

# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Bill Richardson Governor Joanna Prukop Cabinet Secretary Lori Wrotenbery
Director
Oil Conservation Division

ADMINISTRATIVE ORDER SWD-869

APPLICATION OF MARBOB ENERGY CORPORATION FOR SALT WATER DISPOSAL, EDDY COUNTY, NEW MEXICO.

# ADMINISTRATIVE ORDER OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Marbob Energy Corporation made application to the New Mexico Oil Conservation Division on December 16, 2002, for permission to complete for produced water disposal its Zebra Federal "FF" Well No. 1 (API No. 30-015-32056) located 1980 feet from the North line and 1980 feet from the West line (Unit F) of Section 7, Township 21 South, Range 25 East, NMPM, Eddy County, New Mexico.

# THE DIVISION DIRECTOR FINDS THAT:

- (1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;
- (2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified;
- (3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met; and
- (4) No objections have been received within the waiting period prescribed by said rule.

### IT IS THEREFORE ORDERED THAT:

Marbob Energy Corporation is hereby authorized to complete its Zebra Federal "FF" Well No. 1 (API No. 30-015-32056) located 1980 feet from the North line and 1980 feet from the West line (Unit F) of Section 7, Township 21 South, Range 25 East, NMPM, Eddy County, New Mexico, in such a manner as to permit the injection of produced water for disposal purposes into the Canyon formation from a depth of 8320 feet to 8400 feet through 2 3/8 inch plastic-lined tubing set with a packer located at approximately 8275 feet.

# IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

Prior to commencing injection operations, the production casing shall be pressure tested from the surface to the proposed packer setting depth, to assure the integrity of the casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 1664 psi.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the injection formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Artesia District Office of the Division of the date and time of the installation of disposal equipment and of any mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Artesia District Office of the Division of the failure of the tubing, casing, or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER THAT, jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh water or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein.

The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided Administrative Order SWD-869 Marbob Energy Corporation January 7, 2003 Page 3

however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

Approved at Santa Fe, New Mexico, on this 7th day of January 2003.

LORI WROTENBERY, Director

# LW/DRC

cc: Oil Conservation Division – Artesia Bureau of Land Management – Carlsbad STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

# PKKVU L35145711 OIL CONSERVATION DIVISION 2040 SOUTH PACHECO **SANTA FE, NEW MEXICO 87505**

5WD 12/31/02 FORM C-108 Revised 4-1-98

# **APPLICATION FOR AUTHORIZATION TO INJECT**

I.	PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage Application qualifies for administrative approval? X Yes No
II.	OPERATOR: MARBOB ENERGY CORPORATION ADDRESS: P. O. BOX 227, ARTESIA, NM 88211-0227
	CONTACT PARTY:BRIAN COLLINSPHONE:505-748-3303
III.	WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  Additional sheets may be attached if necessary.
IV.	Is this an expansion of an existing project? 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 radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
VII.	Attach data on the proposed operation, including:
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> </ol>
	<ol> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).</li> </ol>
*VIII.	Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such 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 sources 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:BRIAN COLLINSTITLE:ENGINEER
	NAME:BRIAN COLLINSTITLE:ENGINEER  SIGNATURE:DATE: 12 Dec 02
*	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 circumstances of the earlier submittal:

# Application for Authorization to Inject Zebra Federal FF 1 SWD (30-015-32056) Unit F, Section 7-T21S-R25E

- V. Map is attached.
- VI. No wells within the 1/2 mile radius area of review penetrate the proposed injection zone.
- VII. 1. Proposed average daily rate = 500 BWPD Proposed maximum daily rate = 10,000 BWPD
  - 2. Proposed maximum injection pressure = 1664 psi (0.2 psi/ft)
  - 3. System is closed
  - 4. Source of injection fluid will be Morrow produced water. Water analysis is attached
  - 5. Disposal zone water analysis is attached. There will be no compatibility problems.
- VIII. The injection zone is the Upper Penn from 8320' to 8400' and is composed of dolomite. Underground sources of drinking water will be shallower than 400 feet deep.
  - IX. The proposed injection zone will be acidized with 10,000 gallons 20% HCL acid
  - X. Logs are filed with the Division. A section of the neutron-density log is attached.
- XI. There is a windmill approximately one mile north of the proposed SWD well. There is a stock pond 0.3 mile north of the proposed SWD well. Water analysis for each are attached.
- XII. After examining available geologic and engineering data, there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Proof of Notice is attached.

