# GTLT - \_\_\_\_2

# NMSU 1 UL: D 36-23S-2E Dona Ana County

## **Cancelled APD**



## STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

GOVERNOR NICK FRANKLIN GEORETARY

Y APODACA

June 8, 1978

POST OFFICE BOX 2008 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (505) 827-2434

Mr. Lokesh Chaturvedi Principal Investigator, Las Alturas Geothermal Reservoir Confirmation Study NMSU Department of Civil Engineering Box 3CE Las Cruces, New Mexico 88003

Dear Mr. Chaturvedi:

Enclosed herewith is approved Form G-101 for re-entry to maximum depth of 1490 feet of the Clary & Ruther State Well No. 1, located 50 feet from the North line and 20 feet from the West line of Section 36, Township 23 South, Range 2 East, NMPM, Dona Ana County, New Mexico. Also approved Form G-101 for drilling NMSU Land Well No. 1, to be located 500 feet from the North line and 500 feet from the East line of Section 27 of the same township, which would be drilled to a maximum depth of 1000 feet.

It is my understanding that New Mexico State University is undertaking the re-entry and drilling of these wells as part of a DOE- and NMERB-funded project for geothermal research, and that you will plug the wells in accordance with Oil Conservation Division specifications as soon as logging has been completed. I am, therefore, hereby waiving the normal requirement for the posting of a plugging bond prior to approval of Forms G-101.

Very truly yours JÓE D. RAMEY Director

JDR/DSN/fd enc.

cc: Commissioner of Public Lands Carl Ulvog, Geothermal Inspector

| Form G- | 103     |
|---------|---------|
| Adopted | 10/1/74 |

| NO, OF COPIES RECI                          | EIVED           | NEW MEXICO OIL CONSERVATION COMMISSION  |                           |
|---|-----------------|---|---------------------------|
| DISTRIBUTION                                |                 | P. O. Box 2088, Santa Fe 87501  |                           |
| File  |                 |   |                           |
| м. в. м.                                    |                 | SUNDRY NOTICES AND REPORTS  |                           |
| U. S. G. S                                  |                 | ON .  | 5. Indicate Type of Lease |
| Operator                                    |                 | GEOTHERMAL RESOURCES WELLS  | State Fee                 |
| Land Office                                 |                 |   | 5.a State Lease No.       |
| Do Not Use This Form<br>For Permit –" (Form |                 | Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application<br>Proposals.) |                           |
| 1. Type of well                             | Geothermal Prod | ucer 🗆 Temp. Observation 🔽  | 7. Unit Agreement Name    |
|   | Low-Temp Therm  | nal 🔲 Injection/Disposal  |                           |

| Low-Temp Thermal L Injection/Disposal L  | <u> </u>                                 |
|--|--|
| 2. Name of Operator Lokesh Chaturvedi, Principal Investigator                    | 8. Farm or Lease Name                    |
| Dept. of Energy and Minerals   | NMSU                                     |
| 3. Address of Operator   | 9. Well No.                              |
| Box 3-PSL NMSU, Las Cruces, NM 88003   | 1  |
| 4. Location of Well  | 10. Field and Pool, or Wildcat           |
| Unit LetterD50 Feet From The <u>North</u> Line and <u>50</u> Feet From           | NMSU                                     |
|  |  |
| The <u>West</u> Line, Section <u>36</u> Township <u>235</u> Range <u>2E</u> NMPN | n. (())))))))))))))))))))))))))))))))))) |
| · · · · · · · · · · · · · · · · · · ·  |  |
| (1) [] [] [] [] [] [] [] [] [] [] [] [] []                                       | 12. County                               |
| All  | Dona Ana                                 |
| 16. Check Appropriate Box To Indicate Nature of Notice, Report or Other I        | Data                                     |
| NOTICE OF INTENTION TO: SUBSEQU  | ENT REPORT OF:                           |
| PERFORM REMEDIAL WORK PLUG AND ABANDON   |  |
| TEMPORARILY ABANDON  | PLUG & ABANDONMENT                       |
| LULL OR ALTER CASING CHANGE PLANS  | в  |
|  |  |
| OTHER  |  |
| OTHER  |  |
|  |  |

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work) SEE RULE 203.

This is notice that this well will not be drilled; cancel this permit.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

APPROVED BY Carl 2000 TITLE SENIOR PETROLEUM GEOLOGIST DATE 7/15/81

CONDITIONS OF APPROVAL, IF ANY:

| Form G- | 103     |
|---------|---------|
| Adopted | 10/1/74 |

|  |   |   | Form G-103                           |
|--|---|---|--------------------------------------|
|  |   |   | Adopted 10/1/74                      |
| NO. OF COPIES RECEIVED   | NEW MEXICO OIL CONSE                            |   |                                      |
| DISTRIBUTION   | P. O. Box 2088,                                 | Santa Fe 87501                            | ·                                    |
|  |   |   |                                      |
| M. B. M.   | SUNDRY NOTICES                                  |   | 5. Indicate Type of Lease            |
| U. S. G. S<br>Operator   | ON<br>GEOTHERMAL RE                             |   | State Fee                            |
| Land Office  | GLOTHERMAL RE                                   | SOURCES WEELS                             | 5.a State Lease No.                  |
|  | · · · · · · · · · · · · · · · · · · ·           | · · ·                                     |                                      |
| Do Not Use This Form for Proposals to<br>For Permit –" (Form G-101) for Such P   |   | Different Reservoir. Use "Application     |                                      |
| 1. Type of well Geothermal Produ   | cer 🔲 Temp. Öbservation                         |   | 7. Unit Agreement Name               |
| Low-Temp Therma  |   |   | 8. Farm or Lease Name                |
|  | naturvedi, Principal Inv<br>Energy and Minerals | vestigator                                | NMSU                                 |
| 3. Address of Operator   | Energy and Minerais                             |   | 9. Well No.                          |
| -  | L NMSU, Las Cruces, NM                          | 88003                                     | 1                                    |
| 4. Location of Well  |   | · · · ·                                   | 10. Field and Pool, or Wildcat       |
| Unit LetterD   | 50 Feet From The North                          | Line and <u>50</u> Feet From              | NMSU                                 |
|  |   |   |                                      |
| The <u>West</u> Line, Section _  |   | •   |                                      |
| //////////////////////////////////////   | 15. Elevation (Show whethe                      | er DF, RT, GR, etc.)                      | 12. County                           |
|  | 4200 feet above                                 | e MSL                                     | Dona Ana                             |
| 16. Check  | Appropriate Box To Indicate Na                  | ture of Notice, Report or Other Da        | ta                                   |
| NOTICE OF INTEN  | ITION TO:                                       | SUBSEQUE                                  | NT REPORT OF:                        |
| PERFORM REMEDIAL WORK  | PLUG AND ABANDON                                | REMEDIAL WORK                             |                                      |
| TEMPORARILY ABANDON  |   | COMMENCE DRILLING OPNS.                   | PLUG & ABANDONMENT                   |
| ALL OR ALTER CASING  | CHANGE PLANS                                    | CASING TEST AND CEMENT JOB                |                                      |
|  |   | OTHER                                     | ·                                    |
| OTHER  |   | - ··                                      |                                      |
|  |   |   |                                      |
| 17. Describe Proposed or completed Op<br>proposed work) SEE RULE 203.  | perations (Clearly state all pertinent          | details, and give pertinenet dates, inclu | iding estimated date of starting any |
|  |   |   |                                      |
| This is notice that t  | this well will not be d                         | rilled; cancel this permi                 | lt.                                  |
|  |   |   | - · · · ·                            |
|  |   |   |                                      |
|  |   |   |                                      |
|  |   | . <u> </u>                                |                                      |
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|  |   |   | · · · ·                              |
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|  | · ·   |   |                                      |
|  |   |   |                                      |
|  |   |   |                                      |
|  |   |   | -                                    |
|  |   |   |                                      |
| hereby certify that the information  | above is true and complete to the be            | st of my knowledge and belief.            |                                      |
| · R.M.   |   | · · · · · · · · · · · · · · · · · · ·     |                                      |
| SIGNER JUNU UM   | TITLE P   | roject Director                           | DATE 15 July 1980                    |
| <i>V0V_</i> |   |   |                                      |
| 0.07   | 10  |   | 7/1-1-1                              |
|  | TITLE SE  | NIOR PETROLEUM GEOLOGIST                  | DATE / 15 / 8/                       |

CONDITIONS OF APPROVAL, IF ANY:

|   |   |                                    |                | ,                        |                                       |
|---|---|------------------------------------|----------------|--------------------------|---------------------------------------|
|   |   |                                    |                | د مسعد جانبارین آرا<br>د | · · · · · · · · · · · · · · · · · · · |
| NO. OF COPILS NECLIVED                    | NEW MEXICO OIL CONS                               | ERVATION COMMIS                    | SION 🕺         | JUN 2                    | 3 19 Form G-101                       |
| NOITUUTION ·                              | P. O. Box 2088,                                   | Santa Fe 87501                     | ۰ ``           | )                        | 10-1-74                               |
|   |   |                                    | ſ              | - Innicatu               | Type of Leave                         |
| N. B.M.                                   | APPLICATION FOR PERM                              |                                    | FPEN           | STATE                    | Type of Lease                         |
| U.S.G.S.<br>Operator                      | OR PLUG BACKGEOTH                                 | ERMAL RESOURCES                    | WELL           | 54.State ! man           |                                       |
| Land Office                               | ·   |                                    |                | ·····                    |                                       |
| · ·                                       |   |                                    |                |                          | HHHHHHH                               |
| 1. Type of Work Dwill F]                  |   | Dive Dee                           | · · · · ·      | 7. Unit Agree            | ment Name                             |
|   | Deepen [ ]  | -                                  |                | ,                        |                                       |
|   |   | Temp Observatio<br>jection/Disposa |                | 8. Farm or Le            | <b>^</b>                              |
|   |   |                                    |                | State<br>9. Well No.     | Land                                  |
|   | haturvedi, Principal In<br>Energy & Minerals (sta |                                    | iect           | 9. wen No.<br>1          |                                       |
| 3. Address of Operator Box 3CE,           |   |                                    | <u>JCCL</u>    | 10. Field and            | Pool, or Wildcot                      |
|   | es, NM 88003                                      |                                    |                |                          |                                       |
| 4. Location of Well UNIT LETTER D         | LOCATED 50  | FEET FROM THE NOT                  | th             | IIIIII                   |                                       |
| AND 50 ALET FROM THE                      | west use as sec 36                                | 1 23 S RCF. 2                      | E              |                          |                                       |
| AND JO ALET FROM THE                      | West LINE OF SEC. 30                              | TWP. 23 RCF. 2                     |                | 12. County               |                                       |
| AMMMMMMMMMM                               |   |                                    | 1111111        | Dona Ana                 |                                       |
|   |   |                                    |                | IIIIII                   |                                       |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,   |   | 19. Proposed Depth                 | 19A. Formation | mm                       | 20. Rotery or C.T.                    |
|   |   | 1000 feet                          | sedimen        |                          | rotary                                |
| 21. Clovetions (Show whether DF, RT, etc. | 1 21A. Kind & Status Plug. Bond                   | 2113. Drilling Contractor          |                |                          | Date Work will start-                 |
| 4200 ft. above M.S.                       | L. not required                                   | Sandia Laborat                     | ory            | July                     | 31, 1978                              |
| 23.4                                      | PROPOSED CASING A                                 | D CEMENT PROGRAM                   |                |                          |                                       |
|   |   |                                    |                |                          |                                       |

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER.FOOT | SETTING DEPTH | SACKS OF CEMENT | EST. TOP |
|--------------|----------------|-----------------|---------------|-----------------|----------|
|              |                |                 | 0             |                 |          |
|              |                |                 | -             | •               |          |
|              |                |                 |               |                 |          |
|              | 1              |                 |               |                 |          |

This well is planned to be drilled if re-entry in Clary and Ruther State No. 1 is difficult or expensive or both. Permission for re-entry in Clary and Ruther Well has already been obtained. This well will not be drilled if the re-entry in Clary and Ruther Well is successful.

