# CASE NO.

6503

## APPIICATION, Transcripts, Small Exhibits,

ETC.

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

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

CASE NO. 6503 Order No. R-5977

APPLICATION OF SUNDANCE OIL COMPANY FOR SALT WATER DISPOSAL, ROOSEVELT COUNTY, NEW MEXICO.

#### ORDER OF THE DIVISION

#### BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 28, 1979, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 9th day of April, 1979, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

#### FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Sundance Oil Company, is the owner and operator of the Cone Federal Well No. 8, located in Unit P of Section 31, Township 7 South, Range 32 East, NMPM, Tomahawk-San Andres Pool, Roosevelt County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the San Andres formation, with injection into the perforated interval from approximately 4207 feet to 4228 feet.

(4) That the injection should be accomplished through 2 3/8-inch plastic lined tubing installed in a packer set at approximately 4107 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus or the annulus be left open in order to determine leakage in the casing, tubing, or packer. -2-Case No. 6503 Order No. R-5977

(5) That the injection well or system should be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1700 psi.

(6) That the operator should notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(7) That the operator should 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.

(8) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

#### IT IS THEREFORE ORDERED:

(1) That the applicant, Sundance Oil Company, is hereby authorized to utilize its Cone Federal Well No. 8 located in Unit P of Section 31, Township 7 South, Range 32 East, NMPM, Tomahawk-San Andres Pool, Roosevelt County, New Mexico, to dispose of produced salt water into the San Andres formation, injection to be accomplished through 2 3/8-inch tubing installed in a packer set at approximately 4107 feet, with injection into the perforated interval from approximately 4207 feet to 4228 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak detection device or be left open in order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped with a pressure limiting switch or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1700 psi.

(3) That the operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected. -3-Case No. 6503 Order No. R-5977

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(4) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(5) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

(6) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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



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STATE OF NEW MEXICO OIL CONSERVATION DIVISION ml JOE D. RAMEY Director

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1 2 3	STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION State Land Office Building Santa Fe, New Mexico 28 March 1979	
4	EXAMINER HEARING	
5 6 7 8 9	IN THE MATTER OF: Application of Sundance Oil Company for ) salt water disposal, Poosevelt County, ) New Mexico.	CASE 6503
10 00 BOYD 00 BOYD 11 3415 11 11 11 11 11	BEFORE: Richard L. Stamets	
ALLY WALTG	TRANSCRIPT OF HEARING	
Ø 8 5 15	APPEARANCES	-
16 17 18	For the Oil Conservation Division: Legal Counsel for th State Land Office B Santa Fe, New Mexico	Ldg.
19 20 21	For the Applicant: For the Applicant: CAMPBELL & BLACK P. O. Box 2208 Jefferson Place Santa Fe, New Mexic	
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			MR. STAMETS: Call next Case 6503.
	1		MS. TESCHENDORF: Case 6503. Application of
	2		Sundance Oil Company for salt water disposal, Roosevelt
	3		
	4		County, New Mexico.
	E	5	MR. STAMETS: Call for appearances in this
	l	6	case.
e.		7	MR. CARR: May it please the Examiner, I'm
		8	William F. Carr, Campbell and Black, P. A., Santa Fe, ap-
		9	pearing on behalf of the applicant. I have two witnesses.
	1	10	MR. STAMETS: I'd like to have both wit-
		11	nesses stand and be sworn at this time.
		12	
WALTON SHORTMAND BLACK (195			(Witnesses sworn.)
		13	(WICHESSES BROITH)
SALLY CERTFIED 1010 Plaze		14	state Scott.
	1 e .	15	MR. CARR: I would call Mr. George Scott.
	¢	16	
	•	17	GEORGE SCOTT
		18	being called as a witness and having been duly sworn upon
		19	his oath, testified as follows, to-wit:
	. i	20	
		21	DIRECT EXAMINATION
		22	BY MR. CARR:
		23	Mr. Scott, will you state your full name and
$\bigcirc$	4	24	place of residence?
		25	E Scott, I live in Roswell; Con-
		2.0	A. George F. Booton

sulting Geologist. I have an office in the Petroleum Building in Roswell.

Q And you are -- have been employed by Sundance Oil Company in connection with the case before this Commission?

A Yes, that is correct.

Q. Have you studied the area which is the subject of this application?

A. Yes, I have. I have been involved with Sundance in this field since at the very inception of the project.

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

A. Yes, I have.

MR. CARR: Mr. Examiner, are the witnesscredentials acceptable?

MR. STAMETS: They are.

Q (Mr. Carr continuing.) Mr. Scott, will you briefly summarize what Sundance is seeking with this application?

A. Okay. Sundance desires to utilize the No. 8 Cone Federal and it's shown on the structure porosity map which you have there. They desire to utilize that well as a salt water injection well, disposal well.

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Q. Mr. Scott, you're referring to what has been marked for identification as Sundance Exhibit Number One, is that correct?

That is correct.

Q. Would you refer to that exhibit and explain to the Examiner what it is and what it shows?

A. All right, this particular map here is a structural map, contoured on the top of the P-2 zone of the San Andres formation. The P-2 zone is the principal pay zone in this area, and the solid heavy contours are the structural contours. The dashed contours here represent the net porosity in the area, in the P-2 zone.

A. Okay. The Isopaching of the porosity and a detailed study of the well logs indicate that the porosity increases in thickness northward and northwestward from the proposed disposal well.

Southwest of this well, approximately a quarter of a mile, Yates Petroleum drilled a well approximately a year and a half ago that had quite a bit less permeability and less porosity.

Is this the poorest porosity that's been

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encountered in the area, to your knowledge?

A In the Yates well right to the south, yes, and that is shown also on the cross section.

Q Mr. Scott, what does the area colored in yellow signify?

A. That's the acreage, the leases owned by Sundance Oil Company.

And the injection well is indicated how?A. It's outlined in red.

And then what is the red line across the lease area?

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That is the line of cross section.

Q. Where has the oil/water contact been established in this area?

A There has not been an oil/water -- we have not established an oil/water contact in this field; however, there are segments of the field in which the water percentages are very high. Apparently we're looking at zoned water in places. In places in the field we get abnormal high water cuts, probably because of relative permeability considerations. It's very difficult sometimes in these San Andres fields to understand why a segment of the field will be nearly entirely water productive.

Q Mr. Scott, I direct your attention to what has been marked for identification as Exhibit Number Two,

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and ask you to explain to the Examiner what it is and what it shows.

A. All right. Exhibit Number Two is a north/ south cross section through the Tomahawk Field, and it has displayed there the principal porosity log, the sidewall neutron,well-to-well correlations are shown, the Pi marker at the top, the top correlation, then the P-1, P-2, and P-3 zones are displayed on it. Also, the intervals where wells on the line of section are perforated. Also, porosity is shown.

Q Now, on the log of the Cone No. 8 Well, does it show the injection zone?

A. Yes, it does.

A.

Q And how large is the perforated interval in that well?

Approximately 21 feet.

Q. And do the zones correlate well as you go well-by-well across this area?

A. It does. It does. That interval right there correlates very closely with all of the other wells on the cross section. This is the part of the P-2 zone that is oil productive to the north; however, only water was encountered here in this well.

Q. Mr. Scott, were Exhibits One and Two prepared by you or under your direction and supervision?

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A. They were. They were prepared by me. MR. CARR: At this time, Mr. Examiner, we would offer Applicant's Exhibits One and Two.

MR. STAMETS: Those exhibits will be ad-

#### CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Scott, did you say that --- did you have
a reason why the Yates No. 1 East Tomtom was not productive?
A. Yes. The porosities are very low there
compared to the wells to the north.

Q Okay, so it's not because it's below the water/oil contact?

A Right. Right, that is correct.

Q. Now you indicated segments of the field are highly water productive. Can you give us the locations of those --

A. Yes.

Q -- on Exhibit One?

A. I'd be pleased to.

In the southeast southeast of Section 30, the No. 1 Chambers has started producing a very high water cut there, and that well is perforated near the top of the P-2 zone in this interval of our main pay there, and it is

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not a low well structurally. It appears to be just zone water.

Also, the dry hole in Section 29, a completion attempt there gave up water with a very low cut of oil, low percentage of oil cut.

() On Exhibit Number One, Mr. Scott, you've shown a couple of faults in there, one of them just immediately east of the proposed injection well.

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A Yes. That fault is controlled by the No. 7 Cone Federal, located in the southeast of the northeast quarter. That well is an abnormally low well. That well is 60 feet -- roughly 60 feet low to all four offsets, a completely anomalous situation.

I chose to explain this with a fault. The faults would be, of course, subject to -- faulting would be subject to being interpreted in different ways, as faults usually are.

One thing in support of the probability of faulting in this area would be the fact that the No. 1 Cone, right to the north of it, that's the discovery well in the field, that we lost circulation in the pay zone, P-2 zone, while that well was being drilled, and we lost circulation in the north offset, the No. 1 Chambers, while the well was being drilled.

In that local area up there, evidently there

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is extreme fracturing, and that would indicate a tie-in once again with the fault, something unusual there.

 $\Omega$  Is there a possibility that this fault could serve as an avenue of escape for these injected waters out of the P-2 zone?

A Well, it appears that the faulting has not affected the permeability to any great degree in the No. 8 Cone Federal, nor in that Yates dry hole to the south.

MR. STAMETS: I presume you've got another witness ---

MR. CARR: Yes, we do. MR. STAMETS: -- on pressures and --MR. CARR: That's correct. MR. STAMETS: -- this information? MR. CARR: Yes.

Q. (Mr. Stamets continuing.) Now, Mr. Scott, did Well No. 8 produce in the San Andres zone?

A No. A completion attempt there -- on a completion attempt there we were unable to establish commer-cial cuts of oil.

Q So this well is below the local water/oil contact.

A. Well, at least at that location there. All we can get out of the zone is essentially salt water. It's a very minor percentage of oil.

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	1	MR. STAMETS: Okay. Any other questions of
	2	this witness? He may be excused.
-	3	MR. CARR: I would call Mr. Chuck Joy.
	4	
	5	CHUCK JOY
	6	being called as a witness and having been duly sworn upon his
	7	oath, testified as follows, to-wit:
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	10	DIRECT EXAMINATION
BOYD EPORTER	10	BY MR. CARR:
6X	17	Q. Will you state your name and place of resi-
WALTON SHORTHAND Bhinga (6.65)	12	dence?
	13	A. Charles Joy, and I live in Artesia, New
SALLY CERTIFIED 1010 Plaza Santa F	14	
	15	Mexico, and I'm a petroleum consulting engineer.
	16	Q You've been employed by Sundance Oil Company
	17	to study the area involved in this application?
- ·		A. Yes, I have.
	18	Q Have you previously testified before this
	19	Commission and had your credentials accepted and made a
	20	matter of record?
• 7	21	A. Yes.
	22	
	23	MR. CARR: Are the witness' credentials
· · · ·	24	acceptable?
		MR. STAMETS: They are.
	25	Q (Mr. Carr continuing.) Mr. Joy, would you
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refer to what has been marked for identification as Applicant's Exhibit Number Three, and explain to the Commission what it is and what it shows?

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A. All right, this is the OCC C-108, Application to Dispose of Salt Water by Injection into a Porous Formation, and do you think I should go through each item on here, or just go down here, and we found a few errors on this form. One, there is an error in the top of cement.

Based on 100 percent fill-up the calculated top is at 2301, and they have 3900 down there. That needs to be changed.

MR. STAMETS: Calculated was what?

MR. STAMETS: Okay.

A. And Sundance is anticipating injecting under vacuum. You notice we put up here "vacuum". However, if the occasion arises where the formation will no longer take water under vacuum, Sundance would like permission to inject under pressures up to 1750 pounds.

Now the frac pressure has been established in this area from the treating records on the Cone No. 8 and State No. 1 Wells.

Initial shut-in pressures after treating these wells were 2100 and 2300 psig, so we'll be injecting well below frac pressure, if we're granted permission to inject up to 1750 pounds.

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A. '

Let's see, the rest of it on here is just the next coastal zone was 10,000 feet there to the Mississ-1 2

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You want to go to the next exhibit? ippian. 3 Now, Mr. Joy, if you will refer to what has 4 been marked as Exhibit Number Four and explain what it is 5 6

That's just the location map showing where and what it shows. ٨.

And now I would direct your attention to the Cone 8 is located. Exhibit Number Five and ask you to explain to the Examiner

This is a schematic of the proposed inwhat this shows. jection well and if you'll take a look here, they'll have a Igauge on top. Shey'll have a 2 inch by 2000 pound gate valve, slip and pack off 2-3/8ths inch tubing; 2 inch by 2000 bull plug; Larkin 2-3/8ths by 4-1/2 inch well head, and operating pressure on that is 2500 pounds, it's not on here; a Larkin 4-1/2 by 8-5/8ths casinghead; 2 inch by 2000 pound bull plug; 2-3/8ths inch tubing lined with bonded PVC plastic liner with rubber seals inserted in tubing collar; and 4-1/2 inch casing was cemented and the top of it is --I'm repeating here -- was at 2301; and the packer will be set

There is a collar -- a casing collar located

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at 4107.

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4089 and one at 4120, so the packer will not be landed in a collar, and the perforations are from 4207 to 4228.

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They also will have a positive detection device installed with this 2 inch by 2000 pound ball valve on the casing tubing and annulus, and they'll have a 2 inch by 2000 pound ball valve on the surface casing annulus and the 8-5/8ths inch casing shows there and that cement was circulated 390 sacks on the surface casing.

