CASE 6461: OCC PLUGGING CASE
MAYOR EDDIE ARMENTA, VILLAGE OF JEMEZ
SPRINGS AND OTHER INTERESTED PARTIES,
SANDOVAL COUNTY, NEW MEXICO

CASE NO.

6461

APPlication, Transcripts, Small Exhibits,

ETC.



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO P. O. BOX 2088 - SANTA FE

87501

LAND COMMISSIONER PHIL R. LUCERO



STATE GEOLOGIST **EMERY C. ARNOLD**

DIRECTOR JOE D. RAMEY

> Re: CASE NO. 6461 Mr. Booker Kelly R-5941 ORDER NO. White, Koch, Kelly & McCarthy Attorneys at Law

Post Office Box 787 Santa Fe, New Mexico 87501

Applicant:

OCD (Mayor Eddie Armenta, Village of Jemez Springs)

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Yours very truly, JOE D. RAMEY Director

JDR/fd

Copy of order also sent to:

Hobbs OCC Artesia OCC Aztec OCC

Tom Kleeman Other_

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:

> CASE NO. 6461 Order No. R-5941

APPLICATION OF THE OIL CONSERVATION COMMISSION TO PERMIT MAYOR EDDIE ARMENTA, THE VILLAGE OF JEMEZ SPRINGS, AND ALL OTHER INTERESTED PARTIES TO APPEAR AND SHOW CAUSE WHY THE JEMEZ WELL NO. 1 LOCATED IN UNIT A OF SECTION 26, TOWNSHIP 18 NORTH, RANGE 2 EAST, SANDOVAL COUNTY, NEW MEXICO, SHOULD NOT BE PLUGGED AND ABANDONED IN ACCORDANCE WITH A DIVISION-APPROVED PLUGGING PROGRAM.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 23, 1979, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 2nd day of March, 1979, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the Jemes Well No. 1 located in Unit A of Section 26, Township 18 North, Range 2 East, Sandoval County, New Mexico, was spudded on January 3, 1979, and was drilled to a total depth of 824 feet.
- (3) That the operator of record of said well is Eddie Armenta, Mayor of the Village of Jesez Springs.
- (4) That said well encountered waters in excess of 150°F at a depth of approximately 80-90 feet and another naturally heated water at a depth of approximately 500 feet.

-2-Case No. 6461 Order No. R-5941

- (5) That 7-inch casing was set in said well at approximately 120 feet.
- (6) That the comenting of said 7-inch casing was inadequate to prevent waters from escaping from the strata in which they are found into other strata and to the surface.
- (7) That water from the 80-90 foot zone is flowing from the well to the surface of the ground outside the 7-inch casing at a rate of approximately 1000 gallons per hour.
- (8) That said waters flowing to the surface of the ground are of sufficient temperature to be considered a geothermal resource.
- (9) That allowing said water to flow unrestricted from the well without being utilized constitutes waste of a geothermal resource.
- (10) That allowing said well to flow unrestricted could result in injury to neighboring properties.
- (11) That caving has occurred both within the wellbore and around the 7-inch casing, creating a hole and resultant pond at the wellhead of sufficient size to be a hazard to human life and health.
- (12) That said pond should be fenced in a manner sufficient to prevent access by children and livestock and other animals.
- (13) That said well should be repaired in such a manner that geothermal resources will be contained within the 7-inch casing.
- (14) That if said well cannot be repaired, then said well should be plugged and abandoned in a manner that will confine all waters to the strata in which they are found.

IT IS THEREFORE ORDERED:

- (1) That the Mayor Eddie Armenta Jemes Springs Well No.

 1, located in Unit A of Section 26, Township 18 North, Range

 2 East, Sandoval County, New Mexico, shall be re-entered and
 repaired in such a manner that geothermal resources are contained
 within the 7-inch casing.
- (2) That the water flow encountered at approximately 500 feet shall be isolated by setting a cement plug across the shoe of the 7-inch casing.

-3-Case No. 6461 Order No. R-5941

- (3) That in the event re-work operations are unsuccessful in containing the geothermal resources inside the 7-inch casing, the well shall be plugged and abandoned in a manner prescribed by the Santa Fe district office of the Oil Conservation Division.
- (4) That, so long as the hazardous conditions described in Finding No. 12 above shall prevail, the area surrounding said well shall be fenced in a manner sufficient to prevent access by children and livestock and other animals.
- (5) That re-work or plugging and abandonment operations shall be commenced immediately and shall be concluded within 14 days following the date of this order.
- (6) That the Santa Fe District Office shall be notified at least 48 hours prior to commencing re-work or plugging and abandonment operations.
- (7) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

ALEX J. ARMIJO, Member

C. ARHOLD, Member

JOE D. RAMEY, Member & Secretary

SEAL

22

23

24

21

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION State Land Office Building Santa Fe, New Mexico 23 February 1979

COMMISSION HEARING

IN THE MATTER OF:

The hearing called by the Oil Conservation Commission on its own motion to permit Mayor Eddie Armenta, the Village of Jemez Springs, and all other interested parties to appear and show cause why the Jemez Well No. 1 located in Unit A of Section 26, Township 18 North, Range 2 East, Sandoval County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.

BEFORE: Commissioner Ramey Commissioner Arnold

TRANSCRIPT OF HEARING

APPEARANCES

For the Oil Conservation Commission:

Ly in Teschendorf, Eq. Legal Counsel for the Commiss State Land Office Bldg. Santa Fe, New Mexico 87503

CASE

6461

For Mr. McAllister, et al:

W. BOOKER KELLY, ESQ. WHITE, KOCH, KELLY, & McCARTHY 200 Otero Street Santa Fe, New Mexico 87501

22

23

25

27

39

47

52

57

61

62

64

65

66

INDEX

CARL ULVOG 3 Direct Examination by Ms. Teschendorf Cross Examination by Mr. Ramey Cross Examination by Mr. Kleeman EDDIE ARMENTA Direct Examination by Ms. Teschendorf Cross Examination by Mr. Ramey 10 11 TOM KLEEMAN Direct Examination by Ms. Teschendorf 13 Cross Examination by Mr. Ramey 14 Cross Examination by Mr. Arnold 15 Recross Examination by Mr. Ramey 16 Cross Examination by Mr. Ulvog 17 Recross Examination by Mr. Ramey 18 19 GARY MCALLISTER 20 Direct Examination by Ms. Teschendorf 21 Cross Examination by Mr. Ramsy 22 Cross Examination by Mr. Nutter 23 24 Statement by Jamie Hahn Statement of Mayor Armenta

Statement by Dr. Harold Daw

EXHIBITS

Exhibit Number One, Well file Exhibit Number Two, Letter Exhibit Number Three, Proposal Exhibit Number Four, Newspaper article Exhibit Number Five, Photos Exhibit Number Six, Letters Exhibit Number Seven, Rules Exhibit Number Eight, Photos Exhibit Number Nine, Summary Exhibit Number Ten, Exhibit Number Eleven, Proposal Exhibit Number Twelve,

SALLY WALTON BOY!
CERTIFIED SHORTHAND REPORTS
31619 FLAT Marico 215 41

MR. RAMEY: We have one case on the docket this morning, Case 6461, in the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Mayor Eddie Armenta, the Village of Jemez Springs, and all other interested parties to appear and show cause why the Jemez Well No. 1 should not be plugged and abandoned in accordance with a Division-approved plugging program.

We sent out several subpoenas, one for Tom Kleeman, Eddie Armenta, and Gary McAllister. I understand these have all been served.

Are those persons present?

MR. KLEEMAN: Yes.

MR. RAMEY: Mr. Kleeman. Is the Mayor?

MR. ARMENTA: Yes.

MR RAMEY: And Gary McAllister?

MR. McALLISTER: Yes.

MR. RAMEY: Ms. Teschendorf, would you call your first witness, please?

Oh, are there any other appearances in the case this morning?

MS. TESCHENDORF: I'm Lynn Teschendorf, appearing on behalf of the Division. My first witness is Carl Ulvog.

MR. RAMEY: All right, we'll ask Mr. Kleeman, Mr. Ulvog, Mr. Armenta, and Mr. McAllister to stand at this

time and be sworn.

(Witnesses sworn.)

MR. KELLY; Mr. Ramey, my name is Booker Kelly. I'm appearing on behalf of Mr. McAllister, and I'd like to just clarify one point.

The order is addressed to other interested parties, however we are appearing here under a subpoena and we do not consider ourselves parties in the sense that any order of the Commission is directed against us, and I'd like to just clarify the status of the people who you have subpoensed before we get into this hearing.

MR. RAMEY: I think we have subpoensed everyone here to find out all the information we can, Mr. Kelly, about the well.

Are you representing Mr McAllister, is that --

MR. KELLY: Yes, I am. I just -- I would not want to be classified -- he or his company to be classified as a party, is my position.

MR. RAMEY: I think we're going to ask him to testify as to what work he did on the well.

MR. KELLY: Yes.

MR. RAMEY: So that we can have a complete file on the well.

MR. KELLY: That's fine.

12

13

14

15

16

17

18

19

20

21

22

23

24

11

12

13

14

15

16

17

CARL ULVOG

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MS. TESCHENDORF:

Would you state your name, by whom you're employed, and in what position?

Yes, ma'am. Carl Ulvog, Senior Geologist for the Oil Conservation Commission in Santa Fe.

Q Have you previously testified before this Commission and had your credentials made a matter of record?

I have and they are.

Q Are you familiar with the circumstances and the subject matter of this case?

Yes, I am.

MS. TESCHENDORF: Is the witness considered qualified?

MR. RAMEY: We consider the witness qualified.

(Ms. Teschendorf continuing.) Mr. Ulvog, do your duties as District Supervisor include making recommendations to the Commission as to when wells should be plugged and abandoned?

11

12

13

15

16

17

18

19

20

21

22

23

24

25

feet.

1978.

A Yes, that is correct.

And does that include geothermal wells as well as oil and gas wells, is that right?

- A That is right.
- Would you please refer to Exhibit One in
 this case and describe that?

A I believe Exhibit One is actually the official well file that we maintain here, and it consists of a Form G-101, which is the application for a permit to drill, and in this case it's an application for a permit to drill a temperature observation well, and it states that the operator would be Mayor Eddie Armenta and the address of the operator would be the Village of Jemez Springs, New Mexico.

It states that the well, which is described by the docket, I believe, would be drilled with 8-3/4 inch hole with 7-inch casing set at 100 feet with 30 sacks of cement circulated to the surface.

Then there would be a 5-inch hole drilled to some unspecified depth and nothing more stated about the casing, and so on, of the well.

But the total depth was proposed to be 750

That permit was approved on December 28th,

SALLY WALTON BO CHITTERD SHORTHAND REPORT 3082PLAS Blanca (3:6) 411-Reads Po, New Monton 6:6 2

5

7

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Accompanying that form was a Form G-102, which is a land plat, or acreage dedication plat, and it describes the location of this well. And that -- I beg your pardon?

- Q For the record would you state the location of that well?
- A Yes, I will. That would be located in Unit A, which is actually described as being 90 feet west of the Town Hall in Section 26 of Township 18 NOrth, Range 2 East, Sandoval County.
- Q I notice from the G-101 that the drilling contractor is Stuart Brothers in Grants, New Mexico. Were we able to get service on them?
 - A Were we able to what?
 - Q Did we subpoena anyone from Stuart Brothers?
- A. Not to my knowledge. I'm not sure if we did. I didn't notice that subpoena.

Did you mention that, Mr. Ramey?

MR. RAMEY: No, I had heard from counsel that those -- we had subpoensed two people from Stuart Drilling, or at least one, Don Kelly. We understand he went to Texas and we weren't able to serve him.

- A I see. All right.
- Do you have anything further on Exhibit One?
- A That actually is all that our official well

file contains.

Q Will you now refer to Exhibit Two and describe that?

That, I believe, is a letter, undated, captioned the Village of Jemez Springs, New Mexico, and it is simply a letter from Mr. Eddie Armenta, as Mayor of the Village of Jemez Springs, and I would like to call that in that letter it states that the Village of Jemez Springs guarantees that the above mentioned well will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in the Rules and Regulations.

That is, of course, the primary interest in that exhibit.

Q. Would you now refer to Exhibit Three and describe that?

A Exhibit Three, I believe, is a copy -- pardon me, yes, Exhibit Three is a portion of a proposal for this project, and this proposal is unsigned. I couldn't tell you who prepared it; it doesn't say, but it's dated 5th of July of 1978.

And it lists several items involving the drilling of this well.

But the pertinent paragraph that I would like to point out appears about in the middle of that ex-

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 1948 PEARS RINGS (665) 471-54 Beats Fo. New Medics 570.

hibit and it's entitled item four, and I would just like to read that.

vision and with the advice of the project geologist. Two test wells of a diameter of four inches to six inches, to be determined upon completion of mapping, will be drilled into the limestone formation. Well depths are not expected to go below 750 feet. Fluids brought to the surface will be held during the test and subsequently reinjected into the formation.

I'll dispense with reading the rest of that exhibit, if I may.

Q How did you first hear that this well had been spudded?

A Actually, the only way that I knew that it had been started was through the medium of a newspaper article, which appeared in the <u>Albuquerque Journal</u> Friday, January 5th.

Q That is marked as Exhibit Four, is it not?

A. Yes, that is how I knew that the well had been started. We never did receive a report of the spudding of the well.

Q And what did you do after reading the newspaper article?

A Well, of course, I investigated the well,

SALLY WALTON BOY CERTIFIED SHORTHAND RE-ORT 1988 Fleat Blanca (648) 411-24 Santa Pe, New Mexico, 2750 2

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

when we did not receive an official report that the well had been started, or anything, so I went out and inspected it.

Q Will you refer to Exhibit Five, then, and describe what that shows?

A Exhibit Five, I think, is a series of pictures. There are three pictures that I took out there and the uppermost picture is looking at the site from a distance of approximately 25 to 30 feet away.

The next one is right up at the very edge of it. There is a large hole where the water is coming up, and bubbling and running off to the river.

And then the third picture near the bottom of the page is a real close up of the casing, approximately 3-inch casing that is projecting from that hole with water flowing around it.

- Q What date were these pictures taken?
- A. They were all taken on January 29, 1979.
- Q Do you have an estimate as to how much water is coming out of the hole?
- A. Yes. I estimated it in the vicinity of 1000 gallons an hour is flowing from the hole at a temperature of approximately 150 degrees at the surface.

MR. RAMEY: Mr. Ulvog, you said this is about 3-inch casing?

5

6

12

13

14

15

16

17

18

19

20

21

22

23

24

25

A Something in that order. I didn't get up to it. I didn't feel like swimming over, so I would estimate it was about a 3-inch tubing, casing, pipe, whatever, with valves at the top.

MR. RAMEY: I'd understood from Exhibit One they were going to run 7-inch casing in the hole.

- A. I did not see any 7-inch casing.

 MR. RAMEY: Thank you.
- Q (Ms. Teschendorf continuing.) Mr. Ulvog, what did you do after discovering that the well was in this condition?
- A Well, I wrote two letters to the operator of record, and first of all requesting that the now delinquent data be filed with this office.
- Q These are both listed on Exhibit Six, are they not?
- A Yes, that was the first letter.

 The second one, then, I simply sent by registered mail or --
 - Q What's the date of that letter?
 - A Beg pardon?
 - Q What is the date of that letter?
 - A That's February 1, 1979.

And in this letter I mentioned that there were violations of the State Regulations and that upon the --

in fact I'll read it.

An inspection of the site on January 29th last, indicates that your project is in violation of State Regulations in several respects. Please refer to the rules and make such changes as are necessary to be in compliance. Of primary importance is immediate shutting off of the water that is escaping to the surface.

Kindly submit your plan for remedial action and/or plugging for abandonment in time for same to be witnessed by a representative of this agency.

- Q What was the date of that first letter?
- A That was January 30th.
- Q What rules have been violated?
- A Well, this was a permit for a temperature observation well, and a temperature observation well is never produced, and the fact that there is water flowing from this well, I would have to call it a -- it is being produced, so it is now a producing well.

Number two, there were never any reports filed, official reports, telling us the well had been spudded. There were no reports telling us when casing was being run or cementing being done, or anything of that sort, or tests being made, and all of those are conditions of the permit for an observation well.

An observation well is simply for the measure-

Î

ALLY WALTON BOY ATFRED SHORTHAMD REFORM 18 THAM BRINGE (1845) 471-25 BRITA PS, NOW MOSEGO 875-

15

16

17

18

19

20

21

22

23

24

ment of temperature, nothing else.

Q So these rules you're referring to are shown on Exhibit Seven, are they not?

A. Yes, that's right. I have some -- just a few items that I pointed out; comes from the rule book, and under A, which appears on page A-1 of the rules, --

- A These are geothermal rules.
- A. That's correct, that's geothermal rules, I'm sorry.

About in the middle of that page there I've indicated a geothermal observation well shall mean a well drilled solely for temperature observation purposes and which shall not be completed as a geothermal producing well or as an injection well.

That's the primary thing I wanted to point out in that page.

And when you go to page -- well, item B under miscellaneous rules, well we find there under Rule 3, I've indicated that, that pertains to waste. Waste is prohibited.

Under A, the production or handling of geothermal resources of any type or in any form, or the handling
of products thereof, in such a manner or under such conditions, or in such an amount as to constitute or result in
waste, is hereby prohibited.

12 13

15 16

18

19

17

20 21

22

23

24

25

And I might point out that this includes also heat, if that is allowed to escape, that would be considered waste.

And under sub-paragraph B, all owners, operators, contractors, drillers, transporters, service companies, pipe pulling and salvage contractors, and all other persons shall at all times conduct their operations in drilling, equipping, operating, producing, and plugging and abandoning a geothermal resource well in a manner that will prevent waste of geothermal resources and shall not wastefully utilize geothermal resources or allow leakage of such resources from a geothermal reservoir, or from wells, tanks, containers, or pipes, or other storage conduit or operating equipment.

And on page D-2 conforms to the filing of Form G-103, and I would just point out briefly that under that it states that the Form G-103 is a subsequent report of operation which shall be filed in accordance with this rule applicable to the particular operation being reported, and among those, number one, commencement of drilling operations; number two, casing and cement; number three, altering a well casing installation; number four, temporary abandonment; and so on and so on.

And it further states that within ten days following the commencement of drilling operations, the operALLY WALTON BOYE
INTERE SHORTHAND REPORTE
BRITAL BRADD (805) A11-446
SERIA PS, New Maxico 31901

2

12

13

14

15

16

17

18

19

20

21

22

23

ator of the well shall file a report thereof on a Form G-103, and so on.

And on the following page, D-3, it states that report results of test of casing and cement job, and so on, those reports to be filed within ten days following the setting of the string or using cement.

abandonment, and of course, at the times I have visited the well it has definitely been abandoned. There was no one there and nothing there, and so on, so I would have to consider it to be temporary abandonment, even though there has never been a permit applied for for that.

- Q Have you made a second inspection of this well?
 - A. Yes, I have.
 - Q And what date did you make that inspection?
- A. That date was on -- that was taken on February 21st, 1979.
- Q Will you refer to Exhibit Eight and describe what that shows?
- A Exhibit Eight consists of two pictures that were taken on that date, both of them show the condition of the hole and the casing, which is leaning off to the side; it shows the valve assumbly at the top, and there's a yardstick there for scale, which indicates that the hole

12

13

14

15

16

17

13

19

21

22

23

would be approximately ton feet across. The casing is fallen or collapsed or washed out or something, but it's laying off to the side of the hole.

That's what those two pictures show, plus, of course, the water coming from that.

- In your opinion, Mr. Ulvog, are geothermal resources being wasted?
- Well, yes, I don't believe there's much question about that. The water flowing and the heat that's escaping, you'd have to say that it's being wasted.
 - And is fresh water being contaminated?
- Yes, this is running right into the river, the Jemez River.
- Are there migration of fluids in the wellbore from the strata in which they are found to other strata?
- Well, there certainly is migration of fluids to the surface. Now how many zones are exposed, I have no way of knowing, but in conversations with people at the site and others, there is definitely more than one zone of water.
- In your opinion is there a possibility that caving is the wellbore?
- I would think so, yes. There would have to be some erosion taking place by the fact that the water is flowing from it. Now whether there's caving going on, of

SALLY WALTON BOY CERTIFED SHOPTHAND REPORT 1955 Plats, Billion (195) Senis Pe, New Mexico 515

5

10

11

12

13

14

15

18

19

21

22

23

24

25

course I wouldn't know, but I would certainly suspect it.

Q Is the well in such a condition that injury is being caused to neighboring properties?

my disposal, but the condition of the casing is shown in that Exhibit — the first set of pictures — that was Exhibit what? Exhibit Number Five. I believe that indicates that there's something occurring on that casing. It's being discolored, and so on, so there's some chemical action taking place there, and from this I would assume that there would be some pollution occurring to the water.

- Q Isn't there a bathhouse nearby here?
- A That is correct, there is.
- Q And has that suffered injury by the condition of this well?

A Well, the original well that, or spring, that supplied the bathhouse, the flow has been reduced so badly that the bathhouse operator obtains water by pumping it from this pool around this pipe, because there is not enough water coming from the original spring any more.

Q What do you propose should be done about this situation, Mr. Ulvog?

A Well, I believe that the hole should be plugged all throughout its entire length, since we have no way of knowing how many fluid zones or porosity zones, for

SALLY WALTON BOY CERTIFIED SHORTHAMD METON 1961 Plans, Blanca (196) 471-4 Blanta Fo, New Mexico 515 2

3

10

15

18

21

22

25

that matter, that may be barren but could be acting as seep zones in that case, we have no idea where they are, how many there are, so I would feel that the obvious solution would be to plug the entire wellbore.

Were Exhibits One through Eight -- Exhibit
One is the well file. Exhibit Two is the letter from the
Mayor. The pictures on Exhibits Five and Eight were taken
by you, is that correct?

- A. That is correct.
- Q Do they absolutely reflect the situation as it was on those dates?
 - A That's correct.
- Q And the letters on Exhibit Six were written by you?
 - A. That's right.

MS. TESCHENDORF: At this time I'll offer Exhibits One through Eight in evidence.

MR. RAMEY: Exhibits One through Eight will be admitted.

MS. TESCHENDORF: And I have nothing further of this witness.

CROSS EXAMINATION

BY MR. RAMEY:

Q Mr. Ulvog, I notice in comparing your ex-

SALLY WALTON BOY CERTIFIED SHORTHAND REPORTS 1984 Fights Binnes (1984) 411-44 Fights Power Bandon 1184

hibits Five and Eight, in Exhibit Five there was a little fence of some kind around the well.

- A. That's right.
- Q Around the well and the hole there.
- A True.
- And this fence seems to have been removed.
- A Yes.
- Q Is this well in a populated area?
- A. Yes, it is. It's right down behind the -it's right in the Village of Jemez Springs, right below the
 City Hall, and there are residences, and so on, all around
 there.
- Q And you say the temperature of the water in hole was 150 degrees?
 - A. Right at the surface, yes.
- Q What would be the effect of a small child falling into it?
 - A. I don't believe it would survive very long.
- Q So it's also a hazard to the people of Jemes
 Springs, particularly the young children?
 - A I would think so.
 - Q Small animals or livestock?
- A It's pretty muddy around there, I guess you could sure slip in easy.

MR RAMEY: Any other questions of the wit-

24

25

2

3

10

13

14

_

4 |

MR. KLEEMAN: Yes. May I ask a question?
MR. RAMEY: Yes, let me ask one more, Mr.

Kleeman.

Q (Mr. Ramey continuing.) Now, you're recommending that the well be plugged. If we get a report from Mayor Armenta or Mr. Kleeman that something can be done to the well to repair the well and contain the water the way they should be contained, would you still recommend it be plugged?

A Well, we would have to look at that proposal and consider whether it was satisfactory, but we do have to remember that this is a temperature observation well and not to be produced.

We do have --

Q But if the well resulted in a clean completion and they did have a possible geothermal source, why, don't you think it would be possible for the Commission or the Division to waive the requirements of an observation well being plugged?

A. Yes, I think that is possible, but then I think we should also go to the section pertaining to producing wells and then operate under those provisions, and not to consider this as a temperature observation well.

Otherwise, the statutes would be violated. We wouldn't be

8

9

11

12

13

14

16

15

17

20

21

22

19

23

doing our job. If it's produced, it's not a temperature observation well, in other words, and that's our permit at the moment.

I think we could perhaps go to an entire different set-up, that is, as a geothermal producer, but you see, we have an entire set of operating conditions for those.

Q Okay.

MR. RAMEY: Mr. Kleeman, did you have a question?

MR. KLEEMAN: Yes, I did have one question.
MR. RAMEY: Would you identify yourself for

MR. KLEEMAN: I am Tom Kleeman, Project Manager for the Jemez Springs No. 1 Well.

CROSS EXAMINATION

BY MR. KLEFMAN:

the record?

Q. I believe you stated that you saw a 2-inch casing leaning over to the side?

A. No, I didn't think I said anything about a 2-inch. I said I thought there was a 3-inch casing protruding from this hole. I'm estimating that. I didn't measure it.

Q And you did not see a 7-inch casing?

SALLY WALTON BO ERIFFED SHORTHAND REPORT SEPTIME BEARS (615, 471-488) FO. May Marko 616

14

15

16

17

18

19

21

22

23

24

25

A I did not see any 7-inch casing at all at any time.

MR. KLEEMAN: That's all I wanted to get on the record.

MR. RAMEY: Any other questions of the witness? We may be excused.

MS. TESCHENDORF: I'd like to call Mr. Eddie Armenta.

EDDIE ARMENTA

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MS. TESCHENDORF:

- Q Would you please state your name and place of residence?
 - A. Eddie Armenta, Jemez Springs, New Mexico.
- Q. And you are the mayor of the Village of Jemez Springs?
 - A. Yes, I am.
- Q Let me show you what we've already introduced as Exhibit Number One. That is a drilling permit.

 That was signed by you, was it not? As operator?
 - A. Yes, it was.

11

13

14

15

16

17

18

19

21

22

23

25

Ø.	W	ould you	please	describe	the	chain	of	events
leading up t	to the	drillin	g of th	is well?				

- A Leading up to it?
- Q. Uh-huh, how you -- who first proposed the drilling of the well, did you decide that the Village of Jemez Springs needed a geothermal well, or what was your interest in the drilling of this well?
- A. Well, we always knew it was a possibility it was there.

Back in '78 Mr. Kleeman, Tom Kleeman, was passing through and made the proposal to the Village Council as to the possibilities of using geothermal heat to heat the village.

It was discussed and approved by the council and the proposal was it was up to Mr. Kleeman to get together with us and make a proposal for funding to drill.

- Where did you get this funding?
- A From the State of New Mexico.
- Q I'd like to show you what we've introduced as Exhibit Two, and that is your letter guaranteeing that the Village of Jemez Springs would see that the well was properly plugged in accordance with the Division Rules and Regulations.
 - A. Uh-huh.
 - I want to ask you some questions about the

SALLY WALTON BOY SETTIFIED SHOWTHAND REPORT 9910 THE BLADON (616) 411-4 FARTER TS., New Models 5150

12

13

15

16

17

18

19

20

21

22

23

24

25

Village of Jemez Springs financial responsibility in the situation.

There is no bond covering this well, but by your letter you have guaranteed that the financial responsibility for the plugging of this well is there. Are you still in that position? Can you still guarantee that the Village of Jemez Springs will assume financial responsibility and see that this well is properly plugged or repaired?

A. If my signature is on it saying I guaranteed it, I guess it is.

- On whose property is this well located?
- A. The Village of Jemez Springs.
- And you are the listed operator.
- A. I am.

MS. TESCHENDORF: I have nothing further of this witness.

CROSS EXAMINATION

BY MR. RAMEY:

Q. Did you, Mr. Mayor, did you have anything to do with the drilling of the well?

- A. No.
- Q You had nothing to do with it, Mr. Kleeman has been the supervisor of the drilling of the well?
 - A Yes, he was.

,

. .

ness?

want.

6

7

8

10

11

13

14

15

17

19

20

22

23

24

MR. RAMEY: Any other questions of the wit-

MR. ARMENTA: Can I add something?

MR. RAMEY: Yes, you may add anything you

MR. ARMENTA: The last person that was here, the geologist, made a statement as to the bathhouse.

That bathhouse belongs to the Village of Jemez Springs. It is not privately owned. So any effect to that bathhouse would affect the Village, and it does belong to the Village.

One other thing he said about the possibility of the water flowing into the river affecting the fresh
water, all along that area, along that one-mile strip, there
are several open springs going into that water, and have
been going into that river for many years, many years, and
has not had any effect. I doubt that one more little spring
would affect it that much.

That doesn't mean it should not be taken care of, but -- that's all I had to say.

MR. RAMEY: Thank you, Mayor.

MS. TESCHENDORF: I'd like to call Tom Klee-

man next.

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

TOM KLEEMAN

DIRECT EXAMINATION

BY MS. TESCHENDORF:

- Q. Would you please state your name and by whom you're employed?
- A My name is Tom Kleeman and I am under -I'm a subcontractor to the Village of Jemez Springs for this
 project.
- Q Are you a professional engineer or some kind, or what is your educational background?
- A. My educational background? Economics and resource management.
 - Q What are your work experience background?
 - A As regards geothermal resources?
 - Q Yes, drilling, and so on.
- A. While working for the State of Texas General Land Office, I was responsible for studying feasibilities of developing various energy resources on State-owned lands, and impacts from development.

I have subsequently worked for the last four and a half years as an independent consultant in the energy field in everything from doing environmental impact

SALLY WALTON BOY: ERRIFED SHORTHAND REPORTS BERTHERS, BLANCE (0.6.5) 471.24. MINISTER PR., NOW MOUNDS 515.5.

12

13

14

15

16

17

18

19

20

ŽŽ

23

24

SALLY WALTON BOY
ERRIPRED SHORTHAND REPORT
696 Place Blance (366) 471-24
SERE Ps. Now MoxIco 3759

analyses for pipelines, to planning new energy development projects, studying the economics of energy development.

- Mr. Armenta, Mayor Armenta, has stated that a grant was obtained from the State of New Mexico. Were you instrumental in obtaining that grant?
 - A. I played a role in it, yes.
- Q Can you tell me from whom the grant was obtained, for what purpose, and how much it was?
- A Yes. The grant came from the -- what is now the New Mexico Energy and Minerals Department. The amount, the original amount was some \$31,400. The purpose was to drill, to do test drilling in Jemez Springs to determine whether or not there was a viable geothermal resource there.
- And what was your -- you were the project engineer or --
 - A. Project manager.
 - Q -- project manager.
- A. The project engineer was James Copeland-Moran in Albuquerque.
 - Q Who was the driller on this well?
- A. The driller was Stuart Brothers, Grants, New Mexico.
- Q Did you contact them and hire them to do this work?
 - A. Yes.

2

10

11

12

13

14

with the drilling

Can you describe the water that was encountered

Yes. If I may, if you'll accept this as

evidence, the reasOn I was tardy was that -- apparently these

Who was the cementing company?

	A.	National Cement.				
	Q.	And did you hire them to do the cementing?				
*	Ã.	No. All third party work done on the well				
was carrie	ed out	by Stuart Brothers.				
	Q.	Okay. Do you have any drilling experience				
at all?						
-	A.	Have I drilled wells? No.				
	Q.	Well, have you been connected with the drill				
of wells						
	A.	Only in the analysis of results.				
	Q	Do you have any knowledge in this particular				
case, the	depth	to which the well was drilled?				
	A.	Yes.				
	Q. 4 a	What was that depth?				
	Α.	The TD was 824.				
	Q.	Do you know the depths at which the water				
zones were encountered?						
	A.	Yes. The first zone was encountered at ap-				
proximatel	y 80 i	eat and the only other zone of water en-				
	at all? of wells -	Q. A. was carried out Q. at all? A. Q. of wells A. Q. case, the depth A. Q. A. Q. zones were encount				

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 1918 Plant, Blance (1865) 471-4 Senta Pu, New Maxioo 5756 geothermal vapors have affected my memory, and I went off and left a chemical analysis of the water sitting on the Xerox machine at Energy and Minerals Department, and so I called Los Alamos and talked to the chemist who was analyzing the water, and I have a very brief summary of the chemistry of the water, which if you will accept, I can provide you with more detailed a summary later, but the purpose of this exhibit is I think it will show that the water at 500 feet is substantially less saline and has less chemical content than the water at 80 feet and two other geothermal springs which are present in the area.

The chemist did a much more extensive survey. He sampled several springs in the area as well as the water from the well. But I think this will convey the essence of the difference, that the water at the surface is coming up at the surface in these springs is substantially more contaminated than the water that's coming up inside of the well.

So, if I may, I'd like to enter this as an exhibit.

MS. TESCHENDORF: I think, if the Commission please, I'll just mark this as OCD Exhibit Nine, and offer that in evidence.

MR. RAMEY: It will be accepted.

Q Mr. Kleeman, do you have any knowledge as to

SALLY WALTON BOY ERTIFED SHOWTHAND REPORT SEEPHER, BLADGE (1912) 471-4 BELLE PC, New Monthly 575;

11

12

13

14

15

16

17

18

19

20

21

22

23

24

any pipe that was set?

- A. In terms of casing?
- 0. Uh-huh.
- A. Yes.
- What casing was set, to your knowledge, and at what depth?
- M. We have a 7-inch casing that's been set to the depth of approximately 120 feet.
 - Q That's all, to your knowledge?
 - A. That is -- that's all the casing I bought.
- Q You have no knowledge of smaller 3-inch casing?
 - A. I'd like to clarify that matter.

The staff geologist commented that he saw a 3-inch casing leaning over to the side. This, in fact, is a 2-inch steel pipe, which has been welded onto a cap, which has been placed on top of the casing.

is, if I may explain briefly, we dug out a cellar to allow for a blowout preventer to be placed atop the casing during drilling, and still leave clearance for the rig. With the subsequent flow that comes up the outside of the casing, which has developed since drilling, I'm afraid that he couldn't see the 7-inch casing because his view was obscured by the water.

SALLY WALTON BOYD
BETFFED SHORTHAND REPORTER
SEPARE Blance (1885) 471-244
Seets Fe, New Maxico 87601

10

11

12

13

15

17

18

19

The purpose of the 2-inch pipe was to -- it does have a valve at the top of it -- and it was to reduce the -- stop the flow of water coming up from the top and be able to control it.

I have found out strictly secondhand information, apparently the hotshot driver that came to pick up the blowout preventer was fooling around with the 2-inch pipe and somehow loosened this cap from the casing. I can no longer thread the cap onto the casing and going to have to replace this device. But the casing is quite firm and if you would care to, I will explain exactly how it is set.

Q Thank you.

A. I think it should satisfy the Commission's interest in this matter.

We originally tried to set the casing at 80 feet and the witness from National Cement can give you the exact figures, but I know I bought an awful lot of cement from that gentleman, approximately 350 bags, and there was some discoloration at the top of the casing, indicating that concrete was washing back to the surface; however, when we subsequently tested the casing, it did not prove to be firm and since there was concern that we might hit a hot zone, we wanted to make sure that the casing would withstand any pressures and would accommodate the blowout preventer.

So we then pulled the casing out and redrille

23 24

25

ZZ

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 888 Plant Blames (1983) 471-3-3 Sents Pt. New Mexico 5756

13

14

15

16

17

19

20

21

23

24

25

this time to 140 feet, approximately, and then at that point we -- this was with a 9-3/4 inch bit -- and we lowered the 7-inch casing back down to approximately 120 feet, pumped more concrete down the hole, again some discoloration was occurring at the surface, indicating the concrete was coming back up the outside of the casing.

We let it set for overnight, nearly 24 hours, when we came back we ran a pressure check on the casing, and it held 3500 pounds of pressure. We knew, based upon the cuttings we were getting, that we were well into the limestone, so we were satisfied that the casing would do the job.

with the water flow on the outside of the casing. It was subsequent to that, while we were drilling, that apparently the vibrations set up from drilling shook the casing loose from whatever cement existed in the annulus between the alluvial material and the casing, and I think the combination of those vibrations and the pressure of the water coming up from 80 feet washed out whatever cement was there, and that's why we now have water flowing up the outside of the casing.

Q You said you bought 350 sacks. Is that how much you --

A. That was the first go-round.

SALLY WALTON BOY CENTIFIED SHORTHAND REPORT 1955 WITH A PRINCE BASE TO, Now Motion 511

10

12

13

15

16

18

19

20

23

24

Q That was the first go-round? How much cement totally have you bought and tried to use in this hole?

A I will, if you don't mind, defer to the records of the cementer. Enough for him to have a very nice vacation, I'm sure.

Well, let's see. I bought 350 bags of cement on the 4th of January, and then I bought another 80 bags on the 6th of January, and I think I bought another 20 on the 6th of January. That's a lot of cement.

- Q It certainly is. Did you bring any records with you concerning this well, other than this water analysis
 - A. Yes, I did.
 - Q What records do you have?
- but very detailed assessment of the cuttings from the well and these are being analyzed, the cuttings are being analyzed at Los Alamos Scientific Laboratory. Their speed may not be everything I could wish, but their thoroughness is beyond question. And I will submit these for the inspection of the Commission. I think you'll find that, as we have stated, I have told you on previous occasions, that from ground level to 80 feet, approximately 80 feet, the material encountered is alluvial; that at about 80 to 90 feet we entered the limestone formation. This assessment stops at 460 feet.

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 8889 Planta Blance (861) 471-3 Senta Pe, New Mexico 8751

-11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Indications are that there's a transition zone between the limestone and Sandia conglomerate at somewhere around 500 feet, give or take 50 feet either direction.