Order No. R-4860 Exhibit No. B

| I homeby certify that the information above is true as | d complete to the best of my knowledge and belief. |               |
|--|--|---------------|
| signed_WChatwwed-                                      | TuleAssistant Professor                            | June 27, 1978 |
| (This space for State Use)                             |  |               |
| CONDITIONS OF APPROVAL, IF ANY                         | SENIOR PETROLEUM GEOLOGIST                         | DATE 6/29/78  |

|   | All distances must be f                           | from the outer boundari         | es of the Section. | <u>/ 14N 2,3 1978</u>  |
|---|---|---------------------------------|--------------------|--|
| NMSU - Lokesh Chat  | turvedi   | Luuse                           | nt-lease St        | Woll No.   |
| hit Latter Section  | Township  | Hanga                           | County             | ······································   |
| D 36  | 23_S  | 2 E                             | Don                | ia Ana Conta Fe  |
| 50 feet from the  | north imagend                                     | 50                              | ( ) ( ) <b>T</b>   | rest line  |
| 50 feet from the<br>round Level Flow. Producing F                                   |   | Pool                            | feet from the W    | Dedicated Acreage;   |
| 4200 feet   |   |                                 |                    | Aci  |
| 1. Outline the acreage dedic  | cated to the subject w                            | ell by colored pen              | cil or hachure n   | narks on the plat below.   |
| interest and royalty).<br>3. If more than one lease of<br>dated by communitization, | different ownership is<br>unitization, force-pool | dedicated to the w<br>ing. etc? | cell, have the in  | wnership thereof (both as to working the state working the state of all owners been conso  |
| If answer is "no," list the   | answer is "yes," type of owners and tract desc    |                                 |                    | n consolidated. (Use reverse side  |
| -   | -   |                                 |                    | d (by communitization, unitization, has been approved by the Commi   |
| <br>⊙ I   |   | 1                               | T [                | CERTIFICATION  |
| Proposed well is  |   | 1                               |                    |  |
| 5 feet east of<br>lary & Ruther   |   | i                               |                    | there has an atter sheet she takes made a  |
|   |   | •                               |                    |  |
| State Well No.1   |   | 1                               |                    | tained herein is true and complete to s  |
| -   |   | 1<br>1                          |                    | tained herein is true and complete to p<br>best of my knowledge and belief.  |
| -   |   |                                 |                    | tained herein is true and complete to a  |
| -   |   |                                 |                    | tained herein is true and complete to the best of my knowledge and belief.<br>Mchaturech   |
| -   |   |                                 |                    | tained herein is true and complete to p<br>best of my knowledge and belief.<br>WChaturved<br>Name  |
| -   |   |                                 |                    | tained herein is true and complete to p<br>best of my knowledge and bellef.<br>WChaturwech<br>Name<br>Lokesh Chaturvedi<br>Position<br>Assistant Professor<br>Company  |
| -   |   |                                 |                    | toined herein is true and complete to speed of my knowledge and bellef.<br>WChatwwedde<br>Name<br>Lokesh Chaturvedi<br>Position<br>Assistant Professor<br>Company<br>New Mexico State Univ.<br>Date  |
| -   |   |                                 |                    | tained herein is true and complete to<br>best of my knowledge and bellef.<br>WCLAUWECH<br>Name<br>Lokesh Chaturvedi<br>Position<br>Assistant Professor<br>Company<br>New Mexico State Univ.  |
| -   |   |                                 |                    | tained herein is true and complete to the<br>best of my knowledge and bellef.<br>Name<br>Lokesh Chaturvedi<br>Position<br>Assistant Professor<br>Company<br>New Mexico State Univ.<br>Dato<br>June 27, 1978<br>I hereby certify that the well locati<br>shown on this plat was plotted from file<br>notes of actual surveys made by me<br>under my supervision, and that the same  |
| -   |   |                                 |                    | tained herein is true and complete to a<br>best of my knowledge and bellef.<br>McMaturwech <sup>.</sup><br>Name<br>Lokesh Chaturvedi<br>Position<br>Assistant Professor<br>Company<br>New Mexico State Univ.<br>Dato<br>June 27, 1978<br>I hereby certify that the well locati<br>shown on this plat was plotted from file<br>notes of actual surveys made by me<br>under my supervision, and that the same  |
| -   |   |                                 |                    | tained herein is true and complete to a<br>best of my knowledge and bellef.<br>McMaturwedt<br>Name<br>Lokesh Chaturvedi<br>Position<br>Assistant Professor<br>Company<br>New Mexico State Univ.<br>Dato<br>June 27, 1978<br>I hereby certify that the well locati<br>shown on this plat was platted from file<br>notes of actual surveys made by me<br>under my supervision, and that the sai<br>is true and correct to the best of a  |
| -   | Order No. R-4<br>Exhibit No. 0                    |                                 |                    | WChatwred:<br>Name<br>Lokesh Chaturvedi<br>Position<br>Assistant Professor<br>Company<br>New Mexico State Univ.<br>Date<br>June 27, 1978<br>I hereby certify that the well locati<br>shown on this plat was plotted from file<br>notes of actual surveys made by me<br>under my supervision, and that the sai<br>is true and correct to the best of r<br>knowledge and belief.   |
| -   |   |                                 |                    | tained herein is true and complete to a<br>best of my knowledge and bellef.<br>Name<br>Lokesh Chaturvedi<br>Position<br>Assistant Professor<br>Company<br>New Mexico State Univ.<br>Dato<br>June 27, 1978<br>I hereby certify that the well locati<br>shown on this plat was platted from file<br>notes of actual surveys made by me<br>under my supervision, and that the sai<br>is true and correct to the best of a<br>knowledge and belief.<br>Date Surveyed<br>Registered Professional Engineer |

