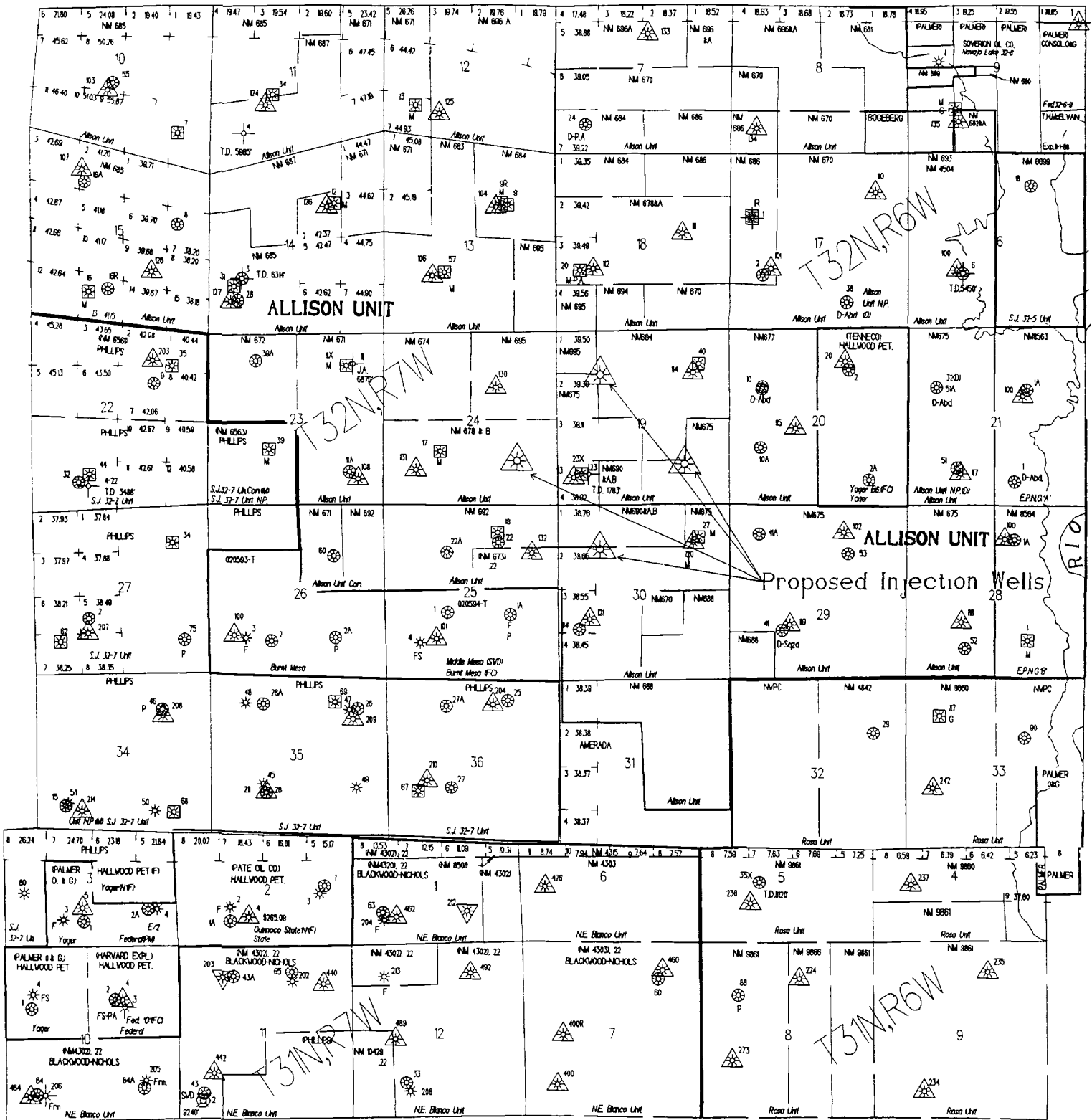
Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

