



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

GARREY CARRUTHERS
GOVERNOR

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Date: 7-14-89

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: Proposed MC _____
Proposed DHC _____
Proposed NSL _____
Proposed SWD X _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated 6-6-89
for the Memco Oil & Gas Corp. Western #5
Operator Lease & Well No.

B-7-26N-44W and my recommendations are as follows:
Unit, S-T-R

Set for hearing - Surrounding P&A wells have
insufficient cement coverage

Yours truly,

Tom Busch

Approval not granted

MERRION OIL & GAS CORPORATION

610 REILLY AVE. • P. O. Box 840
FARMINGTON, NEW MEXICO 87499

June 5, 1989

RECEIVED
JUN 6 1989
OIL CON. DIV.
DIST. 3

Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attn: Mr. Michael Stogner

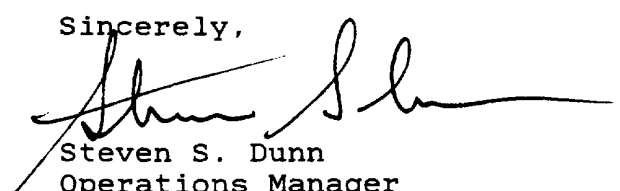
SUBJECT: Application for Authorization to Inject
Western No. 5
Unit B, Section 7, T26N, R11W
San Juan County, New Mexico

Dear Mr. Stogner:

By application enclosed herein, Merrion Oil & Gas requests administrative approval for authority to dispose of produced water in the Western No. 5 well.

If further information is required, please advise.

Sincerely,

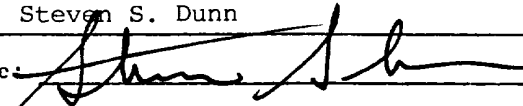

Steven S. Dunn
Operations Manager

SSD/eg

✓CC: Mr. Frank Chavez, Aztec OCD

Enclosures

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: MERRION OIL & GAS CORPORATION
Address: P. O. Box 840, Farmington, New Mexico 87499
Contact party: Steven S. Dunn Phone: 327-9801
- 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. ATTACHMENT NO. 2
- * 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. ATTACHMENT NO. 3
- VII. Attach data on the proposed operation, including: ATTACHMENT NO. 4
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. ATTACHMENT NO. 4
- IX. Describe the proposed stimulation program, if any. ATTACHMENT NO. 4
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) On file with NMOC
- * 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. ATTACHMENT NO. 5
- 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. ATTACHMENT NO. 6
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. ATTACHED
Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Steven S. Dunn Title: Operations Manager
Signature:  Date: 5/11/89
- * 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. X. Filed as a result of original Gallup drilling and completion.

ATTACHMENT NO. 1
INJECTION WELL DATA SHEET

MERRION OIL & GAS CORPORATION		WESTERN		
OPERATOR		LEASE		
5	660' FNL & 660' FWL	7	26N	11W
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

(SCHEMATIC ATTACHED)

Tabular Data

Surface Casing

Size _____" Cemented with _____sx.

TOC _____ feet determined by _____

Hole size _____

Intermediate Casing

Size _____" Cemented with _____sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size _____" Cemented with _____sx.

TOC _____ feet determined by _____

Hole size _____

Total depth _____

Injection interval

_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with plastic set in a
(material)

Baker Model "A" tension packer at 2,340 feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

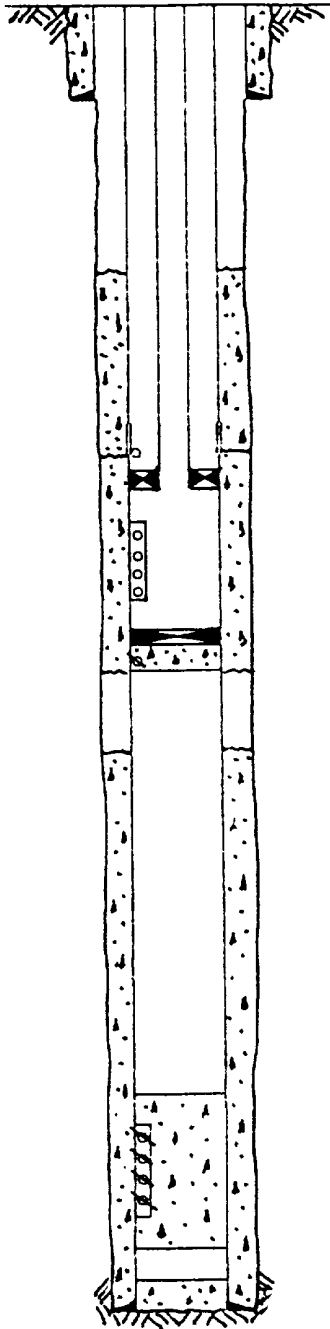
1. Name of the injection formation Mesaverde - Cliffhouse
2. Name of Field or Pool (if applicable) N/A
3. Is this a new well drilled for injection? ☐ Yes ☒ No
If no, for what purpose was the well originally drilled? Gallup oil production
in the Gallegos field
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) See wellbore schematic attached
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. South Gallegos Fruitland Sand \approx 800' - 1,400', Basin Fruitland \approx 800' - 1,400', Gallegos Gallup \approx 5,000', Basin Dakota \approx 6,000'.

ATTACHMENT NO 1
 * MERRION OIL & GAS *
 PROPOSED INJECTION CONFIGURATION
 WELLBORE SCHEMATIC

Well: Western No 5
 Field: Gallegos Gallup

Location: 660'FNL & 1980'FEL
 Sec. 7, T26N, R11W
 San Juan Co. New Mexico

Elevation: 6,109' KB
 6,098' GL



TOC @ Surface
 Bit Size - 13 3/4"

10 3/4" 32.75# Surface @ 173' KB w/ 200sx

Hole size - 7 7/8"

TOC @ 1,000'KB (calculated)

Annular Fluid w/ biocide & oxygen scavenger

Sqz holes @ 2,320'
 5 1/2" 14lb/ft @ 2,320'KB w/150 sx

Model 'A' Tension Packer @ 2,340'

Cliffhouse Perfs 2,359'-2,425' (Inject Interval)

Retainer @ 2,490'
 Sqz holes @ 2,500'

TOC @ 3,950' (Temp Survey)

	Tops	Depth
Well Equip:		
2" EUE Plastic Lined	Pic Cliffs	1,454
Tbg @ 2,340'w/Mod 'A'	Lewis	1,730
Tension Packer	Mesa Verde	2,337
	Mancos	4,196
	Gallup	5,042

Spot 65sx 'B' - 5,350' - 4,820'KB (March 1988)