DEPARTMENT OF CIVIL ENGINEERING Box 3CE/Las Cruces, New Mexico 88003 Telephone (505) 646-3803

February 12, 1979

Santa Fe



Mr. Carl Ulvog Senior Petroleum Geologist New Mexico Oil Conservation Commission P.O. Box 2086 Santa Fe, NM 87503

Dear Mr. Ulvog:

Please find enclosed Forms G-103 for the two geothermal wells which we recently drilled on NMSU land. We are currently using the wells for research and would like to keep them open (unplugged) until December 31, 1979. Please note slight changes in the locations of these two wells.

At the present time, we have decided to cancel our plans for reopening the Clary and Ruther state well no. 1 in Section 36, T 23S, R 2E, NMPM. We did not get permission from the State Lands Commissioner to drill a well on state land at 50' FNL and 50' FWL, Sec. 36, T 23S, R 2E, NMPM. If we decide to carry out any drilling work in Section 36, we will, of course, notify you.

With personal regards and best wishes.

Sincerely yours,

Nocalimved.

Lokesh Chaturvedi Assistant Professor

ca Enclosures: Two (2) G-103 forms cc: N. N. Gunaji

DEPARTMENT OF CIVIL ENGINEERING Box 3CE/Las Cruces, New Mexico 88003 Telephone (505) 646-3803

February 12, 1979



Mr. Carl Ulvog Senior Petroleum Geologist New Mexico Oil Conservation Commission P.O. Box 2086 Santa Fe, NM 87503

4

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With personal regards and best wishes.

Sincerely yours,

Noralinved

Lokesh Chaturvedi Assistant Professor

ca Enclosures: Two (2) G~103 forms cc: N. N. Gunaji

12/6/78

Dear Mr. Wichaturvedi

We are beginning to get somewhat confused. Perhaps it is due to a bit of misunderstanding concerning actions you may have already taken or changes in your plans which are unclear to us. According to data on file here, you now hold permits for drilling the following:

C& K State Well no. 1; 50'FNL \$ 20'FWL, Sec. 36; MMSU Well no. 1; 500'FNL \$ 500'FEL, Sec 27; State Well no. 1; 50'FNL \$ 50'FWL, Sec 36; and MMSU Well no. 2; 1500'FNL \$ 1000'FWL, Sec 35; all in T 235, R 2 E, NMPM, Dona Ana Co.

Is it your intent that all of these locations be drilled or that permits be maintained for such drilling? If you have definitely desided to abandon any of these locations, please advise. Thank you Carl Elvog

See Plat of note attached

6460111 2431 Kul 212> County Dona Ana Pool TOWNSHIP 23 South Range 2 East NMPM 3 2 6 5 4 7 8 -9 -10 ---- 11 --12 - 18 -·17 · -16 -- 15 -14--13-22 <u>-</u> D2 3 19 20 -21-23 24 DT-1 AINMSU 0 ≫¦≏ 27 29-28 26-25 -30 -DT1 رما state CIR ٢Ň e Al - 31-- 32 -- 33 -- 34 -- 36 i I 500 feron North 400 fait from East line 12-11-78: Dr. Daw was in office. now Thinks NMSU # 3 will be drilled first.

N



## State of New Mexico



## Commissioner of Public Lands

PHIL R. LUCERO

June 12, 1978

P. O. BOX 1148 SANTA FE, NEW MEXICO 87501

New Mexico State University Box 3CE Las Cruces, New Mexico 88003

ATTN.: Prof. Lokesh Chaturvedi Department of Civil Engineering

Re: Las Alturas Geothermal Reservoir Confirmation Study; Clary and Ruther State No. 1 Well

Gentlemen:

This letter is in reply to your June 7, 1978 letter wherein you request permission to reopen the above-referenced well located on the  $NW_4^1NW_4^1$  of Section 36, Township 23 South, Range 2 East, N. M. P. M., in Dona Ana County, New Mexico. Your purpose in reopening the well is to take temperature measurements for experimental and research purposes only.

Permission is hereby granted by the Commissioner of Public Lands, for a period of 45 days from the date of this letter, to enter the  $NW_4^1NW_4^1$  of Section 36, Township 23 South, Range 2 East, to reopen the Clary and Ruther State No. 1 Well to conduct the above-mentioned research.

In exchange for the permission to enter upon the above-described state trust lands, New Mexico State University (NMSU) shall fully disclose, in writing, to the Commissioner of Public Lands the results of its experiments and shall further comply with the following conditions:

1. NMSU, including its heirs, assigns, agents, and contractors shall, at their own expense, fully comply with all laws, regulations, rules, ordinances,

New Mexico State University June 12, 1978 Page (2)

and requirements of the city, county, state, federal authorities and agencies, in all matters and things affecting the premises and operations thereon which may be enacted or promulgated under the governmental police powers pertaining to public health and welfare, including but not limited to conservation, sanitation, aesthetics, pollution, cultural properties, fire and ecology. Such agencies are not to be deemed third party beneficiaries hereunder; however, this clause is enforceable by the Commissioner of Public Lands as herein provided or as otherwise permitted by law.

