1	NEW MEXICO OIL CONSERVATION DIVISION
2	STATE LAND OFFICE BUILDING
3	STATE OF NEW MEXICO
4	CASE NO. 10640
5	
6	IN THE MATTER OF:
7	
8	The Application of Arapaho Oil & Gas, for Salt Water Disposal, Eddy County,
9	New Mexico.
10	
11	
1 2	
13	
1 4	
15	BEFORE:
16	MICHAEL E. STOGNER
1.7	Hearing Examiner
18	State Land Office Building
1.9	December 17, 1992
20	
2: 1	DEGE WE
2 2	JAN 6 1993
2:3	REPORTED BY: CARLA DIANE RODRIGUEZ OIL CONSERVATION DIVISION
24	
25	Certified Court Reporter for the State of New Mexico
	·

ORIGINAL

1	APPEARANCES
2	
3	FOR THE NEW MEXICO OIL CONSERVATION DIVISION:
4	
5	ROBERT G. STOVALL, ESQ. General Counsel
6	State Land Office Building Santa Fe, New Mexico 87504
7	
8	FOR THE APPLICANT:
9	CAMPBELL, CARR, BERGE & SHERIDAN, P.A.
10	Post Office Box 2208 Santa Fe, New Mexico 87504-2208
11	BY: WILLIAM F. CARR, ESQ.
1. 2	
13	
1. 4	
15	
1.6	
17	
1. 8	
1.9	
20	
21	
2: 2	
23	
2.4	
25	

1	I N D E X	
2		Page Number
3	Appearances	2
4	WITNESSES FOR THE APPLICANT:	
5	1. RANDALL HARRIS	
6	Examination by Mr. Carr Examination by Mr. Stogner	6 11
7	Certificate of Reporter	23
8	EXHIBITS	Reference
9	Exhibit No. 1 Exhibit No. 2	6
10	EXHIBIT NO. 2	11
1. 1		
12		
1. 3		
14		
1. 5		
16		
1. 7		
18		
1. 9		
20		
21		
22		
23		
24		
25		

1	EXAMINER STOGNER: Call next case, out
2	of order, No. 10640.
3	MR. STOVALL: Application of Arapaho
4	Oil & Gas for salt water disposal, Eddy County,
5	New Mexico.
6	EXAMINER STOGNER: Call for
7	appearances.
8	MR. CARR: May it please the Examiner,
9	my name is William F. Carr with the Santa Fe law
1.0	firm, Campbell, Carr, Berge & Sheridan. We
1. 1	REPRESENT Arapaho Oil & Gas, and I have one
1. 2	witness.
1.3	EXAMINER STOGNER: Any other
1. 4	appearances?
1.5	Will the witness please stand to be
1.6	sworn.
1. 7	RANDALL L. HARRIS
1.8	Having been first duly sworn upon his oath, was
1. 9	examined and testified as follows:
2: 0	EXAMINATION
21	BY MR. CARR:
2: 2	Q. Would you state your name for the
23	record?
2.4	A. My name is Randall Harris.
25	Q. Where do you reside?

1 A. I reside in Lake Arthur, New Mexico. 2 Mr. Harris, by whom are you employed? Q. 3 Α. I'm employed as an exploration geologist and exploration manager for Ray Westhal Operating, Incorporated. However, today i AM 5 representing Arapaho as an agent. 6 7 Q. Have you previously testified before this Division? 8 9 Α. Yes, I have. At the time of that testimony were your 1.0 11 credentials as a geologist accepted and made a 1. 2 matter of record? Yes, they were. 13 Α. 1.4 Q. Are you familiar with the application filed in this case on behalf of Arapaho Oil & **1.5** 1.6 Gas? 1.7 Α. Yes, sir, I am. And are you familiar with the proposed 1.8 Q. 19 disposal well? 20 Α. Yes, I am. MR. CARR: 2 1 Are the witness' 2.2 qualifications acceptable? 2:3 EXAMINER STOGNER: They are. 2.4 Q. Mr. Harris, would you briefly state

what you seek with this application?

2:5

- abandoned wells, and also states the one-half mile area of review.
 - Q. And there are well symbols that indicate P & A'd wells and oil and gas wells within that area?
 - A. Yes, that's correct.
 - Q. Behind that is an additional plat.

 Does this plat show all leasehold ownership

 within two miles of the proposed injection well?
- 1.0 A. Yes, it does.

3

5

6

7

8

9

11

1, 2

13

1.4

15

1.6

17

1.8

19

20

21

22

- Q. Do any wells within the area of review actually penetrate the injection zone?
- A. Yes. There are nine wells that penetrate the injection zones, and on the plat that we discussed earlier those have large circles drawn around them for easy identification.
- Q. Does Exhibit No. 1 contain the information which is required by OCD rules of the C-108 for each of those wells?
- A. Yes, it does.
 - Q. Are there any plugged and abandoned wells within the area of review?
- A. Yes. There is one well that has penetrated the Lovington sand and that is the

	A	•	We	SE	ek	app	prov	al	to	conve	ert	the	Arapa	aho
Oil	&	Gas	Cav	7 e	Sta	ite	#3	int	o a	wate	er d	lispo	sal	
wel	ı.													

1

2

3

5

6

7

8

9

1.0

1.1

1. 2

1.3

1.4

1.5

:. 6

1.7

1.8

1.9

20

2.1

22

2.3

24

2.5

- Q. Let's refer to what has been marked as Arapaho Exhibit No. 1. Would you identify that, please?
- A. Yes. Exhibit No. 1 is a completed Form C-108 application for authorization to inject.
- Q. What are going to be the injection zones in this well?
- A. The injection zone will be the Lovington sand of the San Andres formation.
- Q. Is this a new well or are you converting an older well?
 - A. We're converting an old well. It was originally drilled by JEM Resources in January of 1984, to test the Lovington sand.
 - Q. Is it currently producing?
 - A. Yes, it's currently producing somewhat less than one barrel per day.
 - Q. Could you refer to the plat contained in Exhibit No. 1, I think that's on page 6, and review that for Mr. Stogner?
- A. The plat is a land map that gives
 locations of all wells, producing, plugged and

Highland Corporation #4 Levers, located in the southwest/southwest of Section 33 of 16/29.

- Q. Could you review the schematic drawing on page 4 of this exhibit for the proposed injection well, and review for the Examiner exactly what Arapaho is proposing to do?
- A. This well is currently perforated in the Lovington sand at a depth of 2449 through 2464. They propose to just inject into the same perforations without any additional stimulation.

They proposed to run 2-3/8ths plastic lined tubing and set it in a Baker Locset packer at 2400 feet.

- Q. Will the annular space be filled with a fluid?
 - A. Yes.

1

2

3

5

6

7

8

9

1.0

11

1. 2

13

1.4

15

1.6

1. 7

18

1.9

20

2.1

22

23

24

- Q. And will there be a pressure gauge at the surface to monitor the pressure in the annular space as required by the Federal Underground Injection Rules?
 - A. Yes.
- Q. Into exactly what formation did you indicate you were proposing to inject?
- A. We're going to propose to inject into the Lovington sand. It's within the San Andres

formation. It's approximately 50 foot into the

San Andres formation and is approximately 24-feet
thick in this well.

Q. What is the source of the water that you propose to inject into this well?

5

6

7

8

9

1.2

23

1.4

1. 5

1.6

1.7

18

1.9

20

21

22

2:3

- A. The source of water is other producing San Andres wells and Grayburg wells within this same area.
 - Q. These are Arapaho-operated wells?
- 10 A. Yes, these are all Arapaho-operated
 11 wells.
 - Q. What is Arapaho currently doing with that water?
 - A. They are currently disposing in other disposal wells within the unit.
 - Q. The reason for this application, is just they need additional capacity?
 - A. They're anticipating additional recompletions, which inevitably will bring in more water in this advanced stage of depletion.
 - Q. What volumes of water are they proposing to dispose of in this well?
 - A. They are anticipating 300 barrels of water per day on an average.
- 25 Q. What will the maximum rate be?

1 A. 400. 2 Q. Is this going to be a closed system? Yes, it will be closed. 3 Α. Will injection be on vacuum or will you Q. be required to use pressure? 5 Initially we believe that the pressure 6 A. will be on vacuum until such time as the 7 reservoir does catch up with energy. 8 And we anticipate probably 150 pounds being necessary to 9 1.0 put 300 barrels of water a day. 11 Q. Do you have a maximum pressure figure 1. 2 that you're anticipating needing to use? 13 Α. The maximum pressure we envision would be 450 pounds. 1.4 Would a pressure limitation of ∴ 5 Q. 1.6 two-tenths pound per foot of depth to the top of 1.7 the injection interval be satisfactory for the 1.8 Arapaho proposal? 1.9 Α. Yes. 2:0 Does Exhibit No. 1 contain water Q. analyses of the injection fluid? 21 Α. 2:2 Yes, it does. 2.3 Do you anticipate any compatibility Q. 2:4 problems by injecting this water into this

2.5

formation?

- A. No. We have taken two water samples from the San Andres and from the Grayburg formations, different wells, and compared that to the water that has come out of the Cave State #3, and they are all compatible.
 - Q. Are there fresh water zones in the area?
 - A. None that have been found, although it's possible from surface to 250 foot in depth.
 - Q. There are no fresh water wells within the area of review?
- 12 A. No.

1

2

3

5

6

7

8

9

10

1.1

16

17

18

19

20

- Q. Is a log of the proposed injection well on file with the Commission?
- 15 A. Yes, it is.
 - Q. Is Exhibit No. 2 a copy of an affidavit confirming that notice of today's hearing has been provided in accordance with OCD rules and with the requirements of Form C-108?
 - A. Yes, sir.
 - Q. To whom has notice been givin?
- A. It has been sent to Fina Oil & Gas, and to the State Land Office.
- Q. Does this include the surface owner and all offsetting operators within a half-mile of

the proposed injection well?

A. Yes, it does.

1

2

3

5

6

7

8

9

1.0

11

1. 2

13

1.4

<u>.</u> 5

1.6

1.7

1.8

1.9

2:0

21

2:2

23

- Q. Are you aware of similar applications that have been granted in this immediate area for disposal?
- A. Yes, there's been several applications that have been granted.
- Q. Are there any that you can identify in particular?
- A. The most current one was approximately two years ago, converting the Red 12 #29. That would be located in the southeast of the southwest corner of the same section, Section 40.
- Q. Is that injecting or disposing of water into the same formation?
 - A. Disposing in the San Andres formation.
 - Q. Have you examined the available geologic and engineering information on this area?
 - A. Yes, I have.
 - Q. As a result of that investigation, have you found evidence of any open faults or other hydrologic connections between the disposal zone and any underground source of drinking water?
- 25 A. No. There is no evidence.

1	Q. In your opinion, will approval of this
2	application be in the best interest of
3	conservation, the prevention of waste and the
4	protection of correlative rights?
5	A. I do.
6	Q. Were Exhibits 1 and 2 prepared by you
7	or compiled at your direction?
8	A. Yes, they were.
9	MR. CARR: At this time, Mr. Stogner,
1. 0	we move the admission of Arapaho Exhibits 1 and
11	2.
1. 2	EXAMINER STOGNER: Exhibits 1 and 2
13	will be admitted into evidence at this time.
1.4	MR. CARR: That concludes my direct
15	examination of Mr. Harris.
1.6	EXAMINATION
17	BY EXAMINER STOGNER:
1.8	Q. Mr. Harris, in looking at the plat,
19	page 6 of Exhibit No. 1, there's quite a few oil
20	wells within the half-mile review. What
21	formation are those wells producing from?
22	A. The ones with the circles around them
23	are producing out of the San Andres formation.
24	Q. How about the ones without the circles?

25

Α.

Without, they are producing from the

1 Grayburg.

2

3

7

8

9

1.3

2:0

- What's the pool out here that this Q. production is attributed to?
 - Α. The Cave Queen-Grayburg-San Andres.
- And that's considered common source in 5 Q. 6 supply?
 - Α. Yes, sir. There may be a clarification The premier sand of the pool has been on that. unitized.
- 1.0 Q. Okay. And you're referring to the Cave Unit belonging to Arapaho Oil & Gas as indicated 1.1 1.2 on 6?
 - Α. Yes.
- 1.4 Q. And that is the premier?
- 1.5 Α. Yes. The premier is unitized sand of 1.6 the Grayburg formation, but it is within the Cave 1. 7 Queen-Grayburg-San Andres pool.
- 1.8 Q. Is that an active waterflood?
- 1.9 Α. No.
- Now, your source water again is Q. Okay. going to be water from this particular area, from 21 this unit, from the surrounding wells? 2.2
- 23 Α. Yes, sir.
- Now, this well in this particular 2:4 **Q**. 2.5 injection interval have been producing you said,

up to one barrel of oil per day?

- A. Yes, that is correct.
- Q. Are there any other wells surrounding immediately offsets that are producing from the same correlative interval?
- A. There is one. It would be the Theos, which is located in Section 5 in the southwest of the northeast quarter. That is perforated exclusively in the Lovington sand interval also.
- Q. Is there any stimulation technique or stimulation that is done to any of these wells within this half-mile review of the producing wells?
 - A. In the Lovington sand?
- Q. We're talking about a common source and supply. We're talking about the Cave Grayburg-San Andres pool.
- A. Yes, they all have been fracture-treated. Fracture treatments have ranged everywhere from 10,000 gallons, 20,000-pound sand, all the way up to 80,000 gallons, 100,000-pound sand. This pool has gone through numerous operators and numerous fractechniques.
 - Q. And you want to keep the injection or

the disposal within that, what you call the Lovington sand interval, but if it's been that badly fractured out there, what's the possibility of being able to do that?

- A. It's about 50 feet into the San Andres, and that is zero percent porosity for that 50 feet. Below the Lovington sand it's virtually no porosity, either, until you get down into the lower slaughter (phonetic) section, approximately 500 feet lower. So I wouldn't anticipate much communication problems.
- Q. Do you have a log in here that shows me that?
 - A. No, sir.

2.1

2.5

- Q. Could you provide me one, a type log, per say?
- A. Yes. The premier is waterflooded throughout this area.
 - Q. I thought you said it wasn't?
 - A. Oh, no, the premier is--I'm sorry, it's disposed. The premier originally was a waterflood. It has been abandoned. The wells that were considered injection wells have been reclassified as disposal wells.
 - Q. How many of those are there out there?