And behind, in the annulus between the casing and tubing will be filled with KCL water treated with one gallon of HAI 50 plus 5 gallons of Anhib inhibitor.

And the 4-1/2 inch casing is 10-1/2 pound K-55 cacing and the 4-1/2 inch choke collar is at 4326 and the 4-1/2 inch casing was landed at 4368.

Q Mr. Joy, in your opinion are all zones other than the injection zone fully protected against any intrusion of these injected waters?

A. Yes, they are, and my review of the area indicates that cement was well above the P-1 zone.

Q. Will you refer to what has been marked for identification as Exhibit Number Six and explain this to the Examiner?

A. This is a treating record on the Cone No. 8.
On the original completion it shows perforated from 4207 to
4228 with two shots per foot; spotted 6 barrels of acid at

4228; pulled up and set R-4 packer at 4107; acidized with 4500 gallons of 20 percent NE acid, using 84 ball sealers, and they had good ball action. The average injection rate was 2.5 barrels per minute. Average treating pressure was 2500 pounds. Initial shut-in was 2100 pounds. Final shutin was 1770 pounds after 13 minutes and swab tested for five days, recovered salt water with only a trace of oil. Shut in pending approval to convert to salt water disposal well.

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Q Mr. Joy, would you refer to what has been marked for identification as Exhibit Number Seven and summarize this.

A. That is a water analysis of water from the Cone No. 8 Well.

Q Is this water from the San Andres?

Yes, it is.

A.

Q. And what is the source of the water you propose to inject?

A. It would be all produced San Andres water.Q. So it would all be compatible?

A. Yes, it will be compatible.

Q Is it safe to say, then, you're simply reinjecting water into the formation from which it was produced?

A That is correct.

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Is the injection system to be a closed system?

Yes, it will be.

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Q Would you refer to what have been marked Exhibits Eight, Nine, and Ten, and explain what they are? And what they show?

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A. Well, this shows that all of the wells in the area are completed in the P-2 zone and also four wells are completed in the P-3 zone, and that is the Cone Federal 1, 3, and 4, and the State No. 1 Well.

Q. Now, let's look at what has been marked as Exhibit Number Eleven and explain what that is.

A That is a schematic of the Yates -- oh, wait a minute. This is wells within 1-1/2 mile radius of the Cone Federal No. 8 Well, and that is Cone Federal No. 4, which is in the northeast southeast of 31, 7 South, 32 East, 660 feet from the east line, 1980 feet from south line, Roosevelt County, New Mexico, and the surface casing is set at 1827 feet and cemented with 600 sacks. The production casing was set at 4398 and cemented with 300 sacks and the calculated top of cement based on 100 percent fill-up would be at 2739 feet, and the producing interval is from 4323 to 4333.

The next well is the Cone Federal No. 7, southeast of the northeast, Section 31, 7 South, 32 East, 1980 feet from north line, 660 feet from east oine, Roosevelt County, New Mexico. Surface casing was set at 1835 feet and cemented with 450 sacks. Producing casing was set at 4400 feet and cemented with 300 sacks, and the calculated top of cement there is at 2741 feet. Producing interval is from 4251 to 4278.

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Then this dry hole of Yates that's been plugged and abandoned, Yates No. 1-E Tomtom, is in the northwest northeast Section 6, 8 South, 32 East, 660 feet from the north line and 1980 feet from the east line, Chaves County, New Mexico, and it was P&A'ā 9-26-77, and surface casing was set at 1725 feet with 760 sacks; producing casing was set at 4400 feet with 420 sacks, and the cement top was recorded at 2400 feet, and the producing interval shows 0, P & A'd.

Q. Now will you refer to Exhibit Number Twelve and summarize this for the Examiner.

A. All right, well, this is a schematic of the Yates Well and how they went in and plugged it. They run a cast iron bridge plug at 4080 and put 2 bailers of cement on top. They set a 32-sack plug at 2881 to 2780 and top of a 4-1/2 was at 2875; they pulled that much 4-1/2 inch casing from the well. Then they filled the bored area here with heavy drilling mud and they set a 35-sack cement plug from 1762 to 1680, and they had to re-cement and set a 50-sack cement plug at 1762 feet. And it has 8-5/8ths inch 24-pound surface casing and a 12-1/4 inch hole set at 1725 feet,

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		1	cemented with 760 sacks, and coment was circulated. And						
		2	then at the surface they have an 8-sack cement plug on top						
		3	of the surface casing and a dry hole marker inserted in th						
		4	top of the well.						
		5	Q Refer to what has been marked as Exhibit						
		6	Thirteen and summarize this for the Examiner.						
		7	A. This shows the leases held by Sundance Oil						
	- 	8	Company in the Tomahawk Field.						
		9	Q Does it also show other wells in the area?						
· ,									
	BOYE EPORTE	11							
$\cap$	TON AND M	12	Q Are there any wells within 2-1/2 miles of						
'	WAL SHORTI Blance	13	the subject disposal well which are not San Andres comple-						
-	SALLY CERTIFIED 020 Plana Santa P	14	tions?						
	S B S		A. Yes, the Holly Energy-Union Federal No. 1						
		15	is completed in the Pennsylvanian formation.						
		16	Q. Are there any other wells?						
		17	A. NO.						
		18	Q And the yellow line on this merely shows						
		. 19 	Sundance's						
		20	A Outlines the lease, right.						
		21	0. Please refer to Exhibit Fourteen and explain						
		22	that to the Examiner.						
2.		23	A. This is a plat of the proposed injection						
		24	system. If you look up here at the Langlie Federal, they						
		25	plan on returning water from the Langlie Federal lease down						

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to the Chambers Federal by gravity and heater-treater pressure.

From there they will pump the water from the Chambers lease and the Langlie lease down to the Cone Federal lease right straight south there.

Then the water from the State lease on the east there will be returned by gravity and heater pressure back to the Cone Federal, and all the produced water will be pumped from the Cone Federal down to the proposed injection well where they will install a Gardner-Denver TA-3 Triplex pump, and this system will be closed.

Will you now refer to Exhibit Fifteen and Sixteen, and identify what they are?

This is just the United States Department λ, of Interior Geological Form 9331, and they've requested to convert the well to salt water disposal.

And the second one is the U.S. Form 2920-1 and this is temporary use of application and permit. Mr. Joy, in your opinion what effect will Q the injection of this water have on the reservoir? If application is denied the wells will be A, prematurely shut in, causing a loss of recoverable oil. presently two high water-producing wells, the Langlie No. 1 and the Chambers Federal No. 1, are shutin. Respective water production is 160 and 340 barrels per

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	3 ard 4 5 14 6 7 ir 8 in	It costs .43 conts per barrel to truck water from se wells. This high cost has raised economic limits to bund 12 barrels of oil per day per well. The above two wells were averaging 11 and barrels of oil per day when they were shut-in. Injecting water in the Cone No. 8 Well will herease oil recovery from this reservoir. Present data baicates reservoir has a solution gas drive mechanism. By
V WALTON BOYD D SHORTHAND REFORTER A BADDER (561) 411-4463 #8, New Mostoo 87601	10 b	aintaining a higher reservour part of the vater will follow path of least resistance; consequently, most of the water injected will move northward as the reservoir pressure is being decreased by reservoir
SALLY CENTIFIED 8010 Para Banka	14 15 16	withdrawals in this area. Also additional oil recovery will result as injected water will sweep unrecovered oil into the
	17 18 19 20 21	northern producing wells. Q Okay, now Mr. Joy, if we just assume for the moment that the water injected will migrate radially the moment that the water injected will migrate radially away from the wells, how long would it take, in your opinion, away from the wells, how long would it take, in your opinion, for the injected water to affect any offsetting lease? A Well, according to Mr. Scott's structure
	22 23 24 25	A. Well, according to have map, the Cone No. 8 Well is located on the periphery of the reservoir, and based on this interpretation it is doubtful injected water would move out radially. However, if radial

movement occurs, it would take approximately eight years for water to reach a well located 660 from the north line and from the west line of Section 5, Township 8 South, Range 32 East. Above calculations were based on injection rate of 600 barrels of oil per day, 35 feet of pay, and 4 percent porosity.

Q Mr. Joy, in your opinion, will granting this application prevent waste?

A. By granting the --Q. Yes.
A. No, it will not waste.
Q. Wait a minute.
Q. Wait a minute.
A. I didn't hear it.
Q. In your opinion, will granting the application prevent waste?

A Let's see.

Q By granting this application, Mr. Joy, would hydrocarbons be recovered that would otherwise be left in the ground?

A. Yes, they would be by granting this.

Q. And would it therefore prevent waste?

A. Correct.

Q Would granting the application protect the correlative rights of Sundance?

A Yes, it would.

Y WALTON BOY! D SHORTHAND REPORT M BILDON (605) 471-34 Pe, New Mosiloo 87160 2

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Q Nove Exhibits Three through Sixteen either prepared by you or have you reviewed them and can you testify as to their accuracy?

A I reviewed them.

MR. CARR: At this time, Mr. Examiner, I would offer into evidence Exhibits Three through Sixteen. MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further on direct.

#### CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Joy, have you checked any of the cement tops to see how much actual fill there is? I see you've calculated some tops.

A. I calculated them 100 percent. I think you can, normally you can get a figure at least 60 percent of fill on most of these areas, which ---

Q. I notice the Yates here shot off their casing about 325 feet below the top of cement. Seems like that would be a little hard to do.

A. I was looking at that, too. I noticed that. Unless they have --- I don't see how they got their casing loose if they had an excellent cement job up around the pipe there, but I still feel like you got adequate space to

SALLY WALTON BOYD CERTIFIED SHORTHAND REPORTEI 2020 Plaza Blanca (505) 471-345 Basia Fe, New Mexico 57601 2

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1 protect the pay, even if you figured at 60 percent. 2 I could find no bond logs or any temperature logs 3 run on these wells. Okay. And you have one exhibit that shows Q. 5 the 2100 pounds instantaneous shut-in on the well in question 6 and then you mentioned one well had 2300 pounds. Which well 7 is that? 8 That was the Cone No. --- it's the State No. A. 9 1 Well. It's directly northeast of the No. 8 there. Of 10 No. 4, rather. 11 Those are the only two wells that you have Q 12 this information on? 13 Right, that's the only two wells I have the Λ 14 information on. 15 And since Mr. Scott testified he had lost Q. 16 circulation in the couple of other wells, that obviously 17 wouldn't carry out throughout the entire formation. 18 Do you find that these pressures pretty well 19 jibe with those that you've seen in other San Andres wells 20 in this general area? 21 They do, because I know my San Andres wells ħ. 22 when I was with the oil company -- from past experience I've 23 found that at shallower depths I was happy to get up to 24 around 1300 pounds to inject at around 2500, 2600 feet into 25 the San Andres in Eddy County.

			4.	Page 25	
		1	ŷ	Generally this is a tight formation	
		2	A.	Right.	i.
		3	Q.	and has a high frac pressure.	
	· · ·	4	ð.	Correct.	
	2	5	Q.	And the annulus on this well will either	
1		6		r a gauge will be on there to make determina-	
		7	÷	akage of either the tubing or the packer?	
		8	55×. A.	Right, correct. We got a positive detection	- - -
		9	device.		- 
  -  -	058-	10		MR. STAMETS: Any other questions of this	
	I BOY REPORT 0 671-30 00 87150	11	witness? He m	ay be excused.	
	LTON THAND THAND	12		Anything further in this case?	
	LY WA	13		MR. CARR: Nothing further.	
	SALL CENTIFI 1020Ph Banki	.14		MR. STAMETS: Take the case under advisement	
		15		(Hearing concluded.)	
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REPORTER'S	CERTIFICATE
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SALLY WALTON BOYD CERTIFIED SHORTHAND REPORTER

(606) 471-34 Mexico 37501 I, SALLY WALTON BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, knowledge, and skill, from my notes taken at the time of the hearing.