Gallup Perfs - 5,062'-5,310'KB Gross Interval

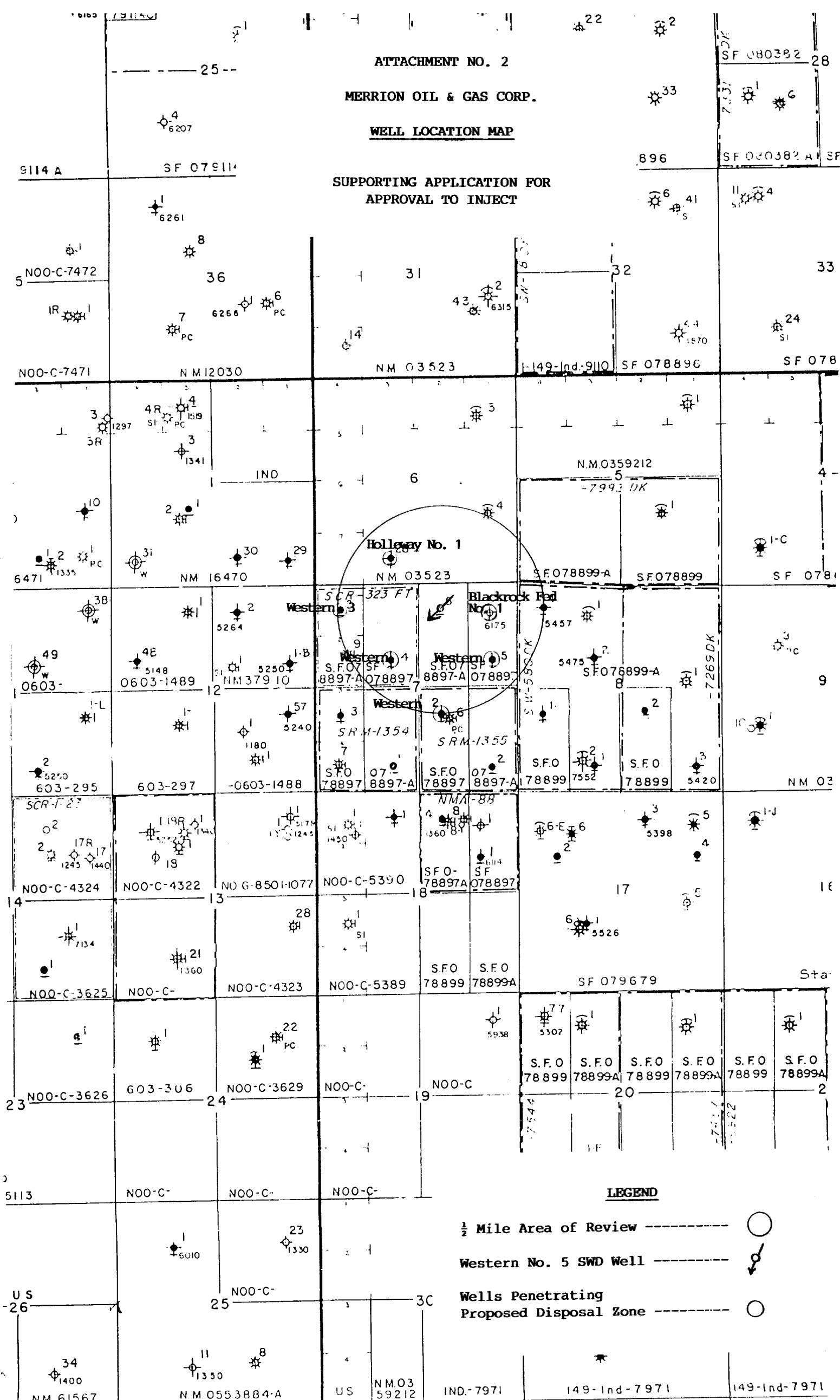
PBTD @ 5,370'KB
 5 1/2" 15.5# Prod Csg @ 5,373'KB w/300 sx
 TD @ 5,373' KB

5/11/1989
 File: WSTN5.sch

Capacities: 2" Tbg - 0.00387 Bbl/Ft
 5 1/2" 15.5#Csg- 0.0238 Bbl/Ft
 Annulus - 0.0183 Bbl/Ft

WELL LOCATION MAP

**SUPPORTING APPLICATION FOR
APPROVAL TO INJECT**



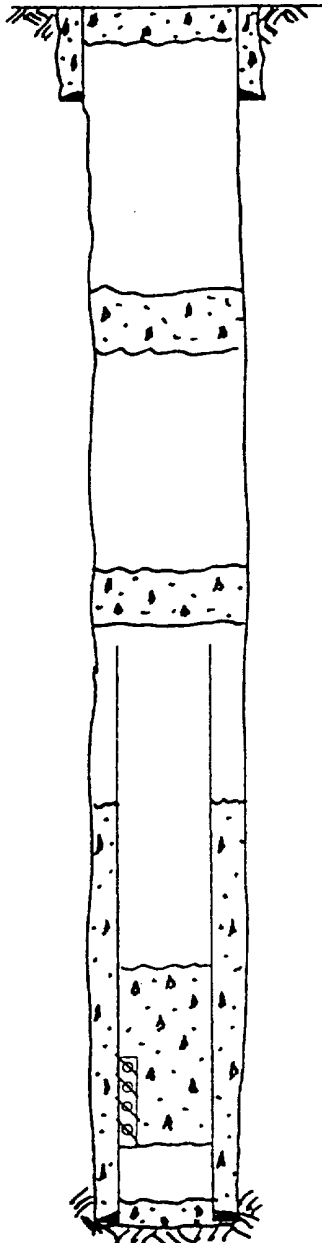
ATTACHMENT NO 3
* MERRION OIL & GAS *

WELLBORE SCHEMATIC

Well: Blackrock Fed No. 1
Field: Basin Dakota

Location: 790'FNL & 790'FEL
Sec. 7, T26N, R11W
San Juan Co, New Mexico
Operator: Southwest Production

Elevation: 6,135' KB
6,122' GL



TOC @ Surface Est
30' Surf Plug
Hole - 12 1/4"(Est)
8 5/8" Surface @ ?' KB w/ ?sx

Cmnt Plug @ 972' - 1,102'

Hole size - 7 7/8"(Est)

Cement Plug @ 4,585' -
4,715'
cut off casing @ 4,799'

Dakota Perfs 6,160' - 6,090' Gross Interval
Squeezed w/ 50sx 5,600 - 6,160'

4.5" 10.5# @ 6,190 w/ 275sx
TD @ 6,190' PBTD @ 6,174'

Tops	Depth
Ojo Alamo	
Pic Cliffs	
Cliffhouse	
Pt Lookout	
Gallup	

5/23/1989
File: WF4.sch

Capacities: 2 3/8" Tbg - 0.00387 Bbl/Ft
4 1/2" 10.5#Csg- 0.0159 Bbl/Ft
Annulus -(2" x 4.5") 0.0105 Bbl/Ft