A. There are three.

Q. Are they on this map?

3

5

6

7

8

9

12

1.3

14

1.5

16

1. 7

1.8

1.9

20

21

2.2

23

2.4

- A. Yes, they are.
 - Q. Which ones are they?
- A. The current producing ones, one of them is listed as the Hodges Federal #1, which is in the northwest of the northeast. On the land map it does show it as a dry hole. However, there is an injection arrow drawn through it.

MR. STOVALL: In Section 5, right?

THE WITNESS: Yes, sir, in Section 5.

- Q. Northwest of the southeast?
- A. No, northeast.

MR. STOVALL: Right on the edge of your half-mile area circled there, is that right?

- Q. Looking at the northwest/northeast, I see two wells, #1 and 4. Or am I looking at Section 4, not 5? Okay, I'm sorry. Okay. The other two?
- A. In the same section, Section 5, would be actually Unit P, southeast/southeast, and the third one that is currently under injection--I've lost it. Excuse me a minute. I had them right here in front of me.

25 Well #27, that's the one I just gave

you. Northwest quarter of the northwest quarter of Section 5, Well #8. I'm sorry, northwest quarter of the northeast quarter.

MR. STOVALL: We already discussed that one, didn't we?

THE WITNESS: We had that one, too.

I'm sorry.

- A. No, that must be the only two. I'm sorry. The other one has been plugged and abandoned. That was Kay pool #13.
- Q. Now, you mentioned something about the #29 well that's down there in, I believe, Unit N of Section 4?
- A. Yes, that's in the lower part of the San Andres.
- Q. What kind of well?
- 17 A. A disposal well.

5

6

7

8

9

1.0

11

<u>.</u> 2

13

14

15

16

18

19

20

21

- Q. In the San Andres. Do you have casing records of all the wells within the half-mile area of review?
 - A. Yes, sir.
 - Q. Is that in a tabulated form?
- 23 A. No, that's in the form of the

 24 completion reports. The one tabulated form, the

 25 schematic, is from the plugged and abandoned

1 | well, the Levers.

2

3

6

7

8

9

10

11

15

16

17

18

19

20

21

22

23

24

- Q. You say that's the only P & A'd well out there?
- A. That has penetrated the Lovington sand, yes, sir.
 - Q. So when I see the other P & A markings, they don't penetrate that deep?
 - A. No.
 - Q. Are those wells covered in your tabulation?
 - A. No. They were not put into the C-108.
- Q. Of the other wells that you reviewed, are there any potential communication through inadequate casing programs?
 - A. No, sir. They all have adequate cement behind the casing.
 - Q. Were you notified that this was to go to hearing or did you request this to go to hearing?
 - A. My understanding of the C-108, any time that you request to dispose in a formation that is currently producing within a mile, that necessitates a hearing.
 - Q. Okay. Do you anticipate any type of, say, waterflood activity that this might

stimulate some movement or production?

A. Not very likely, sir.

q

1.0

- Q. And why is that, since we have a common source of supply out there?
- A. The Lovington sand that we're going to be actually disposing in has been tested in two wells that I'm familiar with, including this one, and the production has been extremely low; noneconomic.
- Q. But it's a common source of supply.

 You seem to be talking about several different
 pay zones out there, but it's a common source of
 supply. You got me confused here and you didn't
 provide me a type log of any kind to substantiate
 your reasoning that we have several different pay
 zones out there, like this Lovington sand, that
 premier, the San Andres, the Grayburg.

There again, it's common sources of supply. You got me very confused. Is there an impermeable layer between each one of these zones? But you said it's frac'd? But we're not going to have any type of communication problems per say from the injection from this well. Am I to understand this right?

A. The Grayburg wells, none of those have

penetrated through the Lovington sand. They were
all completed from the Grayburg and higher.

Therefore, I would not anticipate, from injecting
into the Lovington sand, any communication up to

Q. And why is that?

those wells.

- A. They were not drilled deep enough to penetrate it.
- Q. How about some of the wells that have penetrated?
- A. They are perforated in the San Andres carbonate, 3- to 500 feet below the Lovington sand interval.
- Q. And the cement is adequate to--
- 15 A. Yes, sir. They are virtually
 16 circulated, almost every one of them.
 - Q. Okay, now those wells have fracture treatment, is there any possibility that fracture came up into this Lovington sand?
 - A. Through the porosity that's in the San Andres carbonates, not very likely. We're talking about a 400-foot vertical fracture; not very likely in the San Andres.
 - EXAMINER STOGNER: Mr. Carr, if you'll provide me an adequate type log?

1	MR. CARR: We will, that will indicate
2	each of the zones and the structure in between.
3	EXAMINER STOGNER: Yes, if you would,
4	please, and describe that somewhat.
5	Any other questions of this witness at
6	this time?
7	MR. STOVALL: Not me.
8	EXAMINER STOGNER: I'll hold the record
9	open until I get that particular information,
0	then, if there is nothing further in this
1. 1	particular case.
1 2	MR. CARR: We have nothing further, Mr.
1. 3	Stogner.
1 4	EXAMINER STOGNER: Let's take an
1. 5	extended recess for 30 minutes, then and
6	reconvene at 1:00 o'clock.
1. 7	(And the proceedings concluded.)
18	
1. 9	
2: O	I do hereby
2 1	a complete recorn of the foregoing is the Examiner (early continue)
2: 2	neard by many strings in
23	The for 19 92
2.4	Oil Conservation Division, Examiner
2 5	

CERTIFICATE OF REPORTER 1 2 STATE OF NEW MEXICO 3 SS. COUNTY OF SANTA FE 5 I, Carla Diane Rodriguez, Certified 6 7 Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings 8 9 before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed 1.0 under my personal supervision; and that the 11 <u>..</u> 2 foregoing is a true and accurate record of the proceedings. 13 I FURTHER CERTIFY that I am not a . 4 relative or employee of any of the parties or 15 attorneys involved in this matter and that I have 16 no personal interest in the final disposition of 17 this matter. 18 WITNESS MY HAND AND SEAL December 28, 19 20 1992. 21 22 23

CARLA DIANE RODRIGUEZ,

CCR No. 4

24

STATE OF NEW MEXICO --

OIL CONSERVATION DIVISION

RECEIVED

FORM C-108 Revised 7-1-81

- Stebre Buf - a Duth

POST OFFICE BOX 2008
STATE LAND OFFICE BUILDING
BANTA FE, NEW MEXICO B/501

NOV 16 1992

PPLICA	TION FOR AUTHORIZATION TO INJECT OIL CONSERVATION DIVISION
	Purpose: Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? yes X
II.	Operator: ARAPAHO OIL & GAS
	Address: P.O. Dwr. 9 Carlsbad New Mexico 88221
	Contact party: Randall L. Harris Phone: (505) 365-2237
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?
٧.	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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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.).
111.	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.
х.	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 available geologic and engineering data and find non-vocate for any other hydrologic connection between the disposal zone and any entergraphism source of drinking water.
CIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification CASE NO. 10640
	I hereby certify that the information submitted with this application is true and correct to the best of my knowledge any belief.
	Name: Randall L. Harris Title Agent-Geologist
	Signature:
submi	ne information required under Sections VI, VIII, X, and XI above has been previously litted, it here not be duplicated and resubmitted. Please show the date and circumstance ne 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

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.

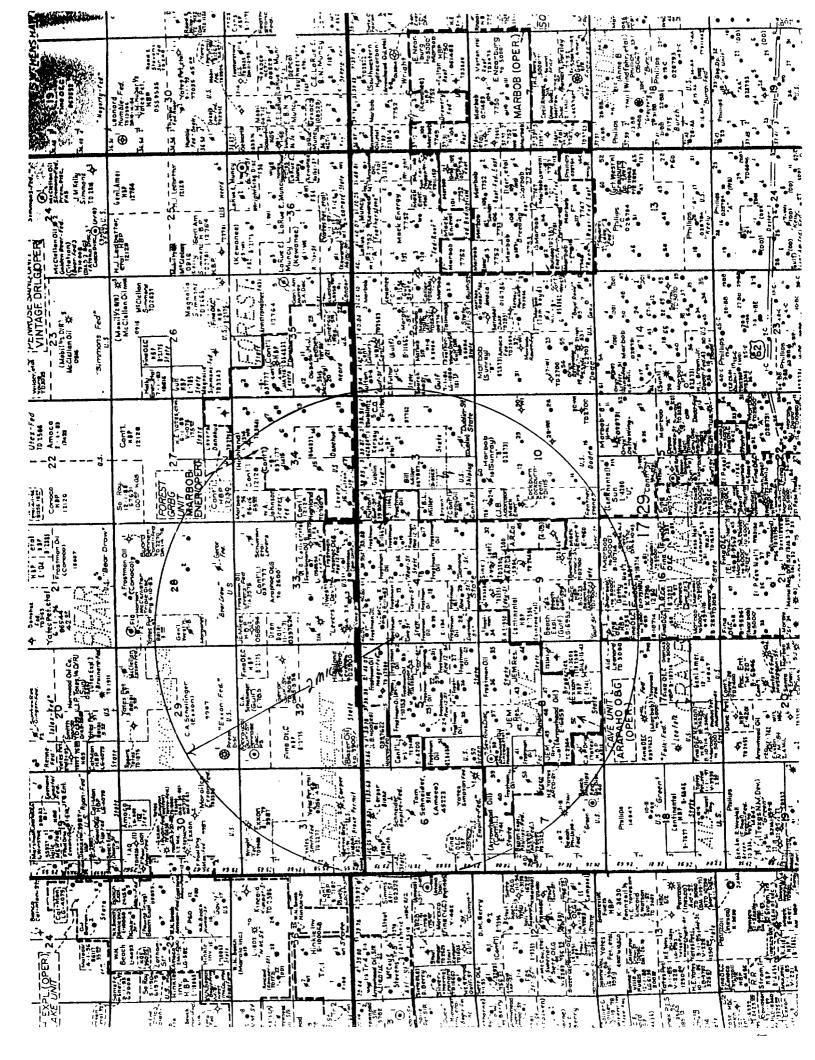
3105 Lac .

* I Milthe information of the state of th

III. WELL DATA

OPLR	ATUR		LEASE			
Arap	phoe Oil &	Gas Ca	ve State #	3		
3		TAGE LOCATION PNL & 330 FWL			TOWNSHIP 17 South	RANGE 29 East
,					•	
	Schematic	•		<u>Tabul</u>	or Data	•
	•		Surface Casi			
			Size 8	5/8" "	Cemented with	320 sx.
		23/8" PLASTIC CONTED TUBING	TOC Circu	lated red	t determined by	visual
		COMICD /45/114	Hole size _	124"		
, 1	· ,		Intermediate	Casing		:
			Size	11	Cemented with	ו ו
J		8 6 320 CMT CIRCULAR	11-1.			
		City, Cities	Long string			
				1 2 "	Camanhadaatta	925 sx
.		· .		*		
ł	.				et determined by	Visual
		,	Hole size			
			Total depth	2564		•
			Injection in	terval 4	•	• •
			2449	feet to	2464 indicate which)	feet perfora
		PERF 2449-ZULY PROPOSED INDECT	rion! ENTERVA	•		
<u>ئە</u>		- 5% "e 2564"				
		CMT CIRCULAT	EW		·	
dijî Nijer						
				-	•	
Tubi	ng size 2	3/8 line	d with <u>pl</u>	astic		set in a
	aker Loc Se		,	(materia	2400	
	(brand an	· · · · · · · · · · · · · · · · · · ·		_ pocker at _	2100	feet
(or	describe any	other casing-tubin	g seal).			
Otho	er Drto				•	
		njection formation	San An	dres		
		or Pool (if appli		e Grayburg	-SanAndres	
•		well drilled for		•	7 No	- :
- •		nat purpose was the				ion
	mi		9			
4.	lias the well	ever been perforat ging detail (sacks	ed in any other	er zone(a)? bridge plug(List all such po s) used) No	rforated interval
	-	n perforated		· • • • • • • • • • • • • • • • • • • •		
					•	
5.	Give the dept	th to and name of a	eny overlying o	and/or underl	yimy oil or gos	zonon (poola) in
5.			ny overlying (and/or underl	yimy oil or gos	zanos (poola) in

	1	11				1
i			5,C GUH-SY: - 2	Dale 10 2600'	5707C5-	03777
Feach Che Che		- 1	32	September 1	erefor Conf'I	34 - 7
F	STATE OF THE PERSON.	Smith Fed Yoles Pet			4. TUJES	15 044337 HZ
) on	Contract of the last	*		(Westing	,	Ile Danchue !
67		80+445 Bross 2 7 Corper 15:1-91	(00	A 3 Made Tred	19. 19.	
M)	39.97 P	1.82 19.	78 3739.30	46.05 1 1 1 10.80 VII 39.951 39.88	100 000	18 85 3 39.87 2 38.91 67
10	1 6	S Actes 1 33 Miles	Hear	Freshman Dill.	Freshman (5.4.3)	Cublin Kersey 5C.O.
)-(()	A +1-S+	Smith 15		4	shron 8. 11662	· chiB*
m la	E/2 (Amoco) 1		- Quan	NOE REG-St.	A SHIP OF	Miller
		9	Freshman 6 22 (All Nos man Freshman	Krostman 18	Miller	06.7807.2
nî	(Paye 4845)	28.23	011 51 24 Freshmann Freshman 011180	Liostman I	, [Siate
			Freshman A Frest	Trestman Trestman 30	Happy Oil	U.S
\$	* #	57.05	5.2	Diamond Twelve St. 1 St. St. 5t.		leg (Diolin) State
, ,	-	(Arrowkepd Oil)	7 SerRivaDise From	frost. \$10243 Sinc.)	32 128 - 22-1	60 Harbob
1 -	Siete		Attouring of the state	1950 E 19255 TO 2590 - 10	(J.B.	1820
.::'.	10 0 E	2 Begen Expl.	Pes. 1. 43 JEMRes	ontinental	R.Co. Ener	- OE
·····	16250 Margio)	THE CONTROLL	resiman Oil	1255 or 1 2526.	• Oil We	Wells
X 👙	\$ 100 m	HEYOTES	UEM 49 48 47 13	1 5	M W	Wells 26
·72	T5625	Beoch A	TE2364 E-6353	Exp. St.	Wells Penetr	that have ated Inj Zone
- de	- a	Fed. Fed.	Sto (Exxon libra	Harring Conco. S.	. Son Am	Mr
	Campbel	323	(Yates)		Carpeny	00
) : E	7 Xi (0.5.	Tale Tale		- Prame	· =
r w r	3630		080E 1 Femeral 080	000000 D	12 for	a bushing 52
·)- ()	otes pre	T. 1287	PER.)	برارز	ii,	indusied
6.	- St.		Dayreza (Marbob) (Termeco) Pro	C (Ma		n
17	180	n	10 5000' FPG	1 10 500c	AirT Cas	TIPESO TE TOTAL



- IV. Nine wells have penetrated the proposed injection zone within the ½ mile radius of the proposed injection well, with one well plugged. Well data attached.
- VII. The average daily volume of 300 BWPD at 2 BPM. Expected maximum of 400 BWPD.