#### Sally W. Boyd, C.S.R.

BEFORE EXAMINER STAMETS CIL CONSE VATION DIVISION \_\_\_\_\_EXHIBIT NO.\_\_\_\_\_ CASE NO.\_\_\_\_\_

Submitted by

Hearing Date\_\_\_\_

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. heard by me on \_\_\_\_\_\_19\_\_\_\_

, Examiner

**QII** Conservation Division

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	UNITED STATES DEPARTMENT OF THE INTERIOR	5. LEASE
•	GEOLOGICAL SURVEY	6. IF INDIAN, ALLOTTEE OR TRIBE NAME
-	SUNDRY NOTICES AND REPORTS ON WELLS	7. UNIT AGREEMENT NAME
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	2. NAME OF OPERATOR SUNDANCE OIL COMPANY	10. FIELD OR WILDCAT NAME
34.27 Se	3. ADDRESS OF OPERATOR	Tomahawk, San Andres 223
	Suite 510, 1776 Lincoln St., Denver, CO 80203 4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)	AREA Section 31, Tr7S., R.32E.
	AT SURFACE: 660' FSL, 660' FEL Unit P AT TOP PROD. INTERVAL:	12. COUNTY OR PARISH 13. STATE
	AT TOTAL DEPTH: Same	Rocsevelt HERE New Mexico
	16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA	15. ELEVATIONS (SHOW DF, KDB, AND WD)
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- Martine	17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly stat including estimated date of starting any proposed work. If well is o measured and true vertical depths for all markers and zones pertinent Intend to convert well to a water disposal w	lirectionally drilled, give subsurface locations and nt to this work.)* 응답함 이 가지 않는 것이 가지 않는 것이 있는 것이 있다. 것이 있는 것이 있
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	•	BURE	RTMENT OF THE INTERIOR		OMB N	APPROVED 0. 42-R0996
Til.	1a 1. Sec. 28/	2)(e) of the Mi	Y USE APPLICATION AND PE ineral Leasing Act of 1920, 30	U.S.C. 185, as amend-	Serial Number	
ed	;Secs. 302(b)	and 504(a) of	P.L. 94-579, October 21, 1976 APPLICATION	, 43 U.S.C. 1732, 1764.	INSTRUCT	IONS ON REVERSE
1.	Name (firs	t, middle in	itial, and last)	Address (incl	ude zip code)	<u></u>
	SUNDANCE	OIL COMP	ANY	Suite 510, Denver, CO	1776 Lincoln 80203	Street
2.	Give legal	description	of public lands for which y	ou are applying		
	TOWNSHIP	RANGE	SECTION		SUBDIVISION	
	7 South	32 East	31 660'	FSL and 660' F	EL, Unit P	·
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1/0	ridian	<u> </u>	State	County		Acres (number)
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3.	Proposed	date(s) of u	se: From February, 19	979 to	February, 19	89
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с.	As applica or an agen	ant, are you icy of		sociation XX Corp ate Government		
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<u> </u>	Ate you m	aking this a	pplication for your own use	and benefit? XX Y	es No (1/ ")	no,'' explain)
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	poses, ide This mine What do y Dama Dama What impr <i>drawings</i> , We d have What is th cost of pr ment? \$	entily users well is rals. ou propose ges for s ovements, in <i>il convenie</i> o not pla to set t ne estimated oposed impu <u>81,000.0</u>	and occupants) on Tom Gainor's ranc to use the lands for? surface on this locat anto make any change tanks & pump, they wi d. What is the propose To dispose of and on this 1	h. He owns the ion & roads hav s, do you intend to s in location a ll be on same p sed source of water water from our ease.	surface & we re been approve make? ( <i>Describe</i> at this time. ad as the well for domestic or oth other leases	have the ed & paid for. <i>improvements and</i> If we should l is now on. er uses?
 b  8	poses, ide This mine What do y Dama Dama What impr <i>drawings</i> , We d have What is th cost of pr ment? \$ Have you	entily users well is rals. ou propose ges for s ovements, in <i>il convenie</i> o not pla to set t ne estimated oposed impu <u>81,000.0</u> enclosed fi	and occupants) on Tom Gainor's ranc to use the lands for? surface on this locat anto make any change tanks & pump, they wi d. What is the propose To dispose of and on this 1 ling fee of \$10? [X] Yes	<ul> <li>h. He owns the</li> <li>ion &amp; roads hav</li> <li>s, do you intend to</li> <li>s in location a</li> <li>11 be on same p</li> <li>sed source of water</li> <li>water from our</li> <li>ease.</li> <li>No (See Instruct</li> </ul>	surface & we re been approve make? ( <i>Describe</i> at this time. ad as the wel for domestic or oth other leases	have the ed & paid for. <i>improvements and</i> If we should I is now on. er uses? adjacent to
	poses, ide This mine What do y Dama Dama . What do y Dama . What impr <i>drawings</i> , We d have What is th cost of pr ment? \$ Have you CERTIFY TH	entily users well is rals. ou propose ges for s ges for s ovements, in <i>il convenie</i> 0 not pla to set t ne estimated oposed impu 81,000.0 enclosed fi hat the info	and occupants) on Tom Gainor's ranc to use the lands for? surface on this locat anto make any change tanks & pump, they wi d. What is the propose To dispose of and on this 1 ling fee of \$10? [X] Yes rmation given by me in thi is given in good faith.	<ul> <li>h. He owns the</li> <li>ion &amp; roads hav</li> <li>s, do you intend to</li> <li>s in location a</li> <li>11 be on same p</li> <li>sed source of water</li> <li>water from our</li> <li>ease.</li> <li>No (See Instruct</li> <li>s application is true</li> </ul>	surface & we re been approve make? ( <i>Describe</i> at this time. ad as the wel for domestic or oth other leases	have the ed & paid for. <i>improvements and</i> If we should I is now on. er uses? adjacent to
	poses, ide This mine What do y Dama Dama . What do y Dama . What impr <i>drawings</i> , We d have What is th cost of pr ment? \$ Have you CERTIFY TH	entily users well is rals. ou propose ges for s ges for s ovements, in <i>il convenie</i> 0 not pla to set t ne estimated oposed impu 81,000.0 enclosed fi hat the info	and occupants) on Tom Gainor's ranc to use the lands for? surface on this locat anto make any change tanks & pump, they wi d. What is the propose To dispose of and on this 1 ling fee of \$10? [X] Yes rmation given by me in thi is given in good faith.	<ul> <li>h. He owns the</li> <li>ion &amp; roads hav</li> <li>s, do you intend to</li> <li>s in location a</li> <li>11 be on same p</li> <li>sed source of water</li> <li>water from our</li> <li>ease.</li> <li>No (See Instruct</li> <li>s application is true</li> </ul>	surface & we re been approve make? ( <i>Describe</i> at this time. ad as the wel for domestic or oth other leases	have the ed & paid for. <i>improvements and</i> If we should I is now on. er uses? adjacent to
	poses, ide This mines What do y Dama What do y Dama What impr <i>drawings</i> , We d have What is th cost of pr ment? \$ Have you CERTIFY Th owledge and 2/26/7	entily users well is rals. ou propose ges for s ovements, in <i>il convenie</i> 0 not pla to set t ne estimated oposed impu 81,000.0 enclosed fi hat the info l belief and	and occupants) on Tom Gainor's ranc to use the lands for? surface on this locat an to make any change tanks & pump, they wi d. What is the propose To dispose of and on this 1 ling fee of \$10? [X] Yes rmation given by me in thi is given in good faith. $E \times hibit$	<ul> <li>h. He owns the</li> <li>ion &amp; roads hav</li> <li>s, do you intend to</li> <li>s in location a</li> <li>11 be on same p</li> <li>sed source of water</li> <li>water from our</li> <li>ease.</li> <li>No (See Instruct</li> <li>s application is true</li> </ul>	surface & we re been approve make? ( <i>Describe</i> at this time. ad as the wel for domestic or oth other leases	have the ed & paid for. improvements and If we should I is now on. er uses? adjacent to correct to the best

•			PEF	TIMS		~		
Permission is	hereby granted	to						
of						-	·• '	
to use the follo	owing-describe	d lands:	- 4		· .			
TOWNSHIP	RANGE	SECTION	<u> </u>	SUBDIV	VISION			
	<b>.</b>	- <b>I</b>	L				1 1	
				a static			÷	
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	•			•				
				· · ·				
				· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			
Meridian		State		County	Acres (	number)		
for the purpose	of			<u> I</u>			:	2
	1921) 				· •			
				است	which to the fall	wing on ditions.	-	
2				anu I	subject to the follo	wing conditions:	1	
It is revocable of the Bureau of This permit is	at the discret Land Manager subject to val	the period spe- ion of the authorient, at any time id adverse clair	upon notice.	<ol> <li>Authorized repres Interior, other Federal all times have the ri- business.</li> </ol>	agencies, and game	wardens shall at	n an	
or hereafter acqu	ired.			7. Permittee shall no public use.	ot enclose roads or t	rails commonly in		
2. Permittee s	hali pay annu:	ally, in advance	, to the au-	8. Permittee shall pa its property resulting fr	ay the United States rom this use.	for any damage to		
thorized officer to dollars as renta rental adjustmen	l or such other	sum as may be	required if a	9. Permittee shall no change immediately.	otify the authorized	officer of address		
3. Permittee s laws and regula	shall observe a tions applicable	all Federal, Stat to the premises	te, and local and to erec-	10. This permit is sub regulations (43 CFR	bject to all applicable 2920) which are ma	provisions of the de a part hereof.		ang the second
tion or maintena the regulations	nce of signs or for the protect all keep the pre	advertising displ tion of game bit emises in a neat	lays including rds and game	<ol> <li>Permittee agrees t marked or painted on maintained under the an</li> </ol>	i each advertising d	isplay erected or		a hear a thu anna ann an anna an anna an anna an anna an an
		under this perm	nit shall com-	12. Permittee shall no prior permission from t				an sui di Man
mence within exercised at lea		om date hereof ch year.	and shall be	13. This permit is so Order No. 11246 of Se sets forth the Equal	eptember 24, 1965, a Opportunity clauses.	s amended, which A copy of this		E Augus Baran Antonio, e
5. Permittee s	· · · · · · · · · · · · · · · · · · ·			order may be obtained i	from the signing office	er.		ź

Description	issued	800	
Permit	issued	IOT	Derioa

Fr

To

(Authorized Officer) ; (Title)

#### INSTRUCTIONS

. :

1. Submit, in *duplicate*, to any local office of the Bureau of Land Management having jurisdiction of the lands.

2. An application by a partnership or association must be accompanied by a statement by each member that he is a citizen of the United States or has filed a declaration to become a citizen. An application by a corporation must be accompanied by a statement showing that the corporation is authorized to hold land in the State in which the land is located and that the person making the application is autho-rized to act for the corporation.

3. If applicant is other than a Federal, State, or local gov-ernmental agency, this application must be accompanied by a

nonreturnable filing fee of \$10 made payable to the Bureau of Land Management.

4. If this application is for permission to erect an adver-tising display or sign, the applicant must: (a) attach an accurate and fully descriptive diagram, sketch, or photo-graph (at least  $3^n \times 5^n$ ) of the sign or display to be erected showing the dimensions, type of construction, estimated cost, the advertising material to be included thereon, the plan of illumination, if any, and the manner of attachment to the land; and, (b) a photograph (at least  $3^n \times 5^n$ ) showing the site on which the sign or display is to be erected.

GPO 841-243

(Date)

1.12.

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Form C-108 Revised 3-1-68

	TION TO DISP	OSE OF SALT W		TION INTO A POR	OUS FOR	MATION		
SUNDANCE OIL COMPAN	Y	:	Suite 5	10, 1776 Linco	1n St.,	Denver, CO	80203	
Cone Federal	WELL NO.	Tomaha	wk, San Andres		Roosevelt			
LOCATION	P		60			660		
UNIT LETTER	<b></b>	ELL IS LOCATED <u>0</u> WNSHIP 7 SOUTH		act	_ LINE AND _	FEE	Y FROM THE	
East LINE, SECTION			AND TUBING DAT					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMEN	SACKS CEMENT TOP OF CE		TOP DETERMINED BY		
Wt. 24#	8 5/8"	1817'	390 sx	390 sx Surface		Circulated 10 sx		
None								
Wt. 10.5#	4 1/2"	4368'	300 sx			Schlumberger Perf. Depth Control Log		
TUBING 4.70#, J-55 NAME OF PROPOSED INJECTION FORMA	2 3/8"	3960'	HOWCO R-4,	4107				
· · · · ·	TION	· · · · · · · · · · · · · · · · · · ·	TOP OF FORM	ATION		BOTTOM OF FORMATION		
San Andres	DPOSED INTERVAL (S) OF I		5.					
TUDING	IF ANSWER IS	4207-42 5 NO, FOR WHAT PURPO		07-4228	HAS WE	LL EVER BEEN PERFOR THER THAN THE PROPO	ATED IN ANY	
No	0il Wel	1 <b>1</b>			TION ZO		SED INJECT	
LIST ALL SUCH PERFORATED INTERVA	LS AND SACKS OF C	EMENT USED TO SEAL (	OFF OR SQUEEZE EACH					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA	- <del> </del>	DEPTH OF SOTTOM OF OIL OR GAS ZONE IN	F NEXT HIGHER This Area	DEPTH OF OIL OR GA	TOP OF NEK	T LOWER RIS AREA		
Approximatel	y 250'	None	ED TYPE SYSTEM	ADDLOR GA	imately	10,000' (Mi	SS.)	
18815.) 600 1 200	1500	Closed	<i>.</i>	Gravity		Vacuum		
ANSWER YES OR NO WHETHER THE FOL ERALIZED TO SUCH A DEGREE AS TO B STOCK, IRRIGATION, OR OTHER GENER.	LOWING WATERS AN E UNFIT FOR DOMES AL USE -		TO BE DISPOSED OF	SAL ZONE		ARE WATER ANALYSES ATTACHED? Yes		
NAME AND ADDRESS OF SURFACE OWN	ER (OR LESSEE, IF	Yes 3 Sa	1t Water	Same		<u> </u>		
Tom Gainor, P.O. BO	DERATORS WITHIN	New Mexic	THIS INJECTION WELL	······································		· · · · · · · · · · · · · · · · · · ·		
Champlin Petroleum	<u>Co., 300 W</u>	ilco Bldg., M	lidland, TX	79701				
<u>Yates Petroleum Cor</u>	poration.	207 4th St	Artesia, New	Mexico 8821	.0	·		
		· ·				•		
	· · · · · · · · · · · · · · · · · · ·			Exhibit	2			
	· · · · · · · · · · · · · · · · · · ·			Exhibit Case 6	503			
HAVE COPIES OF THIS APPLICATION B SENT TO EACH OF THE FOLLOWING?	EEN SURFACE OW	NER	TEACH OPERAT	R WITHIN ONE-HALF MILE				
Yes	Yes		LECTRICAL L			MMATIC SKETCH OF WE		
THIS APPLICATION (SEE RULE TOI-B)	Yes		Yes		Yes			
		formation above is		to the best of my kno			· .	
Lichard	Alun	Vice Pr	<u>esident, Pro</u>	duction	2/2	26/79	• •	
(Signature)	Richard O.	<u>Dimit</u>	(Tule)			(Date)		
NOTE: Should waivers from the s Mexico Qil Conservation at the end of the 15-day w the application will be set	Commission will h aiting period no p	old the application fo rotest has been receiv	or a period of 15 day. ved by the Santa Fe	from the date of receip	n by the Ça	mmission's Santa F	e office. If	

