BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION FOR AUTHORIZATION TO INJECT

SPEIGHT FEE WELL NO. 1

Located 660' FNL & 2310' FWL Sec. 1-T16S-R35E

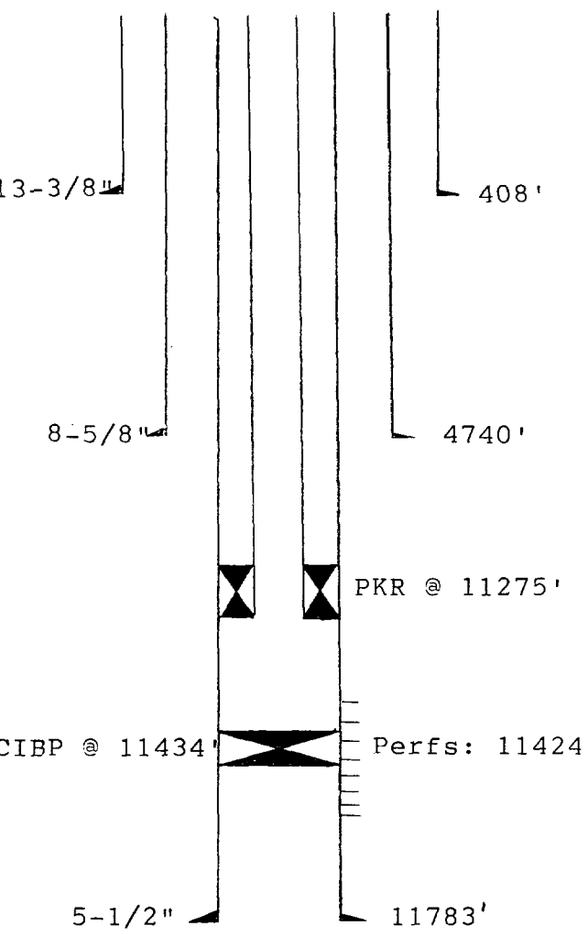
Lea County, New Mexico

T A B L E O F C O N T E N T S

INJECTION WELL DATA SHEET

Charles B. Gillespie, Jr.	Speight Fee			
OPERATOR	LEASE			
1	660 FNL & 2310 FWL	1	16-S	35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 13-3/8 " Cemented with 440 sx.

TOC Surface feet determined by Circulation

Hole size 17-1/2"

Intermediate Casing

Size 8-5/8 " Cemented with 475 sx.

TOC 2850 feet determined by Temp Survey

Hole size 11"

Long string

Size 5-1/2 " Cemented with 800 sx.

TOC 8310 feet determined by Temp Survey

Hole size 7-7/8"

Total depth 11,784

Injection interval

11,424 feet to 11,434 feet
(perforated or open-hole, indicate which)

(perforated)

Tubing size 2-7/8" lined with None (material) set in a

Baker Lok-Set (brand and model) packer at 11,275 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Strawn

2. Name of Field or Pool (if applicable) West Lovington Strawn

3. Is this a new well drilled for injection? [ ] Yes [X] No

If no, for what purpose was the well originally drilled? Producing oil and gas well

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

Wolfcamp-Townsend Permo Upper Penn

Depth 10,500 - 10,600'

