NMSU GD-2 LRG-3648 UL:D 27-23S-02E Dona Ana County

STATE OF NEW MEXICO



ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

July 11, 1988

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. C. D. Black
Physical Plant Department
New Mexico State University]Box 3545
Las Cruces, New Mexico 88003-3545

RE: Discharge Plan GW-38
New Mexico State University
NMSU Geothermal Wells PG-1 and PG-4
Las Cruces, Dona Ana County

Dear Mr. Black:

On December 22, 1986, the ground water discharge plan, GW-38, for NMSU Geothermal wells PG-1 and PG-4 located in Dona Ana County, was approved by the Director of the Oil Conservation Division (OCD). This discharge plan was required and submitted pursuant to Water Quality Control Commission Regulations and it was approved for a period of two years. The approval will expire on December 22, 1988.

If your facility continues to have effluent and leachate discharges and you wish to continue discharging to the unlined pit, please submit your application for renewal of plan approval as quickly as possible. The OCD is reviewing discharge plan submittals and renewals carefully and the review time can often extend for several months. Please indicate whether you have made, or intend to make, any changes in your discharge system, and if so, include an application for plan amendment with your application for renewal. To assist you in preparation of your renewal application, I have enclosed a copy of the OCD's guidelines for preparation of ground water discharge plans at geothermal installations. These guidelines will be used in review of your renewal application.

If you no longer have such discharges and discharge plan renewal is not needed, please notify this office.

Mr. C. D. Black July 11, 1988 Page -2-

If you have any questions, please do not hesitate to contact Jami Bailey at (505) 827-5884

Sincerely,

David G. Boyer, Chief Environmental Bureau

DGB:JB:sl

Enclosure

cc: OCD - District IV

P. O. Box 2088, Santa Fe 87501

APPLICATION TO PLACE WELL ON INJECTION-GEOTHERMAL RESOURCES FAREA 7, 1982.

Operator					Address					
New Mexico Sta	te Univer	sity			Воз	x 344	5 New Mexico	Stat	e Universi	_ty
Lease Name		V	Well No.	_	Field				County	
N/A			GD-2,L	RG364	8 NM	SU			Dona	a Ana
Location			220							
Unit LetterD								JUFee	t From The	North
Line, Section $\frac{2.7}{1.00}$	Township	, 2,3 S	R	ange	2	E	NMPM.			
	-									
			CASING	AND T	UBING DA	TA				
NAME OF STRING	SIZE	SETTING	DEPTH	SA	CKS CEME	ENT	TOP OF CEME	NT	TOP DETER	MINED BY
Conductor Pipe										
Surface Casing								.		
Long String	0 5:4011	270		,	200		0 1	_	70.	
	8 5/8"	370 £		ļ	200		Ground s	ırtace	e Positiv	e return
Tubing	0 5/01	390-4 370-3	70		•		of Tubing Packer		2167 00 0	
Screen	8 5/8"			Joni			ound screen,		316L SS, C	1.00 slots
Name of Proposed Injection Form	สเเอก	33 %			Top of For			Botton		
Santa Fe		 			25				990 feet	
Is Injection Through Tubing, Casir	ng, or Annulus?	, P	ertorations	or Ope	en Hole?	ropose	d Interval(s) of Inje	ction		
Thru screen			screen				70 – 380 390			
Is This a New Well Drilled For Injection? If Answer is No, For What Purpose was Well Originally Drilled? Has Well Ever Been Perforated in Any Zone Other Than the Proposed Injection Zone?										
List All Such Perforated Intervals	and Sacks of C	ement used	to Seal Of	ff or Sq	ueeze Each					
Depth of Bottom of Deepest Fresh in This Area	n Water Zone				ose of Press ules 501 ar		ntenance			
None None		Oi water	- Disposal:	(306 R			water di	sposal	<u>-</u>	
Anticipated Daily Minimum	Max	kimum	Open or System	Closed	Туре	Is Inj	ection to be by Gra	vity or	Approx. Press	ure (psi)
Volume 370.000gpd 150.	00gpd 37	0,000gr	od -	clos	sed		gravity			
Answer Yes or No Whether the Folto such a Degree as to be Unfit for				r to be	Injected	Natu	ral Water in Injectio	n Are W	Vater Analyses A	ttached?
or Other General Use—			у	es			yes		yes	
Name and Address of Surface Own	,		ederal Lan	d)						
New Mexico Sta									•	
List Names and Addresses of all Op	erators Within	One-Half (1/	2) Mile of	This Inj	ection Well					
•							•			
(NI - Marin Gr	-4- 77 *									
(New Mexico St	ate Unive	ersity)								
			-,							-
								-		
Have Copies of this Application Bed	en									
Sent to Each Operator Within One- Half Mile of this Well?	Yes	□ No		N/A					•	
Are the Following Items Attached				·	Electrical L	_og		Diagra	mmatic Sketch	of Well
this Application (see Rule 503)	Yes	□X No		į	Yes	□X N	۷۰ 🗆	Yes	s 🖾 No	
1 hereby			n above is	true an		7	best of my knowled			
11/1/1	grilly july the	miormatio	ii audve is	iiuc all	a complete	to the	ocst of my knowled	ige allu Di		
CHAM)			Direct	or	Physica	1 P1 2	<u>ant Deptar</u> tm	ent	12-2	2-82
(Signature)				<u> </u>	(Title)	<u> </u>	<u>arre vepear</u> em		(Date)	

NOTE: Should waivers from all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 20 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 20-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 503.

OWNER OR OPERATOR Name <u>New Mexico S</u>	State Univer	sity	DEC 2 7, 1982					
Address Box 3445 Nev	Mexico Sta	te University		KEJEIVED				
TYPE OF WELL Geothermal Producer []		Low-Temperature The	ermal []	Injection/Disposal X]				
REASON FOR FILING New Well [x] Rec Change in Ownership [] Other (Please Explain)	Designation							
DESCRIPTION OF WELL Lease Name N/A		Well NMSU GD-2 No. LRG 3648	Name ofReservoir New	Mexico State University				
Kind of Lease (Fee, Fed. or State)		Lease Number	N/A					
LOCATION Unit Letter ;;;				line and				
•								
County								
TYPE OF PRODUCT Dry Steam		eam and ater	Low Tem					
DESIGNATION OF PURC Name of PurchaserN/A		DDUCT						
Address of Purchaser								
Product Will Be Used For								
CERTIFICATE OF COMP	LIANCE							
	Conservation Co	ommission of New Mexic	o, have been complied	he State of New Mexico, as d with, with respect to the knowledge and belief.				
Signed C	4/15		_ Position _ Direct or	, PPD Date 12-22-52				
Approved Approved	San	ney	Position DIVI	, PPD Date 12-22-52 Director Date 12/30/82				

GEOTHERMAL RESOURCES WELL LOG

DEC 2 7 1982

Operator	New Mexi	co State Uni	versity					(0) -00 42
		New Mexico					d.	INFO
Reservoir	NMSU	· 			an	,		
Lease Name_	N/A			_Well No	<u> </u>	<u>48</u> ι	Jnit Letter_	D
Location:	330		feet from	the	West		line	and
	1,000	feet from the						
Township	23 S						Dona A	

FORMATIONS PENETRATED BY WELL

		.						
	H TO Bottom of	Thickness	Drilled or Cored	Recovery	DESCRIPTION			
Top of Formation	Formation		Coreu					
G.S.	725	725 feet	Drilled	Cutting	Santa Fe fill			
725	700	CE C	D . 111 1	2 .				
72.5	790 [°]	65 feet	Drilled	Cutting	Clay and finely divided sand (Santa Fe group)			
790	990	200 feet	Drilled	Cutting	Santa Fe fill			
				·	. ,			
					,			
					,			
					·			

Attach Additional Sheets if Necessary

This form must be accompanied by copies of electric logs, directional surveys, physical or chemical logs, water analyses, tests, and temperature surveys (See Rule 205).

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Signed Position Director, PPD Date 12-22-62

GEOTHERMAL RESOURCES WELL SUMMARY REPORT

DEC 2.7/1982 Quinty .

Оре	rator <u>New</u>	Mexic	o State.	Univer	sity		Add	dress <u>Box</u>	3445 New	Mexico Sta	ite Unive	ersity
	se Name								U-GD-2 LRG			
	t Letter								Rg			
Res	ervoir	NMSU					Cou	unty <u>Don</u>	ia_Ana			
	menced drill								ICAL MARKERS		DEPTH	
Com	pleted drillir	ng	22 Octo	ber 19	82			Clay zon	ie	725	5-790	
	l depth <u>9</u>							Rhyolite	gravel) <u>=990 </u>	
	menced prod				•			Geologic a	age at total depth		.ion_yea:	
		-	(Date)									
	Sta	tic test					P	roduction Tes	t Data			
Date	Shut-ir	n well hea	d		Total	Mass Flov	v Data			Separato	r Data	
	Temp. °F	Pres. F	sig. L	bs/Hr	Temp. °F	Pres. Psig.	. Enthalpy	Orifice	Water cuft/Hr	Steam Lbs/Hr	Pres. Psig.	Temp. °F
		_								<u> </u>		
	-											-
		<u> </u>	•				•					
	-											
					•							
	*											•
		- 1			C	ASING RE	FCORD (Pr	esent Hole)	,			
Size	Size	Weight	Grade	New	Seam		Depth	Top	Number	Тор		
of Hole	of	of	of Casing	or Used	Lapv	-	of Shoe	of Casing	of Sacks Cement	of Cement.		ent Top mined By
	Casing	Csg/ft.	Casing	Oseu	Lapv	veiu	Sirve	1' above		ground		•
14 3/	4'' 8 5/8	<u>;</u>	A120	New New	Seam	less	34.7!	ground	200	-surface-	Cement	t returns
					-							
			(Si:	ze, top, bot	tom, perfo		RATED CA		ration and method	d.)		
				,						· ,	-	
	3 5/8-in	ich Joh	nson sta	inless	_steel	type 3	16L, wi	re round,	0.60 inch	slots, $1\frac{1}{2}$	by 3-inc	ch
(collars,	from	370 to	380 fee	t, and	390 to	470 fe	et.		ш.		
Was	analysis of et	ffluent mad	_{le?} yes	Electrica	l log depth	s <u>990</u>	feet		_ Temperature log	depths 990) feet	
	CERT	IFICATI	ON									
			y that the i		on given a	bove and	the data ar	nd material att	ached hereto a	re true and co	mplete to tl	he
			1			7						
	Signed			US	le L	Do	sitionI	Director,	PPD	Date <u>/2</u> -	22-8L	_
	Signed	. <u></u>	/				31 LIUH	<u> </u>		Date _ & ·		

DEC 2 7 1982

KL JOVED

GEOTHERMAL RESOURCES WELL HISTORY

Operator	New Mexico State University Address Box 3445 New Mexico State University
Lease Name_	Well NoNMSU GD-2 LRG 3648
Unit Letter	D Sec. Twp. 23S Rge ; 2E
Reservoir	New Mexico State University Dona Ana
opera there detail Date	It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important tions during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates of. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation is, sidetracked junk, bailing tests, shooting, and initial production data and zone temperature. (Attach additional sheets if necessary.)
23 Sep 82	Spudded well; pilot hole drilled 7 7/8-inch diameter to 520 feet and 6 1/2-inch to 991 feet.
6 Oct 82	Pilot hole logged by Century Geophysical.
6-7 Oct 82	Pilot hole packed with gravel, and water samples were jetted from 840 feet and 468 feet of depth. Jetting continued for 6 hours at each horizon to assure representative samples were attained. Water temp. 88°F.
11-15 Oct 82	Pilot hole reamed to $14 3/4$ -inch diameter to $486 \mathrm{feet}$.
21-22 Qct 82	Casing and screen set, with perforated zones 370 to 380 feet, and 390 to 470 feet. Blank casing 0-370, 380-390, and 470 to 477. Bottom cement plug set (20 sacks of cement) from 464 to 486 feet. Gravel set from 464 to 348 feet. Casing cemented with 200 sacks of cement through gravel tube. Good cement returns at surface from 347 feet to surface.
25-28 Oct 82	Well developed by air jetting. Flow cleared in 6 hours. Approximately 100 gpm air jetted for 6 hours each of four days.
1-5 Nov 82	Well test pumped at 100-150 gpm for total of 24 hours.
15-24 Nov 82	Well re-developed by air jetting for a total of 48 hours.
29-30 Nov 82	Well head installed, and connection made to geothermal disposal pipeline.
I-15 Dec 82	Fifteen day controlled test reinjection. Flow maintained at $220240~\text{gpm}$. Gravity reinjection.