The system will be closed.

Average injection pressure of 150#, maximum of 450#.

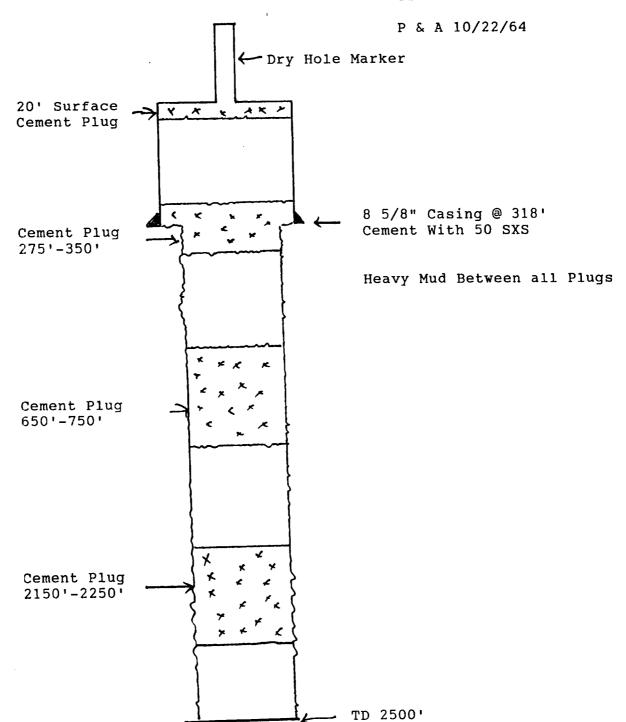
Source of injection water is from the SanAndres Formation. Analysis of the water is attached.

The disposal zone does produce within one mile of the proposed injection well. Water analysis is attached.

- VII. The proposed injection zone is the Lovington Sand of the SanAndres Formation. The Lovington Sand is a fine-grained Quartz sand with varing amounts of shales. It is 26 feet thick, at a depth of 2448-2474'. There is no sources of drinking water overlying or underlying the injection interval.
- IX. No stimulation of the injection zone is proposed.
- X. Well history is attached.
- XI. There is no producing fresh water wells within one mile of the proposed disposal well.
- XII. All available geologic and engineering data has been examined. No evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water has been found.

VI. WELL HISTORIES IN AREA OF REVIEW

Highland Corp. 4-Levers 330 FSL & 660 FWL T16S-R29E



•		- 							
	1			可用問題	8 1/ 12/	LEAS	E OR PERMIT	то Рвов	PECT
			T U	II MART	7 1959	NITED STATE	2		
	-			MESTAL I	₩ ₩₩₩₩₩ ₩₩₩₩	NITED STATES			
			_					X 200	
	SYIN	714 V 17	TOTIC	ES AN	d repu	ordelcyr)ankk	EVELLO		
	35 / 3 3 4				1	STOP WAT & STOP	681		
C had	16	1184	_	IO	II SUBSLODENT R		ACIDILING		
LOCATE W	ELL GO	RRECTLY	en iOstune.	LOC	Surranetti i	REPORT OF RE-condition	VV - CAA	CLL	
Conce Office	NTIGN 10	KL-DPild. O	r kepair we	ti 4an	SUBSTOLIENT !	REPORT OF RE-UNITED BY ANGE	hire Bou	leverd	•
company crusessor or Tra				LON	Surr in it	Forest	L es) _yGa 	17 tolu	Varian
Vall No Carter	n Hön 10) printial filt is	EII. T 16SP	2014	r leiu	A SOLERIA	Diate	T A I	MEXICO
ogetion T	10 84	N.	perer _e . Times	CHE K L C C C C C C C C C	E.	Line of Sec	nıy	raay	•
The infe	motio	Sχ∫ ⁰¹	onourith i	na samplet	We sud comes	JABALLET IN BILL		Derrick Spe	10D vg
						t second of the w			
	6, 2	:	ا وي نز ۋ ايس	ft, from Sig	ned in a	Ji Vanne Title	mylo	عدد عدد	,
ate Ca Mar	oh 16	1959"			3. V	Title	Agent		
ine sum	mary o	or ruis bai	ge is for i	ne conamo	ញ ូល une we n	i at above date.			
ommenced	Irilling	Jan	uary24	. 19 رئيستور	59 Finish	ed drilling	Februar	y-20,	, 19 -59
	(¥nul-)		OI	L OR GAS	S SANDS O	R ZONES			
o Lifrom	an of il	ar derrick	: flaur ab - to	ύνε sta ILD	No.4	from , from	to .		
o. 2. from -			_ to	DELYD	S OF WO. 5.	from	to	A dissertation	Secretaria de la composição de la compos
o. 3. from -			_ to		No. 6,	from	to .		
•		,	onenna al	MPORTAI	VT: WATER	(SANDS.TEEL			
o. 1, from .	1175	, , , , ,	_ to	1192	No. 3,	from runs at	to.	ar ner	111
o. 2, from .	!	, et -	_ to	NE Luck	No. 4,	from	to _		
	L			CASI	NG RECO	RD			
Size Weigh	t Ti	hreads per Inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforat From-	ed To	Purpose
3.5/8	-		;	318	 				
	ge or bri	dgoa-wore-	put in to te	Ht-tor-water-s	tato kind of nu	sterial used, position	and results	ուգատեր	g or hailing.
th the reason	or left in	e work and the well, g	its results voits size	. If there we and Tocation.	re any change Triffe werr Ha	s made in the casing s been dynamited, g	, state fully, ve dute, size;	and it an postton;	y casing was and animber
	greatest					Pleaso state in de	ail the dates.		ing, logether
11 19-0f-the			HI		OIL OR	1	E=48004 Z u A	COYERUBEN -	EULUBS GEUTE
It is of the			_ 1	NING AND	GEMENTI	NG RECORD			
11 19 of the	<u> </u>		MUDI	TING AND			1		
11 i) of the	pro set	Numb	MUDI er sacks of co		Mothod used	Mud gravity	Amo	unt of mu	d used
Size Whe	316	Numb			Method used	Mud gravity	Amo	unt of mu	d used
Size Who	+	Numb			 		Amo	unt of mu	d maed

(SUBMIT IN TRIPLICATES

M. O. C. D. CORY

Land Office . .

as Croses

Lease Na.

LC 0377774

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

RVEY (F)

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF
NOTICE OF INTENTION TO CHANGE PLANS	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING
NOTICE OF INTENTION TO TEST WATER SHUT-OFF	SUBSEQUENT REPORT OF ALTERING CASING.
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR
1	SUBSEQUENT REPORT OF ABANDONMENT.
NOTICE OF INTENTION TO PULL OR ALTER CASING	SUPPLEMENTARY WELL HISTORY
NOTICE OF INTENTION TO ABANDON WELL	

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Well No. is located	1	10-23 ndft. from W line of	19 64 sec. 33
() foc. and foc. No.)	(145) (B	(Meridian)	
Cave Pogs	or Subdivision)	New (MEXICOT)	
The elevation of the derrick fl	oor above sea level is	ft.	
	DETAILS OF WO	RK	,
(State names of and expected depths to of	ojective sands; show sizes, weights, and i ing points, and all other important p	iengths of proposed easings; indicate mudd proposed work)	ing Jobe, coment-

Mudded hole from 2500' to 2350' set 100' cement plug from 2250' to 2150' - set 100' cement plug from 750' to 650'set cement plug 350' to 275' Set 20' plug at surface. Hevey mud placed between all pluge.

Back filled pit, cleaned location & Set regulation Marker

RECEIVED

JAN 1 4 1965

O.C.C.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Highiung Corp.

Address 3928 Wilshim Rive

Las Angeles 5, Cally.

By agent

GPD 914974

Titl.

			tal Oll		תתפר /	, ,	·····	State 1	~ 5		
		-	my or Opera		~~			(Lease))		
No		-	116			-		175	, R	. 29R	, NM
	Cavo		·	,	· 1	Pool,	******************	Fddy		•••••••	Cou
is.	1960	fo	et from	S	cuth	line and	660	leet fro	Y677	Fasi	
						d Gas Lesse No. i	B7556	***************************************	/ 440 - 4 - - 4 - 4 - 4 - 4	***************************************	******
ecnon	,						B	**************************************		••••••••••••••••••••••••••••••••••••••	
						19. Drilling					
e of Drilli	ng Contrac	tor	••••••	123	aver bri	lling Corps	TŢ?	9 }111+4212+4000+++4211+++++	********	*************	**********
rc#4	***************	******		04	esea, To	75019 19 f				1000000	
				. 27	34	16	The le	fa-madan show	1	h. 1	. وداد د د
	c scs icaci s						I AC II	nountrion five:	1 14 10 1	be kept conf	identiai t
*********	*****************	.,,,,,,,,,,,		, 13	*********						
					OE	L SANDS OB ZO	nes				
1 (2370		*-		2588	No. 4,	fanm		••		
•											
•						No. 5,					
3, from		*******	t o)	************	No. 6,	from		to	686684088444 <u>00</u> 04144 <u>000</u>	******
						STANT WATER					
lude data o	on rate of w	rater i	nflow and	elevatio	on to which	water rose in hole	•				
1, from	*************			•••••••	to			feet	**********		
2, from			•••••		to	*********************		fact			
									**********	************	
9 from					to.						
•								feet	*********		••••••
•								feet	*********		
•								feet	*********		
•			······································	×		CASING BECOI	3D	feet	*********		
4, from		HT						feet	***************************************		
4, from	WEIGI	ET DOT	NEW	o k	AMOUNT	CASING BECOI	COT AND PULLED FROM	reefora	***************************************		
4, from	WEIGI PER PO	HT	NEW (USE)	OR D	AMOUNT	CASING BECOI	CUT AND	reefora	***************************************		
4, from	WEIGH PER PO	HT	NEW (USE)	OR D	AMOUNT	CASING BECOI	COT AND PULLED FROM	reefora	***************************************		
81ZE	WEIGH PER PO	HT	NEW (USE)	OR D	AMOUNT	CASING BECOI	COT AND PULLED FROM	reefora	***************************************		
4, from	WEIGH PER PO	HT	NEW (USE)	OR D	amount 720 2455	CASING BECOI	CUT AND PULLED FROM	PERFORAT	***************************************		
4, from	WEIGH PER PO	HT	NEW (USE)	OR D	amount 720 2455	CASING BECOI	CUT AND PULLED FROM	PERFORAT	***************************************		
4, from SIZE 7 5/C 4 1/Z	WEIGH PER PO	er Door	NEW (USE)	or D	amount 720 2455	CASING BECOI	CUT AND PULLED FROM	PERFORAT	***************************************		RPOSE
4, from SIZE 7 5/6 4 1/2	WEIGHTER NO.	ETT DOOT	NEW CUSE!	OR D	AMOUNT 2453 MUDDING BACES CEMENT	CASING BECOI	CUT AND PULLED FROM D & Float ING RECORI	FEEFORA	***************************************	PU	RPOSE
4, from SIZE 7 5/6 4 1/2	WEIGHT PORT PORT PORT PORT PORT PORT PORT POR	err Door	New Custing Pictory	OR D	AMOUNT 727 2277 MUDDING	CASING BECOI	COT AND PULLED FROM	FEEFORA	***************************************	PU	RPOSE
81ZE 7 5/C 4 1/2	WEIGHTER PO	err Door	NEW USE INC.	OR D	AMOUNT 720 2455 MUDDING BACKS CEMENT	CASING BECOMES OF SHAPE STATE	COT AND PULLED FROM	FEEFORA	***************************************	PU	RPOSE
4, from SIZE 7 5/6 4 1/2	WEIGHTER PO	err Door	NEW USE INC.	OR D	AMOUNT 720 2455 MUDDING BACKS CEMENT	CASING BECOMES OF SHAPE STATE	COT AND PULLED FROM	FEEFORA	***************************************	PU	RPOSE
81ZE 7 5/C 4 1/2	WEIGHTER PO	err Door	NEW USE INC.	OR D	AMOUNT 720 2455 MUDDING CEMENT 350	CASING BECOMES THE CAPITAL SING	COT AND PULLED FROM	FEEFORAT COLLAR MUD GRAVITY	***************************************	PU	RPOSE
81ZE 7 5/C 4 1/2	WEIGHTER PO	err Door	NEW USE INC.	OR D	AMOUNT 720 2455 MUDDING CEMENT 350	CASING BECOMES OF SHAPE STATE	COT AND PULLED FROM	FEEFORAT COLLAR MUD GRAVITY	***************************************	PU	RPOSE
SIZE 7 5/C 4 1/2 SIZE OF HOLE	SIZE OF CASING	W ZZ	NEW USE INC. INC. INC. INC. INC. INC. INC. INC.	NO OF	AMOUNT 720 2455 MUDDING BACES CEMENT 350 50	CASING BECOMES THE CAPITAL SING	COT AND PULLED FROM	FERFORAT COLLAP MUD GRAVITY	FIONS	PU	RPOSE
SIZE 7 5/C 4 1/2	WEIGHTER PO	W ZZ	NEW USE INC. INC. INC. INC. INC. INC. INC. INC.	NO OF	AMOUNT 720 2455 MUDDING BACKS CEMENT 350 500	CASING BECOMES THE CASING BECOMES SING CASING BECOMES SING CASING SING CASING SING CASING SING CASING CASIN	COT AND PULLED FROM	FERFORAT COLLAP MUD GRAVITY	FIONS	PU	RPOSE
SIZE V 5/C L L/Z SIZE OF HOLE	SIZE OF CASING	W ZZ	NEW USE INC. INC. INC. INC. INC. INC. INC. INC.	NO OF	AMOUNT 720 2455 MUDDING BACKS CEMENT 350 500	CASING BECOMES THE CASING BECOMES SING CASING BECOMES SING CASING SING CASING SING CASING SING CASING CASIN	COT AND PULLED FROM	FERFORAT COLLAP MUD GRAVITY	FIONS	PU	RPOSE
SIZE 7 5/C 4 1/2	SIZE OF CASING	W ZZ	NEW USE INC. INC. INC. INC. INC. INC. INC. INC.	NO OF	AMOUNT 720 2455 MUDDING BACKS CEMENT 350 500	CASING BECOMES THE CASING BECOMES SING CASING BECOMES SING CASING SING CASING SING CASING SING CASING CASIN	COT AND PULLED FROM	FERFORAT COLLAP MUD GRAVITY	FIONS	PU	RPOSE
size 7 5/6 4 1/2 size of Hole	SIZE OF CASING	W ZZ	NEW USE INC. INC. INC. INC. INC. INC. INC. INC.	NO OF	AMOUNT 720 2455 MUDDING BACKS CEMENT 350 500	CASING BECOMES THE CASING BECOMES SING CASING BECOMES SING CASING SING CASING SING CASING SING CASING CASIN	COT AND PULLED FROM	FERFORAT COLLAP MUD GRAVITY	FIONS	PU	RPOSE

later than twenty days after completion of well. Follow instructions in Rules and Regulations