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		7	SECTIO
	=F No. 1	Ħ	UNIT LETTER
Marbob Energy Corp.	WELL NAME & NUMBER: Zebra Federal FF No.	1980' FWL, 1980' FWL	FOOTAGE LOCATION
OPERATOR:	WELL NAME & NUM	WELL LOCATION:	

WELL CONSTRUCTION DATA

WELLBORE SCHEMATIC

Surface Casing

See Attached Wellbore Schematic

12"4 "Casing Size: 8%"@ 1505'	sx. or ft <sup>3</sup>	Surface Method Determined: Civeulated	Run 1951de 858" due to casing look @ 406")	Casing Size: 7 "@ 1020'	sx. or ft <sup>3</sup>	Gurtage Method Determined: Circulated
12	1072		358" due ta	NIA	150	
Iole Size:	emented with:	op of Cement:	Run inside 8	Iole Size:	emented with:	op of Cement:

# Injection Interval

10390'

Total Depth:

2600

Top of Cement:

Method Determined: Survey

SX. or

Cemented with: 350

Casing Size: 41/2" @ 10390'

Hole Size:  $7^{7}8'' \times 6^{1}8''$ 

Production Casing

8320 feet to 8400

(Perforated or Open Hole; indicate which)

# INJECTION WELL DATA SHEET

)astic	retrievable		
Lining Material: Plastic	double arip	>	able):
., Li	plated 10K	8275 ±	ing Seal (if applic
; Size: 2 1/8	Type of Packer: Nickel plated 10K double grip retrievable	Packer Setting Depth: 8275' 1	Other Type of Tubing/Casing Seal (if applicable)
Tubing Size:	Type o	Packer	Other 1

# Additional Data

Is this a new well drilled for injection? Yes X No	If no, for what purpose was the well originally drilled? $Q_i / \sigma_i d$		Name of the Injection Formation: Upper Pann	Name of Field or Pool (if applicable):	Has the well ever been perforated in any other zone(s)? List all such perforated
1. Is	II	1	Ž	Z	Ξ.

Atoka 954-70' C130 +cmt @ 9500', Walteamo 7847-49', Sgzd 50 sx cmt, 3" Bon Spring 6970-7167'

Give the name and depths of any oil or gas zones underlying or overlying the proposed

Atoka 9564'