For sure we know that the Precambrian granite begins at 790 feet.

- Q Would you have any objection to having that Keroxed and introduced as an exhibit?
 - A None at all.
 - Q Okay, that will be Exhibit Ten.

 Do you have any other records with you?
- A. Yes, I do. I have a proposal which I have brought before the OCD on previous occasions and would at this time submit it formally.

It's a proposal to control -- titled,

Proposal to Control Waterflow at Jemez Springs Well No. 1,

in which we discuss the situation at the well and what we

propose to do with it, and if you like, I'll give a verbal

description at this time, if it's helpful.

- Q I think you should.
- A All right. Maybe I can clear up something. The staff geologist has stated that he thought the well was in a condition of temporary abandonment and I think it's quite reasonable that he could come to that conclusion, but there are circumstances which also argue quite reasonably that we have not abandoned the well.

SALLY WAI,TON BOYI CENTIFED SHORTHAMD REPORTE 3988 FIRM Blanch (1983) 471-34. Senta Fe, Nov. Mexico 67101 10

12

15

18

23

24

25

A combination of weather and other factors.

Originally when the rig went off the well a crew from Los

Alamos was going to come in and lower tubing to do temperature gradient measurements, and this was the 15th of January;

they were going to come in in two days. Unfortunately,

this was the time that the snows hit, and which it reemed

about the time that Highway 4 would be cleared and you could

get a crew over from Los Alamos, another snowstorm would

come in.

And after three weeks of this, when the crew finally did get into the site and was able to start to lower some instruments down the hole, they discovered that bridging had occurred at about 140 feet.

With this situation it no longer seemed feasible to discuss trying to do the temperature gradient measurement and we were ready to abandon that aspect of the project.

and so what we have now is -- and let me add here, previously water coming up inside the casing was flowing at a rate of approximately 18 gallons per minute.

A geologist from Los Alamos and I were at the site last week and we estimate it to be at less than 5 gallons a minute at this time, coming up inside the casing.

The apparent bridging at the depth of approximately 140 feet had substantially decreased the flow

LY WALTON BOYD
FED SHOITHAND REPONTER
MAR Blanca (661) 471-3461
to Fe, New Marido 27161

of water coming up inside the casing.

We are proposing to test this bridge for its strength with river sand and gravel. If it appears to be quite solid, we would like to pump concrete down the inside of the casing and plug the hole back up to inside the casing from, say, around 130 feet. I have a schematic here that shows it. Back inside the casing to prevent any movement of water from the 500 foot zone up into the 80 foot zone; we would segregate the two aquifers.

After that plugging is completed, we then propose to open the casing, probably using what is known as a mills knife, or casing knife, to allow the water at 80 feet to enter the casing and reduce it, or possibly stop even altogether, the flow of water up the outside of the casing.

With this flow controlled on the inside we would then lower a treime pipe, or treime tube, wash it down the outside of the casing, and pump cement down the outside of the casing to prevent any future flow of water up the outside of the casing, and then cement the area at ground level around the casing. The main reason for this being spring occurrence in the area there is rather erratic and unpredictable, and if there are going to be any others popping up, I don't want them popping up near this well.

The alluvial material and the highly mineralized water act in such a way that you have artesian flow, SALLY WALTON BOY CERTFRED SHORTHAND REPORT 1988 PRING BERDA (1983) 471-3 SMERLI FO, New Mexico 875

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

which creates its own caprock by precipitating out minerals, and so then the water starts seeking new courses to come to the surface.

- Q Who prepared this proposal?
- A Well, I prepared it with the advice of geologist from Los Alamos.
- Q You are not an engineer or geologist your-self?
- A No, that's why I go to other people to assist in these things.
 - Q Is that all the records you brought, then?
- A. That is all I had to submit at this time, yes.
- Q I'll mark the proposal as our Exhibit Eleven.

 Have you prepared G-103 and the various
 other forms that Mr. Ulvog has stated are delinquent in this
 and necessary?
 - A Right, I have.
- Q Have you submitted those to the Division or would you like to do that at this time?
- A I have -- I have tentatively prepared these forms based upon my conversations with the Division staff geologist and staff engineer. Let me state that part -- well, the responsibility is entirely mine and I'm not shirking it, but part of the problem with the tardiness of the 103

ALLY WALTON BOYD
BRIDED BHORTHAND REPORTER
16 Plaza Blanca (1665) 471-3448
Senta P., New Marico 1769

forms was a misunderstanding between myself and the staff geologist as to when these had to occur. I was under the impression that we filed them after the well was completed, and since the well obviously is not in a state of completion, I held up on filing them.

I subsequently learned that this was not the case and have prepared them and am prepared to submit them, but if the Commission does not mind waiting, I'd like to sit down with the staff geologist and engineer and go over them and make sure they're filled out properly.

Q I'm sure that would be acceptable.

MS. TESCHENDORF: I'll offer Exhibits Ten and Eleven, and I don't think I have anything further of this witness.

MR. RAMEY: Exhibits Ten and Eleven will be admitted.

CROSS EXAMINATION

BY MR. RAMEY:

Q Mr. Kleeman, you state that you have encountered water at 80 feet and at 500 feet in this well?

A. That is correct, yes; sir.

Q. And then in your proposed reworking you do not propose to do anything to the hole from where the bridge is at approximately 100 feet to the 800 plus feet that the

well is?

2

3

5

10

13

14

A Well, no, sir. We did not encounter any other aquifer zones and feel that as long as we are segregating two zones in question that we would be preventing any contamination. In fact, if there were any contamination to occur, it would be the water below contaminated by the water atop.

- And both of these flows are artesian flows.
- A. Yes, sir.
- Q. Have you analyzed the -- what we've marked Exhibit Ten, have you analyzed the limestones and such that are in the deeper part of the hole to see if there's any porosity present in those?

A Well, that -- the indications are that the most significant porosities correspond with the -- with the presence of the aquifers. In terms of the analysis, it is still being conducted by the geologists and chemists at Los Alamos.

I would say that their impression seems to be there are no other significant zones of porosity.

Mell, how could -- how could the Commission and Division be assured that if you -- if you seal off just the top part of the hole right below the 7-inch casing that the waters encountered at 500 feet would stay in the 500 foot zone?

SALLY WALTON BOY CERTIFIED SHORTHAMD REPORT 3959 Plant. Blanca (191) 471-4 Banta Fe, New Mexico 5156

24

25

11

12

13

14

15

16

17

18

19

20

21

ZZ

23

Well, let me -- let me state that the water we encountered at 80 feet is apparently an aquifer which is at the top of the limestone formation. Indications are -this is a zone, a high faulted area, and indications are that this aquifer is coming up at some point north of the drill site in some proximity to Soda Dam and the Ranger Station along a fault from depth. The exact location is unknown, but flowing along the top of the limestone formation and finding an advantageous situation along the river there by the bathhouse for coming up.

The water at 500 feet, there is no other recorded incidence of water of this composition in the area, and it appears to be flowing through the limestone to some other point to the west and south of this well.

Now the fractures and faults in this area do continue in that direction and it probably comes up at some point to the west and south of the well.

Well, I'm looking at your water analysis here and there doesn't seem to be any correlation between any of the waters insofar as chemical analysis is concerned.

You have, say, for example, chlorides in the 80-foot water 705; and in the third one here you show 936; in the fourth one you show 653. Are you -- are you saying any of these waters are connected or the same water?

Well, the water in the springs and waters

24

25

SALLY WALTON BOY SETTIFED SHORTHAND REPORT 18 12 Plans Blacks (16 to 17 at 80 feet are much more mineralized than, for the most part, than the water is at 500 feet.

Do you agree with Mr. -- with Mayor Armenta's statement that the springs are flowing into the river and therefore -- I took it from his analysis, that the additional 1000 gallons an hour that are coming out of this well would not contaminate the river any more than it's naturally being contaminated?

A Yes, sir. I would appreciate the opportunity to comment on that for the record.

Prior to our drilling there was a well that had developed the springs that were behind the bathhouse, to the north of the bathhouse, and there was a cistern at this well that filled up and fed the bathhouse when it was used. There was a 3-inch pipe going from the cistern to the bathhouse; however, during periods in which the bathhouse was not using the water, there was a runoff pipe from the cistern. There was a rather large travertine deposit just to the west and south of this cistern, which shows that the runoff water, the water ran off that travertine deposit and down into the river, where all the other springs fed it.

Since we have drilled this well, we have diverted the flow of water that was going to this well that fed the bathhouse to the new geothermal well, so that any

12

13

14

15

16

17

18

19

20

21

22

23

24

water that's coming up from the geothermal well is essentially the same water which was going into the bathhouse well and flowing into the river.

It's a point of diversion rather than an additional amount of water going into the river.

O So you've just taken the bathhouse water that was going into the river and it's now coming up around your well and going into the river, and so the net effect is that there's no -- no further contamination of the river by your well?

A Not to my knowledge. No, sir, there is not.

Q Have you seen Mr. Ulvog's Exhibit Five and Eight?

A. The pictures?

Q Yes.

A I haven't seen his pictures, but I'm quite familiar with the site.

Q Would you classify this as a hazard to any small children or maybe --

A. Well, I certainly wouldn't advise keeping it in that condition. I'm more concerned with somebody getting scalded than I am drowning, but I think as soon as we can get a permit to proceed with this matter, we would like to definitely fill it in.

11

12

13

14

15

16

17

18

19

20

2;

22

23

I think I can speak for the Mayor in saying we're not happy with the present situation and definitely intend to see it corrected.

Q. Well, I would think you should have some kind of a fence around this installation, Mr. Kleeman.

The 2-inch pipe that was sticking straight up, which is now laying off to the side there, that was put in to, I suppose, seal off the bottom aquifer, to contain it.

- A Right.
- Q And is that -- you say now that that is no longer serving that purpose?

A. No, it's -- because of the stripping of the threads in the cap, it's -- well, it reduces the flow somewhat but there's still water seeping out between the cap and the casing.

So that will have to be replaced.

MR. RAMEY: Do you want to ask some questions?

CROSS EXAMINATION

BY MR. ARNOLD:

Mr. Kleeman, you may have answered or may have mentioned this in your testimony, but I didn't hear you say how you did this sampling at the 80-foot and the 500-foot zones.

SALLY WALTON BOYD
ZERTIFIED SHORTHAND REPORTER
188 Plant Blanca (1985) 411-4423
Senta Fe, New Mexico 81581

8

10

11

12

13

14

15

16

17

18

19

20

21

ŽŽ

23

24

25

A Well, the water -- the water coming up from 80-feet was easy to sample. It was on the outside of the casing.

The water coming up from 500-feet, we pumped down the water in the hole so that water coming from 80 feet was below the top of the casing, and allowed the inside to flow for 20 minutes, which satisfied the geochemist and he then took samples of the water coming up the inside of the casing.

Q You had the shallow water outside the casing and the deep water on the inside?

A Yes, sir.

Q Are you certain you didn't have any mixing along the way or --

A Oh, I know there was no mixing inside the casing. That's sealed off. The water at 80 feet is on top of the limestone and the casing is cemented to the limestone.

The only place it could have mixed is at the surface, and that's why we pumped the water level down below the top of the casing.

MR. ARNOLD: Okay, thank you.

RECROSS EXAMINATION

BY MR. RAMEY:

SALLY WALTON BOYE
CERTIFIED SHORTHAND REPORTE
30542 Par Many Maxico 11511

10

11

12

13

14

15

16

17

18

19

20

21

ŹŹ

23

24

25

You said at one time you tried to set the cement or set the casing at 80 feet?

A. Yes, sir.

Q And you cemented with several sacks of cement at that point and it did not -- you did not get a cement job.

A. Right; we were not satisfied with the cement job.

Q And then when you set it at 120 feet, did you have -- did you have shutoff of the water from 80 feet when you finished cementing?

A I do not recall any water from 80 feet coming up the outside of the casing at that time.

And how many sacks of cement did you use at that joint?

A. Well, we used either 60 or 80, according to our witness from National Cement.

Q. Well, maybe Mr. McAllister can answer that question a little better.

A. We did use -- I know we did pump some cement down the outside of the casing subsequent to that to make sure that it was -- it was sealed off, because we assumed that probably a good bit of the concrete was being washed out the aquifer at 80 feet, and weren't sure how reliable that cement job was. So we did pump some down from the top,

as well.

ness?

9

10

11

12

13

14

15

18

20

21

22

23

24

25

Cemented both from the bottom and at the top Ω at that 120 feet, then. And subsequent drilling operations evidently jarred the upper cement loose.

That's what I have concluded.

MR. RAMEY: Any other questions of the wit-

MR. ULVOG: I have a couple I'd like to ask.

MR. RAMEY: Okay, Mr. Ulvog.

CROSS EXAMINATION

BY MR. ULVOG:

I believe in the proposal that was submitted here for this project, that prior to the drilling geologic mapping of the area, part of the on-going San Diego Canyon mapping program will be completed by a geologist from Los Alamos Scientific Laboratory. These maps will be necessary in locating the drilling site.

Was that mapping done?

Yes, sir.

So there are geologic maps, then, of the

Let me say that there are geologic maps and field notes supporting the conclusions of the geologist. The final map has only completed in terms of ready for pub-

lication to a point just, say, in proximity to Soda Dam. He does have his field notes and his own field sketching.

- What is the geologic formation that is the limestone in which you set the 7-inch casing? What's that formation, do you know?
 - I believe it's mostly Madera.
 - I see, and at the total depth?
 - Total depth is Precambrian granite.
- Now, in the cementing of this 7-inch casing, as I understand it, you pumped cement down inside the casing and then later you poured -- pumped some down on the outside?
 - That's correct.
- Where would that cement on the outside have been? I mean at what depth would that be that you cemented outside the casing?
- Well, our intention was for it to be from the top down to 80 feet.
- Don't you feel that the waters that were circulating might have washed that out?
- That was the reason we went back and took a shot from the top, was that even though we know the casting was camented in the -- into the limestone formation, having lost 350 bags of cement previously at that 80-foot zone, I was somewhat concerned that we might have lost additional

15

14

11

12

13

17

16

19

20

18

21

24

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 1098 Plant Blance (1945) 471-44 Santa Fe, New Mexico 2710

12

13

14

15

16

17

18

19

20

21

ZZ

like I said, we had some discoloration coming to the top,
we went back and pumped down the outside.

Q Well, now, I was just reviewing some of your drilling reports here, and I notice that there was quite a bit of material, weighted material, added to your mud, so you had -- I don't know what your density of your mud was, I don't see anything on there anywhere, but I notice quick gel, and so on, hulls occasionally were added, and so on. So you had weighted material in the hole. You had weighted drilling mud at the time that you went in and drilled inteside the casing when you deepened the well?

A. I believe, let's check this, I believe that let's check the date on the -- on the mud. Okay, waiting for mud to be delivered on the 3rd of January. We are at a depth of 80 feet.

As I recall, I'm not sure this record reflects it, as I recall, we lost circulation somewhere in the proximity of that 80-foot zone. In other words at the top of the limestone in the alluvial material.

My memory is somewhat vague because it was at 4:00 o'clock in the morning and it was a rather tough day, but I had taken about an hour and a half nap and the driller came in and woke me up and said we have to buy \$2000 worth of mud, so I do remember that we put substantial

14

15

:6

17

18

19

20

21

22

23

quantities of mud and hulls and quick gel, probably whatever else was available at that time.

- Q Well, I'm wondering, you had a weighted mud column at any rate when you were drilling.
 - A. Right.
- Mud column, the hydrostatic pressure being exerted on the formation could have contained some fluids -- I'm talking now about below the casing -- below the casing when you were drilling? Isn't it conceivable that you could have had porosity zones either acting as seep zones or actually attempting to give up fluid but the weight of the mud column held it in, so you wouldn't know about other porosity zones above that 500-foot level?
- A. I would say that that would be entirely possible, except that we did not have any other problem with, as I recall, losing drilling fluids.
 - Q. Uh-huh.
- A By encountering some porosity zone where it made lateral movement, and secondly, from the time we stopped drilling until the discovery of the bridging, the flow of water didn't change, that flow from 500 feet stayed 18, approximately 18 gallons per minute until the time the bridging occurred, and which reduced it.
 - Q Oh, what date did drilling begin?

11

12

13

14

15

16

17

18

19

20

21

22

23

24

I believe it was on 3 January. The reports which you have, I believe, indicate it was 3 January.

- Well, of course, that's a newspaper article.
- No, sir, I mean these reports.
- January 3rd.
- I believe so.
- And when you finished your drilling and left the location?
- Again, I refer to these reports and I think the last date was 15 January.
- What effect would the -- after you had set and cemented your 7-inch and continued drilling to 800-some feet, what effect would the vibration and beating of the drill pipe on the side of tha- 7-inch have on the cement which, of course, it's only cemented near the bottom, right?
 - As a --
- Q Obviously it would have to be loose at least from, what, 80 feet where you tried to cement and couldn't? The pipe would have to be loose at least from there on up, right?
 - Or there would be no flow.
- O So you would have vibration caused by the drill pipe and so on hitting the side of that 7-inch, what do you suppose the effect of that would be where it is cemented? Couldn't it break it loose?

SALLY WALTON BOY!
CERTIFIED SHORTHAND REPORTE
3999Plant Blance (645) 471-544
Senie Pc, New Mexico 57101

11

12

13

14

15

16

17

18

19

20

21

Z2

23

24

25

however, during the time while we were drilling, on a couple of different occasions, oh, like around from 400 to 430 feet, we stopped, did a pressure check, again it held 3500 pounds, and then after we encountered the water at 500 feet and at this point it's an unknown depth below 500 feet, we ran another pressure check of 3500 pounds and it did hold, so I do know that, because of our concern with high pressures, the cement was holding.

Q Uh-huh.

MR. ULVOG: I believe that's all the questions I have.

RECROSS EXAMINATION

BY MR. RAMEY:

Mr. Kleeman, you said that James Copeland was the project engineer.

A Yes, sir.

Q Was he advised or was he present at all during the drilling of the well?

A. Mr. Copeland's responsibilities and function in this project in no way encompassed drilling operations. His stated purpose in this project was to analyze whatever data we had in the post-drilling in terms of heat content of the fluids, volumes, chemistry, and what have you, for

the potential use of this resource, to space heat the Village of Jemez Springs, so his knowledge of what occurred during drilling is strictly informal, that which I've passed on in our discussing the project and its incumbent headaches.

Q So when you were having problems with cementing your 7-inch pipe, why, you -- who did you go to?

A Well. I had -- of course we had the crew from Stuart Brothers present which having before I ever contacted this firm I checked out their reputation and they were quite reputable. They have a great deal of drilling experience. They even drilled some geothermal test wells for Los Alamos Scientific Laboratories.

Given that background I had them there. We discussed the project before we started drilling, and so their expertise was at hand, and also there was a considerable amount of advice made available from Los Alamos.

Q And how much have you spent on this project?

To date?

A. If it is permissible, I would prefer to defer on that question until such time as I could put together all the figures and there are some costs that are not -- I could only be very rough about.

Q Well, I read a second article in the paper that stated you drilled the well and when you ran out of money, why, you quit drilling. Is that true or --

SALLY WALTON BOY SHIPPED BHORTHAND REPORT 111-2-11-2-

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 1855 FEAR BARRS (865) 471-5 SEREN FO. NOW MAKED 5715

15

16

17

19

20

21

22

23

24

25

A Well, Mr. Chairman, some of the things I've read in the paper about this project are -- I find rather amazing.

That's not true. We -- we ran out of money more than once but managed to secure additional funding.

What really made me decide to stop drilling was that we were approaching the end of the period on this last increment. We got an additional \$3000 from the Energy and Minerals Department and then subsequent to that I received another \$3500 from Sunoco, and while we were starting to run short on that, I had found another source to sustain continued drilling, but my last Tricone rotary bit went for one hour and fifteen minutes and 5 feet, and I decided that there was no point buying bits. We had reached the Precambrian. We had learned a lot of significant information about the geology in the area. It appeared that the hottest producing zone was going to be at 80 feet and it would be pointless to continue drilling.

Q Well, do you have a -- do you have a money source for the proposed work that you intend to do now?

A I believe so. I have not got in hand a detailed budget from the driller of what it would take to conduct this work, but, you know, my feeling is that it's going to be somewhere between \$1000 and \$3000, and if that's the case, I think we will be all right, but it's -- David

SALLY WALTON BOY SERTIFIED SHORTHAND REPORT 88 CREAR BRADA (608) 471-34 SERTE FO. Now MOREO 5710 10

11

12

13

14

15

16

17

18

20

21

22

23

24

25

Stuart is in Texas and I've only talked to him about it on the telephone and we haven't had a chance to sit down for me to show him the proposal and to go over the exact cost of everything involved.

But based on my discussions with the people at Los Alamos, I think we'll be all right, based on this proposal.

Q Okay. If this Commission directs you to repair this well or plug it, how much time is it going to take you to do the work?

A Prior to drilling this well I would have been quite confident in answering that question. I have led to believe that we could complete it in two to two and a half days, provided that it doesn't snow and provided that everything goes according to plan.

Q Well, if we directed you to do this today you couldn't have it done by the weekend.

I'm not trying to criticize anybody, but we also are dealing with the State Engineer's Office and I have to clear what I do with them, and make sure that they're going to accept the proposals or the participation of all involved, and since the proposed driller is out of state -- he will be back in town on Monday -- I would prefer to wait until next week.

Q Well, I really would tend to disagree with you. I don't -- I think if this Commission directed you to do something, I don't think you would have to clear it with the State Engineer's Office.

A Well, Mr Chairman, I do not mean to imply that I have to clear the directions of the Commission with the State Engineer's Office, but I think there may be some question about the actions of the driller, between the driller and the State Engineer's Office. I do not feel privileged to comment on those, but I'm aware that they exist.

I seem to be caught in a double bind here.

MR. RAMEY: Any other questions of the witness? He may be excused.

MR. STUART: Mr. Ramey?

MR. RAMEY: Yes.

MR. STUART: My name is Steve Stuart. I'm from Stuart Drilling Company. I'm not contracting officer for the company and so -- and I was not subpoensed to be here. I'm mainly here as a matter of interest to see what, if anything, our involvement is, but if there is anything I can answer, I will.

I want to be honest about what my limited knowledge is about the situation and don't want to over-represent it, but I want you to know that I'm here and I'll

be of what help I can.

MR. RAMEY: Thank you, Mr. Stuart.

Let's take about a fifteen minute recess.

(Thereupon a recess was

taken.)

MR. RAMEY: The hearing will come to order,

please.

10

11

12

13

15

16

18

19

20

21

23

24

25

Did we excuse you, Mr. Kleeman?

MR. KLEEMAN: I believe you did, sir.

MR. RAMEY: Okay.

MS. TESCHENDORF: I'd like to call Gary

McAllister.

GARY MCALLISTER

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MS. TESCHENDORF:

- Q Would you please state your name and by whom you're employed?
 - A Gary McAllister, National Cement Corporation
 - And what is your position with that company?
 - A. Station Manager and Service Foreman.
 - Q What is the scope of your duties in that

12

13

14

15

16

17

18

19

20

21

22

23

24

25

position?

Λ. To cement all wells that we are called on to do work on.

Could you briefly summarize your experience in cementing?

I worked for Byron Jackson, Incorporated, for 3-1/2 years in Wyoming, which is one of the major cementing companies in the world, and I moved down here in 1975 to work for Fleet Cementers, and that company was bought out a year ago by National Supply Company.

MR. RAMEY: So you are a subsidiary of National Supply, National Cementers are a subsidiary of National Supply?

> Yeah, Armco Steel, National Supply, yes, sir. MR. RAMEY: Okay, thank you.

(Ms. Teschendorf continuing.) What records have you brought with you concerning this well?

The tickets that I used for each cement job.

Do you or your attorney have any objections to our copying those and introducing them as an exhibit?

No, ma'am.

MS. TESCHENDORF: I think we'll mark those as Exhibit 12 and I'll introduce them later.

Referring to those records, Mr. McAllister, will you please describe the cementing program, including the

16

17

18

19

20

21

22

23

24

25

amounts of cement, the class of cement, what happened to it, and the whole sequence of events?

A. Yes, ma'am.

The first time they called me they had run 7-inch casing to 74 feet.

Q Who is "they"?

A. Stuart Brothers. And 9-3/4 hole they had drilled at that time because the 8-3/4 hole they couldn't get the pipe down.

I ran -- they wanted me to pump cement until we got it to the surface because they wanted a cement job, and the truck I took holds 350 sacks, and we emptied it.

They had circulation on the hole but it never did bring any cement back.

And after we got done, I displaced it down to 54 feet so they'd have cement in the casing to drill out, and we didn't get any cement back to the surface and they could move the pipe with the rig.

So they decided we didn't have a cement job and pulled the casing.

Q What date was this, do you know?

A 4th of January. They released me and I went home and they called me back on the 6th and they had drilled to 140 feet, and they ran 115 foot of 7-inch casing and we cemented it with 60 sacks of cement, which would be over

SALLY WALTON BOY ENTITIES SHOWTHAND REPORT 1848 FIRST BEAUTH BEAU

10

11

13

14

15

17

18

21

23

24

25

100 percent excess for the hole. And we did not get any cement back to the surface on it.

So I ran my home into the hole 20 feet -15 feet, I think it was, and mixed 20 sacks, and we did get
good cement back to the surface then. It fell about 2 feet,
which was where the bottom of the -- the top of the casing
was set underground, and they released me.

MR. RAMEY: This was on the outside --

A Right.

MR. RAMEY: Between the hole and the pipe.

A. Right. And they released me and I left and they called me when I was about half way from Grants to Albuquerque going home, and the cement had fallen and they wanted to try to do it again.

I came back and put my hose in the hole again and we cemented it with 20 sacks and brought it back, and it was holding at the time, and they released us and shut the rig down, I believe, for 24 hours, because they'd been working for 3 or 4 days straight, and that's the last time I had anything to do with the well.

Q Do you have any opinion as to what happened to this cement? That it didn't circulate back?

A. It may have fallen down the hole like the first one did and created a channel, maybe, and eventually when they started drilling it broke loose, possibly.

12

13

14

15

16

17

18

19

20

21

22

24

25

That's all I would know,

Q. You've no other explanation for where that 350 sacks went?

I do not, except that we may have -- it may have went into that water zone that they encountered at 80 feet. That's where we think it went.

And Stuart Brothers Drilling hired your company to do the cementing?

- Yes, they called me.
- So at this point, to your knowledge, there is no cement job in the well?
 - Not on top, no.
 - Q. What do you --
- If they pressured up to 3500 when they got ready to drill the cement -- I left 20 feet of cement in the pipe when they shut down for 24 hours, and eventually it was there if they pressured up to 3500, which they said they did, there should be a cement job from 115 foot to 80 foot, anyway.
- May I look at those records you brought with you?
 - Yeah, there's two, three.
 - Okay.

MR. RAMEY: So you feel, Mr. McAllister, that the bottom of the 7-inch is cemented in at this time?

11

12

13

14

15

16

17

18

19

20

21

ŽŽ

23

24

25

A I feel it is, yes, sir.

Q. What type of cement did you use on this well?

A. Class B.

Q Is this a heat resistant cement?

A It's supposed to be at that temperature, yes.

A Set up all right at 150 degrees?

A. Right.

MR. RAMEY: Do you have anything further, Ms. Teschendorf?

MS. TESCHENDORF: I'd like to offer Exhibit 12 in evidence.

MR. RAMEY: Okay, it will be admitted.

MR. MELLY; Mr. Examiner, I'd just like to request, I think you were going to make copies and let us have the originals back.

MS. TESCHENDORF: Okay.

MR. RAMEY: Do you have anything further?

MS. TESCHENDORF: No, I have nothing further.

MR. RAMEY: Does anyone have any questions of the witness? Mr. Nutter?

CROSS EXAMINATION

BY MR. NUTTER:

Q My name is Dan Nutter. I'm with the Oil Conservation Division.

11

12

13

14

15

16

17

18

19

20

21

ZZ

23

24

25

Apparently water is coming up around the outside of this casing. You probably heard that testimony this morning.

Do you have any suggestions as an experienced cementer as to how this water coming up outside the casing could be remedied?

A No, I don't, sir. We put 350 sacks in it, which would be approximately 1000 percent excess on the amount of pipe we have in the hole and couldn't touch it.

So it is a common occurrence, is it not, that you have difficulty setting cement in flowing water?

Sometimes, yes, sir.

Uh-huh. Are there any substitutes for cement that are effective in setting in flowing water condi-Any types of plastic or anything like that? tions?

I believe there is. My superior might know I do not. of some.

Uh-huh.

In our company there isn't, that I know of.

So you don't have any recommendation, then, as to how the upper part of this casing could be cemented to adequately shut off that water flow?

Not other than running 1 or 2-inch pipe down it, like he suggested and tried to do it.

Well, again we'd have the flowing water and

SALLY WALTON BOY CENTRIES SHORTHAND REPORT 223 PERSA BERGAS (165) 471-3: Senda Po., New Mordon 5754

difficulty in getting it to set, wouldn't we?

A. Yes, mixing as heavy a cement as we could, we could cement it and get it up to 16 to 17 pounds a gallon.

Q. And then would that resist a flow of water of the volume that we've got in this well, do you think?

A. Yes, I killed it one -- I had resisted -- there's no pressure on it, that I know of.

It's not flowing hard enough to have any pressure behind it, from our wells that we have cemented up around Nose Rock for Phillips. They've got wells that flow 180 to 200 gallons a minute.

Q Artesian type wells and they cement against that flow?

A Yes, sir, kill them off.

Q With 16 or 17 pound cement?

A 15 pound cement will kill them.

Q Okay, thank you, that's all.

MR. HAHN: There's several techniques that you could use.

MR. RAMEY: Would you identify yourself for the record, please?

MR. HAHN: Yes, sir, I'm Jamie Hahn with National Cement.

There are several techniques that could be used but it would be a trial and error thing of finding

10

13

14

12

15

16 17

18

19 20

22

23

24 25

SALLY WALTON BOY SETTIFFED SHORTHAND REPORT 08.0 Plans, Blanca, (10.0), 411-24 Bearls, Po., Now Morido, 3150

10

12

13

14

15

16

17

18

20

23

24

25

whatever your hydrostatic pressure is would hold the water down and hold the cement in place, too.

If you make your cement too heavy it will force the water down and your cement will go to the water zone. I'm sure I'm not telling you anything.

But if you make it light enough where you do nothing but hold the water pressure down, it gives the cement an opportunity to hydrate, then in fact we probably could get a good cement job, you know, from 20 to 30 feet up. I don't believe there's any way we can go down to the top of the water zone again, on account of cement.

The primary cementing job, there are a lot of techniques you could have used which would have got you a good primary cementing job of your surface casing, but right now there's nothing you can do about it.

MR. NUTTER: Thank you.

MR. RAMEY: Any other questions of the witness? He may be excused.

Do you have anything further, Ms. Teschendorf:
MS. TESCHENDORF: I don't believe so.

MR. RAMEY: Anyone present have anything to add to this case? Any statements?

Yes, sir, Mayor Armenta.

MR. ARMENTA: I'd like to say something.
On behalf of the Village there's been a lot

5

8

10

12

13

14

15

17

18

20

21

22

23

24

25

of money and time spent on this project.

The nomenclature of the original proposal probably should have been changed to maybe a resource well.

Everything was -- this is a fairly new thing, I think, around the state. I can assure you that no one involved in this project maliciously disregarded any regulations, and not to comply with any regulations set forth by this Commission.

I would not like to see that well plugged up. I'm sure there are problems with it now as far as the flow.

If it is, if you order us to plug it up, I feel it would be a waste and it would slow down energy projects that are taking place in the state.

That's all.

MR. RAMEY: Thank you, Mr. Mayor, and I want to assure you that the Commission is certainly interested in seeing geothermal development and if this well can be utilized as a possible geothermal project for space heating, why, we certainly are sympathetic toward that end and we'll do everything that we can to see that the well is utilized.

MR. ARMENTA: Thank you.

DR. DAW: I'm Harold Daw, New Mexico State University.

MR. RAMEY: Yes, Dr. Daw.

DR. DAW: And the Energy Institute has the

SALLY WALTON BC CERTIFIED SHORTHAND REPO SOSPILES BINGS (545) 473 Seals Ft. New Medico 573

.

.4

responsibility for the development of geothermal in the State from a research standpoint, and we would sure like to see if possible for that to be preserved as a viable geothermal program.

MR. RAMEY: Thank you, Dr. Daw.

Anything further?

Mr. Kleeman, we don't prescribe to tell you how to do your well, how to try to repair your well. We are going to tell you to repair it as soon as possible.

We will approve the plugging back operations that you oroposed in your schematic and your proposal, which is marked as Exhibit Eleven. That is as to testing the bridge and we do request that you get as much cement as possible on that plug and, if possible, put in some in the open hole and some in the pipe, and if you could bring it up to the base of your perforations, why, that would be ideal.

that is your problem. We're not going to try to attempt to tell you how. We may have the expertise but we wouldn't want to bet on it, so we will direct you to do this just as soon as possible and there will be an order probably issued early next week that will state that you do this, and we will probably put a time limitation on it, and I would suggest that you do it as soon as possible and probably the Commission

ALLY WALTON BO INTERED SHORTHAND REPO SQUAR PLANCE (695) 471-SQUAR PU, NOW MOXIDOS 571 .

New Mexico 5150

14

11

12

13

17

18

16

19

20

21

22

23 24 would give you something like ten days or two-week period to get the work done.

So you can make your plans accordingly.

MR. KLEEMAN: Yes, sir.

MR. RAMEY: Mr. Ulvog?

MR. ULVOG: Yes, I would like to request that some sort of a protective device be put around this well in the meantime because there's no question about it but it would be a hazard to small children, animals, and so on.

MR. KLEEMAN: May I suggest, Mr. Chairman, that I am going to go back to the site this weekend and I'd like to put back the fence that we had there before and then next week we can complete operations on the well.

MR. RAMEY: Well, Mr. Kleeman, in looking at Mr. Ulvog's Exhibit Five where the fence was in place, I wouldn't consider that a child-proof fence. I would suggest you put something better than that in.

MR. KLEEMAN: All right.

MR. RAMEY: And with that, the hearing is

adjourned.

(Hearing concluded.)

REPORTER'S CERTIFICATE

10

12

11

16

15

18

19

20

21

ŽŽ

23

25

24

I, SALLY W. BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Commission, was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, knowledge, and skill, from my notes taken at the time of the hearing.

Sally W. Boyd CSR

Page	1_		

NEW MEXICO OIL CONSERVATION COMMISSION

COMM:	TSS	TON	HEAR	TNC
		T () I.	11DOV	

SANTA FE , NEW MEXICO

Hearing Date FEBRUARY 23, 1979 Time: 9:00 A.M.

ten Buse Booles lelly 9. Fedor Lyle for Berger Harda, Daw Pest Rogers Tom KEEma-Heros Woodista Stave Stawart Jamie Halu G. Scudella

U.S. Gaslogic & Surray white Kender et al NMEMO / Union Leothermal NM54 Water Resources Village of Jening Spring. National Comenters Stewart Bros. Drlg Co National Conveterdors Grand buctions Co 5.6. EMI

LOCATION Ener Pare City, U.S. Sortife Sant & Fp Lio Taneko Las Cruca Santa Fe) emay Spring Grants, H.M. Curant, NM

COMMISSION HEARING

IN THE MATTER OF:

The hearing called by the Oil Conservation Commission on its own motion to permit Mayor Eddie Armenta, the Village of Jemez Springs, and all other interested parties to appear and show cause why the Jemez Well No. 1 located in Unit A of Section 26, Township 18 North, Range 2 East, Sandoval County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.

CASE 6461

11

12

13

14

15

16

17

18

19

20

21

BEFORE: Commissioner Ramey
Commissioner Arnold

TRANSCRIPT OF HEARING

APPEARANCES

For the Oil Conservation Commission:

Lynn Teschendorf, Esq.
Legal Counsel for the Commission
State Land Office Bldg.
Santa Fe, New Mexico 37503

23

25

For Mr. McAllister, et al:

W. BOOKER KELLY, ESQ. WHITE, KOCH, KELLY, & McCARTHY 200 Otero Street Santa Fe, New Mexico 87501

SALLY WALTON BY
CENTIFIED SHOWTHAND REFY
1938 Plans Blanca (1945) 471
Senta Pi, New Mexico 471

.