DISTRIBUTION P. O. BOX 2088 SANTA FE, NEW MEXICO, 87501	Form 7-101 Revised 10-1-78
U.s.o.s. 1982	50. Indicate Type of Leave
OPERATUR C. C. D.	5, State Oil 6, Gas Leane 255.
ARTESIA, OFFICE	В 11662
SUNDRY NOTICES AND REPORTS ON WELLS IND NOT USE THIS FORM FOR PROPOSES TO INICE OR TO SEEPIN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PROMIT -" IFORM C-1011 FOR SIGN PROPOSALS.I	
OTHER-	?. Unit Agreement Hame CAVE POOL UNIT
J E M Resources, Inc.	CAVE POOL UNIT
P. O. Box 648 Artesia, New Mexico 88210	9. Weil No. 5
DESIGN OF WELL C 1980 FEET FROM THE W LINE AND 990 FLET FROM	10. Field and Pool, or Wilsout Cave Pool G-SA
THE N LINE, SECTION 4 TOWNSHIP 17 PANET 29	
(Sicw whether DF, RT, GR, etc.) GR 3582	12. County Eddy
Check Appropriate Box To Indicate Nature of Notice, Report or Oth NOTICE OF INTENTION TO: SUBSEQUENT	ner Data REPORT OF:
AFOWM REMEDIAL WORK PLUG AND ABANDON REMEDIAL WORK COMMENCE DRILLING OPHS. LL OR ALTER CABING CHANGE PLANS CASING TEST AND CEMENT JCB OTHER Deepen and Ghang	PLUE AND ABANDONMEN.
CPU #5 to State #2	
Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including	estimated date of starting any proposed
Well was drilled out from original TD of 2417 to 2519. Lovington	on sand of the San Andres
Formation was encountered at 2455-2465. Set packer at 2391 and	
gelled water and 10,000 # sand. Swabbed back most of treatment	
24 hour test 7-1-82 - 4 bbls oil and no water, gas TSTM. Left	
open hole 2417 -2519.	
	·
-	
hereby certify that the information above is true and complete to the best of my knowledge and belief.	
Dalton Bell President	7-2-82
While William TITLE OIL AND GAS INSPECTOR	AUG 2 1982

HUITIONS OF APPROVAL, IF ANYI

	GE	DLOGICAL	SURVEY	Art	ad 18.	M as s ver		NM O	11331
	PLETION O	R RECOMF	PLETION RE	PORT	AND	LOG	*		ALLOTTEE OR TRIBE NAME
1a. TYPE OF WELL:	_				- KEELE			- CETT ACRES	CHECK VIUS
b. TYPE OF COMPL		Fl werr	DRY L Ot	her				7. UNIT AGREE	
75 T T W 2 K	ORK DEEP- C	PLUG BACK	DIFF. DESVR. Ot		ro 1	1001	1	S. FARM OR L	oi U nit
WELL O		DACK L	EESVR Ot	ner	EC 1	1. 1945.7			
		,			~ ~	r-s		dod	ges Telere
J L M MCSON	urces, Inc.	·			<u>0. C</u>			D. W.L.C. NO.	_ 2
Bay 61.0	Amtocio N	May 800	10		RTESIA		ļ	10. FIELD AND	POOL, OR WILDCAT
EOX 648 4. LOCATION OF WELL	(Report location cl	early and in acc	ordance with any L	tate reg	uirements	1)*]	Carro C	rbg-San Andres_
	Fr N. & 330							11. SEC., T., R	., M., OR BLOCK AND SURVEY
At top prod. inter	val reported below	Same						OR AREA	
At total depth		Same				•		Sec 5 .	17 29 NMPM
		Ĩ	14. PERMIT NO.		DATE I	SSUED		12. COUNTY O	R 13. STATE
)	Eddv	N. Mex.
į.	16. DATE T.D. REAC	1		rod.)	18. ELEV.	TONB (DF	, RKB, R	T, GR, ETC.)*	19. ELEV. CASINGHEAD
5-5-80 20. TOTAL DEPTH, MD A	7-24-80	9-1-	-81			3603 D	F_		3601
_	ł .	ACK T.D., ND & TV	22, IF MULTI	PLE COM	PL.,	23. INTER	RVALS LED BY	ROTARY TOOL	S CABLE TOOLS
)1d 7D 2426)		· · · · · · · · · · · · · · · · · · ·				<u>→ </u>	771	21
24. PRODUCING INTERV	AL(S), OF THIS CO	IPLETION-TOP, I	OTTOM, NAME (MD	AND TV	D) •				25. WAS DIRECTIONAL BURYEY MADE
2450-2460	San Andres	(Lovingto	n)						No
Gamma Ray-					โ		3) 2: 5	रिल्या	No No
23.		CASIN	G RECORD (Repor	t all str	ings set	well)	11-17	Mr. 511	
CASING SIZE	WEIGHT, LB./FT.	DEPTH SET		SIZE		1.1.	ENTING	RECORD	AMOUNT PULLED
Old Casin	Info On Fi	le. New is	S Open Hole	791	75	از بال ا	÷ 0 9	1981 //	
	·			<u></u>					'J
		— 			_	U.S. GEC	SIL-6 C	AS	·
						ROSWE	L, NEV	AL SURVEY V MEXICO	
29.	LI	VER RECORD		-1		30.		CUBING RECO	ORD
BIZE	TOP (MD) B	ALICAN COLLE	PORRECORD	BCREEN	(MD)	SIZE		DEPTH SET (M	D) PACKER SET (MD)
			W CHIEGIER						
31. PERFORATION BECC	osp (Interval, size	Ing namoetie	9 1981	82			FRACT	URE, CEMEN	r squeeze, etc.
0 11-3-	2126 2505				INTERVA	L (MD)	AM	OUNT AND KIN	D OF MATERIAL CSED
Oben Hote	2426-2505	U.S. GEOLG	OGICAL SURVE	245	0-60		-:0	O Gal Muc	Acid
		ROSWELL	, NEW MEXICO	<u> </u>	11				1. H ₀ &
			-				30,0	00 # Sand	<u></u>
33.*			nncn	UCTION					
DATE FIRST PRODUCTI	ON PRODUCT	ION METHOD (F)	owing, gas lift, pu			une of nun	20)	l well	STATUS (Producing or
9-2-81	1	1.	,,,,,,			, , , , , , , , , , , , , , , , , , ,	.,,	shu	(t-in)
DATE OF TEST	HOURN TESTED	CHOKE SIZE	PROD'N. FOR	OIL—B	BL.	GASM	cr.	WATER-BBI	
9-2-81	24	16/64	TEST PERIOD		-	150	CFFD		
PLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED	OIL-BBL.	G	AS-MCT.	1 . , , , ,	WATER-		OIL GRAVITY-API (CORR.)
15C	O(Pack	24-HOUR BATE	Same			- 1			
34. DISPOSITION OF G	AB (Sold, used for fi	iel, vented, etc.)						TEST WITHE	SAED BY
Sold		·						Pell &	Logsdon.
			nation of N	l ·		5			
36. I hereby certify	- Neutron L	and attached to	INECTION OF N	umrer	correct a	ase Des	signa	tion	records
			ı			- octotinin	eu 110m		
BIGNED			_ TITLE	t	res.			DAT	E

^{*(}See Instructions and Spaces for Additional Data on Reverse Side)

		Recit	ONEE	י א לגם	TION DI	11/16	21.7				
DISTRIBUTION	•		_	•					 ا	e <u>(2</u>	Fue
SANTA FE		DECSAN	TA FE	NEW	, 2088 MEXICO	875	01		ĺ		s Lease No.
FILE		ž.								B-75	
U.S.G.S.	- · W	ELL COMPLE	TION OR	RECO	WLELIO	1 RE	PORT A	ND LOG	1777	TTTT	mmi
OPERATOR ()	7176-) C. U.		}						
Id. TYPE OF WELL				10.12	بذرو			~	7. Unii	Agreemen	t Name
•	01L WELL	X GAS		DRY 🗌	OTHER					_	
b. TYPE OF COMPLET	ION		_		· · · · · · ·				8. Farm	or Lease	Name
MELL X WORK	DEEPE	PLUG BACK	01F		OTHER				Red	Twel	ve State
2. Name of Operator	_								9. Well	No.	
J.E.M. Reso	ources In	c. V								3	
J. Address of Operator	120 n		00015						10. Fie	eld and Po	ol, or Wildcat
P.O. Box 29	336 Kuldo	so, N.M.	88345							Cave	GB/SA
4. Location of Well								-			
T	2 3	10		Conta	_	2.2	^				
UNIT LETTER I	LOCATED	TO PEET F	ROM THE	Souti	LINE AND	477	Vicini	FEET FROM	7777	77777	7777777
East LINE OF S	ς,	179	205	,			M		12. Co.	-	
THE LINE OF S			291	нмрм	777777	7777	77/7/7		Eddy		<u> </u>
15. Date Spudded 9-5-84	9-12-84	eached 17, Date	-3-84	eady to P			$3 \mathrm{GR}$	RKB, RT, C	SK, etc.)		Cashinghead
				4.16.16.1						360	
20. Total Depth	21. Plu	g Back T.D.		dany	e Compl., Ho	·w	23. Interva Drilled	By i		100	uble Tools
3550 24. Producing Interval(s) of this complet	3528	None						All	105 11	as Dissellers) Suine
1		.,	i, Maine								as Directional Survey ade
3004-3434	San Andr	es								NO	1
i 28. Type Electric and O	ther Logs Run								- T	27. Was W	
CNL/FDC/DL								,		NO	55115
28.		CAS	SING RECO	RD (Rep	ort all string	s set	in wall)		<u>_</u>		
CASING SIZE	WEIGHT LB.				E SIZE	Ī		TING REC	ORD		AMOUNT PULLED
8 5/8	24#	350		121) sxs_			None
5 ½	1711	3550			/8			0 sxs			none
· ·	<u> </u>				<u></u>			н.х.н			-IIVIIE
29.	L	INER RECORD					30.		TUBING	RECORD	
SIZE	TOP	воттом	SACKS	EMENT	SCREEN		\$1ZE	D	EPTH SE	Т	PACKER SET
			<u> </u>				2 5	/8 3	450		Free
			<u> </u>				·	<u> </u>			
31. Perforation Record	Interval, size an	d number)			32.	ACID	, SHOT, F	RACTURE	, CEMEN	T SQUEE:	ZE, ETC.
2004 2424	27 0 06				DEPTH				· ···		ATERIAL USED
3004-3434	37 0.36	cal. shot	S		30	104-	3434		<u>0 gal</u>		
											1 wtr.
			•					243,	000 4	20/4	0 sd
				2222	1			I			
33. Date First Production	1 8*64	uction Method (Fla	nuine acc		UCTION	nd two	e numni		Wall	Status /P-	rod, or Shur-in)
10-20-84	Produ	Pump	wing, gas	,, pump	,,,,g Jize a	nu typ	ւշ բատթյ		we!!	-	•
Date of Test	Hours Tested	Choke Size	Prod'n.	For	Oil - Bbl.		Gas - MC	F Wa	ter - Bbl	Prod	s - Oil Ratio
11-28-84	24	7/8''	Test P		60		200	1	250		4 0:1 3333:1
Flow Tubing Press.	Casing Presew		4- Oil - E	3b1.	Gas -	MCF	<u> </u>	ater - Bbl.		Oll Grav	vity - API (Corr.)
0	20#	Hour Rate	▶								
34. Disposition of Gas		el, vented, etc.)			1,,,,			Te	st Witnes	sed By	
S	old.					_				Rex	Glenn
35. List of Attachments											
Logs Devea							···				
35. I hereby certify that	the information	shown on both sid	es of this j	orm is tru	ue and compl	ele w	the best of	my knowle	dge and	belief.	
	N			_	.						•
SIGHED	<i>-</i> -		TI	rle <u>G</u> e	eologis	t	•		DATE	12/1	4/84

٠.