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### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102 Supersedes C-128 Effective 1-1-65

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		All distances must be	from the outer	r boundaries of t	he Section.		
perator			Lease				Well No.
	NDANCE OIL CO		<u> </u>	CONE FED			8
init Letter	Section	Township	Ranqe		County	•	
P	31	7 SOUTH		32 EAST		ROOSEVELT	r
ctual Footage Loca 660		e e u	110				
	leet from the SOU			feel	from the	EAST	line
round Level Elev. 4469,4	Producing For		P001	- 1.			Dedicated Acreage:
	San Andr	es	Tomaha			<u>l</u>	40 Acres
interest an 3. If more that	d royalty). n one lease of di	fferent ownership is	dedicated		•	· · ·	reof (both as to working all owners been consoli-
Yes	No If an	nitization, force-pool swer is ''yes;' type	of consolid	i i i i i i i i i i i i i i i i i i i			ed: (Use reverse side of
this form if No allowab	necessary.) le will be assigne	d to the well until al	l interests	have been c	onsolidate	d (by comm	unitization, unitization, approved by the Commis-
						tained here	CERTIFICATION Milty that she information con- ly is true and complete to she knowledge and filet.
						Richard Position Vice Pre Company	esident, Production
THE PROPERTY	GINEER & LAND TATH OG 576 May W. WEST			Exhibi (ase	+ 4 6505	shown on t nates of a under my s is true am knowledge Date Surveyed OCTOBER	28,1978 cofessional Engineer
330 640 4	EO 1320 1010 190	0 2310 2840 200	0 1600	1900 60		Cegnificene Ne	Dill (1) 7 John W. West 67 Ronald J. Eidson 323

الأثني مترقص وأربي
YATES - #1 E. Tom Tom 660' FNL E 1980' FEL SEC.6, TBS, R 32E CHAVES CO., NEW MEXICO Dry hole marker P&A - SEPT. 26, 1977 8 si Cont in top of Stc. (sg. -85/3", 24# Stc. Cog. in 12.4" Hole Set @ 1725' Cmtd w/ 760 Sr. Two Cont Plugs -- First Did not Hold .. (Cement Circulated to Ste.) 1) 35 Sy (mt @ 1762-1680 2) 50 Sr (mt @ 1762' 1725' WELL PEA - Sept 26, 1977 7 1/3 "Hale HEAVY DRIG MUD Top of (mt Repeated @ 2400' 41/2" (ag Cut off @ 2875' 35 Sx Cont Plug @ 2831-2780' (Top of Cut off 4/2 (5).) Exhibit 12 case 6503 (1BP @ 4080' w/2 Bailersof Cont on top. 41/2" 10,6# (sg. Set @ 4400' (mtd w/ 420 sx.

## CONE FEDERAL #8

On original completion, perforated 4207' to 4228' with 2 shots per foot. Spotted 6 barrels acid at 4228'. Pulled up and set R-4 packer at 4107'. Acidized with 4500 gallons 20% NE acid using 84 ball sealers. Had good ball action. Average injection rate 2.5 BPM. Average treating pressure 2500#. ISIP 2100#. FSIP 1770# in 13 minutes. Swab tested for five days. Recovered salt water with only a trace of oil.

Exhibit 6 Case 6503

Shut-in pending approval to convert to salt water disposal well.

		EW MEXICO 88240 WATER ANA		٢	No. W79-174	<u> </u>
Sundance Oil Comr	any			Date	2-14-79	
Box 115				t is the property	of Halliburton Company and	
Roswell, New Mexi			or disclose of laborat	ed without first sory management	or a copy thereof is to be p securing the express written I; it may however, be used	approva in th
ATTN: Mr. Jim Aki	ns			oyees thereof re-	operations by any person or ceiving such report from Ha	
Submitted by				Dote Rec.	<b>x</b> 2-14-79	
Well No. Cone Federal ;				-		
County	-				~	
· · · · · · · · · · · · · · · · · · ·		-				
Resistivity	0.047 @ 74 <sup>0</sup> F.			n An suite		
Specific Gravity						
эн						
Calcium (Ca)						_*MP
Magnesium (Mg)	<b>A C</b>					
Chlorides (Cl)		``````````````````````````````````````			·	
Sulfates (SO4)						
Bicarbonates (HCO <sub>3</sub> )	290	<u> </u>	·	<u> </u>		
Soluble Iron (Fe)	Nil					
		<u> </u>		A		
and the second						
Remarks:	FED 10-	G			*Milligrams per	liter
(61.978)	SUNDANCE OIL CO	Exhib Case			• 	
Ý	Respect	fully submitted	<u> </u>	~		
Analyst: Brewer	<u> </u>	_	H	ALLIBURTON		,
CC:		By /	1. 0	A. [];	herver	
	N			CHEN	list	

Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Cone Federal #1 Cone Federal #2 Cone Federal #3 Cone Federal #4 Cone Federal #5 Cone Federal #6 Cone Federal #7

Langley Federal #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203

Exhibit 8 case 6503

Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Chambers Federal #1 Chambers Federal #2 Chambers Federal #3

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510, 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904, 1776 Lincoln Street Denver, CO 80203

Jerry Chambers 1720 Lincoln Center Building Denver, CO 80264

والمراجع المعران معاد المتراجع

Exhibit 7 case 6503 Lease Status: State

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: State #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

11

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203

Exhibit 10 Case 6503

Form C-108 Revised 3-1-68

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# NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR			ADDRESS					
SUNDANCE OIL COMPAN	Υ	WELL NO.	Suite 5	Suite 510, 1776 Lincoln St., Denver, CO 80203				
Cone Federal	<u></u>	8	Tomaha	wk, San Andres		Roosevelt		
UNIT LETTER	P; we	LL 15 LOCATED 6	60 FEET FR	South South	LINE AND	660 FEET FROM THE		
East LINE, SECTION	31 TOW	NSHIP 7 South	RANGE 32 E	ast NMPM,				
		CASING	AND TUBING DAT	Α				
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMEN	TOP OF CEM	ENT	TOP DETERMINED BY		
Wt. 24#	8 5/8"	1817'	390 sx	Surface	Cir	culated 10 sx		
	1	· a		( ·				
LONG STAING	<u> </u>			Calc 2301		1 mhouron Douf		
Wt. 10.5#	4 1/2"	4368'	300 SX	3900 <sup>1</sup>		lumberger Perf. th Control Log		
A 70# 1.55	2 3/8"	3960'	Howco R-4,					
4.70#, J-55		3900	TOP OF FORM	TION ATION	BOTTOM OF	FORMATION		
San Andres		6	3391'		4368'			
IS INJECTION THROUGH TUBING, CASIN	G, OR ANNULUS?	1		OPOSED INTERVAL(S) OF INJ	ECTION			
UDING 15 THIS A NEW WELL ORILLED FOR DISPOSALY	IF ANSWER IS	4207-42		07-4228	HAS WELL E	EVER BEEN PERFORATED IN ANT THAN THE PROPOSED INJEC-		
NO	0il Wel	1			ZONZ OTHER	NO		
LIST ALL SUCH PERFORATED INTERVA			FF OR SQUEEZE EACH			/		
			15. 					
PRESH WATER 20NE IN THIS AREA Approximatel ANTICIPATED DAILY MINIMUM		DEPTH OF BOTTOM OF OIL OR GAS ZONE IN T NONE	NEXT HIGHER THIS AREA		mately 1	0,000' (Miss.)		
(BALS.)	1 <sub>6</sub>		ED TYPE SYSTEM	IS INJECTION TO BE BY GR PRESSURE?	L MED	APPROX. PRESSURE (PSIO		
ANSWER YES OR NO WHETHER THE FOI	LLOWING WATERS ARE	L Closed	TO BE DISPOSED OF	Gravity 4/		Vacuum		
ANSWER YES OR NO WHETHER THE FOU ERALIZED TO SUCH A DEGREE AS TO B STOCX, IRRIGATION, OR OTHER GENER	AL USE -		lt Water	SAL ZONE Same	Yes			
NAME AND ADDRESS OF SURFACE OWN		TATE OF FEDERAL LAN		Jane	1 105			
Tom Gainor, P.O. Bo	x 206, Kenn	a, New Mexic	o <u>88122</u>					
<u>Champlin Petroleum</u>				79701				
Yates Petroleum Cor		1.		Marico				
Tales recrotedin cor			MI LESIA	BEFORE EXAMI	NER STA	THEIS T		
•				OIL CONSE VA				
	• •			Caplicants EX 131				
	<del></del>			CASE NO. 65	03	· ·		
HAVE COPIES OF THIS APPLICATION B SENT TO EACH OF THE FOLLOWING?	EEN SURFACE OWN	R	EACH OPERAT	"Submitted by	marie 6	24 Co.		
Yes	Yes		! Yes		2./20/7	9		
ARE THE FOLLOWING ITEMS ATTACHED THIS APPLICATION (SEE RULE 701-8)	TO PLAT OF AREA	· · · · · · · · · · · · · · · · · · ·	ELECTRICAL L	offearing Date	JIAGBAT IMA	TH SEFTCH OF MELL		
Yes	Yes		<u>kes</u>		- <del>Yes</del>			
I hereby co	ertify that the info			to the best of my know	ledge and b	eļief.		
_ unaid (	. Allun Y	Vice Pr	esident, Pro	duction	2/26/	/79		
(Signature)	<u>Richard O.</u>	<u>Dimit</u>	(Title)			(Date)		
NOTE: Should waivers from the Mexico Qil Conservation at the end of the 15-day w the application will be set	Commission will ho maiting period no pro	ld the application fo test has been receiv	r a period of 15 day. ved by the Santa Fe	s from the date of receipt office, the application w	by the Comm ill be process	ny this application, the Neu ission's Santa Fe office. Ij ied. If a protest is received		

# NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102 Supersedes C-128 Effective 1-1-65

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	SUNDANCE OIL C			CONE FE			8
it Letter	Section	Township	Range	•	County		
P	31	7 SOUTH	3	2 EAST	Roosey	RLT	
Lual Eoolage L 660	lest from the SC	UTH line of	nd 660	. 4	a fining the second second		Nee
ound Lyvel Ele			P001		t from the EAST		line Itad Acreage:
4469.4	San And		Tomahaw	ik			40 Acres
1 Outline		ated to the subject	well by colore	d pencil o	r hachure marks on	the plat	below.
				•			
		s dedicated to the v	vell, outline ea	ch and ide	ntify the ownership	thereof	(both as to working
interest	and royalty).	•		· · · · · · · · · · · · · · · · · · ·	•	• •	•
2. If more i	than one leave of	different ownership	in dedicated to	the well	have the interests	of all o	where been concoli
	•	unitization, force-po		we werry	nave the interesta	01 411 0	aners been consoli-
8			Ŭ			·.	
Yes	No If	answer is "yes?' typ	e of consolidat	ion	·		
••							
		owners and tract d	escriptions whi	ch have a	clually been consol	idated. (	Use reverse side of
	if necessary.)			1		·	
		ned to the well until e) or until a non-stan					
iorcea-p	ooling, or otherwise	c) of until a non-stan	nain huit' cium	nating auc	W INTELESTS UNB DE	en appro	ved by the Commis-
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		BEFORE EXAMIN	TD STANFTS			1	hat the information con-
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	C C	DIL CONSERVATI			1/		
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		EASE NO 650		-	Nome		
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		Submitted by	anna or M	and a second			ent. Production
		Hearing Date 3	2879		Company		
***		i lour ing	1		Sunda	nce Oi	1 Company
				• • •	Date		
	e <b>l</b> e				Nove	mber 9	, 1978
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	1		1		<b>J</b> I	• •	that the well location
			1		11	-	st was plotted from field surveys made by me or
	NGINEER &		· ·				sion, and that the some
1/4	SATH ONS		[		Is true	e and con	ect to the best of my
					knowle	dge and be	lief.
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LEG.		-9//			Date Sur	veyed	
REG.P	1. CO/		•		1 1		
REG	TAL MEXICO		Í		-660 OCTO	BER 28,	1978
HEG	TAN W. WEST			¢-	-660 Register	ed Profess	konai Engineer
HEE P	TOMA W. WEST			eo.	-660 Register		konai Engineer
	TOHN W. WEST			660- <b>-</b> -0	-660 Register	ed Profess	konai Engineer
	DAN W. WEST			9660	-660	and Survey	ional Engineer ar

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Q 2000 # Gauge\_\_\_\_ Core Fed. # 8 SWD Well TO PUMP > 2" × 2000 # Gate Value Slips & Packoff for 2 3/8 Tubing 2 × 2000 Ball Value De 2" x 2000 " Bull Plug Larkin 2 3/2 × 4 1/2 Well head JeLarkin 41/2" x 8 78" Cosing Head 2" x 2000 # Bull Plug 2" x 2000# Boll Value 41/2 Casing INSLips 8 5/8 × 24 # Casing 2 1/8" Tubing Lined W/ bonded Cement Circ. 390 SKS Total PVC plastic liners w/ Rubber Seals 8% set at 1807 G.L. inserted in tubing collars BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION appluats EXHIBIT NO. 5 CASE NO. 6503 Submitted by Syndicus Qie Co. Hearing Date 3/28/79 41/2" (asing Cemented w/ 300 SKS. 20,000 ANNULUS displaced w/ KCl Water 50/50 Pozmix " ul 8 # salt, treated w/ Howco 1gal. HAI-50, 1/4 # Floseal, \$ 270 Gel plus 5 gal. AN-HID inhibitor HOWCO R-4 PKR @ 4107' 41/2" × 10,50 # K-55 (25ing Perforated 4207 - 4228 W/2 SPF 41/2 Float Collar Q. 4326' 41/2 Casing Landed @ 4368'

## CONE FEDERAL #8

On original completion, perforated 4207' to 4228' with 2 shots per foot. Spotted 6 barrels acid at 4228'. Pulled up and set R-4 packer at 4107'. Acidized with 4500 gallons 20% NE acid using 84 ball sealers. Had good ball action. Average injection rate 2.5 BPM. Average treating pressure 2500#. ISIP 2100#. FSIP 1770# in 13 minutes. Swab tested for five days. Recovered salt water with only a trace of oil of oil.

