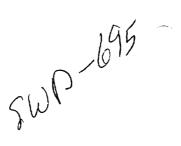
November 14, 1997

State of New Mexico
Energy, Minerals, and Natural
Resources Department
Oil Conservation Division
2040 Pacheco Street
Santa Fe, New Mexico 87505
Attn: Mr. David Catanach



Re: Permit to inject produced water in Sec 14, T24S, R29E, Eddy County, New Mexico

Enclosed is Penwell Energy, Inc.'s <u>APPLICATION FOR AUTHORIZATION TO INJECT</u> into Penwell's Ore Ida "14" Federal # 10. This application is to inject water produced from the Bone Springs Formation at an interval between 7750' and 8115' and the Brushy Canyon Formation at an interval of 6668' to 6704' into the Bell Canyon Formation at perforations between 3210' and 3618'.

In support of this application, the following items are attached:

- 1. A map identifying all wells and leases within two miles of the proposed well with a one-half mile radius circle drawn around the proposed injection well.
- 2. All wells within the one-half mile radius area of review are wells that belong to Penwell Energy, Inc. All offset lease owners have been notified as shown by the enclosed certified mail receipts.
- 3. Data on the proposed operation.
- 4. Geologic data.
- 5. The only stimulation required was a small acid treatment to insure that the perforations were open.
- 6. Water analysis from the two tank batteries that will go to this injection well, a water analysis from the Bell Canyon from well # 10, and compatibility test of the mixed waters. There is only a very minor scaling tendency in these mixed waters.
- 7. Electric logs.
- 8. Injectivity tests in the Bell Canyon.
- 9. A search of records by Renee Romero of the New Mexico State Engineers Office reveals no water wells within a one mile radius of this well. In Sec 7, there are three water wells that all have chlorides in excess of 2000 ppm. In Sec 29, there is a single water well that has chlorides in excess of 5800 ppm.
- 10. Available geologic and engineering data has been examined and there is no evidence of open faults or other hydrologic connections between any source of drinking water and the Bell Canyon Formation.
- 11. Proof of Notice to the BLM, the surface owner, and the legal advertisement in the Carlsbad Current Argus newspaper.
- 12. The well data sheet and a full page wellbore schematic.

Your consideration of this proposal is greatly appreciated.

John T. Gray

Cc: Tim Gumm, OCD in Artesia

RE	SOURCES DEPARTMENT Santa Fe, NM 05
(45)	APPLICATION FOR AUTHORIZATION TO INJECT PURANOSENO Secondary Recovery Pressure Maintenance X Disposal Stora Application qualifies for administrative approval? XYes No
	PUBITION SET Secondary Recovery Pressure Maintenance X Disposal Store No
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ADDRESS: 600 N. Marienfeld, Suite 1100, Midland, TX 79701
\	CONTESTED POTY. John T. Chay Soviet Production Engineer
Ш.	WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Addition sheets may be attached if necessary.
IV.	Is this an expansion of an existing project: Yes X No If yes, give the Division order number authorizing the project
V.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radii circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	
VII.	Attach data on the proposed operation, including:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed wel attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature studies, nearby wells, etc.).
+ VШ.	Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well a any such sources known to be immediately underlying the injection interval.
IX.	Describe the proposed stimulation program, if any.
* X.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted.)
* XI.	Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
XII.	Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
XIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	NAME: John T. Gray TITLE: Senior Production Engineer
	CICAL ATTION

If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstance of the earlier submittal.