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no

II. Operator: Charles B. Gillespie, Jr.

Address: P. O. Box 8 Midland, Texas 79702

Contact party: Kevin Widner Phone: (915) 683-1765

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

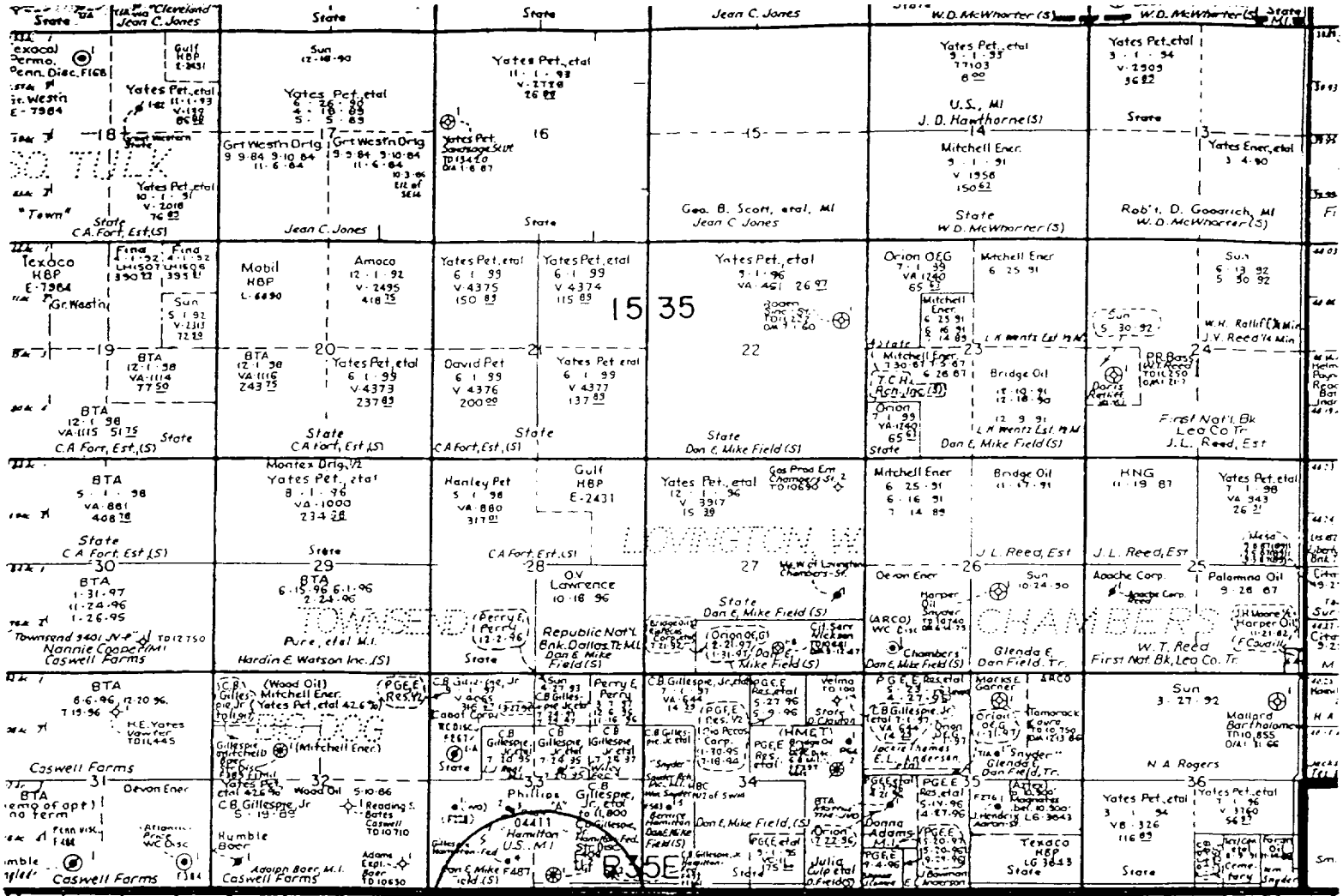
I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Kevin Widner Title Production Manager

Signature: _____ Date: _____

* 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.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.



FORM C-108
SECTION V

Application for Authorization to Inject

Gillespie-Crow, Inc.

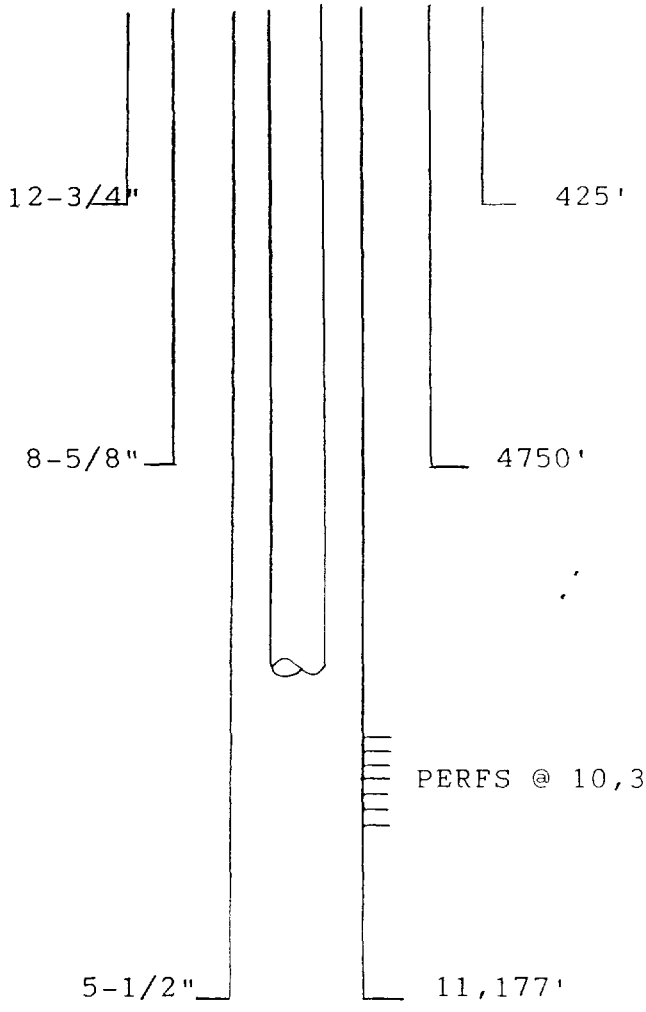
Gas Injection Well

Area Map of Lease and Well Ownership

WELL DATA SHEET

Amerimd	West State			
OPERATOR	LEASE			
1	330 FNL & 330 FEL	2	16-S	35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Type of Well: Oil and Gas



Tabular Data

Surface Casing

Size 12-3/4" Cemented with 400 sx.

TOC Surface feet determined by Circulated

Hole size 17-1/2"

Intermediate Casing

Size 8-5/8" Cemented with 800 sx.

TOC 2600 feet determined by Calculated

Hole size 11"

Long string

Size 5-1/2" Cemented with 450 sx.