Shut-in pending approval to convert to salt water disposal well.

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
applicents EXHIBIT NO. 6
CASE NO. 6503
Submitted by Sundance Die Co.
Hearing Date 3/28/79
• 1

2000 # Gauge\_\_\_\_ Core Fed. # 8 SWD Well TO PUMO > 2" × 2000 # Gate Value Slips & Packoff for 2 3/8 Tubing 2 × 2000 # Ball Value D = 2" x 2000 # Bull Plug Larkin 2 1/2 × 4 1/2 Wellhead Larkin 41/2 × 8 4/2 Well head 2" × 2000# Bull Plug 2" x 2000 # Boll Value 41/2 Casing INSLips 8 5/3 × 24 # Casing 2 3/2 Tubing Lined W/ bonded Cement Circ. 390 SKS Total PVC plastic liners w/ Rubber Seals 8%" set at 1807 G.L. inserted in tubing Collars 200 02 41/2" Casing Cemented w/ 300 SKS. ANNULUS displaced W/KCI Water 50/50 Pozmiz " ul 8 # salt, treated w/ Howco Igal. HAI-50, 1/4 # Floseal, \$ 270 Gel plus 5 gal. AN-HID inhibitor 3 HOWCO R-4 PKR @ 4107 41/2" × 10,50 # K-55 (25ing Perforated 4207 - 4228 W/2 SPF Exhibit 5 41/2 Float Collar Q. 4326 rase 6.503 41/2 Casiva Landed @ 4368'

YATES - #1 E. Tom Tom 660' FNL E 1980' FEL SEC. 6, TBS, R 32E CHAVES CO., NEW MEXICO Dry hole marker P&A - SEPT. 26, 1977 8 sr Cont in top of Stc. (sg. 8%, 24# Stc. Cag. in 12.4" Hole Set @ 1725' Cmtd w/760 Sr. Two Cart Plugs - - First Didnot Hold: (Coment Circulated to Ster) 1) 35 Sy (mt @ 1762-1680 2) 50 Sr (mt @ 1762' 1725' WELL PEA - Sept 26, 1977 73" Hale HEAVY DRIG MUD Top of (mt Reported @ 2400' 4" (sg Cut off @ 2875' 35 Sx Cont Plug @ 2831-2782 ( Top of Cut off 4/2 (5).) BEFORE EXAMINER STATIETS OIL CONSERVATION DIVISION applicants EXHIBIT NO. 12 CALE NO. 6503 Submitted by Sunlance of do. CIBP @ 4080' w/2 Barlers. Hearing Date 3/28/79 of Cont on top. 4'2" 10,6 \* (sg. Set @ 4400' Crital w/ 420 sx.

# WELLS WITHIN ONE-HALF MILE OF CONE FEDERAL #8

Well Name	Surface Casing/Sx Cement	Production Casing/Sx Cement	<u>Cement Top</u>	Producing Interval
Cone Federal # 4 NE SE 31-7S-32E				•
660' FEL, 1980' FSL Roosevelt County, N. M.	1827'/600 sx	4398*/300 sx	* 2739*	4323' to 4333'
Cone Føderal # 7 SE NE 31-7S-32E	• •		•	
1980" FNL, 660' FEL Roosevelt County, N. M.	1835'/450 sx	4400°/300 sx	* 2741'	4251' to 4278'
Yates #1 E. Tom Tom NW NE 6-88-32E				· · · · · · · · · · · · · · · · · · ·
660' FNL, 1980' FEL Chaves County, N. M.	1725'/760 sx	44001/420. sx	2400*	P.& A
(P&A 9/26/77)	e de la companya de l			

\* Calculated

Exhibit 11 Case 6503

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#### HALLIBURTON DIVISION LABORATORY HALLIBURTON SERVICES MIDLAND DIVISION HOBBS, NEW MEXICO 88240

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LABORATORY WATER ANALYSIS No. W79-174 Sundance Oil Company 2-14-79 To. Date\_ 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 Company. Box 115 Roswell, New Mexico ATTN: Mr. Jim Akins ..... Date Rec..... ¥ 2-14-79 Submitted by\_\_\_ · Well No. Cone Federal #8 Depth\_\_\_\_ Formation San Andres Tonahawk Source\_\_\_\_ \_\_\_\_ Field\_\_\_\_ County..... 0.047 @ 74<sup>0</sup>F. \_\_\_\_\_ Resistivity ..... 1.184 Specific Gravity \_\_\_\_\_ ---\_\_\_\_ 6.8 pH \_\_\_\_\_ 36,500 Calcium (Ca) \_\_\*MPL Magnesium (Mg) \_\_\_\_\_\_6,300 Chlorides (Cl) \_\_\_\_\_\_ 171,000 **BEFORE EXAMINER STAMETS** 400 Sulfates (SO<sub>4</sub>) OIL CONSERVATION DIVISION Copplicants EXHIBIT NO. 290 Bicarbonates (HCO<sub>3</sub>) ..... Soluble Iron (Fe) \_\_\_\_\_ CASE NO. 6503 Nil Submitted by Sundance Ć. Hearing Date 3 'Z8 ------**Remarks**: \*Milligrams per liter Respectfully submitted, Analyst: Brewer HALLIBURTON COMPANY cc: NOTICE THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE. States and the states of the second second

Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Cone Federal #1 Cone Federal #2 Cone Federal #3 Cone Federal #4 Cone Federal #4 Cone Federal #5 Cone Federal #6 Cone Federal #7

Langley Federal #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

ga Street Station of a

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203

BEFORE EXAMINER STAMETS
OIL CONSE VATION DIVISION
Coplicants EXHIBIT NO. 8
CASE NO. 6503
Submitted by Sun farm Qie Co.
Hearing Date 3/28/79

an salata di

Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Chämbers Federal #1 Chambers Federal #2 Chambers Federal #3

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510, 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904, 1776 Lincoln Street Denver, CO 80203

Jerry Chambers 1720 Lincoln Center Building Denver, CO 80264

BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION apphaits EXHIBIT NO. 9 CALE NO. 650 3 Submilled by Suplance oie de Hearing Date 3/29/79

South Section

Lease Status: State

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: State #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203

BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION Ciplicate XHIBIT NO. 10 CASE NO. 6503 Submitted by Sundance Die Co. Hearing Dale 3 28 79

# WELLS WITHIN ONE-HALF MILE OF CONE FEDERAL #8

Well Name	Surface Casing/Sx Coment	Production Casing/Sx Cement	Cement Top	Producing Interval
Cone Federal # 4 NE SE 31-75-32E 660° FEL, 1980° FSL Roosevelt County, N. M.	1827'/600 sx	4398*/300 sx	* 2739 <b>'</b>	4323' to 4333'
Cone Federal # 7 SE NE 31-7S-32E 1980" FNL, 660' FEL Roosevelt County, N. M.	1835 <b>'/</b> 450 sx	4400°/300 sx	* 2741*	4251' to 4278'
Yates #1 E. Tom Tom NW NE 6-8S-32E 660' FNL, 1980' FEL Chaves County, N. M. (P&A 9/26/77)	1725 <b>'/</b> 760 sx	440 <b>1°/</b> 420 sx	24001	- P&A

\* Calculated

BEFORE EXA JINER STAMETS OIL CONSE VATION DIVISION CASE NO. 6533 Submitted by Suddence Die C. Hearing Date 3/28/79

		Sundance Oil j Fuel Supply 3 - 1 - 82 1 - 83 1 - 150/9 1 - 18846	1		1		Hearburg Vincent	Cabet Carbon Puncent 10 9465 **	
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Foye Boohar, M.I. T.R. Southard	Holly Energy star Union Lo-245 2 - 1 - 01 20 - 2 - 1 - 02	Game Commist	P25 LS-302	state"	- 33		2 1 87 Wa 2646 Yes	116-k anieler	.O.
4 AlletdChen 5)	20 ± 36 874		O.J. Sorenson	Morailco, etal	Moroico, etai 4 27 47 - Au 4 20 87 - Au Gatty Tem Janer TD 4444		102	Ran Inc	10 90 97 P18465 4 9065 El Ror
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and a stranger	6-1-83 - 18503	BALLINA	H8P	4	7-1-1 13999 J.C. Mai			ocdonald Oil 2 25 33 5 55 33 W Ranck 21 87 7 1 8 81	-6
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	104750 Eugenia	Chandlerka	Cectus Dry Wiry-Feo. Tod 245 as 7.66 U.S.	learing [	Date 3	28/78		5.4.4.C	ግ ለ።
<u>y's</u>	Phillips	WholeyCally U.S.		Gulf	U.S. Yates	Fel	Champlin		
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	Form 9–331 Dec. 1973	Form Approved. 
	UNITED STATES	5. LEASE
	DEPARTMENT OF THE INTERIOR	NM-15019 53 2 457
	GEOLOGICAL SURVEY	6. IF INDIAN, ALLOTTEE OR TRIBE NAME
•		
	SUNDRY NOTICES AND REPORTS ON WELLS	7. UNIT AGREEMENT NAME
•	(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9–331–C for such proposals.)	P. FADU OD LEASE NAME IN STO
-		Cone Federal
	well well other Salt Water Disposal	9. WELL NO. 4 5 4 5 5 5 5
	2. NAME OF OPERATOR	8 33775 15 15 15 15 15 15 15 15 15 15 15 15 15
	SUNDANCE OIL COMPANY	10. FIELD OR WILDCAT NAME 관용 Tomahawk, San Andres 홈 홈
	3. ADDRESS OF OPERATOR Swite 510 1776 Lincoln St. Donyon CO 90203	11. SEC., T., R., M., OR BLK. AND SURVEY OR
	Suite 510, 1776 Lincoln St., Denver, CO 80203 4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17	AREA ALT ALL ALL ALL ALL ALL ALL ALL ALL AL
	below.)	Section 31, T.7S., R.32E.
	AT SURFACE: 660' FSL, 660' FEL Unit P AT TOP PROD. INTERVAL:	12. COUNTY OR PARISH 13. STATE
	AT TOTAL DEPTH: Same	Roosevelt New Mexico
·	16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE,	14. API NO. 전통원이 2 3 200 3
	REPORT, OR OTHER DATA	15. ELEVATIONS (SHOW DF, KDB, AND WD)
	and the second of the second second	4469' GL 48 8 8 8 2 5 5
	REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF:	
	FRACTURE TREAT	
	SHOOT OR ACIDIZE	2007A S TYSY
	REPAIR WELL	(NOTE: Report results of multiple completion or zone change on Form 9-330.) : 국 문 문 문 문
•		
		2007)22 2007)2007 2007)2007 2007
	ABANDON*	· · · · · · · · · · · · · · · · · · ·
	17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly stat including estimated date of starting any proposed work. If well is d	lirectionally drilled, give subsurface locations and
	measured and true vertical depths for all markers and zones pertiner	nt to this work.)*
	Intend to convert well to a water disposal w	
-	( ) Press and the second se	
	BEFORE EXAMINER STAMETS	
	OIL CONSERVATION DIVISION	
54	Byplicants EXHIBIT NO. 15	
	CASE NO. 6533	202222 E 20222
3.		
ALC: NOT THE REAL PROPERTY OF	Submitted by Sundance Die Co.	
	Hearing Date 3/28/79	- 「「「「「「」」」」」。 「「」」」」」。 「」」」」」、 「」」」」」、 「」」」」、 「」」」、 「」」」、 」」、
		1993 de 22 teas 1993 de 22 teas
	Pubaudaga Calabi Value Harri and Tura	
	Subsurface Safety Valve: Manu. and Type	Set @ <u></u> Ft.
	18. I hereby certify that the foregoing is true and correct	2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	SIGNED Allund . Shines TITLE VP, Productio	DATE 2/26/79 23 2823
ام رام رجامع		
	APPROVED BY TITLE TITLE	DATE 22 40 7 9 9 2 3
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	*See Instructions on Reverse !	
	See Instructions on Reverse :	UTUM
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(June 1977)	UNITED STATE DEPARTMENT OF THE I BUREAU OF LAND MAN	INTERIOR			APPROVED O. 42-R0996
Title I Sec 28(2	EMPORARY USE APPLICATIO	ON AND PERMIT	i, as amend-	Serial Number	
ed; Secs. 302(b) a	nd 504(a) of P.L. 94-579, Octob	er 21, 1976, 43 U.S.C.	1732, 1764.	INSTRUCTI	ONS ON REVERS
L. Name (lirst.	APPLICATION middle initial, and last)	bA	dress (incl	ude zip code)	
	DIL COMPANY	Su	ite 510, nver, CO	1776 Lincoln 80203	Street
	description of public lands f			<u> </u>	
TOWNSHIP	RANGE SECTION			SUBDIVISION	4
7 South	B2 EastEFORE BKAMIN	IER 6601 MESIS an	d 660' F	EL, Unit P	
	OIL CONSERVAT	ION DIVISION			
	applicants EXHIBIT	NU. 16		-	•
	CASE NO. 650	1 Q' 4	<b></b>		
	Submitted by	In al 70			
Meridian	Hearing Date 3	128/17	County		Acres (number)
• • • • • • • • • • • • • • • • • • •	New Mexic		Roosevel	<b>t</b>	
3. Proposed d	ate(s) of use: From Febr	uary, 1979	to	February, 19	89
	years of age or over?			zen of the United S	
Ta: [XX] Yes [	l No	γοι	ir intention	? XX Yes 🗌 N	<b>0</b>
C	nt, are you a 📋 Partnersh			oration; [] Indivi Political subdivis	
or an agend	· · · · · · · · · · · · · · · · · · ·		······	·	
d. Are the sta	tements required by Instruct	ion Number 2 attach	ied? XX Y	es No No	lot applicable
5. Are you ma	king this application for you	ir own use and bene	fit? 🕅 🕅 Y	es [] No (1/ '')	no,'' explain)
poses, iden	ds now improved, occupied, niify users and occupants)				
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PERMIT								
Permission is h	ereby granted	to						6-1- <b>4</b> -3
of								••
o use the follo	wing-described	Tands:						
TOWNSHIP	RANGE	SECTION			SUBDIVISION			
	-					1		- 11 - 11
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	•		7	•				
Veridian		State		County	<u></u>	Acres (numb	er)	
or the purpose	of			<u>I</u>				
			e.		and subject	ct to the following	conditions:	
1. This permit is issued for the period specified below. It is revocable at the discretion of the authorized officer of the Bureau of Land Management, at any time upon notice. This permit is subject to valid adverse claims heretofore			officer I notice,	6. Authorized representatives of the Department of the Interior, other Federal agencies, and game wardens shall at all times have the right to enter the premises on official business.				
r hereafter acqui				7. Permittee public use.	shall not enclo	ose roads or trails	commonly in	
		lly, in advance, to	the au-		shall pay the Usulting from this	United States for an	y damage to	
horized officer th offars as rental ental adjustment	or such other	sum as may be requir	ed if a	9. Permittee change immed		e authorized office	r of address	$\mathbb{P}^{(1)}$
		I Dodenat State on		10. This perm	nit is subject to	all applicable prov	isions of the	