__DATE: <u>10/24/97</u>

1 0 1851		13 12 0 m	3 7 7 1 1 1 2 1
Bulling Employ Brows IV	Service Continues of the Continues of th	(Accordant) Regional (March)	2. 1. 1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.
(13.13) Governor (13.13) (13.1	Pogo Prod. L. Horrown, Tr., etal, Min s. Falkins f., war. 1506 Crista 22	1.0.11 mm	Moralo, ebil Permell Ener, etal Biele Free Dond (c). Res
See Collect Water Control of See See Collect C		#22 3 5 5 5 13 15 10 10 10 10 10 10 10 10 10 10 10 10 10	State frameditions to 12 frameditions for the state for
Fore Kas Har Sand Har	013.00 € 013.00 (C)	MIOLPHO 3	Machell &
Reference Oil Constant Oil C	See 1 19	Date of Andrew Oil And	U.S C: t = Chargeon Oils Hou Aces M Aces M

WELLS WITHIN THE RADIUS OF REVIEW SECTION 14, T24S, R29E, EDDY COUNTY, NEW MEXICO

WELL# TYPE		CONSTRUCTION DATE DRILLED	LOCATION	DEPTH	RECORD OF COMPLETION
		SPUD COM	COMPLETION		
1 Oil	Rotary	3/1/96	6/4/96 480' FWL, 660' FNL	8122	YES
2 Oil	Rotary	2/20/97	4/11/97 330' FWL, 1980' FNL		YES
3 Oil	Rotary	96/8/8	9/10/96 2050' FWL, 1830' FNL 8105'	Ι.	YES
4 Oil	Rotary	10/30/96	11/15/96 1650' FWL, 660' FNL	IL 8350'	YES
5 Oil	Rotary	11/30/96	3/8/97 1705' FEL, 935' FNL		YES
6 Oil	Rotary	12/21/96	4/2/97 1780' FEL, 1980' FNL 8350'	VL 8350'	YES
7 Oil	Rotary	1/28/97	3/16/97 1780' FEL, 2180' FSL	SL 8354'	YES
8 Oi	Rotary	1/9/97	4/6/97 1830' FEL, 760' FSL		YES
liO 6	Rotary	4/6/97	5/9/97 760' FEL. 560' FSL	İ	YES
10 Oil	Rotary	4/25/97	860' FEL, 1780' FSL	Ι.	NO. Will be filed upon approval of injection
12 Oil	Rotary	3/17/97	4/5/97 2480' FWL, 1980' FSL 8332'	SL 8332'	YES
13 Oil	Rotary	4/8/97	4/21/97 1980' FWL, 660' FSL 8350'	L 8350'	YES

	OCNOCIO		
your RETURN ADDRESS completed on the reverse elds	SENDER: "Complete items 1 and/or 2 for additional server complete items 3, 4a, and 4b. "Print your name and address on the reverse of this form so that your name and address on the reverse of this form the your name and address on the reverse of this form the your name and address on the reverse of this form the your name and address on the your name and addre	wa can return this	I also wish to receive the following services (for an
4	card to you. Attach this form to the front of the mailpiece, or on the back if specific control of the mailpiece.		extra 100):
٤	permit.		1. Addressee's Address
ŧ	Write "Return Receipt Requested" on the mailpiece below the artise. The Return Receipt will show to whom the article was delivered additional.	cle number. and the date	2. Restricted Delivery
6	delivered.		Consult postmaster for fee
ted	3. Article Addressed to:	4a. Article N	lumber
ם	SANTA FE ENEGY	2 740	499010
Š	550 W. TEXAS, Str. 330	4b. Service	
တ္တ	millal, Ta 79701	☐ Registere	ta Cermien
RE	100000	☐ Express I	Mail ☐ Insured
a		LX Return Rec	ceipt for Merchandise COD
V	Ou Ida "14" #6	7. Date of De	
罚	5. Received By: (Print Name)	1 / 1/	' <i>A /-//</i>
Ä	1	and fee is	's Address' (Only if requested
ır.	6. Signature: (Addresseeror Agent)		paid)
8	X / Chold / Misato		
-6	PS Form 3811, December 1994		
	type type		Domestic Return Receipt
	•		
side	SENDER: Complete items 1 and/or 2 for additional services. Complete items 3, 4a, and 4b.	1	l also wish to receive the following services (for an
86	Print your name and address on the reverse of this form so that we		extra fee):
reverse	MAttach this form to the front of the mailpiece, or on the back if space	I .	1. Addressee's Address
9	permit. Write 'Return Receipt Requested' on the mailpiece below the article The Return Receipt will show to whom the article was delivered and	number.	2. Restricted Delivery
ŧ	The Return Receipt will show to whom the article was delivered and delivered.		Consult postmaster for fee.
mpleted on the	3. Article Addressed to:	4a. Article Nu	mber
ete	O		
ם	Pogo Producing Co.	4b. Service Ty	
ပ္ပ	P.D. Box 10340	☐ Registered	<u> </u>
SS		☐ Express M	
끮	Midland, Ta 79702		eipt for Merchandise COD
ğ	((((((((((((((((((((7. Date of De	MOU
Z		0.444	NOV - 3 1997
ä	5. Received By: (Print Name)	8. Addressee and fee is	's Address (Only if requested paid)
your BETURN ADDRESS			 ,
ž	6. Signature: (Addressee or Agent)		
s yc	X J. B. March IIII		Domestic Poture Receipt
=	PS Forth 3811, December 1994		Domestic Return Receipt