TOC 9100 feet determined by Calculated

Hole size 7-7/8"

Total depth 11,177

Perforations

10,315 feet to 10,564 feet
(perforated or open-hole, indicate which)

FORM C-108
SECTION VI

Application for Authorization to Inject

Gillespie-Crow, Inc.

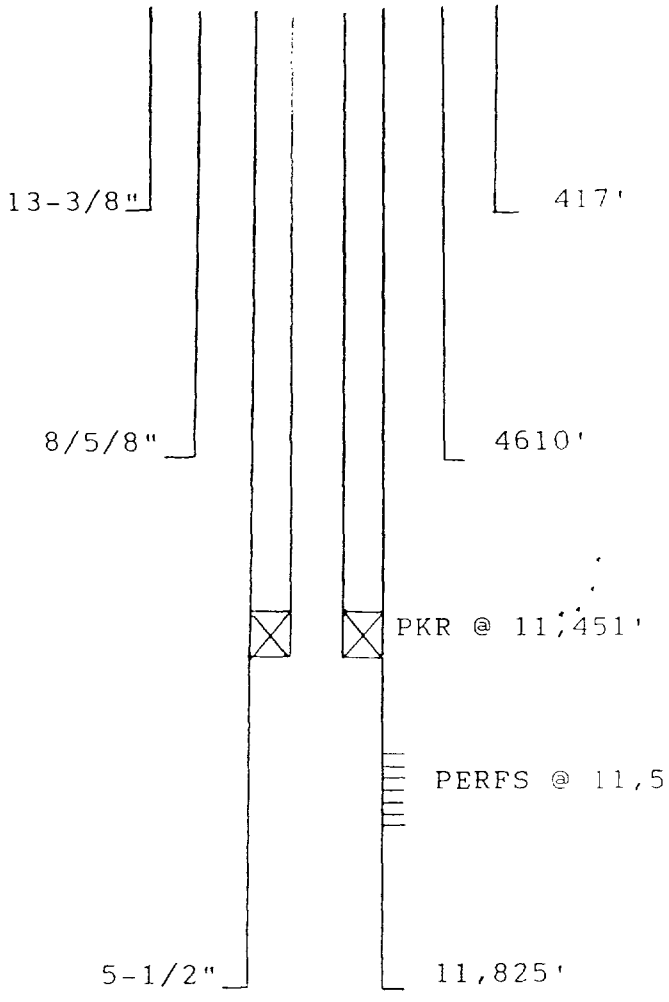
Gas Injection Well

Tabulation of Well Data

WELL DATA SHEET

Charles B. Gillespie, Jr.	Hamilton Federal			
OPERATOR	LEASE			
2	330' FSL & 725' FEL	33	15-S	35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Type of Well: Oil and Gas



Tabular Data

Surface Casing

Size 13-3/8" Cemented with 440 sx.

TOC Surface feet determined by Circulated

Hole size 17-1/2"

Intermediate Casing

Size 8-5/8" Cemented with 1425 sx.

TOC Surface feet determined by Circulated

Hole size 11"

Long string

Size 5-1/2" Cemented with 750 sx.

TOC 9200 feet determined by Temp Survey

Hole size 7-7/8"

Total depth 11,825

Perforations

11,538 feet to 11,580 feet
(perforated or open-hole, indicate which)

FORM C-108
SECTION VI

Application for Authorization
to Inject

Gillespie-Crow, Inc.

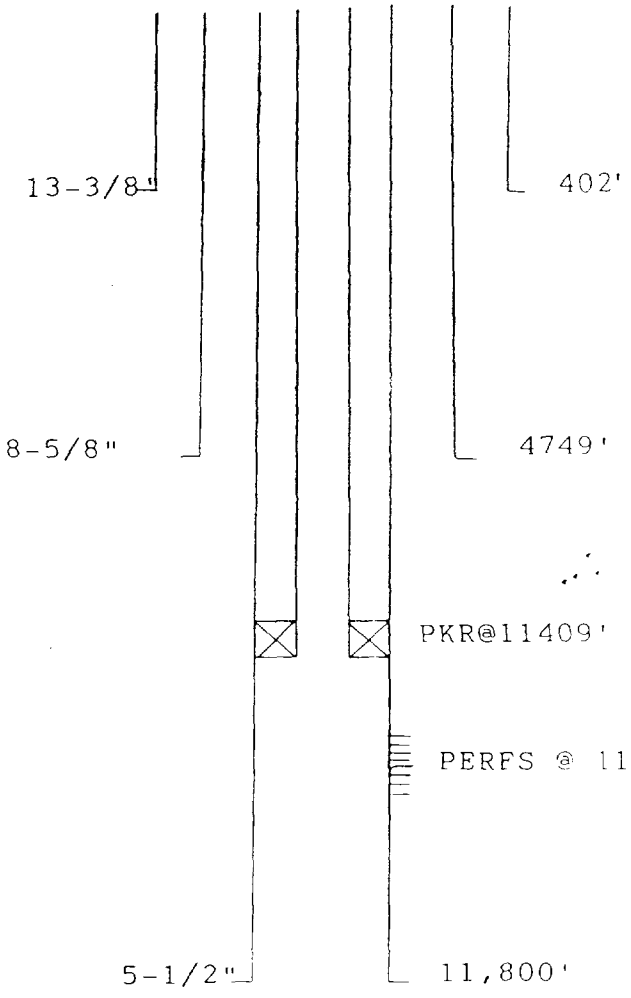
Gas Injection Well

Tabulation of Well Data

WELL DATA SHEET

Charles B. Gillespie, Jr.	Hamilton Federal			
OPERATOR	LEASE			
1	330 FSL & 2145 FEL	33	15-S	35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Type of Well: Oil and Gas



Tabular Data

Surface Casing

Size 13-3/8" Cemented with 440 sx.