I N D E X

2	CARL ULVOG		
3	Di.r	ect Examination by Ms. Teschendorf	
4	Cro	ess Examination by Mr. Ramey	1
5	Cro	ess Examination by Mr. Kleeman	2
8			
7	EDDIE ARMENTA		
8	Dir	ect Examination by Ms. Teschendorf	2
9	Cro	oss Examination by Mr. Ramey	2
10	•		
11	TOM KLEEMAN		
12	Dir	ect Examination by Ms. Teschendorf	2
13	Cro	ess Examination by Mr. Ramey	39
14	Cro	ess Examination by Mr. Arnold	44
15	Rec	cross Examination by Mr. Ramey	45
16	Cro	ess Examination by Mr. Ulvog	47
17	Rec	cross Examination by Mr. Ramey	52
18			
19	GARY McALLIST	ER	
20	Dir	ect Examination by Ms. Teschendorf	57
21	Cro	ess Examination by Mr. Ramey	61
22	Cro	ss Examination by Mr. Nutter	62
23			
24	- · · ·		64
25			65
	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	John Statement by Statement of	Direct Examination by Ms. Teschendorf Cross Examination by Mr. Ramey Cross Examination by Mr. Kleeman EDDIE ARMENTA Direct Examination by Ms. Teschendorf Cross Examination by Mr. Ramey TOM KLEEMAN Direct Examination by Ms. Teschendorf Cross Examination by Mr. Ramey Cross Examination by Mr. Arnold Recross Examination by Mr. Ramey Cross Examination by Mr. Ramey GRAY McALLISTER Direct Examination by Ms. Teschendorf Cross Examination by Mr. Ramey Cross Examination by Mr. Ramey Cross Examination by Mr. Ramey Statement by Jamie Hahn Statement of Mayor Armenta

EXHIBITS

Exhibit Number One, Well file Exhibit Number Two, Letter Exhibit Number Three, Proposal Exhibit Number Four, Newspaper article Exhibit Number Five, Photos Exhibit Number Six, Letters Exhibit Number Seven, Rules Exhibit Number Eight, Photos Exhibit Number Nine, Summary Exhibit Number Ten, Exhibit Number Eleven, Proposal Exhibit Number Twelve,

SALLY WALTON BOY CHITCHIS SHORTHAND REPORT 1015 Park Blanca (105) 471-24

11

12

13

14

15

16

17

18

19

20

23

24

25

MR. MEY: We have one case on the docket this morning, Case 6461, in the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Mayor Eddie Armenta, the Village of Jemez Springs, and all other interested parties to appear and show cause why the Jemez Well No. 1 should not be plugged and abandoned in accordance with a Division-approved plugging program.

We sent out several subpoenas, one for Tom Kleeman, Eddie Armenta, and Gary McAllister. I understand these have all been served.

Are those persons present?

MR. KLEEMAN: Yes.

MR. RAMEY: Mr. Kleeman. Is the Mayor?

MR. ARMENTA: Yes.

MR. RAMEY: And Gary McAllister?

MR. McALLISTER: Yes.

MR. RAMEY: Ms. Teschendorf, would you call your first witness, please?

Oh, are there any other appearances in the case this morning?

MS. TESCHENDORF: I'm Lynn Teschendorf, appearing on behalf of the Division. My first witness is Carl Ulvog.

MR. RAMEY: All right, we'll ask Mr. Kleeman, Mr. Ulvog, Mr. Armenta, and Mr. McAllister to stand at this

and Massaches

SALLY WALTON B()Y CERTRERD SHORTHAND REPORT 1988 Para Bandas (1985) 171-35 Sente Fe, New Mexico 8716

12

13

15

16

17

18

19

20

21

23

time and be sworn.

(Witnesses sworn.)

MR. KELLY; Mr. Ramey, my name is Booker Kelly. I'm appearing on behalf of Mr. McAllister, and I'd like to just clarify one point.

The order is addressed to other interested parties, however we are appearing here under a subpoena and we do not consider ourselves parties in the sense that any order of the Commission is directed against us, and I'd like to just clarify the status of the people who you have subpoenaed before we get into this hearing.

MR. RAMEY: I think we have subpoenaed everyone here to find out all the information we can, Mr. Kelly, about the well.

Are you representing Mr McAllister, is that --

MR. KELLY: Yes, I am. I just -- I would not want to be classified -- he or his company to be classified as a party, is my position.

MR. RAMEY: I think we're going to ask him to testify as to what work he did on the well.

MR. KELLY: Yes.

MR. RAMEY: So that we can have a complete file on the well.

MR. KELLY: That's fine.

CARL ULVOG

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MS. TESCHENDORF:

- Q Would you state your name, by whom you're employed, and in what position?
- A. Yes, ma'am. Carl Ulvog, Senior Geologist for the Oil Conservation Commission in Santa Fe.
- Q Have you previously testified before this Commission and had your credentials made a matter of record?
 - A I have and they are.
- Q Are you familiar with the circumstances and the subject matter of this case?
 - A. Yes, I am.

MS. TESCHENDORF: Is the witness considered qualified?

MR. RAMEY: We consider the witness qualified.

Q. (Ms. Teschendorf continuing.) Mr. Ulvog, do your duties as District Supervisor include making recommendations to the Commission as to when wells should be plugged and abandoned?

SALLY WALTON BOY HRIPPED SHOKTHAND REPORT 1887 PLEAR BLADA (1615) 471-24 SESTA FO, Now MoxIOO 5750 2

3

10

11

12

13

14

15

16

17

18

19

20

21

22

23

8

10

11

12

13

15

16

17

18

19

20

21

22

23

A. Yes, that is correct.

Q And does that include geothermal wells as well as oil and gas wells, is that right?

A That is right.

Q Would you please refer to Exhibit One in this case and describe that?

A. I believe Exhibit One is actually the official well file that we maintain here, and it consists of a Form G-101, which is the application for a permit to drill, and in this case it's an application for a permit to drill a temperature observation well, and it states that the operator would be Mayor Eddie Armenta and the address of the operator would be the Village of Jemez Springs, New Mexico.

It states that the well, which is described by the docket, I believe, would be drilled with 8-3/4 inch hole with 7-inch casing set at 100 feet with 30 sacks of cement circulated to the surface.

Then there would be a 5-inch hole drilled to some unspecified depth and nothing more stated about the casing, and so on, of the well.

But the total depth was proposed to be 750 feet.

That permit was approved on December 28th,

26

1978.

SALLY WALTON ISOY CHITTENED SHORTHAMD REPORT \$655 Firm Minnes (565) 471-24 Sents Pr., Now Mexico 5755 2

3

8

11

12

13

14

15

16

17

18

19

20

21

ŽŽ

23

24

25

Accompanying that form was a Form G-102, which is a land plat, or acreage dedication plat, and it describes the location of this well. And that -- I beg your pardon?

Q For the record would you state the location of that well?

A Yes, I will. That would be located in Unit A, which is actually described as being 90 feet west of the Town Hall in Section 26 of Township 18 NOrth, Range 2 East, Sandoval County.

Q I notice from the G-101 that the drilling contractor is Stuart Brothers in Grants, New Mexico. Were we able to get service on them?

- A. Were we able to what?
- Q Did we subpoena anyone from Stuart Brothers?
- A. Not to my knowledge. I'm not sure if we did. I didn't notice that subpoena.

Did you mention that, Mr. Ramey?

MR. RAMEY: No, I had heard from counsel that those -- we had subpoensed two people from Stuart Drilling, or at least one, Don Kelly. We understand he went to Texas and we weren't able to serve him.

- A I see. All right,
- Q Do you have anything further on Exhibit One?
- A That actually is all that our official well

11

12

13

14

15

16

17

18

19

20

21

22

23

24

file contains.

Q. Will you now refer to Exhibit Two and describe that?

That, I believe, is a letter, undated, captioned the Village of Jemez Springs, New Mexico, and it is simply a letter from Mr. Eddie Armenta, as Mayor of the Village of Jemez Springs, and I would like to call that in that letter it states that the Village of Jemez Springs guarantees that the above mentioned well will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in the Rules and Regulations.

That is, of course, the primary interest in that exhibit.

Would you now refer to Exhibit Three and describe that?

Exhibit Three, I believe, is a copy -- pardon me, yes, Exhibit Three is a portion of a proposal for this project, and this proposal is unsigned. I couldn't tell you who prepared it; it doesn't say, but it's dated 5th of July of 1978.

And it lists several items involving the drilling of this well.

But the pertinent paragraph that I would like to point out appears about in the middle of that ex-

5

8

10

12

13

14

15

16

17

18

20

19

Z2

23

21

24 25 hibit and it's entitled item four, and I would just like to read that.

Drilling will be carried out under the supervision and with the advice of the project geologist. Two test wells of a diameter of four inches to six inches, to be determined upon completion of mapping, will be drilled into the limestone formation. Well depths are not expected to go below 750 feet. Fluids brought to the surface will be held during the test and subsequently reinjected into the formation.

I'll dispense with reading the rest of that exhibit, if I may.

Q How did you first hear that this well had been spudded?

A: Actually, the only way that I knew that it had been started was through the medium of a newspaper article, which appeared in the <u>Albuquerque Journal</u> Friday, January 5th.

Q That is marked as Exhibit Four, is it not?

A. Yes, that is how I knew that the well had been started. We never did receive a report of the spudding of the well.

And what did you do after reading the newspaper article?

A. Well, of course, I investigated the well,

ALLY WALTON B(STREED SHORTHAND REIN 18 Place Barres (848) 475 Berlin Po, Now Moreloo 3

9

10

11

12

13

14

15

16

17

18

19

20

21

ŽŽ

23

24

25

when we did not receive an official report that the well had been started, or anything, so I went out and inspected it.

Will you refer to Exhibit Five, then, and describe what that shows?

Exhibit Five, I think, is a series of pictures. There are three pictures that I took out there and the uppermost picture is looking at the site from a distance of approximately 25 to 30 feet away.

The next one is right up at the very edge of it. There is a large hole where the water is coming up, and bubbling and running off to the river.

And then the third picture near the bottom of the page is a real close up of the casing, approximately 3-inch casing that is projecting from that hole with water flowing around it.

What date were these pictures taken?

They were all taken on January 29, 1979.

Do you have an estimate as to how much water is coming out of the hole?

Yes. I estimated it in the vicinity of 1000 gallons an hour is flowing from the hole at a temperature of approximately 150 degrees at the surface.

MR. RAMEY: Mr. Ulvog, you said this is about 3-inch casing?

15

17

18

20

21

ŽŽ

23

24

25

Something in that order. I didn't get up to it. I didn't feel like swimming over, so I would estimate it was about a 3-inch tubing, casing, pipe, whatever, with valves at the top.

MR. RAMEY: I'd understood from Exhibit One they were going to run 7-inch casing in the hole.

- I did not see any 7-inch casing. MR. RAMEY: Thank you.
- (Ms. Teschendorf continuing.) Mr. Ulvog, what did you do after discovering that the well was in this condition?
- Well, I wrote two letters to the operator of record, and first of all requesting that the now delinquent data be filed with this office.
- These are both listed on Exhibit Six, are they not?
- Yes, that was the first letter. A. The second one, then, I simply sent by registered mail or --
 - What's the date of that letter?
 - Beg pardon?
 - What is the date of that letter?
 - That's February 1, 1979.

And in this letter I mentioned that there were violations of the State Regulations and that upon the --

in fact I'll read it.

An inspection of the site on January 29th last, indicates that your project is in violation of State Regulations in several respects. Please refer to the rules and make such changes as are necessary to be in compliance. Of primary importance is immediate shutting off of the water that is escaping to the surface.

Kindly submit your plan for remedial action and/or plugging for abandonment in time for same to be witnessed by a representative of this agency.

- Q What was the date of that first letter?
- A. That was January 30th.
- Q What rules have been violated?
- A. Well, this was a permit for a temperature observation well, and a temperature observation well is never produced, and the fact that there is water flowing from this well, I would have to call it a -- it is being produced, so it is now a producing well.

Number two, there were never any reports filed, official reports, telling us the well had been spudded. There were no reports telling us when casing was being run or cementing being done, or anything of that sort, or tests being made, and all of those are conditions of the permit for an observation well.

An observation well is simply for the measure

ALLY WALTON BIDYE
INTERED SHORTHAND RZPINTE
SEPLAR, BRADER (861) ATT-446
Santa Pe, New Mexico 31161

15

16

17

18

19

20

21

ment of temperature, nothing else.

So these rules you're referring to are shown on Exhibit Seven, are they not?

Yes, that's right. I have some -- just a few items that I pointed out; comes from the rule book, and under A; which appears on page A-1 of the rules, --

These are geothermal rules.

That's correct, that's geothermal rules, I'm sorry.

About in the middle of that page there I've indicated a geothermal observation well shall mean a well drilled solely for temperature observation purposes and which shall not be completed as a geothermal producing well or as an injection well.

That's the primary thing I wanted to point out in that page.

And when you go to page -- well, item B under miscellaneous rules, well we find there under Rule 3, I've indicated that, that pertains to waste. Waste is prohibited.

Under A, the production or handling of geothermal resources of any type or in any form, or the handling of products thereof, in such a manner or under such conditions, or in such an amount as to constitute or result in waste, is hereby prohibited.

23 24

25

And I might point out that this includes also heat, if that is allowed to escape, that would be considered waste.

And under sub-paragraph B, all owners, operators, contractors, drillers, transporters, service companies, pipe pulling and salvage contractors, and all other persons shall at all times conduct their operations in drilling, equipping, operating, producing, and plugging and abandoning a geothermal resource well in a manner that will prevent waste of geothermal resources and shall not wastefully utilize geothermal resources or allow leakage of such resources from a geothermal reservoir, or from wells, tanks, containers, or pipes, or other storage conduit or operating equipment.

And on page D-2 conforms to the filing of
Form G-103, and I would just point out briefly that under
that it states that the Form G-103 is a subsequent report
of operation which shall be filed in accordance with this
rule applicable to the particular operation being reported,
and among those, number one, commencement of drilling operations; number two, casing and cement; number three, altering
a well casing installation; number four, temporary abandonment; and so on and so on.

And it further states that within ten days following the commencement of drilling operations, the oper-

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 1981 PARK BLADGE G. 171-24 SARLE FO, NOW MARIOC 2150 10

11

12

13

14

15

16

17

18

19

20

21

ator of the well shall file a report thereof on a Form G-103, and so on.

And on the following page, D-3, it states that report results of test of casing and cement job, and so on, those reports to be filed within ten days following the setting of the string or using cement.

abandonment, and of course, at the times I have visited the well it has definitely been abandoned. There was no one there and nothing there, and so on, so I would have to consider it to be temporary abandonment, even though there has never been a permit applied for for that.

- Q Have you made a second inspection of this well?
 - A. Yes, I have.
 - Q And what date did you make that inspection?
- A. That date was on -- that was taken on February 21st, 1979.
- Q Will you refer to Exhibit Eight and describe what that shows?
- A Exhibit Eight consists of two pictures that were taken on that date, both of them show the condition of the hole and the casing, which is leaning off to the side; it shows the valve assumbly at the top, and there's a yardstick there for scale, which indicates that the hole

5

7 8

10 11

12 13

14

16

17 18

20

21

22

19

23

24

25

would be approximately ten feet across. The casing is fallen or collapsed or washed out or something, but it's laying off to the side of the hole.

That's what those two pictures show, plus, of course, the water coming from that.

- Q. In your opinion, Mr. Ulvog, are geothermal resources being wasted?
- A. Well, yes, I don't believe there's much question about that. The water flowing and the heat that's escaping, you'd have to say that it's being wasted.
 - Q And is fresh water being contaminated?
- A. Yes, this is running right into the river, the Jemez River.
- Q Are there migration of fluids in the wellbore from the strata in which they are found to other strata?
- A. Well, there certainly is migration of fluids to the surface. Now how many zones are exposed, I have no way of knowing, but in conversations with people at the site and others, there is definitely more than one zone of water.
- Q In your opinion is there a possibility that caving is the wellbore?
- Q I would think so, yes. There would have to be some erosion taking place by the fact that the water is flowing from it. Now whether there's caving going on, of

SALLY WALTON BC ENTIFIED SHORTHAND REPO SEPRIME BEADON (\$15) 471. Seats Fe, New Maxico 57

SALLY WALTON BC CERTIFIED SHORTHAND REPOI 30519 Plaza Blanca (865) 471. Senit Pe, New Mexico 371.

2

5

6

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

course I wouldn't know, but I would certainly suspect it.

Q Is the well in such a condition that injury is being caused to neighboring properties?

A. I have no analyses of water and so on at my disposal, but the condition of the casing is shown in that Exhibit -- the first set of pictures -- that was Exhibit what? Exhibit Number Five. I believe that indicates that there's something occurring on that casing. It's being discolored, and so on, so there's some chemical action taking place there, and from this I would assume that there would be some pollution occurring to the water.

- Q Isn't there a bathhouse nearby here?
- A. That is correct, there is.
- Q And has that suffered injury by the condition of this well?

A. Well, the original well that, or spring, that supplied the bathhouse, the flow has been reduced so badly that the bathhouse operator obtains water by pumping it from this pool around this pipe, because there is not enough water coming from the original spring any more.

Q What do you propose should be done about this situation, Mr. Ulvog?

A Well, I believe that the hole should be plugged all throughout its entire length, since we have no way of knowing how many fluid zones or porosity zones, for

11

12

13

15

16

18

20

21

ZZ

23

24

25

that matter, that may be barren but could be acting as seep zones in that case, we have no idea where they are, how many there are, so I would feel that the obvious solution would be to plug the entire wellbore.

- Q Were Exhibits One through Eight -- Exhibit
 One is the well file. Exhibit Two is the letter from the
 Mayor. The pictures on Exhibits Five and Eight were taken
 by you, is that correct?
 - A. That is correct.
- Q. Do they absolutely reflect the situation as it was on those dates?
 - A. That's correct.
- Q And the letters on Exhibit Six were written by you?
 - A. That's right.

MS. TESCHENDORF: At this time I'll offer Exhibits One through Eight in evidence.

MR. RAMEY: Exhibits One through Eight will be admitted.

MS. TESCHENDORF: And I have nothing further of this witness.

CROSS EXAMINATION

BY MR. RAMEY:

Mr. Ulvog, I notice in comparing your ex-

BOYD	II:PORTE	471-344
SALLY WALTON BOYD	ERTIFIED SHORTHAND REPORTE	1636 Plaza Blanca (1665) 471-244 Santa Fe, New Mexico 57501
LY WA	PED SHO	Jenia Pe, New
SAL		200 C

hibits Five and Eight, in Exhibit Five there was a little fence of some kind around the well.

- A. That's right.
- Q Around the well and the hole there.
- A. True.
- And this fence seems to have been removed.
- A. Yes.
- Q Is this well in a populated area?
- A. Yes, it is. It's right down behind the -it's right in the Village of Jemez Springs, right below the
 City Hall, and there are residences, and so on, all around
 there.
- Q. And you say the temperature of the water in hole was 150 degrees?
 - A. Right at the surface, yes.
- Q. What would be the effect of a small child falling into it?
 - A. I don't believe it would survive very long.
- Q So it's also a hazard to the people of Jemez Springs, particularly the young children?
 - A. I would think so.
 - Q Small animals or livestock?
- A. It's pretty muddy around there, I guess you could sure slip in easy.

MR. RAMEY: Any other questions of the wit-

24 25

19

21

22

23

ness?

Kleeman.

2.

MR. KLEEMAN: Yes. May I ask a question?
MR. RAMEY: Yes, let me ask one more, Mr.

Q. (Mr. Ramey continuing.) Now, you're recommending that the well be plugged. If we get a report from Mayor Armenta or Mr. Kleeman that something can be done to the well to repair the well and contain the water the way they should be contained, would you still recommend it be plugged?

A. Well, we would have to look at that proposal and consider whether it was satisfactory, but we do have to remember that this is a temperature observation well and not to be produced.

We do have --

Q But if the well resulted in a clean completion and they did have a possible geothermal source, why, don't you think it would be possible for the Commission or the Division to waive the requirements of an observation well being plugged?

A. Yes, I think that is possible, but then I think we should also go to the section pertaining to producing wells and then operate under those provisions, and not to consider this as a temperature observation well.

Otherwise, the statutes would be violated. We wouldn't be

SALLY WALTON BO CERTIFIED BHOTHAND RIPORT BELL BRIDGE (101) (11-6 SAILS FS. NOW MOSTICO 111-

SALLY WALTON BOYE Entired shorthand reporte Series Bedges (661) 471-544 Series Fo, New Messico 67601 10

11

12

13

15

16

17

18

19

20

21

25

doing our job. If it's produced, it's not a temperature observation well, in other words, and that's our permit at the moment.

I think we could perhaps go to an entire different set-up, that is, as a geothermal producer, but you see, we have an entire set of operating conditions for those.

Q Okay.

MR. RAMEY: Mr. Kleeman, did you have a question?

MR. KLEEMAN: Yes, I did have one question.

MR. RAMEY: Would you identify yourself for the record?

MR. KLEEMAN: I am Tom Kleeman, Project Manager for the Jemez Springs No. 1 Well.

CROSS EXAMINATION

BY MR. KLEEMAN:

Q I believe you stated that you saw a 2-inch casing leaning over to the side?

A. No, I didn't think I said anything about a 2-inch. I said I thought there was a 3-inch casing protruding from this hole. I'm estimating that. I didn't measure it.

Q And you did not see a 7-inch casing?

SALLY WALTON BOYD CERTIFIED SHORTHAND REFORTER 3080 Plata Blanca (105) 411-3448 Santa Fe, New Mexico (1701 10

13

14

15

16

17

18

19

20

21

ZZ

23

A. I did not see any 7-inch casing at all at any time.

MR. KLEEMAN: That's all I wanted to get on the record.

MR. RAMEY: Any other questions of the witness? He may be excused.

MS. TESCHENDORF: I'd like to call Mr. Eddie Armenta.

EDDIE ARMENTA

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MS. TESCHENDORF:

Q Would you please state your name and place of residence?

A. Eddie Armenta, Jemez Springs, New Mexico.

Q And you are the mayor of the Village of Jemez Springs?

A. Yes, I am.

Q Let me show you what we've already introduced as Exhibit Number One. That is a drilling permit.

That was signed by you, was it not? As operator?

A. Yes, it was.

11

12

13

14

15

16

17

18

19

20

21

ZZ

23

24

25

Would you please describe the chain of events Q. leading up to the drilling of this well?

Leading up to it?

Uh-huh, how you -- who first proposed the drilling of the well, did you decide that the Village of Jemez Springs needed a geothermal well, or what was your interest in the drilling of this well?

Well, we always knew it was a possibility it was there.

Back in '78 Mr. Kleeman, Tom Kleeman, was passing through and made the proposal to the Village Council as to the possibilities of using geothermal heat to heat the village.

It was discussed and approved by the council and the proposal was it was up to Mr. Kleeman to get together with us and make a proposal for funding to drill.

Where did you get this funding?

From the State of New Mexico.

I'd like to show you what we've introduced as Exhibit Two, and that is your letter guaranteeing that the Village of Jemez Springs would see that the well was properly plugged in accordance with the Division Rules and Regulations.

Uh-huh.

I want to ask you some questions about the

13

14

15

17

18

19

20

21

Ü

23

24

25

Village of Jemez Springs financial responsibility in the situation.

There is no bond covering this well, but by your letter you sed that the financial reconsibility for the is well is there. Are you still in that page Can you still guarantee that the Village of Jemez Springs will assume financial responsibility and see that this well is properly plugged or repaired?

If my signature is on it saying I guaranteed it, I guess it is.

- On whose property is this well located?
- The Village of Jemez Springs.
- Q. And you are the listed operator.
- I am.

MS. TESCHENDORF: I have nothing further of this witness.

CROSS EXAMINATION

BY MR. RAMEY:

Did you, Mr. Mayor, did you have anything to do with the drilling of the well?

No.

You had nothing to do with it, Mr. Kleeman has been the supervisor of the drilling of the well?

> A. Yes, he was.

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 3936 Plant Blance (6CL) 471-24 Senta Pe, New Moxico 575 C. MR. RAMEY: Any other questions of the wit-

MR. ARMENTA: Can I add something?

MR. RAMEY: Yes, you may add anything you

want.

7

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

ness?

MR. ARMENTA: The last person that was here, the geologist, made a statement as to the bathhouse.

That bathhouse belongs to the Village of Jemez Springs. It is not privately owned. So any effect to that bathhouse would affect the Village, and it does belong to the Village.

One other thing he said about the possibility of the water flowing into the river affecting the fresh water, all along that area, along that one-mile strip, there are several open springs going into that water, and have been going into that river for many years, many years, and has not had any effect. I doubt that one more little spring would affect it that much.

That doesn't mean it should not be taken care of, but -- that's all I had to say.

MR. RAMEY: Thank you, Mayor.

MS. TESCHENDORF: 1'd like to call Tom Klee-

man next.

24

25

2

3

4

5

6

8

10

11 12

14

13

16

17

15

18 19

20 21

23

24

25

TOM KLEEMAN

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MS. TESCHENDORF:

- Would you please state your name and by whom
 you're employed?
- A. My name is Tom Kleeman and I am under -I'm a subcontractor to the Village of Jemez Springs for this
 project.
- Q Are you a professional engineer or some kind, or what is your educational background?
- A. My educational background? Economics and resource management.
 - Q What are your work experience background?
 - A. As regards geothermal resources?
 - Q Yes, drilling, and so on.
- A. While working for the State of Texas General Land Office, I was responsible for studying feasibilities of developing various energy resources on State-owned lands, and impacts from development.

I have subsequently worked for the last four and a half years as an independent consultant in the energy field in everything from doing environmental impact

SALLY WALTON BOY ERTIFIED SHORTHAND REPORT 16 Plass, Blasca (\$15, 471.4 Senta Pe, New Minister 575;

SALLY WALTON BOY EXTRED SHORTHAND REPORT STATE SHARE (S.S.) AT 24 SARE PS, Now Marido 1750

13

14

15

16

17

18

19

20

21

22

23

24

25

analyses for pipelines, to planning new energy development projects, studying the economics of energy development.

Q. Mr. Armenta, Mayor Armenta, has stated that a grant was obtained from the State of New Mexico. Were you instrumental in obtaining that grant?

- A I played a role in it, yes.
- Q. Can you tell me from whom the grant was obtained, for what purpose, and how much it was?
- A. Yes. The grant came from the -- what is now the New Mexico Energy and Minerals Department. The amount, the original amount was some \$31,400. The purpose was to drill, to do test drilling in Jemez Springs to determine whether or not there was a viable geothermal resource there.
- Q And what was your -- you were the project engineer or --
 - A. Project manager.
 - Q -- project manager.
- A. The project engineer was James Copeland-Moran in Albuquerque.
 - Who was the driller on this well?
- A. The driller was Stuart Brothers, Grants, New Mexico.
- Q Did you contact them and hire them to do this work?
 - A. Yes.

Who was the cementing company?

2	Α.	National Cement.			
3	Q	And did you hire them to do the cementing?			
4	A	No. All third party work done on the well			
5	was carried out	by Stuart Brothers.			
6	Q	Okay. Do you have any drilling experience			
7	at all?				
8	A.	Have I drilled wells? No.			
9	Q	Well, have you been connected with the drilling			
0	of wells				
11		Only in the analysis of results.			
12	Q	Do you have any knowledge in this particular			
13	case, the depth	to which the well was drilled?			
14	A.	Yes.			
15	Q	What was that depth?			
16	A.	The TD was 824.			
7	Q	Do you know the depths at which the water			
8	zones were encountered?				
9	A	Yes. The first zone was encountered at ap-			
20	proximately 80 f	eet and the only other zone of water en-			
21	countered was ap	proximately 500 feet.			
ž	Q .	Can you describe the water that was encountere			
3	in each of those	zones?			

Yes. If I may, if you'll accept this as

evidence, the reasOn I was tardy was that -- apparently these

13

14

15

16

17

18

19

20

21

22

23

24

25

geothermal vapors have affected my memory, and I went off and left a chemical analysis of the water sitting on the Xerox machine at Energy and Minerals Department, and so I called Los Alamos and talked to the chemist who was analyzing the water, and I have a very brief summary of the chemistry of the water, which if you will accept, I can provide you with more detailed a summary later, but the purpose of this exhibit is I think it will show that the water at 500 feet is substantially less saline and has less chemical content than the water at 80 feet and two other geothermal springs which are present in the area.

The chemist did a much more extensive survey. He sampled several springs in the area as well as the water from the well. But I think this will convey the essence of the difference, that the water at the surface is coming up at the surface in these springs is substantially more contaminated than the water that's coming up inside of the well.

So, if I may, I'd like to enter this as an exhibit.

MS. TESCHENDORF: I think, if the Commission please, I'll just mark this as OCD Exhibit Nine, and offer that in evidence.

MR. RAMEY: It will be accepted.

Q. Mr. Kleeman, do you have any knowledge as to

SALLY WALTON EIOY CERTIFIED SHORTHAND REPORT 1915 PRIZE BIRDON (1915) 471-5. Busta Pt., Now Maridon 1716

11

12

13

14

15

16

17

18

19

20

21

22

23

any pipe that was set?

- A. In terms of casing?
- 0 Uh-huh.
- A Yes.
- Q What casing was set, to your knowledge, and at what depth?
- A. We have a 7-inch casing that's been set to the depth of approximately 120 feet.
 - Q That's all, to your knowledge?
 - A. That is -- that's all the casing I bought.
- You have no knowledge of smaller 3-inch
 casing?
 - A. I'd like to clarify that matter.

The staff geologist commented that he saw a 3-inch casing leaning over to the side. This, in fact, is a 2-inch steel pipe, which has been welded onto a cap, which has been placed on top of the casing.

is, if I may explain briefly, we dug out a cellar to allow for a blowout preventer to be placed atop the casing during drilling, and still leave clearance for the rig. With the subsequent flow that comes up the outside of the casing, which has developed since drilling, I'm afraid that he couldn't see the 7-inch casing because his view was obscured by the water.

The purpose of the 2-inch pipe was to -- it does have a valve at the top of it -- and it was to reduce the -- stop the flow of water coming up from the top and be able to control it.

I have found out strictly secondhand information, apparently the hotshot driver that came to pick up the blowout preventer was fooling around with the 2-inch pipe and somehow loosened this cap from the casing. I can no longer thread the cap onto the casing and going to have to replace this device. But the casing is quite firm and if you would care to, I will explain exactly how it is set.

Q Thank you.

A. I think it should satisfy the Commission's interest in this matter.

We originally tried to set the casing at 80 feet and the witness from National Cement can give you the exact figures, but I know I bought an awful lot of cement from that gentleman, approximately 350 bags, and there was some discoloration at the top of the casing, indicating that concrete was washing back to the surface; however, when we subsequently tested the casing, it did not prove to be firm and since there was concern that we night hit a hot zone, we wanted to make sure that the casing would withstand any pressures and would accommodate the blowout preventer.

So we then pulled the casing out and redrilled

12

13

15

16

17

18

19

22

23

25

this time to 140 feet, approximately, and then at that point we -- this was with a 9-3/4 inch bit -- and we lowered the 7-inch casing back down to approximately 120 feet, pumped more concrete down the hole, again some discoloration was occurring at the surface, indicating the concrete was coming back up the outside of the casing.

We let it set for overnight, nearly 24 hours, when we came back we ran a pressure check on the casing, and it held 3500 pounds of pressure. We knew, based upon the cuttings we were getting, that we were well into the limestone, so we were satisfied that the casing would do the job.

Now at that time we didn't have a problem with the water flow on the outside of the casing. subsequent to that, while we were drilling, that apparently the vibrations set up from drilling shook the casing loose from whatever cement existed in the annulus between the alluvial material and the casing, and I think the combination of those vibrations and the pressure of the water coming up from 80 feet washed out whatever cement was there, and that's why we now have water flowing up the outside of the casing.

You said you bought 350 sacks. Is that how much you --

That was the first go-round.

SALLY WALTON BOY CENTIFIED SHORTHAND REPORT 308 0 Place Banda (505) 471-3-5 Santa Pe, New Mordon 5750 10

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q. That was the first go-round? How much cement totally have you bought and tried to use in this hole?

A I will, if you don't mind, defer to the records of the cementer. Enough for him to have a very nice vacation, I'm sure.

Well, let's see. I bought 350 bags of cement on the 4th of January, and then I bought another 80 bags on the 6th of January, and I think I bought another 20 on the 6th of January. That's a lot of cement.

Q It certainly is. Did you bring any records with you concerning this well, other than this water analysis

- A. Yes, I did.
- Q What records do you have?

A. Ok y. I have an, at this point, incomplete but very detailed assessment of the cuttings from the well and these are being analyzed, the cuttings are being analyzed at Los Alamos Scientific Laboratory. Their speed may not be everything I could wish, but their thoroughness is beyond question. And I will submit these for the inspection of the Commission. I think you'll find that, as we have stated, I have told you on previous occasions, that from ground level to 80 feet, approximately 30 feet, the material encountered is alluvial; that at about 80 feet we entered the limestone formation. This assessment stops at 460 feet.

SALLY WALTON BOY CERTIFIED SHORTHAMD REPORT 1980 Float Bluman (1985) 171-25 Smill Pt. Now Meadon 1716

11

16

17

19

21

22

23

24

25

Indications are that there's a transition zone between the limestone and Sandia conglomerate at somewhere around 500 feet, give or take 50 feet either direction.

For sure we know that the Precambrian granite begins at 790 feet.

- Q Would you have any objection to having that Xeroxed and introduced as an exhibit?
 - A None at all.
 - Q Okay, that will be Exhibit Ten.
 Do you have any other records with you?
- A. Yes, I do. I have a proposal which I have brought before the OCD on previous occasions and would at this time submit it formally.

It's a proposal to control -- titled,

Proposal to Control Waterflow at Jemez Springs Well No. 1,
in which we discuss the situation at the well and what we
propose to do with it, and if you like, I'll give a verbal
description at this time, if it's helpful.

- Q I think you should.
- A. All right. Maybe I can clear up something. The staff geologist has stated that he thought the well was in a condition of temporary abandonment and I think it's quite reasonable that he could come to that conclusion, but there are circumstances which also argue quite reasonably that we have not abandoned the well.

SALLY WALTON (30) CENTIFED SHONTIVAND REPORT 1951 Plant Bladen (191) 471-5 Renta Fe, New Mexico 571. 10

11

14

15

ÍĜ

18

19

20

22

23

24

25

A combination of weather and other factors.

Originally when the rig went off the well a crew from Los

Alamos was going to come in and lower tubing to do temperature gradient measurements, and this was the 15th of January;

they were going to come in in two days. Unfortunately,

this was the time that the snows hit, and which it seemed

about the time that Highway 4 would be cleared and you could

get a crew over from Los Alamos, another snowstorm would

come in.

And after three weeks of this, when the crew finally did get into the site and was able to start to lower some instruments down the hole, they discovered that bridging had occurred at about 140 feet.

With this situation it no longer seemed feasible to discuss trying to do the temperature gradient measurement and we were ready to abandon that aspect of the project.

And so what we have now is -- and let me add here, previously water coming up inside the casing was flowing at a rate of approximately 18 gallons per minute.

A geologist from Los Alamos and I were at the site last week and we estimate it to be at less than 5 gallons a minute at this time, coming up inside the casing.

The apparent bridging at the depth of approximately 140 feet had substantially decreased the flow

SALLY WALTON BOY ERTIFIED SHORTHAND REPORT 38 Plass Banca (505) 171-3 Santa Pr., New Motion 575:

12

13

15

17

20

21

22

24

25

of water coming up inside the casing.

We are proposing to test this bridge for its strength with river sand and gravel. If it appears to be quite solid, we would like to pump concrete down the inside of the casing and plug the hole back up to inside the casing from, say, around 130 feet. I have a schematic here that shows it. Back inside the casing to prevent any movement of water from the 500 foot zone up into the 30 foot zone; we would segregate the two aquifers.

After that plugging is completed, we then propose to open the casing, probably using what is known as a mills knife, or casing knife, to allow the water at 80 feet to enter the casing and reduce it, or possibly stop even altogether, the flow of water up the outside of the casing.

With this flow controlled on the inside we would then lower a treime pipe, or treime tube, wash it down the outside of the casing, and pump cement down the outside of the casing to prevent any future flow of water up the outside of the casing, and then cement the area at ground level around the casing. The main reason for this being spring occurrence in the area there is rather erratic and unpredictable, and if there are going to be any others popping up, I don't want them popping up near this well.

The alluvial material and the highly mineralized water act in such a way that you have artesian flow,

SALLY WALTON BO DESTINATE SHORTHAME HEFOR SECTION THANKS (1915) 471-1-SECTE FO, NOW MALLOS 575

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

which creates its own caprock by precipitating out minerals, and so then the water starts seeking new courses to come to the surface.

- Q Who prepared this proposal?
- A. Well, I prepared it with the advice of gecomes ogist from Los Alamos.
- Q You are not an engineer or geologist your-self?
- A. No, that's why I go to other people to assist in these things.
 - Q Is that all the records you brought, then?
- A. That is all I had to submit at this time, yes.
- Q I'll mark the proposal as our Exhibit Eleven.

 Have you prepared G-103 and the various

 other forms that Mr. Ulvog has stated are delinquent in this and necessary?
 - A. Right, I have.
- Q. Have you submitted those to the Division or would you like to do that at this time?
- A. I have -- I have tentatively prepared these forms based upon my conversations with the Division staff geologist and staff engineer. Let me state that part -- well, the responsibility is entirely mine and I'm not shirking it, but part of the problem with the tardiness of the 103

SALLY WALTON BOY(
ERTIFIED SHORTHAND REPORTE
BEFLEAR BLUCK (646) 471-24(
Settle Fe, New Mexico 51601

11

12

13

14

15

16

17

18

19

20

21

23

24

forms was a misunderstanding between myself and the staff geologist as to when these had to occur. I was under the impression that we filed them after the well was completed, and since the well obviously is not in a state of completion, I held up on filing them.

I subsequently learned that this was not the case and have prepared them and am prepared to submit them, but if the Commission does not mind waiting, I'd like to sit down with the staff geologist and engineer and go over them and make sure they're filled out properly.

Q I'm sure that would be acceptable.

MS. TESCHENDORF: I'll offer Exhibits Ten and Eleven, and I don't think I have anything further of this witness.

MR. RAMEY: Exhibits Ten and Eleven will be admitted.

CROSS EXAMINATION

BY MR. RAMEY:

Q Mr. Kleeman, you state that you have encountered water at 80 feet and at 500 feet in this well?