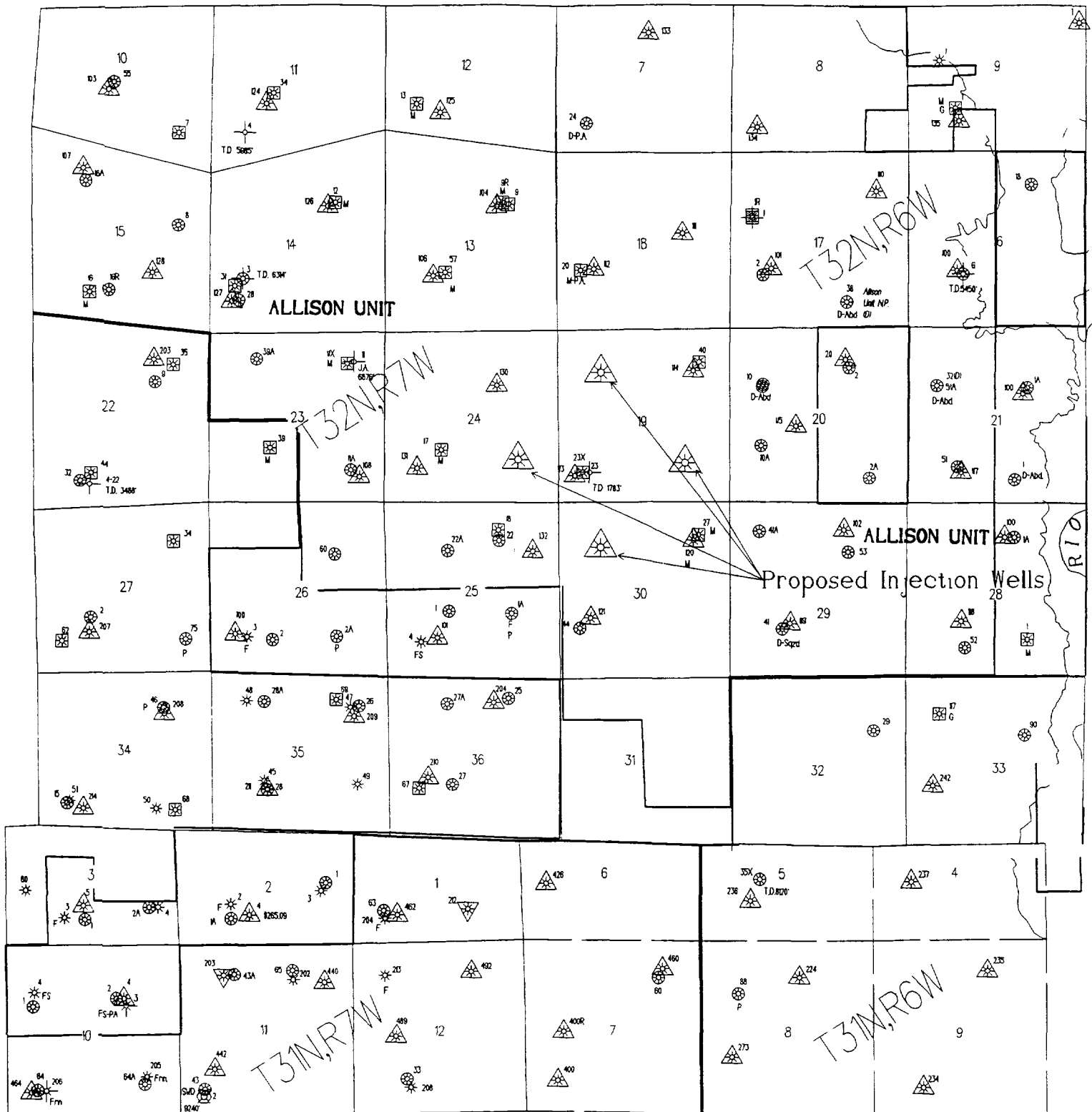
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.