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Position Director, P.P.D. Date 12-22-82

NO. OF COPIES RECEIVED				NEW	MEXICO OIL CONSE	RVATION CO	MMISSION					
DISTRIBUTION					P. O. Box 2088,	Santa Fe 8750	1					
File	8	V										
N.M.B.M.	1								5. Indicate	Type of Lease		
U.S.G.S.] .	APPLI	CATION FOR PERI	MIT TO DRIL	L. DEEPE	N	STATE	FEE 🗓		
Operator	1				G BACKGEOTHE				5.a State Lease No.			
Land Office							J., GEO 111		N/A			
		-	_									
						·				711111111111111111111111111111111111111		
la. Type of Work Dril	1 C]			Deepen 🗆	Plug E	Back 🔲			eement Name		
Coo	+ h a r r	~ ∩.[Produce	er 🗍	-	Гетр Observa	tion 🗀		N/A			
> F						njection/Dispo			8. Farm or l	Lease Name		
Low	- i en	1p 1	hermal			ijection/Dispo	1291 FF		NMSU	Property		
2. Name of Operator									9. Well No.			
N	ew	Mex	ico S	State Ur	niversity				GD-2			
3. Address of Operator									10. Field an	d Pool, or Wildcat		
В	ox	344	5 Nev	v Mexico	State Univer	sity			NMSU			
4. Location of Well	LETT	TED		LOCAT	ер <u>330</u> геет	EROM THE 1	Vest	LINE				
		ich.				ROW THE						
AND 1.000 FEET FR	ОМ	THE	North	LINE OF	SEC. 27 TWP. 23	S RGE.	2E .	NMPM				
	111	111.					111111	1111111	12. County	THITING THE		
									Dona	Ana		
	11	177	1111	11111			77777	777777	TTTTI			
	///	///										
<i>HHHHHH</i>	44	47,	++++	+++++	/////////////////////////////////////	19. Proposed	Depth	19A. Formation	777777	20. Rotary or C.T.		
		///		///////				Canta	E.	Rotary		
21. Elevations (Show whethe	r DF	$\frac{1}{RT}$	etc l	21A Kind	& Status Plug. Bond.	21B. Drilling (Santa	1	x. Date Work will start		
4,000	,	Α. Ι.,	c.c.,	Ziiii Kiiiu	de Otavas 17ag. Dolla.	TBD	Zonti actor			BD		
				<u> </u>					'			
				Р	ROPOSED CASING A	ND CEMENT P	ROGRAM	÷				
SIZE OF HOLE		SIZ	ZE OF (CASING	WEIGHT PER FOOT	SETTING	DEPTH	SACKS OF	CEMENT	EST. TOP		
12 inches		88	3 5/8	inches	_							
		<u> </u>										
	_	<u> </u>			·	·						
Pilot hole 6	½-i	.nch	wil:	l be dri	illed to TD; h	ole will 1	be logge	ed by comm	nercial	logging		
company nil	οt	ho1	ം യ1്	11 he er	nlarged to 12	inches	Johnson	wire scre	en. sta	inless steel.		
•					•							
or equivalen	t w	/i.11	be 1	placed a	after gravel p	ack, diam	eter 8 !	5/8". Cas	sing wil	ll be cemented		
from screen	sec	tic	n to	ground	level.							
- 120 m D 0- 100 m				0								
				•								
								•		•		
						•				•		
APPROVAL VAL	ID !	FOR	90	DAYS								
PERMIT EXP	RES	,	$-\mu/I$	7/82						•		
UNLESS DR	ILLI	NG	UNDE	RWAY	•							
ONE COS CAN					OIL COV	ISERVATIO	N COMI	MISSION T	Ó BÉ N	otified .		
					WITHIN	1 24 HOUI	RS OF E	BEGINNING	OPERA	TIONS		
: ABOVE SPACE DESCRIBE	PRO	OPOS	SED PRO	DGRAM: If						·		
ne. Give blowout preventer preventer precede the tereby certify that the information				ue and comp	plete to the best of my	knowledge and	l belief.					
Celd.	//	1	(/_	· 								
ned C.D. Black					Title <u>Director</u>	, Physica	1 Plant	Dept. De	te Jun	e 30, 1982		
(This space)	for Si	tate (Use)									
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PROVED BY CAT	<u> </u>			7	DISTR	ICT SUP	EK V 13	∪r	۶	7-17-87		

CONDITIONS OF APPROVAL, IF ANY:

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

GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT All distances must be from the outer boundaries of the Section. Well No. Lease Operator GD-2NMSU Land New Mexico State University County Section Unit Letter 23S 2E Dona Ana D 27 Actual Footage Location of Well: 1,000 Line feet from the West line and feet from the North Dedicated Acreage: Pool Ground Level Elev. Producing Formation NMSU Acres 4,000 Santa Fe 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 interest and royalty). 3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc? If answer is "yes," type of consolidation N/A ☐ Yes ☐ No If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission. · CERTIFICATION I hereby certify that the information . contained herein is true and complete to the best of my knowledge and belief. X Position Director, Physical Plant Dept New Mexico State University 30 June '82 I hereby certify that the well location shown on this plat was plotted from field SEC. 27 notes of actual surveys made by me or T. 23S R. 2E under my supervision, and that the same is true and correct to the best of my knowledge and belief. Date Surveyed 17 June '82 Registered Professional Engineer and for Land Surveyor Owen Lockwood

330

660

1320 1850 1980 2310

2€40

2000

1500

Certificate No.

6550

PHYSICAL PLANT DEPARTMENT

Box 3545/Las Cruces, New Mexico 88003 Telephone (505) 646-3021



December 22, 1982



Mr. Carl Ulvog Oil Conservation Commission P.O. Box 2088 Santa Fe, NM 87501

Dear Mr. Ulvog,

Forwarded for your review and approval are properly completed Forms G- 104, G-105, G-106, G-107, and G-112 for New Mexico State University Geothermal Disposal Well.

As you have been notified, this well originally was named and numbered NMSU GD-2. Consistent with our current numbering system, and in compliance with State Engineer numbering system, the well has been renumbered as NMSU GD-2, LRG 3648.

Request permission be granted to place this well on disposal.

Sincerely

Calvin (D/Black

Director, Physical Plant Department

CDB/dhb

Enclosures:

NMSU-GD-2-LRG 3648

G - 104

G - 105

G-106

G-107

G-112

NO. OF COPIES RECEIVED		NEW MEXICO OIL CONSE	ERVATION COMMISSION	
DISTRIBUTION		P. O. Box 2088, 9	Santa Fe 8750I	
File				
N. M. B. M.		SUNDRY NOTICES	AND REPORTS	
U. S. G. S		ЛО	l	5. Indicate Type of Lease
Operator		GEOTHERMAL RES	SOURCES WELLS	State Fee X
Land Office				5.a State Lease No. N/A
Do Not Use This Form for Pro For Permit —" (Form G-101) f	posals to Drill or Such Propo	For to Deepen or Plug Back to a Cosals.)	Different Reservoir. Use "Application	m
I. Type of well Geother	mai Producer	Temp. Observation		7. Unit Agreement Name
<u></u>	np Thermal	Injection/Disposal	X	N/A
2. Name of Operator				8. Farm or Lease Name
New Mexico S	tate Uni	iversity		NMSU Property
3. Address of Operator	т.	as Chilosa NM 990	0.2	9. Well No.
) - Li	as Cruces, NM 880	····	LRG-3648
4. Location of Well		000 W. J	1000	10. Field and Pool, or Wildcat
Unit Letter_D		330 Feet From The West	Line and 1000 Feet Fr	om ////////////////////////////////////
No mth		27	S. Range 2 E. NM	
The <u>NOT LN</u> Line	IPM. []]]]]]]]			
	mm	15. Elevation (Show whethe	r DF. RT. GR. etc.)	12. County
			bove M.S.L.	
16.	Chack Ar		ture of Notice, Report or Other	
		- "	ture of Notice, Report of Other	r Data
	OF INTENTIO	-		QUENT REPORT OF:
PERFORM REMEDIAL WORK	P	LUG AND ABANDON	REMEDIAL WORK	ALTERING CASING
TEMPORARILY ABANDON			COMMENCE DRILLING OPNS	
PULL OR ALTER CASING	L c	HANGE PLANS	CASING TEST AND CEMENT	JOB 🗔
			OTHER	
OTHER				
17. Describe Proposed or con-	pleted Opera	tions (Clearly state all pertinent	details, and give pertinenet dates,	including estimated date of starting any
proposed work) SEE RUL	E 203.			
NMSU acidis problem. of 30% mur was surged was again was begun. Conductivi approximate	zed this (Detaile iatic ac repeate surged : Septer ty was re	s well in September ed as follows). Au cid was placed in edly with air prescrepeatedly. September 6 - air jettimonitored during to,000 gallons of fl	d pressure of 8 ps r in order to alle gust 29 - 18 barre the well. August sure. September 2 mber 3 - air jetti ng was terminated. he jetting process uid from the well. 0 psig head pressu	viate this ls (990 gal.) 30 - the well - the well ng of the well Ph and , which removed September 9 -
				·
			:	
18. I hereby certify that the in	formation abo	Ove is true and complete to the bes	et of my knowledge and belief.	
SIGNED	[][]\{	/ TITLE Di	rector, Physical P	lant _{DATE} 10/1/85
	1			
ADDROVED BY A FI	filmer	DIS	TRICT SUPERVISOR	R 10-8-85

CONDITIONS OF APPROVAL, IF ANY:

WNER OR OPERATOR ame New Mexico St	tate Universi	ty		DEC 2 7 19	VIIII
ddress Box 3445 New		*		KENELVED	:
YPE OF WELL eothermal Producer []		Low-Temperature	Thermal []	Injection/D	sposal [K]
EASON FOR FILING lew Well [X] Record hange in Ownership [] other (Please Explain)	Designation o				
ESCRIPTION OF WELL ease ame N/A	W	ell NMSU GD-2 o. LRG 3648	Name of Reservoir _ Ne	w Mexico Sta	te Univer
(ind of Lease Fee, Fed. or State)	N/A	LeaseNumber	N/A		
OCATION Init			•		
etter;		· ·	e West		
1,000					line of
ection27	=				
YPE OF PRODUCT Ory team		m and er	Low Te		
DESIGNATION OF PURCH Name of PurchaserN/A		UCT			
Address of					
roduct Will Be Used For					i de la companya de l
CERTIFICATE OF COMPL	LIANCE	e .			
hereby certify that all ru promulgated by the Oil C ubject well, and that the in	Conservation Com	mission of New Me	xico, have been compli	ed with, with res	pect to the

OWNER OR OPERATOR Name <u>New Mexico Sta</u>	te University			DEC 2 7.1	982	<u>.</u>
Address Box 3445 New M	exico State U	niversity		REJEIVED	* * **	
				WE DETACO	:	
TYPE OF WELL					Ä	<u>.</u>
Geothermal Producer []	Là	ow-Temperature The	ermal []	Injection	on/Disposal 🛛	Ì
•	A .					
REASON FOR FILING New Well [X] Recomp Change in Ownership [] Other (Please Explain)	Designation of Pu	rchaser []				
			•			
DESCRIPTION OF WELL Lease	Well	NMSU GD-2	Name of			
Name N/A	No		Reservoir	New Mexico	State Unive	ersity
Kind of Lease (Fee, Fed. or State) N	/A	Lease Number	N/A			
I OCUTION						
LOCATION Unit						
Letter D;	330	feet from the	West		line an	ıd
1,000		feet from the _	North	1 ·	line (of
Section27	Township	23· S	Range	2 E		
County		,				
						•
TYPE OF PRODUCT						
Dry Steam	Steam a Water			w Temp. ermal Water X	•	
Sicani	· · · · · · · · · · · · · · · · · · ·				 	
DESIGNATION OF PURCHA	SER OF PRODUC	Τ	•			
Name of						پ.
Purchaser N/A						 .
Address of Purchaser						
Product Will						 ·
Be Used For						1
OFFICIAL ME OF COMPLIA	NOF					
CERTIFICATE OF COMPLIA				lla in the State of	Non Manin	
I hereby certify that all rule promulgated by the Oil Cor subject well, and that the info	nservation Commiss	sion of New Mexic	co, have been co	omplied with, with	h respect to th	
NO D	[][[]	0				
Signed			PositionDire	Pector, PPD	_Date 12-2	<u>2</u> -82
MP X	1 min		\mathcal{D}	$\mathcal{D} = \mathcal{I}$	2 /2/20	6.

OWNER OR OPERATOR	DE	DEC 2 7 .1982			
Name New Mexico Sta Address Box 3445 New M					WE DELA ED
TYPE OF WELL Geothermal Producer [] REASON FOR FILING New Well [X] Recom	Inject	ion/Disposal K)			
Change in Ownership [] Other (Please Explain)		urchaser []	· · · · · · · · · · · · · · · · · · ·		
DESCRIPTION OF WELL Lease Name N/A	Wel No	1 NMSU GD-2 LRG 3648	Name of Reservoi		State University
Kind of Lease (Fee, Fed. or State)		Lease			
LOCATION Unit Letter;;		feet from thefeet from the _	_		line and
Section27	_Township			2 E	-
County	· · · · · · · · · · · · · · · · · · ·				
TYPE OF PRODUCT Dry Steam	Steam Water			ow Temp. termal Water X	· .
DESIGNATION OF PURCHANAME of PurchaserN/A	ASER OF PRODU	СТ			
Address of Purchaser					
Product Will Be Used For					
CERTIFICATE OF COMPLIA	ANCE	•		•	
I hereby certify that all rule promulgated by the Oil Co subject well, and that the inf	nservation Comm	ission of New Mexic	o, have been c	omplied with, wi	ith respect to the
Signed Signed			Position Dir	ector, PPD	Date 12-22-82

P. O. Box 2088, Santa Fe 87501

APPLICATION TO PLACE WELL ON INJECTION-GEOTHERMAL RESOURCES 48 13 1982

· .					
Operator			Address		
New Mexico Sta	te Univers	sity	Box	3445 New Mexico	State University
Lease Name		Well No.	Field		County
N/A			RG3648 NMS	II	Dona Ana
N/A Location		للو 2 100 ا	TILID		Dona And
Unit Letter D					O Feet From The North
Line, Section 27	Township		lange2 E	NMPML	
	_	CASING	AND TUBING DAT	Ά	
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMEN	NT TOP OF CEMEN	TOP DETERMINED BY
Conductor Pipe					
:]			
Surface Casing					
·					· [
Long String	····	 			
Long String	8 5/8"	370 feet	200	C	rfaho Panesan
	ס / ר. מ			Ground su	rface Positive return
Tubing	o elon	390-470		Depth of Tubing Facker	***** 21CT GG 0 CO 1
Screen	8 5/8"	370-380			type 316L SS, 0.60 slots
Name of Proposed Injection Form	nation	19 1 ATT	Top of Form	The state of the s	Bottom of Formation
Santa Fe		· ·	250		990 feet
Is Injection Through Tubing, Casi	ng, or Annulus?	Perforations	s or Open Hole? P	roposed Interval(s) of Inject	tion
				370_38#1 300	470
Thru screen Is This a New Well Drilled For	If Answer	is No, For What Pur	pose was Well Origin	370-380 + 390-	r Been Perforated in Any Zone
Injection?		,			he Proposed Injection Zone?
List All Such Perforated Intervals	and Sacks of Co	ment used to Seal O	Iff or Squeeze Fach	· i	no
23. An Social enorated intervals	and bucks of Ce	asou to seal U	uquocze Edill		
D-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	h:Mate: **=	te This below	or Diverse -7. T	vo Mainton	
Depth of Bottom of Deepest Fres in This Area	ıı vyater ∠one		or Purpose of Pressu? (See Rules 501 and	1 502)	
None				water dis	*
Anticipated Daily Minimur	m Maxi	imum Open or System	r Closed Type	Is Injection to be by Grav Pressure?	rity or Approx. Pressure (psi)
Volume 370,000gpd 150	,00gpd 370	0.000gpd	closed	gravity	
Answer Yes or No Whether the Fo	llowing Waters as	re Mineralized Wate		Natural Water in Injection	Are Water Analyses Attached?
to such a Degree as to be Unfit for or Other General Use—			ves	Zone v∋s	ves
Name and Address of Surface Own	er (or Lessee, if				
New Mexico Sta					
List Names and Addresses of all Or			This Injection Well		
List Hames and Addresses of all Ol	VERNING C		, cool well		: -
•				· ·	
(37. 37. 37.	10t - 17 f		•		
(New Mexico St	cate Univer	rsity)			
		4			
•					
		•			
			·		
					2. 2.
Have Copies of this Application Be					2
Sent to Each Operator Within One- Half Mile of this Well?	Yes [□ No □	N/A		- Ta
Are the Following Items Attached			Electrical Lo)g	Diagrammatic Sketch of Well
this Application (see Rule 503)	į .		. j -		
L		LX No L		X No	Yes LX No L
1 herely	acrtify that the	information above is	true and complete t	to the best of my knowledg	ge and belief:
-	///		٠		12-22-82
Lety 1	m_	Direct	tor, Physical	<u> Plant Dept≘r</u> tm <u>e</u>	ent
(Signature)			(Title)		(Date)
					

NOTE: Should waivers from all operators within one-half mile of the proposed injection well not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 20 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 20-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing. If the applicant so requests. SEE RULE 503.

GEOTHERMAL RESOURCES WELL LOG

DEC 2 7 1982

Operator	New Mexi	co State Univ	versity				3 37 65 p	<u>.</u>
Address	Box 3445	New Mexico S	State Unive	rsi	ty			
Reservoir	NMSU					-		
Lease Name_				/ell 1	$_{\text{Vo.}} \stackrel{\text{GD}}{=} \stackrel{\text{Z}}{=} \stackrel{\text{Z}}{=$	3648 U	nit Letter_	D
Location:	330		feet from the		West		line	and
	1,000	feet from the _						
Township	23 S		Range2	E		_County_	Dona A	lna

FORMATIONS PENETRATED BY WELL

•					
DEPTH TO		Thickness	Drilled or	Recovery	DESCRIPTION
	ttom of rmation		Cored		a Decomination
-				•	
G.S.	725	725 feet	Drilled	Cutting	Santa Fe fill
725	790	65 feet	Drilled	Cutting	Clay and finely divided sand (Santa Fe group)
7,90	990	200 feet	Drilled	Cutting	Santa Fe fill

Attach Additional Sheets if Necessary

This form must be accompanied by copies of electric logs, directional surveys, physical or chemical logs, water analyses, tests, and temperature surveys (See Rule 205).

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Signed Position Director, PPD Date 12-22-62

GEOTHERMAL RESOURCES WELL LOG

Operator	New Mexi	o State University		DEC 2 7 1	982
Address		New Mexico State Unive	rsity	R-OFIVED	
Reservoir	NMSU			_	
Lease Name_	N/A		Vell No. <u>LRG^Z 3648</u>	Unit Letter	D
Location:	330	feet from the	West	line and	· · · · · · · · · · · · · · · · · · ·
	1,000	feet from theNorth			
Township	23 S	Range 2	ECou	nty Dona Ana	.:

FORMATIONS PENETRATED BY WELL

		· .		·	
DEPT	н то	Thickness	Drilled or	D	
Top of Formation	Bottom of Formation	Thickness	Cored	Recovery	DESCRIPTION
G.S.	725	725 feet	Drilled	Cutting	Santa Fe fill
725	790	65 feet	Drilled	Cutting	Clay and finely divided sand (Santa Fe group)
700	222				
790	990	200 feet	Drilled	Cutting	Santa Fe fill
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		-			
	1				<u> </u>

Attach Additional Sheets if Necessary

This form must be accompanied by copies of electric logs, directional surveys, physical or chemical logs, water analyses, tests; and temperature surveys (See Rule 205).

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Signed Position Director, PPD Date 12-22-62

DEC 2,7,119821

GEOTHERMAL RESOURCES WELL SUMMARY REPORT

Oper	ator New	Mexico	State	Univer	sity		Ad	dress Box	3445 New 1	Mèxico Sta	te Unive	ersity
Lease	e Name	NMSU					We	II No. NMS	U-GD-2 LRG	3648		
				Sec	27		Twp.	23_S	Rge	2 E		•
	rvoir								a Ana			· · · · · · · · · · · · · · · · · · ·
Comr	nenced drilli	ing	23 Sep	tember	1982			GEOLOG	ICAL MARKERS		DEPTH	
Comp	oleted drillin	g	22 Oct	ober 19	82			Clay zon	е	725	-790	: <u></u>
	depth 9							Rhyolite	grave1		-990	•
Junk	N/A						 .	· · · · · · · · · · · · · · · · · · ·			· .	· · · · · · · · · · · · · · · · · · ·
Comr	menced prod	lucing	N/A (Date)		-		<u> </u>	Geologic a	ge at total depth	1.0 mill	ion year	
	Sta	tic test					F	Production Tes	t Data			
Date	Shut-in	well hea	d		Total	Mass Flow	v Data			Separato	r Data .	•
	Temp. °F	Pres. P	sig. 1	.bs/Hr	Temp. °F	Pres. Psig.	. Enthalpy	Orifice	Water cuft/Hr	Steam Lbs/Hr	Pres. Psig.	Temp. °F
			-					i				
											<u>.</u>	
• .											. •	
									j 1			•
					C	ASING RE	ECORD (Pi	resent Hole)				
Size of Hole	Size of Casing	Weight of Csg/ft.	Grade of Casing	New or Used	Sean o: Lapv	r	Depth of Shoe	Top of Casing	Number of Sacks Cement	Top of Cement		ent Top mined By
	" 8 5/8		A120	New		less_	34.7 !	I' above	200	ground surface	Cement	t return:
		· 						. 0				
		·										
						22222		1000	`			·
			(S	ize, top, bot	tom, perfo		RATED C		ration and method	(.t		
8	3 5/8-in	ch Joh	nson st	ainless	stee1	type 3	16L. wi	re round.	0.60 inch	slots 15	by 3-in	ch
	ollars,			•	•		-	_				12) 12
Was a	analysis of ef	fluent mad	_{le?} yes	Electrical	l log depth	s <u>990</u>	feet	· · · · · · · · · · · · · · · · · · ·	_ Temperature log	depths 990) feet	· ·.
	CERT	IFICATI	NO									
			/ that the owledge an		n given a	above and	the data a	nd material att	tached hereto a	re true and co	mplete to t	he .
) //	1///	1/1)						· · .