A That is correct, yes, sir.

And then in your proposed reworking you do not propose to do anything to the hole from where the bridge is at approximately 100 feet to the 800 plus feet that the

well is?

A. Well, no, sir. We did not encounter any other aquifer zones and feel that as long as we are segregating two zones in question that we would be preventing any contamination. In fact, if there were any contamination to occur, it would be the water below contaminated by the water atop.

- Q And both of these flows are artesian flows.
- A. Yes, sir.

Q Have you analyzed the -- what we've marked Exhibit Ten, have you analyzed the limestones and such that are in the deeper part of the hole to see if there's any porosity present in those?

A Well, that -- the indications are that the most significant porosities correspond with the -- with the presence of the aquifers. In terms of the analysis, it is still being conducted by the geologists and chemists at Los Alamos.

I would say that their impression seems to be there are no other significant zones of porosity.

Q Well, how could -- how could the Commission and Division be assured that if you -- if you seal off just the top part of the hole right below the 7-inch casing that the waters encountered at 500 feet would stay in the 500 foot zone?

SALLY WALTON BOY CERTWIN SHORTHAND REPORT 1888 PRING (664), 411-44 SARIN BE, NOW MOREOUS 1150

10

11

12

13

14

15

16

17

18

19

20

21

ĨŽ

23

12

13

14

15

16

17

18

19

20

21

44

23

Well, let me -- let me state that the water we encountered at 80 feet is apparently an aquifer which is at the top of the limestone formation. Indications are -this is a zone, a high faulted area, and indications are that this aquifer is coming up at some point north of the drill site in some proximity to Soda Dam and the Ranger Station along a fault from depth. The exact location is unknown, but flowing along the top of the limestone formation and finding an advantageous situation along the river there by the bathhouse for coming up.

The water at 500 feet, there is no other recorded incidence of water of this composition in the area, and it appears to be flowing through the limestone to some other point to the west and south of this well.

Now the fractures and faults in this area do continue in that direction and it probably comes up at some point to the west and south of the well.

Well, I'm looking at your water analysis here and there doesn't seem to be any correlation between any of the waters insofar as chemical analysis is concerned.

You have, say, for example, chlorides in the 80-foot water 705; and in the third one here you show 936; in the fourth one you show 653. Are you -- are you saying any of these waters are connected or the same water?

Well, the water in the springs and waters

24

SALLY WALTON BOY ENTIRE BHORTHAND REPORT 918Plan Blance (198) 471-3-Bazia Po, Now Mexico 8784 10

11

12

13

.14.

15

17

19

21

23

24

25

at 80 feet are much more mineralized than, for the most part, than the water is at 500 feet.

Q. Do you agree with Mr. -- with Mayor Armenta's statement that the springs are flow with young river and therefore -- I took it from his analysis, that the additional 1000 gallons an hour that are coming out of this well would not contaminate the river any more than it's naturally being contaminated?

A Yes, sir. I would appreciate the opportunity to comment on that for the record.

Prior to our drilling there was a well that had developed the springs that were behind the bathhouse, to the north of the bathhouse, and there was a cistern at this well that filled up and fed the bathhouse when it was used. There was a 3-inch pipe going from the cistern to the bathhouse; however, during periods in which the bathhouse was not using the water, there was a runoff pipe from the cistern. There was a rather large travertine deposit just to the west and south of this cistern, which shows that the runoff water, the water ran off that travertine deposit and down into the river, where all the other springs fed it.

Since we have drilled this well, we have diverted the flow of water that was going to this well that fed the bathhouse to the new geothermal well, so that any

13

14

15

17

19

20

21

ŽŽ

23

water that's coming up from the geothermal well is essentially the same water which was going into the bathhouse well and flowing into the river.

It's a point of diversion rather than an additional amount of water going into the river.

So you've just taken the bathhouse water that was going into the river and it's now coming up around your well and going into the river, and so the net effect is that there's no -- no further contamination of the river by your well?

Not to my knowledge. No, sir, there is not.

Have you seen Mr. Ulvog's Exhibit Five and Q. Eight?

The pictures?

Yes.

I haven't seen his pictures, but I'm quite familiar with the site.

Would you classify this as a hazard to any small children or maybe --

Well, I certainly wouldn't advise keeping it in that condition. I'm more concerned with somebody getting scalded than I am drowning, but I think as soon as we can get a permit to proceed with this matter, we would like to definitely fill it in.

SALLY WALTOIN BOY CERTIFIED SHORTHAND MEDON 1828 FAME Blanca (1915) 471-1. Samin Fe, New Hoxioo 471-1.

11

12

13

14

15

17

18

19

20

21

23

I think I can speak for the Mayor in saying we're not happy with the present situation and definitely intend to see it corrected.

Q Well, I would think you should have some kind of a fence around this installation, Mr. Kleeman.

The 2-inch pipe that was sticking straight up, which is now laying off to the side there, that was put in to, I suppose, seal off the bottom aquifer, to contain it.

A. Right.

Q And is that -- you say now that that is no longer serving that purpose?

A. No, it's -- because of the stripping of the threads in the cap, it's -- well, it reduces the flow somewhat but there's still water seeping out between the cap and the casing.

So that will have to be replaced.

MR. RAMEY: Do you want to ask some questions

CROSS EXAMINATION

BY MR. ARNOLD:

have mentioned this in your testimony, but I didn't hear you say how you did this sampling at the 30-foot and the 500-foot zones.

ALLY WALTON BOYD
INTERES SHORTLAND REPORTER
10 Plant Blades (16 t) 11 24 45
64515 Fe, New Mexico 87 6 11

1

6

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

A. Well, the water -- the water coming up from 80-feet was easy to sample. It was on the outside of the casing.

The water coming up from 500-feet, we pumped down the water in the hole so that water coming from 80 feet was below the top of the casing, and allowed the inside to flow for 20 minutes, which satisfied the geochemist and he then took samples of the water coming up the inside of the casing.

- Q You had the shallow water outside the casing and the deep water on the inside?
 - A. Yes, sir.
- Q Are you certain you didn't have any mixing along the way or --
- Oh, I know there was no mixing inside the casing. That's sealed off. The water at 80 feet is on top of the limestone and the casing is cemented to the limestone.

The only place it could have mixed is at one surface, and that's why we pumped the water level down below the top of the casing.

MR. ARNOLD: Okay, thank you,

RECROSS EXAMINATION

BY MR. RAMEY:

13

14

15

16

17

18

19

20

21

22

Let's go into the cementing on the 7-inch. You said at one time you tried to set the cement or set the casing at 80 feet?

Yes, sir.

And you cemented with several sacks of cement at that point and it did not -- you did not get a cement job.

Right; we were not satisfied with the cement job.

Q. And then when you set it at 120 feet, did you have -- did you have shutoff of the water from 80 feet when you finished cementing?

I do not recall any water from 80 feet coming up the outside of the casing at that time. ?

And how many sacks of cement did you use at that point?

Well, we used either 60 or 80, according to our witness from National Cement,

Well, maybe Mr. McAllister can answer that question a little better.

We did use -- I know we did pump some cement down the outside of the casing subsequent to that to make sure that it was -- it was sealed off, because we assumed that probably a good bit of the concrete was being washed out the aquifer at 80 feet, and weren't sure how reliable that cement job was. So we did pump some down from the top,

SALLY WALTON BOY ERFIPED SHORTHAND REPORT SACKE BINDS (COS) 411-24 BACKE FO. New Marico 313-3 as well.

2

7

10

11

12

13

14

15

16

21

22

23

24

25

Q. Cemented both from the bottom and at the top at that 120 feet, then. And subsequent drilling operations evidently jarred the upper cement loose.

A. That's what I have concluded.

MR. RAMEY: Any other questions of the wit-

ness?

MR. ULVOG: I have a couple I'd like to ask.

MR. RAMEY: Okay, Mr. Ulvog.

CROSS EXAMINATION

BY MR. ULYOG:

Q I believe in the proposal that was submitted here for this project, that prior to the drilling geologic mapping of the area, part of the on-going San Diego Canyon mapping program will be completed by a geologist from Los Alamos Scientific Laboratory. These maps will be necessary in locating the drilling site.

Was that mapping done?

A. Yes, sir.

Q So there are geologic maps, then, of the area.

A. Let me say that there are geologic maps and field notes supporting the conclusions of the geologist.

The final map has only completed ir terms of ready for pub-

lication to a point just, say, in proximity to Soda Dam. He does have his field notes and his own field sketching.

- What is the geologic formation that is the limestone in which you set the 7-inch casing? What's that formation, do you know?
 - I believe it's mostly Madera.
 - I see, and at the total depth?
 - Total depth is Precambrian granite.
- Now, in the cementing of this 7-inch casing, as I understand it, you pumped cement down inside the casing and then later you poured -- pumped some down on the outside?
 - That's correct.
- Where would that cement on the outside have been? I mean at what depth would that be that you cemented outside the casing?
- Well, our intention was for it to be from the top down to 80 feet.
- Don't you feel that the waters that were circulating might have washed that out?
- That was the reason we went back and took a shot from the top, was that even though we knew the casing was cemented in the -- into the limestone formation, having lost 350 bags of cement previously at that 80-foot zone, I was somewhat concerned that we might have lost additional

10

11

13

14

15

16

17

18

19

20

21

ŽŽ

23

24

SALLY WALTON BOY CERTWEED SHOWTHAND REPORT 1995 PEAR BEAGE (665) 471-74 Santa Pe, New Mixton 1955

19.

limestone -- or additional cement at that depth, even though, like I said, we had some discoloration coming to the top, we went back and pumped down the outside.

Q Well, now, I was just reviewing some of your drilling reports here, and I notice that there was quite a bit of material, weighted material, added to your mud, so you had -- I don't know what your density of your mud was, I don't see anything on there anywhere, but I notice quick gel, and so on, hulls occasionally were added, and so on. So you had weighted material in the hole. You had weighted drilling mud at the time that you went in and drilled inside the casing when you deepened the well?

A. I believe, let's check this, I believe that let's check the date on the -- on the mud. Okay, waiting for mud to be delivered on the 3rd of January. We are at a depth of 80 feet.

As I recall, I'm not sure this record reflects it, as I recall, we lost circulation somewhere in the proximity of that 80-foot zone. In other words at the top of the limestone in the alluvial material.

My memory is somewhat vague because it was at 4:00 o'clock in the morning and it was a rather tough day, but I had taken about an hour and a half nap and the driller came in and woke me up and said we have to buy \$2000 worth of mud, so I do remember that we put substantial

17

ŽŽ

23

20

25

quantities of mud and hulls and quick gel, probably whatever else was available at that time.

- Q Well, I'm wondering, you had a weighted mud column at any rate when you were drilling.
 - A. Right.
- Mud column, the hydrostatic pressure being exerted on the formation could have contained some fluids -- I'm talking now about below the casing -- below the casing when you were drilling? Isn't it conceivable that you could have had perosity zones either acting as seep zones or actually attempting to give up fluid but the weight of the mud column held it in, so you wouldn't know about other perosity zones above that 500-foot level?
- A. I would say that that would be entirely possible, except that we did not have any other problem with, as I recall, losing drilling fluids.
 - Q Uh-huh.
- A. By encountering some porosity zone where it made lateral movement, and secondly, from the time we stopped drilling until the discovery of the bridging, the flow of water didn't change, that flow from 500 feet stayed 18, approximately 18 gallons per minute until the time the bridging occurred, and which reduced it.
 - Q Oh, what date did drilling begin?

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 1958 Place Blacks (195) 471-34 Santa Pt., Novy Mexico 5750

12

13

14

15

16

17

19

21

ŽŽ

23

24

25

A. I believe it was on 3 January. The reports which you have, I believe, indicate it was 3 January.

- Q Well, of course, that's a newspaper article.
- A No, sir, I mean these reports.
- Q. January 3rd.
- A I believe so.
- And when you finished your drilling and left the location?
- A Again, I refer to these reports and I think the last date was 15 January.
- Q What effect would the -- after you had set and cemented your 7-inch and continued drilling to 800-some feet, what effect would the vibration and beating of the drill pipe on the side of tha- 7-inch have on the cement which, of course, it's only cemented near the bottom, right?
 - A. As a --
- Obviously it would have to be loose at least from, what, 80 feet where you tried to cement and couldn't?

 The pipe would have to be loose at least from there on up, right?
 - A Or there would be no flow.
- Q So you would have vibration caused by the drill pipe and so on hitting the side of that 7-inch, what do you suppose the effect of that would be where it is cemented? Couldn't it break it loose?

SALLY WALTON BOYD CERTIFIED SHORTHAND REPORTED 3055 Plaza Blassa (101) 411-446 Seats Fo, New Mordon 31501 2

3

7

8

9

10

11

12

13

14

15

îĜ

17

18

19

20

21

22

23

24

25

however, during the time while we were drilling, on a couple of different occasions, oh, like around from 400 to 430 feet, we stopped, did a pressure check, again it held 3500 pounds, and then after we encountered the water at 500 feet and at this point it's an unknown depth below 500 feet, we ran another pressure check of 3500 pounds and it did hold, so I do know that, because of our concern with high pressures, the cement was holding.

Q Uh-huh.

MR. ULVOG: I believe that's all the questions I have.

RECROSS EXAMINATION

BY MR. RAMEY:

Q Mr. Kleeman, you said that James Copeland was the project engineer.

A. Yes, sir.

Q. Was he advised or was he present at all during the drilling of the well?

A. Mr. Copeland's responsibilities and functions in this project in no way encompassed drilling operations.

His stated purpose in this project was to analyze whatever data we had in the post-drilling in terms of heat content of the fluids, volumes, chemistry, and what have you, for

SALLY WALTON BOY ERFERD SHORTHAND REPORT SECTION (S.S.) 411-34 SERIA PO., New Mixton STES

11

13

14

15

18

19

20

21

24

the potential use of this resource, to space heat the Village of Jemez Springs, so his knowledge of what occurred during drilling is strictly informal, that which I've passed on in our discussing the project and its incumbent headaches.

Q So when vu were having problems with cementing your 7-inch pipe, why, you -- who did you go to?

A Well, I had -- of course we had the crew from Stuart Brothers present which having before I ever contacted this firm I checked out their reputation and they were quite reputable. They have a great deal of drilling experience. They even drilled some geothermal test wells for Los Alamos Scientific Laboratories.

Given that background I had them there. We discussed the project before we started drilling, and so their expertise was at hand, and also there was a considerable amount of advice made available from Los Alamos.

Q. And how much have you spent of this project?
To date?

A. If it is permissible, I would prefer to defer on that question until such time as I could put together all the figures and there are some costs that are not -- I could only be very rough about.

Q Well, I read a second article in the paper that stated you drilled the well and when you ran out of money, why, you quit drilling. Is that true or --

A. Well, Mr. Chairman, some of the things I've read in the paper about this project are -- I find rather amazing.

That's not true. We -- we ran out of money more than once but managed to secure additional funding.

What really made me decide to stop drilling was that we were approaching the end of the period on this last increment. We got an additional \$3000 from the Energy and Minerals Department and then subsequent to that I received another \$3500 from Sunoco, and while we were starting to run short on that, I had found another source to sustain continued drilling, but my last Tricone rotary bit went for one hour and fifteen minutes and 5 feet, and I decided that there was no point buying bits. We had reached the Precambrian. We had learned a lot of significant information about the geology in the area. It appeared that the hottest producing zone was going to be at 80 feet and it would be pointless to continue drilling.

Q Well, do you have a -- do you have a money source for the proposed work that you intend to do now?

A. I believe so. I have not got in hand a detailed budget from the driller of what it would take to conduct this work, but, you know, my feeling is that it's going to be somewhere between \$1000 and \$3000, and if that's the case, I think we will be all right, but it's -- David

Stuart is in Texas and I've only talked to him about it on the telephone and we haven't had a chance to sit down for me to show him the proposal and to go over the exact cost of everything involved.

But based on my discussions with the people at Los Alamos, I think we'll be all right, based on this proposal.

Q. Okay. If this Commission directs you to repair this well or plug it, how much time is it going to take you to do the work?

A. Prior to drilling this well I would have been quite confident in answering that question. I have led to believe that we could complete it in two to two and a half days, provided that it doesn't snow and provided that everything goes according to plan.

Q Well, if we directed you to do this today you couldn't have it done by the weekend.

I'm not trying to criticize anybody, but we also are dealing with the State Engineer's Office and I have to clear what I do with them, and make sure that they're going to accept the proposals or the participation of all involved, and since the proposed driller is out of state -- he will be back in town on Monday -- I would prefer to wait until next week.

ÍÍ

Q Well, I really would tend to disagree with you. I don't -- I think if this Commission directed you to do something, I don't think you would have to clear it with the State Engineer's Office.

A Well, Mr. Chairman, I do not mean to imply that I have to clear the directions of the Commission with the State Engineer's Office, but I think there may be some question about the actions of the driller, between the driller and the State Engineer's Office. I do not feel privileged to comment on those, but I'm aware that they exist.

I seem to be caught in a double bind here.

MR. RAMEY: Any other questions of the witness? He may be excused.

MR. STUART: Mr. Ramey?

MR. RAMEY: Yes.

MR. STUART: My name is Steve Stuart. I'm from Stuart Drilling Company. I'm not contracting officer for the company and so -- and I was not subpoenaed to be here. I'm mainly here as a matter of interest to see what, if anything, our involvement is, but if there is anything I can answer, I will.

I want to be honest about what my limited knowledge is about the situation and don't want to over-represent it, but I want you to know that I'm here and I'll

12

13

14

15

16

17

18

19

20

21

22

23

24

25

be of what help I can.

MR. RAMEY: Thank you, Mr. Stuart.

Let's take about a fifteen minute recess.

(Theroupon a recess was

taken.)

MR. RAMEY: The hearing will come to order,

please.

Did we excuse you, Mr. Kleeman?

MR. KLEEMAN: I believe you did, sir.

MR. RAMEY: Okay.

MS. TESCHENDORF: I'd like to call Gary

McAllister.

GARY MCALLISTER

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MS. TESCHENDORF:

Q Would you please state your name and by whom you're employed?

- A. Gary McAllister, National Cement Corporation.
- And what is your position with that company?
- A. Station Manager and Service Foreman.
- Q What is the scope of your duties in that

ALLY WALTON BOY GRIPPED SHORTHAND REPORTE BEPARA BLADA (605) 471-244 Basta Pe, New Mexico (716)

11

12

13

14

15

16

18

19

20

21

23

24

25

position?

A. To cement all wells that we are called on to do work on.

in cementing?

A. I worked for Byron Jackson, Incorporated, for 8-1/2 years in Wyoming, which is one of the major cementing companies in the world, and I moved down here in 1975 to work for Fleet Cementers, and that company was bought out a year ago by National Supply Company.

MR. RAMEY: So you are a subsidiary of National Supply, National Cementers are a subsidiary of National Supply?

A. Yeah, Armco Steel, National Supply, yes, sir.

MR. RAMEY: Okay, thank you.

Q (Ms. Teschendorf continuing.) What records have you brought with you concerning this well?

A. The tickets that I used for each cement job.

Q Do you or your attorney have any objections to our copying those and introducing them as an exhibit?

A. No. ma'am.

MS. TESCHENDORF: I think we'll mark those as Exhibit 12 and I'll introduce them later.

Q Referring to those records, Mr. McAllister, will you please describe the cementing program, including the

ALLY WALTON BOYL

THERE SHORTHAND REPORTE

FIRST BRACE (845) AT1-246

MATE Fo. New Morro 57501

11

12

13

15

16

17

18

19

20

21

22

23

24

25

amounts of cement, the class of cement, what happened to it, and the whole sequence of events?

A. Yes, ma'am.

The first time they called me they had run 7-inch casing to 74 feet.

Q Who is "they"?

A. Stuart Brothers. And 9-3/4 hole they had drilled at that time because the 8-3/4 hole they couldn't get the pipe down.

I ran -- they wanted me to pump cement until we got it to the surface because they wanted a cement job, and the truck I took holds 350 sacks, and we emptied it.

They had circulation on the hole but it never did bring any cement back.

And after we got done, I displaced it down to 54 feet so they'd have cement in the casing to drill out, and we didn't get any cement back to the surface and they could move the pipe with the rig.

So they decided we didn't have a cement job and pulled the casing.

What date was this, do you know?

A. 4th of January. They released me and I went home and they called me back on the 6th and they had drilled to 140 feet, and they ran 115 foot of 7-inch casing and we cemented it with 60 sacks of cement, which would be over

13

14

12

15

18 19

17

21 22

23

20

100 percent excess for the hole. And we did not get any cement back to the surface on it.

So I ran my home into the hole 20 feet --15 feet, I think it was, and mixed 20 sacks, and we did get good cement back to the surface then. It fell about 2 feet, which was where the bottom of the -- the top of the casing was set underground, and they released me.

MR. RAMEY: This was on the outside --

A. Right.

MR. RAMEY: Between the hole and the pipe.

Right. And they released me and I left and they called me when I was about half way from Grants to Albuquerque going home, and the cement had fallen and they wanted to try to do it again.

I came back and put my hose in the hole again and we cemented it with 20 sacks and brought it back. and it was holding at the time, and they released us and shut the rig down, I believe, for 24 hours, because they'd been working for 3 or 4 days straight, and that's the last time I had anything to do with the well.

- Do you have any opinion as to what happened to this cement? That it didn't circulate back?
- It may have fallen down the hole like the first one did and created a channel, maybe, and eventually when they started drilling it broke loose, possibly.

13

15

15

17

18

19

20

21

22

23

24

25

That's all I would know.

Q. You've no other explanation for where that 350 sacks went?

I do not, except that we may have -- it may A. have went into that water zone that they encountered at 80 feet. That's where we think it went.

And Stuart Brothers Drilling hired your company to do the cementing?

- Yes, they called me.
- <u>ე</u>, So at this point, to your knowledge, there is no cement job in the well?
 - Not on top, no.
 - What do you --
- If they pressured up to 3500 when they got ready to drill the cement -- I left 20 feet of cement in the pipe when they shut down for 24 hours, and eventually it was there if they pressured up to 3500, which they said they did, there should be a cement job from 115 foot to 80 foot, anyway.
- May I look at those records you brought with you?
 - Yeah, there's two, three.
 - Okay.

MR. RAMEY: So you feel, Mr. McAllister, that the bottom of the 7-inch is cemented in at this time?

23

24

25

I feel it is, yes, sir. A.

What type of cement did you use on this well?

Class B.

Is this a heat resistant cement?

It's supposed to be at that temperature, yes.

Set up all right at 150 degrees?

Right.

MR. RAMEY: Do you have anything further,

Ms. Teschendorf?

MS. TESCHENDORF: I'd like to offer Exhibit 12 in evidence.

MR. RAMEY: Okay, it will be admitted.

MR. KELLY; Mr. Examiner, I'd just like to request, I think you were going to make copies and let us have the originals back.

MS. TESCHENDORF: Okay.

MR. RAMEY: Do you have anything further?

MS. TESCHENDORF: No, I have nothing further.

MR. RAMEY: Does anyone have any questions

of the witness? Mr. Nutter?

CROSS EXAMINATION

BY MR. NUTTER:

My name is Dan Nutter. I'm with the Oil Conservation Division.

ALLY WALTON BOYD

ENTIRED SHORTHAND REPORTER
STREAK BEADON (1983) 411-24461
SAREA Fe, New Mexico 81161

3

8

10

11

12

13

14

15

17

18

19

20

21

23

24

25

Apparently water is coming up around the outside of this casing. You probably heard that testimony this morning.

Do you have any suggestions as an experienced cementer as to how this water coming up outside the casing could be remedied?

A No, I don't, sir. We put 350 sacks in it, which would be approximately 1000 percent excess on the amount of pipe we have in the hole and couldn't touch it.

Q. So it is a common occurrence, is it not, that you have difficulty setting cement in flowing water?

A Sometimes, yes, sir.

Q Uh-huh. Are there any substitutes for cement that are effective in setting in flowing water conditions? Any types of plastic or anything like that?

A. I believe there is. My superior might know of some. I do not.

Q. Uh-huh.

A. In our company there isn't, that I know of.

So you don't have any recommendation, then, as to how the upper part of this casing could be cemented to adequately shut off that water flow?

A. Not other than running 1 or 2-inch pipe down it, like he suggested and tried to do it.

Q. Well, again we'd have the flowing water and

SALLY WALTON BOY CERTIFIED SHORTHAND REPORT 1916 Plant Elmon (11)5 / 411-2 Sente Pe, New Maxico 1116

. 12

13

14

15

16

17

18

19

20

21

22

23

24

25

difficulty in getting it to set, wouldn't we?

A. Yes, mixing as heavy a cement as we could, we could cement it and get it up to 16 to 17 pounds a gallon.

Q And then would that resist a flow of water of the volume that we've got in this well, do you think?

A. Yes, I killed it one -- I had resisted -- there's no pressure on it, that I know of.

It's not flowing hard enough to have any pressure behind it, from our wells that we have cemented up around Nose Rock for Phillips. They've got wells that flow 180 to 200 gallons a minute.

Q Artesian type wells and they cement against that flow?

A Yes, sir, kill them off.

Q With 16 or 17 pound cement?

A. 15 pound cement will kill them.

Q Okay, thank you, that's all.

MR. HAHN: There's several techniques that you could use.

MR. RAMEY: Would you identify yourself for the record, please?

MR. HAHN: Yes, sir, I'm Jamie Hahn with National Cement.

There are several techniques that could be used but it would be a trial and error thing of finding

5 6

ĝ

11

12

13

14

15

16

17

18

19

20

21

SALLY WALTON BOY! CERTIFIED SHORTHAND REPORTS 1995 FRANKE BROOM (545) 411-34 SHARS P., New Marking 313-31 whatever your hydrostatic pressure is would hold the water down and hold the cement in place, too.

If you make your cement too heavy it will force the water down and your cement will go to the water zone. I'm sure I'm not telling you anything.

But if you make it light enough where you do nothing but hold the water pressure down, it gives the cement an opportunity to hydrate, then in fact we probably could get a good cement job, you know, from 20 to 30 feet up. I don't believe there's any way we can go down to the top of the water zone again, on account of cement.

The primary cementing job, there are a lot of techniques you could have used which would have got you a good primary cementing job of your surface casing, but right now there's nothing you can do about it.

MR. NUTTER: Thank you.

MR. RAMEY: Any other questions of the witness? He may be excused.

Do you have anything further, Ms. Teschendorf'
MS. TESCHENDORF: I don't believe so.

MR. RAMEY: Anyone present have anything to add to this case? Any statements?

Yes, sir, Mayor Armenta.

MR. ARMENTA: I'd like to say something.
On behalf of the Village there's been a lot

23

24

3

6

5

8

10

7

11 12

14

15

16

13

17

18

19

<u>20</u> 21

-22-23

University.

24 25 of money and time spent on this project.

The nomenclature of the original proposal probably should have been changed to maybe a resource well.

Everything was -- this is a fairly new thing, I think, around the state. I can assure you that no one involved in this project maliciously disregarded any regulations, and not to comply with any regulations set forth by this Commission.

I would not like to see that well plugged up. I'm sure there are problems with it now as far as the flow.

If it is, if you order us to plug it up, I feel it would be a waste and it would slow down energy projects that are taking place in the state.

That's all.

MR. RAMEY: Thank you, Mr. Mayor, and I want to assure you that the Commission is certainly interested in seeing geothermal development and if this well can be utilized as a possible geothermal project for space heating, why, we certainly are sympathetic toward that end and we'll do everything that we can to see that the well is utilized.

MR. ARMENTA: Thank you.

DR. DAW: I'm Harold Daw, New Mexico State

MR. RAMEY: Yes, Dr. Daw.

DR. DAW: And the Energy Institute has the

WALTON BOYD
HOTHAND REPORTER
Massa (808) 471-2463
Now Mastro 87801

responsibility for the development of geothermal in the State from a research standpoint, and we would sure like to see if possible for that to be preserved as a viable geothermal program.

MR. RAMEY: Thank you, Dr. Daw.

Anything further?

Mr. Kleeman, we don't prescribe to tell you how to do your well, how to try to repair your well. We are going to tell you to repair it as soon as possible.

We will approve the plugging back operations that you oroposed in your schematic and your proposal, which is marked as Exhibit Eleven. That is as to testing the bridge and we do request that you get as much cement as possible on that plug and, if possible, put in some in the open hole and some in the pipe, and if you could bring it up to the base of your perforations, why, that would be ideal.

As to repairing the outside of the hole, now, that is your problem. We're not going to try to attempt to tell you how. We may have the expertise but we wouldn't want to bet on it, so we will direct you to do this just as soon as possible and there will be an order probably issued early next week that will state that you do this, and we will probably put a time limitation on it, and I would suggest that you do it as soon as possible and probably the Commission

4

5

7

8

9

11

12

13

15

17

16

18 19

20

adjourned.

22

23

25

would give you something like ten days or two-week period to get the work done.

So you can make your plans accordingly.

MR. KLEEMAN: Yes, sir.

MR. RAMEY: Mr. Ulvog?

MR. ULVOG: Yes, I would like to request that some sort of a protective device be put around this well in the meantime because there's no question about it but it would be a hazard to small children, animals, and so on.

MR. KLEEMAN: May I suggest, Mr. Chairman, that I am going to go back to the site this weekend and I'd like to put back the fence that we had there before and then next week we can complete operations on the well.

MR. RAMEY: Well, Mr. Kleeman, in looking at Mr. Ulvog's Exhibit Five where the fence was in place.

I wouldn't consider that a child-proof fence. I would suggest you put something better than that in.

MR. KLEEMAN: All right.

MR. RAMEY: And with that, the hearing is

(Hearing concluded.)

SALLY WALTON! I CENTIFIED SHORTHAND RE 1988 Planta Blanca (195;) 4 Santa Fo, New Moximo

REPORTER'S CERTIFICATE

I, SALLY W. BOYD, a Court Reporter, DO HEREBY

CERTIFY that the foregoing and attached Transcript of

Hearing before the Oil Conservation Commission, was reported

by me; that the said transcript is a full, true, and correct

record of the hearing, prepared by me to the best of my

ability, knowledge, and skill, from my notes taken at the

time of the hearing.

Sally W. Boyd CSR

SALLY WALTON BOY REMPED SHORTHAND REPORT BEPTILL BENDA (1841) 471-34 BERTA FS, NOW MAXIOS 8750

Senta Fo, Now h

	NO, OF COMES RECE	EIVED	1	NEV	MEXICO OIL CONSE	RVATION CO	MMISSION			and the second second	
	DISTRIBUTION			,	P. O. Box 2088,	Santa Fe 8750	1				
	File N.M.B.M. U.S.G.S.	/		APPI.	ICATION FOR PERM	MIT TO DRIL	L, DEEPEN	l,	5, Indicate	Typi fi Ligge Property Fr	εε []
	Operator	1			JG BACKGEOTHE						
	Land Office	L	1						.N.	A.	7777
						•					
	1a. Type of Work	Drill (Decpen []	Plug (****	N.,		7777
2	b. Type of Well		mal Produce np Thermal		ļ.	Temp Observanjection/Dispo	osai 🖸			Lease	
	2. Name of Operator	Eddie A	Armenta						9. Well No.	1	
:	3. Address of Operator Villag	e of Je	emez Spri	ings, N	ew Mexico				10. Field an UND	d Pool, or Wildcat	
:	4. Location of Well	UNIT LET	TERA	LOCAT	red 90 West	of Town	Hall	LINE			
1	AND FE	ET FROM	THE	LINE OF	SEC. TWP.	RGE.		NWPM	12. County Sandov		
						19. Proposed 1 750	-	9A. Formatio adera Li		20. Rotary or C.T. Rotary	77777
	21. Elevations (Show) 6275	viether DF	, RT, etc.) G.L.	21A. Kind Ex	& Status Plug. Bond xempt	218. Drilling C Stuart	Contractor Bros./Gra	ants, NM	22. Appro-	k. Date Work will st nuary 1979	art
	resident de la companya de la compan			P	ROPOSED CASING AN	ND CEMENT P	ROGRAM				
	SIZE OF HOLE		SIZE OF C		WEIGHT PER FOOT	SETTING		SACKS OF	CEMENT	EST. TOP	
- I	8 3/4 in. 5 in.		7 in.	<u>u.u.</u>	14 lbs./ft.	100	ft.	30		circ.	
					 			 			
		-	•				-	-			
							·	ODE TI	JE.		
				·		OH.	COD 121	AUGER OF	COMMIS	SION	
	:			. •			646	/	: No. <u>/</u>	, 3	•
	•		:	a .		La D	175. 040 1104 - K.L. 159 Dalo	OC	e 19		٠
		PERMIT	L VALID FO	3/2	8/29	Hea	ring Dulo i	2-0	3-11		
		UNLES	S DRILLIN	IG UNDE	RWAY			.			
	N ABOVE SPACE DES			GRAM: If	proposal is to deepen	or plug back, gi	ve data on pr	esent produc	tive zone and	proposed new pro-	du ctive
-	hereby certify that the			e and comp	plete to the best of my	knowledge and	belief.	· · · · · · · · · · · · · · · · · · ·			
:	igned	tinge	ent	5	Title Mayor, Vi	llage of	Jemez Sp	rings_D	., 22 Dec	ember 1978	
		space for S	ate Use)	 			rriš		19	128/26	•
į.	CONDITIONS OF PPR	OVAL, IF	ANY:	<u> </u>		LS NUT ENGINE	7	D <i>i</i>	ATE	120/10	
· ·	Commission of the South State of the South	and the second	e na se se e e	, we e	en e	an in the second	et e e e e e		and the second	The state of the s	-

NEW MEXICO DIE CONSERVATION COMMISSION P. O. 160X 2088 SANTA FE - 87501 GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

the control of the co	UNDEST. Olored pencil or hachine line each and identify the cated to the well, have to solidation which have actually been a linterests have been a	the interests of all owners been consolidated (Use reverse side of this feonsolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the infont contained herein is true and complete.
90 feet from the west of town hall and feet from the Board Limes tone 1. Outline the acreage dedicated to the subject well by condition and royalty). 3. If more than one lease of different ownersip is dedicted to that one lease of different ownersip is dedicted communitization, unitization, force-pooling, etc? 1. Yes Do If answer is "yes," type of consumers is "no." list the owners and tract descriptions necessary.) No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit,	UNDEST. olored pencil or hachine line each and identify the cated to the well, have to solidation	marks on the plat below. The ownership thereof (both as to working in the interests of all owners been consolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the infont contained herein is true and complete.
1. Outline the acreage dedicated to the subject well by communitization, unitization, force-pooling, etc? 1. The subject well by communitization one lease of different ownersip is dedicated to the well, outlined to that one lease of different ownersip is dedicated to the well, outlined to that one lease of different ownersip is dedicated to the well. 1. If more than one lease of different ownersip is dedicated to the well, outlined to the well of the communitization, unitization, force-pooling, etc.? 1. Yes No If answer is "yes," type of consumers and tract descriptions necessary.) No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit,	UNDEST. olored pencil or hachine line each and identify the cated to the well, have to solidation	marks on the plat below. The ownership thereof (both as to working in the interests of all owners been consolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the infont contained herein is true and complete.
1. Outline the acreage dedicated to the subject well by each of the more than one lease is dedicated to the well, outliand royalty). 3. If more than one lease of different ownersip is dedic communitization, unitization, force-pooling, etc? 1. Yes 1. No 1. If answer is "yes," type of consumers is "no." list the owners and tract descriptions necessary.) No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit,	olored pencil or hachine line each and identify the cated to the well, have to solidation— which have actually been a climinating such interest lett Site	marks on the plat below. The ownership thereof (both as to working in the interests of all owners been consolidated that consolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the information of the contained herein is true and complete.
2. If more than one lease is dedicated to the well, outland royalty). 3. If more than one lease of different ownersip is dediction unitization, unitization, force-pooling, etc? [] Yes [] No If answer is "yes," type of consumers is "no," list the owners and tract descriptions necessary.) No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit,	cated to the well, have to solidation— which have actually bee climinating such interest SPRIJE	the interests of all owners been consolidated (Use reverse side of this feonsolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the infont contained herein is true and complete.
and royalty). 3. If more than one lease of different ownersip is dediction communitization, unitization, force-pooling, etc? [] Yes [] No If answer is "yes," type of consumers and tract descriptions necessary.) No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit,	cated to the well, have to solidation	consolidated. (Use reverse side of this leconsolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the infontecontained herein is true and complete.
communitization, unitization, force-pooling, etc? Yes No If answer is "yes," type of consultranswer is "no."-list the owners and tract descriptions necessary.) No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit,	which have actually been continuously been conti	consolidated. (Use reverse side of this is consolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the information contained herein is true and complete.
If answer is "no," list the owners and tract descriptions necessary.) No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit,	which have actually been continuously been continuously been continuously by the been continuously by the been continuously by the beautiful b	consolidated. (Use reverse side of this tensolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the information contained herein is true and complete.
necessary.) No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit, D C	l interests have been eliminating such interest	consolidated (by communitization, unities, has been approved by the Commission. CERTIFICATION I hereby certify that the information contained herein is true and complete.
No allowable will be assigned to the well until all forced-pooling, or otherwise) or until a non-standard unit, D C	eliminating such interest HELL SITE SPRING	CERTIFICATION I hereby certify that the infant contained herein is true and complete
forced-pooling, or otherwise) or until a non-standard unit,	eliminating such interest HELL SITE SPRING	CERTIFICATION I hereby certify that the infant contained herein is true and complete
	SPRING 1	CERTIFICATION I hereby certify that the infont contained herein is true and complete.
		i hereby certify that the infon- contained herein is true and compli
	House	contained herein is true and comple
		the book of my hoppidades and taken
		the best of my knowledge and believe
	1/1/	Name
E F	-G//	H Tom Kleeman
1		Position Consultant
	//:	Company
		Coupland, Moran & A
	[21 December 1978
L! K	1 l	I hereby certify that the well loc
// X/	1	shown on this plat was plotted from
	i	notes of actual surveys made by n under my supervision, and that the
	1	is true and correct to the best of
	1	knowledge and ballef.
	0,	- -
M ₃ / N	1	
	1	Date Surveyed
	1	Registered Professional Engineer
	1	and/or Land Surveyor
med	- I I	Certificate No.