P	Form 3811, December 1994		Domestic Return Receipt
<u> </u>	Miss///		
1 <u> </u>	Signature: (Addressee or Agent)	and fee is p	Daioj ž
5.	Received By: (Print Name)		's Address (Only if requested paid)
9	dre Ilola "14" #	10/25	
2		7. Date of De	eipt for Merchandise COD
7717	Denver, CO. 80201	☐ Express N	
	P.O. Box 46513	☐ Registere	
	CXACO	4b. Service T	••
	. Article Addressed to:	4a. Article Nu	
•	The Return Receipt will show to whom the article was delivered an delivered.		Consult postmaster for fee.
_	permit. Write "Return Receipt Requested" on the mailpiece below the article		 Addressee's Address Restricted Delivery
9 °	Attach this form to the front of the mailpiece, or on the back if space	ł	extra fee):
	ENDER: Complete items 1 and/or 2 for additional services. Complete items 3, 4a, and 4b. Print your name and address on the reverse of this form so that we	can return this	I also wish to receive the following services (for an easter fee):
	PS Form 3811, December 1994	india).	Demestic Return Receipt
<u>en</u> _	X of Nee ones		
your RETURN ADDRESS	6. Signature) (Addressee ox Agent)	-	~ F-m-4/
EIG	5. Received By: (Print Name)	8. Address	ee's Address (Only if requested
BNA		10/	27/97
DD	The Woodlands, TX 71387-4000	7. Date of I	leceipt for Merchandise
3ES		☐ Express	s Mail 🔲 Insured
S	P.O.Box 4000	☐ Registe	
completed on	Mitchell Energy	4b. Service	140 489 009
ted	3. Article Addressed to:	4a. Article	Number
و د	delivered.		Consult postmaster for fee.
Ę.	"Write "Return Receipt Requested" on the mailpiece below the au The Return Receipt will show to whom the article was delivered	ticle number.	2. Restricted Delivery
ēVe	Attach this form to the front of the mallpiece, or on the back if spermit.	ace does not	1. Addressee's Address
the reverse	Print your name and address on the reverse of a corm so that card to you.		extra fee):
side?	Complete Items 1 and/or 2 for additional servic Complete Items 3, 4a, and 4b.		I also wish to receive the following services (for an
	SENDER:		litati ka