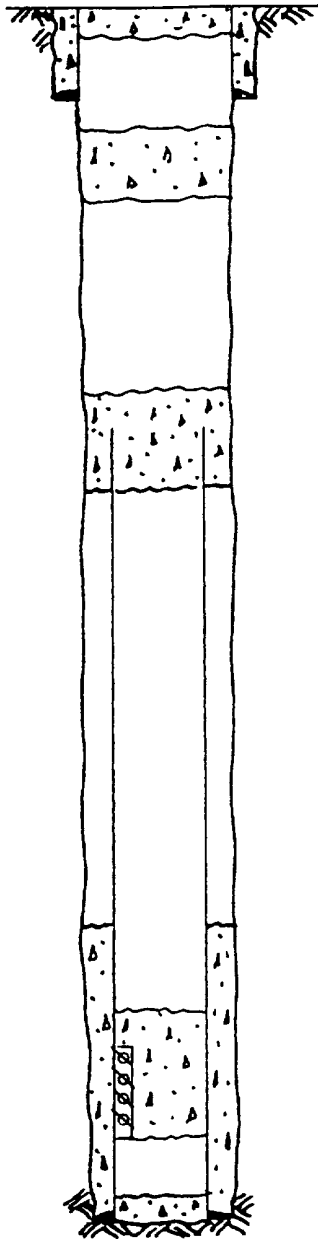
ATTACHMENT NO 3
* MERRION OIL & GAS *

WELLBORE SCHEMATIC

Well: Holloway No. 1
Field: Gallegos Gallup

Location: 660 FSL & 1980'FWL
Sec. 6, T26N, R11W
San Juan Co, New Mexico
Operator: Skelly Oil

Elevation: 6,079' KB
6,066' GL



TOC @ Surface
10sx surf plug
Hole - 12 1/4" (Est)
8 5/8" Surface @ ?' KB w/ ?sx Est

20sx 450' - 550'

20sx 2,426' - 2,526'

Shot off Csg @ 2,476'

Hole size - 7 7/8" (Est)

Tops	Depth
Ojo Alamo	
Pic Cliffs	
Cliffhouse	
Pt Lookout	
Gallup	

TOC @ 4585'

Squeezed w/25sx top @ 4988'
Gallup Perfs 5,063' - 5,258' Gross Interval

5.5" 15.5# @ 5,367' w/ 150 sx
TD @ 5,374' PBTD @ 5,327'

5/23/1989
File: HOLL.sch

Capacities: 2 3/8" Tbg - 0.00387 Bbl/Ft
5 1/2" 14#Csg- 0.0244 Bbl/Ft
Annulus -(2" x 5.5") 0.0189 Bbl/Ft

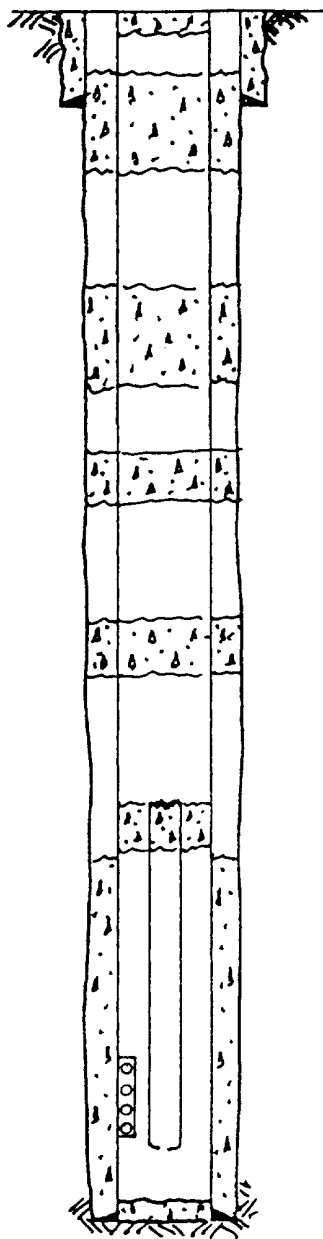
ATTACHMENT NO 3
* MERRION OIL & GAS *

WELLBORE SCHEMATIC

Well: Western Fed No.2
Field: Gallegos Gallup

Location: 1980'FSL & 1980'FEL
Sec. 7, T26N, R11W
San Juan Co, New Mexico
Operator: Dugan Production Corp

Elevation: 6,113' KB
6,100' GL



TOC @ Surface
10sx Surface Plug
Hole - 12 1/4"(Est)
8 5/8" 24# Surface @ 323' KB w/ 225sx

65sx 275' - 520'

80sx 1,140' - 1,450'

26sx 2,230 - 2,330'
Hole size - 7 7/8"(Est)

26sx 3,350' - 3,450'

25sx from 4,190' - 4,075'
Top of Tubing @ 4,190'KB

Gallup Perfs 5,108' - 42'
5,235' - 58'

5.5" 14# @ 5,335' w/ 135sx
TD @ 5,335'

Tops	Depth

5/23/1989
File: WF2.sch

Capacities: 2 3/8" Tbg -	0.00387 Bbl/Ft
5 1/2" 14#Csg-	0.0244 Bbl/Ft
Annulus -(2" x 5.5")	0.0189 Bbl/Ft

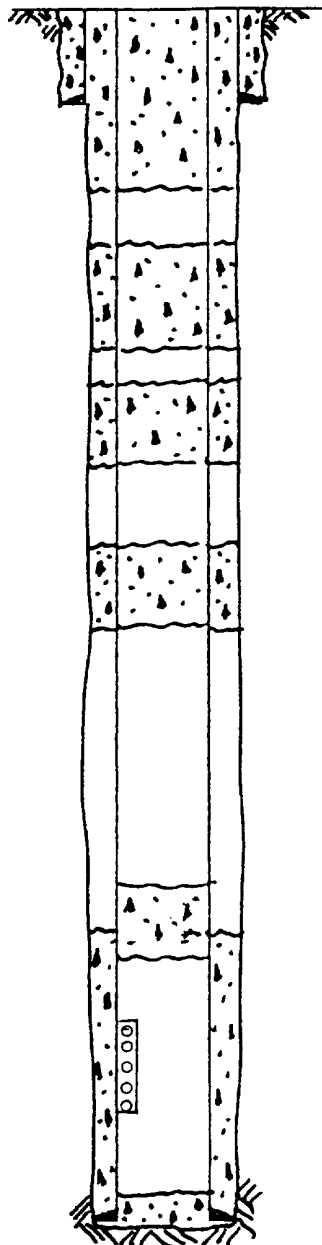
ATTACHMENT NO 3
* MERRION OIL & GAS *

WELLBORE SCHEMATIC

Well: Western Fed No.4
Field: Gallegos Gallup

Elevation: 6,083' KB
6,074' GL

Location: 1980'FNL & 1980'FWL
Sec. 7, T26N, R11W
San Juan Co, New Mexico
Operator: Dugan Production Corp



TOC @ Surface

Hole - 12 1/4"(Est)
8 5/8" 24# Surface @ 323' KB w/ 200sx Est

120sx @ 503'

90sx 664' - 1,440'

26sx 2,065' - 2,290'

Hole size - 7 7/8"(Est)

26sx 2,965' - 3,065'

25sx 4,200' - 4,425'

Gallup Perfs 5,100' - 5,250' Gross Interval

5.5" 15.5# @ 5,346'
TD @ 5,349' PBTD @ 5,305'

Tops	Depth
Ojo Alamo	
Pic Cliffs	
Cliffhouse	
Pt Lookout	
Gallup	

5/23/1989
File: WF4.sch

Capacities: 2 3/8" Tbg - 0.00387 Bbl/Ft
5 1/2" 14#Csg- 0.0244 Bbl/Ft
Annulus -(2" x 5.5") 0.0189 Bbl/Ft