TOC Surface feet determined by Circulated

Hole size 17-1/2"

Intermediate Casing

Size 8-5/8" Cemented with 1200 sx.

TOC 980 feet determined by Temp Survey

Hole size 11"

Long string

Size 5-1/2" Cemented with 800 sx.

TOC 9100 feet determined by Temp Survey

Hole size 7-7/8"

Total depth 11,800

Perforations

11,500 feet to 11,570 feet
(perforated or open-hole, indicate which)

FORM C-108
SECTION VI

Application for Authorization to Inject

Gillespie-Crow, Inc.

Gas Injection Well

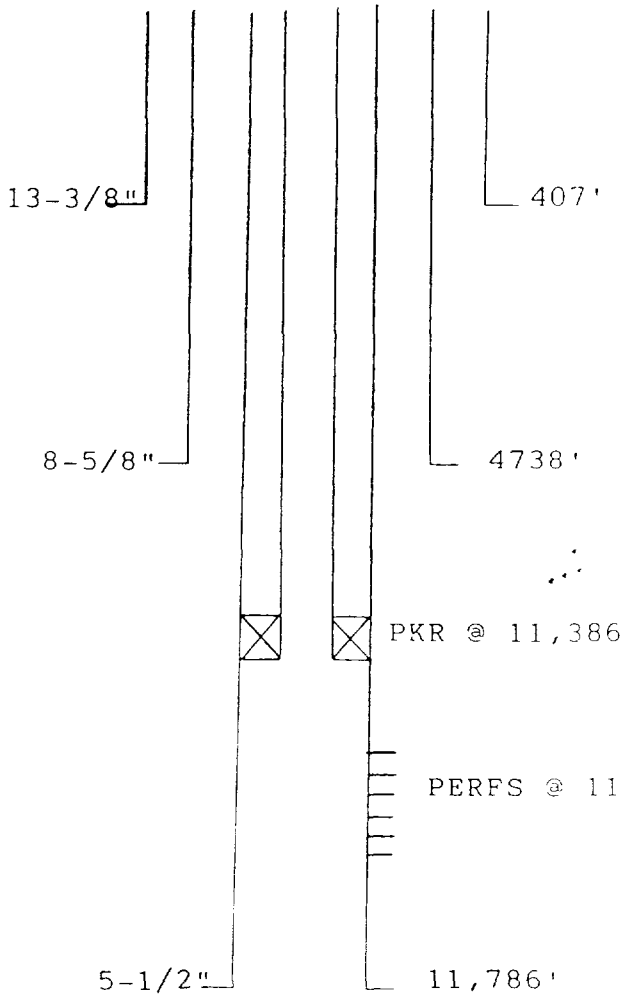
Tabulation of Well Data

WELL DATA SHEET

Charles B. Gillespie, Jr. (OPERATOR) Earnestine (LEASE)

1	990 FNL & 1980 FEL	1	16-S	35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Type of Well: Oil and Gas



Tabular Data

Surface Casing

Size 13-3/8" Cemented with 440 sx.

TOC Surface feet determined by Circulated

Hole size 17-1/2"

Intermediate Casing

Size 8-5/8" Cemented with 750 sx.

TOC 2321 feet determined by Temp Survey

Hole size 11"

Long string

Size 5-1/2" Cemented with 775 sx.

TOC 9200 feet determined by Calculated

Hole size 7-7/8"

Total depth 11,786

Perforations

11,474 feet to 11,514 feet
(perforated or open-hole, indicate which)

FORM C-108
SECTION VI

Application for Authorization
to Inject

Gillespie-Crow, Inc.