3. Permittee shall observe all Federal, State, and local laws and regulations applicable to the premises and to erec-tion or maintenance of signs or advertising displays including the regulations for the protection of game birds and game animals, and shall keep the premises in a neat, orderly, and sanitary condition.

4. Use or occupancy of land under this permit shall commence within months from date hereof and shall be days each year. excrcised at least

5. Permittee shall take all reasonable precautions to prevent and suppress forest, brush, and grass fire and prevent pol-lution of waters on or in the vicinity of the lands.

15. Special Conditions:

regulations (43 CFR 2920) which are made a part hereof.

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11. Permittee agrees to have the serial number of this permit marked or painted on each advertising display erected or maintained under the authority of such permit.

12. Permittee shall not cut any timber on the lands without prior permission from the authorized officer.

13. This permit is subject to the provisions of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the Equal Opportunity clauses. A copy of this order may be obtained from the signing officer.

14. This permit may not be assigned without prior approval of the authorized officer of the Bureau of Land Management.

nonreturnable filing fee of \$10 made payable to the Bureau of Land Management.

4. If this application is for permission to erect an adver-tising display or sign, the applicant must: (a) attach an accurate and fully descriptive diagram, sketch, or photo-graph (at least  $3" \times 5"$ ) of the sign or display to be erected showing the dimensions, type of construction, estimated cost, the advertising material to be included thereon, the plan of illumination, if any, and the manner of attachment to the land; and, (b) a photograph (at least  $3" \times 5"$ ) showing the site on which the sign or display is to be erected.

Permit issued for period		
²rom	(Authorized Officer	·
0	· · · · · ·	
	(Title)	(Date)
•	INSTRUCTIONS	

1. Submit, in *duplicate*, to any local office of the Bureau of Land Management having jurisdiction of the lands.

2. An application by a partnership or association must be accompanied by a statement by each member that he is a citizen of the United States or has filed a declaration to become a citizen. An application by a corporation must be accompanied by a statement showing that the corporation is authorized to hold land in the State in which the land is located and that the person making the application is autho-rized to act for the corporation. rized to act for the corporation.

3. If applicant is other than a Federal, State, or local gov-ernmental agency, this application must be accompanied by a

GPO 841-243

Production       STATE OF NEW MEXICO         STATE OF NEW MEXICO       SERROY AND MINERALS DEPARTMENT         OIL CONSERVATION DUVISION       State Jean do Division         State Jean do Division       State Jean we Mexico         28 March 1979       EXAMINER HEARING         10       Report of Sundance Oil Company for ) CASE         11       Application of Sundance Oil Company for ) CASE         12       Application of Sundance Oil Company for ) CASE         10       BEFORE: Richard L. Stamets         11       REFORE: Richard L. Stamets         12       TRANSCRIPT OF HEARING         13       A P P E A R A N C E S         14       For the Oil Conservation         15       Logal Counsel for the Division State Lend Office Bidg. Santa Fe. New Mexico 87503         16       For the Applicant:         17       College Santa Fe. New Mexico 87501         18       For the Applicant:         19       For the Applicant:         10       Santa Fe. New Mexico 87501         13       Santa Fe. New Mexico 87501					
2       ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION State Land Office Building Santa Fe, New Mexico. 28 March 1979         4       EXAMINER HEARING         5				Page	1
S       EXAMINER HEARING         IN THE MATTER OF:       }         Application of Sundance Oil Company for )       CASE         Sait water disposal, Roosevelt County, )       6503         New Mexico.       }         II       BEFORE: Richard L. Stamets         BEFORE: Richard L. Stamets       }         II       TRANSCRIPT OF HEARING         II       A P P E A R A N C E S         II       For the Oil Conservation         II       Lynn Teschendorf, Esq.         II       Santa Fe, New Mexico 87503         II       For the Applicant:         William F. Carr, Esq.         CAMPBELL & BLACK         P. O. Box 2208         Jefferson Place         Santa Fe, New Mixico 87501		3	ENERGY AND OIL CONS State La Santa	MINERALS DEPARTMENT ERVATION DIVISION and Office Building Fe, New Mexico	
8       IN THE MATTER OF:         7       Application of Sundance Oil Company for ) CASE salt water disposal, Roosevelt County, ) 6503         9       New Mexico.         10       BEFORE: Richard L. Stamets         11       BEFORE: Richard L. Stamets         12       TRANSCRIPT OF HEARING         13       A P P E A R A N C E S         16       For the Oil Conservation Division:         17       Division:         18       Santa Fe, New Mexico 87503         19       For the Applicant:         20       For the Applicant:         21       CAMPBELL & BLACK         22       Santa Fe, New Mexico 87501			EXA	MINER HEARING	
IN THE MATTER OP:         Application of Sundance Oil Company for ) CASE salt water disposal, Roosevelt County, ) 6503         New Mexico.         10         BEFORE: Richard L. Stamets         11         BEFORE: Richard L. Stamets         12         13         BEFORE: Richard L. Stamets         14         A P P E A R A N C E S         15         16         17         18         19         10         10         11         12         13         14         15         16         17         18         19         10         10         11         12         13         14         15         16         17         18         19         10         10         11         12         13         14         15         16         17         18         <					
8       salt water disposal, Roosevelt County, ) 6503         9       New Mexico.         10       BEFORE: Richard L. Stamets         11       TRANSCRIPT OF HEARING         12       TRANSCRIPT OF HEARING         13       A P P E A R A N C E S         16       For the Oil Conservation         17       Division:         18       Santa Fe, New Mexico 87503         19       For the Applicant:         20       Por the Applicant:         21       Output and the second	1	IN THE	MATTER OF:		
BEFORE: Richard L. Stamets HI HI HI HI HI HI HI HI HI HI			salt water dispo	Sundance Oil Company for osal, Roosevelt County,	
Maximum 11         12         13         13         13         14         A P P E A R A N C E S         15         16         17         18         19         20         19         10         10         11         12         13         14         A P P E A R A N C E S         15         16         17       Division:         Lynn Teschendorf, Esq.         Legal Counsel for the Division         State Land Office Bldg.         Santa Fe, New Mexico 87503         19         10         11         12         13         14         15         16         17          18         19         19         10         11         12         13         14         15         16         17         18         19	055	10			
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15         16         16         17         17         18         19         20         21         21         22         23         24	LY W/	13	TRANS	CRIPT OF HEARING	
<ul> <li>For the Oil Conservation</li> <li>For the Oil Conservation</li> <li>IP</li> <li>Por the Applicant:</li> <li>William F. Carr, Esq.</li> <li>CAMPBELL &amp; BLACK</li> <li>P. O. Box 2208</li> <li>Jefferson Place</li> <li>Santa Fe, New Mrxico 87501</li> </ul>	SAL CENTR 10107	14	λρε	) F A D A N C F C	
17For the Oil Conservation Division:Lynn Teschendorf, Esq. Legal Counsel for the Division State Land Office Bldg. Santa Fe, New Mexico 87503191920For the Applicant:20William F. Carr, Esq. CAMPBELL & BLACK P. O. Box 2208 Jefferson Place Santa Fe, New Mexico 87501212323242525		15			
20For the Applicant:William F. Carr, Esq. CAMPBELL & BLACK P. O. Box 2208 Jefferson Place Santa Fe, New M^xico 87501232425		For the 17 Divis 18		Legal Counsel for the State Land Office Blo	e Division lg.
22 23 24 25		20 For the	Applicant:	CAMPBELL & BLACK P. O. Box 2208	• • • • • • • •
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GEORGE SCOTT Direct Examination by Mr. Carr Cross Examination by Mr. Stamets . CHUCK JOY Direct Examination by Mr. Carr Cross Examination by Mr. Stamets EXHIBITS BCA (605) Applicant Exhibit One, Map Applicant Exhibit Two, Cross Section Applicant Exhibit Three, C-108 Applicant Exhibit Four, Map Applicant Exhibit Five, Schematic Applicant Exhibit Six, Record Applicant Exhibit Seven, Water Analysis Applicant Exhibit Eight, Document Applicant Exhibit Nine, Document Applicant Exhibit Ten, Document Applicant Exhibit Eleven, Chart Applicant Exhibit Twelve, Schematic Applicant Exhibit Thirteen, Plat 

SALLY WALTON CERTIFIED SHORTHAND F



	4	Page4
	1	MR. STAMETS: Call next Case 6503.
	2	MS. TESCHENDORF: Case 6503. Application o
	3	Sundance Oil Company for salt water disposal, Roosevelt
	4	County, New Mexico.
	5	MR. STAMETS: Call for appearances in this
	6	case.
	7.	MR. CARR: May it please the Examiner, I'm
	8	William F. Carr, Campbell and Black, P. A., Santa Fe, ap-
	9	pearing on behalf of the applicant. I have two witnesses.
YD 110	10	MR. STAMETS: I'd like to have both wit-
N 80		nesses stand and be sworn at this time.
ALTO NTHANI Dev Mos	12	
LY W. TED SHO TED BLO TE Fo. N	13	(Witnesses sworn.)
SAL CEATIF 2020P	14	
	15	MR. CARR: I would call Mr. George Scott.
· ·	16	
<i>,</i>	17	GEORGE <sup>®</sup> SCOTT
	18	being called as a witness and having been duly sworn upon
	19	his oath, testified as follows, to-wit:
	20	
	21	DIRECT EXAMINATION
	22	BY MR. CARR:
	23	Mr. Scott, will you state your full name and
	24	place of residence?
	25	A. George F. Scott. I live in Roswell; Con-

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sulting Geologist. I have an office in the Petroleum 1 Building in Roswell. 2 And you are -- have been employed by Sun-Q. 3 dance Oil Company in connection with the case before this 4 Commission? 5 Yes, that is correct. 6 A. Have you studied the area which is the sub-Õ. 7 ject of this application? 8 Yes, I have. I have been involved with 9 Α. Sundance in this field since at the very inception of the 10 11 project. Have you previously testified before this 12 0. Commission, had your credentials as a geologist accepted 13 and made a matter of record? 14 Yes, I have. 15 A. MR. CARR: Mr. Examiner, are the witness-16 credentials acceptable? 17 MR. STAMETS: They are. 18 (Mr. Carr continuing.) Mr. Scott, will you 19 Q 👘 briefly summarize what Sundance is seeking with this appli-20 21 cation? Okay. Sundance desires to utilize the 22 A. No. 8 Cone Federal and it's shown on the structure porosity 23 map which you have there. They desire to utilize that well 24 as a salt water injection well, disposal well. 25

LLY WALT

Q. Mr. Scott, you're referring to what has been marked for identification as Sundance Exhibit Number One,

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is that correct?

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Q.

That is correct.

Q. Would you refer to that exhibit and explain to the Examiner what it is and what it shows?

A. All right, this particular map here is a structural map, contoured on the top of the P-2 zone of the San Andres formation. The P-2 zone is the principal pay zone in this area, and the solid heavy contours are the structural contours. The dashed contours here represent the net porosity in the area, in the P-2 zone.