THE West LINE OF THE C. 4 TWP. 17 S REE. 29 F NAME NOTTH LINE AND 1650 FEET FROM 12. County THE West LINE OF THE C. 4 TWP. 17 S REE. 29 F NAME NOTTH LINE AND 18. Elevations (DF, RKB, RT, GR, etc.) 19. Elev. Cashinghead 2/14/84 2/19/84 16. Date T.D. Reached 17. Date Compl. (Ready to Prod.) 18. Elevations (DF, RKB, RT, GR, etc.) 19. Elev. Cashinghead 3/25/84 3589 Gr. 20. Total Depth 2556 21. Plug Back T.D. 22. If Multiple Compl., How Many 23. Intervals Drilled By All 25. Was Directional Survey Made 2421-2500 Grayburg/Sanandres 2421-2500 Grayburg/Sanandres 25. Was Directional Survey Made NO. Line and Cither Logs Run CNL/FDC GRN/CCL 26. Casing size Weight LB./FT. Depth set Hole size Cementing Record Amount Pulled Size Size No. 12½ 225 Cacabot No. 250 No.	DIATE OF NEW ENERGY AND MINERALS DISTRIBUTION 3ANTA FE FILE U.S.O.S. LAND DFFICE OPERATOR Id. TYPE OF WELL b. TYPE OF COMPLET NEW WOR WELL 2. Name of Operator	DEPARTMENT WELL TION	SAI ELL COMPLE	TION OR	о. вох , NEW	MPLETIO	N RE	501		State 5. State B 7 7. Unit CPU 8. Farm	Agraeme	
P.O. Box 2938 Ruidoso NM. 88345 Cave GB/SA Lecention of Well Line and Carried So Test recounted North Line and 1650 rest recounted North Line and 1650 re		ces Inc.	V .									
The Line of Well The Line of Sec. 16 Top. 17 S. Sec. 29 F. Number The West cite of Sec. 4 Top. 17 S. Sec. 29 F. Number 13. Daily Sudded at 17. Daile Compl. (Ready to Prod.) 18. Clavations (DF, RRB, RT, CR. Sec.) 18. Elev. Cashinghaed 3/25/84 3/25/84 35/89 GT. 3589 GT. 35	. · · · · · · · · · · · · · · · · · · ·	938 Ruid	oso NM 8	8345						{ .		•
The West curs of the Study of the Study of Prod. 12. County 12. County 13. Date 5. Due 7. D. Reached 17. Date Compl. (Ready to Prod.) 15. Chevations (0F., RKB, RT., GR., etc.) 19. Elev. Costinaphood 3/25/84 3599 Gr. 3590 Gr.	1. Location of Well	750 KG100	350 Nr. 0	3343						Cav	e GB/	
20. Triel Dpith 21. Plug Back T.D. 22. HMultiple Compl. How 23. Intervals Politics P	THE West LINE OF	iec. 4 T	wp. 17_S	se. 29 E	нмрм					Fiz. com	•	
20. Test Depth 25.56 21. Pipe Back T.D. 25.45 22. It Molitiple Compl., How 23. Derived B. Patenty Tools 25.45 25.4		2/19/84				- 1			KB, RT,	GR, eic.)		
2421-2500 Grayburg/Sanandres 25. Type Electric and chief Loga Run CNL/FDC GRN/CCL 26. Type Electric and chief Loga Run CNL/FDC GRN/CCL 27. Was well Cored CNL/FDC GRN/CCL 28. CASING RECORD (Report all strings set in well) CASING RECORD (Report all strings set in well) CASING SIZE WEIGHT LB./FT. DEPTH SET HOLE SIZE CEMENTING RECORD AMOUNT PULLED 8 5/8 24 355 121 225 CACAGA NOTE 9 15.5 2556 7 7/8 550 CASAGA NOTE 15.5 2556 7 7/8 550 CASAGA NOTE 16. TUBING RECORD NOTE 28. LINER RECORD 30. TUBING RECORD SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE DEPTH SET PACKER SET 2 3/8 2510 Free 31. Perforation Record (Interval., size and number) 24. 421-2500 24 .42 cal. 2421-2500 250 gal 157. HCl 2421-2500 250 gal 157. HCl 2421-2500 570 gal 157. HCl 2421-2500 570 gal 157. HCl 2421-2500 570 gal 157. HCl 2421-2500 Test Production Method (Flowing, gas lift, pumping - Size and type pump) 2421-2500 pumb 1.75" locno Date of Treat Production 3.36. 24 Production Method (Flowing, gas lift, pumping - Size and type pump) 2421-2500 Pumb 1.75" locno Date of Treat Production 3.26. 24 Production Method (Flowing, gas lift, pumping - Size and type pump) 2421-2500 Pumb 1.75" locno Date of Treat Production Size Production Method (Flowing, gas lift, pumping - Size and type pump) 2421-2500 Pumb 1.75" locno Production Con First Production Size Production Method (Flowing, gas lift, pumping - Size and type pump) 2421-2500 Pumb 1.75" locno Production Con First Production Size Production Method (Flowing, gas lift, pumping - Size and type pump) 2421-2500 Pumb 2520 Pumb 2630 Pumb 26421-2500 Pumb 2740 Pumb 2750 P	20. Total Depth 2556		g Back T.D.	22. 1	f Multiple			23. Interval	By i			
CNL/FDC GRN/CCL 28. CASING RECORD (Report all strings set in well) CASING SIZE WEIGHT LB./FT. DEPTH SET HOLE SIZE CEMENTING RECORD AMOUNT PULLED 8 5/8 24 355 12 255 CALL NONE 15.5 2556 7 7/8 550 CALL NONE 15.5 2556 7 7/8 550 CALL NONE 16 15.5 2556 7 7/8 550 CALL NONE 17 15.5 2556 7 7/8 550 CALL NONE 18 15.5 2556 7 7/8 550 CALL NONE 19 15.5 2556 7 7/8 550 CALL NONE 19 15.5 2556 7 7/8 550 CALL NONE 19 15.5 2556 7 7/8 550 CALL NONE 10	2421-2500	Gr	• •	·	S		!				r	Nade
CASING SIZE WEIGHT LB./FT. DEFTH SET HOLE SIZE CEMENTING RECORD AMOUNT PULLED 8 5/8 24 355 124 225 CACADA NOUNT PULLED 15.5 2556 7 7/8 550 NONE 29. LINER RECORD SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE DEPTH SET PACKER SET 20. LINER RECORD SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE DEPTH SET PACKER SET 21. Perforction Record (Interval., size and number) 24. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 24. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 24. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 24. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 24. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 24. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 24. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 24. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 35. QUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 36. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 37. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 44. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 44. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 37. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 44. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 38. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 39. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 44. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 39. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. DEPTH SET WITH SACTURE OF THE STOTE OF THE STOTE OF THE STO	1	=								1	27. Was V	Well Cored
CASING SIZE 8 5/8 24 355 121 225 Included Incompleted Incompleted Interval, size and number) 29. LINER RECORD 30. TUBING RECORD 30. TUBING RECORD 30. TUBING RECORD 31. Perforation Record (Interval, size and number) 2421-2500 24 .42 cal. 2421-2500 24 .42 cal. PRODUCTION Date First Production 3.36-24 Production Method (Flowing, gas lift, pumping - Size and type pump) 1.75" 10 cno Date of Test Howe Tested Coaling Pressure Coaling Pressur	28.	KN/CCL	CA	SING RECO	RD (Rep	ort all string	5 501	in well)			_no	
23. LINER RECORD SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE DEPTH SET PACKER SET 2 3/8 2510 Free 31. Perforation Record (Interval, size and number) 2421-2500 24 .42 cal. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 2421-2500 5250 gal 157, HCl 35,000 gal KCl wtr 50,000 gl KCl		WEIGHT LB.							TING RE	ÇORP		AMOUNT PULLED
LINER RECORD SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE DEPTH SET PACKER SET 2 3/8 2510 free 31. Perforation Record [Interval, size and number] 2421-2500 4 .42 cal. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 2421-2500 52.50 gal 15% HCl 35,000 gal KCl wtr 50,000# 20/40 sd 31. PRODUCTION DOI: OIT First Production 3.26-84 Production Method (Flowing, gas life, pumping - Size and type pump) Quite First Production 3.26-84 Production Method (Flowing, gas life, pumping - Size and type pump) Quite First Production 3.26-84 Production Method (Flowing, gas life, pumping - Size and type pump) Quite First Production 3.26-84 Production Method (Flowing, gas life, pumping - Size and type pump) Quite First Production 3.26-84 Production Method (Flowing, gas life, pumping - Size and type pump) Quite First Production 3.26-84 Production Method (Flowing, gas life, pumping - Size and type pump) Quite First Production 3.26-84 Production Method (Flowing, gas life, pumping - Size and type pump) Quite First Production (Food. or Shut-in) Prod Date of Trest Production (Food. or Shut-in) Prod Test Witnessed By Jay Roye 35, List of Attachments Deviation survey logs 36, I hereby certify that the proformation shown on both sides of this form is true and complete to the best of my knowledge and belief.	l						ļ	<u> </u>			1	
SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE DEPTH SET PACKER SET 2 3/8 2510 free 31. Perforation Record (Interval., size and number) 2421-2500 24 .42 Cal. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 2421-2500 5250 gal 15% HCl 35,000 gal KCl wtr 50,000# 20/40 sd 31. PRODUCTION Date of Test Hours Tested Choke Size Production Method (Flowing, gas lift, pumping - Size and type pump) pump 1.75" locno Date of Test Hours Tested Choke Size Production For Test Production Test Period 48 62 20 1.29 Flow Tubing Press. Casing Pressure Calculated 24- How Role How Role Vented 35. List of Attechments Deviation Survey logs 36. I hereby certify that the promistion shown on both sides of this form is true and complete to the best of my knowledge and belief.	7 2	10.0	2330			70			330 C	ment with		none
SIZE TOP BOTTOM SACKS CEMENT SCREEN SIZE DEPTH SET PACKER SET	29.		INER RECORD				 _ 	30,		TUBING	RECORD	
31. Perforation Record (Interval, size and number) 2421-2500 24 .42 cal. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 2421-2500 5250 gal 15% HCl 35,000 gal KCl Wtr 50,000# 20/40 sd 33. PRODUCTION Oute First Production 3.26-84 Production Method (Flowing, gas lift, pumping - Size and type pump) Q421-2500 pump 1.75" locno Date of Test Houre Tested Choke Size Production Method (Flowing, gas lift, pumping - Size and type pump) Q421-2500 pump 1.75" locno Date of Test Houre Tested Choke Size Production Oil - Bbl. Gas - MCF Water - Bbl. Gas - Oil Ratio -4/1/84 24 7/8" Plow Tubing Press. Casing Pressure Calculated 24- Oil - Bbl. Gas - MCF Water - Bbl. Oil Gravity - API (Corr.) How Flate Houre Flate Control of the Houre Flate Control of the Flow Flow Flate Control of the Flow Flate Control of the Flow Flate Control of the Flow Flow Flow Flow Flow Flow Flow Flow	SIZE	тор	BOTTOM	SACKS C	EMENT	SCREEN		SIZE				
Depth interval Amount and kind material used 2421-2500 5250 gal 15% HCl 35,000 gal KCl wtr 50,000# 20/40 sd 31. PRODUCTION Date First Production 3.36-84 Production Method (Flowing, gas lift, pumping - Size and type pump) Pump 1.75" locno Date of Test 48 62 20 1.29 Flow Tubing Press. Casing Pressure Calculated 24-Hour Rate Production 48 62 20 1.29 St. List of Attachments Deviation shown on both sides of this form is true and complete to the best of my knowledge and belief.								2_3/	8 25	10		free
Depth interval Amount and kind material used 2421-2500	D. Destaration Record	(Interval aire on	d			120	101	SUOT EE	A CZUD F	CENEN	7. 501155	TE ETC
2421-2500 5250 gal 15% HCl 35,000 gal KCl wtr 50,000# 20/40 sd 31. PRODUCTION Date First Production 3.26.84 Production Method (Flowing, gas lift, pumping - Size and type pump) Q421-2500 pump 1.75" locno Date of Test Hour Stated Choke Size Prod'n. For Oil - Bbl. Gas - MCF Water - Bbl. Gas - Oil Ratio - 4/1/84 24 7/8" Priest Period 48 62 20 1.29 Flow Tubing Press. Casing Pressure Calculated 24-Hour Rate Hour Rate Out - Bbl. Gas - MCF Water - Bbl. Oil Gravity - API (Corr.) 34. Disposition of Gan (Sold, used for fuel, vented, etc.) Vented 35. List of Attachments Deviation: Survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.						 						
35,000 gal KCl wtr 50,000# 20/40 sd 31. PRODUCTION Date First Production 3.36-84 Production Method (Flowing, gas lift, pumping - Size and type pump) Q421-2500 Pump 1.75" locno Date of Test -4/1/84 24 7/8" Flow Tubing Press. Casing Pressure Calculated 24- Oil - Bbl. Gas - MCF Water - Bbl. Gas - Oil Gravity - API (Corr.) 34. Disposition of Gas (Sold, used for fuel, vented, etc.) Vented 35. List of Attachments Deviation survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.	2,22	24 .42	cui.									
PRODUCTION Date First Production 3.26-84 Production Method (Flowing, gas lift, pumping - Size and type pump) Q421-2500 pump 1.75" locno Date of Test Hours Tested Choke Size Prod'n. For Oil - Bbl. Gas - MCF Water - Bbl. Gas - Oil Railo -4/1/84 24 7/8" Test Period 48 62 20 1.29 Flow Tubing Press. Casing Pressure Calculated 24- Oil - Bbl. Gas - MCF Water - Bbl. Oil Gravity - API (Corr.) 34. Disposition of Gan (Sold, used for fuel, vented, etc.) Vented 35. List of Attachments Deviation Survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.									35.0	0 <u>0</u> ga		
Date First Production 3.26-84 Production Method (Flowing, gas lift, pumping - Size and type pump) Pump 1.75" locno Date of Test Hours Tested Choke Size Prod'n. For Oil - Bbl. Gas - MCF Water - Bbl. Gus - Oil Ratio -4/1/84 24 7/8" Test Period 48 62 20 1.29 Flow Tubing Press. Casing Pressure Calculated 24-Hour Rate Hour Rate Vented 34. Disposition of Gan (Sold, used for fuel, vented, etc.) Vented Jay Roye 35. List of Attachments Deviation Survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.				•					50,0	00# 2	0/40	_sd
Date of Test Hours Tested Choke Size Prod'n. For Oil - Bbi. Gas - MCF Water - Bbi. Gas - Oil Ratio 4/1/84 24 7/8" Test Period 48 62 20 1.29 Flow Tubing Press. Casing Pressure Calculated 24- Hour Rate Hour Rate Hour Rate	33.				PROD	UCTION						
Date of Test Hours Tested Choke Size Prod'n. For Oil - Bbl. Gas - MCF Water - Bbl. Gas - Oil Ratio 4/1/84 24 7/8"	1	3-26-84 Produ	action Method (Fl				nd typ	e pump)		Well 5	Status (P	rod. or Shut-in)
Test Period 48 62 20 1,29 Flow Tubing Press. Casing Pressure Calculated 24- How Rate How Rate Vented Jay Roye 34. Disposition of Gan (Sold, used for fuel, vented, etc.) Vented Jay Roye 35. List of Attachments Deviation Survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.	/							C 1100				
Flow Tubing Press. Casing Pressure Calculated 24-Oil - Bbl. Gas - MCF Water - Bbl. Oil Gravity - API (Corr.) 34. Disposition of Gan (Sold, used for fuel, vented, etc.) Vented Jay Roye 35. List of Attachments Deviation Survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.			l					Ι'				
Jay Roye 35. List of Attachments Deviation survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.	· · · · · · · · · · · · · · · · · · ·		e Calculated	14- Oil - E	bl.		MCF				OII Gra	
Deviation survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.	34, Disposition of Gan	(Sold, used for fu	el, vented, etc.)						Te	st Witness	sed By	
Deviation survey logs 36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.										Jay R	oye	
36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.	· ·		1000									
	36. I hereby certifynthau	the promotion:	shown on both sid	les of this f	omi is tru	ie and compl	e(e 10	the best of t	my knowl	edge and b	elief.	
SIGNED DATE	1/4.	$\sqrt{}$			C							26/84