SENDER: Complete items 1 and/or 2 for addition		
Complete items 1 and/or 2 for additional services. Complete items 3, 4a, and 4b.		T
Card to Harrie and address on the		l also wich to
Attach this form to the front of the mailpiece, or on the back if specific and the mailpiece of this form so that permit. Write 'Return Receipt Requested' on the mails.	we can return this	I also wish to receive the following services (for an extra fee):
		199):
The Return Receipt Requested* on the mailpiece below the and delivered. 3. Article Addressed	icle number	1. Addressee's Addres
3. Article Addressed to:	and the date	E. C Hestricted Dollars
and the state of t	14-	
3. Article Addressed to: Collins of WARE 508 W. WAII, Suite 1200 Mipland, TX 79701 Du Da "(4" # (0) 5. Received By: (Print Name) 6. Signature: (Addresspe or Agent)	4a. Article Nu	mber Tor lee.
\$ 508 /11 / 11 1	45 0	
508 W. WAII, Suite 1200	4b. Service Ty	pe
MIDLAND, TX 79701	☐ Registered	X 0
AD	☐ Express Ma	il Certified
5. Bereirado	7 The Receip	t for Merchandise COD
5. Received By: (Print Name)	7. Date of Delive	3/2/801 COD
ci	ACCEPTANCE	/ / / / / / / / / / / / / / / / / / /
6. Signatura: (Addresspe or Agent)	and fee is pair	ddress (Only if requested
	- ice is paig)
PS Form 3811 , December 1994		ı
, December 1994		
	Don	nestic Return Receipt
		ticcelbt
SENDER: Complete items 1 and/or 2 for additional services		I also wish to receive the
on ■Complete items 3, 4a, and 4b.		following services (for an
 Print your name and address on the reverse of this form so that we card to you. 	1	extra fee) :
Attach this form to the front of the mailpiece, or on the back if spa permit.	ce does not	1. Addressee's Address
 Write 'Return Receipt Requested' on the mailpiece below the artic The Return Receipt will show to whom the article was delivered a 	de number.	2. Restricted Delivery
delivered.		Consult postmaster for fee.
Print your name and address on the reverse of this form so that we card to you. Attach this form to the front of the mailpiece, or on the back if spanemit. Write 'Return Receipt Requested' on the mailpiece below the article was delivered a delivered. 3. Article Addressed to: UATES Petroleum	4a. Article Nu	mber
UATES Petroleum		
E MATES TOTALLET	4b. Service Ty	4 -
\$ 105 4th St.	☐ Registered	Certifie
	Express M	
# ARtesia, NM 88210		ipt for Merchandise COD
A A A A A A A A A A A A A A A A A A A	7. Date of Deli	
ARtesia, NM 88210 5. Received By: (Print Name) JOANN GRIGGS 6. Signature (Addressee on Agent)	1	0-1/-/
5. Received By: (Print Name)	8. Addressee's and fee is p	s Address (Only if requested
#JOANN GRIGGS		uiuj
6. Signature: (Addressee on Agent)	1	
: Ch / January Lican		
PS form 3811, December 1994	Ī	Domestic Return Receip
V IIV		

DATA ON PROPOSED OPERATION PENWELL ENERGY, INC. ORE IDA "14" FEDERAL # 10 SEC 14, T24S, R29E, EDDY COUNTY, NEW MEXICO

The proposed operation is to set two 500-barrel water tanks on the well pad, plumb in a triplex pump, and pump into the well down plastic coated tubing. A packer will be set at 3150' to insure that the surface casing is not subjected to pressure. Annulus pressure and surface casing pressure will be monitored as required. Water will be transferred from the production batteries by way of plastic lines laid on the surface, which follow existing lease roads. Any surface leaks will be detected on the pumpers daily visits to the wells and batteries.

The proposed average injection volume of produced water is anticipated to be 1500 BWPD.

The proposed maximum injection volume is 3500 BWPD.

The system will be a closed system.

The proposed average injection pressure will be 1000 psig.

The proposed maximum injection pressure will be 2000 psig.

The source water will be Bone Springs and Brushy Canyon Formation water. Compatibility tests have been run and show only a minor tendency for scaling.

An injectivity test was performed on the Bell Canyon perfs, which shows the zone will take water at the desired rates and pressures. No fracturing of the formation was indicated during this test.

GEOLOGIC DATA
PENWELL ENERGY, INC.
ORE IDA "14' FEDERAL # 10
SEC 14, T24S, R29E, EDDY COUNTY, NEW MEXICO

The proposed injection zone is the Bell Canyon Formation which is comprised mainly of sandstone. The top of the Bell Canyon is at 3100' and is approximately 1000' thick.

The only underground source for drinking water is surface rock, clay, sand and intermingled red beds at the surface to a depth of 350'.