2. NMSU shall save and hold harmless, indemnify and defend the State of New Mexico, the Commissioner of Public Lands, and his agent or agents, in their official and individual capacities, of and from any and all liability claims, losses, or damages arising out of or alleged to arise out of or indirectly connected with the operations of NMSU hereunder, off or on the hereinabove described lands, or the presence on said lands of any agent, contractor or subcontractor of NMSU.

3. NMSU, through its liability insurance with Commercial Standard Insurance Company, Policy No. 430147245, or other coverage, shall insure against destruction or injury to any improvements or livestock lawfully upon the lands.

4. Upon completion of research operations on the lands, NMSU, or its authorized representatives, shall notify the Commissioner of Public Lands, in writing, that such operations have been completed.

If the foregoing meets with your approval, please indicate your acceptance by having an authorized representative of NMSU sign the duplicate originals of this letter agreement in the space provided below and return one fully executed original to this office for our files.

Very truly yours,

PHIL R. LUCERO

Commissioner of Public Lands

PRL:ELP:crk cc: Ray Graham Jack Kennedy

AGREED TO and ACCEPTED

this day of

1978:

NEW MEXICO STATE UNIVERSITY

By:

Title:

## STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

> NICK FRANKLIN SECRETARY

### June 8, 1978

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE. NEW MEXICO 87501 (505) 827-2434

Mr. Lokesh Chaturvedi Principal Investigator, Las Alturas Geothermal Reservoir Confirmation Study NMSU Department of Civil Engineering Box 3CE Las Cruces, New Mexico 88003

Dear Mr. Chaturvedi:

Enclosed herewith is approved Form G-101 for re-entry to maximum depth of 1490 feet of the Clary & Ruther State Well No. 1, located 50 feet from the North line and 20 feet from the West line of Section 36, Township 23 South, Range 2 East, NMPM, Dona Ana County, New Mexico. Also approved Form G-101 for drilling NMSU Land Well No. 1, to be located 500 feet from the North line and 500 feet from the East line of Section 27 of the same township, which would be drilled to a maximum depth of 1000 feet.

It is my understanding that New Mexico State University is undertaking the re-entry and drilling of these wells as part of a DOE- and NMERB-funded project for geothermal research, and that you will plug the wells in accordance with Oil Conservation Division specifications as soon as logging has been completed. I am, therefore, hereby waiving the normal requirement for the posting of a plugging bond prior to approval of Forms G-101.

truly yours, ĴÔE D. RAMEY Director

JDR/DSN/fd enc.

cc: Commissioner of Public Lands Carl Ulvog, Geothermal Inspector

DEPARTMENT OF CIVIL ENGINEERING Box 3CE/Las Cruces, New Mexico 88003 Telephone (505) 646-3803



June 7, 1978

Director New Mexico Oil Conservation Commission P.O. Box 2088 Santa Fe, NM 87501

Dear Sir:

As part of a research project funded by the Department of Energy and N.M.E.R.B., we would like to reopen a well and drill a new well in Dona Ana County. The well to be reopened is Clary and Ruther State No. 1 located in the northwest corner of Section 36, T 23S, R2E. The well to be drilled is on University (NMSU) land in the northeast corner of Sec. 27, T.23S, R2E. Both the wells are meant to collect geothermal gradient data as part of the research project. We undertake to plug the wells according to your specifications and requirements as soon as the logging is completed.

Since we plan to do this work for research under a DOE contract and a N.M. State E.R.B. contract and the drilling is to be done by Sandia Laboratory which is also under a DOE contract, we request you to kindly waive the requirements of posting a bond.

Kindly issue us the permits to drill and reopen the above mentioned wells and oblige. We would like to start this work on June 19, 1978. Enclosed please find forms G-101 and G-102 for the two proposed wells.

Yours faithfully, WChaturved'

Lokesh Chaturvedi Assistant Professor, Geological engineering Principal Investigator, NMERB Research Project

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Enclosures

DEPARTMENT OF CIVIL ENGINEERING Box 3CE/Las Cruces, New Mexico 88003 Telephone (505) 646-3803

June 7, 1978

NEXICO

Mr. Phil R. Lucero Commissioner of Public Lands P.O. Box 1148 Santa Fe, NM

Dear Commissioner Lucero:

We are working on a research project titled, "Las Alturas Geothermal Reservoir Confirmation Study," funded by the Energy Resources Board of New Mexico. As part of this research, we would like to attempt to reopen an old wildcat well--Clary and Ruther State No. 1 located about 50 feet south of the northwest corner of Sec. 36, T-23S, R.2E. The well is 2573 feet deep with cement plugs at the surface and at several points underground. Our intention is to reopen this well to a depth of approximately 1000 feet, log it for temperature distribution and then plug it back. We have applied to the Oil Conservation Commission for a permit to carry out this operation.

During a conversation with Mr. Ernest Padilla of your office, it appeared that you are concerned with this well proving or disproving the geothermal potential of the Las Cruces area. Let me assure you that this well will only tell us the geothermal gradient of that particular location and that information cannot be extended to cover the entire Las Cruces area.

The University has a liability insurance with Commercial Standard Insurance Co., policy number 430147245, which will cover us in case of a damage vis a vis grazing rights of private ranchers on state land.

Kindly give us permission to carry out this research project.