DISTRIBUTION						4 4 * *		• •		torm C-1	11-1-m
SANTA FE	12		NEW MI	EXICO O	IL CON	SERVATI	ON CO	MMISSION	Γ	5a. Indicate	Type of Leans
FILE	¥ 1	WELL CO	MPLET	TION OF	RECO	MPLETI	ON R	EPORT AN	D LOG	State X	
u.s.g.s.							4.5	المادية عاميم	1	5. Slale ()	& Gas Lease No.
LAND OFFICE	<u> </u>					•		~ - 1	F	B-118	562
OPERATOR							, t:				
	<u>0 19 m</u>				· ·		F 18				rument Name
IG. TYPE OF WELL	, 0				_				I	7. Out Agre	ument Name
	. WEL	🔲	WELL .	لـ	DRY L	OTHER	·				
b. TYPE OF COMPLET	ION		PLUG							8. Farm or L	'agsa Mawe
WELL M OVER	DEEPE	EN 🔲	BACK	RE:	va.	OTHER	·			ca	<u>ve state</u>
2. Name of Operator	T-	. v'	ř							9. Well No.	•
J.E.M. Reso	urces in	.C .								10 Field on	id Pool, or Wildeat
P.O. Box 29	38 Ruido	N	м я	8345					- 1		
4. Lipsation of Well	Jo Karao	30, 11.	r1. U	0343					<u>-</u>	777777	ve-6-6-69-5A
UNIT LETTER D		330			North			330	- 8		
UNIT LETTER	LOCATED	330	PEET PRO	DM THE	MOLLI	LINE A		1311111	ET FROM	7777777	77777777
7.7		17		•	Λπ.	IIIII				12. County	. (()()()
THEWest LINE OF S		TWP. 17					7777	<i>1XIIII</i>	77777	Ed	
	16. Date T.D. I				eady to P				KB, RT, GR	L	Elev. Cashinghead
11-15-83	· · · · · -	1		7-83			3602	2.2 GR	•		3604
20. Total Depth	h .	ug Back T.D).		if Multiple Many	e Compl., l	low	23. Intervals	Rotary	Tools	Cable Tools
2540	. 2	2504		'	Muny			Drilled B	254	0	•
24. Producing Interval(s)	, of this comple	tion - Top,	Bottom,	Name						2	5. Was Directional S
2475						•					Made
2475 2464-24 6 5	San An	dres									NO
26. Type Electric and O								 		27 W	as Well Cored
CNL/FDC		CMT.	BOND							NO	
28.					VDC /B	ort all strir		: UN	···	1110	
	T	· · · · · · · · · · · · · · · · · · ·					193 361				
CASING SIZE	WEIGHT LB	1./FT.	338	SET		E SIZE			SXS	RD	AMOUNT PULL
	2711		330				_			Maria	'
<u>5}</u>	15.5		25	40		7_7/8_	_	1320	0_sxs_	Cucalar	<u> </u>
							_				
29.		LINER REC	ORD					30.	T	JBING REC	ORD ·
SIZE	TOP	BOTT	ОМ	SACKS C	EMENT	SCREE	EN	SIZE	DEF	TH SET	PACKER SE
								2 3/1	8 240	3	
31, Perforation Record (Interval, size a	nd number)		-4		32.	ACI	D. SHOT, FRA	ACTURE. C	EMENT SO	UEEZE, ETC.
,						DEP		ERVAL			ND MATERIAL USED
2464-75					-		64-				15% нет
Total 28 .4	0 001						11	/ -/			
10La1 20 .4	o car.										Gel_H20
									125.00	U #sa.	
122					BBOO	UCTION					
33. Date First Production	10	duction Meth	nd (Flow	ine ees			and tw	ne numni :		Wall States	s (Prod. or Shut-in)
	1 -100			gus				rump/			· ·
12-27-83	111		ımp	1000		OII - Bbl.		Cup. 1407	141_/		rod.
Date of Test	Hows Tested	Choke		Prod'n. Test P				Gas - MCF	Water	Bbl.	Gas-Oil Ratio
1-15-84	24		/8	1===	>	42:		110		_20	2682
Flow Tubing Press.	Casing Press	Hour		- 011 – E	3b1 .	Gas.	- MCF	Wate	er – Bbl.	OII	Gravity - API (Corr
34. Disposition of Gas	Sald was to		<u>→</u>	<u> </u>	·			l	17	Witnessed B	lu
1 -	Solu, usea for f	uei, venteu,	eic.)						1 651		•
vented	**								l	He	rb Spencer
35. List of Attachments	2										
Logs Dev	ation Su	ırvey			•						
36. I hereby certify life	the information	shown on b	oth side.	s of this f	orm is tru	e and comp	olete to	the best of m	y knowledg	e and belief	
j / /// \	\mathcal{N}										/ / .
SIGNED	(-			711	THE C	reowo	157			DATE /	120/84
310112	•										

٠.

NERGY AND MINERALS	DEPARTM	ENT	OIL (CONSE			ועום ו	NOIZ	۲			ba of Ferre
DISTRIBUTION			SAN	P. NTA FE	O, BOX , NEW						• XX	Fee Gas Leaso No.
U.S.G.S.	1		COMPLE	TION OR	RECO	MPLE	TION RE		ND LOG		~~~	mmm
DESATOR BAIN	7	7 "		,,,,,,		···· i,	5	f) with Oak):	- 1			
a. TYPE OF WELL	7 15-51	J		•						7. Unii	Agreem	ent Name
· ,		WELL XX	GAS WELL				HER	•	Ì	C.P	.U.	
b. TYPE OF COMPLET		were held				0.,				8, Farn	or Lea	se Name
WELL WOR	. D	CEPEN 🔲	PLUG	Dir	<u> </u>	071	+CR			Cave	Poc	ol Unit
Name of Operator										9. Well		
J.E.M. Reco	urces	Inc./					···			64		
Address of Operator												Pool, or Wildcat
P.O. Box 29	38, Ru	<u>idoso</u>	<u>NM 88</u>	345						Cay	e GI	3/SA
Location of Well									8			
		220			1 1-			1650	8	////		
HIT LETTER C	LOCATED	330	FEET F	ROM THE \perp	ortn	LINE	7777	1020		12. Cou	77777	77777777
ME West LINE OF 1	ice. 4	yw,17	7 S , 6	29 E	ныры			MIII	//////		-	
			5/11		euay to F	700.7	3588		KKB, KI; UI	1, etc.)	358	
0, Total Depth	1	/ 04 Plug Bac			Il Multiple	e Compl			ils , Rotary	Tools		Cable Tools
2683	ľ	550			Many		., ,,,,,,,	Drilled	By al		!	0-2:0 :00:2
1. Producing Interval(s			Top, Botton	n, Name							25.	Was Directional Sur
	1	•										Made
2212-2262,	2458-2	519 (Graybur	g/SanA	Andre	s						no
6. Type Electric and O CNL/FDC/GR.							··			1	27. Was	Well Cored
28.			CAS	ING RECO	RD (Rep	ort all st	rings set	in well)				
CASING SIZE	WEIGHT	LB./FT.	DEPT	(SET	ног	E SIZE		CEME	NTING RECO	RD		AMOUNT PULLE
8 5/8	24#		345		12 1			275	Curalo	الما		none
5 }	15,	5∦	2683		7	7/8		9	50 Cuc	Jak	4	none
												
					L							
29.			RECORD	,				30.			RECOR	·
SIZE	TOP		MOTTOM	SACKS C	EMENT	SCA	EEN	SIZE		TH SE	<u>T</u>	PACKER SET
			 	 				2 3	/8 252	20		free
	(l 1 1					7.00		D SUGT 5	DA CTUDE A	CEUCN		
11. Perioration Record						32.			RACTURE,			
2458-2519,	•						PTH INT					MATERIAL USER
2212-2262,	20, .4	o cai					<u>8-251</u> 2-226		3000 g			
		•		*			Perf		1500 g			l KCl+
				•		1011	1611	5	42,000			
33,					PROD	UCTION			1 72,000	- 11 - 4.1	J / TU	<u> </u>
Date First Production		Production	Method (Flo	nuing, gas				e pump)		Well	Status (Prod. or Shut-in)
5/1/84	1	Pump	and F1	.OW						Pro	bc	
Date of Test	Hours Tes		Choke Size	Prod'n.		011 - B		Gas – MC		r - Bbl.		as - Oil Ratio
6/1/84	24 F	lr.	7/8'' \	Test P	atroa	45		175	1 !	5		3.8:1
Flow Tubing Press.	Casing Pr		Calculated 2 Hour Rate	4- OII — E	bl.	Go I	s - MCF	W	ater – Bbl.		Oil Cr	avily - API (Corr.)
	<u> </u>			<u> </u>						1104		
34. Disposition of Gas	(30ld, used)	or juct, ve	nted, etc.)		•			:	l l	Witnes		
Vented	· 							·	Jay	y Ro	ye	·
35. List of Attachments		4										
Deviation s		tina akawa	on had at t	an a (1) ! = !		in code	mplete to	the base of	(my knowlad		ali a f	·
in a reby certify tha	i ine injorma L	HOR INDUT	on ooth sid	er oj inis j	orm is itu	is min co	impicie 10	ine nest o)	my knowien	se una D	€11 € J.	
IN A	V'					Geolo	oiet				67	7/84
SIGNED A				TIT	rle		6136			DATE	0/	1 / 04

SIMIL OF ILLE						_		DC.	S AOR
ENERGY AND MINERALS		OIL	ONSER	A V S	TION DI	VISION	<u>[3a.]</u>		Type of Leusa
MOITUBINTEIO					(2088			state 🔀	
SANYA FE	V V	SAN	ITA FE,	NEW	MEXICO	37501	A		& Gas Lease No.
U.S.O.S.		ELL COMPLET	TION OR I	DECO	MPI ETION	DEDODT A	10100	B - 2	596
LAND OFFICE	<u> </u>	LLL COMPLE	TION OR I	APTE	sies, Office	KLIOKIA Marana	1,0		
DREALTON 15 17-	131/2					X		77777	
10. TYPE OF WELL D							γ ^γ ^{γ, υ}	nii Agre	ement Name
L		. 🛛 🛣 🛣 [ءه لـــ	٠, 🗀	OTHER	- 10h	, l		
b. TYPE OF COMPLET		PLUS [9177.			1.10	1 -	`	oose Nome
well Sover		AL BACK	A CSV	<u>a. L. l</u>	OTHER	$-\mathcal{M}$		ED	STATE
****	2	7	· V			1201] 9. w	eli No.	
J. E. M.	^ESOUR	eces I	X/C:			Ψ		Fulcon	d Pool, or Wildcat
A 2214	2020	, Rui 005.	. 1/1	1)	6671		1 _		1-1
P. O. BOX	2938	, KUI 005	0 ///		8834	7		UE	GB/SA
, Location of well		•							
6	11	50 PRET FR	1/	here	,	27/1			
INIT LETTER	LOCATED /D	TRET FR	OM THE TO	2////	LINE AND	310	FEET FROM	County	77777777
F	11	17 6	70 C			///X///	///// · · ·	004	
THE EAST LINE OF &	ec. 7 T	WP. // J AGE	27 E	HMPM	7777777	7174777	<u> </u>		VIIIIII
15. Date, Spudded	16. Date 1.D. N	edched 17. Date	Comps. (Kea	ay to P				1	Elev. Cashingheud
6/25/84 20. Total Depth	7/1/8/ 21. Plue	9 1 //7	1/84		<u>ک</u> ا	585 B			<i>58</i> 7
	í		22. II Mo	Mullipi iny	e Compl., How	23, intervo			Cable Tools
34/8 24. Producing Interval(s)	30						- ALL		<u> </u>
2621-299			, Num e						5, Was Directional Surv Made X/O
26, Type Electric and O	ther Logs Run							122 W	as Well Cored
CNL/FDC	DLL	Pro]	y/s
28.			ING RECOR	D /Ren	art all strings :	set in well)			V D
CASING SIZE	WEIGHT LB.				E SIZE		NTING RECORD		AMOUNT PULLE
0.5%	21/4	350		12	7/1	250			NONE
5/6	100	# 3//	ē - 	<u> </u>	2/4	8005			NOME
		3// 6	^			8003.	K) C//		17077
						· 			
29.		INER RECORD				30.	TUBII	IG RECO	ORD
SIZE	TOP	ВОТТОМ	SACKS CE	MENT	SCREEN	SIZE	DEPTH		PACKER SET
			SACKS CL.		3311211	23/8	3005		No P.K.R
					·				7,57,61
31. Perforation Record (Interval, size and	d number)	<u> </u>		32.	CID. SHOT. F	RACTURE, CEM	ENT SOL	JEEZE ETC.
2621-2999		•				NTERVAL	T		ID MATERIAL USED
2021-2777	25 190				2621-25			FAL	15% HEFE
					2021 -7				GEL HOOT
							195,000	20	110 50
							11.50,000		70_39
33.				PROD	UCTION				
Date First Production	Produ	iction Method (Flow	ving, gas lif	t, punip	ing - Size and	type pump)	w.	ll Status	s (Prod. or Shur-in)
7/14/84		Pump						PR	200
Date of Test	Hours Tested	Choke Size	Prod'n. F		ОП — ВЫ.	Gas - MC	F Water - 1	Bbl.	Gas - Oll Ratio
7/16/84	24 hr.	7/8	Test Peri	>	100	300	200		300
Flow Tubing Press.	Casing Pressur	Calculated 24	- OII - Bbl		Gas - Mo		ater — Bbl.	OII	Gravity - API (Corr.,
1913 B	<u> </u>		.			·			
34. Disposition of Gan (Sold, used for fu	el, vented, etc.)					Test Witr		-
SOLD			<u> </u>		·		REX	GLE.	N
35. List of Attachments		•					 		
	CULATION S								
30. I hereby certify that	the information :	shown on both side	s of this for	n is tru	ie and complete	to the best of	my knowledge ar	d belief.	,
سندست در مر	/J/								<i>Y</i> / ,
SIGNED SIGNED	2/20		TITL	E COA	USUC TING	Créolo	GIST DA	re <u>8/</u>	16/84