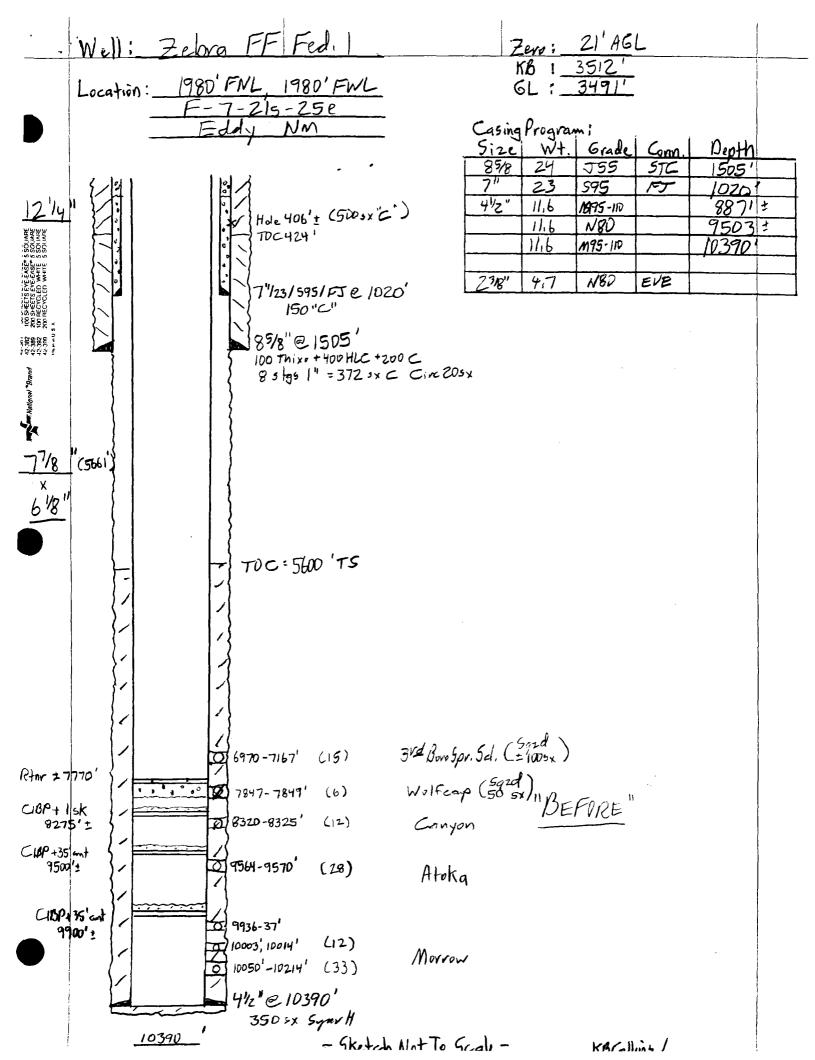
Underlying

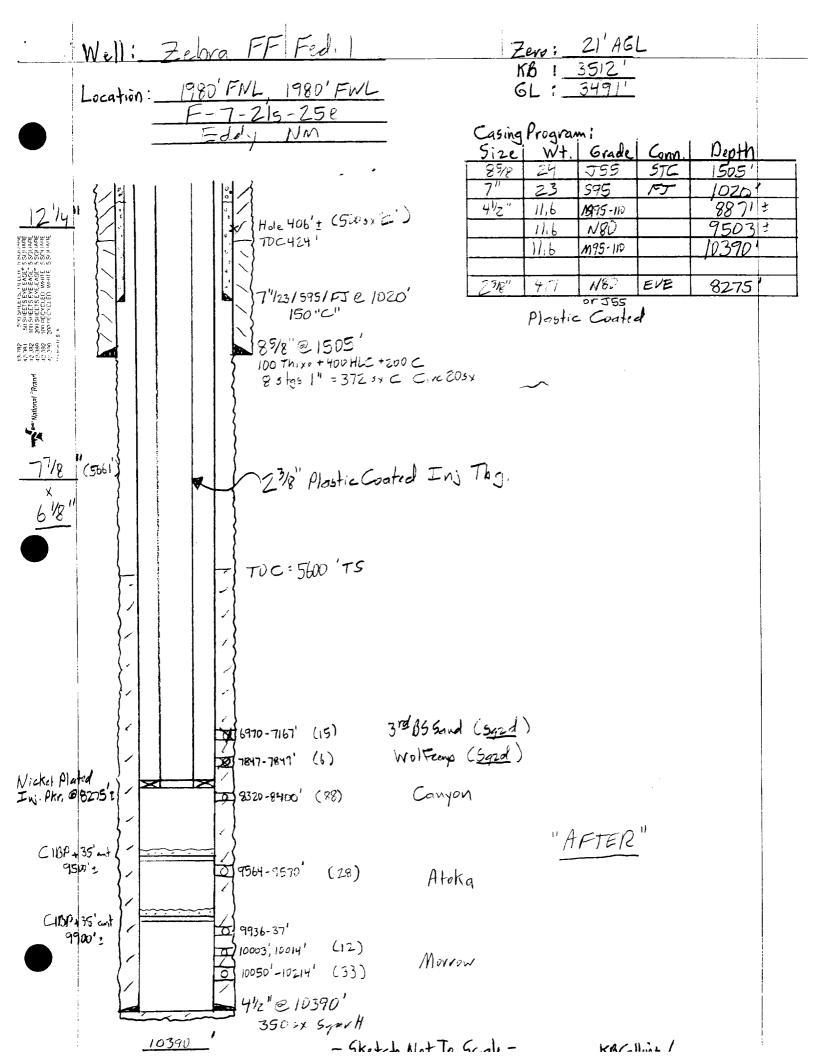
injection zone in this area:

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None

Overlying







# CENTRAL OPERATIONS LABORATORY WATER ANALYSIS REPORT HOBBS, NEW MEXICO

COMPANY	Marbob				REPOR	Т	W	02-206	
					DATE		Novemb	per 15, 2002	_
					DISTRIC	CT	Ā	rtesia	_
	<del></del>								
SUBMITTED BY	Y Phillip Mo	olina for Jim	Trela						_
WELL Zara	affa FF Federal 1	DE	PTH		FORMA	TION			
COUNTY		FIF	ELD		SOURC	E	Wells		_
SAMPLE	Morrow Format	ion	Pond 3/10 M	ile_	Windmill 1+/- r	nile			
Sample Temp.	50	°F	51	٥F	50	٥F			°F
RESISTIVITY	0.079		15		9	— ·			<b>-</b> `
SPECIFIC GR.	1.08		1.000	<del></del>	1.001			<del>-</del>	_
pH	6.490	_	8.26		7.82	_		· · · · · ·	
CALCIUM	4200.00	mpi	170	mpi	130	mpl			— mpl
MAGNESIUM	3,960	mpl	54	mpl	72	mpl			mpl
CHLORIDE	72,450	mpl	50	mpl	463	mpl			mpl
SULFATES	1,600	mpl	50	mpl	50	mpl	·		mpl
BICARBONATES	214	mpl	180	mpi	122	mpl			mpl
SOLUBLE IRON	150	mpl	0	mpi	0	mpl			mpi
KCL	Negative	_ /							_
Sodium		mpi \		mpl		mpl		0	mpl
TDS		mpl \		mpl		mpl		0	mpl
OIL GRAVITY	@	°F		°F	@	°F		@	_°F
REMARKS	Produced h	Vater )							
. (2.0	1-1000000							<del></del>	

MPL = Milligrams per litter
Resitivity measured in: Ohm/m2/m

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management: it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Co.

ANALYST:	John Eubank	

Yates Petroleum - Chalk "AKH" Federal Com #1 (Unit I) 22-18S-27E Eddy Co.

Resistivity	0.21 @ 66		3 @ 66
	2233	223	
Sod & Pot	11,344	11,	
Chlorides	23,296	22,	325
CALC	38,403	36,	803
Calcium	2993	256	
Bicarbonates	1421	149	2
Magnesium	1014	967	
KCĽ	slight trac		ght trace
Tot. Hardness as		661 10,	398
Tot. Dissolved S	Solids 49,	955 47,	771

Water Analyses From Canyon Disposal Interval

Should be similar to Canyon water in the Zebra FF Fed. 1.