Sincerely yours,

la aturved'

Lokesh Chaturvedi Assistant Professor, Geological Engineering

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|                                |                     |                                     |                                       |  |               |  | Form G-101<br>Adopted 10/1/74      |
|--------------------------------|---------------------|-------------------------------------|---------------------------------------|--|---------------|--|------------------------------------|
| NO. OF COPIES RECEI            | VED 6               | NEV                                 | MEXICO OIL CONSER                     | VATION COMMISSIO                         | N             |  |                                    |
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| File                           | IX                  |                                     |                                       |  |               |  |                                    |
| 3.M.                           | 1                   |                                     |                                       |  |               | 5. Indicate                              | Type of Lease                      |
| U.S.G.S.                       | 1                   | APPL                                | ICATION FOR PERM                      |  | PEN           | STATE                                    | FEE                                |
| Operator                       | 1                   |                                     | JG BACKGEOTHER                        |  |               | 5.a State Le                             | ase No.                            |
| Land Office                    | 1                   |                                     |                                       |  |               |  |                                    |
| BLM                            | 1                   |                                     |                                       | <i>۱</i>                                 |               |  |                                    |
| 1a. Type of Work               | Drill X<br>Re-entry | Reopen<br>of Clary &                | Deepen 🗌<br>Ruther State #1           | Plug Back                                |               | 7. Unit Agre                             | ement Name                         |
| b. Type of Well                |                     | l Producer 🔲                        |                                       | mp Observation                           | XI I          | 8. Farm or L                             | lease Name                         |
|                                | Low-Temp            |                                     | •                                     |  |               | C  | # R State                          |
|                                | Dept. of            | Energy Rese                         | rincipal Invest<br>arch Project       | igator                                   |               | 9. Well No.                              | 1 <del>State</del>                 |
| 3. Address of Operator         | Box 3CE,            | NMSU                                |                                       |  |               | 10. Field and                            | d Pool, or Wildcat                 |
|                                | Las Cruc            | es, NM 88003                        |                                       |  |               | Wildc                                    | at                                 |
| 4. Location of Well            | JNIT LETTE          | RDLOCA                              | red50feet f                           | ROM THE North                            | LINE          |  |                                    |
| AND 20 FEE                     | T FROM TH           | West LINE OF                        | sec. 36 <sub>twp.</sub> 23            | S, <sub>rge.</sub> 2 E                   | NMPM          |  |                                    |
|                                |                     |                                     |                                       |  |               | 12. County<br>Dona Ana                   |                                    |
|                                |                     |                                     |                                       |  |               |  |                                    |
|                                | //////              |                                     |                                       | 19. Proposed Depth                       | 19A. Formatio | n an | 20. Rotary or C.T.                 |
|                                |                     |                                     |                                       | 1490 (Max.)                              | Sediment      |  | Rotary                             |
| 21. Elevations (Show w<br>4200 |                     | T, etc.) 21A. Kin<br>2 M·S·C· Not R | d & Status Plug. Bond<br>equired      | 21B. Drilling Contracto<br>Sandia Labora |               | 22. Appro:<br>June 1                     | x. Date Work will start<br>9, 1978 |
|                                |                     |                                     | enclosed letter<br>PROPOSED CASING AN |  | M             |  |                                    |
| SIZE OF HOLE                   |                     | SIZE OF CASING                      | WEIGHT PER FOOT                       |  |               | OFMENT                                   |                                    |

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | SACKS OF CEMENT | EST. TOP |
|--------------|----------------|-----------------|---------------|-----------------|----------|
|              |                |                 |               | !               |          |
|              |                |                 |               |                 |          |
|              |                |                 |               |                 | 1        |

The proposed action is to reopen an existing well, Clary and Ruther State No. 1 located near NMSU campus. This action is part of a research program funded by N.M. Department of Energy and Minerals. The purpose of reopening the well is to measure the geothermal gradient in the well, after which the well will be plugged back. Application to state land office for waiver of bond is being sent seperately. Copy of that letter enclosed.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. Give blowout preventer program, if any.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

•

| Signer WChatwrveh' Assistant Professor  | June 7, 1978                  |
|---|-------------------------------|
| (This space for State Use)<br>APPROVED BY Auditum TITLE DANIEL S. NUTTER<br>CONDITIONS OF APPROVAL, IF ANY:<br>Audited to approval for he sering by Gramminiane | DATE 6/8/78<br>& Public Lands |

| NEW | MEXIC |     | CON  | SERVAT | ION | COMMISSION |
|-----|-------|-----|------|--------|-----|------------|
|     | P. O. | вох | 2088 | SANTA  | FE  | 87501      |

### GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

| ΔП | distances | must | he | from   | the        | outer | boundaries | of | the  | Section  |
|----|-----------|------|----|--------|------------|-------|------------|----|------|----------|
| A  | uistances | musi | 06 | 110111 | <i>cue</i> | outer | Donnanies  | 01 | cire | Section. |