Mr. Joe D. Ramey, Director
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
Old Santa Fe Trail
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

In lieu of posting a bond for a permit to drill a geothermal observation well, I am writing to assure you that The Village of Jemez Springs guarantees that the above mentioned well will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in The Rules and Regulations. We look forward to working with the Division in this endeavor.

Sincerely,

Eddie Armenta, Mayor

The Village of Jemez Springs, N.M.

DEFORE THE OIL COMMISSION

Sania Fo, New Mexico

Case No. 646/ Endalbit No. 2

Submitted by oce

Hearing Date 2-23-79

JEMEZ No 1 A-26-18N-RE, Sandoval County

III. PROPOSED WORK EFFORT

Heading Date 2 23-79
s using State funds for results. These wells will

The Village of Jemez Springs, New Mexico proposes using State funds for drilling geothermal test wells and assessing the results. These wells will make it possible to ascertain the deliverable quantities of geothermal fluids (flow rates, their temperatures and chemical makeup). This data will lend more precision to determining the engineering and economic feasibility of utilizing the resource.

The work plan, shown on the following chart, calls for execution of assignments in the following order:

- 1. Prior to drilling, geologic mapping of the area, part of the ongoing San Diego Canyon mapping program, will be completed by geologists from Los Alamos Scientific Laboratories. These maps will be necessary in locating the drilling site.
- 2. Upon the completion of the mapping, expected in early August, personnel from L.A.S.L. will lend expertise in locating an optimal drilling site along a controlling fault. Given the extant information on geothermal and hydrological phenomena in the area, the locations of hot springs and wells and the data yielded from mapping, it should be possible to locate a favorable test site:
- 3. Upon locating a test site that meets with the satisfaction of the project geologist and the principal investigator, the project director will secure the services of a drilling subcontractor.
- 4. Drilling will be carried out under the supervision and with the advise of the project geologist. Two test wells, of a diameter of 4" 6", to be determined upon completion of mapping, will be drilled into the limestone formation. Well depths are not expected to go below 750 Ft. Fluids brought to the surface will be held during the test and subsequently reinjected into the formation.
- 5. After the well is completed the project geologist will inform the project director and project engineer of the relevent engineering data, e.g. temperatures, flow rates (determined by draw down tests) etc. The project geologist will analyze the well data for its geologic significance regarding the geothermal resource. Upon the completion of this effort, he will present the project director with a short report on his findings which will be included in the final project report.
- 6. The project engineer will use the findings of the geologists to determine engineering and, with the participation of the project director, economic reasonity of resource utilization. At the end of this assessment the project engineer will present his findings to the project director,
- 7. The project director will then write a final report based on the findings of the participants. This final report is expected to include a clear, precise and acceptable determination of the efficacy of the utilization of geothermal resources utilization in the Village of Jemez Springs, New Mexico. Afthe The report is 155 very pipes will be is at to delive her water from The well to The Tiwn Hall to be used for space hearing.

Case 11: (440) 115. 4

Submitted by 000

Hearing Date 2-23-79

Project Heating Up Energy Prospects

ACRUAGOR ROGHWAR Lingar, rainar, of rain

At Jemez Springs

By TOMAS O. MARTINEZ

Assistant State Editor

JEMEZ SPRINGS — The Village of Jemez Springs may become energy self-sufficient if a test project, currently under way, shows that geothermal energy can provide the village with heat and electricity.

The Village of Jernez Springs, located about 50 miles northwest of Albuquerque, is drilling a test well on village property to locate underground volcanic-heated water to use as a power source.

The drilling, project management, and feasibility studies are being funded through a \$32,000 grant from the New Mexico Department of Energy.

Jemez Springs Mayor Eddie Armenta, 39, said he hopes the well will produce water heated at 250 degrees Fahrenheit. Hot water or steam from that well would be used to heat homes within the village and generate electricity.

"It's a tremendous project. If it works, we could become energy self-sufficient. Residents would be able to cut their utility costs by about 50 percent. I liope it works. We all do," Armenta, a retired Treasury Department agent and former Albuquerque police officer, said.

The well is being dug on village property behind the Jemez Springs City Hall. The project is the brain child of Project Engineer Tom Klee-

Armenta said Kleeman visited Jemez Springs in late 1977 to bathe in the hot springs near the village.

"He (Kleeman) came up with the idea," Armenta said. "The village hired him to study the possibility of such a project, and to write a proposal to the federal government for funding.

"The federal government (Department of Energy) turned down our \$4 million proposal. They said they could not fund exploratory projects. In July 1978 we submitted a proposal to the state. It was approved in late Novem-

ber. If the well produces water at 250 degrees, we will resubmit our proposal to the federal government for construction of a generating plant," Armenta said.

Kleeman said, "If the test is a success, it will be a tremendous event for New Mexico."

Kleeman, who represents Copeland-Moran Associates of Albuquerque, said drilling began Wednesday.

The drilling is being done by Stuart Brother's Drilling Co. of Grants. The firm has drilled similar wells for Los Alamos Scientific Labs in the Valle Grande area between Los Alamos and Jemez Springs.

Two Los Alamos scientists, Bill Laughlin and Francis West of LASL's Georthermal Groups, were at the drilling site Thursday to provide technical advice. West said the hot water the village is trying to locate escapes through faults from the Valle Grande, the site of a gigantic extinct volcano:

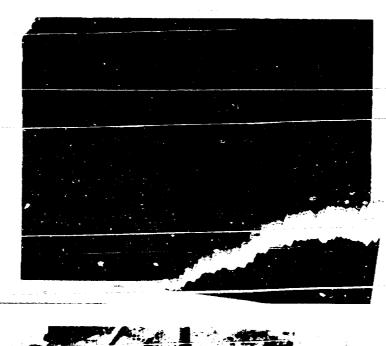
Laughlin said the volcano last erupted about 40,000 years ago and hot rocks heat the water in the calderon. That water escapes through faults, and one of those faults runs through the area where the well is being dug.

If the drilling project is a success, Armeta said that included in the second proposal to the U.S. Department of Energy will be a request to fund construction of village greenhouses.

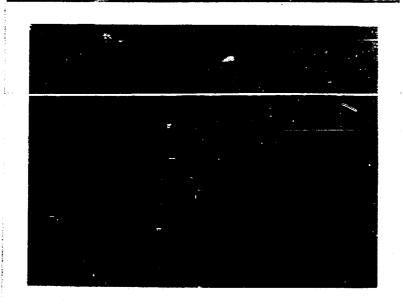
Armenta said village greenhouses would represent a cooperative village effort to provide residents with vegetables and other food stuffs.

"It's a tremendous opportunity for the Village of Jemez Springs. If the well is a success, we hope the federal government will fund this as a pilot project," Armenta said.

Kleeman anticipates the possibility of geothermal energy for Jemez Springs could become a reality by late 1980. That is, if the well comes through, and the federal government funds the project.









MUNIARIA NON MERKONA

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

February 1, 1979

POST CYFICE BOX 2008 STATE LAND OFFICE BUILDING SANTA FF, NEW MEXICO 87501 15051 837-8454



HCK FRANKLE SLOWING

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

--

STATE LAND OFFICE BUILDING
RANGE OF ANY STATE AND STATE

January 30, 1979

Mr. Eddie Armenta Mayor of Jemez Springs Village P. O. Bor 87 Jemez Springs, New Mexico 87025

Tou are the recorded operator of a geothermal temperature observation well located in Unit A of Section 28, Township 18 North, Range 2 East, NNPM, Sandoval County, New Mexico. According to the permit granted by this office the total depth would not exceed seven hundred fifty feet (750'), would have seven inch (7") casing set at one hundred feet (100') and cemented into the full length of the hole (cemented circulated). Purthermore, your letter to this agency requesting a waiver of bonding requirements states that your well will be plugged and the location cleaned in accord with State regulations.

An inspection of the site on January 29th last, indicates that your project is in violation of State Regulations in several respects. Please refer to the rules and make such changes as are necessary to be in compliance. Of primary importance is the immediate shutting off of the water that is escaping to the surface.

Kindly submit your plan for remedial action and/or plugging for abandonment in time for same to be witnessed by a representative of this agency.

Yours truly,

CARL ULVOG Senior Geologist

CU/og

Nayor Eddie Armenta Village of Jemez Springs Jemez, New Mexico

Subject:

Jemez Lease Well No. 1 Unit A, Section 26, Township 18 North, Range 2 East, NMPM, Sandoval County,

New Mexico

Dear Sir:

The subject well appears to have been drilled. It was permitted as a "Temperature Observation" well by this agency on December 28, 1978. To date, no reports or other information concerning that operation have been received in this office.

Rindly refer to the New Mexico State Regulations and supply all of the now-delinquent data. Also, because this agency was not notified prior to the setting and/or cementing of any casing in the subject-well, please submit affidavits from the companies or individuals employed for such operations.

Yours truly,

Carl ULVOG Senior Geologist

CU/og cc: Lynn Teschendorf Oil Conservation Division General Counsel

1	ORS THE MANGE COMMISSION	ON
Case 1 (04/0)	1 6	
Submitted	Oce	}.
Hearing Date	2-23-79	- 77

B. Form 6-103 as a Sulsequent Report

Form C-103 as a subsequent report of operations shall be filed in accordance with the section of this rule applicable to the particular operation being reported.

Form G-103 is to be used in reporting such completed operations as:

- (1) Commencement of drilling operations
- (2- Casing and cement lest
- (3) Altering a well's casing installation
- (4) Temporary abandonment
- (5) Plugging and Abandonment
- . (6) Plugging back or deepening
- (7) Remedial work
- (8) Change in ownership of a drilling well
- (9) Such other operations which affect the original status of the well but which are not specifically covered herein.
- C. Filing Form C-103 as a Subsequent Report

Information to be entered on Form G-103, Subsequent Report, for a particular operation is so follows:

(1) Report of Commencement of Drilling Operations

Within ten days following the commencement of drilling operations, the operator of the well shall file a report thereof on Form C-103 in DUPLICATE. Such report shall indicate the hour and the date the well was spudded.

D-2

(2) Report of Results of Test of Casing and Coment Job; Report of Casing Alteration

A report of casing and cement test shall be filed by the operator of the well within ten days following the setting of each string of casing or liner. Said report shall be filed in DUPLICATE on Form G-103 and shall present a detailed description of the test method employed and the results obtained by such test, and any other pertinent information required by Rule 108 B(5). The report shall also indicate the top of the cement and the means by which such top was determined. It shall also indicate any changes from the casing program previously authorized for the well.

(3) Report of Temporary Abandonment

A report of temporary abandonment of a well shall be filed by the operator of the well within ten days following completion of the work. The report shall be filed in DUPLICATE and shall present a detailed account of the work done on the well, including location and type of plugs used, if any, type and status of surface and downhole equipment, and other pertinent information relative to the overall status of the well.

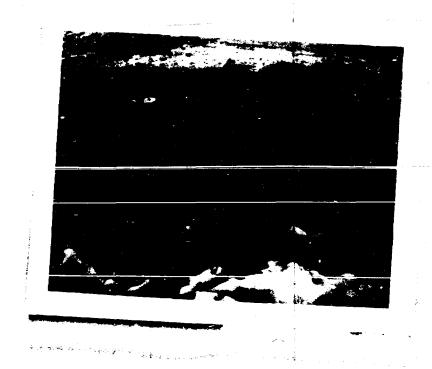
(4) Report on Plugging of Well

A report of plugging operations shall be filed by the operator of the well within 30 days following completion of plugging operations on any well. Said report shall be filed in TRIPLICATE on Form G-103 and shall include the date the piugging operations were begun and the date the work was completed, a detailed account of the manner in which the work was performed including the depths and lengths of the various plugs set, the nature and quantities of materials employed in the plugging operations including the weight of the mud used, the size and depth of all casing left in the hole, and any other pertinent information.

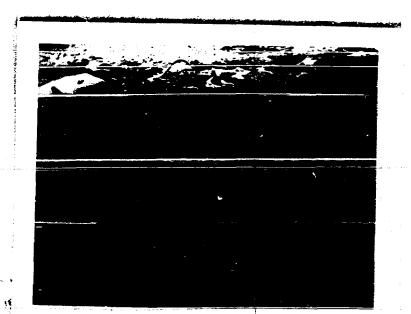
(See Rules 301-303 regarding plugging operations.)

Capital Offo | 2-23-79

P-3







2/21/79 James Spr. Seathermal Will A-26-18N-2E

			ma	4/	ζ, τ	e.	The same of the sa				The state of the s				Management of the state of the				i				-		was to a supplied to the suppl	American Company of the Company of t		Marine Marine Marine and Marine	-	
					•	A/		Fe		m	n	Ça	/	Ng		Va	K	4		HC.	وم	S	04	CI	F	SI	Oz		Ph.	genn fra s namena alaksa
	.	F	}			.01	3	0.3				122		0															6.6	- A
E- 1	00	FT C				518		. 3 -	<i>4</i>	-							1					<u> </u> 								
	∂ ~•	eria.	e							•0		12()	7.3	,	/8:	2	9.9	2.2	7 4	777	ک	8	24	3:	3. 30	2	4. 2	6.	69
	10n 72				• (16	-	./5	_	-/1		114		4.	48	6	/2	70.	3	8.4	6 7	14	43.	2 9	36	50	5	\$2,	g 6.	.66
		_ ,	a.T					2 .														A Parana and the state of the s								
	50	°c			• •	/3		6		. 19		12%		?:	- 0	4	194	57	.8	6.6	6	708	4	Øc G	65	-3	3.	76	72	6.59
																	REF	ORE	TL	E										1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
												e Alexander E	-		OIL Case	1	SER	o, N	DM (MO lexic		-								
					 [%		7								ł	ng D			<u>C</u> ,	1										
				:		2012 - 2012 -		2.							ve ve ve €							All superiors	And the second s							

Notes on cuttings from Jemez Springs well. Andi Kron REFORE THE OIL CONSTRYNTION OF MMISSION 2/22/19 Sarto C., ... Burneo Care Plo. UYCO 10 Submitted by OCC. Hearing Date_ 1471 C-111 Howard, Sundan, sweet, gety file, to 10-201; Allevising Gta, samuchen, Ale ite 7.36 21 -40: Mucany oty, callity, His hotele, Maring 4.50; Alleran, fety, calette, the, vicences, serede reter; Mayum band, au grz, hoff, adete 65-70; Millionen largely wieanes beselt 1 72 50 ? linestone; w/some buscuit + Hore 1-31-79 12-40 Centishington closes

light

light

lack shall shore

lack the shore

lack shall shore

lack the shore 100-110; Municy limestone - pay slevers it

Mainly light only finear limestone miner imparitles of Aboy basalt, tuff, 120-130 Lineston; mainly light offey, fire micritic 130-140 Limestone; light grey slivers, Whitish powdery is.; Calcite, miner red sandstone, miner giz, + tuff +basair Limestone - light grey, med. gray w/ black spots, 140-150 150-160 Limestone - light + med. gray Limestone: dom. medgray, blocky; Some light gray slivers, (marin). 160-170 Limistone - whitish gray w/ ting black inclusions () (spets). 170-180 180-190 Linestone - med gray w/small black grains (bictite?) v. sneg. 190-200 Limestone (Same as above) 200-20 Kinestene: med. gray + lighter gray, rishing of Hack June

Collete of the work of the collection of the col

210-220 himestone - med das x gray, v. sine grained 220-230 Limestone (saine as above) 230 240 Linestone - med - light gray, fine grained 240-250 Linestone-light gray micritic of and v. fine grained . Roth w/ miner plack mineral 3,2005. 250-260 Limestone: mainly light gray vichite; lew pieces w/ minor black mineral 3,000s; minor pyrite 260-270 Limestone; homogeneous light angul spay meritic; fewpieces white 1.5. 270-280 Limistone - medigray, b. time grained to micritic 180-290 Limestones: white light gray, 1914d.
gray brackiesed, Some grains
yellow stained Livestone; light group merite, crimaid stems, fusitionals Transpains-v. few + localiz 270.300 300 310 Limestone; meenty whites () Chie works for dates gray prices;

d. white swell 1.6. w/ bester 4
microcline (?). 310-320 Limestone; mainly white, erystalline, pure; \$ 2/9/79 320-330 / White clean crystalline (micrite?) Thildy, shally, selly linestone time sand. (a) Sandy Unieston w/ birtete & microcline? 30% (+); Crincid stem in C. ranging in colors from mark to Some wate, sanay lis. w/ Bichie white crip talline (is. (A) and

(pised line said) investine

A. White, clian, crystalline

6. light grey, microcriptalline (micritic?)

C. dark grey - brown muddy, sitty (poss. Line sand) limistione

d. white Sandy l.h. w/ brother 4
microcline (?).

© ©

0

a **e**

310-320 Limestone; mainly white, crystalline, pure;

\$ 2/9/79

1/21 1. 2000 in

2-12-79 340-350 (Gark grey maicrocrystalline lemestone 5.7) dark grey muddif limestine Substitution Sansy

Swhite-gray pictute limestone

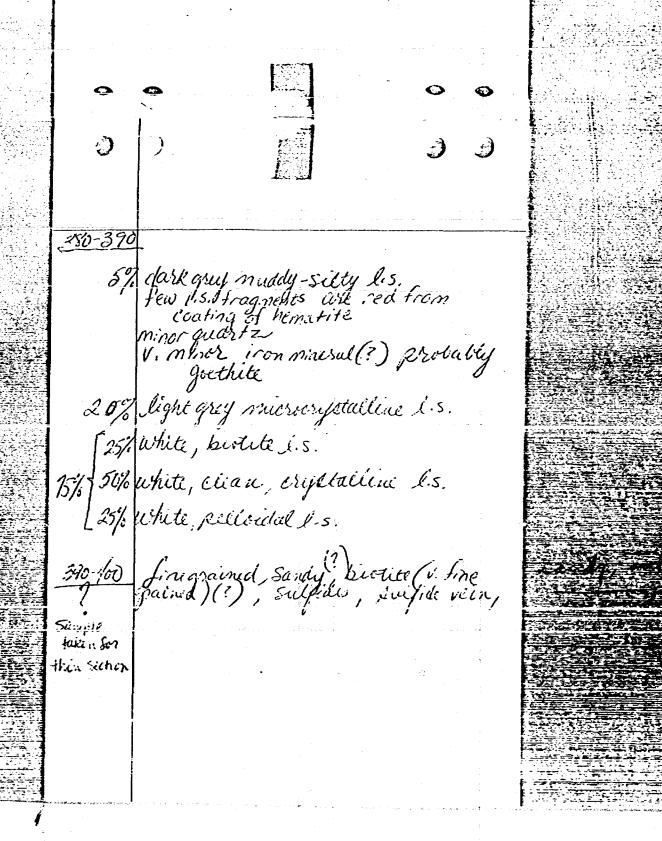
White clear crystalline l.s.

I large fragment of pelloidal 1.s. 350-360 2-2mm pice of pipite - criptals are small Aandy histite l.s. (whiteh)
white clean crystalline l.s.
1-chiere white powdery opaque
light grey microcrystalle calcula dark grey - purple incidely k.s. dark ligher Sulty L.s. in sample 200-370 Size of rock fragment considerally swaller than average (majortly) are 1-2 mm) sample The quartz - With inclusions of brotote(?)

Limiten sound georg (gellere

Cities; mostly colored

light grey microcriptalline l.s. white Elean creptalline l.s. white-grey birties l.s. 90% 1 Stake (5 mm) goethite (?) 2 pieces candstone (3 mm) (red) 1 piece (2 mm) pyrite Many Gragments Show slight fing stain on fortion of Surjuce from from 50% Brogments 1-2 mm (unknown mine) 370-380 white crystalline, clean (.5. (some light grey microcreptalline l.S.
physics white chalky calcite
5% clear glasts
principle white occite \$5. 95% 5% dark greef limestone! some muddy 1. flake geething (2) fao som lie pueces havait



400-410 Sample take a der Either: 1) volcame dike w/ aplitic Min Section 2) luge bodder of fine grained Proximprian rock We prefer interpretation in 1) but are getting some samples proposed to butter study. 50% limestine 50% of shift in too-410 ft by

420-430 Mostly livestice sample takenftz then seen 430-446 majority of hagments limine White, clian criptalline les (one frag, dans sink from Fe staining);
Shape of fragments States;
minor suyrde as criptal aggregates
minor suyrde as criptal aggregates
minor southite
plag, baskit; I hag, midstone 74% quartite white, v. In grained, lateit coment. Minure black inclusions 5% in the mande beach of him

don the who

Į			
)		
	·	· · · · · · · · · · · · · · · · · · ·	
-			
	20%	V. fine grained saltipepper Kxture	
	(fedicin)		
	**)		
	2-20-19		
	440-450		
ļ	•	į	
	10%	s. Light brown to white universery lally findstone. Tomi sandy, to miner finalite, miner forcial	" the
		clark brown sittetone / mudstine	
	5%	Syrious (aplite?)	
	Line was	moust volcanies its.	
		I	The second s The second secon

2-21-79 cream white sandy limestone or colored simestone or white sandy limestone with the line of some or conjulation white charge sooning microcryplathing lis. 450-460 60%

PROPOSAL TO CONTROL WATER FLOW AT JEMEZ SPRINGS WELL NO. 1

At present warm water, 150°-155°F, is flowing up the outside of the 7 inch casing in the Jemez Springs no. 1 geothermal well. Cooler water, 120°-125°F, is flowing up the inside of the well from approximately 500 feet. It is proposed here to do the following:

- 1) Fill the hole from 140 feet back to 130 feet with river sand and gravel. This material will sit on a bridge which has developed at 140 feet.
- 2) The upward flow of water would be stopped and the well plugged at 130 feet with 30 feet of concrete poured into the hole. This would leave a concrete column from 130 feet back to 110 feet, cementing off the well below the casing to 10 feet into the casing. The casing is cemented into the limestone from 120 feet back to approximately 90 feet.
- 3) After the flow inside the casing has been stopped the casing will be opened between the depths of 80-90 feet. This will allow the water which is presently flowing up the outside of the casing to flow inside.

Once the flow from 80 feet has been directed inside the casing a tremie pipe will be lowered down the outside of the casing and concrete will be pumped into the space between the casing and the well wall, where water is flowing at present.

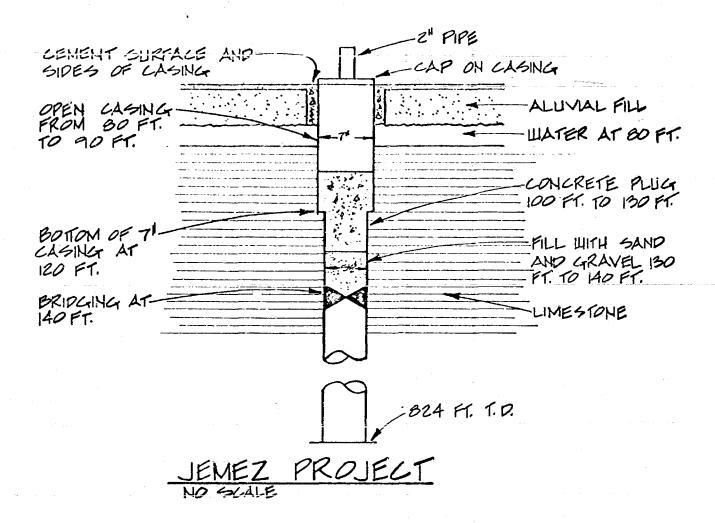
Upon completion of the cementing of the outside of the casing the surface around the top of the casing for 3 feet will also be cemented to prevent future seeping from shallow water.

Cat. COS Profession Sucression Costs.

Proposal to Control Water Flow at Jemez Springs Well No. 1 Page 2

6) A two inch pipe attached to a 7 inch collar will be placed on the top of the casing. The 2 inch pipe will have a value to shut off and control the flow of water coming up the well.

Attached is a schematic of the proposed work.



SUB-TOTAL

OWNER, OPERATOR OR HIS AGENT

TOTAL

JOB COMMENTS:

NATIONAL CEMERTERS CORPORATION

No

489

SALES DELIVERY TICKET

Solve Mexico

Date	Customer Order No.	Section Township	Range	County	an a nakakatata da da			
Well !	Number & Farm	Location		Contract	or	2, 14, 1)wner	
Charge To:	12 1	110 Me 2-24	كبتيك	had a wear		11660	<u> </u>	
	Hewsell F	80000) ohc)				
NATIONAL C	EMENTERS CORP. is hereb	y requested to furnish m	eterial					
To 💝 🗸								
	milau	M.M.	7.7	1631				
-	DI.S	SCRIPTION		************	QUANTITY ISSUED	UNIT PRICE	AMOUN	NT
6	(1) (1) (1) (1) (1) (1)				800	4 75	333	
- 11	1 ll cons	Uliva Cl	dave o	<u> </u>	8.038	6/	46	<u>S: </u>
		7.1. 7.5	··	G (I				
-5	9 7530	5 600 40	13:1/00		25.26	42	226	<u> </u>

			<u></u>					
								
<u> </u>								
 								
Job Comments:							200 000	<u></u>
					SUB-TOTAL	77	26	5
					TAX	40	7 (S) 1 (<u>. </u>
					TOTAL	***************************************	ROOT!	<u>) (C.</u>
								•
-								j
						12		
	as authorized agent of the custo							
	terms and conditions appearing out the consent of an authorized				i ilo auditional l	citus and Condin	ore real side	
				Signed:				
OLORADO PRINTING CO. GRA	AND ANCTION COLO			orgined.	· · · · · · · · · · · · · · · · · · ·	OWNER OPER	TOR OR HIS AG	ENT

TOTAL 15551

SIGNED:

OWNER, OPERATOR OR HIS AGENT

	.do _ [\land \land		GFINE:	INTERS	s come	OFFAST	1	Vo.	48	8
	Fico 191 Mexico 196	SALE	s du.	YSEIVI	TICKET	•		11		
Date	Customer Order No.	Section	Township	Range	r (talif (b) a filiraa (a). Coun(ly	.gis w.e	S	tate	
Wel	l Number & Farm	1	Location		Contrac			O	wner	
Charge To:	The state of the s			<u> </u>		<u></u>				
NATIONAL To	CEMENTERS CORP. is hereb	y requested		aterial			e alaba de cuale pulsar de 18 desembre de 18 de			
	11100 10		Ę	~ i C 2	<u> </u>		20000			
		CRIPTION				QUANTITY	UNI' PRIC		AMOU	NT
		1					. :		•	
	d english									
			1 ((),,							
Job Comments:	*					SUB-TOTAL				
				-		TAX	S 1 ()		166 1750	
-		·.				· .				

The undersigned, as authorized agent of the customer, agrees and be subject to the terms and conditions appearing on the front a to this order without the consent of an authorized representative	and reverse sides of the customer copy hereof and no addi-	supplies provided for in this order small tional terms and conditions shall apply
		The second second
COLORADO PRINTING CO. GRAND ANCTION COLO.	Signed:	OWNER, OPERATOR OR HIS AGE
	$\sim 10^{-3}$	OWNER, OPERATOR OR HIS A

ĺ

•		Rational C	carem	Crs te	धारिकाल	HUII		Nº	490
Home Office Phone (303) 243	4358			المارية		Lield Opera		្តែសុខទាប់ស្រីការ៉ាង ហ	n arra a
P. O. Box 2370 Grand Junction.	Colorado 81501				Phone (505) ec. New Mexi			P. O. Box 20 a Mexico 8701	06
Date	Customer Order No.	Section To	ownship	Range	('omity		State	
Well Num	ber & Parm		ocation			niractor		Owner	
Charge To:				:			1		,
NATIONAL CEMEN	FERS CORP, is hereby i	requested to furnish cer	menting equip	oment	er Language		i ne ataun to bus		
Го	A State of								
	an an	OWNER	OPERATOR	OR HIS AC	FNTi	o na manaka na manaka kasa sa anda kanan kanan na anda kanan na manan na anda kanan na anda kanan na anda kana			one e mate
	an	d service men to deliver	r and operate	same, as an i	ndependent e	confractor			
for in this order s	as authorized agent o hall be subject to the nd conditions shall a	e terms and condition	ons appearir	ng on the fronsent of a	ont and re-	verse sides of the d representative o	customer co	py hereof an	id no
		11me:		Signed		WELL OW	'NER, OPERA	TOR of CON	TRACTO
	TYPE OF JOB AND S	SIZE				HOLE DA	TA		
								*	
				•					
	PLUG BACK OR SQUI	EEZE				CEMENT D.			
DEPTH FROM:	PLUG BACK OR SQUI TO APPROX:	SIZE	OLE			CEMENT D.			
		SIZE	OLE	MAKE (DE FLOATR	CEMENT D			
		CASING HO		MAKE (DE FLOATE	CEMENT D	ATA		I.T.
DEPTH FROM:	TO APPROX:	CASING HO		MAKE (DE FLOATE	CEMENT D. NG EQUIP':	ATA		FT.
DEPTH FROM:	TO APPROX: ON LOCATION	CASING HO		MAKE (OF FLOATING T LEFT IN C	CEMENT D. NG EQUIP': CASING CREW ON JOB	ATA		FT.
DEPTH OF !OB	TO APPROX: ON LOCATION	CASING HO		MAKE C	OF FLOATING T LEFT IN C	CEMENT D. NG EQUIP': CASING CREW ON JOB	ATA		
DEPTH OF !OB PRICE REF:	ON LOCATION	CASING HO		MAKE C	OF FLOATING T LEFT IN C	CEMENT D. NG EQUIP': CASING CREW ON JOB	ATA		
DEPTH FROM: DEPTH OF !OB PRICE REF:	TO APPROX: ON LOCATION	CASING HO	EXPLA	MAKE C	OF FLOATING T LEFT IN C	CEMENT D. NG EQUIP': CASING CREW ON JOB	ATA		
DEPTH OF !OB PRICE REF:	TO APPROX: ON LOCATION	CASING HO	EXPLA	CEMEN' JOB COM	OF FLOATING T LEFT IN C	CEMENT D. NG EQUIP': CASING CREW ON JOB	ATA		
DEPTH FROM: DEPTH OF IOB PRICE REF:	TO APPROX: ON LOCATION	CASING HO	EXPLA	CEMEN' JOB COM	OF FLOATING T LEFT IN C	CEMENT D. NG EQUIP': CASING CREW ON JOB	ATA		
DEPTH FROM: DEPTH OF IOB PRICE REF:	TO APPROX: ON LOCATION	CASING HO	EXPLA	CEMEN' JOB COM	OF FLOATING T LEFT IN C	CEMENT D. NG EQUIP': CASING CREW ON JOB	ATA		
DEPTH OF !OB PRICE REF:	TO APPROX: ON LOCATION	CASING HO	EXPLA	CEMEN' JOB COM	OF FLOATING T LEFT IN C	CEMENT D. NG EQUIP': CASING CREW ON JOB	ATA		

Date Customer Order No. Section Township Range Coun	1)		State
Well Number & Farm Location Contra	vtor		Owner
Charge To:	l		THE CASE OF PERSONS ASSESSED.
NATIONAL CEMENTERS CORP, is hereby requested to furnish material			
To the state of th			
MARKET MARKET POLICY			
DESCRIPTION	QUANTITY ISSUED	UNIT PRICE	AMOUN
		1.	
real State of the contract the state of the	#	ļ	
	¥		
Part of the Committee o			
· ·			
			1
			-
ob Comments:	11		;
	SUB-TOTAL		
	TOTAL	4	
		٠	
The undersigned, as authorized agent of the customer, agrees and acknowledges that the services, materials, pro- e subject to the terms and conditions appearing on the front and reverse sides of the customer copy hereof a	ducts and supplies	provided for erms and cond	in this order shall itions shall apply
o this order without the consent of an authorized representative of National Cementers Corporation.	1 11	• • • • •	
Signed: X	Mount	OWNER, OP	ERATOR OF HIS AG

Memo

dockets to:

FromD. S. NUTTER

70

Caustand, moran

200 alter SE allenguerque NM 87123 atta: mr. Congland and mr. maran

Mr. W.T. Kleeman fr Go Cempland, Makan Descriator 200 alta SE Abuquerque 1 Mey 87123

Memo

D. S. NUTTER

Mer. Karry Kehal Settefary Energy and Mindrala Olpostment Mer. Steve Reguella 51cece Eugr

Memo

DromD. S. NUTTER
CHIEF ENGINEER

70

Dr. Hexald Daw

Casociate academie
Vice President

P.O. Box 3445

New Mexico State University

Las Cruces n meg 88005

Mayor Eddie Armenta F.O. Box 87 Jenna Springs Vew Mexico 87025

DISTRIBUTION		All Commences	P. O. Box 208	8, Senta Fe 875			
File N.M.B.M. U.S.G.S. Operator Land Office				RMIT TO DRI IERMAL RESC		N, STATE	icate Type 11 Lagge [] Property !! le Lease No. N.A.
Can Cirice							
1a. Type of Work	Drill [X	Dec	pen 🗀	Plug	Back	7. Unit	Agreement Name N.A.
b. Type of Well	Geothermal Produ Low-Temp Therm		ang need of the	Temp Observ	-74		nez Lease Name
2. Name of Operator	Eddie Armenta			and programmed the design of the second		9. Well	No.
3. Address of Operato	ge of Jemez Sp	rings, New	Mexico				d and i oot, or Wildcat JNDES.
4. Location of Well	UNIT LETTER	ALOCATED	90 Wes	st of Town	Hall	THE	
AND FE	EET FROM THE	LINE OF SEC	TWP.			NMPE: 12. Cou Sand	onty doval
				19. Proposed		19A. Formation	20. Rotary or C.T.
21. Flevations (Show	whether DF, RT; etc.)		Status Plug. Bond	750 d 218. Drilling		Madera Limeston	ne Rotary
6275	G.L.	Exem	npt	Stuart AND CEMENT		rants, NM 2	pprox. Date Work will s January 1979
SIZE OF HOL		F CASING WI	EIGHT PER FOO		G DEPTH	SACKS OF CEMEN	T EST. TOP
8 3/4 in. 5 in	7 ir	1. G.D.	14 lbs./f	t. 100	ft.	30	circ.
						BEFORE THE	
	,	w.			NL COMS	RERVATION COL eta Fa, Nova Max	tico
				C	no No. $\underline{\mathcal{U}}$	461 NO). <u>/</u>
	APPROVÁL VÁLID	FOR 90	DAYS	Su	Smillod (i earing Do	10 CC	79
	PERMIT EXPIRE UNLESS DRILL		AY				
- 1							
ABOVE SPACE DES		ROGRAM: If pro	posal is to deepe	en or plug back, s	ive data on p	present productive zone	and proposed new pro
hereby certify that the	tinformation above is	.		_			
gned /	tement		le Mayor, 1	Village of	Jemez S	prings Date 22	Dećember 1978
This	space for State Use)						11,
	_ //I	,	TLE DAN				

To the second se	Alt dis	tances must be from the o	uter boundaries of the S	Andrew and an investment of the Control of the Cont
Mayor Edd	ie Armenta	Lease	Village	well No.
Unit Letter A Sectio	n 26 Town-bip	18 North		Sandoyal
Actual Footage Location of	_	*		
	toducing Formation Madera Limes	Pool	UNDEST.	Dedicated Actenge: None Actes
1. Outline the act	cage dedicated to the	subject well by colored	pencil or hachure m	Strategie and Artist a
2. If more than cand royalty).	one lease is dedicated	to the well, outline ca	ch and identify the	ownership thereof (both as to working interest
	me leuse of different m, unitization, force-p	•	to the well, have the	interests of all owners been consolidated by
□ Yes □ ?	No If answer is "y	es." type of consolidat	ion	
If answer is "no," necessary.)	list the owners and t	ract descriptions which	have actually been	consolidated. (Use reverse side of this form if
			nating such interests,	solidated (by communitization, unitization, has been approved by the Commission.
			LIELL SITE	——————————————————————————————————————
0	C	S B SPRIUK	· [] / / HADD	
	•			Name
Ε	F	G	77	H Tom Kleeman
				Consultant
			; 	Company Coupland, Moran & Assoc.
			; []	Date 21 December 1978
L	K	J		I I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.
				Date Surveyed
				Registered Professional Engineer
n uso neu 90 192	0 1050 1000 2310 26	40 2000 1500	1000 500	Certificate No.

Mr. Joe D. Ramey, Director Oil Conservation Division Energy and Minerals Department State Land Office Building 0]d Santa Fe Trail Santa Fe, New Mexico 87501

Dear Mr. Ramey:

In lieu of posting a bond for a permit to drill a geothermal observation well, I am writing to assure you that The Village of Jemez Springs guarantees that the above mentioned well will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in The Rules and Regulations. We look forward to working with the Division in this endeavor.

Sincerely,

Eddie Armenta, Mayor The Village of Jemez Springs, N.M.