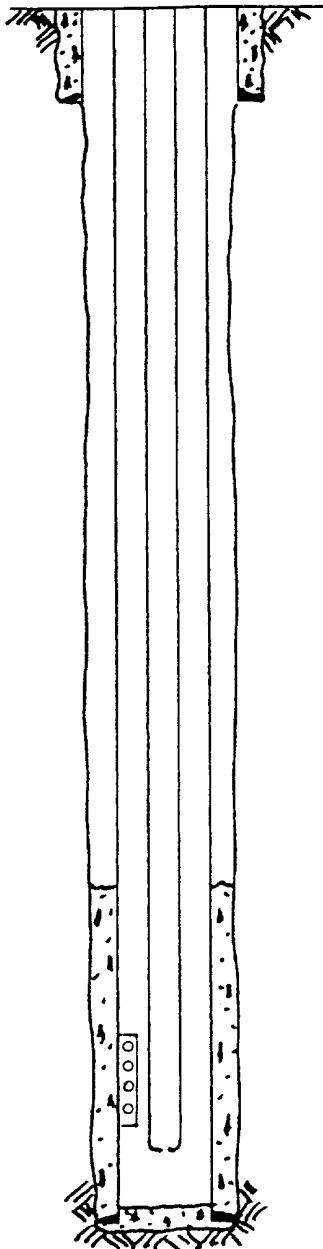
ATTACHMENT NO 3
* MERRION OIL & GAS *

WELLBORE SCHEMATIC

Well: Western Fed No.5
Field: Gallegos Gallup

Location: 660'FNL & 1980'FEL
Sec. 7, T26N, R11W
San Juan Co, New Mexico
Operator: Dugan Production Corp

Elevation: 6,147' KB
6,134' GL



Tops	Depth
Ojo Alamo	347
Pic Cliffs	1,481
Cliffhouse	2,338
Pt Lookout	3,942
Gallup	5,043

5/23/1989
File: WF5.sch

Capacities: 2 3/8" Tbg - 0.00387 Bbl/Ft
5 1/2" 14#Csg- 0.0244 Bbl/Ft
Annulus -(2" x 5.5") 0.0189 Bbl/Ft

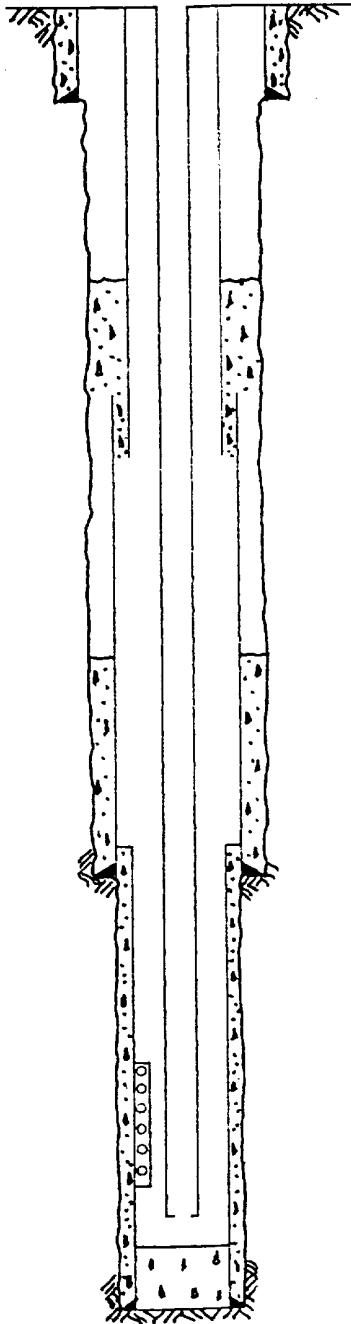
* MERRION OIL & GAS *

WELLBORE SCHEMATIC

Well: Western No 3
Field: Gallegos Gallup

Location: 660'FNL & 660'FWL
Sec. 7, T26N, R11W
San Juan Co. New Mexico

Elevation: 6.059' KB
6.048' GL



TOC @ Surface

Bit Size - 13 3/4"

10. 3/4" 32.75# Surface @ 171' KB w/ 150sx

Hole size - 9 7/8"

TOC @ 1,190'KB (calculated)

Top of 7 5/8" 26.4# @ 1,430'KB

5 1/2" 15.5# @ 1,511'KB w/ 100 sx

	Tops	Depth
	Pic Cliffs	1,385
	Mesa Verde	2,275
	Mancos	4,132
TOC @ 2,990'	Gallup	4,992

5 1/2" Liner Top @ 4,105'KB

7 5/8" 26.4# @ 4,177'KB w/ 250sx

Well Equip:
2" EUE Tbg @ 5,248'
165 Joints
79 - 3/4" Scr Rods
8 - 5/8" Scr Rods
98 - 5/8" Pln Rods
20 - 3/4" Pln Rods

Gallup Perfs - 5,006'-5,252'KB Gross Interval

PBSD @ 5,270'KB

5 1/2" 15.5# Prod Csg @ 5,303'KB w/300 sx

TD @ 5,319' KB

9/16/1988
File: WSTN3.sch

Capacities: 2" Tbg - 0.00387 Bbl/Ft
5 1/2" 15.5#Csg- 0.0238 Bbl/Ft
7 5/8" 26.4#Csg - 0.0472 Bbl/Ft

ATTACHMENT NO. 4

APPLICATION FOR AUTHORIZATION TO INJECT
WESTERN NO. 5

SECTION VII: OPERATIONAL DATA

1. Proposed Average Rate - 100 BPD
Maximum Rate - 400 BPD
2. System is closed.
3. Average injection pressure - 450 PSI
4. Injection fluid - Gallup produced water and Fruitland produced water. (Analysis included)
5. Injection zone water analysis to be submitted after perforating and prior to injection.

SECTION VIII: GEOLOGIC DATA

1. Injection zone - Cliffhouse formation
2. Lithology - Sandstone
3. Depth - 2,358' KB
4. Thickness - 69'
5. Overlying aquifers - Ojo Alamo formation
6. Depth of bottom - estimated < 400 feet
7. Underlying aquifers - none

SECTION IX: STIMULATION PROGRAM

1. Propose to sand-water frac the Cliffhouse with approximately 20,000 lbs 20/40 sand.

Date 4-19-88

API FORM 45-1

API WATER ANALYSIS REPORT FORM

Company <u>Merwin Oil & Gas</u>		Sample No.		Date Sampled <u>4-15-88</u>	
Field <u>Gallegos Gallup</u>		Legal Description		County or Parish <u>NM</u>	
Lease or Plot <u>Well</u>		Well <u># 1</u>		Depth	
Type of Water (Produced, Supply, etc.) <u>produced</u>		Sampling Point <u>well head</u>		Water, B/D <u>Gallup</u>	
				Sampled By <u>Tom Merrill</u>	

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	<u>16050</u>	<u>698.17</u>
Calcium, Ca	<u>672</u>	<u>16.77</u>
Magnesium, Mg	<u>96</u>	<u>3.95</u>
Barium, Ba	<u>—</u>	<u>—</u>
Potassium, K	<u>72</u>	<u>1.84</u>

ANIONS

Chloride, Cl	<u>25390</u>	<u>715.21</u>
Sulfate, SO ₄	<u>0</u>	<u>0</u>
Carbonate, CO ₃	<u>0</u>	<u>0</u>
Bicarbonate, HCO ₃	<u>337</u>	<u>5.52</u>
Hydroxide, OH	<u>0</u>	<u>0</u>

Total Dissolved Solids (calc.)