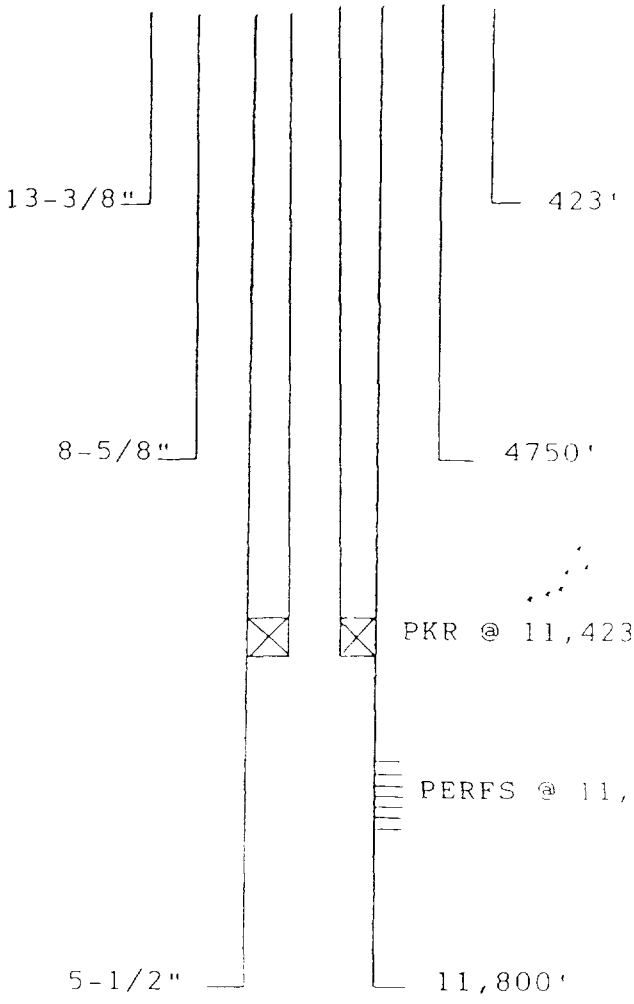
Gas Injection Well

Tabulation of Well Data

WELL DATA SHEET

Charles B. Gillespie, Jr.		Earnestine		
OPERATOR		LEASE		
2	990 FNL & 660 FEL	1	16-S	35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Type of Well: Oil and Gas



Tabular Data

Surface Casing

Size 13-3/8 " Cemented with 440 sx.

TOC Surface feet determined by Circulated

Hole size 17-1/2"

Intermediate Casing

Size 8-5/8 " Cemented with 750 sx.

TOC 2095 feet determined by Temp Survey

Hole size 11"

Long string

Size 5-1/2 " Cemented with 750 sx.

TOC 8925 feet determined by Temp Survey

Hole size 7-7/8"

Total depth 11,800

Perforations

11,510 feet to 11,540 feet
(perforated or open-hole, indicate which)

FORM C-108
SECTION VI

Application for Authorization to Inject

Gillespie-Crow, Inc.

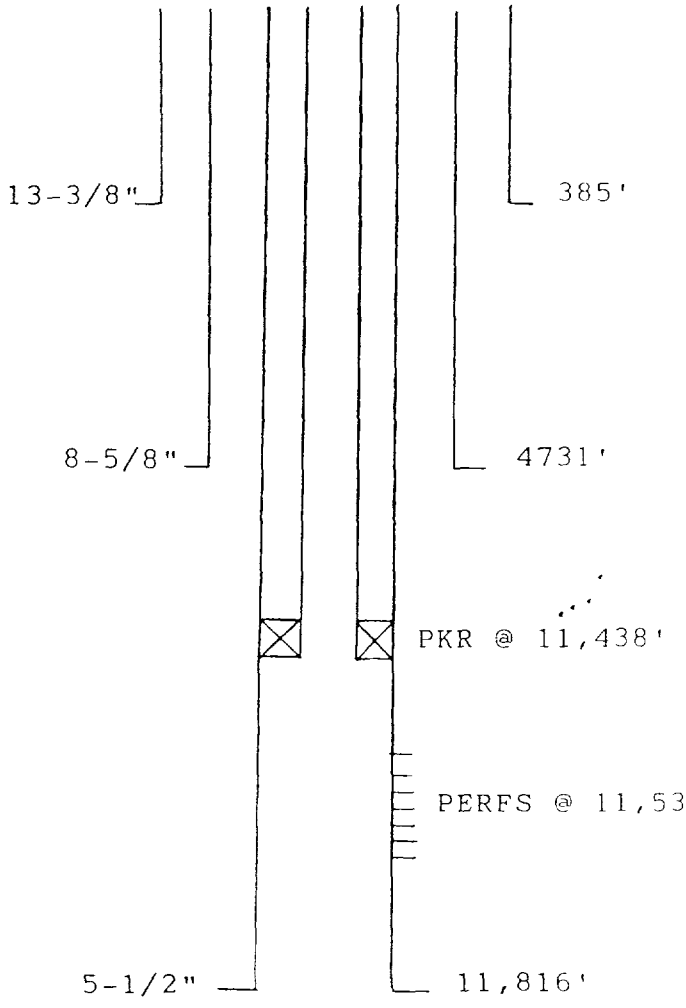
Gas Injection Well

Tabulation of Well Data

WELL DATA SHEET

Charles B. Gillespie, Jr.	Hamilton Federal			
OPERATOR	LEASE			
4	1880 FSL & 2080 FWL	33	15-S	35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Type of Well: Oil and Gas



Tabular Data

Surface Casing

Size 13-3/8 " Cemented with 440 sx.

TOC Surface feet determined by Circulated

Hole size 17-1/2

Intermediate Casing

Size 8-5/8 " Cemented with 1504 sx.

TOC Surface feet determined by Circulated

Hole size 11"

Long string

Size 5-1/2 " Cemented with 1100 sx.