. brided By	uip.   Location	Max. Rec. Temp.	, Time on Bottom	Time Since Circ.	Rm @ BHT	Source Rmf   Rmc	Rmc @ Meas. Temp.		Rm @ Meas. Temp.		Ph   Fluid Loss	Dens.   Visc.	Type Fluid in Hole			_	d Interval		Driller	No.	Date	Drilling measured from K	Log measured from K	Permanent Datum C	COMPAN WELL FIELD COUNTY		A FF FI	EDERAL	·			LI HALLI	
BEN DEARING	S82 HOBBS	174 @ T.D.	12/30 03:0	12/29 11:0	0.051 @ 174 F	CALC   CALC	6	9	1	1-	10.0   6.0	9.4   44	SALT/GEL	6.125	8.625 @ 1506	SURF	10388	10390	10390	ONE	12/29/2001	K.B.	K.B. , 21	G.L	Sect 7 Twp	API No. 30-015-32056 Location 1980 FNL & 19 UNIT F	COUNTY ED	FIELD WI	WELLZE	COMPANY MA		HALLIBURTON	
		6			•		•	•	0			_			•								ft, above perm, deturn	Elev 3491	21S Hg# 25€	30015-32056 1980 FNL & 1980 FWL UNIT F	EDDY	WILDCAT	ZEBRA FF FEDERAL NO. 1	MARBOB ENERGY CORPORATION	Engr W	DUAL SF	SPEC
		6			6		6	9	6				And the second s		9			en e				- OL	D.F.	Elav. K.B		OPEN SHIVE SHOWS	STATE		<b>5</b> . 1	PORATION	Worhlon	DUAL SPACED NEUTRON	SPECTRAL DENSITY
	_	9			8		9	9	9		_	_			6							3491	3511	3512		5	<b>E</b>					Õ	≺

ervice Ticket No.:	1686570	API Serial No.:	30-015-32056	PGM	4 Version:	XL v	4.64	
CHANGE IN MU	D TYPE OR ADDITIONAL S	AMPLES		RESIST	TIVITY SC	ALE CHANGE	S	
Date   Sample No.			Type Log	Depth	Scare	ip Hae	Scale Do	VII HOLE
Depth - Driller								
Type Fluid								
in Hole								
Dens. Visc.		1						
Ph   Fluid Loss								
Source of Sample				RESIST	TIVITY EQ	UIPMENT DA	TA	
Rm @ Meas. Temp.	•	0	Run No.	Tool Type &	No.	Pad Type	Tool Pos.	Other
Rmf @ Meas, Temp.	•	•	ONE	DLLT 11362	5YL		CENT	
Rmc @ Meas. Temp.	<b>@</b>	•	ONE	MCGRD 102	159YL	RUBBER	ADJ.	
Source Rmf   Rmc								
Rm @ BHT	<b>@</b>	<b>©</b>						
Rmf @ BHT	<b>@</b>	<b>@</b>						
Rmc @ BHT	@	@						

DENSITY

ONE

SDLT

GR-GR

CS-137

4.5"

109067GR

Run No.

Serial No.

Model No.

Diameter

Log Type

Source Type

NEUTRON

ONE

DSNT

3.625"

NEU-NEU

AMBE-241

A042GR

Run No.

Serial No.

Model No.

Diameter

Log Type

Source Type

ACOUSTIC

Run No.

Serial No.

Model No.

Spacing

No. of Cent.

Fold Here

Run No.

Serial No.

Model No.

Diameter

Туре

Detector Model No.