42617

(meas.)

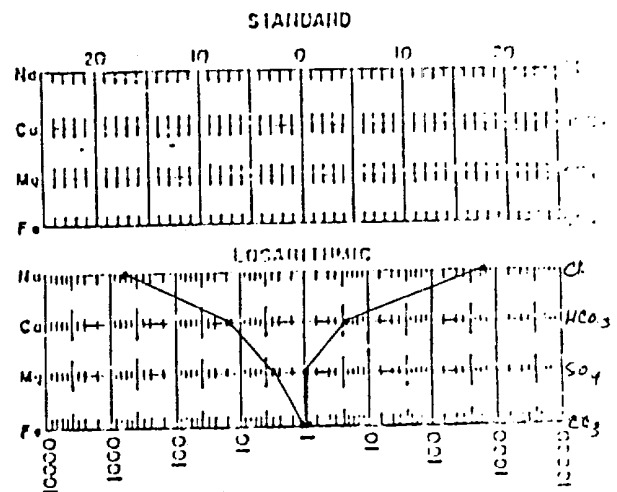
Iron, Fe (total)

Fe⁺⁺ 0 / Fe⁺⁺⁺ 0Sulfide, as H₂Snegative

OTHER PROPERTIES

pH	<u>6.8</u>
Specific Gravity, 60/60 F.	<u>1.030</u>
Resistivity (ohm meters) @ <u>75° F.</u>	<u>0.2</u>
Total Hardness	<u>2098</u>

WATER PATTERNS — me/l



REMARKS & RECOMMENDATIONS:

Analyst

Jim Little

Field Receipt

API FORM 45-1

API WATER ANALYSIS REPORT FORM

Company Marion Oil & Gas Co.		Sample No.		Date Sampled 4-15-88	
Field Gallegos Gallup		Legal Description		County or Parish State NM	
Lease or Unit Western		Well # 3		Depth Formation Gallup	
Type of Water (Produced, Supply, etc.) Produced		Sampling Point well head		Water, B/D Sampled By Tim Merrillatt	

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	<u>11195</u>	<u>486.97</u>
Calcium, Ca	<u>395</u>	<u>9.56</u>
Magnesium, Mg	<u>96</u>	<u>3.95</u>
Barium, Ba	<u>-</u>	<u>-</u>
Potassium, K	<u>62</u>	<u>1.59</u>

NOTES

Chloride, Cl	<u>1746.8</u>	<u>492.06</u>
Sulfate, SO ₄	<u>150</u>	<u>156</u>
Carbonate, CO ₃	<u>0</u>	<u>0</u>
Bicarbonate, HCO ₃	<u>534</u>	<u>8.75</u>
Hydroxide, OH	<u>0</u>	<u>0</u>

Total Dissolved Solids (calc.)

(meas.) $\frac{29,900}{\text{Fe}^{II} \text{ O } \text{Fe}^{III} \text{ O}}$
negative

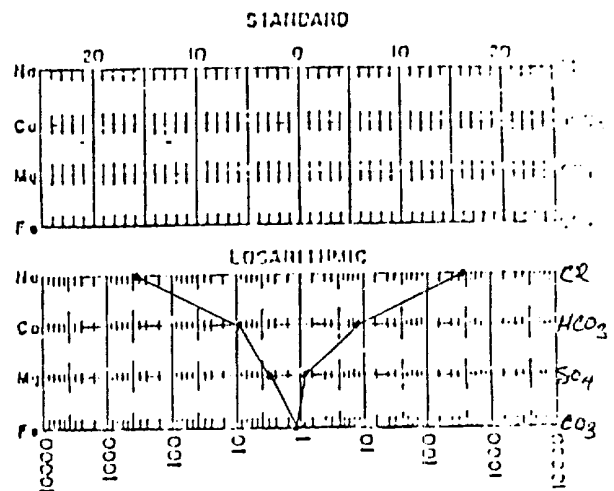
Iron, Fe (total)

Sulfide, as H₂S

OTHER PROPERTIES

pH	<u>4.73</u>
Specific Gravity, 60/60 F.	<u>1.027</u>
Resistivity (ohm meters) <u>75° F.</u>	<u>0.22</u>
<u>Total Hardness</u>	<u>1366</u>
_____	_____
_____	_____

WATER PATTERNS — mo/l



REMARKS & RECOMMENDATIONS:

Analyst Jon Little

LABORATORY WATER ANALYSIS

No. _____

To Merrion Oil & GasDate 12/4/86

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by Mike Mullin (Welex)Date Rec. 12/3/86Well No. Hickman 7-R Depth Formation FruitlandCounty Field WAW Source

Resistivity	<u>0.32 @ 66°F</u>	
Specific Gravity	<u> </u>	
pH	<u>6.7</u>	
Calcium (Ca)	<u>950</u>	<u> </u> *MPL
Magnesium (Mg)	<u>600</u>	
Chlorides (Cl)	<u>15900</u>	
Sulfates (SO ₄)	<u>less than 50</u>	
Bicarbonates (HCO ₃)	<u>280</u>	
Soluble Iron (Fe)	<u>no trace</u>	
	<u> </u>	
	<u> </u>	
TDS	<u>17750</u>	

Remarks:

*Milligrams per liter

Respectfully submitted,


Analyst: Barry Peiser
cc: _____

HALLIBURTON COMPANY

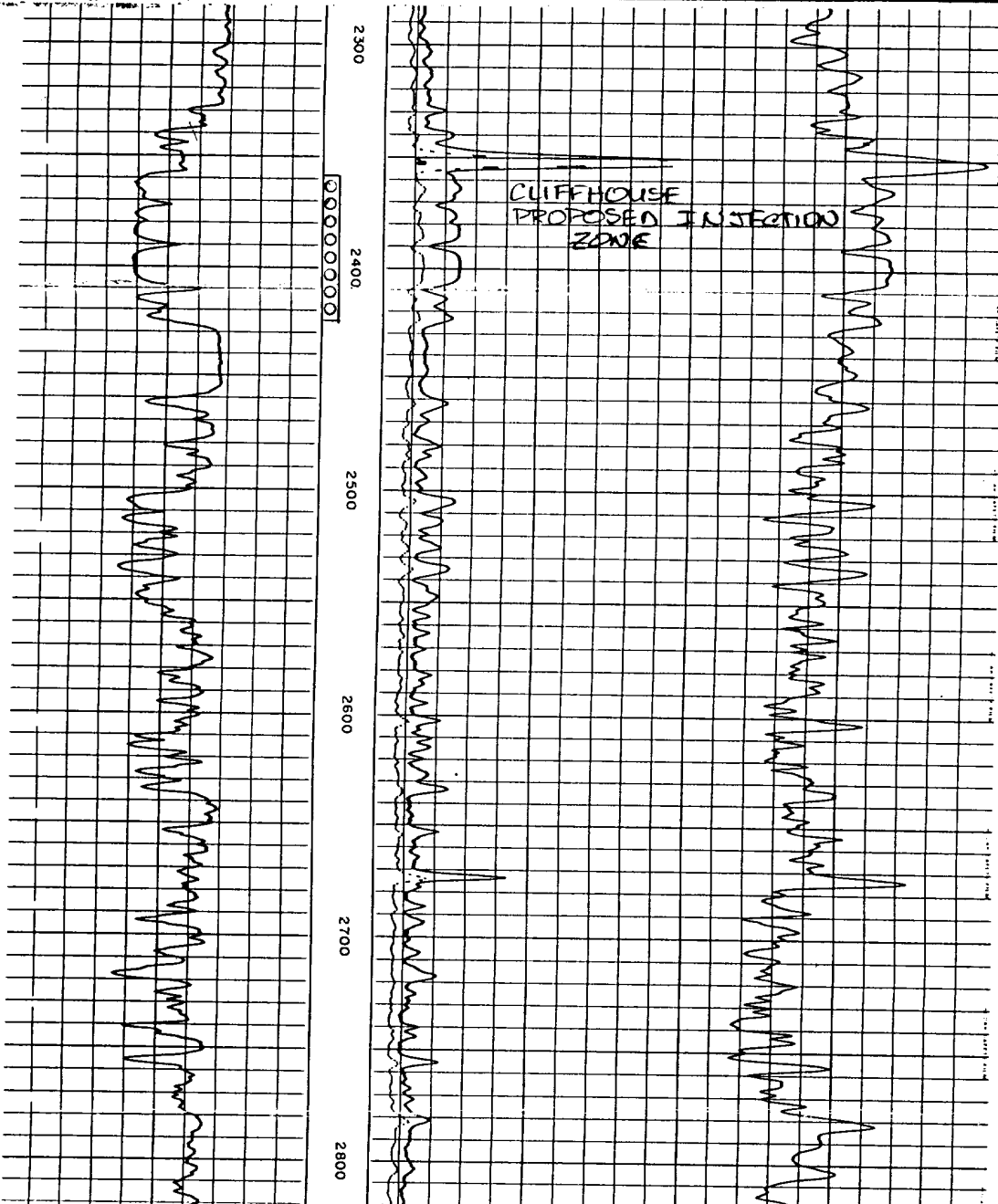
By _____

NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

 Schlumberger Well Surveying Corporation Houston, Texas <i>Induction - Electrical Log</i>		COUNTY <u>SAN JUAN, N.M.</u> FIELD or LOCATION <u>GALLEGOS-GALLUP</u> WELL <u>WESTERN #5</u> COMPANY <u>EL PASO NATURAL GAS PRODUCTS CO.</u> COUNTY <u>SAN JUAN</u> STATE <u>NEW MEXICO</u> FILING No. <u>5</u>	
COMPANY <u>EL PASO NATURAL GAS PRODUCTS COMPANY</u> WELL <u>WESTERN #5</u> FIELD <u>GALLEGOS-GALLUP</u> LOCATION <u>SEC. 7-26N-11W</u> Location of Well <u>660' FR N/L</u> <u>1980' FR E/L</u> <u>SEC. 7-26N-11W</u> Elevation: D.F.: 6108' K.B.: 7-26N-11W or G.L.: 6039'		Other Surveys NONE Property of <u>El Paso Natural Gas Products Co.</u> Geological Department San Juan Division	

RUN NO.	ONE	QA	347
Date	2-8-58		534
First Reading	5387	12.35	14.81
Last Reading	5377	12.35	17.56
Feet Measured	530	12.35	2336
Csg. Schlum.	177	12.35	3942
Csg. Driller	170	12.35	4194
Depth Reached	5372	12.35	5043
Bottom Driller	5315	12.35	5164
Depth Datum	KB	12.35	5282
Mud Nat.	GEL	12.35	5381
Dens. Visc.	10.67	12.35	5481
Mud Resist.	4.2 @ 58	12.35	5581
Res. BHT	2.0 @ 130	12.35	5681
Run	2.5 @ 77	12.35	5781
Rate	1.1 @ 30	12.35	5881
pH	8.5 @	12.35	5981
Wtr. Loss	2.2 @ 30 min.	12.35	6081
BH Size	8 3/4"	12.35	6181
Secys-AM	18"	12.35	6281
IND.	40"	12.35	6381
Op. Rig Time	2 HRS	12.35	6481
Truck No.	2515 FARM	12.35	6581
Recorded By	COVEY	12.35	6681
Witness	THOMAS	12.35	6781



API FORM 45-1

FIELD RECEIPT NO. _____

API WATER ANALYSIS REPORT FORM

Company <u>Mission Oil & Gas</u>		Sample No. <u>1</u>	Date Sampled <u>5-24-89</u>
Field <u>Gallegos</u>	Legal Description <u>NE/SE 1/4, 26N, 12W</u>	County or Parish <u>San Juan</u>	State <u>N.M.</u>
Lease or Unit	Well <u>Whitey Spring</u>	Depth	Formation <u>Ojo Alamo</u>
Type of Water (Produced, Supply, etc.) <u>Spring water</u>	Sampling Point <u>Surface Water</u>	Sampled By <u>T.L.M.</u>	

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	<u>211</u>	<u>9.18</u>
Calcium, Ca	<u>26</u>	<u>1.29</u>
Magnesium, Mg	<u>3</u>	<u>0.25</u>
Barium, Ba	<u>-</u>	<u>-</u>
Potassium, K ⁺	<u>1</u>	<u>0.03</u>

ANIONS

Chloride, Cl	<u>39</u>	<u>1.1</u>
Sulfate, SO ₄	<u>280</u>	<u>5.83</u>
Carbonate, CO ₃	<u>-</u>	<u>-</u>
Bicarbonate, HCO ₃	<u>233</u>	<u>3.82</u>
<u>OH</u>	<u>-</u>	<u>-</u>

Total Dissolved Solids (calc.)

793.0

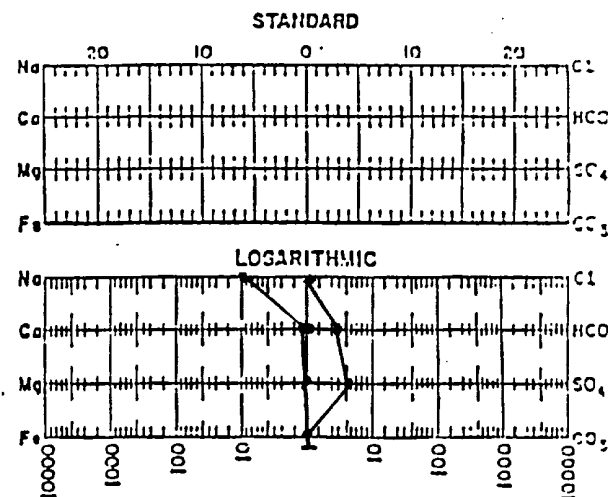
Iron, Fe (total)

Fe⁺⁺ 0 ppmSulfide, as H₂Snegative

OTHER PROPERTIES

pH	<u>7.39</u>
Specific Gravity, 60/60 F.	<u>1.0012</u>
Resistivity (ohm-meters) <u>78°</u> F.	<u>+ 10</u>
Total hardness	<u>76</u>

WATER PATTERNS — me/l



REMARKS & RECOMMENDATIONS:

metal stamp at well with the following info:
 ACO-operative U.S. Public Health Service
 Project Huerfano Ch. Whitey Spring
 19-5-6 5-28-65

ANALYST: Jim L. L.