Other geologic marker tops are:

Lamar	3050'
Brushy Canyon	5500'
Bone Springs	6800'
1 st Bone Springs	7100'

RESULT OF WATER ANALYSES

•	MEGGET OF WATER		1097136	
TO: Mr. John Gray		LABORATORY NO.	10 17 07	
600 N. Marienfeld, Ste 1100, Mid	lland TV	SAMPLE RECEIVED	10 01 02	
	79701	RESULTS REPORTE	D 10-21-31	
COMPANY Penwell Energy, Inc.		Ore Ida	"14" Federal	#10
FIELD OR POOL			14 FEUCLAL	#1U
SECTION BLOCK SURVEY			ATE NM	
SOURCE OF SAMPLE AND DATE TAKEN:	COUNTY	<u>Edd y</u> 214	ATE No.	
	- 0 Tag #1/	12 T-11 #10	10 10 07	
NO.1 Produced water - taken fro	m Ure 1da 14	" Federal #10	. 10-10-97	
NO.2 Produced water - taken from				
NO.3 Produced water - taken from	m "B" battery	. 10-15-97	<u></u> -	
NO. 4				
REMARKS:				
CHEM	IICAL AND PHYSICA	1 DDADERTIES		
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60 ° F.	1.1185	1.1278	1.1258	110. 4
pH When Sampled		1.1	1.2.44.70	
pH When Received	6.23	6.59	6.75	
Bicarbonate as HCO,	117	556	508	
Supersaturation as CaCO,	4	88	48	
Undersaturation as CaCO,		`		
Total Hardness as CaCO,	34,000	9,600	8,600	
Calcium as Ca	10,400	2,920	2.560	
Magnesium as Mg	1,944	559	535	
Sodium and/or Potassium	58,140	73,366	71,046	
Sulfale as SO.	74	389	395	
Chloride as CI	113,630	119,312	115,051	
Iron as Fe	1.05	68.8	32.3	
Barium as Ba	0	0	Q	
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	184,305	197,102	190,094	
Temperature *F.				
Carbon Dioxide, Calculated	129		167	
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0	0.0	
Resistivity, ohms/m at 77° F. Suspended Oil	0.061	0.059	0.060	
Filtrable Solids as mg/l	 			
Volume Filtered, mi	r 			
Calcium Carbonate Scaling Tendency	27			
Calcium Sulfate Scaling Tendency	None	Marginal	None	
Barium Sulfate Scaling Tendency	None None	None	None	
	NOILE Paults Reported As Milligram	None	None	
	ve herein is t		omnatihility b	ofricen the
waters represented. A careful con	mparison fails	s to reveal e	vidence of any	facom-
patibility. This is to say that	any combinatio	on of these wa	aters would no	t he expected
to result in any precipitation or	scaling poter	ntial. Contac	ct us i <u>f we ca</u>	n be of any
additional assistance in this mat	ter.			<u> </u>
	·			
			77	
		- Win 7	10	