ALLISON UNIT CO2 PROJECT
 SECTIONS 19 & 30, T32N-R6W
 SECTION 24, T32N-R7W
 SAN JUAN CO, NEW MEXICO



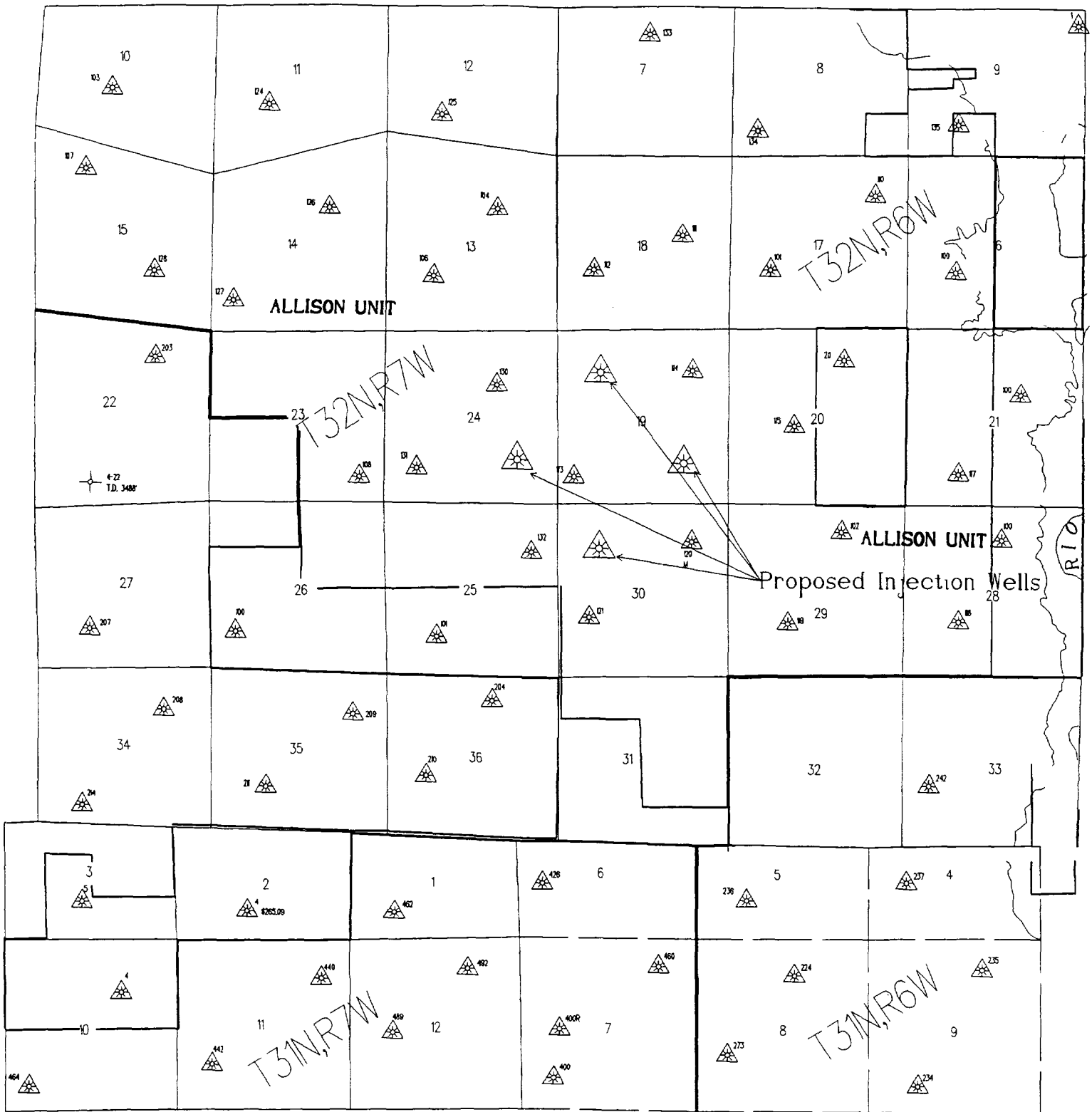
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|--|----------------------|--|----------------|--|---|
| | FRUITLAND SAND WELL | | MESAVERDE WELL | | PROPOSED FRUITLAND COAL INJECTION WELLS |
| | FRUITLAND COAL WELL | | DAKOTA WELL | | |
| | PICTURED CLIFFS WELL | | GALLUP WELL | | |