THE WESTERN COMPANY OF
 NORTH AMERICA, FARMINGTON, NM
 (505) 327-6222

Please refer any questions to: Clay Terry, District Engineer

ATTACHMENT NO. 6

APPLICATION FOR AUTHORIZATION TO INJECT
WESTERN NO. 5

Merrion Oil and Gas Corporation states the following:

1. We 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.

MERRION OIL & GAS CORPORATION

By: 
Steven S. Dunn,
Operations Manager

Date: JUNE 5, 1989

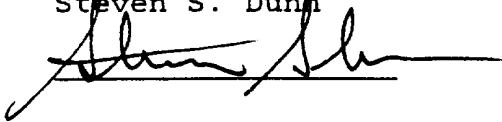
PROOF OF NOTICE
APPLICATION FOR AUTHORIZATION TO INJECT
WESTERN NO. 5

I hereby certify to the best of my knowledge and belief that Merrion Oil & Gas Corporation has furnished notice of this application by certified mail to the surface owner of the land on which the well is located and to each leasehold operator within one-half mile of the well location.

A copy of such notice is enclosed herein.

Name: Steven S. Dunn

Title: Operations Manager

A handwritten signature in black ink, appearing to read 'Steven S. Dunn', is written over a horizontal line.

Date: June 5, 1989

AFFIDAVIT OF PUBLICATION

Copy of Publication

No. 23565

STATE OF NEW MEXICO,
County of San Juan:

Betty Shipp being duly
sworn, says: That he is the Nat'l. Adv. Manager of
THE FARMINGTON DAILY TIMES, a daily newspaper of general circulation
published in English at Farmington, said county and state, and that the
hereto attached legal notice

was published in a regular and entire issue of the said FARMINGTON DAILY
TIMES, a daily newspaper duly qualified for the purpose within the
meaning of Chapter 167 of the 1937 Session Laws of the State of New
Mexico for one consecutive (days) (weeks) on the same day as
follows:

First Publication Tuesday, May 30, 1989

Second Publication _____

Third Publication _____

Fourth Publication _____

and that payment therefor in the amount of \$ 10.23
has been made.

Betty Shipp

Subscribed and sworn to before me this 31st day
of May 1989.

J. Shorter
NOTARY PUBLIC, SAN JUAN COUNTY, NEW MEXICO

My Commission expires: June 23, 1990

NOTICE

Subject: Western No. 5
Section 7, T26N, 11W
San Juan County, NM

Merrion Oil & Gas has applied to the New Mexico Oil Conservation Division requesting administrative approval for their Application to Inject produced water into the Western No. 5 well located in the NW/4, NE/4, of Section 7, T26N, R11W, NMPM, San Juan County, New Mexico, in accordance with Rule No. 701 Section D of the New Mexico Oil Conservation Commission Rules.

The proposed maximum injection rate is 400 BPD with an average injection pressure of 450 PSI. The injection zone is to be the Cliffhouse formation with a depth of 2,350 ft. to 2,430 ft.

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.

For further information contact Steven S. Dunn, Merrion Oil & Gas, P. O. Box 840, Farmington, New Mexico 87499, (505) 327-9801.

Legal No. 23565 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, May 30, 1989.

MERRION OIL & GAS CORPORATION

610 REILLY AVE. • P. O. Box 840
FARMINGTON, NEW MEXICO 87499

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 25, 1989

Marathon Oil Co.
P. O. Box 552
Midland, Texas 79702

Subject: Application for Authorization to Inject
Western No. 5
Gallegos Gallup Pool
Sec. 7, T26N, R1W
San Juan County, New Mexico

Gentlemen:

Merrion Oil & Gas has applied to the New Mexico Oil Conservation Division requesting administrative approval to inject produced water into the Cliffhouse formation at a depth of 2,358 feet in the Western No. 5 well in accordance with Rule 701-B.

Merrion Oil & Gas requests you to submit a written waiver to the NMOC if you have no objection to our application.

Enclosed for your review is a lease ownership map identifying the location of this well and the offsetting leases. Also, included is a wellbore schematic and log across the Cliffhouse interval.

If you have questions or desire further information, please give me a call.

Yours truly,


Steven S. Dunn
Operations Manager

SSD:ks

Enc.

PS Form 3800, June 1985

Sent to	Marathon Oil	
Strengthen No.	P.O. Box 552	
P.O., State and ZIP Code	Midland, TX 79702	
Postage	\$	7.00
Certified Fee		
Special Delivery Fee		
Restricted Delivery Fee		
Return Receipt showing to whom and Date Delivered		
Return Receipt showing to whom, Date, and Address of Delivery		
TOTAL Postage and Fees	\$	7.00
Postmark or Date	5-25-89	

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

P 950 806 079

MERRION OIL & GAS CORPORATION

610 REILLY AVE. • P. O. Box 840

FARMINGTON, NEW MEXICO 87499

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 24, 1989

Depco, Inc.
110 16th Street, Suite 1000
Denver, Colorado 80202

Subject: Application for Authorization to Inject
Western No. 5
Gallegos Gallup Pool
Sec. 7, T26N, R1W
San Juan County, New Mexico

Gentlemen:

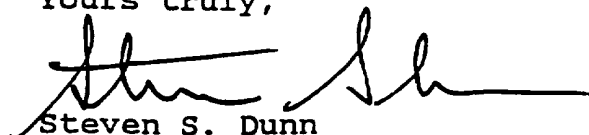
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Merrion Oil & Gas requests you to submit a written waiver to the NMOCD if you have no objection to our application.

Enclosed for your review is a lease ownership map identifying the location of this well and the offsetting leases. Also, included is a wellbore schematic and log across the Cliffhouse interval.

If you have questions or desire further information, please give me a call.

Yours truly,


Steven S. Dunn
Operations Manager

SSD:ks

Enc.

PS Form 3800, June 1985

Sent to <i>Depco, Inc.</i>	Postage \$	Certified Fee	Special Delivery Fee	Restricted Delivery Fee	Return Receipt showing to whom and Date Delivered	Return Receipt showing to whom, Date, and Address of Delivery	TOTAL Postage and Fees	Postmark or Date <i>5-25-89</i>
Street and No. <i>110 16th St. Denver</i>							\$	
P.O. State and ZIP Code <i>Denver, Colo. 80202</i>								

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

P 750 006 078

MERRION OIL & GAS CORPORATION

610 REILLY AVE. • P. O. Box 840

FARMINGTON, NEW MEXICO 87499

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 24, 1989

W. W. Lynch
2010 Fdltz Life Bldg.
Dallas, Texas 75201-4713

Subject: Application for Authorization to Inject
Western No. 5
Gallegos Gallup Pool
Sec. 7, T26N, R1W
San Juan County, New Mexico

Gentlemen:

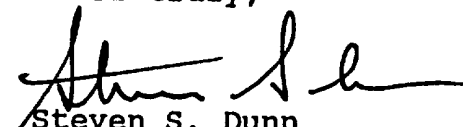
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If you have questions or desire further information, please give me a call.