TOC 9590 feet determined by Temp Survey

Hole size 7-7/8"

Total depth 11,816

Perforations

11,532 feet to 11,576 feet
(perforated or open-hole, indicate which)

FORM C-108
SECTION VI

Application for Authorization to Inject

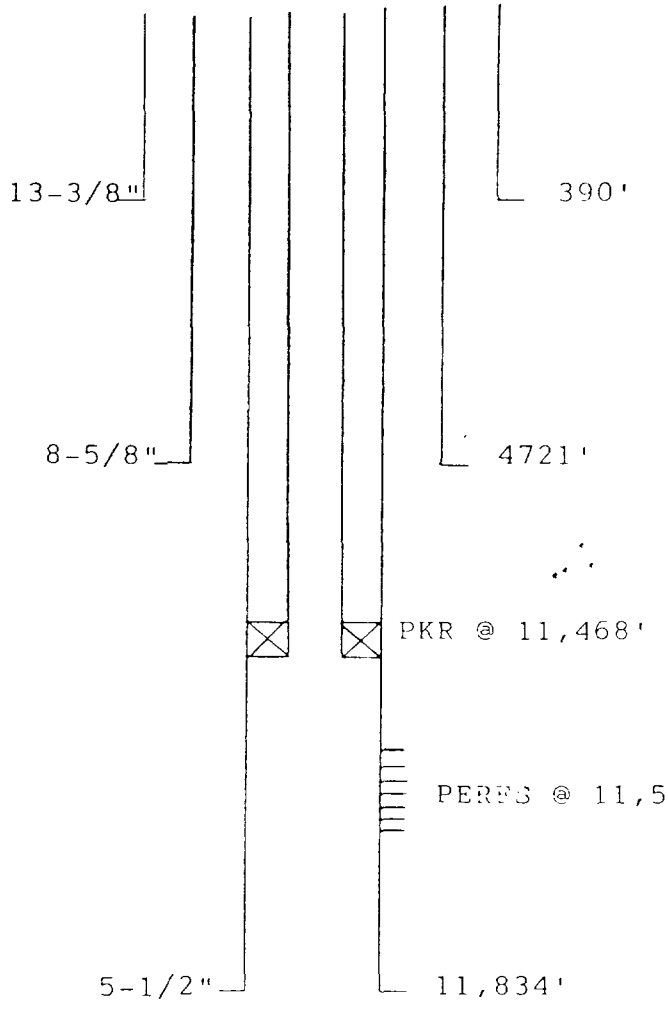
Gillespie-Crow, Inc.
Gas Injection Well

Tabulation of Well Data

WELL DATA SHEET

Charles B. Gillespie, Jr.		Hamilton Federal		
OPERATOR		LEASE		
3	1880 FSL & 2080 FWL	33	15-S	35-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Type of Well: Oil and Gas



Tabular Data

Surface Casing

Size 13-3/8 " Cemented with 525 sx.

TOC Surface feet determined by Circulated

Hole size 17-1/2"

Intermediate Casing

Size 8-5/8 " Cemented with 1580 sx.

TOC Surface feet determined by Circulated

Hole size 11"

Long string

Size 5-1/2 " Cemented with 738 sx.

TOC 8480 feet determined by Temp Survey

Hole size 7-7/8"

Total depth 11,834

Perforations

11,556 feet to 11,600 feet
(perforated or open-hole, indicate which)

FORM C-108
SECTION VI

Application for Authorization to Inject

Gillespie-Crow, Inc.

Gas Injection Well

Tabulation of Well Data

FORM C-108

SECTION VII

1) Proposed Average Daily Injection Rate - 1.5 MMCFPD
   Proposed Maximum Daily Injection Rate - 9 MMCFPD

2) This will be a closed system.

3) Estimated Average Injection Pressure - 2700 psi
   Estimated Maximum Injection Pressure - 3000 psi

4) Gas Analysis is attached. Does not apply.
   Re-injecting produced natural gas from formation

5) Does not apply.

***** DAWSON NATURAL GAS SERVICES, INC. *****
1515 IDLEWILDE
P.O. BOX 7006 * MIDLAND, TEXAS 79708-0006
PHONE 915/694-6000

RUN NO: 14323
DATE RUN: 05/13/94

STATION NAME: 1121 - SPEIGHT FEE #1
COMPANY NAME: CHARLES B. GILLESPIE
LOCATION: LEA CO., NM SECURED BY: RH DATE: 05/10/94
SAMPLE CONDITIONS: PRESS: 14# TEMP: TIME:

********* FRACTIONAL ANALYSIS *********
@ 14.65 PSIA & 60 DEG. F.

	MOL. %	GPM (REAL)
CARBON DIOXIDE	1.14	
NITROGEN	2.23	
OXYGEN		
H2S	0.00	
METHANE	66.32	
ETHANE	15.92	4.254
PROPANE	9.27	2.552
ISO-BUTANE	0.98	0.320
N-BUTANE	2.58	0.813
ISO-PENTANE	0.47	0.172
N-PENTANE	0.50	0.181
HEXANES PLUS	0.59	0.256
TOTAL	100.00	8.548

CALC. SP.GR., (REAL)	
DRY BASIS	0.8285
SAT BASIS	0.8253
CALC SP.GR., (IDEAL)	
DRY BASIS	0.8247
SAT BASIS	0.8211
BTU/CU.FT., (REAL)	
DRY BASIS	1372
SAT BASIS	1349
BTU/CU.FT., (IDEAL)	
DRY BASIS	1366
SAT BASIS	1342

********* ADDITIONAL DATA AND REMARKS *********

Z (SAT) 0.995 Z (DRY) 0.995

COPIES TO: JIS MEASUREMENT-STERLING
REMARKS: HYDROGEN SULFIDE BY STAIN

FORM C-108
SECTION VII(4)

Application for Authorization to Inject

Gillespie-Crow, Inc.