GAMMA

ONE

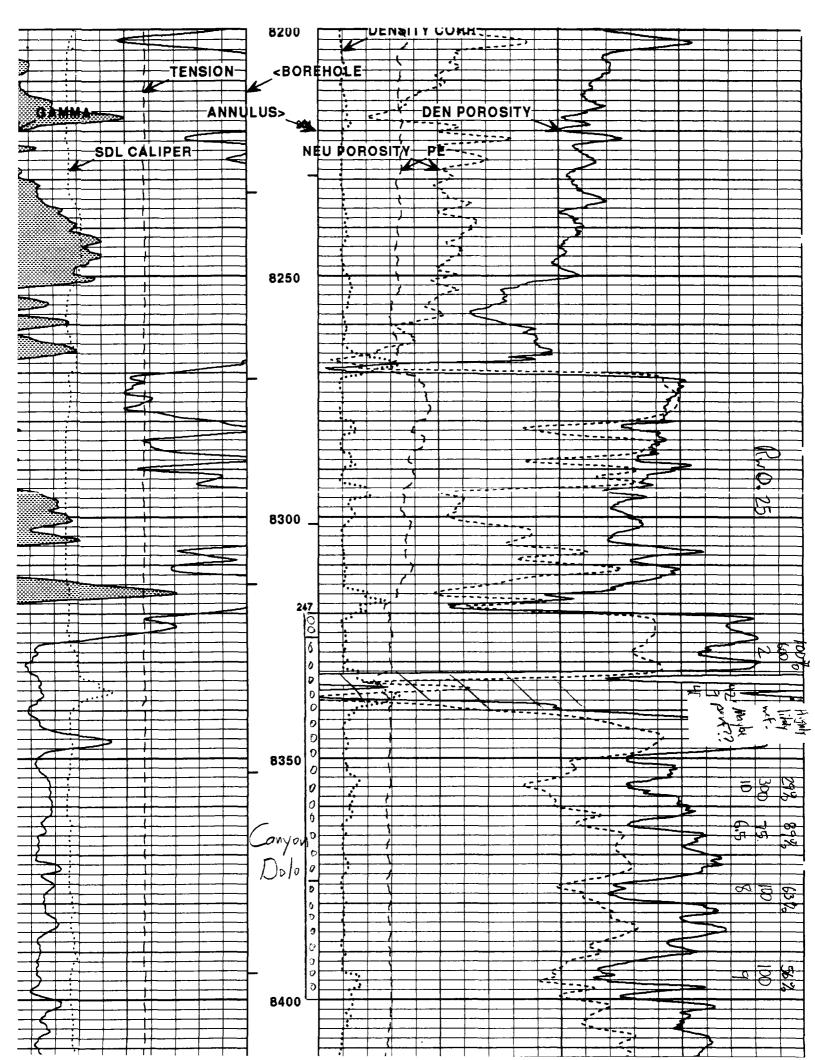
NGRT

3.625"

T102A

SCINT

108590GR





Artesia Daily Press P. O. Box 190 Artesia, NM 88211-190

Re: Legal Notice

Salt Water Disposal Well

### Gentlemen:

Enclosed is a legal notice regarding New Mexico Oil Conservation Division C-108 Application for Authorization to Inject for a salt water disposal well.

Please run this notice and return the proof of notice to the undersigned at Marbob Energy Corporation, P. O. Box 227, Artesia, NM 88211-0227.

Sincerely,

**Brian Collins** 

Petroleum Engineer

BC/dlw

enclosure

# ARTESIA DAILY PRESS LEGAL NOTICES

Marbob Energy Corporation, Post Office Box 227, Artesia, New Mexico, 88211-0227, has filed Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Zebra Federal FF No. 1 is located 1980' FNL and 1980' FWL, Section 7, Township 21 South, Range 25 East, Eddy County, New Disposal water will be sourced from area wells Mexico. producing from the Morrow formation. The disposal water will be injected into the Upper Penn formation at a depth of 8320'-8400' at a maximum surface pressure of 1664 psi and a maximum rate of 10,000 BWPD. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Street, Santa Fe, New Mexico, 87505, within fifteen (15) days of this notice. Any interested party with questions or comments may contact Brian Collins at Marbob Energy Corporation, Post Office Box 227, Artesia, New Mexico 88211-0227, or call 505-748-3303.

Published in the Artesia Daily Press, Artesia, New Mexico \_\_\_\_\_\_, 2002.



Marathon Oil Company P. O. Box 552 Midland, TX 79702

Re: Application to Inject

Zebra Federal FF No. 1

Township 21 South, Range 25 East, NMPM

Section 7: 1980' FNL and 1980' FWL

Eddy County, New Mexico

### Dear Gentlemen:

Enclosed for your review is a copy of Marbob Energy Corporation's application to convert the referenced well into a saltwater disposal well. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as an operator or surface owner. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter. If you have no objections to our application, please indicate below and return one copy of this letter to our office.