BEFORE THE OIL CONSERVATION COMMISSION Sente Pa, New Mexico Case No. 6461 Select No. 2 Submitted by oee Hearing Date <u>1-23-79</u>

JEMEZ No 1 A-20-1811- RE, Sandoval County

201.0	PEFCRE	THE ON COMMISSIO	эм -
The Oile C		i aks	
Coll	6461	5.5. <u>3</u>	
Ca Non	. 0	e e/	

III. PROPOSED WORK EFFORT

The Village of Jemez Springs, New Mexico proposes using State funds for drilling geothermal test wells and assessing the results. These wells will make it possible to ascertain the deliverable quantities of geothermal fluids (flow rates, their temperatures and chemical makeup). This data will lend more precision to determining the engineering and economic feasibility of utilizing the resource.

The work plan, shown on the following chart, calls for execution of assignments in the following order:

- 1. Prior to drilling, geologic mapping of the area, part of the ongoing San Diego Canyon mapping program, will be completed by geologists from Los Alamos Scientific Laboratories. These maps will be necessary in locating the drilling site.
- 2. Upon the completion of the mapping, expected in early August, personnel from L.A.S.L. will lend expertise in locating an optimal drilling site along a controlling fault. Given the extant information on geothermal and hydrological phenomena in the area, the locations of hot springs and wells and the data yielded from mapping, it should be possible to locate a favorable test site:
- 3. Upon locating a test site that meets with the satisfaction of the project geologist and the principal investigator, the project director will secure the services of a drilling subcontractor.
- 4. Drilling will be carried out under the supervision and with the advise of the project geologist. Two test wells, of a diameter of 4" 6", to be determined upon completion of mapping, will be drilled into the limestone formation. Well depths are not expected to go below 750 ft. Fluids brought to the surface will be held during the test and subsequently reinjected into the formation.
- 5. After the well is completed the project geologist will inform the project director and project engineer of the relevent engineering data, e.g. temperatures, flow rates (determined by draw down tests) etc. The project geologist will analyze the well data for its geologic significance regarding the geothermal resource. Upon the completion of this effort, he will present the project director with a short report on his findings which will be included in the final project report.
- 5. The project engineer will use the findings of the geologists to determine engineering and, with the participation of the project director, economic feasibility of resource utilization. At the end of this assessment the project engineer will present his findings to the project director.
- 7. The project director will then write a final report based on the findings of the participants. This final report is expected to include a clear, precise and acceptable determination of the efficacy of the utilization of geothermal resources utilization in the Village of Jemez Springs, New Mexico. After the report is issued pipes will be lad to delive by water from the well to the Town Hall to be used for space hearing.

	BEFORE THE
•	OIL CONSTRUCTION COMMISSION
	State of the Marketics
	Caro 10 1046/ 100 11.15. 4
	Suimmai occ
į	Houring Dato 2-23-79

Project Meating Up Energy Prospects At Jennez Springs

By TOMAS O. MARTINEZ

Assistant State Editor

JEMEZ SPRINGS — The Village of Jemez Springs may become energy self-sufficient if a test project, currently under way, shows that geothermal energy can provide the village with heat and electricity.

The Village of Jemez Springs, located about 50 miles northwest of Albuquerque, is drilling a test well on village property to locate underground volcanic-heated water to use as a power source.

The drilling, project management, and feasibility studies are being funded through a \$32,000 grant from the New Mexico Department of Energy.

Jemez Springs Mayor Eddie Armenta, 39, said he hopes the well will produce water heated at 250 degrees Fahrenheit. Hot water or steam from that well would be used to heat homes within the village and generate electricity.

"It's a tremendous project. If it works, we could become energy self-sufficient. Residents would be able to cut their utility costs by about 50 percent. I hope it works. We all do," Armenta, a retired Treasury Department agent and former Albuquerque police officer, said.

The well is being dug on village property behind the Jemez Springs City Hall. The project is the brain child of Project Engineer Tom Kleeman.

Armenta said Kleeman visited Jemez Springs in late 1977 to bathe in the hot springs near the village.

"He (Kleeman) came up with the idea," Armenta said. "The village hired him to study the possiblity of such a project, and to write a proposal to the federal government for funding.

"The federal government (Department of Energy) turned down our \$4 million proposal. They said they could not fund exploratory projects. In July 1978 we submitted a proposal to the state. It was approved in late Novem-

ber. If the well produces water at 250 degrees, we will resubmit our proposal to the federal government for construction of a generating plant," Armenta said

Kleeman said, "If the test is a success, it will be a tremendous event for New Mexico."

Kleeman, who represents Copeland-Moran Associates of Albuquerque, said drilling began Wednesday.

The drilling is being done by Stuart Brothers Drilling Co. of Grants. The firm has drilled similar wells for Los Alamos Scientific Labs in the Valle Grande area between Los Alamos and Jemez Springs.

Two Los Alamos scientists, Bill Laughlin and Francis West of LASL's Georthermal Groups, were at the drilling site Thursday to provide technical advice. West said the hot water the village is trying to locate escapes through faults from the Valle Grande, the site of a gigantic extinct volcano.

Laughlin said the volcano last crupted about 40,000 years ago and hot rocks heat the water in the calderon. That water escapes through faults, and one of those faults runs through the area where the well is being dug.

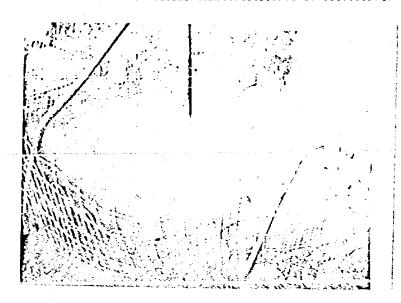
If the drilling project is a success, Armeta said that included in the second proposal to the U.S. Department of Energy will be a request to fund construction of village greenhouses.

Armenta said village greenhouses would represent a cooperative village effort to provide residents with vegetables and other food stuffs.

"It's a tremendous opportunity for the Village of Jemez Springs. If the well is a success, we hope the federal government will fund this as a pilot project," Armenta said.

Kleeman anticipates the possibility of geothermal energy for Jemez Springs could become a reality by late 1980. That is, if the well comes through, and the federal government funds the project.

A-26-18N-2E Taken 1/29/79 C.U.



A-26-18N-2E Taken 1/29/19 C.U.



A-26-18N-2E Taken 1/29/79 C.U.

ESTORE THE
OIL COME MATION COMMISSION
Topic Markico
Cpro 11 646/ 11 No. 5
Submitted occ
Haging (18) 1- 22 29



NICK PRINKUN

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

February 1, 1979



STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

NICK FRANKLIN

January 30, 1979

Mr. Eddie Armenta Mayor of Jemez Springs Village P. O. Box 87 Jemez Springs, New Mexico 87025

Dear Sir:

You are the recorded operator of a geothermal temperature observation well located in Unit A of Section 26, Township 18 North, Range 2 East, NNPM, Sandoval County New Mexico. According to the permit granted by this office the total depth would not exceed seven hundred fifty feet (750'), would have seven inch (7") casing set at one hundred feet (100') and cemented into the full length of the hole (cemented circulated). Furthermore, your letter to this agency requesting a waiver of bonding requirements states that your well will be plugged and the location cleaned in accord with State regulations.

An inspection of the site on January 29th last, indicates that your project is in violation of State Regulations in several respects. Please refer to the rules and make such changes as are necessary to be in compliance. Of primary importance is the immediate shutting off of the water that is escaping to the surface.

Kindly submit your plan for remedial action and/or plugging for abandonment in time for same to be witnessed by a representative of this agency.

Yours truly.

CARL ULVOG Senior Geologist

CU/og

Mayor Eddie Armenta Village of Jemez Springs Jemez, New Mexico

Subject:

Jemez Lease Well No. 1 Unit A, Section 26, Township 18 North, Range 2 East, NMPM, Sandoval County, New Mexico

Dear Sir:

The subject well appears to have been drilled. It was permitted as a "Temperature Observation" well by this agency on December 28, 1978. To date, no reports or other information concerning that operation have been received in this office.

Kindly refer to the New Mexico State Regulations and supply all of the now-delinquent data. Also, because this agency was not notified prior to the setting and/or cementing of any casing in the subject well, please submit affidavits from the companies or individuals employed for such operations.

Yours truly,

Carl ULVOG Carl ULVOG Senior Geologist

CU/og cc: Lynn Teschendori Oil Conservation Division General Counsel

BEFORE THE OIL CONSTRUCTION COMMISSION OF CONTRACTOR AND A STATE OF THE PROPERTY OF THE PROPER
Case 12 646/ 12 116. 6
Submitted by OCC
Hearing Data 2-23-79

B. Form 6-103 as a Subsequent Report

Form G-103 as a subsequent report of operations shall be filed in accordance with the section of this rule applicable to the particular operation being reported;

Form G-103 is to be used in reporting such completed operations as:

- (1) Commencement of drilling operations
 - (2- Casing and cement test
 - (3) Altering a well's casing installation
- / (4) Temporary abandonment
 - (5) Plugging and Abandonment
 - (6) Plugging back or deepening
 - (7) Remedial work
 - (8) Change in ownership of a drilling well
 - (9) Such other operations which affect the original status of the well but which are not specifically covered herein.

C. Filing Form G-103 as a Subsequent Report

Information to be entered on Form G-103, Subsequent Report, for a particular operation is as follows:

(1) Report of Commencement of Drilling Operations

Within ten days following the commencement of drilling operations, the operator of the well shall file a report thereof on Form G-103 in DUPLICATE. Such report shall indicate the hour and the date the well was spudded.

(D-2

(2) Report of Results of Test of Casing and Coment Job; Report of Casing Alteration

A report of casing and cement test shall be filed by the operator of the well within ten days following the setting of each string of casing or liner. Said report shall be filed in PUPLICATE on Form G-103 and shall present a detailed description of the test method employed and the results obtained by such test, and any other pertinent information required by Rule 108 B(5). The report shall also indicate the top of the cement and the means by which such top was determined. It shall also indicate any changes from the casing program previously authorized for the well.

(3) Report of Temporary Abandonment

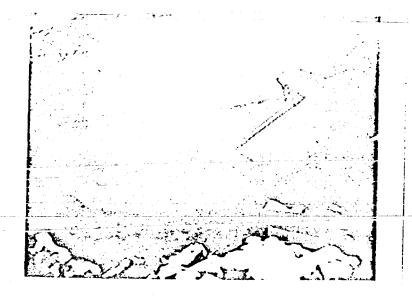
A report of temporary abandonment of a well shall be filed by the operator of the well within ten days following completion of the work. The report shall be filed in DUPLICATE and shall present a detailed account of the work done on the well, including location and type of plugs used, if any, type and status of surface and downhole equipment, and other pertinent information relative to the overall status of the well.

(4) Report on Plugging of Well

A report of plugging operations shall be filed by the operator of the well within 30 days following completion of plugging operations on any well. Said report shall be filed in TRIPLICATE on Form G-103 and shall include the date the plugging operations were begun and the date the work was completed, a detailed account of the manner in which the work was performed including the depths and lengths of the various plugs set, the nature and quantities of materials employed in the plugging operations including the weight of the mud used, the size and depth of all casing left in the hole, and any other pertinent information. (See Rules 301-303 regarding plugging operations.)

Caro No. 046/ No. 7
Submitted by 0.000
Hearing Date 2-23-79

D-3



A-26-18N-2E Taken 2/21/79 C.U.



A-26-18N-2E Taken 2/21/19 C.U.

PROPOSAL TO CONTROL WATER FLOW AT JEMEZ SPRINGS WELL NO. 1

At present warm water, 150°-155°F, is flowing up the outside of the 7-inch casing in the Jemez Springs no. 1-goothermal well. Cooler water, 120°-125°F, is flowing up the inside of the well from approximately 500 feet.

It is proposed here to do the following:

- 1) Fill the hole from 140 feet back to 130 feet with river sand and gravel. This material will sit on a bridge which has developed at 140 feet.
- 2) The upward flow of water would be stopped and the well plugged at 130 feet with 30 feet of concrete poured into the hole. This would leave a concrete column from 130 feet back to 110 feet, cementing off the well below the casing to 10 feet into the casing. The casing is cemented into the limestone from 120 feet back to approximately 90 feet.
- 3) After the flow inside the casing has been stopped the casing will be opened between the depths of 80-90 feet. This will allow the water which is presently flowing up the outside of the casing to flow inside.

Once the flow from 80 feet has been directed inside the casing a tremie pipe will be lowered down the outside of the casing and concrete will be pumped into the space between the casing and the well wall, where water is flowing at present.

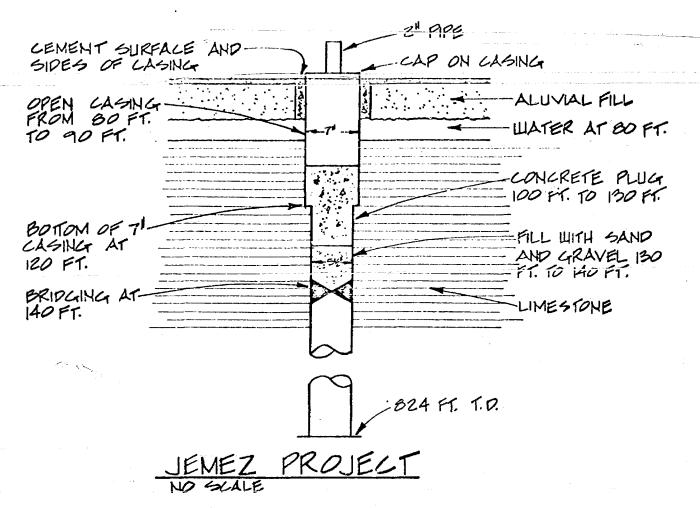
Upon completion of the cementing of the outside of the casing the surface around the top of the casing for 3 feet will also be cemented to prevent future seeping from shallow water.

Cat. Crivery and a series of the Submitter of the sering Date of the series of the ser

Proposal to Control Water Flow at Jemez Springs Well No. 1 Page 2

6) A two inch pipe attached to a 7 inch collar will be placed on the top of the casing. The 2 inch pipe will have a value to shut off and control the flow of water coming up the well.

Attached is a schematic of the proposed work.



TYPE OF JOB AND SIZE

PLUG BACK OR SQUEEZE

CEMENT DATA

DEPTH FROM:

TO APPROX:

CASING HOLE

MAKE OF PLOATING EQUIP:

CEMENT LEFT IN CASING

FT.

DEPTHI OF JOB

ON LOCATION

JOB BEGAN

JOB COMPLETED

CREW ON JOB

PRICE REF:

EXPLANATION:

CASING HOLE

TAX 42/0 330 4

SIGNED:

Exhibit 12 case 6461

TOTAL

Exhibit 12 case 6461 SIGNED: X MISS / MISS /

OWNER, OPERATOR OR HIS AGENT

KATOKAL CEREBIELS COLLEGRATION

No

469

SALES DELIVERY TICKET

334-9491 ants, New Mexico . US = 287-4596	SWES DELIVE	ary ngaan	-			
Date Customer Order No. Well Number & Farm	Section Township Ra		y tor	0	tate tate wher	**************************************
Charge To:	L'ovos D.	A_{c}				
NATIONAL CEMENTERS CORP. is he to the second	A A A					
· · · · · · · · · · · · · · · · · · ·	DESCRIPTION	C> 1 C C-1	QUANTITY	UNIT PRICE	AMOUN	T
8730 Cas	CACAL		€ €,5,8	4 75	364	
10-40 Max	alling Clie	<u>~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ </u>	G. Cok	61	46	<u>S</u>
	10 5 (3 × 1/2 m)	10. 20.12/1	75.20	- 42	536	
		•				
	·					
		es.				
Job Comments:			SUB-TOTAL.	90	263	5
			TAX		68 13	, _C
en e						- backen
	and the same and the					1
The undersigned, as authorized agent of the cube subject to the terms and conditions appear to this order without the consent of an authority	ring on the front and reverse sides of t	he customer copy hereof an	ucts and supplies d no additional te	provided for in the rank and condition	his order shall as shall apply	
COLORADO PRINTINS CO., GRAND AMETION, COLO		Signed:	1 200	OWNER, OPERA	TOR OR HIS AGE	NT

OWNER, OPERATOR OR HIS AGENT

188

Date	Sustainer Order No.	Section Township	Range	Count		o o o o grapación de	S	State	5.5
Well No	umber & Parin	Location		Contrac	101		ő	wner	
Charge To:	•					An experience of the second			
NATIONAL CE	MENTEDS CODE is book					en de l'Angele de la Principal			1.74.2
Te	MENTERS CORP. is hereh	y feducated							
1	MINI	<u> </u>	-762.	(
	ÐES	SCRIPTION			QUANTITY ISSUED	UNIT PRIC	r E	AMO	JN
	3.5			-		1			
···					-				_
	Mark di	hiine Che	· . · · . · · · · · · · ·		₹.500		(+
	1,			ale alia e j	2297		. 		-
			1						
		· · · · · · · · · · · · · · · · · · ·	······································						
		<u>' </u>							\dotplus
······································				·					+
									I
									1
									+
<u> </u>									
ob Comments:					SUB-TOTAL.			, 1,	T
						:/c		114	
					TOTAL	••••••	L	<u>1780</u>	L
· -						€ .			
	ilian in the second of the second			Anna Carata La Santa	The second secon	<u> </u>		r v. Ne steen	
e subject to the ter	authorized agent of the custors and conditions appearing the consent of an authorized	on the front and reverse sid	ies of the custor	ner copy hereof an	ucts and supplies d no additional te	provided i	for in t	his order sh ons shall app	通
t the older whilet	the consent of an authorized	representative or material C	ementers Corp.	oration.		ردر و معمر	· .	-	
N ORADO PRINTING ED , GRAND	a,mc710%, CULD,			Signed:		- AMARTA		TOR OR HIS	<u> </u>

4.9

Hom Office Phonor303+143:	4358			Field Operati	.mis Phone (505) 287-45	nr.
the transfer of the transfer o	Tolorata S1501		Ph., 4584	G.334-0401		06
Date	Customer Order No.	Section Township	Range	County	State	217
	er & Farm	1 1		Contractor	Owner	
			•			
Charge To:						
NATIONAL CEMENT	ERS CORP, is hereby requ	tested to furnish concurring eq	our eres ure o our observer. ofpinent	vinto de anno como esta estable.		ನ್ನಳಗ ುತ್ತ ವ
		(. **)				
L		(OWNER, OPERAT	OR OR HIS AGENT)			
• • 🔨	and se	rvice men to deliver and opera	te same, as an independen	t confractor		
for in this order sh additional terms at ation.	nall be subject to the te	he customer, agrees and a rms and conditions appears to this order without with	ring on the front and e consent of an authoria	reverse sides of the cored representative of	ustomer copy hereof an	id no
Date:		Time:	Signed:	WELL OWN	IER, OPERATOR or CON	TRACTO
	TYPE OF JOB AND SIZE			HOLE DAT	A	
					·	·
			·			
	PLUG BACK OR SQUEEZ	SIZE		CEMENT DA	Γ A	
DEPTH FROM:	TO APPROX:	CASING HOLE	MAKE OF FLOAT	TING FOLLE'S		
			MAKE OF FEOR	THO EQUIT.		
	<u> </u>		CEMENT LEFT IN	N CASING		FT.
DEPTH OF JOB	ON LOCATION	JOB BEGAN	JOB COMPLETED	CREW ON JOB		
	7.11	The second secon				<u> </u>
PRICE REF:		EXPL	ANATION:			
		The second second			12/4/3	
2.2. T.7	-71:					
		·				
-	2			8		
: Las, bus las ambasa en yene		e de la companya del companya de la companya del companya de la co		<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		
JOB COMMENTS:				SUB-TOTAL	891	1.3
			4.	TAX (140 15	الب ـ
				TOTAL	796	<u> ? </u>
COLORADO PRINTING CO., GRAND AINCTION	ı, cor.o.		SICHED		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	-475 -
•			SIGNED:		PERATOR OR HIS AGEN	T
The second secon			and the second s		Committee Audit class passed and class p	

	renico				TCKET		No.	4
287-4		0.000						
Date	Customer Order No.	Section	Township	Range	County		State	· · · , ·
We	Il Number & Farm		Location		Contractor		Owne	.т Н
							•	
Charge To:		•				and digital and the second		
NATIONAL	CEMENTERS CORP, is here	by requested	to furnish m	aterial				·1.772/4.
To .		•						
			ار فورا پر صورت در			The second secon	-	

	12201:0	PKK	1;	ł	
					l
Add to 12 to the second of the					
				i i	
					ļ
		<u></u>			
Jeb Comments:	SUB-TOTAL				4
	TAX				
					1

The undersigned, as authorized agent of the cu	stomer, agrees and acknowledge	owledges that the service	s, materials, products and supplies	provided for in this order shall
be subject to the terms and conditions appear	ing on the front and rev	erse sides of the custome	er copy hereof and no additional t	erms and conditions shall apply
to this order without the consent of an authori	zed representative of Nat	tional Cementers Corpor	ation.	

OSTRIBUTION		and the second of the second o			
		P. O. Box 26	088, Santa Fc 87501		
file	/ /			fe"	
N.M.B.M.	4		. The second second	3.	Indicate Typi of Lease
U.S.G.S. Operator			PERMIT TO DRILL, DEEPE	N, 51	ATE Droperty FEE State Lease No.
and Office		OR PLUG BACKGEO	THERMAL RESOURCES W	EL,L,	N.A.
.and Crince				77	aran aran aran aran aran aran aran aran
ř					
- T	Drill [X		Plug Back []	7.	Unit Agreement Name
a. Type of Work	Driii (A)	· Deepen tu	Flug Back		N.A.
b. Type of Well	Geothermal Producer		Temp Observation [X]	8. 4	Sum of Lease Name
	Low-Temp Thermal		Injection/Disposal 🔲		Jemez Lease
. Name of Operator		The second second		9. 1	Vell No.
Mayor	Eddie-Armenta				
Address of Operator	r		a department of the second of	10.	Field and Pool, or Wildcat
Villag	e of Jemez Sprin	igs, New Mexico	an kana da paman Marin daga daman saka da		UNDES.
Location of Well	UNIT LETTERA	LOCATED 90 F	est of Iown Hall	- the	
FE ************************************	ET FROM THE L	INE OF SEC. TWP.	RGE.	NMPM	
				2' \	County andoval
444444	44444444		4444444	rHHH	HHHPrimm
444444	4144444		19. Proposed Depth	13111111111111111111111111111111111111	20. Rotary or C.T.
				ladera Limes	
1. Elevations (Show i	whether DF, RT, etc.)	21A. Kind & Status Plug. Bo	777		
6275	G.L.	Exempt	Stuart Bros./Gi	ants, NM	2. Approx. Date Work will start 2 January 1979
		PROPOSED CASIN	G AND CEMENT PROGRAM		
SIZE OF HOLE	SIZE OF CA			SACKS OF CE	
5 in		3.0. 14 105./	ft. 100 ft.	30	circ.
	<u></u>				
			PEEC	APE THE	
			BEFO OIL CONSERV		MISSION
			OIL COMSERV	MION COM	
			OIL CONSERV.	ATION COMP ATION COMP	
			OIL COMSERVA Suit of Case No. 6446	MOON COMP Sine Medical Movement Leading	
			OIL COMSERVA Suit of Case No. 6446	MOON COMP Sine Medical Movement Leading	
		<i>a</i>	OIL COMSERVA See a P Case No. 646 (Substitled by	MION COMP Time Medical No.	
	APPROVAL VALID FO	r 90 pays	OIL COMSERVA Suit of Case No. 6446	MION COMP Time Medical No.	
	PERMIT EXPIRES _	3/28/79	OIL COMSERVA See a P Case No. 646 (Substitled by	MION COMP Time Medical No.	
	APPROVAL VALID FO PERMIT EXPIRES UNLESS DRILLING	3/28/79	OIL COMSERVA See a P Case No. 646 (Substitled by	MION COMP Time Medical No.	
	PERMIT EXPIRES _	3/28/79	OIL COMSERVA See a P Case No. 646 (Substitled by	MION COMP Time Medical No.	
en e	PERMIT EXPIRES _ UNLESS DRILLING	UNDERWAY	OIL COMSERVA Section F Case No. 646 (Substitional by Hearing Date_	MION COM Medica 1	29
ABOVE SPACE DESC	PERMIT EXPIRES UNLESS DRILLING CRIBE PROPOSED PROG	UNDERWAY	OIL COMSERVA Section F Case No. 646 (Substitional by Hearing Date_	MION COM Medica 1	
ABOVE SPACE DESC e. Give blowout preve	PERMIT EXPIRES	B UNDERWAY RAM: If proposal is to dee	OIL COMSERVE Some P Case No 6446 Submitted by Hearing Date	MION COM Medica 1	29
ABOVE SPACE DESC e. Give blowout preve	PERMIT EXPIRES	RAM: If proposal is to dee	OIL CONSERVA Same P Case No. 6446 Substituted by Hearing Date pen or plug back, give data on a	ATION COMPANIES Menico OCC 2-23- present productive	zone and proposed new productive
ABOVE SPACE DESC be. Give blowout preve creby certify that the	PERMIT EXPIRES	RAM: If proposal is to dee	OIL COMSERVE Some P Case No 6446 Submitted by Hearing Date	ATION COMPANIES Menico OCC 2-23- present productive	zone and proposed new productive
ABOVE SPACE DESC ie. Give blowout preve creby certify that the	PERMIT EXPIRES	RAM: If proposal is to dee	OIL CONSERVA Same P Case No. 6446 Substituted by Hearing Date pen or plug back, give data on a	ATION COMPANIES Menico OCC 2-23- present productive	zone and proposed new productive
ABOVE SPACE DESC. Give blowout prevented the certify that the	PERMIT EXPIRES	RAM: If proposal is to dee	OIL CONSERVA Same P Case No. 6446 Substituted by Hearing Date pen or plug back, give data on a	ATION COMPANIES Menico OCC 2-23- present productive	zone and proposed new productive
ABOVE SPACE DESC. Give blowout prevented the certify that the	PERMIT EXPIRES	RAM: If proposal is to dee and complete to the best of	OIL CONSERVA Same P Case No. 6446 Substituted by Hearing Date pen or plug back, give data on a	ATION COMPANIES Menico OCC 2-23- present productive	zone and proposed new productive
ABOVE SPACE DESC. Give blowout prevented the certify that the	PERMIT EXPIRES	RAM: If proposal is to dee and complete to the best of	OIL CONSERVE Same Process of Case No. 6446 Substituted by Hearing Date Hearing Date on the Case of the	ATION COMPANIES Menico OCC 2-23- present productive	zone and proposed new productive

NEW MUNICO OIL CONSERVATION COMMISSION P. O. BOX 2088 SANTA FE. 87501 GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

Mayor Eddie Armenta	Mil distances must be dism	Village	Well No	
Unit Letter A Section 26	astrip 18 North	Range 2-East Co	Sandova 1	
Actual Feotage Location of Well:	of town hall			
Ground Level Nev. Producing Tormation 6275 Madera L		UNDEST.	Dedicated Accorde: None	
1. Outline the acreage dedicated to	المطلاعين ومناهد	ored pencil or hachuse	marks on the plat below.	es
2. If more than one lease is dedic and royalty).	ated to the well, outlin	e each and identify th	he ownership thereof (both as to working in	terest
3. If more than one lease of diffe communitization, unitization, fo	-	ted to the well, have	the interests of all owners been consolidate	ed by
☐ Yes ☐ No If answer	is "yes," type of conso	lidation		
If answer is "no," list the owners :		which have actually be	en consolidated. (Use reverse side of this fo	um if
No allowable will be assigned t	o the well until all	liminating such interes	consolidated (by communitization, unitization, the commission).	ation,
0'	· ·	HELL SITE		
) 	3		A CERTIFICATION ALL I hereby certify that the information contained herein is true and complete the best of my knowledge and belief.	te to
	- 	- ,G	H Tom Kleeman	
			Position Consultant	
			Company Coupland, Moran & As	soc.
			Date 21 December 1978	
	*	J	I hereby certify that the well local shown on this plat was plotted from the notes of actual surveys made by me under my supervision, and that the sist true and correct to the best of knowledge and belief.	field e or same
M	N	0	- p	
			Date Surveyed	
			Registered Professional Engineer	
6 310 660 90 1920 1650 1890 231	2 2640 2000 1	200 1000 500	Certificate No.	

Mr. Joe D. Ramey, Director
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
Old Santa Fe Trail
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

In lieu of posting a bond for a permit to drill a geothermal observation well, I am writing to assure you that The Village of Jemez Springs guarantees that the above mentioned well-will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in The Rules and Regulations. We look forward to working with the Division in this endeavor.

Eddie Armenta, Mayor
The Village of Jemez Springs, N.M.

BEFORE THE
OIL CONSERVATION COMMISSION
Satta Fe, New Mexico

Case No. <u>046 /</u> Entert No. <u>2</u>

Submitted by OCC

Hearing Date 2-23-79

JEMEZ No 1 A-20-12N- RE, Sandoval County

	a, PI	PORF T	HE.	
OIL	CO115.	MARIÔN	CO	MMISSION
				•

Com it 646/ 11 11 11. 11. 3

III. PROPOSED WORK EFFORT

The Village of Jemez Springs, New Mexico proposes using State funds for drilling geothermal test wells and assessing the results. These wells will make it possible to ascertain the deliverable quantities of geothermal fluids (flow rates, their temperatures and chemical makeup). This data will lend more precision to determining the engineering and economic feasibility of utilizing the resource.

The work plan, shown on the following chart, calls for execution of assignments in the following order:

- 1. Prior to drilling, geologic mapping of the area, part of the ongoing San Diego Canyon mapping program, will be completed by geologists from Los Alamos Scientific Laboratories. These maps will be necessary in locating the drilling site.
- 2. Upon the completion of the mapping, expected in early August, personnel from L.A.S.L. will lend expertise in locating an optimal drilling site along a controlling fault. Given the extant information on geothermal and hydrological phenomena in the area, the locations of hot springs and wells and the data yielded from mapping, it should be possible to locate a favorable test site:
- Upon locating a test site that meets with the satisfaction of the project geologist and the principal investigator, the project director will secure the services of a drilling subcontractor.
- 4. Drilling will be carried out under the supervision and with the advise of the project geologist. <u>Two test wells</u>, of a diameter of 4" 6", to be determined upon completion of mapping, will be drilled into the limestone formation. Well depths are not expected to go below 750 Ft. Fluids brought to the surface will be held during the test and subsequently reinjected into the formation.
- 5. After the well is completed the project geologist will inform the project director and project engineer of the relevent engineering data, e.g. temperatures, flow rates (determined by draw down tests) etc. The project geologist will analyze the well data for its geologic significance regarding the geothermal resource. Upon the completion of this effort, he will present the project director with a short report on his findings which will be included in the final project report.
- 6. The project engineer will use the findings of the geologists to determine engineering and, with the participation of the project director, economic feasibility of resource utilization. At the end of this assessment the project engineer will present his findings to the project director.
- 7. The project director will then write a final report based on the findings of the participants. This final report is expected to include a clear, precise and acceptable determination of the efficacy of the utilization of geothermal resources utilization in the Village of Jemez Springs, New Mexico. After the report is issued pipes will be lad to delive that water from the well to the Town Hall to be used for space hearing.

- ALBUQUERQUE JOURNAL Friday, January 5, 1979

Care 11 6461 THE COMMISSION

Substitute of the Commission

Care 11 6461 This 4

Substitute of the Commission

A co

Project Heating Up Energy Prospects

At Jennez Springs

By TOMAS O. MARTINEZ

Assistant State Editor

JEMEZ SPRINGS — The Village of Jemez Springs may become energy self-sufficient if a test project, currently under way, shows that geothermal energy can provide the village with heat and electricity.

The Village of Jemez Springs, located_about 50 miles northwest of Albuquerque, is drilling a test well on village property to locate underground volcanic-hested water to use as a power source.

The drilling, project management, and feasibility studies are being funded through a \$32,000 grant from the New Mexico Department of Energy.

Jemez Springs Mayor Eddie Armenta, 39, said he hopes the well will produce water heated at 250 degrees Fahrenheit. Hot water or steam from that well would be used to heat homes within the village and generate electricity.

"It's a tremendous project. If it works, we could become energy self-sufficient. Residents would be able to cut their utility costs by about 50 percent. I hope it works. We all do," Armenta, a retired Treasury Department agent and former Albuquerque police officer, said.

The well is being dug on village property behind the Jemez Springs City Hall. The project is the brain child of Project Engineer Tom Kleeman.

Armenta said Kleeman visited Jemez Springs in late 1977 to bathe in the hot springs near the village.

"He (Kleeman) came up with the idea," Armenta said. "The village hired him to study the possiblity of such a project, and to write a proposal to the federal government for funding.

"The federal government (Department of Energy) turned down our \$4 million proposal. They said they could not fund exploratory projects. In July 1978 we submitted a proposal to the state. It was approved in late Novem-

ber. If the well produces water at 250 degrees, we will resubmit our proposal to the federal government for construction of a generating plant," Armenta said.

Kleeman said, "If the test is a success, it will be a tremendous event for New Mexico."

Kleeman, who represents Copeland-Moran Associates of Albuquerque, said drilling began Wednesday.

The drilling is being done by Stuart Brothers Drilling Co. of Grants. The firm has drilled similar wells for Los Alamos Scientific Labs in the Valle Grande area between Los Alamos and Jemez Springs.

Two Los Alamos scientists, Bill Laughlin and Francis West of LASL's Georthermal Groups, were at the drilling site Thursday to provide technical advice. West said the hot water the village is trying to locate escapes through faults from the Valle Grande, the site of a gigantic extinct volcano.

Laughlin said the volcano last erupted about 40,000 years ago and hot rocks heat the water in the calderon. That water escapes through faults, and one of those faults runs through the area where the well is being dug.

If the drilling project is a success, Armeta said that included in the second proposal to the U.S. Department of Energy will be a request to fund construction of village greenhouses.

Armenta said village greenhouses would represent a cooperative village effort to provide residents with vegetables and other food stuffs.

"It's a tremendous opportunity for the Village of Jemez Springs. If the well is a success, we hope the federal government will fund this as a pilot project," Armenta said.

Kleeman anticipates the possibility of geothermal energy for Jemez Springs could become a reality by late 1980. That is, if the well comes through, and the federal government funds the project.

A-26-18N-2E Taken 1/29/19 C.U.

A-26-18N-2E Taken 1/29/79 C.U. Care IV 646/ 1135. 5

Hearing Dato 2-23-79



MERITATION MEMBERS

ENERGY AND MINERALS DEPARTMENT OIL CONSCRIVATION DIVISION

ENERGY AND MINERALS DEPARTMENT OIL CONSTITUTION DIVISION

January 30, 1979

Punt data p man pang Bidig Lahap para di pang Luag Bahita sa mang ant ng pangg Pangalan ang panggan

MORE PRAINES SENTANTALINE SECRETARY PANTA FE NOTE PANTA PANTA BANTA EL TATO CONTRA PANTA PANTA PANTA FE NOTE NOTE PANTA PANTA

February 1, 1979

Mr. Eddie Armenta Mayor of Jemoz Beringa Village P. O. Box 87 Jemoz Springa, New Mexico 87028

Door Stra

You are the recorded operator of a geothermal temperature chaeration well located in Unit A of Section 21, Tamable 18 North, Bange 2 East, 1994, Bandevel County, New Mexico. According to the permit granted by thim office the total depth would not exceed seven hundred fifty feet (780'), would have seven inch (7") caming set at one hundred feet (100') and cemented into the full length of the hole (cemented circulated). Furthermore, your letter to this agency requesting a waiver of bonding requirements states, that your well will be plugged and the location cleaned in accord with State regulations.

An inspection of the site on January 20th last, indicates that your project is in violation of State Regulations in several respects. Please refer to the rules and make such changes as are necessary to be in compliance. Of primary importance is the immediate shutting off of the water that is excepting to the surface.

Kindly submit your plan for remedial action and/or plugging for abandonment in time for same to be witnessed by a representative of this agency.

Yours truly,

CARL ULVOG Senior Geologist

CU/cg

Mayor Eddie Armenta Village of Jemen Springs Jemen, New Mexico

Bubject!

Jemes Leans Well No. 1 Unit A. Section 36, Township 18 North, Hanne 3 hast, NHTM, Bandoyal County, Now Mexico

Dyar Sir:

The subject well appears to have been drilled. It was permitted as a "Temperature Observation" well by this agency on December 28, 1976. To date, no reports or other information concerning that operation have been received in this office.

Kindly refer to the New Mexico State Regulations and supply all of the now-delinquent data. Also, because this agency was not notified prior to the setting and/or comenting of any casing in the subject well, please submit affidavite from the companies or individuals employed for such operations.

Yours truly,

Cark Microg CARL ULVOG F Senior Geologist

CU/og
do: Lynn Temohendorf
Oil Conservation Division
General Counsel

Constitute Office Offic

B. Form G-103 as a Subsequent Report

Form C-103 as a subsequent report of operations shall be filed in accordance with the section of this rule applicable to the particular operation being reported.

Form G-103 is to be used in reporting such completed operations as:

- (1) Convencement of drilling operations
- ____(2- Gaeing and coment-test
 - (3) Altering a well's casing installation
- / (4) Temporary abandonment
 - (5) Plugging and Abandonment
 - . (6) Plugging back or deepening
 - (7) Remedial work
 - (8) Change in ownership of a drilling well
 - (9) Such other operations which affect the original status of the well but which are not specifically covered herein.