Gas Injection Well

Injection Gas Analysis

***** DAWSON NATURAL GAS SERVICES, INC. *****
1515 IDLEWILDE
P.O. BOX 7006 * MIDLAND, TEXAS 79708-0006
PHONE 915/694-6000

RUN NO: 14323
DATE RUN: 05/13/94

STATION NAME: 1121 - SPEIGHT FEE #1
COMPANY NAME: CHARLES B. GILLESPIE
LOCATION: LEA CO., NM SECURED BY: RH DATE: 05/10/94
SAMPLE CONDITIONS: PRESS: 14# TEMP: TIME:

********* FRACTIONAL ANALYSIS *********
@ 14.65 PSIA & 60 DEG. F.

	MOL. %	GPM (REAL)
CARBON DIOXIDE	1.14	
NITROGEN	2.23	
OXYGEN		
H2S	0.00	
METHANE	66.32	
ETHANE	15.92	4.254
PROPANE	9.27	2.552
ISO-BUTANE	0.98	0.320
N-BUTANE	2.58	0.813
ISO-PENTANE	0.47	0.172
N-PENTANE	0.50	0.181
HEXANES PLUS	0.59	0.256
TOTAL	100.00	8.548

CALC. SP.GR., (REAL)	
DRY BASIS	0.8285
SAT BASIS	0.8253
CALC SP.GR., (IDEAL)	
DRY BASIS	0.8247
SAT BASIS	0.8211
BTU/CU.FT., (REAL)	
DRY BASIS	1372
SAT BASIS	1349
BTU/CU.FT., (IDEAL)	
DRY BASIS	1366
SAT BASIS	1342

********* ADDITIONAL DATA AND REMARKS *********

Z (SAT) 0.995 Z (DRY) 0.995

COPIES TO: JIS MEASUREMENT-STERLING
REMARKS: HYDROGEN SULFIDE BY STAIN

FORM C-108
SECTION VII(4)

Application for Authorization to Inject

Charles B. Gillespie, Jr.

Gas Injection Well

Injection Gas Analysis

ATTACHMENT C-108 VIII

GEOLOGICAL DATA

Pressure maintenance is proposed for the Lovington Strawn, West Pool by injecting natural gas into the top of the Strawn reservoir in an interval from 11,424 feet to approximately 11,444 feet in the Charles B. Gillespie, Jr. Speight Fee No. 1 well located 660 feet from the North line and 2310 feet from the West line of Section 1, Township 16 South, Range 35 East, N.M.P.M., Lea County, New Mexico.

The Strawn formation in this well, as well as throughout the general area, is mostly a carbonate limestone interval underlying the Canyon shale section, however, there is a thin lower Strawn clastic section immediately overlying the Atoka formation, all of which are Pennsylvanian in age. The top of the Strawn formation in the proposed injection well occurs at 11,420 feet, while the base of the formation is found at 11,744 feet, for an overall thickness of 324 feet. The proposed injection well, like all the wells in the Lovington Strawn, West Pool, is producing oil and gas from a phylloid algal mound of Pennsylvanian (Strawn) age where porosity and permeability was greatly enhanced by fresh water dissolution of bioclastic material during periods of subaerial exposure.

Fresh water may be found in the Quaternary formation above the redbeds in the vicinity of the proposed injection well. This ground water is usually found at a depth between 100 feet and 200 feet, and all oil and gas wells drilled in the area have surface casing set and cemented to a depth of at least 375 feet.

There are no other known fresh water sands overlying the proposed injection zone and there are no known fresh water sands underlying the injection zone anywhere in the vicinity.

FORM C-108

SECTION IX

There will be no stimulation program.

FORM C-108

SECTION X

Original logs previously submitted with C-102 on 9/11/92.