Please do not hesitate to contact us should you have any questions.

Sincerely,

Brian Collins

Petroleum Engineer

BC/dlw enclosure

Marathon Oil Company has no objection to the proposed disposal well:

By: \_\_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Como Petroleum Corporation Attn: Mark Robinson P. O. Box 1227 Roswell, NM 88202-1227

> Re: Application to Inject Zebra Federal FF No. 1

> > Township 21 South, Range 25 East, NMPM Section 7: 1980' FNL and 1980' FWL

Eddy County, New Mexico

Dear Mr. Robinson:

Enclosed for your review is a copy of Marbob Energy Corporation's application to convert the referenced well into a saltwater disposal well. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as an operator or surface owner. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter. If you have no objections to our application, please indicate below and return one copy of this letter to our office.

Please do not hesitate to contact us should you have any questions.

Sincerely.

**Brian Collins** 

Petroleum Engineer

BC/dlw enclosure

Como Petroleum Corporation has no objection to the proposed disposal well:

By: \_\_\_\_\_\_
Title: \_\_\_\_\_
Date:



Bureau of Land Management 2909 W. Second St. Roswell. NM 88202

> Re: Application to Inject Zebra Federal FF No. 1

> > Township 21 South, Range 25 East, NMPM

Section 7: 1980' FNL and 1980' FWL

**Eddy County, New Mexico** 

Dear Gentlemen:

Enclosed for your review is a copy of Marbob Energy Corporation's application to convert the referenced well into a saltwater disposal well. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as an operator or surface owner. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter. If you have no objections to our application, please indicate below and return one copy of this letter to our office.

Please do not hesitate to contact us should you have any questions.

Sincerely.

**Brian Collins** 

Petroleum Engineer

BC/dlw enclosure

Bureau of Land Management has no objection to the proposed disposal well:

By: \_\_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> <li>Article Addressed to:</li> <li>Bureau of fand Maynt.</li> <li>2909 W 2nd</li> <li>Roswell, NM 8820</li> </ul>	A. Received by (Please Print Clearly)  B. Date of Delivery    2   3   02    C. Signature    Agent   Addressee  D. Is delivery address different from item 1?   Yes  If YES, enter delivery address below:   No
	3. Service Type  Certified Mail  Registered  Insured Mail  C.O.D.  4. Restricted Delivery? (Extra Fee)  Yes
2. Article Number (Copy from serv	0860 0006 7056 7231
PS Form 3811, July 1999  C -/0 8  Domestic Ref	complete this section on delivery
<ul> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> </ul>	A. Received by (Please Print Clearly)  B. Date of Delivery  C. Signature
<ul> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> <li>1. Article Addressed to:  (Emo Retaclicum Corp.  Des Bex 1227</li> </ul>	Agent Addressee  D. Is delivery address different from item 1? Yes If YES, enter delivery address below: No
Roserell, NM 88202-1227	3. Service Type  Certified Mail
2. Article Number (Copy from	
PS Form 3811, July 1999 C-log Domestic Ret	rurn Receipt Zebia 102595-00-M-0952
SENDER: COMPLETE THIS SECTION  Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.  Print your name and address on the reverse so that we can return the card to you.  Attach this card to the back of the mailpiece, or on the front if space permits.  1. Article Addressed to:  Marathon Del Co.  P. C. Boy SS2.  Midland, TK 19102.	A. Received by (Please Print Clearly)  B. Date of Delivery  M.W.   1   Agent  C. Signature  X   Agent   Addressee  D. Is delivery address different from item 1?   Yes  If YES, enter delivery address below:   No  DEC 1 6 2002  3. Service Type  Certified Mail   Express Mail   Registered   Return Receipt for Merchandise   Insured Mail   C.O.D.
2. Article Number (Copy from servic	4. Restricted Delivery? (Extra Fee)
PS Form 3811. July 1999 Domestic Re	

Zehra Ted FF#1

500 x 69