\* <u>+</u> ·

|                             |                                       | An distances must be                              | tom the outer pounda | and an the Bachon.  |  |   |
|-----------------------------|---------------------------------------|---|----------------------|---------------------|--|---|
|                             | Lokesh Chatur                         |   | Lease<br>No presen   | t lease             |  | Well No.Clary &<br>Ruther State #1  |
| Unit Letter D               | Section 36                            | Township<br>23 S                                  | Range 2 E            | County<br>Don       | a Ana  |   |
| Actual Footage Locat<br>50  | ion of Well:                          | orth line   | 20                   | feet from the       | West   | line  |
| Ground Level Elev.          | Producing Form                        |   | Pool                 |                     | Ded  | icated Acreage:   |
| 4200 ft.                    |                                       |   |                      |                     |  | Acres   |
| 1. Outline the              | he acreage dedicate                   | d to the subject well b                           | y colored pencil or  | hachure marks or    | the plat belo                                | ow.   |
| 2. If more t<br>and royal   |                                       | edicated to the well, o                           | outline each and id  | entify the owners   | hip thereof (b                               | ooth as to working interes  |
|                             |                                       | different ownersip is d<br>n, force-pooling, etc? | edicated to the we   | ll, have the intere | ests of all own                              | ners been consolidated by   |
| 🗌 Yes                       | □ No If ans                           | swer is "yes," type of a                          | consolidation        |                     |  |   |
| If answer is necessary.)    | •                                     | ers and tract descripti                           | ons which have act   | ually been consol   | idated. (Use 1                               | reverse side of this form i   |
| No allowabl                 | e will be assign                      | ed to the well until<br>until a non-standard u    |                      |                     |  | munitization, unitization   |
| lorced-poolin               | ig, of otherwise) of                  |   | init, emmating suc   |                     |  | by the commission.  |
| O <sub>Clary &amp; Ru</sub> | ther                                  |   | <br> <br>            |                     | С  | ERTIFICATION  |
| State #1                    |                                       |   | l                    |                     | l hereby ce                                  | rtify that the information  |
|                             | L.                                    |   |                      |                     |  | rein is true and complete to  |
|                             | 1                                     |   | 1                    |                     | Nen  | w knowledge and belief.   |
|                             | · + ~                                 |   | ·                    | N                   | Lokesh Ch                                    |   |
|                             | 1                                     |   | 1                    |                     |  | Professor<br>Mexico State   |
|                             | 1                                     |   |                      | 4                   | Universit                                    |   |
|                             |                                       |   | 1                    |                     | ompany<br>Las Cruce                          |   |
|                             |                                       |   | l                    |                     | June 7, 1                                    |   |
|                             |                                       |   |                      |                     |  |   |
|                             |                                       |   |                      |                     | shown on thi<br>notes of actu<br>under my su | tify that the well location<br>s plat was plotted from field<br>Ial surveys made by me or<br>pervision, and that the same |
|                             | <br> <br>+                            |   |                      |                     | is true and<br>knowledge an                  | correct to the best of my<br>d belief.  |
|                             | 1<br>                                 | ,   | k<br>L               |                     |  |   |
|                             | ,t<br>                                |   | ł .<br>              | .   Ľ               | Date Surveyed                                |   |
| •                           | .  <br>                               |   | 1                    |                     | Registered Profes<br>nd/or Land Sur          | ssional Engineer<br>veyor   |
| L                           | I                                     |   | )<br>                |                     |  |   |
| Statutes                    | · · · · · · · · · · · · · · · · · · · |   |                      |                     | ertificate No.                               |   |

Form G-101 Adopted 10/1/74

| NON COPIES RECEIVED                           | NEW                                      | MEXICO OIL CONSER                       | VATION COMMISSION                          |                |   |                    |  |
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| File  |  |   |  | г              |   |                    |  |
| NGR.M.  |  |   |  | 1              |   | Type of Lease      |  |
| U.945.S.                                      | APPLI                                    | CATION FOR PERMI                        | T TO DRILL, DEEPE                          | IN, L          | STATE L   | FEE                |  |
| Operator                                      | OR PLU                                   | G BACKGEOTHER                           | MAL RESOURCES W                            | ELL            | 5.a State Le                                      | ease No.           |  |
| Land Office                                   |  |   |  |                | <del></del>                                       |                    |  |
|   |  |   | х. — .                                     |                |   |                    |  |
| 1a. Type of Work Drill Re-ent                 | Reopen [<br>ry of Clary & R              | Deepen 🗌<br>Suther State #1             | Plug Back                                  |                | 7. Unit Agre                                      | eement Name        |  |
|   | mal Producer 🔲                           | Te                                      | mp Observation 🖾                           | -              | 8. Farm or 1                                      | Lease Name         |  |
|   | np Thermal 🛛                             | -                                       | ection/Disposal                            |                |   | State              |  |
| Dept.   | Chaturvedi, Pr<br>of Energy Resea        | incipal Investi<br>Irch Project         | gator                                      | -              | 9. Well No.                                       | 1 <del>State</del> |  |
| 3. Address of Operator Box 30                 | E, NMSU                                  |   |  |                |   | d Pool, or Wildcat |  |
| Las Cr  | uces, NM 88003                           |   |  |                | Wildc   | at                 |  |
| 4. Location of Well UNIT LET                  |  | ED 50 <sup>°,</sup> FEET FR             |  | LINE           |   |                    |  |
| AND 20 FEET FROM                              | THE West LINE OF S                       | <sub>SEC.</sub> 36 <sub>тwp.</sub> 23   | S. RGE. 2 E                                | NMPM           |   |                    |  |
|   |  |   |  |                | 12. County<br>Iona Ana                            |                    |  |
|   |  |   |  |                |   |                    |  |
|   |  | UIIIIIII,                               | 9. Proposed Depth                          | 19A. Formation | 1 .   | 20. Rotary or C.T. |  |
|   |  | /////////////////////////////////////// | 490 (Max.)                                 | Sediment       |   | Rotary             |  |
| 21. Elevations (Show whether DF<br>4200 ft ab | RT, etc.) 21A. Kind<br>OVE M.S.C. Not RE | & Status Plug. Bond 2<br>equired        | 1B. Drilling Contractor<br>Sandia Laborato | ory `          | 22. Approx. Date Work will start<br>June 19, 1978 |                    |  |
|   | (see e                                   | enclosed letter)<br>ROPOSED CASING AND  |  |                | ·   |                    |  |
| SIZE OF HOLE                                  | SIZE OF CASING                           | WEIGHT PER FOOT                         | SETTING DEPTH                              | SACKS OF       | CEMENT  | EST. TOP           |  |
| ·   | · · · · · · · · · · · · · · · · · · ·    |   |  |                |   |                    |  |

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| 1 hereby certify that the information above is true and complete to the best of my knowledge and belief. Signed Signed Title Assistant Professor | June 7, 1978 |
|--|--------------|
| APPROVED BY Conduction TITLE DANIEL S. NUTTER  | DATE 6/8/78  |
| CONDITIONS OF APPROVAL, IF ANY:<br>Adjust to approval for the early by Commissioner  |              |