Director, PPD

NEW MEXICO OIL CONSERVATION COMMISSION

P. O. Box 2088, Santa Fe 87501

DEC 2 7 1982

GEOTHERMAL RESOURCES WELL SUMMARY REPORT

	rator <u>New</u> se Name								3445 New 1			
Unit	Letter ervoir	D		Sec	27		wp	23 S	a_Ana	≥2_1	E	
Com	menced drill	ing							ICAL MARKERS		DEPTH	
Tota		90	Plug			990			e _gravel		5-790 0-990	*
Junk	N/A											
Com	menced proc	ducing	N/A (Date)				· 	Geologic a	ge at total depth	1.0 mil	lion yea	rs
	Sta	tic test					P	roduction Test	t Data			
Date		well hea			·	Mass Flow		-		Separato		,
-	Temp. °F	Pres. F	'sig. I	Lbs/Hr	Temp. °F	Pres. Psig.	Enthalpy	Orifice	Water cuft/Hr	Steam Lbs/Hr	Pres. Psig.	Temp. °F
		-										
		.										26.
		_i			C	ASING RE	CORD (Pre	esent Hole)			J	<u> </u>
Size of Hole	Size of Casing	Weight of Csg/ft.	Grade of Casing	New or Used	Sean or Lapv	nless r	Depth of Shoe	Top of Casing	Number of Sacks Cement	Top of Cement	1	ent Top mined By
14 3/4	∔" 8 5/8		A120	Nev	Seam	less	347'	I' above ground	200	ground surface	Cement	t retur ns
		_	(5	ize ton bo	ttom perfo		RATED CA		ation and method			
										· · · · · · · · · · · · · · · · · · ·		
						_type_31 _390_to			0.60 inch	slots, 1½	_by_3-inc	ch
Was	analysis of ef	ffluent mac	_{le?} yes	Electric	al log depth	s 990 f	eet		Temperature log	depths 990) feet	
	CERT	TFICATION	ON								•	
			that the owledge ar		on given a	above and t	he data an	d material att	ached hereto a	re true and co	mplete to th	he

Director, PPD

DEC 2 7 1982

GEOTHERMAL RESOURCES WELL HISTORY

Operator _	New Mexico State University Address Box 3445 New Mexico State University
Lease Nam	Well No. NMSU GD-2 LRG 3648
Unit Lette	
Reservoir _	New Mexico State University Dona Ana
th	It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important perations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates ereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation etails, sidetracked junk, bailing tests, shooting, and initial production data and zone temperature. (Attach additional sheets if necessary.)
3 Sep 82	Spudded well; pilot hole drilled 7 $7/8$ -inch diameter to 520 feet and 6 $1/2$ -inch to 991 feet.
6 Oct 82	Pilot hole logged by Century Geophysical.
-7 Oct 82	Pilot hole packed with gravel, and water samples were jetted from 840 feet and 468 feet of depth. Jetting continued for 6 hours at each horizon to assure representative samples were attained. Water temp. 88°F.
1-15 Oct 8	2 Pilot hole reamed to 14 3/4-inch diameter to 486 feet.
1-22 Oct 8	Casing and screen set, with perforated zones 370 to 380 feet, and 390 to 470 feet. Blank casing 0-370, 380-390, and 470 to 477. Bottom cement plug set (20 sacks of cement) from 464 to 486 feet. Gravel set from 464 to 348 feet. Casing cemented with 200 sacks of cement through gravel tube. Good cement returns at surface from 347 feet to surface.
5-28 Oct 8	Well developed by air jetting. Flow cleared in 6 hours. Approximately 100 gpm air jetted for 6 hours each of four days.
-5 Nov 82	Well test pumped at 100-150 gpm for total of 24 hours.
5-24 Nov 8	Well re-developed by air jetting for a total of 48 hours.
9-30 Nov 8	Well head installed, and connection made to geothermal disposal pipeline.
-15 Dec 82	Fifteen day controlled test reinjection. Flow maintained at 220-240 gpm. Gravity reinjection.

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Position Director, P.P.D. Signed_

DEC 2 7 1982

GEOTHERMAL RESOURCES WELL HISTORY

					•	•	
	Operator		New Mexico	State University	Address	Box 3445 New Mexico State Univers	ity
	Lease Na	me			Well No	NMSU GD-2 LRG 3648	
	Unit Let	ter	D	Sec	Twp23S	Rge 2E	
٠	Reservoi	r	New Mexico	State University	County	Dona Ana	_
							_
		operation thereof.	ons during the dri Be sure to includ	lling and testing of the well le such items as hole size, for	or during re-drilling, a mation test details, amo	I. Use this form to report a full account of all important litering of casing, plugging, or abandonment with the date ounts of cement used, top and bottom of plugs, perforation d zone temperature. (Attach additional sheets if necessary	es on
!3	Sep 82		Spudded we inch to 99		led 7 7/8-inch	diameter to 520 feet and 6 1/2-	
6	Oct 82		Pilot hole	logged by Century	Geophysical.		
5 <u>-</u> 7	Oct 82		468 feet o		ontinued for 6	mples were jetted from 840 feet and hours at each horizon to assure r temp. 88°F.	
i 1–	15 Oct	82	Pilot hole	reamed to 14 3/4-i	nch diameter t	o 486 feet.	
21-	22 Oct	82	feet. Blan (20 sacks of Casing cemo	nk casing 0-370, 38 of cement) from 464	0-390, and 470 to 486 feet. s of cement th	s 370 to 380 feet, and 390 to 470 to 477. Bottom cement plug set Gravel set from 464 to 348 feet. rough gravel tube. Good cement	
₹5	28 Oct	82		oped by air jetting tted for 6 hours ea		d in 6 hours. Approximately 100 s.	
-5	Nov 82		Well test	pumped at 100-150 g	pm for total o	f 24 hours.	
. 5-	24 Nov	82	Well re-de	veloped by air jett	ing for a tota	1 of 48 hours.	
9-	30 Nov	82 .	Well head	installed, and conn	ection made to	geothermal disposal pipeline.	
-1	.5 Dec 8	32	Fifteen da	,	einjection. F	low maintained at 220-240 gpm.	-

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Position Director, P.P.D.

To:

Roy Cunniff, PSL

DEC 2 7 1982

From:

Andrew Lee Bristol, Soil & Water Testing Lab

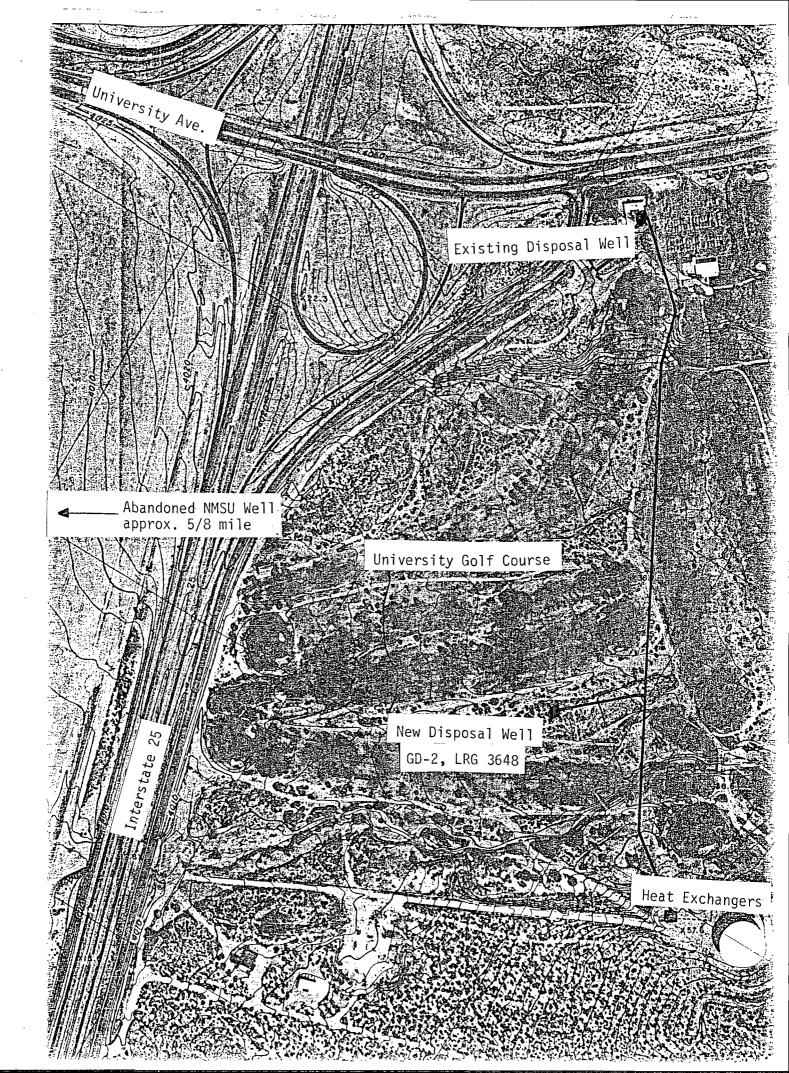
Subject: Water analysis of geothermal injection well (Lab Nos 4405-4406)

			mmhos/cm				mq	/L			
	Sample	pΗ	E.C.								
n	370-450	7.90	2.70	427.6	43.8	130.0	36.0	573.7	0	422.2	315
OLD	840-850	7.91	2.45	386.2	34.8	114.5	36.6	440.3	0	494.2	280

						- mg/L				
						Hg				
370-450	<.001	.08	<.005	.002	< .005	≺.0002	.001	<.05	< .01	1.29
840-850	.001	.09	< .005	.002	۷.005	 0002	.001	< .05	.02	.55

					ma/l		
	SiO ₂	Fe	Mn	В	TDS by S	(as Hardness	CaCO ₃) Alkalinity
370-450	23.2	1.28	.09	.30	1948	473	346
840-850	36.0	6.00	.13	.30	1787	436	405