Now, this is not net pay. It's total porosity and in general a porosity cutoff of 5 percent was used. Q. And what can you tell us about the porosity in the general area?

A. Okay. The Isopaching of the porosity and a detailed study of the well logs indicate that the porosity increases in thickness northward and northwestward from the proposed disposal well.

Southwest of this well, approximately a quarter of a mile, Yates Petroleum drilled a well approximately a year and a half ago that had quite a bit less permeability and less porosity.

Is this the poorest porosity that's been

Y WALTON BOYD ED SHOATHAND REPORTER ER BLADCR (605) 471-346 Fe, New Medico 87501

Page encountered in the area, to your knowledge? 2 In the Yates well right to the south, yes, A. 3 and that is shown also on the cross section. Q, Mr. Scott, what does the area colored in 5 yellow signify? 6 That's the acreage, the leases owned by A. 7 Sundance Oil Company. 8 And the injection well is indicated how? Q. ĝ It's outlined in red. A. 10 Q. And then what is the red line across the ALTON BOY 11 lease area? 12 That is the line of cross section. A. 13 Where has the oil/water contact been estab-Q. 14 lished in this area? 15 A. There has not been an oil/water -- we have 16 not established an oil/water contact in this field; however, 17 there are segments of the field in which the water percentages 18 are very high. Apparently we're looking at zoned water in 19 places. In places in the field we get abnormal high water 20 cuts, probably because of relative permeability considera-21 tions. It's very difficult sometimes in these San Andres 22 fields to understand why a segment of the field will be 23 nearly entirely water productive. 24 Mr. Scott, I direct your attention to what Q. 25 has been marked for identification as Exhibit Number Two,

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and ask you to explain to the Examiner what it is and what it shows.

A. All right. Exhibit Number Two is a north/ south cross section through the Tomahawk Field, and it has displayed there the principal porosity log, the sidewall neutron,well-to-well correlations are shown, the Pi marker at the top, the top correlation, then the P-1, P-2, and P-3 zones are displayed on it. Also, the intervals where wells on the line of section are perforated. Also, porosity is shown.

Q. Now, on the log of the Cone No. 8 Well, does it show the injection zone?

Yes, it does.

A.

Q. And how large is the perforated interval in that well?

A. Approximately 21 feet.

Q And do the zones correlate well as you go well-by-well across this area?

A. It does. It does. That interval right there correlates very closely with all of the other wells on the cross section. This is the part of the P-2 zone that is oil productive to the north; however, only water was encountered here in this well.

Q Mr. Scott, were Exhibits One and Two prepared by you or under your direction and supervision?

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A. They were. They were prepared by me. MR. CARR: At this time, Mr. Examiner, we would offer Applicant's Exhibits One and Two.

MR. STAMETS: These exhibits will be admitted.

#### CROSS EXAMINATION

BY MR. STAMETS:

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Q. Mr. Scott, did you say that -- did you have
a reason why the Yates No. 1 East Tomtom was not productive?
A. Yes. The porosities are very low there
compared to the wells to the north.

Q Okay, so it's not because it's below the water/oil contact?

A. Right. Right, that is correct.

Q. Now you indicated segments of the field are highly water productive. Can you give us the locations of those --

Yes.

A.

A.

Q -- on Exhibit One?

I'd be pleased to.

In the southeast southeast of Section 30, the No. 1 Chambers has started producing a very high water cut there, and that well is perforated near the top of the P-2 zone in this interval of our main pay there, and it is

LY WALTON BO FIED SHORTHAND REPOI not a low well structurally. It appears to be just zone water.

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SALLY WALTON BOYD CERTIFIED SHORTHAND REFORTER 1010 Plaza Bianca (501) 471-2461 Starta Fe, New Metico 17501 Also, the dry hole in Section 29, a completion attempt there gave up water with a very low cut of oil, low percentage of oil cut.

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Q. On Exhibit Number One, Mr. Scott, you've shown a couple of faults in there, one of them just immediately east of the proposed injection well.

A. Yes. That fault is controlled by the No. 7 Cone Federal, located in the southeast of the northeast quarter. That well is an abnormally low well. That well is 60 feet -- roughly 60 feet low to all four offsets, a completely anomalous situation.

I chose to explain this with a fault. The faults would be, of course, subject to -- faulting would be subject to being interpreted in different ways, as faults usually are.

One thing in support of the probability of faulting in this area would be the fact that the No. 1 Cone, right to the north of it, that's the discovery well in the field, that we lost circulation in the pay zone, P-2 zone, while that well was being drilled, and we lost circulation in the north offset, the No. 1 Chambers, while the well was being drilled.

In that local area up there, evidently there

		Page11
	1	is extreme fracturing, and that would indicate a tie-in once
	2	again with the fault, something unusual there.
	3	Q Is there a possibility that this fault could
	4	serve as an avenue of escape for these injected waters out
	5	of the P-2 zone?
	6	A. Well, it appears that the faulting has not
	7	affected the permeability to any great degree in the No. 8
	8	Cone Federal, nor in that Yates dry hole to the south.
	9	MR. STAMETS: I presume you've got another
	10	witness
N BO	11	MR. CARR: Yes, we do.
ALTO ALTO ARTHANI	12	MR. STAMETS: on pressures and
LY W. TED SHC LEZE BLA LEZE BLA	13	MR. CARR: That's correct.
SAL. CERTIN 2010P	14	MR. STAMETS: this information?
	15	MR. CARR: Yes.
	16	Q (Mr. Stamets continuing.) Now, Mr. Scott,
	17	did Well No. 8 produce in the San Andres zone?
: .	18	A. No. A completion attempt there on a
	19	completion attempt there we were unable to establish commer-
	20	cial cuts of oil.
	-21	Q. So this well is below the local water/oil
	22	contact.
	23	A. Well, at least at that location there. All
	24	we can get out of the zone is essentially salt water. It's
	25	a very minor percentage of oil.

|.

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Page	L &

MR. STAMETS: Okay. Any other questions of

this witness? He may be excused,

MR. CARR: I would call Mr. Chuck Joy.

## CHUCK JOY

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

#### DIRECT EXAMINATION

BY MR. CARR:

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Q. Will you state your name and place of residence?

A. Charles Joy, and I live in Artesia, New Mexico, and I'm a petroleum consulting engineer.

Q You've been employed by Sundance Oil Company to study the area involved in this application?

A. Yes, I have.

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

A. Yes.

Q.

MR. CARR: Are the witness' credentials acceptable?

MR. STAMETS: They are.

(Mr. Carr continuing.) Mr. Joy, would you

refer to what has been marked for identification as Applicant's Exhibit Number Three, and explain to the Commission what it is and what it shows?

13

A. All right, this is the OCC C-108, Application to Dispose of Salt Water by Injection into a Porous Formation, and do you think I should go through each item on here, or just go down here, and we found a few errors on this form.

One, there is an error in the top of cement. Based on 100 percent fill-up the calculated top is at 2301, and they have 3900 down there. That needs to be changed.

MR. STAMETS: Calculated was what?

2301.

A.

MR. STAMETS: Okay.

A. And Sundance is anticipating injecting under vacuum. You notice we put up here "vacuum". However, if the occasion arises where the formation will no longer take water under vacuum, Sundance would like permission to inject under pressures up to 1750 pounds.

Now the frac pressure has been established in this area from the treating records on the Cone No. 8 and State No. 1 Wells.

Initial shut-in pressures after treating these wells were 2100 and 2300 psig, so we'll be injecting well below frac pressure, if we're granted permission to inject up to 1750 pounds.

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Let's see, the rest of it on here is just the next coastal zone was 10,000 feet there to the Mississippian.

You want to go to the next exhibit? Q Now, Mr. Joy, if you will refer to what has been marked as Exhibit Number Four and explain what it is and what it shows.

A. That's just the location map showing where the Cone 8 is located.

Q. And now I would direct your attention to Exhibit Number Five and ask you to explain to the Examiner what this shows.

A This is a schematic of the proposed injection well and if you'll take a look here, they'll have a lgauge on top. They'll have a 2 inch by 2000 pound gate valve, slip and pack off 2-3/8ths inch tubing; 2 inch by 2000 bull plug; Larkin 2-3/8ths by 4-1/2 inch well head, and operating pressure on that is 2500 pounds, it's not on here; a Larkin 4-1/2 by 8-5/8ths casinghead; 2 inch by 2000 pound bull plug; 2-3/8ths inch tubing lined with bonded PVC plastic liner with rubber seals inserted in tubing collar; and 4-1/2 inch casing was cemented and the top of it is --I'm repeating here -- was at 2301; and the packer will be set at 4107.

There is a collar -- a casing collar located

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4089 and one at 4120, so the packer will not be landed in a collar, and the perforations are from 4207 to 4228. 2 3 They also will have a positive detection device installed with this 2 inch by 2000 pound ball valve on the casing tubing and annulus, and they'll have a 2 inch 5 by 2000 pound ball valve on the surface casing annulus and the 8-5/8ths inch casing shows there and that cement was 8 circulated 390 sacks on the surface casing. And behind, in the annulus between the casing 10 and tubing will be filled with KCL water treated with one 11 gallon of HAI 50 plus 5 gallons of Anhib inhibitor. 12 And the 4-1/2 inch casing is 10-1/2 pound 13 K-55 cacing and the 4-1/2 inch choke collar is at 4326 and 14 the 4-1/2 inch casing was landed at 4368. 15 Mr. Joy, in your opinion are all zones other Q 16 than the injection zone fully protected against any intrusion 17 of these injected waters? 18 Yes, they are, and my review of the area A. 19 indicates that cement was well above the P-1 zone. 20 Will you refer to what has been marked for 21 identification as Exhibit Number Six and explain this to the 22 Examiner? 23 This is a treating record on the Cone No. 8. A. 24 On the original completion it shows perforated from 4207 to 25 4228 with two shots per foot; spotted 6 barrels of acid at

4228; pulled up and set R-4 packer at 4107; acidized with 4500 gallons of 20 percent NE acid, using 84 ball sealers, and they had good ball action. The average injection rate was 2.5 barrels per minute. Average treating pressure was 2500 pounds. Initial shut-in was 2100 pounds. Final shutin was 1770 pounds after 13 minutes and swab tested for five days, recovered salt water with only a trace of oil. Shut in pending approval to convert to salt water disposal well.

16

Q Mr. Joy, would you refer to what has been marked for identification as Exhibit Number Seven and summarize this.

A. That is a water analysis of water from the
 Cone No. 8 Well.

Q. Is this water from the San Andres?A. Yes, it is.

Q And what is the source of the water you propose to inject?

A. It would be all produced San Andres water.Q. So it would all be compatible?

A. Yes, it will be compatible.

Q. Is it safe to say, then, you're simply reinjecting water into the formation from which it was produced?

That is correct.

A.

Q.

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Is the injection system to be a closed system?

Page \_\_\_\_\_\_ 17

A. Yes, it will be.

Q Would you refer to what have been marked Exhibits Eight, Nine, and Ten, and explain what they are? And what they show?

A. Well, this shows that all of the wells in the area are completed in the P-2 zone and also four wells are completed in the P-3 zone, and that is the Cone Federal 1, 3, and 4, and the State No. 1 Well.

Q. Now, let's look at what has been marked as Exhibit Number Eleven and explain what that is.

A. That is a schematic of the Yates -- oh, wait a minute. This is wells within 1-1/2 mile radius of the Cone Federal No. 8 Well, and that is Cone Federal No. 4, which is in the northeast southeast of 31, 7 South, 32 East, 660 feet from the east line, 1980 feet from south line, Roosevelt County, New Mexico, and the surface casing is set at 1827 feet and cemented with 600 sacks. The production casing was set at 4398 and cemented with 300 sacks and the calculated top of cement based on 100 percent fill-up would be at 2739 feet, and the producing interval is from 4323 to 4333.

The next well is the Cone Federal No. 7, southeast of the northeast, Section 31, 7 South, 32 East, 1980 feet from north line, 660 feet from east oine, Roosevelt County, New Mexico. Surface casing was set at 1835 feet

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and cemented with 450 sacks. Producing casing was set at 4400 feet and cemented with 300 sacks, and the calculated top of cement there is at 2741 feet. Producing interval is from 4251 to 4278.

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SALLY WALTON BOYD CERTIFIED SHORTHAND REPORTER 3020 Plans Banca (506) 471-5462 Santa Fe, New Mexico 37501 Then this dry hole of Yates that's been plugged and abandoned, Yates No. 1-E Tomtom, is in the northwest northeast Section 6, 8 South, 32 East, 660 feet from the north line and 1980 feet from the east line, Chaves County, New Mexico, and it was P&A'd 9-26-77, and surface casing was set at 1725 feet with 760 sacks; producing casing was set at 4400 feet with 420 sacks, and the cement top was recorded at 2400 feet, and the producing interval shows 0, P & A'd.

Q. Now will you refer to Exhibit Number Twelve and summarize this for the Examiner.

A. All right, well, this is a schematic of the Yates Well and how they went in and plugged it. They run a cast iron bridge plug at 4080 and put 2 bailers of cement on top. They set a 32-sack plug at 2881 to 2780 and top of a 4-1/2 was at 2875; they pulled that much 4-1/2 inch casing from the well. Then they filled the bored area here with heavy drilling mud and they set a 35-sack cement plug from 1762 to 1680, and they had to re-cement and set a 50-sack cement plug at 1762 feet. And it has 8-5/8ths inch 24-pound <sup>sur</sup>face casing and a 12-1/4 inch hole set at 1725 feet,

Page \_\_\_\_\_\_ 19\_\_\_

cemented with 760 sacks, and cement was circulated. And then at the surface they have an 8-sack cement plug on top of the surface casing and a dry hole marker inserted in the top of the well.