CRGY AND MINERALS	DEPARTMENT								•		
HO, OF COPIES RECEIVE		OIL	CONSE			DIV	ISION		Su. India	ole Ty	pe of Leuse
DISTRIBUTION		-		O, 80)			1504				Fee
SANTA FE		5.	ANTA FE	, NEW	MEXIC	.O 87	501				Gas Lease No.
V.S.O.S.	- 	ELL COMPL	CTION OF		WOL CT		CDODT AND	1.00	Es	120	0
LAND OFFICE.	- W	ELL COMPL	E HON UP	KECO	MPLEH	ON R	EPUK I ANI	י בטט		1111	
OPERATOR							فميدوني ال			7///	
TYPE OF WELL	不明之								7. Unit	\graem	ent Name
	OIL WEL	. 🔲 🐪 👯		DRY	OTHE	R		'			
S. TYPE OF COMPLET									8. Farm	or Lea	se Name
MELL OVER		H	K D AE	sva.	OTHE	A				Ca	ve State
Name of Operator		_			,				9. Well 1	vo.	
	esources	inc.								_2_	
Address of Operator	2020 B	. 1							10. Fiel	d and F	Pool, or Wildcat
	2938 Ru	rdoso, N	.M. 883	45	<u> </u>					Ca	ve - Grbg - SA
. Location of Well			•							IIII	
н		1650		NT + 1-			220			IIII	
H H	LOCATED	1030 FEE	FROM THE _	HOLLE	LINE A	ND	330	ET FROM	77777	7777	777777777.
							//////////////////////////////////////		12. Cour	-	VIIIIIII.
THE EASTINE OF			AGE. 29	E HMPM		7777,	<i>11XIIII</i>	77777	Edd		
12-11-83	16. Date T.D. R	Reached 17. Do			rod.)	B. Elev			R, e1c.)		ev. Cashinghead
			1-5-8		_لل		3406 GR				3408
23. Total Depth	ı	g Back T.D.	22.	ii Multipi Many	e Compl.,	How	23. Intervals Drilled B		2530	!	Cable Tools
2530	2505	/a=		·				-	2330		
.4, Producing Interval(s), at this complet	10n - 10p, Bai	iom, Name					•		25.	Was Directional Survey Made
2447-2468	San	Andres								١,	no
.c. Type Electric and O	ther Logs Run								12		Well Cored
	DC / Cmt	Rond Co	זי								
28.	-0 , 0		ASING REC	ORD (Ren	ort all stri	ng \$ 50	t in well)			no	
CASING SIZE	WEIGHT LB.		THSET		LE SIZE		CEMENT	ING REC	ORD		AMOUNT PULLED
8 5/8	241	32		12			481 sx:	^	0.1.	1	
5.1								<u> </u>	4.1.	7	none
	15.	5-# 25 3	· U	/	- / / 8 -	_	-875 sx	5CM	CALL	-	none
				 							
29.		INER RECORD					30.		TUBING F	ECOR	D
312 E	тор	воттом	SACKS	EMENT	SCRE	EN	SIZE	0.6	PTH SET		PACKER SET
							2 3/8	1	2420		
1. Perforation Record (Interval, size an	d number)			32.	AC	ID, SHOT, FRA	CTURE,	CEMENT	SQUE	EZE, ETC.
//7 0//0 00		•			DEP	TH IN	TERVAL	AMO	UNT AND	KIND	MATERIAL USED
447-2468 28	.40 cal s	shots.	•		244	+/-2	468		00 ga		5% HC1
								70,	000 g	<u>al (</u>	Gel Wtr.
								120,0	00 #	sd.	
~- 											·
11,	12.				UCTION				1 11 11 6	· ,	D (C)
First Production	i	iction Method (_	and ty	(pe pump)		ı	-	Prod. or Shut-in)
-5-84	Howa Tested	Choke Siz		· La	OII - Bhi		Gas – MCF	Was	er - Bbl.	Prod	i . Gas – Oil Rutio
-15 84	24	7/8	Test P		4/1	•	111		18	١	2707
low Tubing Press.	Casing Pressu	e Calculate	1 24- OII - I	Bbl.	·	- MCF		r' Bbl.		OII Gr	avity - API (Corr.)
		Hour Flate	ا حــ						1		
1. Disposition of Gas	Sold, used for fu	el, vented, etc.	, - '					Ter	it Wilness	ed By	
ented								- 1		Hert	Spencer
5. List of Attachments	~										
/\a	1) 1										
i. I hereby certify the	I Information	shown on both t	ides of this	om is in	ue and com	plete H	the best of m	y knowle	ize and b	slief.	
/ // /	M				_					-	
SIGNED		·	TI	TLE _6	EULUG	157	·		DATE.	1 -	20-84

٠.

STATE OF NEW	MEXICO							
HO, OF COOLS ALCELY		OIL C	ONSERV	ATION DI	VISION			
DISTRIBUTION				OX 2088			State X	Type of Leuse
SANTA FE		. SAN	TA FE, NE	EW MEXICO	87501			& Gus Legse No.
FILE							!	163
U.S.G.S.		VELL COMPLET	TION OR RE	COMPLETION	REPORT A	ND LOG	Timi	mmilli
ROTARSO				4 	ga riang a sega anterior son (56 kg). I	, s. e. in e. T		
.U. TYPE OF WELL	190m						7. Unit Agree	oment Name
b. TYPE OF COMPLE	LION D WEL		ا مما	OTHER			8. Farm or L	egge Ngme
	• 🗀	PLU6 [DIFF.	-				Stata
WELL X OVE	AL DEEPE	H BACK	RESVA.L	OTHER			Theas	Deace
J.E.M. Resou	irces INC						3	
. Address of Operator	11005 1110	<u> </u>					10. Field and	d Pool, or Wildcal
P.O. Box 293	38 Ruidos	o. NM	88345				Carra	<i>ር</i> ኤ ር
Location of Well		<u> </u>	00347				Cave	mmittill
THIT LETTER G	LOCATED 16	50 FEET FR	OM THE MORT	h LINE AND	1650	FEET FROM		
				TITITA	MXIII	77777	12. County	
THEE AST LINE OF	•cc. 5	WP. 17 S AGE	. 29 E	111111 man	THXIII		Eddy	
15, Date Spudded	16, Date T.D. F	Reached 17, Date	Compl. (Ready)	to Prod.) 18. E	levations (DF,	RKB, RT, C	R, etc./ 19. 1	Elev. Cashinghead
	1/4/84	1/12		3	613 Gr.			3615
20. Total Depth	,	ig Back T.D.	22, If Mul Many	tiple Compl., Hov	23. Intervo	ls Rota	ry Tools	Cable Tools
2550		522				<u>→ 2.</u>	550	·
24. Producing Interval(s			, Name				2	 Was Directional Surv Made
SanAndres 2	2453-2467							no
26. Type Electric and C		····		 				
Grn CBL CCL	iner Logs Hun	•					27. W	as Well Cored
· · · · · · · · · · · · · · · · · · ·							<u> </u>	0
28.				Report all strings				T
CASING SIZE	WEIGHT LB.			HOLE SIZE	350 s	TING REC	ORD TO	AMOUNT PULLE
8 5/8	24	32		121			water.	none
<u> </u>	15.5	255	0	7 7/8	735_s	xs Cu	- suraru	none
								
29.		INER RECORD		l	30.		TUBING RECO	ORD
SIZE	TOP	воттом	SACKS CEMEI	NT SCREEN	SIZE	10	EPTH SET	PACKER SET
					2 3/8			
			·					
31, Perforation Record	(Interval, size an	d number)		32.	ACID, SHOT, F	RACTURE	CEMENT SQL	JEEZE, ETC.
•					INTERVAL			O MATERIAL USED
2453-2467 2	8 .40 cal	shots		2453-2	2467		gal 15%	
•								el KCl wtr.
						76,00	00# sd	
						l		
13. Date First Production	15	uction Method (Flor		RODUCTION	d 2000 500 = 1	···	(w=11 c+=+	(Prod. or Shut-in)
1/14/84	1		ving, gas tijt, p	umping — Size an	a type pampj		l	i (1-roa. or shut-in)
1/14/04 Date of Test	Hours Tested	ump Choke Size	Prod'n, For	Oil - Bbi.	Gas – MC	F Wa	Prod	Gas - Oil Ratio
7/24/84	24	7/8	Test Period	► 50	285	j	12	5700
Flow Tubing Press.	Casing Pressu		- OII - Bbi.	Gas - k		zier – Bbi.		Gravity - API (Corr.)
· ·		Hour Flate	.	1				
34, Disposition of Gas	(Sold, used for fu	iel, vented, etc.)				Te	st Witnessed B	у
vented						_	Herb Spe	ncer
35. List of Attachments	•		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			
Logs Deviat								
76. I hereby certify the	the internation	shown on both side	s of this form i	s true and complet	te to the best of	my knowle	dge and belief.	
· //////	עען	_		0 1				
SIGNED		-	_ TITLE _	Geologis	T.		DATE	/2//84
, , ,								

VII. SOURCE & ANALYSIS OF INJECTION FLUID

WATER ANALYSIS REPORT furnished by TRETOLITE CHEMICALS

COMPANY: ARAPAHO
LEASE: C. P. U.
SAMPLE POINT: S. W. D.
SAMPLE DATE: 4-23-90
SAMPLE TEMP.: N/A

pH: 7.0 H2S: POS GRAVITY: 1.09

SPECIFIC GRAVITY: 1.095

ar training

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
нсоз	366.00	6.00
Cl	76254.00	2148.00
SO4	3500.00	72.92
Ca	46800.00	2340.00
Mg	0.00	0.00
Na	0.00	0.00

IONIC STRENGTH = 3.48

TOTAL HARDNESS = 18500.0 mg/ltr.

TOTAL DISSOLVED SOLIDS = 124663.7 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS	MILLIGRAMS
	PER LITER	PER LITER
1 Ca (HCO3)2	6.00	486.24
CaSO4	72.92	4963.44
CaCl2	2148.00	119214.00
Mg(HCO3)2	0.00	0.00
MgSO4	0.00	0.00
Mg C12	0.00	0.00
NaHCO3	0.00	0.00
Na2S04	0.00	0.00
NaCl	0.00	0,00

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F. = 2.0 CaCO3 @ 120 DEG F. = 2.5

SATURATION POINT

CaSO4 @ 70 DEG F. = 368.3 MG/LTR. CaSO4 @ 110 DEG F. = 365.7 MG/LTR.

- 1

(THIS SAMPLE CONTAINED 4963.4 MG/LTR. CaSO4)

WATER ANALYSIS REPORT furnished by TRETOLITE CHEMICALS

COMPANY: ARAPAHO
LEASE: CAVE #2
LE POINT: WATER TANK
PLE DATE: 4-23-90

SAMPLE POINT:

SAMPLE DATE:

SAMPLE TEMP.:

N/A

pH: 7.0

H2S: POS

SPECIFIC GRAVITY: 1.07

TITRATED AND CALCULATED IONS

EQUIVALENTS ITER
00
00
02
00
64
00

IONIC STRENGTH = 3.20

TOTAL HARDNESS = 130000.0 mg/ltr.

TOTAL DISSOLVED SOLIDS = 66874.8 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS
	PER LITER	PER LITER 1053.52
Ca (HCO3)2	13.00	1053.52
CaSO4	13.02	886.33
CaC12	1170.00	64935.00
Mg (HCO3)2	0.00	0.00
ິ∴∴ MrSO4	0.00	0.00
MgC12	0.00	0.00
NaHCO3	0.00	0.00
Na2SO4	0.00	0.00
NaCl	0.00	0.00

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F. = 2.1 CaCO3 @ 120 DEG F. = 2.6

SATURATION POINT

CaSO4 @ 70 DEG F. = 473.5 MG/LTR. CaSO4 @ 110 DEG F. = 469.3 MG/LTR.

THIS SAMPLE CONTAINED 886.3 MG/LTR. CaSO4)

X. DATA ON INJECTION WELL

WATER ANALYSIS REPORT furnished by TRETOLITE CHEMICALS

COMPANY:

ARAPAHO

LEASE:

CAVE POOL UNIT #3

SAMPLE POINT:

WATER TANK

SAMPLE DATE:

4-23-90

SAMPLE TEMP.

N/A

 $\mathbf{p}\mathbf{H}$:

H2S:

. ...

SPECIFIC GRAVITY: 1.03

7.0

POS.

TITRATED AND CALCULATED IONS

	MILLIGRAMS	MILLIEQUIVALENTS
	PER LITER	PER LITER
HCO3	451.40	7.40
C1	21726.00	612.00
SO4	2500.00	52.08
Ca	2480.00	124.00
Mg	947.70	77.68
Na	10805.47	469.80

IONIC STRENGTH = 0.80

TOTAL HARDNESS = 10100.0 mg/ltr.

TOTAL DISSOLVED SOLIDS = 38889.5 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS	MILLIGRAMS
	PER LITER	PER LITER
Ca(HCO3)2	7.40	599.70
CaSO4	52.08	3545.31
CaC12	64.52	3580.67
Mg (HCO3)2	0.00	0.00
MgSO4	0.00	0.00
MgC12	77.68	3699.14
NaHCO3	0.00	0.00
Na2SO4	0.00	0.00
NaC1	469.80	27464.68

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F. = 0.3 CaCO3 @ 120 DEG F. = 0.8

SATURATION POINT

CaSO4 @ 70 DEG F. = 3405.1 MG/LTR. CaSO4 @ 110 DEG F. = 3419.3 MG/LTR.