NMSU GD-2, LRG 3648	8 5/8" casing TOP TO 370'
Cement 348' to top	14 3/4" top to 486
6 to 9 guage silica gravel 464 to 348'	316 SS .060 slot screen 370' to 380' Blank 8 5/8" 380 to 390' 316ss .060 slot screen
464'Cement plug	390' to 470'
Jetted sample 468'	486'
	Back filled pilot 7 7/8" 486 to, 520' Back filled pilot 6 1/2" 520' to 991' TD
Jetted sample 840'	
	TD 991'



and the second second SURVEY COMFO-LOG 7867 TEMPERATURE HOLE ID: REINJECTION WELL DATE: 10-86-82 PROBE TYPE 9055H CLIENT: PHYSICAL SCIENCE LAB LOCATION: UNIV. GOLF COURSE LOCATION: UNIV. TRUCK NO.: 7602 DATA VSL2 DEFTH DEG.F. 86.3 86.3 FT 10.5 15.5 20.5 86.5 20. 25.5 38.5 35.5 48.5 45.5 86.6 86.6 86.6 86.7 86.8 50.5 55.5 60.5 65.5 70.5 86.8 86.8 36.8 86.8 88. B 75.5 86.9 80.5 86.9 85.5 90.5 86.9 86.9 87.2 87.1 87.3 95.5 