ALLISON UNIT C02 PROJECT
SECTIONS 19 & 30, T32N-R6W
SECTION 24, T32N-R7W
SAN JUAN CO., NEW MEXICO



-  FRUITLAND SAND WELL
  MESAVERDE WELL
  PROPOSED FRUITLAND COAL INJECTION WELLS
-  FRUITLAND COAL WELL
  DAKOTA WELL
-  PICTURED CLIFFS WELL
  GALLUP WELL

ALLISON UNIT CO2 PROJECT
 SECTIONS 19 & 30, T32N-R6W
 SECTION 24, T32N-R7W
 SAN JUAN CO., NEW MEXICO



- | | | |
|---|--|---|
|  FRUITLAND SAND WELL |  MESAVERDE WELL |  PROPOSED FRUITLAND COAL INJECTION WELLS |
|  FRUITLAND COAL WELL |  DAKOTA WELL | |
|  PICTURED CLIFFS WELL |  GALLUP WELL | |

**ALLISON CO2 PROJECT
SAN JUAN COUNTY, NEW MEXICO**

SURFACE OWNER AT EACH INJECTION WELL LOCATION

WELL NAME

Allison Unit INJ #140
SE/4 19-32N-6W

SURFACE OWNER/ADDRESS

Bureau of Land Management
(no grazing permittee)

Allison Unit INJ #141
SE/4 24-32N-7W

Lawrence Kelly
Route 2, box 86A
Ignacio, CO 81137

Allison Unit INJ #142
NW/4 19-32N-6W

Leroy Self
Route 2, Box 85
Ignacio, CO 81137

Allison Unit INJ #143
NW/4 30-32N-6W

Joseph Leonel Martinez
Route 1, Box 199-A
Deming, NM 88030

Exhibit A
Review Area Well Tabulation

Well Name & Number	Location	Type	Date Drilled	Depth	Completion
Allison Unit 23X	M-19-32-6	MV/Dk	08/01/60	8104	Cased & Fraced
Burnt Mesa 4	M-25-32-7	Mesaverde	12/23/80	3761	Openhole Shot
Allison Unit 44	L-30-32-6	Mesaverde	08/02/81	6212	Cased & Fraced
Allison Unit 27	A-30-32-6	MV/Dk	09/17/65	8044	Cased & Fraced
Allison Unit 22A	F-25-32-7	Mesaverde	11/30/83	6242	Cased & Fraced
Allison Unit 22	B-25-32-7	Mesaverde	11/07/77	6144	Cased & Fraced
Burnt Mesa1A	J-25-32-7	Mesaverde	08/08/77	6158	Cased & Fraced
Allison Unit 40	A-19-32-6	MV/Dk	12/02/73	8181	Cased & Fraced
Allison Unit 17	K-24-32-7	MV/Dk	08/11/58	8121	Cased & Fraced
Allison Unit 18	B-25-32-7	Dakota	10/31/73	8093	Cased & Fraced
Allison Unit 113	M-19-32-6	Fruitland Coal	07/08/89	3094	Cased-hole Natural
Allison Unit 114	I-19-32-6	Fruitland Coal	01/13/89	3150	Cased-hole Natural
Allison Unit 120	A-30-32-6	Fruitland Coal	06/17/89	3087	Cased-hole Natural
Allison Unit 121	L-30-32-6	Fruitland Coal	12/20/88	3248	Cased-hole Natural
Allison Unit 130	G-24-32-7	Fruitland Coal	02/01/89	3200	Cased-hole Natural
Allison Unit 131	M-24-32-7	Fruitland Coal	01/25/89	3240	Cased & Fraced
Allison Unit 132	H-25-32-7	Fruitland Coal	06/17/89	3169	Cased-hole Natural
Burnt Mesa 1	K-25-32-7	Mesaverde	05/05/72	6000	Cased & Fraced
Burnt Mesa 101	N-25-32-7	Fruitland Coal	08/12/88	3341	Cased-hole Natural

Exhibit B
Description of Proposed Operation
Allison Unit Fruitland Coal Carbon Dioxide Injection Project