(THIS SAMPLE CONTAINED 3545.3 MG/LTP. CACCA)

ENERGY AND MINERAL		OU (CONSERVA	ATION D	IVISION		
DISTRIBUTION	DISTRIBUTION P. O. BOX 2088						
SANTA PE	SANTA FE, NEW MEXICO 87501						rie XX Foo .
FILE	V v					3. Sidi	e Oil & Gas Lease No.
U.S.G.S.	V	VELL COMPLE	TION OR REC	OMPLETION	REPORT A	ND LOG	77 6 67276
LAND OFFICE							
OPERATOR							
IG. TYPE OF WELL	<i>∫'າ.</i> '	·		_		7, Uni	t Agreement Name
	T) OIL	LE WELL	DAY [OTHER!	-	-	
b. TYPE OF COMPLE	TION			. 1.57		8. Far	m or Lease Name
MER WO	RK D DEEP	IN PLUS	OIFF. E	OTHER		Ca	ive State and //w/
2. Name of Operator		<u> </u>				9. Wel	102 1 9/14/
J.E.M. Res	Ources In	c. '	Ţ	\$2.79 kg 1	17 (178)	<u>. </u>	r #56
J. Address of Operator				ز.	No. 3.4.	10. Fi	eld and Pool, or Wildcat
P.O. Box 2	938 Ruido	so NM. 883	345	47,775	r that	Ca	ve Gb/Sa
1. Location of Well				THE WATER COLUMN	-		
Tr		1650	N7 1-	1	220		
UNIT LETTER E	LOCAYED		HOM THE NOTE	LINE AND	330_		
					HHXHH	12. Cc	Danth (11111111
THEWEST LINE OF	sec. 4	TWP. 17 S AC	E. 29 E HMP		MXIIII	////// Edd	lv (\\\\\\\
15. Date Spudded		Reached 17. Date			Elevations (DF.	RKB, RT, GR, esc.	19. Elev. Cashinghead
1/4/84	1/9/84	1/17/	¹ 84	1	600 Gr.	'	3602
20. Total Depth	l	ag Back T.D.		ple Compl., Ho		ls Rotary Tools	
2564	1		Many	pre Compr., 110	Drilled	By	Capte Logie
		14		·		→ : 2564	
24, Producing Interval		• •	n, Nome				25, Was Directional Survey
SanAndres	-2449-24	64					
							no
26. Type Electric and	Other Logs Run		 				27, Was Well Cored
C=/N CCT C	DΤ						
Gr/N CCL C	DΓ	CAS	INC DECORD (B.			l	no
28.			ING RECORD (Re	·			
CASING SIZE	WEIGHT LB		SET HO	DLE SIZE		TING RECORD -	AMOUNT PULLED
8 5/8	24	340		4	320 sx	cs Cucula	none = '/
5]	15.5	2564		7_7/8	925 sx	S Conculation	none :
29,		LINER RECORD	····		30.	TURING	RECORD
							
SIZE	тор	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SI	ET PACKER SET
			<u> </u>		278	2575	
		<u></u> ·		<u> </u>	<u> </u>		
31. Perforation Record	(Interval, size ar	nd number)		32.	ACID, SHOT, F	RACTURE, CEMEN	IT SQUEEZE, ETC.
				DEPTH	INTERVAL		ID KIND MATERIAL USED
2449-2464	30 40 0	1 shots		2449-2		0000	
2117 2104	30 .40 C	ii anoca		2447 2	104		15% HCl
	•					25,000 gal	
		•				35,000# sc	<u>i</u>
				L		L	·
33.				DUCTION			
Date First Production	Prod	uction Method (Flo	wing, gas lift, pun	nping — Size ar	id type pump)	Well	Status (Prod. or Shut-in) ,
1/18/84		Pump ·				ומ	rod
Date of Test	Hours Tested	Choke Size	Prod'n. For	OII - Bbl.	Gas - MC		
1/24/84	24	7/8	Test Period	62	385	30	6210
Flow Tubing Press.	Casing Pressy		4- Oil – Bbl.	Gas -		eter – Bbl.	Oil Gravity - API (Corr.)
	1	Hour Rate	.		1		
34, Disposition of Gas	(Sold weed for t					\m	
	Lance, used for fi	eer, ventea, etc.)				Test Witner	
vented						Herb S	Spencer
35. List of Attachment							
Deviation	Survey Lo	ogs					
36. I hereby certify th			es of this form is t	rue and comple	ie to the best of	my knowledge and	belief
44/\	\mathcal{N}		, , ,			,	/
1///// 634			-				-
SIGNED ALLIY			71716	Geologis	t	DATE	1/27/84

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

		Sout	he astern	Nev. exico				:	ərthw	estem	Ne	v Mexico	
T. Anhy	<i>,</i>		Т.	Canyon		Т.	Ojo Al	lamo			T.	Penn, "B"	
T. Salt	3	06	τ.	Strawn		Υ.	Kirtla	nd-Fruit	land		T.	Penn. "C"	
	660		Т.	Atoka		T.	Pictur	ed Cliff	s		T.	Penn. "D"	
T. Yate			Т.	Miss		T.	Cliff I	louse			T.	Leadville	
T. 7 Ri	vers	1088	Т.	Devonian		T.	Menele	e e	•		T.	Madison	
T. Que	nn	164/	Т.	Silurian		Т.	Point !	Lookout		 '	T.	Elbert	
T. Gray	burg —	2040	т.	Montoya		T.	Manco	s			T.	McCracken	
				Simpson									
				МсКее									
				Ellenburger									
	•			Gr. Wash									
				Granite									
				Delaware Sand									
•				Bone Springs			_						
	•												
				-									
No. 2, from	mm	e of water	inflow as	d elevation to which w	PORTANT	No. No. Win he	5, from 6, from ATER ole.	SAND	s		•	toto	***************************************
•				to.,									
•													
No. 3, Iron	m			:		******			leet.	********		·	}
No. 4, from	m	, , , , , , , , , , , , , , , , , , ,		FORMATION RECORD							•	******************************	13 00 00 0 00 0 00 000 0 000
Prom	То	Thickness in Feet		Formation .		F	rom	То	Thickness in Feet			Formation	
306 660 1088		306 354 428 559	Salt Red s Red s	clay + Calich sand + anhy sand + Dolo. + sands	nie	•••							
040		352		+ sands	H							:	÷
3924			Dolo	- Dundb	i							•	

STATE UP NEW WIERROU ENERGY AND MINERALS DEPARTMENT

DISTRIBUTION SANTA PE

OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE, NEW MEXICO 87501 .

Form C-103 - Revised 19-1-78

PILE P		•	130	. Indicate Type	of Legse
U.S.O.S.		5. C. I		State X	F•• 🗌
OPERATOR		A TOTAL OF	3.	State Oi) & Gas	7596
SUNDR'	Y NOTICES AND REPORTS	ON WELLS			
USE "APPLICATI	ON FOR PERMIT -" (FORM C-101) FO	A SUCH PROPOSALS.)	2	, Unit Agreement	7/1////////////////////////////////////
OIL EAD WELL	OTHER-		'	, Om Agreement	Manne
2. Name of Operator			8	. Farm or Lease	Jiane , 1
J.E.M. Resources Ir	nc. ·V'			Cave Sta	(Thit
3. Address of Operator			9	. Well No.	
P.O. Box 2938 Ruido	so NM,88345			28 50	0
4. Location of Well E	650 Nort	·h 220	1	0. Field and Pao	
UNIT LETTER	1650 FEET FROM THE NOTE	TI LINE AND 330	PECT FROM	Cave Gb	(Sa (Titirimin
West LINE, SECTION	4 TOWNSHIP	17 S RANGE 29	E NMPM.		
	15. Elevation (Show who 3600 C	eiher DF, RT, GR, eic.)	1	2. County Eddy	
16. Check	Appropriate Box To Indica	te Nature of Notice Res	noer or Other		
	TENTION TO:			REPORT OF:	
PERFORM REMEDIAL WORK	PLUS AND ABANDON	REMEDIAL WORK	\Box	ALTERI	NG CASING
TEMPORARILY ABANDON		COMMENCE DRILLING OPHS	. 🗖	PLUG A	ND ABANDONMENT
PULL OR ALTER CASING	CHANGE PLANS	CASING TEST AND CEMENT	•	1' -	
OTHER	·	- C	Peri	and Frac	
17. Describe Proposed or Completed Op work) SEE RULE 1103.	erations (Clearly state all pertine	nt details, and give pertinent dat	es, including es	timated date of s	tarting any proposed
1/13/84 Run GrN CBI	L CCL logs				
1/14/84 Pressure to	est csng to 1000#	held for 30 min			
Perf 2449-2	2464 2 spf .40 cal	. (30 shots)			
Acid w/ 200	00 gal 15% HCl 3.6	BPM @ 1900 PSI	ISDP 110	0# 15 min	ι 0#
Swab well b	ack				
1/16/84 Frac perf 2 27 BPM @ 24	2449-2464 w/25,000 400# ISDP 2100 15	gal Gel KCl Wtr	35,000#	20/40	
		21. 2000			
1/17/84 Swab well h	pack				
	•				
		•			•
		,			
	•				•
	·				•
Λ	·	•			
18. I hereby coffy that the mormation	above is true and complete to the	best of my knowledge and belief	·		
	•	0 1 1		= :	
*16#E0	YITLE	Geologist		DATE	24/84
the first section of the section of	• `			·	
mil whis	liams	OIL AND BAS INSPECTOR		FEB	0 6 1984
APPROVED BY	TITLE			DAYC	

SANTA PE		NEW MEXICO 8750	1	Ře	vised 10-1-78
U.S.G.S.		•	5a.	Indicate Type of Le	_
OPERATOR -	4		5. 5	State X	Fee
	···		, and the second second	B 75	96
SUNDE THIS FORM FOR PARTICAL	CEERVOIR.				
OIL WELL WELL WELL	OTHER-		7.	Unit Agreement Nam	e
2. Name of Operator			8.	Farm or Lease Name	,
J.E.M. Resources Inc				ave State Well No.	
P.O. Box 2938 Ruidos	o NM 88345			3	
4. Location of Well UNIT LETTER E	1650 PEET PROM THE 2	Inth LINE AND 3	3) PEET FROM	Field and Pool, or Cave - G-S	•
	10H 4 TOWNSHIP				
	15. Elevation (Show	whether DF, RT, GR, etc.)	12.	County	HHHH
	3600	gr.		Eddy	
16. Check	Appropriate Box To Ind	icate Nature of Notice,	Report or Other	Data	
NOTICE OF I	NTENTION TO:		SUBSEQUENT RE	PORT OF:	
PERFORM REMEDIAL WORK	PLUG AND ABAN	DON REMEDIAL WORK	۲	ALTERING CA	
TEMPORARILY ABANDON	•	COMMENCE DRILLING	OPHS.	PLUG AND AS	· -
PULL OR ALTER CASING	CHANGE PLANS	CASING TEST AND CE	X APL THEM		
		OTHER			
OTHER			<u> </u>		
17. Describe Proposed or Completed C work) SEE RULE 1 103.	perations (Clearly state all per	tinent details, and give pertine	nt dates, including esti	mated date of starti	ig any proposed
1/7/84 Hit water f	low @ 1745 est 4	O Gal per min			
. •	. 1	ļ .			
1/9/84 TD 2564 W		0.567			•
	$5\frac{1}{2}$ " 15.5# csng SXS Pacesetter 1		iled in W/		
					*
Plug down (/50 poz 4# Hiseal 1 12:37 AM 1/10/8	4 Circulated 1	68 SXS to pi	t.	
Woc 18 Hrs.		•			
	•		•	•	
		e e e e e e e e e e e e e e e e e e e			
	•				
	7	•			
18. I hereby from the the information	on above is true and complete to	the best of my knowledge and	belief.		
	•			•	
#16HEB	· • • • • • • • • • • • • • • • • • • •	Geologist		DATE	84
		Original Signed I			
		Leslie A. Clemen	ts	JAN 2	5 1984

CONDITIONS OF APPROVAL, IF ANYI

ENERGY AND MINERALS DEPARTMENT

CHOI MA HIMENICA D	LIMI	. IAIT
(1	
DISTRIBUTION		
SANTA PE		
FILE		
U.S.G.S.		
LAND OFFICE		
		

CONDITIONS OF ADDROUAL IF ANY

OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE. NEW MEXICO

Form C-103

PILE		SARTATI	E, 14 E, W	MEXICO 87501				10-1-7
U.S.G.S.				:	ART28-1111	State X		
DPERAT				No. among	CANTELLO LINEARING WAS SERVICED IN THE	5, State Oil & G		•• 📙
13.2						R	7596	2
	SUNDRY N	OTICES AND REPO	RTS ON	WFLIS		THINK!	Mille	TITI
(PO HO	T USE THIS FORM FOR PROPOSA	OR PERMIT -" IFORM C-10			ERVOIR.			
1.	644					7, Unit Agreeme	nt Name	
MELL X	weit L	OTHER-		·				
2. Name of Ope						8. Farm or Leas		
Di	amondback Petr	oleum Inc. ⊱		· · · · · · · · · · · · · · · · · · ·	•	Cave St	ate	
3. Address of C	•		•			9. Well No.		
1. Location of	O. Box 2938, R	uldoso, NM.				5 10, Field and Pe	nol or Wilden	
		50	Mazeh	2.2	^	Cave 9-		•
UNIT LETTI	:#, <u></u> ,	50 PEET PROM THE	NOLLII	LINE AND33	PEET FROM	minim	mm	m
l W∈	est	4 TOWNSHIP	175	BANGE _ 29	c			/////
THE	LINE, SECTION	TOWNSHIP		RANGE	<u>С.</u> нм#м.		((((((/////
mm		15. Elevation (Sho	m myether	DF, RT, GR, etc.)		12. County	7/////	444
		36	00 GR.			Eddy		/////
16.	Check Apr	propriate Box To Inc	dicate N	ature of Notice	Report of Ot	her Data		7777
_	NOTICE OF INTE		1		=	T REPORT OF	•	
-	•			:			•	
PERFORM REME	DIAL WORK	PLUG AND ABA	ND ON	REMEDIAL WORK		ALTE	RING CASING	
TEMPORARILY	ABANDON			COMMENCE ORILLING O	PNS.	PLUG	AND ABANDONA	4EHT [
PULL OR ALTER	CASING	CHANGE PLANS	· []	CABING TEST AND CEM	ENT JOB X			
				OTHER				L
OTHER			∸					
17. Describe F	roposed or Completed Opera	tions (Clearly state all pe	rtinent deta	ils, and give pertinent	dates, including	estimated date of	starting any	propose
work) SEE	RULE 1 103.				•		•	
	,			;				
1 // /0/	C 10111 11	- A 10 00 TV		į				
1/4/84	Spud 12½" hol	e @ 10:00 PM						
	•	•		:				
1/5/84	TD 340' Ran 3	40' 8 5/8" 24	l cene	•			•	
1,5,6,							•	
	Cmt W/ 225 sx	s class "C" 2	% CaCl	.2 95 sxs cl	ass "C" r	neat		
•	Pd @ 9:31 PM	WOC 18 hrs Ni	pple u	D BOP Press	ure test	Cana to		
	800 PSI held		• •			05.16 20		
	ood ibi neid	JU MIN				•		
		•		•				
1/6/84	Drilled out W	/ 7 7/8" bit	·					•
	,	•		•				
12.7		•						
•		•						
	\mathcal{M}			•				
18. I hereby co	willy/that the information abo	ove is true and complete to	o the beat o	I my knowledge and be	lief.		······································	
1	H	•		•				
			urur Ger	logist		DAYE 1/10	1/84	,
*16969	/			Original Signed a				
	•			Leslie A. Clements				
		7	17 LE	Supervisor District	11	DATE JAN	2 5 198	4