Form No. 3

Waylan C Wartin W A

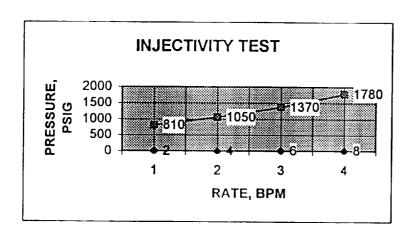
ORE IDA "14" FEDERAL ,# 10

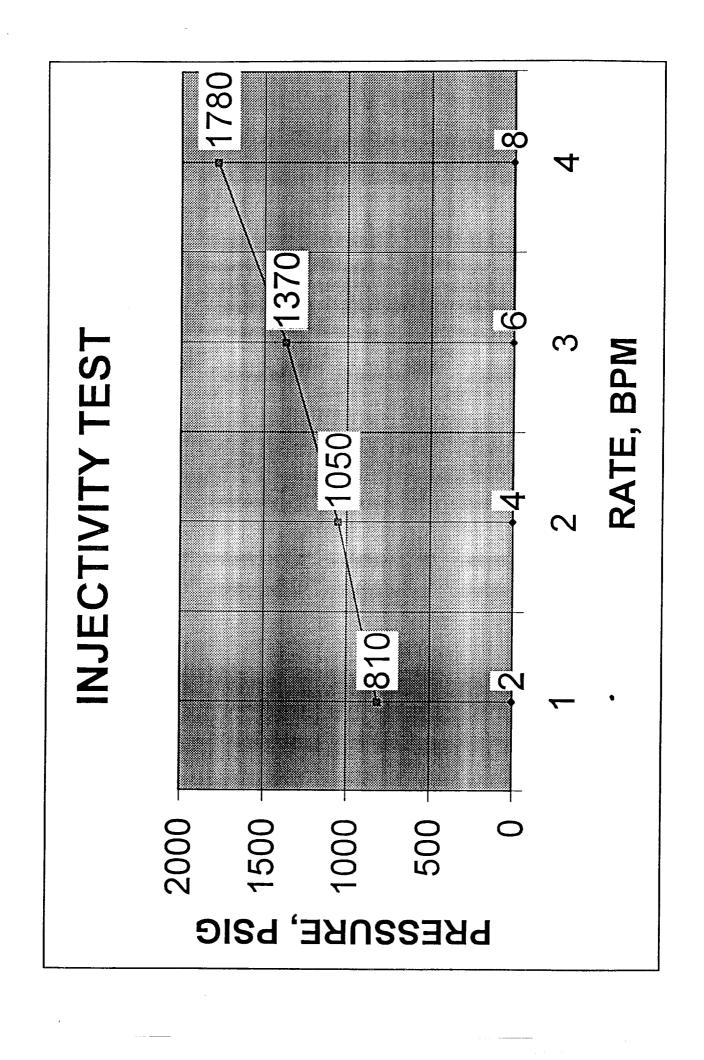
INJECTIVITY TEST

Test Date 10-16-1997

Perfs: Bell Canyon, 3210' - 3618'

RATE	PF	RESSURE
ВРМ	PS	SIG
	2	810
	4	1050
	6	1370
	8	1780





Affidavit of Publication

State of New Mexico,
County of Eddy, ss.
Amy McKay
being first duly sworn, on oath says:
That she is Business Manager of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the state wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:
October 23 , 19 97
, 19
, 19
, 19
That the cost of publication is \$34.46_, and that payment thereof has been made and will be assessed as court costs. Subscribed and sworn to before me this 27 10 day of October 1997 Louis Crush
My commission expires 8/1/98 Notary Public

October 23, 1997

NOTICE OF INTENT TO INJECT PRODUCED WATER

PENWELL ENERGY, INC. 600 N. Marienfeld Suite 1100 Midland, Texas 79701

Contact Person: John T. Gray, Senior Production Engineer: 915/683-2534

The purpose is to inject water produced from the Bone Springs Formation at an interval of 7750 to 8115 and the Brushy Canyon Formation at an interval of 6668 to 6704 into the Bell Canyon Formation at an interval of 3210 to 3618 in PENWELL ENERGY. INC.'s Ore Ida '14' Federal Well #10.

The well is located 1780 FSL, 860' FEL, Sec 14, T26S, R29E, Eddy County New Mexico.

The produced water is from wells Penwell operates that are all located in Sec 14, T26S, R29E.

The injection perforations are in the Bell Canyon Formation at 3210' - 3240', 3252' - 3276', 3284' - 3326', 3382' - 3426', 3454' - 3483', 3504' - 3520', & 3606' - 3618'

The maximum injection rate expected is 3509 BWPD.

The maximum injection pressure expected is 2500 PSIG.

All interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe New Mexico 87504, 2088 within 15 days.

elpt Service.	ın Bec	ութե ը	nisuri	c :	Thank		
I also wish to receive the following services (for an extra fee): 1. □ Addressee's Address 2. □ Restricted Delivery Consult postmaster for fee.	ta. Article Number 2 740 499 006	Type IX Certified	☐ Express Mail ☐ Insured ☐ Receipt for Merchandise ☐ COD	of Delivery	8. Addressee's Address (Only if requested and fee is paid)		Domestic Return Receipt
we can return this ace does not cide number. and the date	4a. Article Number 2 740 499	4b. Service Type	Express Mail Return Receipt	7. Date of Delivery -23	8. Addressee's Ad and fee is paid)		
SENDER: Complete items 1 and/or 2 for additional services. Complete items 3, 4a, and 4b. Complete items 3, 4a, and 4b. Complete items 3, 4a, and 4b. Pomplete items 3, 4a, and 4b. Attach items and address on the reverse of this form so that we can return this card to you. Attach this form to the front of the mailpiece, or on the back if space does not permit. Pommit. The Return Receipt Requested* on the mailpiece below the article number. Complete items and items and items article was delivered and the date delivered.	6,	E 2909 W. 2nd. S Roswell, NM 88201-2019	SSBU	De Dota 14: 410	5. Received By: (Print Name)	6. Signatule: (Addressee or Apent)	PS Form 3811, December 1994

: -----

INJECTION WELL DATA SHEET

OPERATOR	OBERATOR Perwell Energy, Inc.	IFASE Ore Ida "14" Federal	4" Federal		ĺ
	10 1780' ES! 6 840' EE!	70	376	99F	
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE	
	Schematic		Well Construction Data		-
		Surface Casing			
		Slze 13 3/8"	. Cemented with	325	XX
		TOC Surface	feet determined by Circulation	y Circulation	
		11 11911	1/9"		

SX.	no.			×s	ис			SX.			
325	Circulati			1200	cinculatic			30	CBL		
Cemented with	feet determined by Circulation			Cemented with	feet determined by <u>Circulation</u>			Cemented with 1230	feet determined by_		
Slze 13 3/8"	TOC Surface	Hole Size 17 1/2"	Intermediate Casing	Size 8 5/8	TOC Surface	Hole Size 12 1/4"	Long String	Size 5 1/2	TOC 2500'	Hole Size 7 7/8"	Total Depth 8350

feet

3618

feet to

3210

<u>Injection Interval</u> Perforations

INJECTION WELL DATA SHEET

Tub	Tubing Size 2 7/8" lined with Plastic Coated	s ci
ğ	(type of internal coating) Baker AD-1 packer at 3150'	feet
Othe	Other type of tubing / casing seal if applicable	
Othe	Other Data	
_ :	Is this a new well drilled for injection? Yes X No	
	If no, for what purpose was the well originally drilled? Oil & Gas Production.	
	Well was not an economic well in the Bone Springs.	
o.i	Name of the injection formation Bell Canyon	
i	Name of Field or Pool (if applicable) Ε. Ρίελαε αποδική	
:	Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. Yes, Bone Sprkings @	and
	7951'-55', 7990'-96' which are isolated by a CIBP & 6 sx. of cement.	<i>k</i> .
•	Give the names and depths of any over or underlying oil of gas zones (pools) in this area.	eri eri
	Potential in Bell Canyon below 3720'	
	Brushy Canyon below 5500'	
	Bone Springs below 6800'	

Wellbore I agram.

172" Hole

Ran 8jts (369.66') of 13%, 48#, H-40Csq to 362! Cont vs/325 Sx Class "C' Cont. w/ additives. Circ 40 Sx to Surface.

124" Hole.

Ran 7/j'ts (3147.43) of 858", 32#, J-55 Csq to 3141'.

Cmt w/ 950 sx 'C" Lite + additives followed by

250 sx 'C" + 250 Ca Cla.

Circ 220 sx to Surface.

Bell Canyon Perfs: 32/0-40, 52'-76', 3284'-3326', 3382'-3426', 54'-83', 3504'-20', 3606'-3618'.

DV Tool@ 5,532.76

CIBP@ 7890'. Dump 25x Cm+ on Plug. Bone Springs Perfs: 7951'-7955' & 7990'-7996'.

7%" Hole.
Ran 190 jts (8361. 38') of 56", 17#, J-55 Ceg to 8350'.
Cont 1st Stage w/ 600 sx'H" + additives. Citc 65x.
2ND Stage w/ 280 sx "C" Lite + additives F/B 350 sx'H" + add