BPCI

Water Analysis Report

Analysis Number : 000003359

Company.....:	C.b. Gillespie	Date of Sampling.....:	12/07/94
Location.....:	SE SW Sec 33	Date of Analysis.....:	12/07/94
Field.....:		Baker Representative..:	Steven Stroud
Lease.....:		Well#.....:	
Sample Source....:		Analysis by.....:	Williams

DISSOLVED SOLIDS

	mg/l	me/l
CATIONS:		
Ca++	800.00	40.00
Mg++	976.00	80.00
Fe+++	0.00	0.00
Ba++	0.00	0.00
Na+	0.00	0.00
Mn++	0.00	0.00
ANIONS:		
Cl-	4058.72	114.33
SO4--	80.00	1.67
HCO3-	244.00	4.00
CO3--	0.00	0.00
OH-	0.00	0.00
S-	0.00	0.00
TOTAL HARDNESS.....:		120.00
TOTAL SOLIDS (quantitative).....:		6158.70
RESIDUAL HYDROCARBONS(ppm).....:		0.00

ø = not determined

DISSOLVED GASES

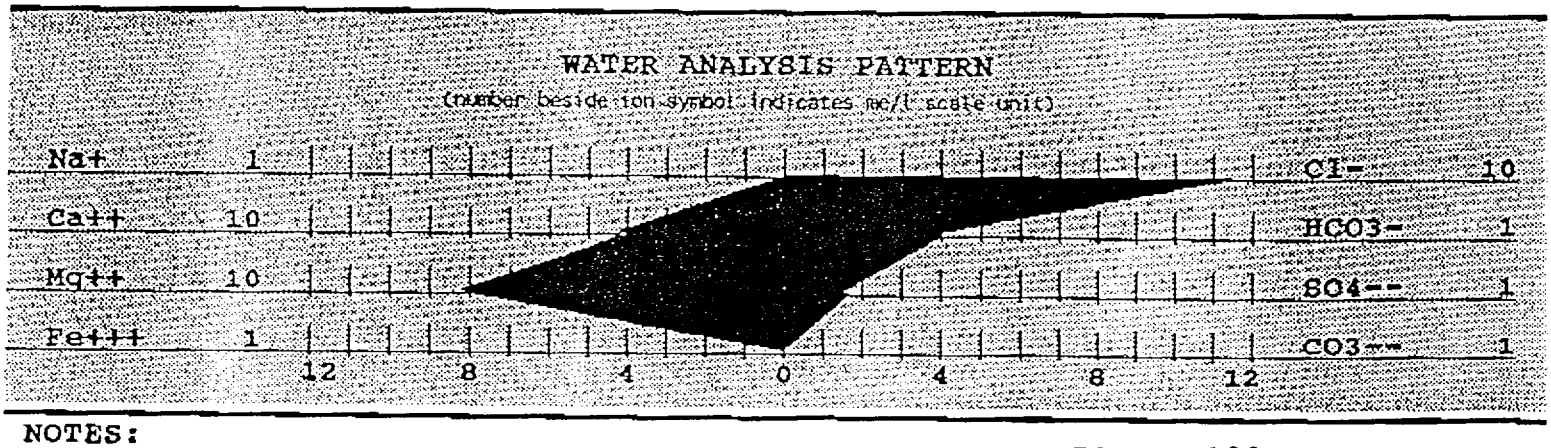
Hydrogen Sulfide, H2S.....:	0.0
Carbon Dioxide, CO2.....:	0.4
Oxygen, O2.....:	0.0

PHYSICAL PROPERTIES

pH.....:	7.4
Specific Gravity.....:	1.010
TDS (calculated) ppm.....:	6158.7
TIS (calculated) .....:	0.2

SCALE STABILITIES

Temp. °C	°F	CaCO3	CaSO4	BaSO4
20	68	0.47	2011	0
30	86	0.65	2083	0
40	104	0.86	2117	0
Max entity, (calculated):		113		0



NOTES:

FORM C-108
SECTION XI

Application for Authorization to Inject

Gillespie-Crow, Inc.

Gas Injection Well

Water Well Analysis

ATTACHMENT C-108 XI

WATER WELLS WITHIN ONE MILE RADIUS
OF PROPOSED INJECTION WELL

DESCRIPTION	SERVICE	REMARKS
SW/4 NW/4 of Sec. 33-T15S-R35E	Drilling	Out of Service
NW/4 NE/4 of Sec. 33-T15S-R35E	Livestock	Active
NW/4 SW/4 of Sec. 33-T15S-R35E	Drilling	Out of Service
SE/4 SW/4 of Sec. 33-T15S-R35E	Livestock	Active, Analysis Attached
SE/4 SW/4 of Sec. 33-T15S-R35E	Domestic	Active, Reynaldo B. Hernandez
SW/4 SE/4 of Sec. 33-T15S-R35E	Drilling	Inactive
Lot 3 of Sec. 1-T16S-R35E	Drilling	Inactive
Lot 4 of Sec. 1-T16S-R35E	Irrigation	Active
Lot 5 of Sec. 1-T16S-R35E	Livestock	Active
Lot 9 of Sec. 1-T16S-R35E	Drilling	Out of Service
Lot 11 of Sec. 1-T16S-R35E	Drilling	Out of Service
Lot 13 of Sec. 1-T16S-R35E	Drilling	Out of Service
Lot 2 of Sec. 2-T16S-R35E	Irrigation	Inactive
Lot 2 of Sec. 2-T16S-R35E	Irrigation	Inactive
Lot 4 of Sec. 6-T16S-R36E	Drilling	Out of Service

FORM C-108
SECTION XII

AFFIRMATIVE STATEMENT

Applicant hereby affirms that he has examined the available geologic and engineering data and finds no evidence of open faults or other hydrologic connection between the injection zone and any underground source of drinking water.