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

-

| Operator       All distances must be from the outer boundaries of the Section.         Operator       NMSU - Lokesh Chaturvedi       Lease       Well No.Clarr<br>Ruther State         Outerter       Section 36       Township 23 S       Range 2 E       County Dona Ana         Actual Footage Location of Well:       50       feet from the North line and 20       feet from the West line         Ground Level Elev.       Producing Formation       Pool       Dedicated Acreage:         4200 ft.       1.       Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.         2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working and royalty).         3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolid communitization, unitization, force-pooling, etc?         □       Yes       No         If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this necessary.)         No allowable will be assigned to the well until all interests have been consolidated (by communitization, unif forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission the best of my knowledge and bell to be workedge and bell  |             |
|--|-------------|
| NMSU - Lokesh Chaturvedi       No present lease       Ruther Sta         Outling       Section 36       Township 23 S       Range 2 E       County Dona Ana         Actual Footage Location of Well:       50       feet from the North       line and       20       reat from the West       line         Ground Level Elev.       Producing Formation       Pool       Dedicated Acreage:       Peol       Dedicated Acreage:         1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.       2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working and royalty).       3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolid communitization, unitization, force-pooling, etc?       Yes       No       If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this necessary.)         No allowable will be assigned to the well until all interests have been consolidated (by communitization, uniforced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission contained herein is true and commission the best of my knowledge and bell         © Clary & Ruther       State #1       Image: CERTIFICATION       Image: CERTIFICATION  | <u>ν</u> δ. |
| Actual Footage Location of Well:       S0       feet from the North       line and       20       feet from the West       line         Ground Level Elev.       Producing Formation       Pool       Dedicated Acreage:       4200 ft.       Dedicated Acreage:         1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.       2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working and royalty).         3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolid communitization, unitization, force-pooling, etc?       Image: Communitization of the owners and tract descriptions which have actually been consolidated. (Use reverse side of this necessary.)         No       If answer is "yes," type of consolidation       If orced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission or the east of my knowledge and beil owner the information of the best of my knowledge and beil owner the best of my knowledge and beil owner the best of my knowledge and beil owner the owner the best of my knowledge and beil owner   |             |
| 50       feet from the North line and 20       feet from the West line         Ground Level Elev.       Producing Formation       Pool       Dedicated Acreage:         4200 ft.       Producing Formation       Pool       Dedicated Acreage:         1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.       1.       If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working and royalty).         3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolid communitization, unitization, force-pooling, etc?       Image: Communitization force-pooling, etc?         If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this necessary.)       No allowable will be assigned to the well until all interests have been consolidated (by communitization, unif forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission the best of my knowledge and bell         Clary & Ruther       CERTIFICATION       I hereby certify that the infor contained herein is true and communities of the best of my knowledge and bell   |             |
| Ground Level Elev.       Producing Formation       Pool       Dedicated Acreage:         4200 ft.       Producing Formation       Pool       Dedicated Acreage:         1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.       2.         2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working and royalty).       3.         3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolid communitization, unitization, force-pooling, etc?       Image: Pool         If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this necessary.)       No allowable will be assigned to the well until all interests have been consolidated (by communitization, unif forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission the best of my knowledge and bell with the tree information is true and communities the set of my knowledge and bell with the tree in the set of my knowledge and bell with the tree in the set of my knowledge and bell with the tree in the set of my knowledge and bell with the set of my  |             |
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| <ul> <li>If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working and royalty).</li> <li>If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolid communitization, unitization, force-pooling, etc?         <ul> <li>Yes</li> <li>No</li> <li>If answer is "yes," type of consolidation</li> <li>If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this necessary.)</li> <li>No allowable will be assigned to the well until all interests have been consolidated (by communitization, unif forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission</li> </ul> </li> <li>Clary &amp; Ruther state #1         <ul> <li>Lary &amp; Ruther state #1</li> <li>Lary &amp; Ruther state #1</li> <li>No will be assigned to the well until all interests have been consolidated (by communitization, unit forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission or the best of my knowledge and bell would be an otherwise in the information of the best of my knowledge and bell would be approved by the communities the best of my knowledge and bell would be best of my knowledge and bell would be best of my knowledge and bell would be approved by the communities the best of my knowledge and bell would be approved by the communities of the best of my knowledge and bell would be been the best of my knowledge and bell would be been the best of my knowledge and bell would be best of my knowledge and bell would be</li></ul></li></ul> | Acres       |
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| necessary.)  |             |
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| Clary & Ruther<br>State #1<br>Clary & Ruther<br>State #1<br>CERTIFICATION<br>I hereby certify that the info<br>contained herein is true and com<br>the best of my knowledge and bel<br>Wenthreeh   | tization    |
| Clary & Ruther<br>State #1   |             |
| Clary & Ruther<br>State #1   |             |
| State #1<br>I hereby certify that the info<br>contained herein is true and com<br>the best of my knowledge and bel<br>Wenturven  |             |
| contained herein is true and com<br>the best of my knowledge and bel<br>WCUAturved   | rmation     |
| Wenaturved.  |             |
| Lokesh Chaturvedi  | ief.        |
| Lokesh Chaturvedi  | •           |
| Name   |             |
| Assistant Professor  |             |
| Position New Mexico State  |             |
| University<br>Company  |             |
| Las Cruces, NM 88003   | <u>ن</u>    |
| Date<br>June 7, 1978   |             |
|  |             |
| I hereby certify that the well I   | ocation     |
| shown on this plat was plotted fro   | m field     |
| notes of actual surveys made by  |             |
| under my supervision, and that th<br>is true and correct to the best   |             |
| knowledge and belief.  | or my       |
| ┝····································  |             |
|  |             |
| Date Surveyed  |             |
| Registered Professional Engineer   |             |
| and/or Land Surveyor   |             |
|  |             |
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Form G-102 Adopted 10/1/74

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