Average daily injection rate : 2.0 MMcf/d per well
8.0 MMcf/d total

Maximum daily injection rate: 2.5 MMcf/d per well
10.0 MMcf/d total

Open system

Average surface injection pressure: 1500 psia
Maximum surface injection pressure: 2000 psia

Injected fluid will be composed of 99.5% carbon dioxide and 0.5% methane. Source of the injectant will be Meridian Oil Gathering, Inc's Val Verde coal gas processing plant. Injectant will be transported via pipeline to the border of the Allison Unit, where a unit-owned distribution system will transport it to the injector wells. Since the coal in the Allison Unit produces gas which is roughly 4-6% carbon dioxide, and since the injectant has been extracted from coal wells having very similar characteristics to the proposed injectors, fluid compatibility is not an issue.

Injection will be into the three main coal zones of the Cretaceous Fruitland formation, which has a gross thickness of 250 to 300 feet and a net thickness of 35 to 45 feet in the subject area. The top of the Fruitland formation ranges from 2,920 feet to 2,980 feet. No known sources of drinking water exist in the area.

Injector wells will be perforated in three main coal intervals, the perforations will be broken down with acid, and a small fracture treatment will be performed in order to establish communication with the reservoir. All injector wells proposed for this project will be new wells, therefore all zones except the Fruitland coal will be sealed off by casing and cement and no log or test data exists prior to initiation of the project. There are no known zones above the Fruitland coal in this area which are capable of economic hydrocarbon production and there are, according to the best available data, no fresh water wells within one mile of any of the injectors.

Injection will be for enhanced recovery purposes into a hydrocarbon-productive formation, and is not intended for disposal purposes.

Exhibit C
Injector Well Data

Well Name & Number	Section	Township	Range	County	Surface Casing	Hole Size	Cement
Allison Unit INJ #140	785' FEL	19	32-N	San Juan	8 5/8 @ 200'	12 3/4"	163 sx
Allison Unit INJ #141	800' FEL	24	32-N	San Juan	8 5/8 @ 200'	12 3/4"	163 sx
Allison Unit INJ #142	850' FWL	19	32-N	San Juan	8 5/8 @ 200'	12 3/4"	163 sx
Allison Unit INJ #143	1,880' FWL	30	32-N	San Juan	8 5/8 @ 200'	12 3/4"	163 sx