700.5 105.5 770.5 87.3 87.3 87.4 87.4 87.4 135.5 * 87.4 87.4 87.5 87.5 140.5 145.5 750.5 155.5 160.5 87.5 165.5 87.5 87.7 87.8 87.9 87.9 178.5 175.5 T80.5 185.5 190.5 195.5 200.5 205.5 210.5 215.5 220.5 87.9 87.9 88.0 88. I 88. I

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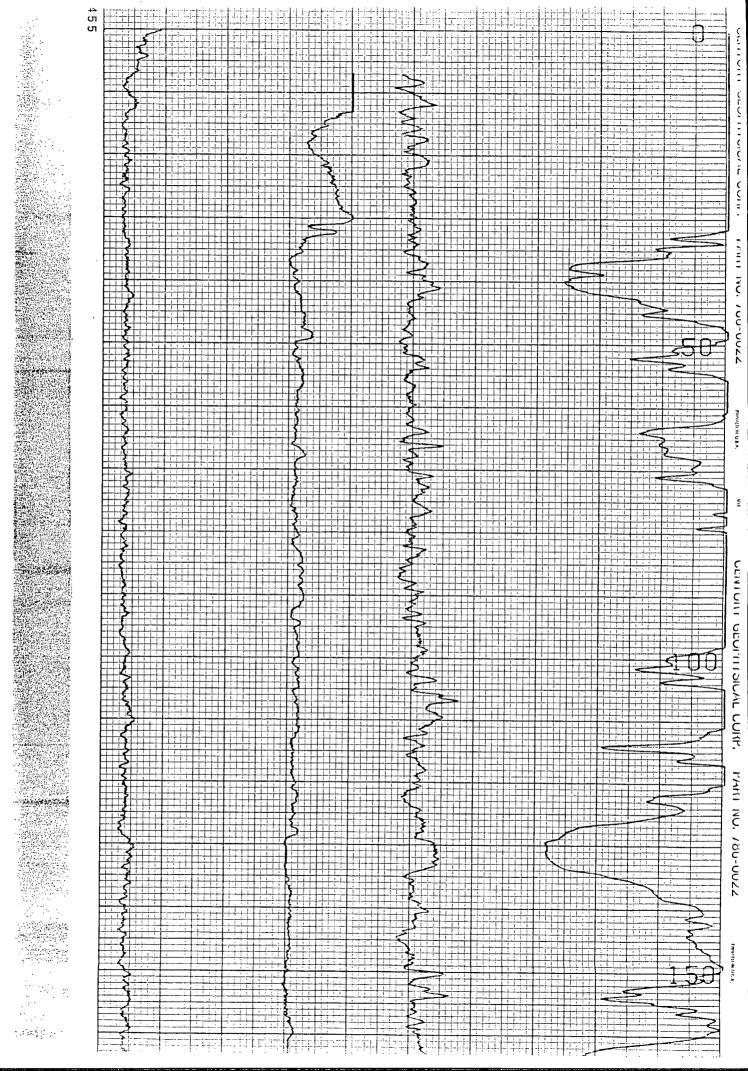
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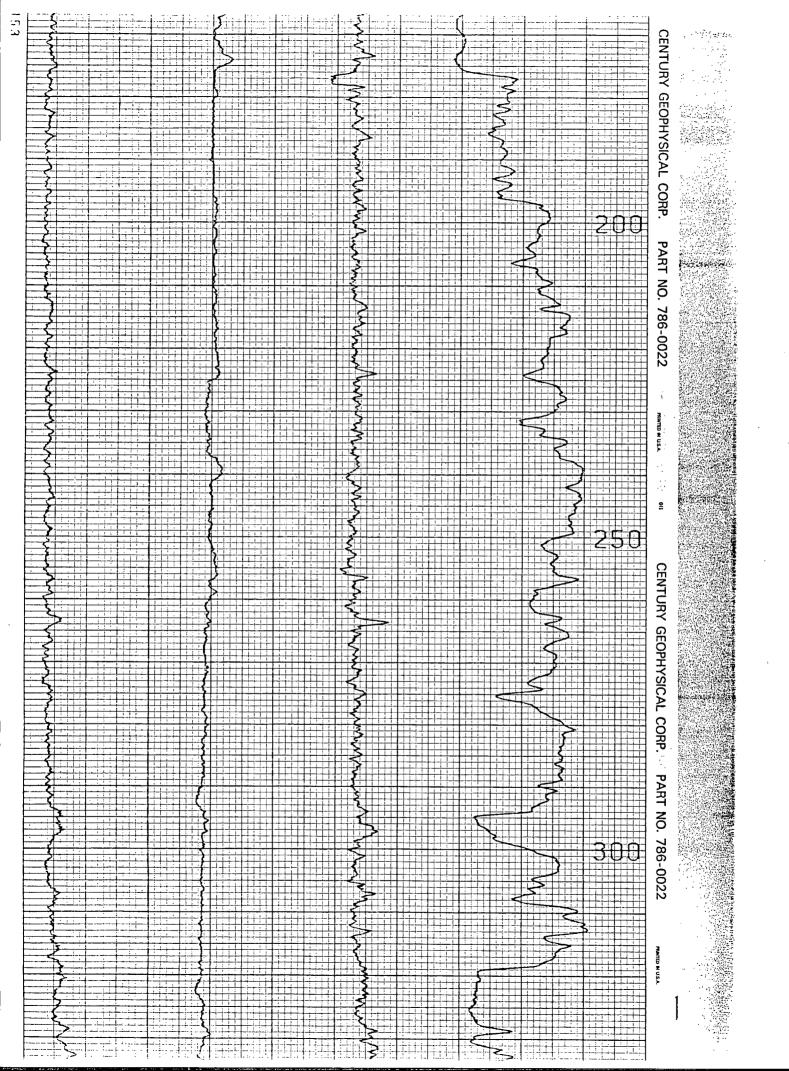
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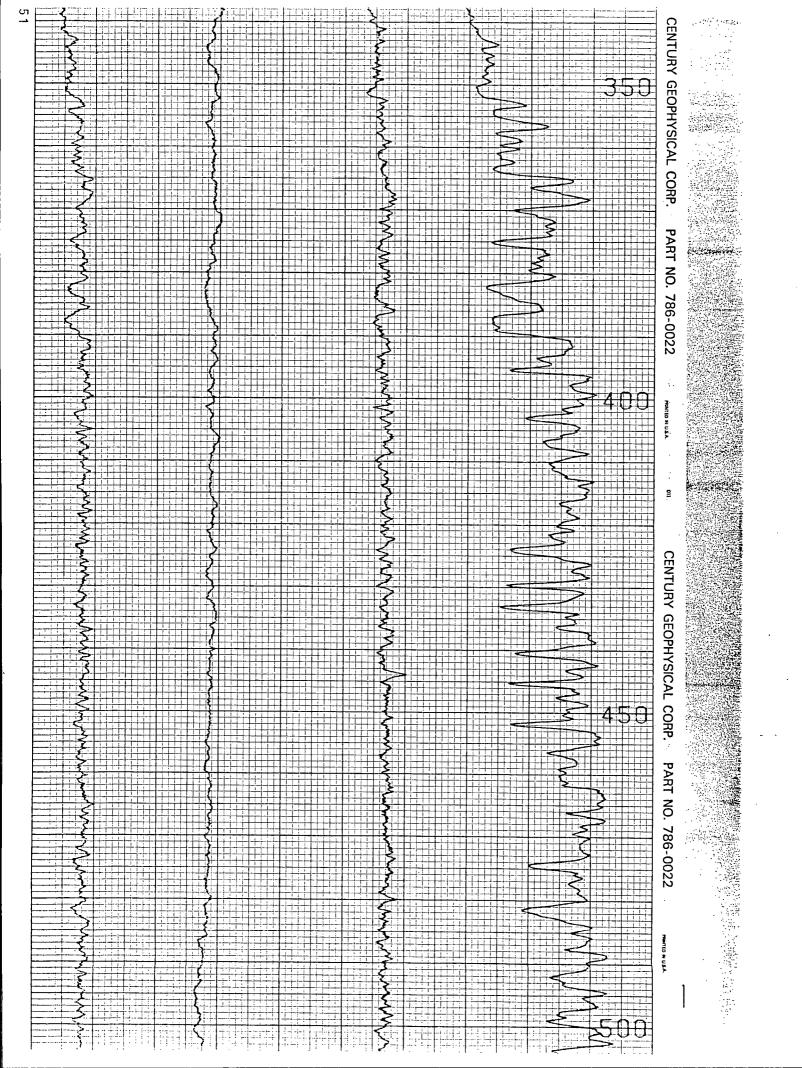
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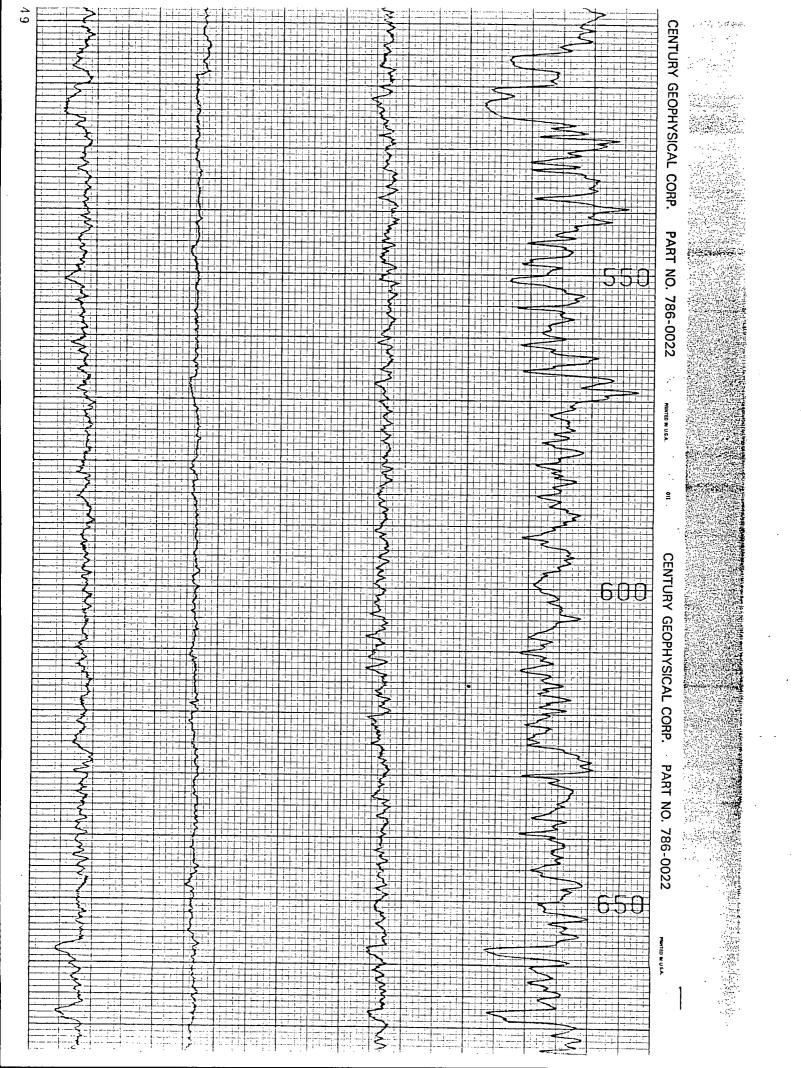
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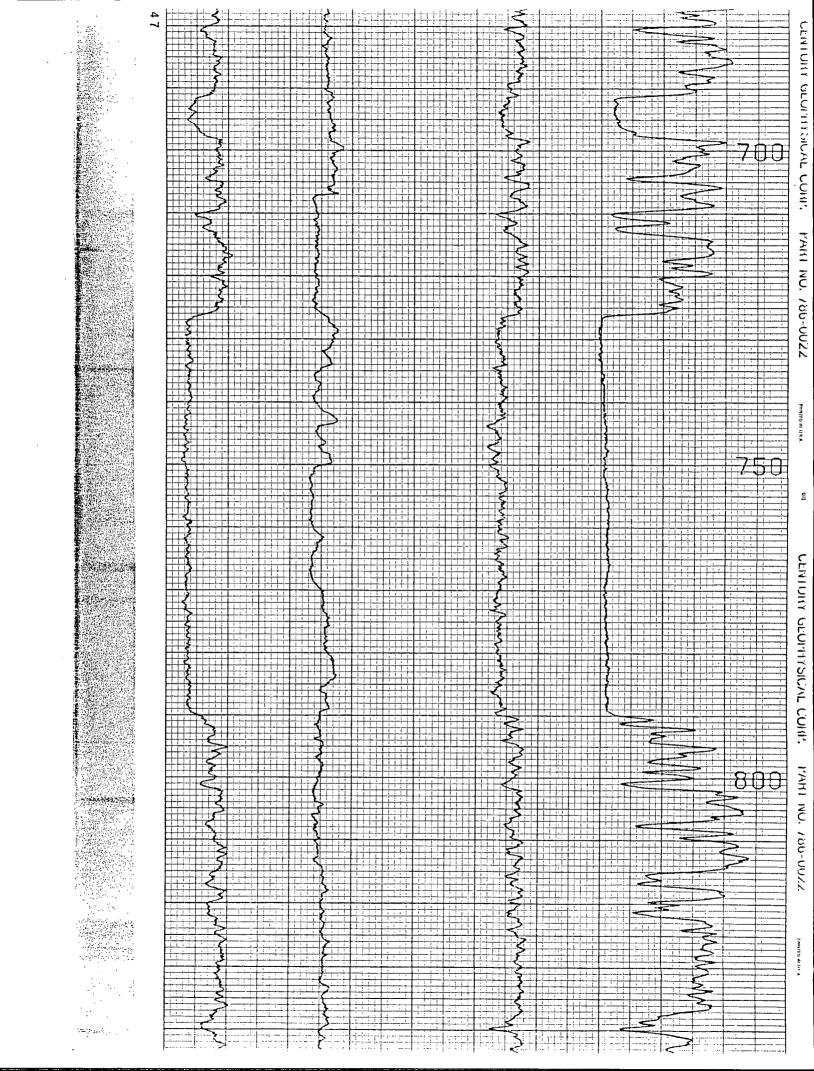
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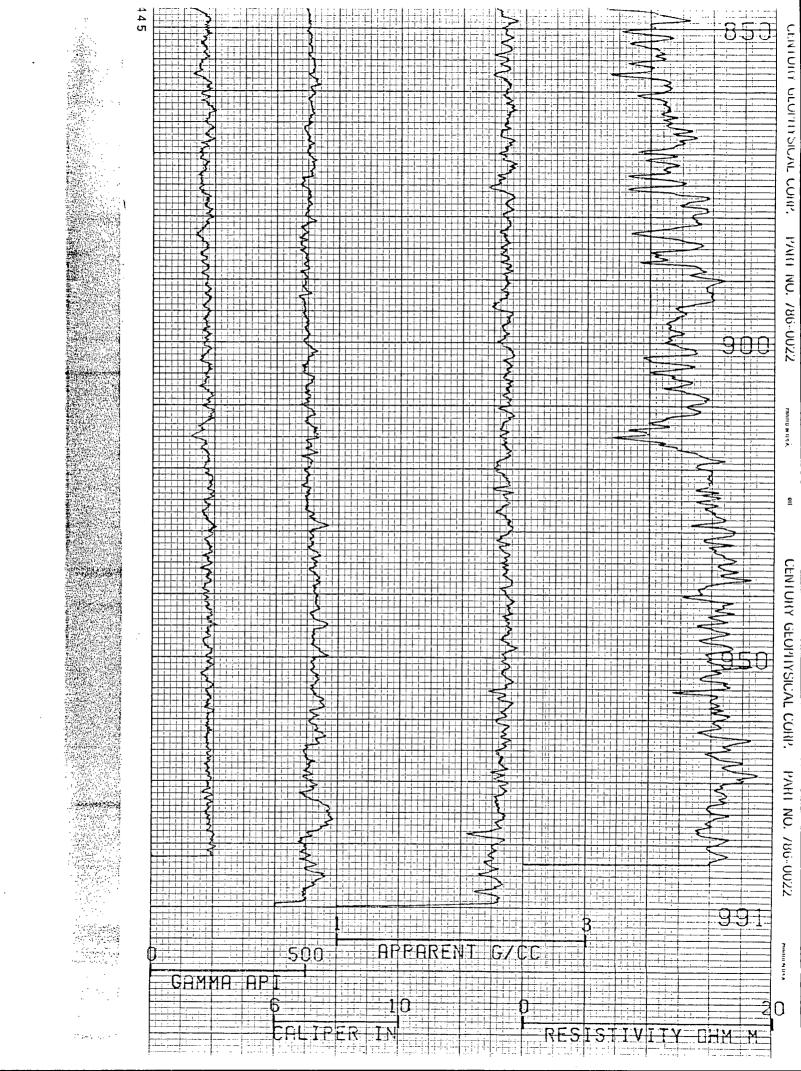