Yours truly,


Steven S. Dunn
Operations Manager

SSD:ks

Enc.

P 783 348 613

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	Waldo W. Lynch
Street and No.	800 SW 57th Avenue #221
P.O. State and ZIP Code	Fort Lauderdale, Florida 33143
Postage	\$ 45
Certified Fee	.85
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	.90
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$ 2.20
Postmark or Date	6-2-89

P 950 806 083

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to	W. W. Lynch
Street and No.	2010 Fdltz Life Bldg.
P.O. State and ZIP Code	Dallas, TX
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	5-25-89

PS Form 3800, June 1985

MERRION OIL & GAS CORPORATION

610 REILLY AVE. • P. O. Box 840
FARMINGTON, NEW MEXICO 87499

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 25, 1989

Meridian Oil Co.
P. O. Box 4289
Farmington, New Mexico 87499Subject: Application for Authorization to Inject
Western No. 5
Gallegos Gallup Pool
Sec. 7, T26N, R1W
San Juan County, New Mexico

Gentlemen:

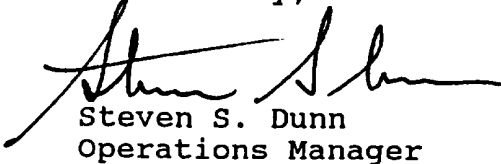
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Enclosed for your review is a lease ownership map identifying the location of this well and the offsetting leases. Also, included is a wellbore schematic and log across the Cliffhouse interval.

If you have questions or desire further information, please give me a call.

Yours truly,


Steven S. Dunn
Operations Manager

SSD:ks

Enc.

P 950 806 082

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to <i>Meridian Oil</i>	
Street and No. <i>P.O. Box 4289</i>	
P.O., State and ZIP Code <i>Farmington, N.M.</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date <i>5-25-89</i>	

PS Form 3800, June 1985

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4. Put your address in the RETURN TO space on the reverse side. Failure to do so will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested. 1. <input type="checkbox"/> Show to whom delivered, date, and addressee's address. 2. <input type="checkbox"/> Restricted Delivery (Extra charge)	
3. Article Addressed to: <i>Meridian Oil Co.</i> <i>P.O. Box 4289</i> <i>Farmington, NM 87401</i> <i>Western 5</i>	4. Article Number: <i>P 950 806 082</i>
Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise	
Always obtain signature of addressee or agent and DATE DELIVERED.	
5. Signature - Address: <i>X</i>	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature - Agent: <i>X</i> <i>Tracy Rice</i>	
7. Date of Delivery: <i>5-26-89</i>	

MERRION OIL & GAS CORPORATION
610 REILLY AVE. • P. O. Box 840
FARMINGTON, NEW MEXICO 87499

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 25, 1989

Bureau of Indian Affairs
P. O. Box M
Window Rock, Arizona 86515

Subject: Application for Authorization to Inject
Western No. 5
Gallegos Gallup Pool
Sec. 7, T26N, R1W
San Juan County, New Mexico

Gentlemen:

Merrion Oil & Gas has applied to the New Mexico Oil Conservation Division requesting administrative approval to inject produced water into the Cliffhouse formation at a depth of 2,358 feet in the Western No. 5 well in accordance with Rule 701-B.

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If you have questions or desire further information, please give me a call.

Yours truly,


Steven S. Dunn
Operations Manager

SSD:ks

Enc.

225

SENDER: Complete items 1 and 2 when additional services are desired and complete items 3 and 4. Put your address in RETURN TO Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check boxes for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. (Extra charge) 2. ☐ Restricted Delivery. (Extra charge)

3. Article Addressed to: *BIA P.O. Box M Window Rock, Arizona 86515*

4. Article Number: *P-950-806-080*

Type of Service: ☐ Registered ☐ Insured ☐ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature - Addressee: *[Signature]*

6. Signature - Agent: *[Signature]*

7. Date of Delivery: *05-26-89*

8. Addressee's Address (ONLY if requested and fee paid):

PS Form 3811, Mar. 1988 • U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

P 950 806 080

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to: *BIA*

Street and No.: *P.O. Box M*

P.O., State and ZIP Code: *Window Rock, Az. 86515*

Postage: \$

Certified Fee:

Special Delivery Fee:

Restricted Delivery Fee:

Return Receipt showing to whom and Date Delivered:

Return Receipt showing to whom, Date, and Address of Delivery:

TOTAL Postage and Fees: \$

Postmark or Date:

3800, June 1985

MERRION OIL & GAS CORPORATION

610 REILLY AVE. • P. O. Box 840
FARMINGTON, NEW MEXICO 87499

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 25, 1989

Navajo Agriculture Products Industry
S. Highway 371
Farmington, New Mexico 87401

Subject: Application for Authorization to Inject
Western No. 5
Gallegos Gallup Pool
Sec. 7, T26N, R1W
San Juan County, New Mexico

Gentlemen:

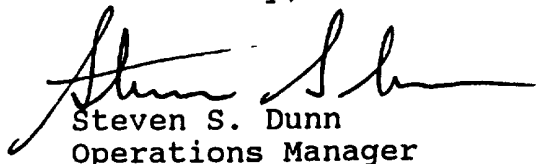
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If you have questions or desire further information, please give me a call.

Yours truly,


Steven S. Dunn
Operations Manager

SSD:ks

Enc.

P 950 806 081

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to <i>NAPI</i>	
Street and No. <i>S. Highway 371</i>	
P.O., State and ZIP Code <i>Farmington, N.M.</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date <i>5-25-89</i>	

orm 3800, June 1985

1. Complete items 1 and 2 when additional services are desired and complete items 3 and 4.	
2. RETURN TO: Space on the reverse side. Failure to provide this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check boxes for additional service(s) requested.	
1. <input type="checkbox"/> Show to whom delivered, date, and address of address. (Extra charge)	2. <input type="checkbox"/> Restricted Delivery (Extra charge)
3. Article Addressed to: <i>NAPI</i> <i>S. Highway 371</i> <i>Farmington, N.M. 87401</i>	4. Article Number: <i>P 950 806 081</i>
Type of Service:	
<input type="checkbox"/> Registered	<input type="checkbox"/> Insured
<input type="checkbox"/> Certified	<input type="checkbox"/> COD
<input type="checkbox"/> Express Mail	<input type="checkbox"/> Return Receipt for Merchandise
Always obtain signature of addressee or agent and DATE DELIVERED.	
5. Signature - Addressee: <i>W. S. Dunn</i>	6. Signature - Agent: <i>[Signature]</i>
7. Date of Delivery: <i>5-25-89</i>	8. Address of Addressee (ONLY if requested on this card):

6861
92
MAY
1989
FARMINGTON, N.M.