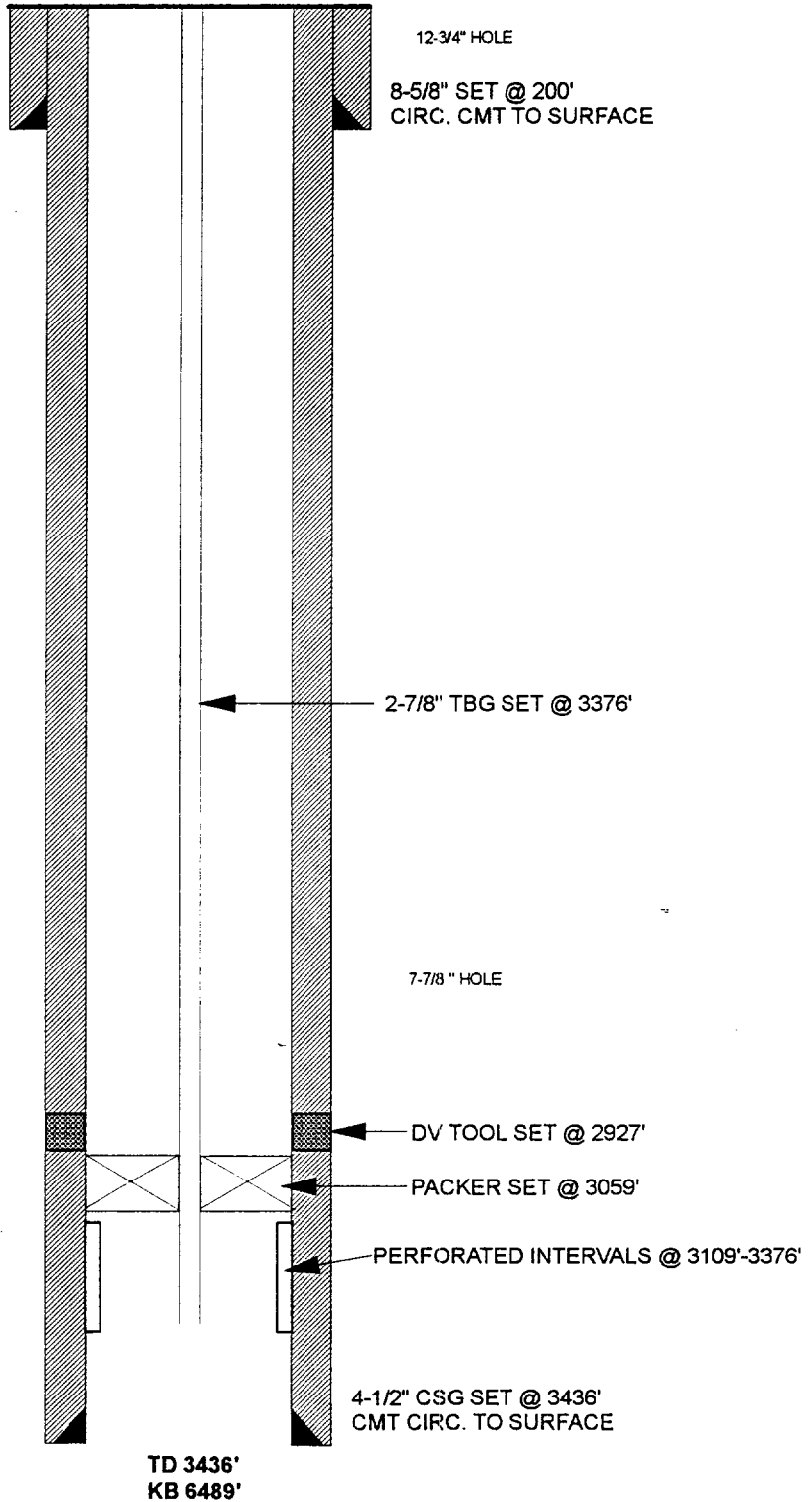
Well Name & Number	Long String	Hole Size	Stage Tool	Stage 1 Cement	Stage 2 Cement	Tubing	Lining	Packer	Setting Depth
Allison Unit INJ #140	4 1/2" @ 3,436'	7 7/8"	2,927'	164 sx	786 sx	2 7/8" @ 3,376'	Cement	Guiberson Model G-6	3,059'
Allison Unit INJ #141	4 1/2" @ 3,426'	7 7/8"	2,877'	175 sx	774 sx	2 7/8" @ 3,366'	Cement	Guiberson Model G-6	3,017'
Allison Unit INJ #142	4 1/2" @ 3,386'	7 7/8"	2,877'	164 sx	774 sx	2 7/8" @ 3,326'	Cement	Guiberson Model G-6	3,009'
Allison Unit INJ #143	4 1/2" @ 3,375'	7 7/8"	2,856'	167 sx	768 sx	2 7/8" @ 3,315'	Cement	Guiberson Model G-6	3,008'

Well Name & Number	Formation	Interval	Perforated?	Drilled for Injection?	Other Perforated Intervals	Other Productive Zones
Allison Unit INJ #140	Fruitland Coal	3,109'-3,376'	Yes	Yes	None	None
Allison Unit INJ #141	Fruitland Coal	3,067'-3,366'	Yes	Yes	None	None
Allison Unit INJ #142	Fruitland Coal	3,059'-3,326'	Yes	Yes	None	None
Allison Unit INJ #143	Fruitland Coal	3,058'-3,315'	Yes	Yes	None	None