C. Filing Form G-103 as a Subsequent Report

Information to be entered on Form G-103, Subsequent Report, for a particular operation is as follows:

(1) Report of Commencement of Drilling Operations

within ten days following the commencement of drilling operations, the operator of the well shall file a report thereof on Form G-103 in DUPLICATE. Such report shall indicate the hour and the date the well was spudded.

D-2

(2) Report of Results of Test of Casing and Coment Job; Report of Casing Alteration

A report of casing and cement test shall be filed by the operator of the well within ten days following the setting of each string of casing or liner. Said report shall be filed in DUPLICATE on Form G-103 and shall present a detailed description of the test method employed and the results obtained by such test, and any other pertinent information required by Rule 108 B(5). The report shall also indicate the top of the cement and the means by which such top was determined. It shall also indicate any changes from the casing program previously authorized for the well.

(3) Report of Temporary Abandonment

A report of temporary abandonment of a well shall be filed by the operator of the well within ten days following completion of the work. The report shall be filed in DUPLICATE and shall present a detailed account of the work done on the well, including location and type of plugs used, if any, type and status of surface and downhole equipment, and other pertinent information relative to the overall status of the well.

(4) Report on Plugging of Well

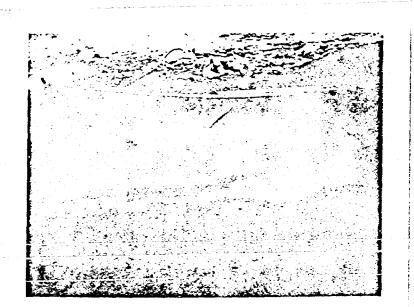
A report of plugging operations shall be filed by the operator of the well within 30 days following completion of plugging operations on any well. Said report shall be filed in TRIPLICATE on Form G-103 and shall include the date the plugging operations were begun and the date the work was completed, a detailed account of the manner in which the work was performed including the depths and lengths of the various plugs set, the nature and quantities of materials employed in the plugging operations including the weight of the mod used, the size and depth of all tasing left in the hole.

(See Rules 301-303 regarding plugging operations.)

Care No. 64. 1 a. A.No. 7
Substitud a 0 CC
Hearing Date 2-23-79

D-3

-A-26-13N-2E Taken 2/21/79 C.U.



A-26-18N-2E Taken 2/21/19 C.U.

DEFORE THE OIL COMMISSION

Submittee to OCC

Hearing Date 2-23 - 79

DISTRIBUTION P. O. Box 2088, Senta Fe 87501 File N.M.B.M. U.S.G.S. ODERATOR OR PLUG BACKGEOTHERMAL RESOURCES WELL Jand Office APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACKGEOTHERMAL RESOURCES WELL N.A. I. Unit Agreement Name N.A. b. Type of Well Geothermal Producer Temp Observation IN Low-Temp Thermal Injection/Disposal Demoz Lease 2. Name of Operator Mayor Eddie Armenta 3. Address of Operator Village of Jemez Springs, New Mexico 4. Location of Well OO West of Town Hall	y FEE !
N. A. B. M. A. APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACKGEOTHERMAL RESOURCES WELL Ta. Type of Work Drill M. Deepen Plug Back Temp Observation M. A.	y see !
b. Type of Well Geothermal Producer Temp Observation ID 8. ***** Lease Name Low-Temp Thermal Injection/Disposal Demoz Lease 2. Name of Operator Mayor Eddie Armenta 3. Address of Operator Village of Jemez Springs, New Mexico N.A.	
Low-Temp Thermal Injection/Disposal I Jemez Lease 2. Name of Operator Mayor Eddie Armenta 3. Address of Operator Village of Jemez Springs, New Mexico 10. Field and Pool, or Wild UNDES.	
Mayor Eddie Armenta 3. Address of Operator Village of Jemez Springs, New Mexico 10. Field and Pool, or Wild UNDES.	7
3. Address of Operator Village of Jemez Springs. New Mexico UNDES.	
4 Location of Well	cat
UNIT LETTER A LOCATED 90 FEET FROM THE LINE	
AND FEET FROM THE LINE OF SEC. TWP. Rose MIMON VIZ. County Sandoval	
19. Proposed Depth 19A. Formation 20. Rotary or	
21. Elevations (Show whether DF, RT, etc.) 21A. Kind & Status Plug. Bond 6275 G.L. Exempt Stuart Bros./Grants, NM 2 January 197	
PROPOSED CASING AND CEMENT PROGRAM	
SIZE OF HOLE SIZE OF CASING WEIGHT PER FOOT SETTING DEPTH SACKS OF CEMENT EST. T	OP
8 3/4 in. 7 in. 6.D. 14 lbs./ft. 100 ft. 30 circ.	
DEFORE THE OIL CONSTRUATION COMMISSION Care No. 6461 For 90 PAYS PERMIT EXPIRES 3/28/79 UNLESS DRILLING UNDERWAY	
IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal i to deepen or plug back, give data on present productive zone and proposed new	producth
I hereby certify that the information above is true and complete to the best of my knowledge and belief.	
Signed Title Mayor, Village of Jemez Springs Date 22 December 197	'8
(The space for State Use)	
CONDITIONS OF APPROVAL, IF ANY: CHIEF ENGINEER	

NEW MENICO OIL CONSERVATION COMMISSION P. O. HOX 2088 SANTA FE 87503 GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

Operator		All distances must (or from the outer be	undatics of the Sec	well No.
	Eddio Armanto			lage	
Unit Teiter A	26	Lownship 18 No	rth Range 2	East Counts	Sandova1
Actual Footage Focal		t of town hal	·L	-tt	the tree
Ground Lovel Flex. 6275	Producing Forms		UNDE	ST.	Dedicated Acreage: None Acres
1. Outline i	he acreage dedicated	to the subject wel	I by colored penc	il or hachure mail	ks on the plat below.
2. If more and royal		dicated to the wel	l, outline each an	d identify the ov	mership thereof (both as to working interest
	than one lease of d lization, unitization	•		well, have the i	nterests of all owners been consolidated by
☐ Yes	□ No If answ	ver is "yes," type o	f consolidation		
If answer is		rs and tract descrip	otions which have	actually been co	onsolidated. (Use reverse side of this form if
No allowabl	e will be assigned			have been conse	olidated (by communitization, unitization, is been approved by the Commission.
				HELL SITE	
	01	C	SPRING BATH HOUSE	TOUNA HALL	CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.
	- E,	_F		/ 	Name Tom Kleeman
					Company
	1				Coupland, Moran & Assoc.
				i	Žī December 1978
			J	I	I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.
				p	
			1		Date Surveyed
			, 		Registered Professional Engineer
					Certificate No.
n 310 nec ec	1370 1050 1985	2310 2640 80	20 1500 100	' '	1

Mr. Joe D. Ramey, Director
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
Old Santa Fe Irail
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

In lieu of posting a bond for a permit to drill a geothermal observation well, I am writing to assure you that The Village of Jemez Springs guarantees that the above mentioned well will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in The Rules and Regulations. We look forward to working with the Division in this endeavor.

Sincerely,

Eddie Armenta, Mayor
The Village of Jemez Springs, N.M.

BEFORE THE
OIL CONSERVATION COMMISSION
States Fo, New Mexico
Case No. 646 | Entablish No. 2
Submitted by o.e.e.
Hearing Date 9-23-79

JEMEZ No 1 A-26-18N-RE, Sandoval County

	BEFORE	THE	·
OIL CON	OLVANJS,	DM COW	MISSION
			^

Carolil . UYG	1 19 11 145. 3
	. OCC
	02-23-79

III. PROPOSED WORK EFFORT

The Village of Jemez Springs, New Mexico proposes using State funds for drilling geothermal test wells and assessing the results. These wells will make it possible to ascertain the deliverable quantities of geothermal fluids (flow rates, their temperatures and chemical makeup). This data will lend more precision to determining the engineering and economic feasibility of utilizing the resource.

The work plan, shown on the following chart, calls for execution of assignments in the following order:

- 1. Prior to drilling, geologic mapping of the area, part of the ongoing San Diego Canyon mapping program, will be completed by geologists from Los Alamos Scientific Laboratories. These maps will be necessary in locating the drilling site.
- 2. Upon the completion of the mapping, expected in early August, personnel from L.A.S.L. will lend expertise in locating an optimal drilling site along a controlling fault. Given the extant information on geothermal and hydrological phenomena in the area, the locations of hot springs and wells and the data yielded from mapping, it should be possible to locate a favorable test site:
- 3. Upon locating a test site that meets with the satisfaction of the project geologist and the principal investigator, the project director will secure the services of a drilling subcontractor.
- 4. Drilling will be carried out under the supervision and with the advise of the project geologist. Iwo test wells, of a diameter of 4" 6", to be determined upon completion of mapping, will be drilled into the limestone formation. Well depths are not expected to go below 750 Ft, Fluids brought to the surface will be held during the test and subsequently reinjected into the formation.
- 5. After the well is completed the project geologist will inform the project director and project engineer of the relevent engineering data, e.g. temperatures, flow rates (determined by draw down tests) etc. The project geologist will analyze the well data for its geologic significance regarding the geothermal resource. Upon the completion of this effort, he will present the project director with a short report on his findings which will be included in the final project report.
- 6. The project engineer will use the findings of the geologists to determine engineering and, with the participation of the project director, economic feasibility of resource utilization. At the end of this assessment the project engineer will present his findings to the project director.
- 7. The project director will then write a final report based on the findings of the participants. This final report is expected to include a clear, precise and acceptable determination of the efficacy of the utilization of geothermal resources utilization in the Village of Jemez Springs, New Mexico. Afthe The report is issued pipes will be lad to delive but water from The well to the Town Hall to be used for space hearing.

ALBUQUERQUE JOURNAL Priday, January 5, 1919

Care 11.6461 CCC
Healing Data 2-23-79

Project Meating Up Energy Prospects

At Jemez Springs

By TOMAS O. MARTINEZ

-Assistant State Editor

JEMEZ SPRINGS — The Village of Jemez Springs may become energy self-sufficient if a test project, currently under way, shows that geothermal energy can provide the village with heat and electricity.

The Village of Jemez Springs, located about 50 miles northwest of Albuquerque, is drilling a test well on village property to locate underground volcanic heated water to use as a power source.

The drilling, project management, and feasibility studies are being funded through a \$32,000 grant from the New Mexico Department of Energy.

Jemez Springs Mayor Eddie Armenta, 39, said he hopes the well will produce water heated at 250 degrees Fahrenheit. Hot water or steam from that well would be used to heat homes within the village and generate electricity.

"It's a tremendous project. If it works, we could become energy self-sufficient. Residents would be able to cut their utility costs by about 50 percent. I hope it works. We all do," Armenta, a retired Treasury Department agent and former Albuquerque police officer, said.

The well is being dug on village property behind the Jemez Springs City Hall. The project is the brain child of Project Engineer Tom Kleeman.

Armenta said Kleeman visited Jemez Springs in late 1977 to bathe in the hot springs near the village.

"He (Kleeman) came up with the idea," Armenta said. "The village hired him to study the possiblity of such a project, and to write a proposal to the federal government for funding.

"The federal government (Department of Energy) turned down our \$4 million proposal. They said they could not fund exploratory projects. In July 1978 we submitted a proposal to the state. It was approved in late Novem-

ber. If the well produces water at 250 degrees, we will resubmit our proposal to the federal government for construction of a generating plant," Armenta said.

Kleeman said, "If the test is a success, it will be a tremendous event for New Mexico."

Kleeman, who represents Copeland-Moran Associates of Albuquerque, said drilling began Wednesday.

The drilling is being done by Stuart Brothers Drilling Co. of Grants. The firm has drilled similar wells for Los Alamos Scientific Labs in the Valle Grande area between Los Alamos and Jemez Springs.

Two Los Alamos scientists, Bill Laughlin and Francis West of LASL's Georthermal Groups, were at the drilling site Thursday to provide technical advice. West said the hot water the village is trying to locate escapes through faults from the Valle Grande, the site of a gigantic extinct volcano.

Laughlin said the volcano last erupted about 40,000 years ago and hot rocks heat the water in the calderon. That water escapes through faults, and one of those faults runs through the area where the well is being dug.

If the drilling project is a success, Armeta said that included in the second proposal to the U.S. Department of Energy will be a request to fund construction of village greenhouses.

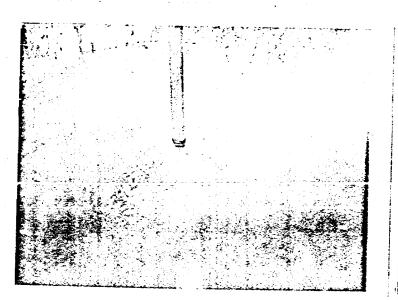
Armenta said village greenhouses would represent a cooperative village effort to provide residents with vegetables and other food stuffs

"It's a tremendous opportunity for the Village of Jemez Springs. If the well is a success, we hope the federal government will fund this as a pilot project," Armenta said.

Kleeman anticipates the possibility of geothermal energy for Jemez Springs could become a reality by late 1980. That is, if the well comes through, and the federal government funds the project.



A-26-18N-2E Taken 1/29/19 C.U.



A-26-18N-2E Taken 1/29/79 C.U.

DEFORE THE

OIL COME VATION COMMISSION

Commission No. 5

Summer Day 2-23-79



ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

WICK FRANKLIN SECRETARY

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO BYS 15078 R22 0438

January 30, 1979

February 1, 1979

Mr. Eddie Armonta Mayor of Jemez Springs Village P. O. Box 87 Jemez Springs, New Mexico 87025

Dear Sir

You are the recorded operator of a geothermal temperature observation well located in Unit A of Section 26, Township 18 North, Range 2 East, NNPM, Sandoval County, New Mexico. According to the permit granted by this office the total depth would not exceed seven hundred fifty feet (750'), would have seven inch (7") casing set at one hundred feet (100') and cemented into the full length of the hole (cemented circulated). Furthermore, your letter to this agency requesting a waiver of bonding requirements states that your well will be plugged and the location cleaned in accord with State regulations.

An inspection of the site on January 29th last, indicates that your project is in violation of State Regulations in several respects. Please refer to the rules and make such changes as are necessary to be in compliance. Of primary importance is the immediate shutting off of the water that is escaping to the surface.

Kindly <u>submit</u> your plan for remedial action and/or plugging for abandonment in time for same to be witnessed by a representative of this agency.

Yours truly,

CARL ULVOG Senior Geologist

CU/og

Mayor Eddie Armenta Village of Jemez Springs Jemez, New Mexico

. .

Subject: Jemez Lease Well No. 1 Unit A, Section 26, Township 18 North, Range ? East, NNPM, Sandoval County,

New Mexico

Dear Sir:

The subject well appears to have been drilled. It was permitted as a "Temperature Observation" well by this agency on December 28, 1978. To date, no reports or other information concerning that operation have been received in this office.

Kindly refer to the New Mexico State Regulations and supply all of the now-delinquent data. Also, because this agency was not notified prior to the setting and/or cementing of any casing in the subject well, please submit affidavits from the companies or individuals employed for such operations.

Yours truly,

Carl Illeng CARL ULVOG Senior Geologist

CU/og cc: Lynn Teschendorf Oil Conservation Division General Counsel

BEFORE THE OIL CONSTRUMENTON COMMISSION	
Case to UMU/ The Mos. 6	
Submitted by OCC	
Hearing Data 2-23-79	

B. Form G-103 as a Subsequent Report

Form G-103 as a subsequent report of operations shall be filed in accordance with the section of this role applicable to the particular operation being reported.

Form G-103 is to be used in reporting such completed operations as:

- (1) Conventement of drilling operations
- (2- Casing and cement test
- (3) Altering a well's casing installation
- (4) Temporary abandonment
 - (5) Plugging and Abandonment
 - . (6) Plugging back or deepening
 - (7) Remedial work
 - (8) Change in ownership of a drilling well
 - (9) Such other operations which affect the original status of the well but which are not specifically covered herein.

C. Filing Form G-103 as a Subsequent Report

Information to be entered on Form G-103, Subsequent Report, for a particular operation is as follows:

(1) Report of Commencement of Drilling Operations

Within ten days following the commencement of drilling operations, the operator of the well shall file a report thereof on Form G-103 in DUPLICATE. Such report shall indicate the hour and the date the well was spudded.

(D-2

(2) Report of Results of Test of Casing and Coment Job; Report of Casing Alteration

A report of casing and cement test shall be filed by the operator of the well within ten days following the setting of each string of casing or liner. Said report shall be filed in DUPLICATE on Form G-103 and shall present a detailed description of the test method employed and the results obtained by such test, and any other pertinent information required by Rule 108 B(5). The report shall also indicate the top of the cement and the means by which such top was determined. It shall also indicate any changes from the casing program previously authorized for the well.

(3) Report of Temporary Abandonment

A report of temporary abandonment of a well shall be filed by the operator of the well within ten days following completion of the work. The report shall be filed in DUPLICATE and shall present a detailed account of the work done on the well, including location and type of plugs used, if any, type and status of surface and downhole equipment, and other pertinent information relative to the overall status of the well.

(4) Report on Plugging of Well

A report of plugging operations shall be filed by the operator of the well within 30 days following completion of plugging operations on any well. Said report shall be filed in TRIPLICATE on Form G-103 and shall include the date the plugging operations were begun and the date the work was completed, a detailed account of the manner in which the work was performed including the depths and lengths of the various plugs set, the nature and quantities of naterials employed in the plugging operations including the weight of the mad used, the size and depth of all casing left in the hole, and any other pertinent information.

(See Rules 301-303 regarding plugging operations.)

Co. 1. 046/ 1. No. 7
Substitute Date 2-23-29

D-3

A-26-18N-2E Taken 2/21/19 C.U.



A-26-18N-2E Taken 2/21/19 c.U.

DEFORE THE OIL COMMISSION Eller Population Maxico

Cara N. 646/ 1 No. 8 Subminud w. oce

Hearing Date 2-23-7

Mr. Joe D. Ramey, Director
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
Old Santa Fe Trail
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

In lieu of posting a bond for a permit to drill a geothermal observation well, I am writing to assure you that The Village of Jemez Springs guarantees that the above mentioned well will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in The Rules and Regulations. We look forward to working with the Division in this endeavor.

Eddie Armenta, Mayor The Village of Jemez Springs, N.M.

BEFORE THE
OIL CONSERNATION COMMISSION
Senter Re, In the Medico
Case No. 6461 Exhibits No. 2
Submitted by
Hearing Date

Sincerely,

JEMEZ No 1 A-26-18N- RE, Sandoval County Dockets Nos. 9-79 and 10-79 are tentatively set for hearing on March 14 and 28, 1979. Applications for hearing must be filed at least 22 days in advance of hearing date.

Docket No. 7-79

DOCKET: COMMISSION HEARING - TRIDAY - FEBRUARY 23, 1979

OIL CONSERVATION COMMISSION - 9 A.M. - ROOM 205 STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

CASE 6461:

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Mayor Eddie Armenta, the Village of Jemez Springs, and all other interested parties to appear and show cause why the Jemez Well No. 1 located in Unit A of Section 26, Township 18 North, Range 2 East, Sandoval County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.

Docket No. 8-79

DOCKET: EXAMINER HEARING - WIDNESDAY - FEBRUARY 28, 1979

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM. STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter. Alternate Examiner:

CASE 6422: (Continued from January 31, 1979, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Division on its own motion to permit Helton Engineering & Geological Services, Inc., Travelers Indemnity Company, and all other interested parties to appear and show cause why the Brent Well No. 1 located in Unit M of Section 29 and the Brent Well No. 3 located in Unit G of Section 19, both in Township 13 North, Range 6 East, Sandoval County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.

CASE 6434: (Continued from January 31, 1979, Examiner Hearing)

Application of Amerada Hess Corporation for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the drilling of its State "O" Well No. 5 to be located in Unit H of Section 30, Township 19 South, Range 37 East, Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well, and further seeks approval of a waiver of existing well-spacing requirements.

CASE 6435: (Continued from February 14, 1979, Examiner Hearing)

Application of Amerada Hess Corporation for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the drilling of the W. A. Weir BB Hell No. 3 located in Unit B of Section 26, Township 19 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well, and further seeks approval of a waiver of existing well-spacing requirements.

CASE 6436: (Continued from January 31, 1979, Examiner Hearing)

Application of Amerada Hess Corporation for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a linding that the drilling of its State "U" Gas Com Well No. 2 to be located in Unit C of Section 32, Township 19 South, Range 37 East, Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well, and further seeks approval of a waiver of existing well-spacing requirements.

CASE 6462: Application of McClellan Oil Corporation for an unorthodox well location, Chaves County, New Mexico. Applicant. in the above-styled cause, seeks approval for the unorthodor location of its Mariisus State Well No. 3 to be located 1155 feet from the North line and 1485 feet from the West line of Section 24, Township 14 South, Range 29 East, Double "L" Queen Associated Pool, Chaves County, New Mexico, the NE/4 NW/4 of said Section 24 to be dedicated to the well.

Application of Orville Slaughter for pool and lease commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Oswell-Farmington Pool production from his Sangre de Cristo Well No. 1 with undesignated Fruitland production from his Sangre de CASE 6463: Cristo Well No. 2, both located in Unit D of Section 34, Township 30 North, Range 11 West, San Juan County, New Mexico.

ACACIONA YEMBU RUASSOS

NICK FRANKLIN SECRETARY February 5, 1979

FC SE OFFICE FOX \$088 STATE LAND OFFICE RURDING SANTA FE. NEW MEXICO 87501 1505) 827-2434

Sheriff of Valencia County 320 E. High Grants, New Mexico 87020

Dear Sir:

Enclosed please find Subpoenas Duces Tecum for service on the following individuals:

Don Kelly 310 Airport Road Milan, New Mexico

Gerry McAllister
1319 Berryhill
Milan, New Mexico

I would appreciate having these people served as soon as possible, as the hearing date is February 23. Please complete the Return of Service on each original, and return them with your bill to my office.

Very truly yours,

(Ms.) LYNN TESCHENDORF General Counsel

LT/dr

£ 5

SUBPORNA DUCES TECHM

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

To Don Kelly	Greeting:
We command you to bo	and appear at 9:00 a.m. on February 23, 197
before the Oil Conservation	n Commission of the State of New Mexico, at
The Oil Conservation Commi	ssion Conference Room in the State Land
Office Building, in the Ci	ty of Santa Fe, then and there to testify
in the Case of application	of the Oil Conservation Commission to show
cause why the Jemez Well No	. 1 should not be plugged
on behalf of Stewart Br	others Drilling Co.
and also that you bring wi	th you and produce at the time and place
aforesaid any and all rec	ords pertaining to the Jemez Well No. 1
located in Unit A, Section	26, Township 18 North, Range 2 East,
Sandoval County, New Mexico	
And this do you under	r penalty of the law
	WITNESS JOE D. RAMEY, Member
	of the Oil Conservation Commission of
	the State of New Mexico, and the seal
• .	of said Commission, this 5th
	day of February , 1979.

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

COUNTY OF SANTA FE

APPLICATION OF: OIL CONSERVATION COMMISSION TO SHOW CAUSE WHY THE JEMEZ WELL NO. 1 SHOULD NOT BE PLUGGED.

SUBPOENA

STATE OF NEW MEXICO

ENERGY AND TOURISH DEPARTMENT.

JURBY APODACA GOVER**NOR**

NICK FRANKLIN SECRETARY February 5, 1979

POST OFFICE FOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 1505) 507-2404

Sheriff of Sandoval County Court House Bernalillo, New Mexico 87004

Dear Sir:

Enclosed please find a Subpoena Duces Tecum for service on the following individual:

Eddie Armenta, Mayor Village of Jemez Springs

I would appreciate having this person served as soon as possible, as the hearing date is February 23. Please complete the Return of Service on the original, and return it with your bill to my office.

Very truly yours,

(Ms.) LYNN TESCHENDORF General Counsel

LT/dr enc.

DOCKET: COMMISSION HEARING - FRIDAY - FEBRUARY 23, 1979

OIL CONSERVATION COMMISSION - 9 A.M. - ROOM 205 STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

CASE 6461:

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Mayor Eddie Armenta, the Village of Jemez Springs, and all other interested parties to appear and show cause why the Jemez Well No. 1 located in Unit A of Section 26, Township 18 North, Range 2 East, Sandoval County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.

need Suppoenas Duces Decem In the following person in Case 28. 616/ Der. 23, 1979, Case of Cepplication gocc to show rause why the gency well no. 1 Should not be plugged. tack gerson should bring "any and all record sertaining to the goods Well No. 1 Cocated in Hut A Sec 26, TIBN, RZE, Sandoval County, nm" Don Keely on behalf of Stewart Brothers Drieling Co. 310 Airport Road, Milan 2) Levry Mcallister on behay of National Comenting Corp 1319 Berrybile , Milan (3) Eddie armenta on behalf of Village of Jemez Springs P.O. Fox 8

Joe Pierce J Stell Engineer State Engineer Gadie Ormenton Mayor of Jem Sp DO 8 22 87 J S 87025

SUBPOENA DUCES TECUM

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

TO TOM KLEEMAN		Greeting:
We command you to	be_and_appear <u>at9 a.m.</u>	on February 23, 1979
before the Oil Conservat	ion-Commission of the St	ate of New Mexico, a
The Oil Conservation Com	mission Conference Room	in the State Land
Office Building, in the	City of Santa Fe, then a	nd there to testify
in the Case of show caus	e hearing to plug the Je	mez Well No. 1
on behalf of <u>Coupland</u> , M	oran & Associates	
and also that you bring	with you and produce at	the time and place
aforesaid <u>any and all</u>	records pertaining to th	e Jemez Well No. 1
located in Unit A, Sect	ion 26, Township 18 Nort	h, Range 2 East,
Sandoval County, New Me	xico	
And this do you und	der penalty of the law	
	WITNESS JOE D. RAMEY	Member
•	of the Oil Conservati	on Commission of
	the State of New Mexi	co, and the seal
	of said Commission, t	this 2nd
	day of February	, īġ 79

CASE	NO.	6461	
------	-----	------	--

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

COUNTY OF SANTA FE

APPLICATION OF: Oil Conservation Commission to show cause why the Jemez Well No. I should not be plugged.

SUBPOENA

RETURN OF SERVICE

SUBPOENA DUCES TECUM

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

To	TOM KLEEMAN	Greeting:
	We_command_you_to_be_and_appear_at_9	a.m. on February 23, 1979
befo	re the Oil Conservation Commission of the	ne State of New Mexico, a
The	Oil Conservation Commission Conference	Room in the State Land
Offi	ce Building, in the City of Santa Fe, th	nen and there to testify
in t	he Case of show cause hearing to plug th	ne Jemez Well No. 1
		.* .
on b	ehalf of <u>Coupland</u> , Moran & Associates	
and a	also that you bring with you and produce	e at the time and place
afor	esaid any and all records pertaining	to the Jemez Well No. 1
100	cated in Unit A, Section 26, Township 18	North, Range 2 East,
Sar	ndoval County, New Mexico	
	and the second of the second o	

And this do you under penalty of the law



witness JOE D. RAMEY, Member of the Oil Conservation Commission of the State of New Mexico, and the seal of said Commission, this 2nd

day of February

19 79

SUBPORTA BUCES TECOM

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

To Eddie Armenta	Greeting:
we command you to be	and appear at 9:00 a.m. on February 23, 1979
before the Oil Conservatio	n Commission of the State of New Mexico, at
The Oil Conservation Commi	ssion Conference Room in the State Land
	ty of Santa Fe, then and there to testify n of the Oil Conservation Commission to show
cause why the Jemez Well No	o. 1 should not be plugged
on behalf of Village of	Jemez Springs
•	th you and produce at the time and place ecords pertaining to the Jemez Well No. 1
located in Unit A, Section	26, Township 18 North, Range 2 East,
Sandoval County, New Mexico	·
And this do you under	r penalty of the law =-
	WITNESS JOE D. RAMEY, Member
	of the Oil Conservation Commission of
	the State of New Mexico, and the seal
	of said Commission, this 5th
	day of February 19 79

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

COUNTY OF SANTA FE

APPLICATION OF: OIL CONSERVATION COMMISSION TO SHOW CAUSE WHY THE JEMEZ WELL NO. 1 SHOULD NOT BE PLUGGED

SUBPOENA

RETURN OF SERVICE

SUBPOENA DUCES TECUM

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

To Gerry McAllister		Greeting:
We command you to be	and appear at 9:00 a.m.	on February 23, 1979
before the Oil Conservation	n Commission of the Stat	e of New Mexico, at
The Oil Conservation Commis	ssion Conference Room in	the State Land
Office Building, in the Ci	ty [°] of Santa Fe, then and	there to testify
in the Case of application	of the Oil Conservation	Commission to show
cause why the Jemez Well N	lo. I should not be plug	ged
on behalf of National Cem	nenting Corporation	
and also that you bring with aforesaid any and all reconsided in Unit A, Section	cords pertaining to the	lemez Well No. 1
Sandoval County, New Mexico		
Sandoval County, New Mexico		
Sandoval County, New Mexico		
And this do you under		
	penalty of the law	Member
	penalty of the law WITNESS JOE D. RAMEY,	Member n Commission of
	penalty of the law WITNESS JOE D. RAMEY, of the Oil Conservatio	Member n Commission of o, and the seal
	penalty of the law WITNESS JOE D. RAMEY, of the Oil Conservatio the State of New Mexic	Member n Commission of o, and the seal is

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

COUNTY OF SANTA FE

APPLICATION OF: DIL CONSERVATION COMMISSION TO SHOW CAUSE WHY THE JEMEZ WELL NO. 1 SHOULD NOT BE PLUGGED

SUBPOENA

TESTIMONY FOR SHOW CAUSE HEARING

1.	Would you state your name, position and place of residence for the record. please?
2.	How long have you held this position?
3.	Have you previously testified before the Commission, and are your credentials a matter of record?
4.	Does District include that part of County involved in this case?
-5.	Do your duties as District Supervisor include making recommenda- tions to the Commission as to when wells should be plugged and abandoned?
6.	Are you familiar with the subject matter of Case?
7.	What is the purpose of this case?
8.	Have you reviewed all reports filed with the Commission concerning these wells?
9.	Do you have these records with you?
10.	Please refer to the records which pertain to this well and summarize its history.
11.	On what date was the last official form filed with the Commission?
12.	Do you have any other communications relative to this case which should be called to the Commission's attention?
13.	In your opinion, could the failure to plug this well cause wasted
14.	Would you elaborate on how waste could be caused?
15.	Are you prepared to recommend a plugging program at this time, or would you prefer to describe the program at the actual time of plugging?
*16.	Would you now refer to the records on the well and summarize its history (Q11-15)
*17.	Are the exhibits true and correct copies of Commission records? Offer exhibits.
18.	I have nothing further.

1-26-18N-2E Taken 2/21/19 C.U.



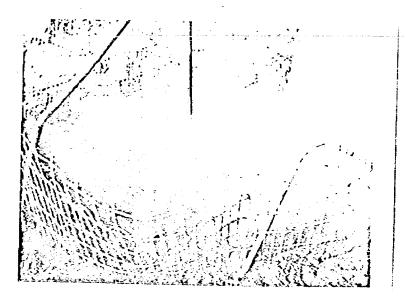
A-26-18N-2E Taken 2/21/19 C.U.

DEFORE THE OIL COMMISSION

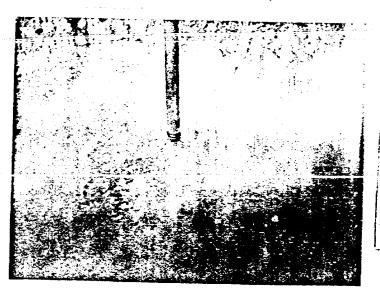
Submined by occ

Hearing Date <u>2-23-79</u>

A-26-18N-2E
Taken 1/29/79
C.U.



A-26-18N-2E Taken 1/29/79 C.U.



A-26-18N-2E Taken 1/29/19 C.U.

OIL COMMUNICATION COMMISSION

Case N 646/ No. 5

Hearing Dalo 2-23-79

	NO. OF COPILS RECE	IVED		NEV	VIMUNICO OIL CONS	ERVATION COMMISSIO	NC		
	DISTRIBUTION				P. O. Box 2088,	Santa Fe 87501			e de la composición dela composición de la composición dela composición de la composición de la composición dela composición dela composición de la composic
	N.M.B.M. U.S.G.S. Operator Land Office	1				MIT TO DRILL, DEE ERMAL RESOURCES		5. Indicate SYATE 5.a State L.C	Typiflage Property FEE (asse No. A.
·	Samuel Communication and the second								
						Plug Back - E	_	7. Unit Agre	eement Name A.
	b. Type of Well 2. Name of Operator		nal Produce p Thermal			Temp Observation [] njection/Disposal			Lease Name Lease
	Mayor I	Eddie A	rmenta		7 mm	**************************************		9. Well No.	1
:	3. Address of Operator Village	e of Je	mez Spri	ings, N	ew Mexico	÷.		10. Field an	d Pool, or Wildcat ES.
	4. Location of Well	JNIT LET	rerA	LOCA1	red 90 West	of Town Hall	LINE		
	AND FEE	T FROM	LHE LHE	LINE OF	SEC. TWP.	TTTTT RGE	NMPM	12. County	
								Sandov	
-									
1		11111				19. Proposed Depth 750 ft.	19A. Forma	lion	20. Rotary of C.T.
	21. Elevations (Show w	hether DF,	RT, etc.)	21 A. Kind	& Status Plug. Bond Xempt		r Grants N	imestone 22. Approx 2 .la	Rotary K. Date Work will start NUARY 1979
THE CHARLES AND THE CHARLES AND						ND CEMENT PROGRAM		<u> </u>	110017 151.
-	SIZE OF HOLE		SIZE OF C		WEIGHT PER FOOT	SETTING DEPTH	SACKS O	OF CEMENT	EST. TOP
Ĺ	8 3/4 in. 5 in.		7 in.	G.D.	14 lbs./ft	· 100 ft.	30		circ.
-	<u> </u>					•			
	N ABOVE SPACE DESC	PERMIT UNLES	L VALID FO EXPIRES S DRILLIN POSED PRO	3/2	8/79/ RNAY	Case II 644 / Submitted 11/2 Hearing Date	2-23	3-79	proposed new productive
P	one. Give blowout preven	iter program	n, if any.		- 				proposed new production
	gned	me		Zina comp	•	llage of Jemez	Springs	Date 22 Dec	ember 1978
en eine en torta bio	of this sp	ate for S	te Use)	-					1-6-6
Ě	PPROVED BYONDITIONS OF PPRO	VAL, IF A	NELLU NY:	C		LS. NUTTER ENGINEER		DATE 12	128/78
•	entropy of the second s		* *				August 1		

NEW MENICO DE CONSERVATION COMMISSION P. O. HOX 2008 SANTA FE - 87501 GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

**		All distance	s must be from	the outer b	oundaties	of the Secti	man,	En .n. N.	
Operator Mayon	Eddie Armer	nta	1.0	use 717	llage		1 American	Well No.]
Unit Letter A	Section 26	lownship	18 North	Range	2 East	County	Sandoval		
Actual Footage Locat		vest of tow	n hall		ه د د د د د د د د د د د د د د د د د د د	l			
Ground Level Flev. 6275		rmation era Limesto			EST.			Dedicated Acreage None	Acres
1. Outline f	he acreage dedica	ited to the subje	ect well by e	alarad peni	ril or bac	lure muk	easy the plat	below,	
2. If more (and royal	than one lease is lty).	dedicated to t	he well, out	ine each ar	id identii	ly the own	nership thereo	of (both as to wo	rking interest
	than one lease o dization, unitizati		-	rated to th	e well, h	ave the in	eterests of all	owners been co	nsolidated by
☐ Yes	□ No If a	nswer is "yes."	type of cons	olidation_					
If answer is necessary.)	"no," list the ov	vners and tract	descriptions	which have	e actually	been c oi	nsolidated. (U	se reverse side o	f this form if
No allowabl	e will be assig								
					- HELL S	51TE			
	D1 	C		SPRING -		HALL HALL	contained the best o	CERTIFICATION certify that the horein is true and if my knowledge ar	information complete to
	E,	F		- G /	/	H	Position Con-	Kleeman sultant pland, Morar	ı & Assoc
				. l . l _i				December 197	/8
		K		J	-	Ī	shown on notes of under my is true ar	certify that the this plat was plotte actual surveys mad supervision, and the and belief.	ed from field le by me or hat the same
	M //		· 	-0; -					, egil eskil k
				1			Date Surveyed	d	
1				1			Registered Pro	ofessional Engineer	
p	<u> </u>			<u> </u>			Certificate No	· · · · · · · · · · · · · · · · · · ·	
n san neo sa	1 1 02 00 00 191 191 02 00 00 191	90 2310 2640 10 2310 2640	3000	1500 10	000 50	0	<u> </u>		İ

Mr. Joe D. Ramey, Director Oil Conservation Division Energy and Minerals Department State Land Office Building Old Santa Fe Trail Santa Fe, New Mexico 87501

Dear Mr. Ramey:

In lieu of posting a bond for a permit to drill a geothermal observation well, I am writing to assure you that The Village of Jemez Springs guarantees that the above mentioned well will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in The Rules and Regulations. We look forward to working with the Division in this endeavor.

Sincerely,

Eddie Armenta, Mayor The Village of Jemez Springs, N.M.