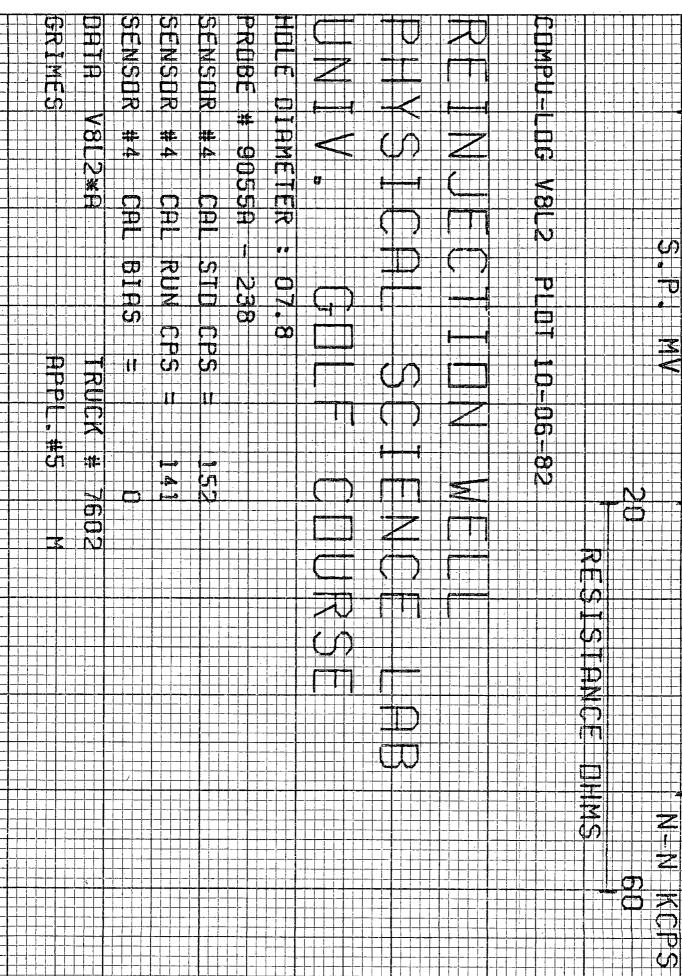


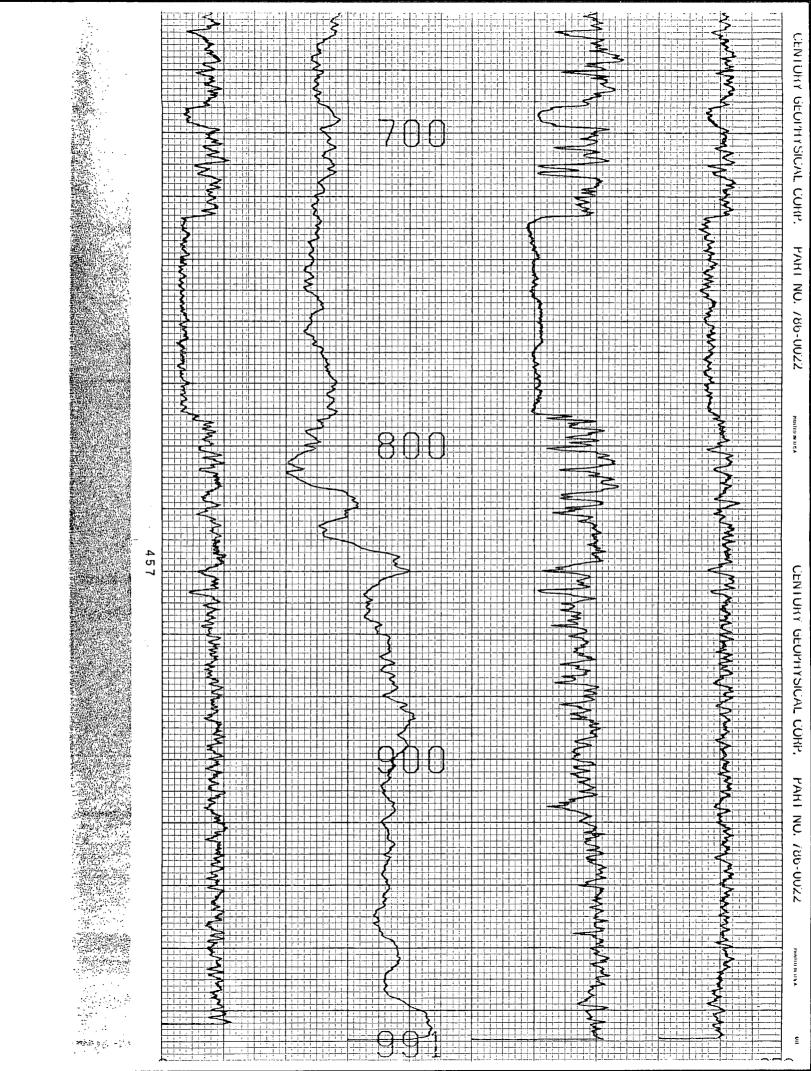


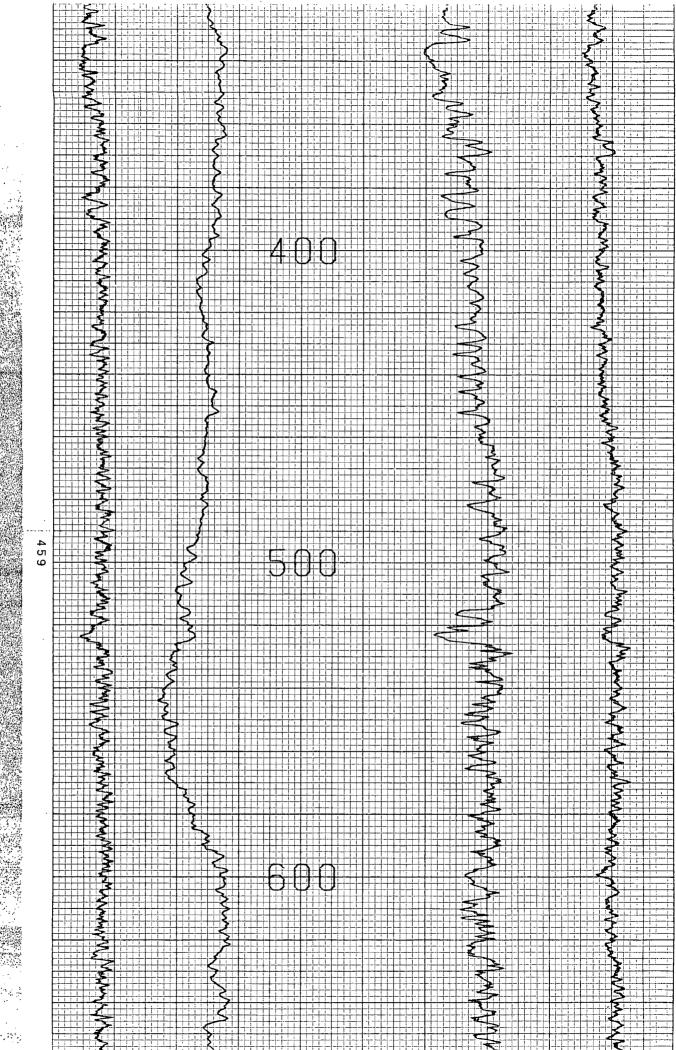


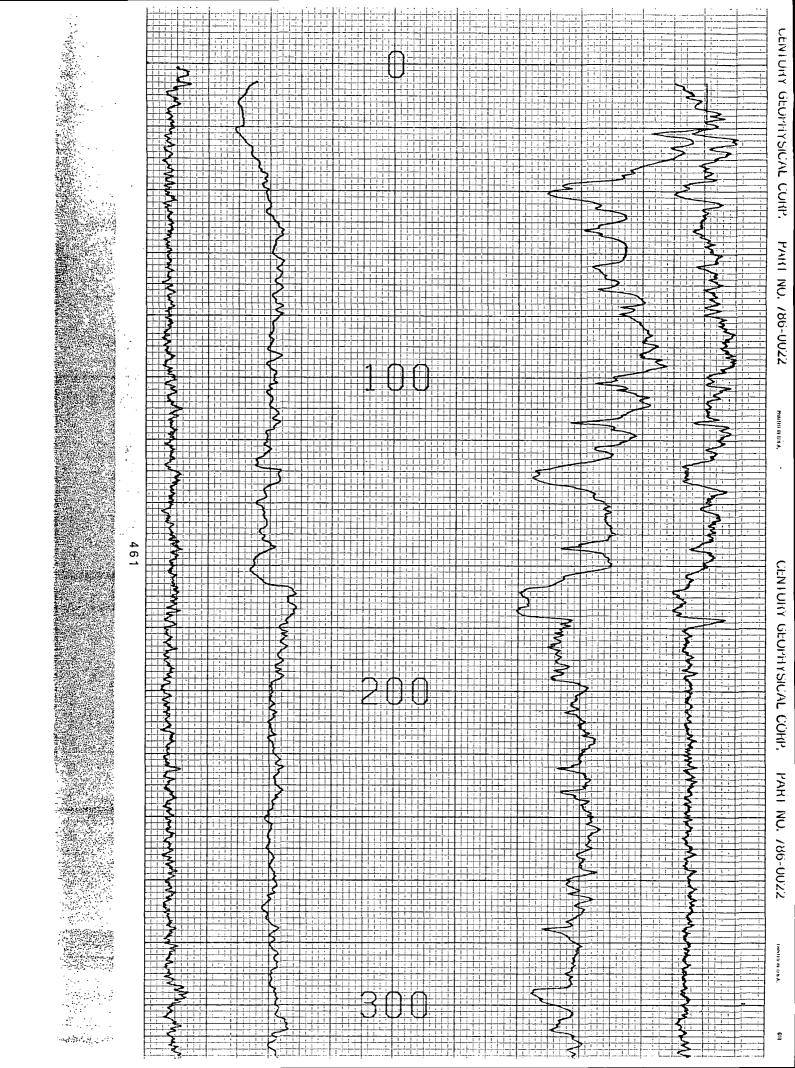








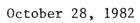


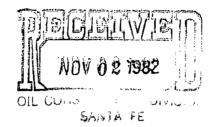


PHYSICAL PLANT DEPARTMENT

Box 3545/Las Cruces, New Mexico 88003 Telephone (505) 646-3021







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

Dear Mr. Ulvog:

This letter forwards an original and two copies of a Form G-103, Well Completion Report, for our new geothermal disposal well.

Please be advised that this well has been re-designated as follows:

Old Name:

NMSU GD-2

New Name and Number:

NMSU GD-2, LRG 3648

This change makes the well numbering scheme conform to both the OCD and State Engineer well numbering system. Please annotate your file copies of the G-101 and G-102 for this well with the new number.

As you were advised during your informal inspection visit of October 26, we will conduct a 24-hour flow test next week. After that test, we will advise you of our intent to place this well injection status by filing Form G-104 through G-107 and Form G-112.

Sincerely

C. D. Black, Director

Physical Plant Department

Enclosure: a/s

· • • • • • • • • • • • • • • • • • • •				第1111	Adopted 10/1/7
NO. OF COPIES RECEIVED	-		NEW MEXICO OIL CONSERVATION COMMISS ON		
DISTRIBUTION	 		/ P. O. Box 2088, Santa Fe 87501/	B	
File	1./_	ν	NOV OR TOBE	- 1111:	
N. M. B. M.	 		SUNDRY NOTICES AND REPORTS	of honory	
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Operator		ļ	GEOTHERMAL RESOURCES WELLS	5.a State L	
Land Office				N/A	case 140.
				777777	
			Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application		
For Permit —" (Form G-101				7 Unit Ac	greement Name
1. Type of well Geoth				N/A	reement Name
2. Name of Operator	emp	Inerm	al Injection/Disposal X		r Lease Name
New Mexico Sta	t	Iniv	preity		Property
3. Address of Operator)IIT A	EISILY	9. Well No	······································
•	evi	20 S	cate University		LRG 3648
4. Location of Well	CAIC	-0 0	ate oniversity		and Pool, or Wildcat
	30		West 1 000	NMSU	na root, or whiteat
Unit Letter	30		Feet From The West Line and 1,000 Feet From	11/1//	mmmm
North			27Township 23S2ENMPM.		
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	1111.		4,000 Feet above MSL	Dona Ar	
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10.		Checi	Appropriate Box To Indicate Nature of Notice, Report or Other Da	ita	
NOTIC	E OF	INTE	ITION TO: SUBSEQUE	NT REPORT	OF:
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			OTHER Well Complet:	ion	
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17. Describe Proposed or c	omple	eted C	perations (Clearly state all pertinent details, and give pertinenet dates, incl	uding estima	ted date of starting any
proposed work) SEE RU			positive cares, inc.		cu dute of starting any
,			on 23 September 1982, and was drilled to 990 f	oot TD.	
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			feet, and 6 $1/2$ -inch to TD. Suite of electric ples jetted from 840 and 968 feet. Hole was en		
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to 14 3/4-111CII	LO	400	feet TD. Casing and screen setting:		
ourfood to	. 37	n fa	et; 380 to 390 feet; 470 to 477 blank casing, 8	5/8-inc	h
			nches wall thickness, Al20 Kaiser prime steel	J/ 0 - 111C	,11
diameter,	0.5	- 24	inches wall thickness, Alzo Karser prime steer		
corpon set	ttin	o• 1	70 to 380 feet and 390 to 470 feet of depth, 8	5/8-inch	1
			Type 316L stainless steel, 0.60 slot, 1 1/2 by		
collars	,0111.1	.0011	Type 5100 beariness seeds, 0.00 bloc, 1 1/2 by	5 Inch	
COTTAL					
Rottom hole cer	nent	ր1ւ	g 486 feet to 467 feet, using 20 sacks of cemen	it. Grav	re1
		-	Colorado Silica gravel 0.079 to 0.132 inches.		
		-	00 sacks. Good cement returns.		
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Well Developmen	it 2	5-29	October, 1982		
Test numning is	s nc	w s	heduled for 1-5 November 1982		
rest pamping it	, 110	w 5.	neddied 101 1 3 November 1902		
18. I hereby certify that the	infor	matio	above is true and complete to the best of my knowledge and belief.		
control the the		7			
SIGNED C. D. Blace	ck /	M	TITLE Director, Physical Plant De	pt	ct. 28. 1982
SIGNED		rep.	THE ,	DATE O	
7	a. 1	7 7	ClongTITLE DISTRICT SUPERVISOR		11/11/82
APPROVED BY	بحراوه	_ ~	TITLE DISTRICT SUPERVISOR	DATE	11/4/82
CONDITIONS OF APPROVA	A 1 1 E		, V		

CONDITIONS OF APPROVAL, IF ANY:

NO. OF COPIES RECEIVED	NEW MEXICO OIL CONSE	RVATION COMMISSION	Adopted 10/1/14
DISTRIBUTION	P. O. Box 2088, S	Santa Fe 87501,	
Fite		Ville Alban Brown 1/1	<u> </u>
N. M. B. M.	SUNDRY NOTICES	AND REPORTS	
U. S. G. S	ON	HILL KING OF THE PARTY OF	Indicate Type of Lease
Operator	-	OUDOS MELLO	State L Fee L
Land Office	_ GEOTTIETIMAE TIEG	OIL CONSERVATION UN	5-a-State Lease No.
		SANTA FE	VISION/A
Do Not.Use This Form for Proposals t For Permit —" (Form G-101) for Such	o Drill or to Deepen or Plug Back to a D Proposals.)		
Type of well Geothermal Proc Low-Temp Ther		$\overline{\mathbf{x}}$	7. Unit Agreement Name N/A
2. Name of Operator			8. Farm or Lease Name
New Mexico State Uni	versity		NMSU Property
3. Address of Operator			9. Well No.
Box 3445 New Mexico	State University		GD-2 LRG 3648
4. Location of Well			10. Field and Pool, or Wildcat
Unit LetterD,330	Feet From The West	Line and1,000 Feet From	NMSU
	n 27		
	15. Elevation (Show whether		12. County
	4,000 Feet abov	ve MSL	Dona Ana
1.6. Che	ck Appropriate Box To Indicate Nat	ture of Notice, Report or Other D	ata
NOTICE OF INT	1	1	ENT REPORT OF:
PERFORM REMEDIAL WORK	PLUG AND ABANDON	REMEDIAL WORK	ALTERING CASING
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proposed work) SEE RULE 203.	Operations (Clearly state all pertinent of	details, and give pertinenet dates, inc	luding estimated date of starting any
Pilot hole was spudde 7 7/8-inch hole to 52 aquired, and water sa	ed on 23 September 1982, and 6 1/2-inch to amples jetted from 840 and 6 feet TD. Casing and sci	o TD. Suite of electric d 968 feet. Hole was en	cal logs
	feet; 380 to 390 feet; 470 inches wall thickness, A		8 5/8-inch
	370 to 380 feet and 390 n Type 316L stainless ste		
from 486 to 347 feet.	lug 486 feet to 467 feet, , Colorado Silica gravel 200 sacks. Good cement	0.079 to 0.132 inches.	
Well Development 25-2	29 October, 1982	1	
Test pumping is now s	scheduled for 1-5 Novembe	r 1982	
18. I hereby certify that the informati	on above is type and complete to the bes	t of my knowledge and belief.	
SIGNED C. D. Black	Man TITLE Dir	ector, Physical Plant D	ept _. Oct. 28, 1982
			· · · · · · · · · · · · · · · · · · ·
APPROVED BY	TITLE		DATE
CONDITIONS OF APPROVAL, IF AN	IY:		



STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

October 15, 1982

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

Physical Plant Department Post Office Box 3545 Las Cruces, New Mexico 88003

Attention: C. D. Black

Re: Disposal of Geothermal

Waters

Dear Sir:

Pursuant to your letter of October 8, 1982, requesting permission to dispose of geothermal water produced during well development and test pumping of well NMSU GD-2, your request is hereby granted.

The Oil Conservation Division requests that NMSU submit all water analyses done on the domestic and geothermal wells described in your letter.

If you have any questions on this matter you may contact Carl Ulvog or Oscar Simpson at (505) 827-2534.

Yours very truly,

JOE D. RAMEY Director

JDR/OAS/fd

PHYSICAL PLANT DEPARTMENT

Box 3545/Las Cruces, New Mexico 88003 Telephone (505) 646-3021

October 8, 1982



Re: Request for approval of temporary surface disposal of geothermal waters

Mr. Joe D. Ramey, Director Oil Conservation Division Post Office Box 2088 Santa Fe, New Mexico 87501

Dear Mr. Ramey:

This letter contains a request for temporary surface disposal of geothermal water produced during well development actions on our new geothermal disposal well, NMSU GD-2. Based on driller's progress, we anticipate the well will be completed and ready for development by October 18, 1982.

Concerning water quality, the 7-7/8-inch pilot hole was drilled to a depth of 1,000 feet. Water samples were acquired by air-jetting from gravel-packed zones at 850 feet and 458 feet of depth. These zones were evaluated in order to compare them with normal ground water in the area of the new well, which contains approximately 1,550 ppm total dissolved solids. (See Enclosure 1) A complete chemical analysis is being conducted on the jetted samples, and preliminary values are as follows:

Strata	Conductivity MMHOS/cm	рН	Apparent TDS(mg/1)
850 feet	2,682	7.8	1,800
458 feet	3,123	7.6	1,900

NOTE: See Enclosure 2 for analysis.

It is apparent that the ground water quality is consistent with the geothermal water produced by our three geothermal wells, which range

in TDS from 1950 - 2020 mg/1. It is also apparent that normal ground water in this vicinity is similar to the slightly deeper formation water we sampled by air jetting.

As part of the well development actions, the following tasks are planned:

- Water jetting to clean the screen section between 374 and 484 feet of depth. Water source will be domestic water, and this will be delivered to a Johnson screen 4-point jet nozzle, at approximately 200 psig and 100 gpm.
- Air jetting, using a 2-inch tube and 1-inch air supply line, to produce an estimated 100 gpm.
- After the first two actions are completed, which will take about 8 hours, a contractor-operated submersible pump will be installed, and a 24-hour flow test will be conducted. Planned flow is 250-300 gpm.

Total amount of formation water at 1950 mg/l TDS expected to be produced is approximately 400,000 gallons. We propose to install a temporary pipeline from the well head to an arroyo 250 feet away, and discharge the water into the arroyo bed. A small earthern dam will be erected across the arroyo to prevent downstream migration of formation waters. The map and tabular data at Enclosures 3 and 4 define the well within a two mile radius. As can be seen, the nearest well is an NMSU domestic water well, Number 9, which is more than 6,400 feet from the test well.

The above concept has been reviewed informerly by telephone between Oscar Simpson and Roy Cunniff of PSL.

Sincere1

C. D. Black, Director

CDB/mm

Enclosures

cc: Roy Cunniff

DEGISTATIVE TO BE 1982

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1/3/62 Dick inson Lab. Inc. 1550 pm. TOS 51-12ppu. pH-7.0 C2 - 9.23 meg/d. ppm 185 1.30 N2 - 12, +7 x K - , 31 co3 .00 HC03 6,58 420 504 3,93 185 C/ 12,20 432

Tot. Hardness 11.80 grand gal, 90 N2 52,70

TEST WELL, NMSU GOLF COURSE

ANALYSIS OF SHALLOW GROUND WATER

			(1) (建筑,1866年) (1968年) (1968年) (1968年) 1973年 - 1978年 (1968年) (1968年) (1968年) (1968年)	raphysical states
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	K [≠]	44.5	47.5	
	Catt	131.1	113.9	
	Mg+1	36.//	35.56	
	(O3 =	0	0	
	HCO	393.9	590.2	
	SQ=	254.0	160.0	
	ee -	516.0	433.7	
	8:0=	63.7	43.0	
	TDS	1871.81	1798.86	
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Table X-7
Well Data, Las Cruces Wells and Campus Wells

				Distance to Golf Course	
 Well No.	Depth	Elev.	TDS	Well (feet)	Remarks
 LRG-427	383'	4077 '	900	4300	Las Cruces City Well
 LRG-430	5.26 '	4077'	900	4000	Las Cruces City Well, to be abandoned Current well condition open only to 250
LRG-520	870 '	4210 '	2000	3700	NMSU PG-3, Geothermal production well
 LRG-521	860'	4164'	2000	3535	NMSU PG-1, Geothermal production well
LRG-522	505'	4120'	2070	2500	NMSU Geothermal well for PG-2, President's Home
NMSU #1	385 '	3900'	400 - 500	6150	Secondary producer of campus domestic water
NMSU #2	485'	3903'		6000	This well is used only for an observation well
NMSU #3	678'	3985'		3800	This well is not used and is question- able whether it is open at bottom
NMSU #4	607'	4057'	1650	0	Golf Course Well
NMSU #5	260'	3888'		6200	Used as an irrigation well, water is contaminated
NMSU #8	630'	3954'	800- 900	5300	Not in service at present
NMSU #9	525'	3932'	500 - 550	6400	Principal producer for campus domestic water
NMSU #10	750'	3912	400 - 500	7300	Principal producer for campus domestic water

EX = 3888

LOCATION OF DOMESTIC WATER WELLS AND GEOTHERMAL WELLS ON AND NEAR NMSU CAMPUS

Box 3545/Las Cruces, New Mexico 88003 Telephone (505) 646-3021

October 8, 1982



Re: Request for approval of temporary surface disposal of geothermal waters

Mr. Joe D. Ramey, Director Oil Conservation Division Post Office Box 2088 Santa Fe, New Mexico 87501

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Sincerely.

C. D. Black, Director

CDB/mm

Enclosures

cc: Roy Cunniff

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Tot. Hardwins 11.80 gram gal, 90 N2 52,70

TEST WELL, NASA GOLF COURSE

ANALYSIS OF SHALLOW GROUND WATER

	·	<u>ll</u> (chem 458'	850	•
	Equivalent conductivity; umas fem	3/23	2682	
	pH	7.60	7.80	•
	Zons concentration: mg/e		Language de la companya de la compa	. 2 3 10 3
	Na ⁺	432.5	375.0	
	K*	44.5	47.5	
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	Ma**	36.//	35.56	
	(O3=	0	0	
	HCO	393.9	590.2	
	SQ=	254.0	160.0	
<u> </u>	el.	5/6.0	433.7	
	3;0=	63.7	43.0	
	7DS		1798.86	· · · · · · · · · · · · · · · · · · ·
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	Note; There are some oth	t element	ts such as: \$	6, 1
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	the above TDS is	approximately	of the account	for
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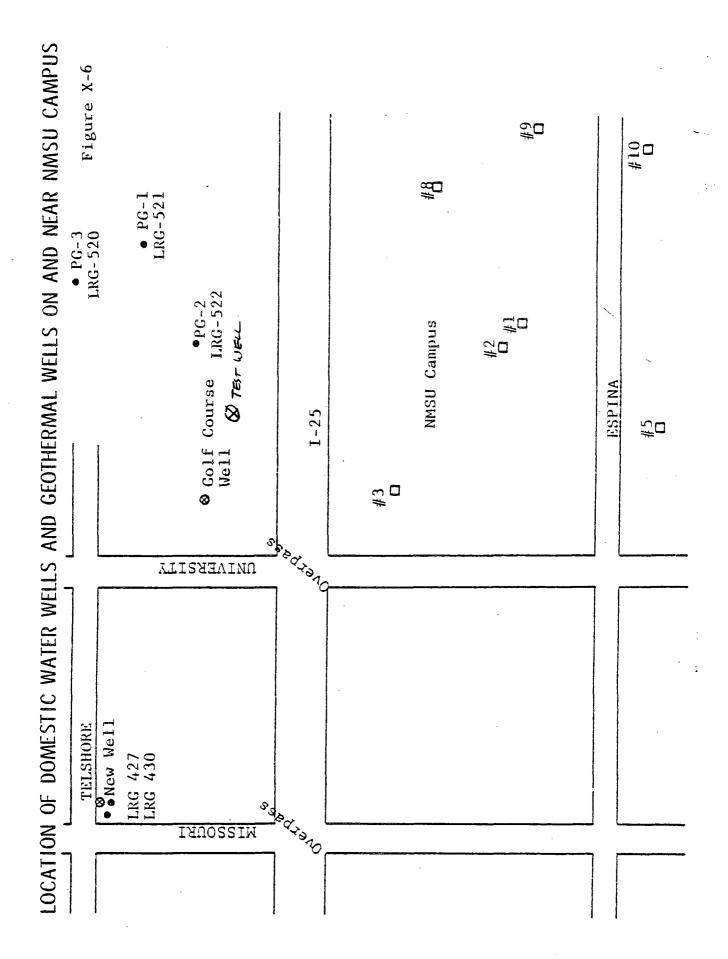


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