ALLISON UNIT #140

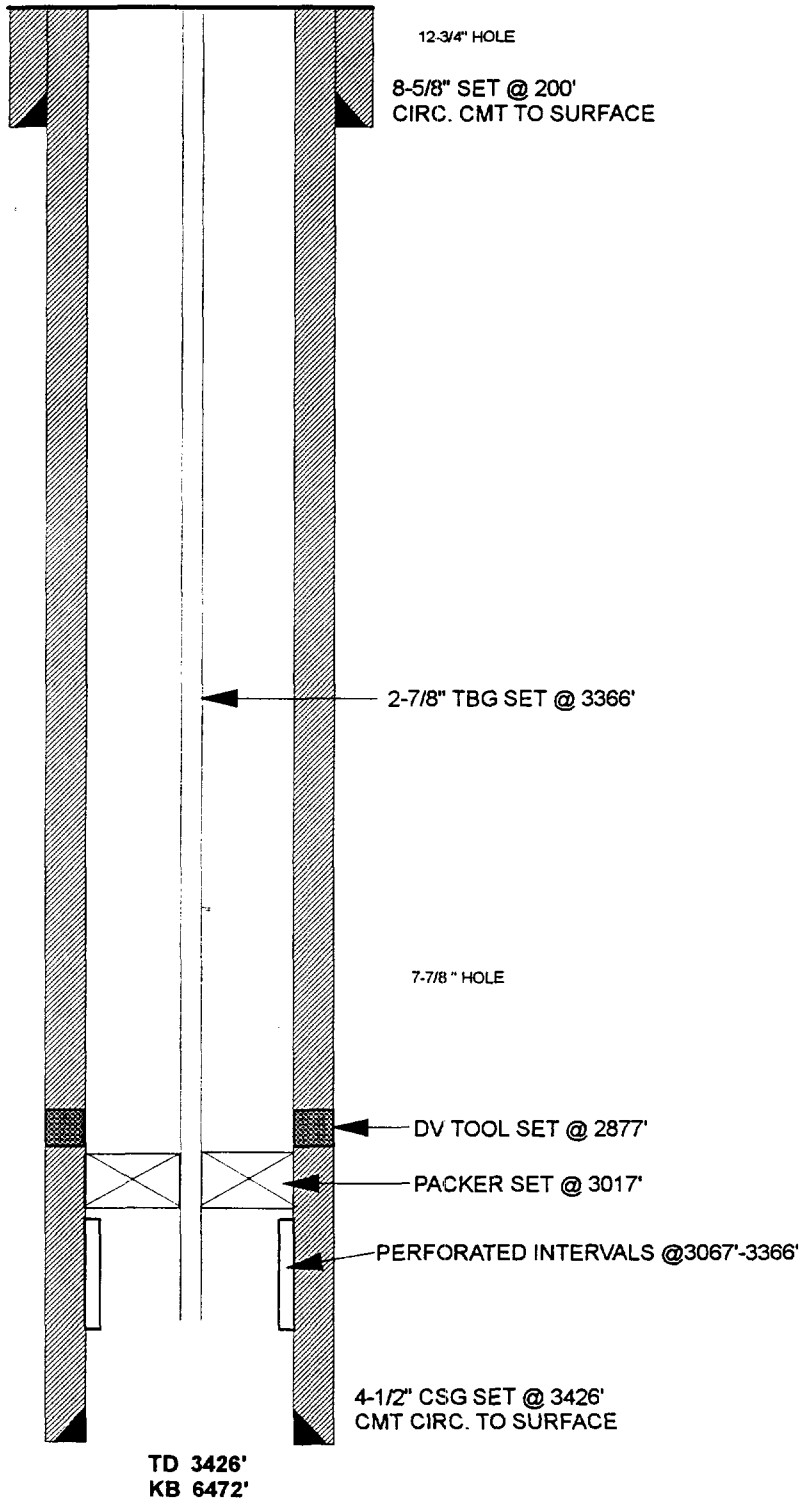
BASIN FRUITLAND COAL

600' FSL & 785' FEL, SEC. 19, T32N, R6W, SAN JUAN COUNTY, NM

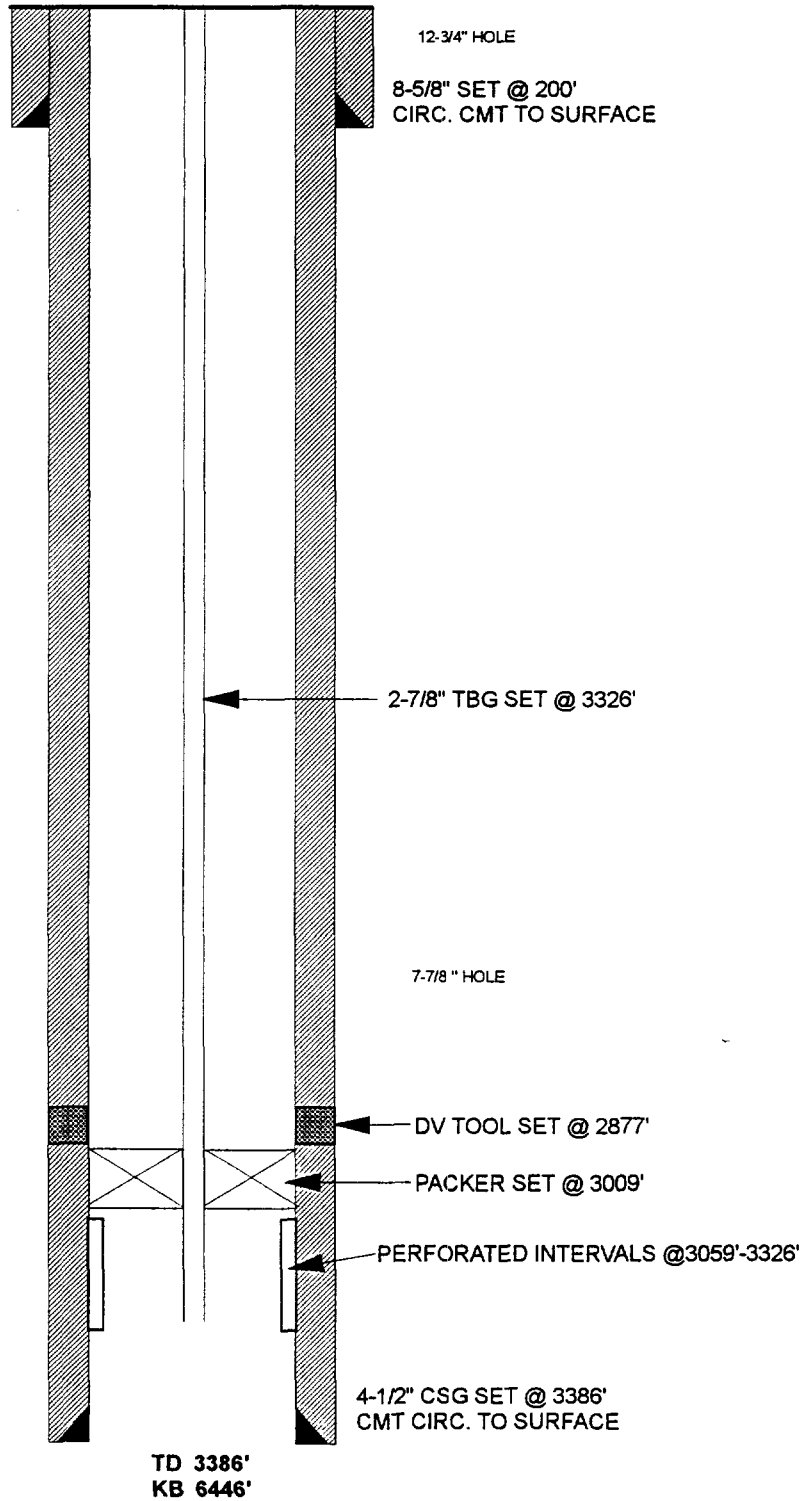


ALLISON UNIT #141

BASIN FRUITLAND COAL
1070' FSL & 800' FEL, SEC. 24, T32N, R7W, SAN JUAN COUNTY, NM



BASIN FRUITLAND COAL
1920' FNL & 850' FWL, SEC. 19, T32N, R6W, SAN JUAN COUNTY, NM



ALLISON UNIT #143

BASIN FRUITLAND COAL

1205' FNL & 1880' FWL, SEC. 30, T32N, R6W, SAN JUAN COUNTY, NM