BEFORE THE

OIL CONSERVATION COMMISSION

Santa Fa, Nour Mexico

Case No. UYU | Exhibit No. 2

Submitted by Oee

Hearing Date 2-23-79

JEMEZ No 1 A-20-18N- RE Sandoval County

	DIFORE THE
CH	COMMUNICAL COMMISSION
	The grant of the file of the state of the st

Cate !	1. 4441 ilo. 3	
Submi	oce_	

III. PROPOSED WORK EFFORT

The Village of Jemez Springs, New Mexico proposes using State funds for drilling geothermal test wells and assessing the results. These wells will make it possible to ascertain the deliverable quantities of geothermal fluids (flow rates, their temperatures and chemical makeup). This data will lend more precision to determining the engineering and economic feasibility of utilizing the resource.

The work plan, shown on the following chart, calls for execution of assignments in the following order:

- 1. Prior to drilling, geologic mapping of the area, part of the ongoing San Diego Canyon mapping program, will be completed by geologists from Los Alamos Scientific Laboratories. These maps will be necessary in locating the drilling site.
- 2. Upon the completion of the mapping, expected in early August, personnel from L.A.S.L. will lend expertile in locating an optimal drilling site along a controlling fault. Given the extant information on geothermal and hydrological phenomena in the area, the locations of hot springs and wells and the data yielded from mapping, it should be possible to locate a favorable test site:
- 3. Upon locating a test site that meets with the satisfaction of the project geologist and the principal investigator, the project director will secure the services of a drilling subcontractor.
- 4. Drilling will be carried out under the supervision and with the advise of the project geologist. <u>Two test wells</u>, of a diameter of 4" 6", to be determined upon completion of mapping, will be drilled into the limestone formation. Well depths are not expected to go below 750 Ft. Fluids brought to the surface will be held during the test and subsequently reiniected into the formation.
- 5. After the well is completed the project geologist will inform the project director and project engineer of the relevent engineering data, e.g. temperatures, flow rates (determined by draw down tests) etc. The project geologist will analyze the well data for its geologic significance regarding the geothermal resource. Upon the completion of this effort, he will present the project director with a short report on his findings which will be included in the final project report.
- 6. The project engineer will use the findings of the geologists to determine engineering and, with the participation of the project director, economic feasibility of resource utilization. At the end of this assessment the project engineer will present his findings to the project director.
- 7. The project director will then write a final report based on the findings of the participants. This final report is expected to include a clear, precise and acceptable determination of the efficacy of the utilization of geothermal resources utilization in the Village of Jemez Springs, New Mexico. After the report is issued pipes will be lad to delive by water from the well to the Town Hall to be used for space hearing.

Care N. UYU! 113. 4
Submitted to 2 2-23-79

Project Heating Up Energy Prospects

ALDUQUERQUE JOURNAL Friday, January 0, 1979

At Jemez Springs

By TOMAS O. MARTINEZ

Assistant State Editor

JEMEZ SPRINGS — The Village of Jemez Springs may become energy self-sufficient if a test project, currently under way, shows that geothermal energy can provide the village with heat and electricity.

The Village of Jemez Springs, located about 50 miles northwest of Albuquerque, is drilling a test well on village property to locate underground volcanic heated water to use as a power source.

The drilling, project management, and feasibility studies are being funded through a \$32,000 grant from the New Mexico Department of Energy.

Jemez Springs Mayor Eddie Armenta, 39, said he hopes the well will produce water heated at 250 degrees Fahrenheit. Hot water or steam from that well would be used to heat homes within the village and generate electricity.

"It's a tremendous project. If it works, we could become energy self-sufficient. Residents would be able to cut their utility costs by about 50 percent. I hope it works. We all do," Armenta, a retired Treasury Department agent and former Albuquerque police officer, said.

The well is being dug on village property behind the Jemez Springs City Hall. The project is the brain child of Project Engineer Tom Kleeman

Armenta said Kleeman visited Jemez Springs in late 1977 to bathe in the hot springs near the village.

"He (Kleeman) came up with the idea," Armenta said. "The village bired him to study the possiblity of such a project, and to write a proposal to the federal government for funding.

"The federal government (Department of Energy) turned down our \$4 million proposal. They said they could not fund exploratory projects. In July 1978 we submitted a proposal to the state. It was approved in late Novem-

ber. If the well produces water at 250 degrees, we will resubmit our proposal to the federal government for construction of a generating plant," Armenta said.

Kleeman said, "If the test is a success, it will be a tremendous event for New Mexico."

Kleeman, who represents Copeland-Moran Associates of Albuquerque, said drilling began Wednesday.

The drilling is being done by Stuart Brothers Drilling Co. of Grants. The firm has drilled similar wells for Los Alamos Scientific Labs in the Valle Grande area between Los Alamos and Jemez Springs.

Two Los Alamos scientists, Bill Laughlin and Francis West of LASL's Georthermal Groups, were at the drilling site Thursday to provide technical advice. West said the hot water the village is trying to locate escapes through faults from the Valle Grande, the site of a gigantic extinct volcano.

Laughlin said the volcano last erupted about 40,000 years ago and hot rocks heat the water in the calderon. That water escapes through faults, and one of those faults runs through the area where the well is being dug.

If the drilling project is a success, Armeta said that included in the second proposal to the U.S. Department of Energy will be a request to fund construction of village green-bouses

Armenta said village greenhouses would represent a cooperative village effort to provide residents with vegetables and other food stuffs.

"It's a tremendous opportunity for the Village of Jemez Springs. If the well is a success, we hope the federal government will fund this as a pilot project," Armenta said.

Kleeman anticipates the possibility of geothermal energy for Jemez Springs could become a reality by late 1980. That is, if the well comes through, and the federal government funds the project.

Taken 1/29/79 C.U.

A-26-18N-2E Taken 1/29/79 C.U.

A-26-18N-2E
Taken 1/29/79
C.U.

Cassic UYU | Dee | Hearing Date | 2-23-79



ICK FRANKLY

STATE OF INCH MICKIGO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

February 1, 1979

NICK FRANKLIN

January 30, 1979

Mr. Eddio Armenta Mayor of Jemez Springs Village P. O. Box 87 Jemez Springs, New Mexico 87025

You are the recorded operator of a geothermal temperature observation well located in Unit A of Section 20, Township 10 North, nauge 2 rast. NAPM, Sandoval County, New Mexico. According to the permit granted by this office the total depth would not exceed seven hundred fifty feet (750'), would have seven inch (7") casing set at one hundred feet (100') and cemented into the full length of the hole (cemented circulated). Purthermore, your letter to this agency requesting a waiver of bonding requirements states that your well will be plugged and the location cleaned in accord with State regulations. regulations.

An inspection of the site on January 29th last, indicates that your project is in violation of State Regulations in several respects. Please refer to the rules and make such changes as are necessary to be in compliance. Of primary importance is the immediate shutting off of the water that is escaping to the surface.

Kindly submit your plan for remedial action and/or plugging for abandonment in time for same to be witnessed by a representative of this agency.

Yours truly,

CARL ULVOG Senior Geologist

CU/og

Mayor Eddie Armenta Village of Jemez Springs Jemez, New Mexico

Jemez Lease Well No. 1 Unit A, Section 26, Township 18 North, Range 2 East, NNPM, Sandoval County, New Mexico Subject:

Dear Sir:

The subject well appears to have been drilled. It was permitted as a "Temperature Observation" well by this agency on December 28, 1978. To date, no reports or other information concerning that operation have been received in this office.

Kindly refer to the New Mexico State Regulations and supply all of the now-delinquent data. Also, because this agency was not notified prior to the setting and/or cementing of any casing in the subject well, please submit affidavits from the companies or individuals employed for such operations.

Yours truly.

Carl Elling CARL ULVOG & Senior Geologist

CU/og cc: Lynn Teschendorf Oil Conservation Division General Counsel

	THE
Oir congag	Light Colimission
	in the state of th
C= : 4441	
	0 cc
Hearing Date	2-23-79
	and the state of t

B. Form G-103 as a Subsequent Report

Form G-103 as a subsequent report of operations shall be filed in accordance with the section of this rule applicable to the particular operation being reported.

Form 6 103 % to be used in reporting such ecopiesed speciations has

(1) Commencement of drilling operations

(2- Casing and cement test

- (3) Altering a well's casing installation
- (4) Temporary abandonment
 - (5) Plugging and Abandonment
 - . (6) Plugging back or deepening
 - (7) Remedial work
 - (8) Change in ownership of a drilling well
 - (9) Such other operations which affect the original status of the well but which are not specifically

C. Filing Form G-103 as a Subsequent Report

Information to be entered on Form G-103, Subsequent Report, for a particular operation is as follows:

(1) Report of Commencement of Drilling Operations

Within ten days following the commencement of drilling operations, the operator of the well shall file a report thereof on Form G-103 in DUPLICATE. Such report shall indicate the hour and the date

(2) Report of Results of Test of Casing and Coment Job; Report of Casing Alteration

A report of casing and cement test shall be filed by the operator of the well within ten days following the setting of cach string of casing or liner. Said report shall be filed in DUPLICATE on Form G-103 and shall present a detailed description of the test method employed and the results obtained by such test, and any other pertinent information required by Rule 108 B(5). The report shall also indicate the top of the cement and the means by which such top was determined. It shall also indicate any changes from the casing program previously authorized for the well.

(3) Report of Temporary Abandonment

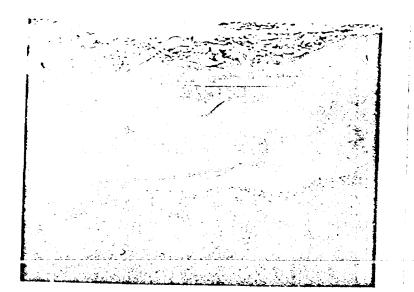
A report of temporary abandonment of a well shall be filed by the operator of the well within ten days following completion of the work. The report shall be filed in DUPLICATE and shall present a detailed account of the work done on the well, including location and type of plugs used, if any, type and status of surface and downhole equipment, and other pertinent information relative to the overall status of the well.

(4) Report on Plugging of Well

A report of plugging operations shall be filed by the operator of the well within 30 days following completion of plugging operations on any well. Said report shall be filed in TRIPLICATE on Form 6-103 and shall include the date the plugging operations were begun and the date the work was completed, a detailed account of the manner in which the work was performed including the depths and lengths of the various plugs set, the nature and quantities of materials employed in the plugging operations including the weight of the mud used, the size and depth of all casing left in the hole, and any other parriment information. (See Rules 301-303 regarding plugging operations.)

DEFORE THE OIL CONSTRUCTION COMMISSION Colo Pt. Daz Maxico Caro N. 6461 Jan. No. 7 Suita OCC Hearing Date 2-23-79

A-26-18N-2E Taken 2/21/19 C.U.



A-26-18N-2E Taken 2/21/19 C.U.

PEFCRE THE
CIL COMMISSION
Committee of the second
Care N. 646/ No. 8
Submitted by OCC
Harring Dais 2-23-79

	NO. OF COPIES RECEIVED	NE.		RVATION COMMISSION	and the second			
	DESTRIBUTION		P. O. Box 2088,	Santa Fe 8/501				
	N.M.B.M. // U.S.G.S. // Operator // Land Office	N, ELL	5. Indicate Type of Lease STATE Property FEE [] 5.a State Lease No. N.A.					
1 1 1 1	la. Type of Work Drill [Deepen []	Plug Back []		7. Unit Agro N.	cement Name	
		nal Producer np Thermal		Temp Observation (X) njection/Disposal		8. Tum or 1 Jemez	Lease Name Lease	
	2. Name of Operator Mayor Eddie A	Irmenta				9. Well No.	1	
The state of the s	3. Address of Operator Village of Je		10. Field and Pool, or Wildcat UNDES.					
Committee of Carolina Committee			TEO 90 West	of Town Hall	1 INE			
e-surection, services	AND FEET FROM	THE LINE OF	SEC.	TTTT RGE	NMPM	12. County Sandova	1	
- CANTON LANGE MAY CAN THE CAN					19A. Formatio		20. Rotary or C.T.	
SERVICE SAME BATTER STATES	21. Elevations (Show whether D?)	RT, etc.) 21A. Kin G.L. E	d & Status Plug. Bond xempt	750 ft. 21B. Drilling Contractor Stuart Bros./Gi	nadera Lii	mestone	ROTARY K. Date Work will sta	rt
PRANASKE + P				ND CEMENT PROGRAM	- <u></u>	1 = 59		
BECKE SHOW	SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT		SACKS OF	CEMENT	EST. TOP	
Characteristic	8 3/4 in. 5 in.	7 in. 0.D.	14 lbs./ft.	· 100 ft.	30		circ.	
President								
CONTENANT APPRINTED (1964) (MARCHE CHARLES CONTENANT ARPRICALITY OF A PROPERTY CONTENANT OF A PROPERTY	PERMIT	L VALID FOR 90 EXPIRES 3/2 IS DRILLING UNDE	DALS 8/29	OIL CONTE	000	1 No	SION /	
BREAT BESTREAMS		e grande e e e e e e e e e e e e e e e e e e						
***************************************	IN ABOVE SPACE DESCRIBE PRO zone. Give blowout preventer progra	m, if any.	· Sage		present product	tive zone and	proposed new produ	ıctive
The state of the s	I hereby certify that the information	bove is true and com	· .	knowledge and belief. 11age of Jemez S	prings _{Da}	22 Dec	ember 1978	(T)
The second second	Athy space for s	ate Usej					1.4.6	
	CONDITIONS OF PPROVAL, IF	Mellic ANY:	_TITLEDANIE CHIEF	LS NUTTER ENGINEER	D#	ATE 12	128/78	
		Marine Landers of the Market Marine	and the second second	en Sternamente en de la companya de	e en 475 data en 1994e - 199			

NEW MEXICO OIL CONSERVATION COMMISSION P. O. BOX 2006 SANTA FE. 87501 GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

Ond Letter A Actual bootage Location 90 Ground Level Hex. 6275 1. Outline the		18 North f town hall nestone	명	Sa	ndoval
A Count tootage Location 90 Ground Level Hex. 6275	26 on of Well: feet form the West of Producing Formation Madera Lie	18 North f town hall nestone	Z Last	Sa Sa	ndova l
90 Ground Level Hex. 6275	Producing Formation Madera Lie	nes tone	orol	ers from the	÷ ••
	ncreage dedicated to 1		UNDEST.	· · · · · · · · · · · · · · · · · · ·	Hadicated Acreage: None
2. If more in	• . • . • . • . • . • . • . • . • . • .				
and royaliy		ed to the well, our	time each and identif	y the owners	hip thereof (both as to working interes
	ian one lease of differe zation, unitization, force		icated to the well, ha	ive the intere	ists of all owners been consolidated by
□ Yes [I No If answer is	"yes," type of cor	isolidation	*****************	
If answer is "i		d tract description	s which have actually	been consoli	idated. (Use reverse side of this form i
	_			erests, has bee	led (by communitization, unitization en approved by the Commission.
	D)	C	SPRING HOUSE	TOWN A HALL	CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.
	E.	F	G	H	Tom Kleeman sition Consultant physics Coupland, Moran & Assoc ate 21 December 1978
		K	J	I	I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.
		N	0 1	P	te Surveyed
			: 		gistered Professional Engineer

Mr. Joe D. Ramey, Director
Oil Conservation Division
Energy and Minerals Department
State Land Office Building
Old Santa Fe Trail
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

In lieu of posting a bond for a permit to drill a geothermal observation well, I am writing to assure you that The Village of Jemez Springs guarantees that the above mentioned well will be plugged and the area cleaned in accordance with the rules of the Oil Conservation Division as stipulated in The Rules and Regulations. We look forward to working with the Division in this endeavor.

Eddie Armenta, Mayor
The Village of Jemez Springs, N.M.

OIL CONSERVATION COMMISSION

Senie Fo, Now Mexico

Case No. 646 / Exhibit No. 2

Submitted by OCC

Hearing Date 2-23-79

JEMEZ No 1 A-26-18N- RE, Sandoval County

DEFORE THE
OIL COMMISSION
the Allen Medico
Com 14 6461 - 1 No. 3
Cu OCC

Hackey Dan 2-23-79

III. PROPOSED WORK EFFORT

The Village of Jemez Springs, New Mexico proposes using State funds for drilling geothermal test wells and assessing the results. These wells will make it possible to ascertain the deliverable quantities of geothermal fluids (flow rates, their temperatures and chemical makeup). This data will lend more precision to determining the engineering and economic feasibility of utilizing the resource.

The work plan, shown on the following chart, calls for execution of assignments in the following order:

- 1. Prior to drilling, geologic mapping of the area, part of the ongoing San Diego Canyon mapping program, will be completed by geologists from Los Alamos Scientific Laboratories. These maps will be necessary in locating the drilling site.
- 2. Upon the completion of the mapping, expected in early August, personnel from L.A.S.L. will lend expertise in locating an optimal drilling site along a controlling fault. Given the extant information on geothermal and hydrological phenomena in the area, the locations of hot springs and wells and the data yielded from mapping, it should be possible to locate a favorable test site:
- 3. Upon locating a test site that meets with the satisfaction of the project geologist and the principal investigator, the project director will secure the services of a drilling subcontractor.
- 4. Drilling will be carried out under the supervision and with the advise of the project geologist. Two test wells, of a diameter of 4" 6", to be determined upon completion of mapping, will be drilled into the limestone formation. Well depths are not expected to go below 750 ft. Fluids brought to the surface will be held during the test and subsequently reinjected into the formation.
- 5. After the well is completed the project geologist will inform the project director and project engineer of the relevent engineering data, e.g. temperatures, flow rates (determined by draw down tests) etc. The project geologist will analyze the well data for its geologic significance regarding the geothermal resource. Upon the completion of this effort, he will present the project director with a short report on his findings which will be included in the final project report.
- 5. The project engineer will use the findings of the geologists to determine engineering and, with the participation of the project director, economic feasibility of resource utilization. At the end of this assessment the project engineer will present his findings to the project director.
- 7. The project director will then write a final report based on the findings of the participants. This final report is expected to include a clear, precise and acceptable determination of the efficacy of the utilization of geothermal resources utilization in the Village of Jemez Springs, New Mexico. After the report is issued pipes will be laid to delive by water from the well to the Town Hall to be used for space hearing.

Carett 6461 2-23-79

Project Mesting Up Emergy Prospects

At Jemez Springs

By TOMAS O. MARTINEZ

Assistant State Editor

JEMEZ SPRINGS — The Village of Jemez Springs may become energy self-sufficient if a test project, currently under way, shows that geothermal energy can provide the village with heat and electricity.

The Village of Jemez Springs, located about 50 miles northwest of Albuquerque, is drilling a test well on village property to locate underground volcanic heated water to use as a power source.

The drilling, project management, and feasibility studies are being funded through a \$32,000 grant from the New Mexico Department of Energy.

Jemez Springs Mayor Eddie Armenta, 39, said he hopes the well will produce water heated at 250 degrees Fahrenheit. Hot water or steam from that well would be used to heat homes within the village and generate electricity.

"It's a tremendous project. If it works, we could become energy self-sufficient. Residents would be able to cut their utility costs by about 50 percent. I liope it works. We all do," Armenta, a retired Treasury Department agent and former Albuquerque police officer, said.

The well is being dug on village property behind the Jemez Springs City Hall. The project is the brain child of Project Engineer Tom Kleeman

Armenta said Kleeman visited Jemez Springs in late 1977 to bathe in the hot springs near the village.

"He (Kleeman) came up with the idea," Armenta said. "The village hired him to study the possibility of such a project, and to write a proposal to the federal government for funding.

"The federal government (Department of Energy) turned down our \$4 million proposal. They said they could not fund exploratory projects. In July 1978 we submitted a proposal to the state. It was approved in late Novem-

ber. If the well produces water at 250 degrees, we will resubmit our proposal to the federal government for construction of a generating plant," Armenta said.

Kleeman said, "If the test is a success, it will be a tremendous event for New Mexico."

Kleeman, who represents Copeland-Moran Associates of Albuquerque, said drilling began Wednesday.

The drilling is being done by Stuart Brothers Drilling Co. of Grants. The firm has drilled similar wells for Los Alamos Scientific Labs in the Valle Grande area between Los Alamos and Jemez Springs.

Two Los Alamos scientists, Bill Laughlin and Francis West of LASL's Georthermal Groups, were at the drilling site Thursday to provide technical advice. West said the hot water the village is trying to locate escapes through faults from the Valle Grande, the site of a gigantic extinct volcano.

Laughlin said the volcano last erupted about 40,000 years ago and hot rocks heat the water in the calderon. That water escapes through faults, and one of those faults runs through the area where the well is being dug.

If the drilling project is a success, Armeta said that included in the second proposal to the U.S. Department of Energy will be a request to fund construction of village greenbouses.

Armenta said village greenhouses would represent a cooperative village effort to provide residents with vegetables and other food stuffs.

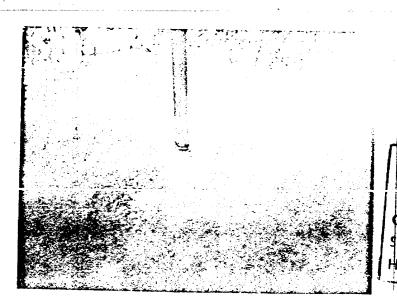
"It's a tremendous opportunity for the Village of Jemez Springs. If the well is a success, we hope the federal government will fund this as a pilot project," Armenta said.

Kleeman anticipates the possibility of geothermal energy for Jemez Springs could become a reality by late 1980. That is, if the well comes through, and the federal government funds the project.

A-26-18N-2E Taken 1/29/79 C.U.



A-26-18N-2E Taken 1/29/79 C.U.



A-26-18N-2E Taken 1/29/79 C.U.

OIL COMMISSION

Cate IX (1961)

Donning Date 2-23-29

B. Form G-103 as a Subsequent Report

Form C-103 as a subsequent report of operations shall be filed in accordance with the section of this rule applicable to the particular operation being reported.

Form G-103 is to be used in reporting such completed operations as:

- (1) Contemporaries of drilling operations
- (2- Casing and cement test
- (3) Altering a well's casing installation
- (4) Temporary abandonment
 - (5) Plugging and Abandonment
- . (6) Plugging back or deepening
- (7) Remedial work
- (8) Change in ownership of a drilling well
- (9) Such other operations which affect the original status of the well but which are not specifically covered herein.

C. Filing Form G-103 as a Subsequent Report

Information to be entered on Form G-103, Subsequent Report, for a particular operation is as follows:

(1) Report of Commencement of Drilling Operations

Within ten days following the commencement of drilling operations, the operator of the well shall file a report thereof on Form G-103 in EMPLICATE. Such report shall indicate the hour and the date

(D-2)

(2) Report of Results of Test of Casing and Coment Job; Report of Casing Alteration

A report of casing and cement test shall be filed by the operator of the well within ten days following the setting of cach string of casing or liner. Said report shall be filed in DUPLICATE on Form G-103 and shall present a detailed description of the test method employed and the results obtained by such test, and any other pertinent information required by Rule 108 B(5). The report shall also indicate the top of the cement and the means by which such top was determined. It shall also indicate any changes from the casing program previously authorized for the well.

(3) Report of Temporary Abandonment

A report of temporary abandonment of a well shall be filed by the operator of the well within ten days following completion of the work. The report shall be filed in DUPLICATE and shall present a detailed account of the work done on the well, including location and type of plugs used, if any, type and status of surface and downhole equipment, and other pertinent information relative to the overall status of the well.

(4) Report on Plugging of Well

A report of plugging operations shall be filed by the operator of the well within 30 days following completion of plugging operations on any well. Said report shall be filed in TRIPLICATE on Form G-103 and shall include the date the plugging operations were begun and the date the work was completed, a detailed account of the manner in which the work was performed including the depths and lengths of the various plugs set, the nature and quantities of materials employed in the plugging operations including the weight of the mud used, the size and depth of all casing left in the hole, and any other pertinent information.

(See Rules 301-303 regarding plugging operations.)

PEFCRE THE
OIL CONSTITUTION COMMISSION

Care No. 646 / State Not. 7

Substituting Data 9-23-79



MCX FABRIC

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

NICK FRANKUN

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT **OIL CONSERVATION DIVISION**

January 30, 1979

February 1, 1979

Mr. Eddie Armenta Mayor of Jemez Springs Village P. O. Box 07 Jemez Springs, New Mexico 87025

You are the recorded operator of a geothermal temperature observation well located in Unit A of Section 20, Township 10 North, Hange 2 bast, NMFM, Candoval County, New Mexico. According to the permit granted by this office the total depth would not exceed seven hundred fifty feet (750'), would have seven inch (7") casing set at one hundred feet (100') and cemented into the full length of the hole (cemented circulated). Furthermore, your letter to this agency requesting a waiver of bonding requirements states that your well will be plugged and the location cleaned in accord with State regulations. regulations.

An inspection of the site on January 29th last, indicates that your project is in violation of State Regulations in several respects. Please refer to the rules and make such changes as are necessary to be in compliance. Of primary importance is the immediate shutting off of the water that is escaping to the surface.

Kindly submit your plan for remedial action and/or plugging for abandoument in time for same to be witnessed by a representative of this agency.

Yours truly,

CARL ULVOG Senior Geologist

CU/og

Mayor Eddie Armenta Village of Jemez Springs Jemez, New Mexico

Subject:

Jemez Lease Well No. 1 Unit A, Section 26, Township 18 North, Range 2 East, NMPM, Sandoval County, New Mexico

Dear Sir:

The subject well appears to have been drilled. It was permitted as a "Temperature Observation" well by this agency on December 28, 1978. To date, no reports or other information concerning that operation have been received in this office.

Kindly refer to the New Mexico State Regulations and supply all of the now-delinquent data. Also, because this agency was not notified prior to the setting and/or cementing of any casing in the subject well, please submit afridavits from the companies or individuals employed for such operations.

Yours truly,

Cark Ming CARL ULVOG Senior Geologist

CU/og cc: Lynn Teschendorf Oil Conservation Division General Counsel

BEFORE THE
OIL COMMISSION
Care 12 6461
200
Submitted by OCC
1 - 22 - 79
Hearing Data 2 - 23 - 79
The state of the s

Carl Ulvog 1000 gals /hr. 150° Recommendation Plug hole through entire length Eddie Armanta Tom Kleenson James Cope band - project engineer TD 824' Wtr. 80' + 500' 80 7" @ 120! How much have you spent on project McAllister - Notional Comenters 7'0 74' cented y 350 3xs no returns 1/6/79 @ 120' hose on ontside

.

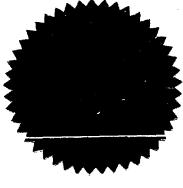
R	ETURN MECKLY RIN
STATE OF NEW MEXICO	ss. OIL CONS.
COUNTY OF VALENCIA	
RETURN FOR COMPLETION BY SHERIF	F OR DEPUTY: SAMIA AD DIVISION
<i>1</i> b	nmons in said County on theday of
attached, and a form for Answer, in the	delivering a copy thereof, with copy of Complaint following manner: 17.55 fur houlded
RETURN FOR COMPLETION BY OTHER	PERSON MAKING SERVICE:
I, being duly sworn, on oath, say that I	am over the age of 18 years and not a party to this
lawsuit, and that I served the within S	ummons in said County on theday of
attached, and a form for Answer, in the	delivering a copy thereof, with copy of Complaint following manner:
(check one box and fill in appropriate blanks)	
[] To Defendant GERRY M.C.A. copy of Summons, is read Summons or Comp	LISTER (used when Defendant receives plaint or refuses to receive Summons or hear reading.)
[] To	a person over 15 years of age and
	Defendant,
[] By posting a copy of the Summons and	d Complaint in the most public part of the premises
of Defendant	(used if no person found at
dwelling house or usual place of abode.)	
dwelling house or usual place of abode.)	, an agent authorized to receive service of
dwelling house or usual place of abode.) [] To process for Defendant	, an agent authorized to receive service of
dwelling house or usual place of abode.) [] To process for Defendant	, an agent authorized to receive service of
dwelling house or usual place of abode.) [] To	an agent authorized to receive service of
dwelling house or usual place of abode.) To	, an agent authorized to receive service of , (parent) (guardian) of Defendant , (used when Defendant is a minor or an
To process for Defendant To	title of person authorized to receive service of title of a sociation subject to a suit under a
dwelling house or usual place of abode.) To	title of person authorized to receive service of title of a sociation subject to a suit under a
To process for Defendant To	title of person authorized to receive service of title of person authorized to receive service nt is a corporation or association subject to a suit under a the State of New Mexico or any political subdivision.) SIGNATURE OF PRIVATE CITIZEN MAKING SERVICE Subscribed and sworn to before me this day of
To process for Defendant To incompetent person. To name of person (used when Defendant common name, a land grant board of trustees) Fees:	title of person authorized to receive service of title of person authorized to receive service nt is a corporation or association subject to a suit under a the State of New Mexico or any political subdivision.)
To process for Defendant To incompetent person. To name of person (used when Defendant common name, a land grant board of trustees) Fees:	title of person authorized to receive service of title of person authorized to receive service nt is a corporation or association subject to a suit under a the State of New Mexico or any political subdivision.) SIGNATURE OF PRIVATE CITIZEN MAKING SERVICE Subscribed and sworn to before me this day of

SUBPOENA DUCES TECUM

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

To Gerry McAllister	Greeting:
We command you to be and appear at 9:00 a.m.	on February 23, 197
before the Oil Conservation Commission of the Stat	e of New Mexico, at
The Oil Conservation Commission Conference Room in	the State Land
Office Building, in the City of Santa Fe, then and	there to testify
in the Case of application of the Oil Conservation	Commission to show
cause why the Jemez Well No. 1 should not be plugg	ed
on behalf of National Cementing Corporation	
and also that you bring with you and produce at the aforesaid any and all records pertaining to the J	•
located in Unit A, Section 26, Township 18 North, R	
Sandoval County, New Mexico	

And this do you under penalty of the law



SEAL

WITNESS JOE D. RAMEY, Member of the Oil Conservation Commission of the State of New Mexico, and the seal of said Commission, this 5th 19_79

Some the Meritine in person 0219

Some Walnes.

X Damy Wa Dide

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

COUNTY OF SANTA FE

APPLICATION OF: OIL CONSERVATION COMMISSION TO SHOW CAUSE WHY THE JEMEZ WELL NO. 1 SHOULD NOT BE PLUGGED

SUBPOENA

BILL HOLTDAY-SHERIFF VALENCIA COUNTY SHERIFF'S DEPARTMENT

STATE OF NEW MEXICO

(505)287-9476 (505)287-9477

> plaintiff VS defendant TYPE OF ACTION Lulpoena 6461 NUMBER ATTORNEY 79: DEAR SIR; The above action is being returned to your office for the reasons stated below. If you will take the appropriate action and return, you may be assured that our office will complete service at the earliest possible date and return to your office with the Return of Service completed. Should you require any further information or assistance, please feel free to contact me at the address below. Subject(s) moved, left no fowarding address. _ Service attached is out of date, please reissue for service. Service is out of our jurisdiction, it is being fowarded to County for service, their office will complete the Return of Service. Valencia County Sheriff's Department - Civil Division

VALENCIA COUNTY SHERIFF'S DEPARTMENT - GRANTS SUB-STATION - 320 EAST HIGH STREET GRANTS, NEW MEXICO 87020

SUBPOENA DUCES TECUM

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

To Don Kelly	Greeting:
We command you to be and app	pear at 9:00 a.m. on February 23, 1979
before the Oil Conservation Commis	sion of the State of New Mexico, at
The Oil Conservation Commission Co	onference Room in the State Land
Office Building, in the City of Sa	nta Fe, then and there to testify
in the Case of application of the	Oil Conservation Commission to show
cause why the Jemez Well No. 1 sho	ald not be plugged
on behalf of Stewart Brothers	Orilling Co.
and also that you bring with you a	nd produce at the time and place
aforesaid any and all records pe	rtaining to the Jemez Well No. 1
located in Unit A, Section 26, Tow	nship 18 North, Range 2 East,
Sandoval County, New Mexico	
·	

And this do you under penalty of the law



SEAL

WITNESS JOE D. RAMEY, Member
of the Oil Conservation Commission of
the State of New Mexico, and the seal
of said Commission, this 5th
day of February , 1979

Jos Farmey

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION COMMISSION

COUNTY OF SANTA FE

APPLICATION OF: OIL CONSERVATION COMMISSION TO SHOW CAUSE WHY THE JEMEZ WELL NO. 1 SHOULD NOT BE PLUGGED.

SUBPOENA

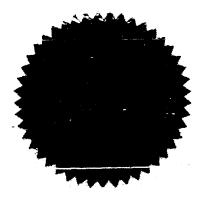
SUBPOENA DUCES TECUM

Don Kelly

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

To Don Kelly	Greeting:
We command you to be and appear at 9:00 a	.m. on February 23, 1979
before the Oil Conservation Commission of the Sta	te of New Mexico, at
The Oil Conservation Commission Conference Room i	n the State Land
Office Building, in the City of Santa Fe, then and	d there to testify
in the Case of application of the Oil Conservation	n Commission to show
cause why the Jemez Well No. 1 should not be plugge	ed
on behalf of Stewart Brothers Drilling Co.	
and also that you bring with you and produce at the	ne time and place
aforesaid any and all records pertaining to the	Jemez Well No. 1
located in Unit A, Section 26, Township 18 North,	Range 2 East,
Sandoval County, New Mexico	<u> </u>
•	

And this do you under penalty of the law



SEAL

WITNESS JOE D. RAMEY, Member of the Oil Conservation Commission of the State of New Mexico, and the seal of said Commission, this ____5th_

day of February

19 79

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION COMMISSION

COUNTY OF SANTA FE

APPLICATION OF: OIL CONSERVATION COMMISSION TO SHOW CAUSE WHY THE JEMEZ WELL NO. 1 SHOULD NOT BE PLUGGED.

SUBPOENA

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING!

CASE NO. 646/5941 ORDER NO. R-6500

APPLICATION OF THE DIL CONSERVATION DIVISION TO PERMIT MAYOR EDDIE ARMENTA, THE VILLAGE OF JEMEZ SPRINGS, AND ALL OTHER INTERESTED PARTIES TO SHOW CAUSE WHY THE TEMEZ WELL NO. 1 SHOULD NOT BE PLUGGED AND ABANDONED SANDOUAL COUNTY, NEW MEXICO

ORDER OF THE COMMISSION

BY THE COMMISSION!

This course come on for hearing 27 9 am on February 23,1979, at Souta Fe, Now May before the Oil Conservation Commission of New Mexico, hereinester referred to es The "Commission."

NOW, on this 2nd day of March, 197 the Commission, a guorum being present having considered the testimony presents the exhibits received at soid bearings and being Jully sourced in the premises,

FINDS!

(1) That Ine public notice having been given as required by low, the Commission has jurisdiction of this couse of the subject matter thereof.

(2) That the Jemez Well No. 1 located in Unit Agof Section 26, Township 18 North, Range 2 East, Sandowol County, New Mexico was spudded on January 3,1979, two willesty of 2 total depth of 824 feet.

(3) That the operator of recordnis Eddie Armenta, Mayor of the Village of James Springs.

(4) That said well encountered waters at a depth of and approximately 80-90 feet in excess of 150°F at a depth of approximately 80-90 feet and make another an naturally heated water at a depth of a depth of a poposimately 500 feet

(5) That some inch casing was set in said well at approx. 120 feet. and that sufficient coment

(a) That the convening of said finish can a was a circular was a waters from exappled was a prevent waters from escaping from the strata in which they are found into other strata and to the sergace.

Un unister twik in,

Seve Czi

water from the 80-90 Feet. (7), That water from the 80-90 Soot zone is flowing from the well to me suffer of the sound inch gelons per hour love of approximately 1000 (8) That the rate of flow from the well to the surface of the ground ontside the seran inch cosing is approximately soons per hour. (9) That said waters flowing to The surface of the ground are of sufficient temperature to be tortitize of Sor geothermal resources. (19) That allowing 321 I waste to my without being without constitutes waste of a geothernal response unrestricted could course the mines of geothermat fluids from other prosent in the immediate over, Thereby injury to meighboring properties. has occurred both within the (16) That well bore and
The second-inch cosing, has occurred creating a hole + resultant pond

of sufficient size to be a hozard

to human life & heal this

at the wellhead

4

(12) That 301 & pond should be adequately be fence of to prevent to prevent sees so by small chilchen slivestock and other animals.

be repaired in such a manner that geothermal resources will be contained within the seven inch

(14) That if said well amnot be repaired, then said well should be blugged to should be consine, all waters to the the strata in which they are found.

IT 15 THEREFORE ORDERED!

That the Major Eddie Armenta

Temez Springs Well No. 1, located in Unit

A of Section 26, Township 18 North, Range

2 East, Sardoval County, New Mexica,

3hall be re-entared & repaired

in such a manner that year geo thermal

resources

resources are contained within the

secont-inch casing.

(2) That the water flow encounters
at approximately 500 feet shall be
150/ated by setting and coment
plug across the standard men casing

(3) That in the event re-work operations are un success Sul jours inside The sun mich cosing, The well shall be plugged & about doned in a manner prescribed by the bont a Fe district office of the Oil Conservation Division. (4) That, The Dred to mediately surrounding soil well shall be fenced in a manner sufficient to prevent access by sunt children and livestock and other animals. (5) That re-work of operations shall be commerced immediately + 3hall be concluded within 14 Loys, following the date of this Order, (6) That the Sonte Fe District Office shall be notified at least 18 hours prior to commencing re-work 10 per strons. (7) Juris diction