Q. Refer to what has been marked as Exhibit Thirteen and summarize this for the Examiner.

A. This shows the leases held by Sundance Oil
 Company in the Tomahawk Field.

Q. Does it also show other wells in the area?A. Yes, it does.

Q Are there any wells within 2-1/2 miles of the subject disposal well which are not San Andres completions?

A. Yes, the Holly Energy-Union Federal No. 1
 is completed in the Pennsylvanian formation.

Are there any other wells?

A. No.

Q.

Q. And the yellow line on this merely shows Sundance's --

A. Outlines the lease, right.
 Q. Please refer to Exhibit Fourteen and explain that to the Examiner.

A. This is a plat of the proposed injection system. If you look up here at the Langlie Federal, they plan on returning water from the Langlie Federal lease down

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to the Chambers Federal by gravity and heater-treater pressure.

From there they will pump the water from the Chambers lease and the Langlie lease down to the Cone Federal lease right straight south there.

Then the water from the State lease on the east there will be returned by gravity and heater pressure back to the Cone Federal, and all the produced water will be pumped from the Cone Federal down to the proposed injection well where they will install a Gardner-Denvér TA-3 Triplex pump, and this system will be closed.

Q Will you now refer to Exhibit Fifteen and Sixteen, and identify what they are?

A. This is just the United States Department of Interior Geological Form 9331, and they've requested to convert the well to salt water disposal.

And the second one is the U.S. Form 2920-1 and this is temporary use of application and permit.

Q Mr. Joy, in your opinion what effect will the injection of this water have on the reservoir?

A. If application is denied the wells will be prematurely shut in, causing a loss of recoverable oil.

Presently two high water-producing wells, the Langlie No. 1 and the Chambers Federal No. 1, are shutin. Respective water production is 160 and 340 barrels per



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day. It costs .43 cents per barrel to truck water from these wells. This high cost has raised economic limits to around 12 barrels of oil per day per well.

The above two wells were averaging 11 and 14 barrels of oil per day when they were shut-in.

Injecting water in the Cone No. 8 Well will increase oil recovery from this reservoir. Present data indicates reservoir has a solution gas drive mechanism. By maintaining a higher reservoir pressure the gas will not break out of solution as easily leaving oil behind. Injected water will follow path of least resistance; consequently, most of the water injected will move northward as the reservoir pressure is being decreased by reservoir withdrawals in this area.

Also additional oil recovery will result as injected water will sweep unrecovered oil into the northern producing wells.

Q. Okay, now Mr. Joy, if we just assume for the moment that the water injected will migrate radially away from the wells, how long would it take, in your opinion for the injected water to affect any offsetting lease?

A. Well, according to Mr. Scott's structure map, the Cone No. 8 Well is located on the periphery of the reservoir, and based on this interpretation it is doubtful injected water would move out radially. However, if radial

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movement occurs, it would take approximately eight years for water to reach a well located 660 from the north line and from the west line of Section 5, Township 8 South, Range 32 East. Above calculations were based on injection rate of 600 barrels of oil per day, 35 feet of pay, and 4 percent porosity.

22

Q Mr. Joy, in your opinion, will granting this application prevent waste?

А.	By granting the
Q	Yes.
Α.	No, it will not waste.
Q.	Wait a minute.

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A. I didn't hear it.

Q. In your opinion, will granting the application prevent waste?

A. Let's see.

Q By granting this application, Mr. Joy, would hydrocarbons be recovered that would otherwise be left in the ground?

A. Yes, they would be by granting this.
Q. And would it therefore prevent waste?
A. Correct.

Q Would granting the application protect the correlative rights of Sundance?

Yes, it would.

1007 1

A.

Q. Were Exhibits Three through Sixteen either prepared by you or have you reviewed them and can you testify as to their accuracy?

A. I reviewed them.

MR. CARR: At this time, Mr. Examiner, I would offer into evidence Exhibits Three through Sixteen. MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further on direct.

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CROSS EXAMINATION

BY MR. STAMETS:

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Q. Mr. Joy, have you checked any of the cement tops to see how much actual fill there is? I see you've calculated some tops.

A. I calculated them 100 percent. I think you can, normally you can get a figure at least 60 percent of fill on most of these areas, which --

Q. I notice the Yates here shot off their casing about 325 feet below the top of cement. Seems like that would be a little hard to do.

A. I was looking at that, too. I noticed that. Unless they have -- I don't see how they got their casing loose if they had an excellent cement job up around the pipe there, but I still feel like you got adequate space to

Page \_\_\_\_\_\_24\_\_\_

protect the pay, even if you figured at 60 percent.

I could find no bond logs or any temperature logs run on these wells.

Q Okay. And you have one exhibit that shows the 2100 pounds instantaneous shut-in on the well in question and then you mentioned one well had 2300 pounds. Which well is that?

A. That was the Cone No. -- it's the State No.
l Well. It's directly northeast of the No. 8 there. Of
No. 4, rather.

Q Those are the only two wells that you have this information on?

A. Right, that's the only two wells I have the information on.

Q And since Mr. Scott testified he had lost circulation in the couple of other wells, that obviously wouldn't carry out throughout the entire formation.

Do you find that these pressures pretty well jibe with those that you've seen in other San Andres wells in this general area?

A. They do, because I know my San Andres wells when I was with the oil company =- from past experience I've found that at shallower depths I was happy to get up to around 1300 pounds to inject at around 2500, 2600 feet into the San Andres in Eddy County.

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#### REPORTER'S CERTIFICATE

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SALLY WALTON BOY CERTIFIED SHORTHAND REPORT

ta Blanca (505) 4 Fe, New Mexico I, SALLY WALTON BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, knowledge, and skill, from my notes taken at the time of the hearing.

Sally W. Boyd, C.S.R.

Page

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BEFORE EXAMINER STAMETS OIL CONSERVATION DIVISION

CASE NO.\_\_\_

Submitted by \_\_\_\_

Hearing Date\_

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6503heard by me on 3-26

19.79 ሻ OII Conservation Division Examiner

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

JERRY APODACA

GOVERNOR NICK FRANKLIN SECRETARY

#### April 9, 1979

POST OFFICE BOX 2008 STATE LAND OFFICE DUILDING SANTA FE, NEW MEXICO 07501 15051 027-2434

Mr. William F. Carr Campbell & Black Attorneys at Law Post Office Box 2208 Santa Fe, New Mexico Re: CASE NO. 6503 ORDER NO. R-5977

Applicant:

Sundance Oil Company

Dear Sir:

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

Yours very truly, JOE D. RAMEY Director

#### JDR/fd

Other

Copy of order also sent to:

Hobbs OCC	X
Artesia OCC	X
Aztec OCC	



## Form C-108 Revised 3-1-68

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#### NEW MEXICO OIL CONSERVATION COMMISSION

#### APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR		·	ADDRESS	····		
SUNDANCE OIL COMPAN	Y		Suite 5	10, 1776 Lind	coln St.	, Denver, CO 80203
Cone Federal		8	Tomaha	wk, San Andre	es	Roosevelt
UNIT LETTER	P	LL IS LOCATED	60	South	LINE AND	660 FEET FROM THE
East LINE. SECTION		VNSHIP 7 South				
			AND TUBING DAT	· · · · · · · · · · · · · · · · · · ·		
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMEN	T TOP OF	CEMENT	TOP OETERMINED BY
Wt. 24#	8 5/8"	1817'	390 sx	Surfac	ce	Circulated 10 sx
None			-			
Wt. 10.5#	4 1/2"	4368'	300 sx			Schlumberger Perf. Depth Control Log
· · ·	2 2/01	3960'	HOWCO R-4,	PTH OF TUBING PACKE	R	
4.70#, J-55	2 3/8"	3900	TOP OF FORM	TION	80110	OM OF FORMATION
San Andres			3391'		436	58 <b>'</b>
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Champlin Petroleum	Co., 300 Wi	lco Bldg., M	idland, TX	79701		
<u>Yates_Petroleum_Cor</u>	poration, 2	207 4th St.,	Artesia, New	Mexico 88	210	• ,
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THE APPLICATION (SEE AULE 701-B)	Yes		Yes		1	es
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(Signature)	Richard O.	<u>Dimit</u>	(Tule)	نې <u>د مېرونې د مېرونې</u>		(Date)
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# NEW MEXICO OF CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C+102 Supersedes C+128 Effective 1-1-65

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erator	SUNDANCE OIL	Lease Cone Federal		Well No. 8	
it Letter	Section	Township	Range	County	
P	31	7 SOUTH	32 EAST	ROOSEVELT	
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				Sundance	<u>Oil Company</u>
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2000 # Gauge Core Fed. # 8 SWD Well TO PUME > 2" X 2000 # Gate Value Slips & Packoff for 2 3/8 Tubing 2 \* X 2000 # Ball Value 2" x 2000 # Bull Plug Larkin 2 3/2 × 4 1/2 Well head ATTA Larkin 41/2" x 8 48" Cosing Head 2" x 2000 # Boll Value 2" x 2000 # Bull Plug 41/2 Casing INSLips 8 5/8 × 24 # Casing 2 7/2" Tubing Lived W/ bonded Cement Circ. 390 SKS Total PVC plastic liners w/ Rubber Seals 8 78" set at 1807 G.L. inserted in tubing collars 20,000 41/2" Casing Cemented w/ 300 SKS. ANNULUS displaced w/ KCl Water 50/50 Pozmiz " ul 8 # salt, treated w/ Howco 1gal. HAI-50, 1/4 # Floseal, \$ 270 Gel plus 5 gal AN-HID inhibitor HOWCO R-4 PKR @ 4107' 41/3" × 10.50" K-55 (25109 Ferforated 4207 - 4228 W/2 SPF 41/2 Float Collar Q 4326 41/2 Casing Landed @ 4368' 5. States and the

#### CONE FEDERAL #8

Bernard States and Ar

On original completion, perforated 4207' to 4228' with 2 shots per foot. Spotted 6 barrels acid at 4228'. Pulled up and set R-4 packer at 4107'. Acidized with 4500 gallons 20% NE acid using 84 ball sealers. Had good ball action. Average injection rate 2.5 BPM. Average treating pressure 2500#. ISIP 2100#. FSIP 1770# in 13 minutes. Swab tested for five days. Recovered salt water with only a trace of oil of oil.

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Shut-in pending approval to convert to salt water disposal well.

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#### HALLIBURTON DIVISION LABORATORY HALLIBURTON SERVICES MIDLAND DIVISION HOBBS, NEW MEXICO 88240 LABORATORY WATER ANALYSIS

No. W79-174

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Sundance Oil Comrany 2-14-79 Date\_ To. This report is the property of Hallburton 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 Company. Box 115 Roswell, New Mexico ATTN: Mr. Jim Akins Dote Rec. x 2-14-79 Submitted by\_\_\_\_ -Well No. Cone Federal #8 Depth. Formation San Andres Tomahawk Source . Field..... County\_\_\_ 0.047 @ 74<sup>0</sup>F. . Resistivity \_\_\_\_\_ 1.184 Specific Gravity \_\_\_\_\_ \_\_\_\_\_ 6.8 Н ..... 36,500 Calcium (Ca) .\*MPL 6,300 Magnesium (Mg) 171,000 Chlorides (Cl) \_\_\_\_\_ 400 Sulfates (SO<sub>4</sub>) 290 Bicarbonates (HCO<sub>3</sub>) \_\_\_\_\_ Nil. 9 Soluble Iron (Fe) Remarks: \*Milligrams per liter SUINDANCE OIL Respectfully submitted, Analyst: Brewer HALLIBURTON COMPANY CC: NOTICE THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE. Salah Managarah Salah Sana Managara Salah S

Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells:	Cone	Federal	#1
	Cone	Federal	#2
	Cone	Federal	#3
-	Cone	Federal	#4
	Cone	Federal	#5
	Cone	Federal	#6
-	Cone	Federal	#7

Langley Federal #1

Lessor's of Mineral Rights:

e e ser e

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203 Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Chambers Federal #1 Chambers Federal #2 Chambers Federal #3

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510, 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904, 1776 Lincoln Street Denver, C0 80203

Jerry Chambers 1720 Lincoln Center Building Denver, CO 80264

Second Pro-

Lease Status: State

Well Status: Producing

Formation: San Andres, P-2 zone

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Wells: State #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203

#### WELLS WITHIN ONE-HALF MILE OF CONE FEDERAL #8

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Well Name	Surface Casing/Sx Cement	Production Casing/Sx Coment	<u>Cement Top</u>	Producing Interval
Cone Federal # 4 NE SE 31-7S-32E 660' FEL, 1980' FSL Roosevelt County, N. M.	1827°/600 sx	4398*/300 sx	* 2739*	4323' to 4333'
Cone Federal # 7 SE NE 31-7S-32E 1980" FNL, 660' FEL Roosevelt County, N. M.	1835 <b>°/</b> 450 sx	4400°/300 sx	* 2741*	4251' to 4278'
Yates #1 E. Tom Tom NW NE 6-88-32E 660' FNL, 1980' FEL			на 1997 г. 1997 г. 1997 г. 1997 г. 1997 г.	
Chaves County, N. M. (P&A 9/26/77)	1725 <b>'/</b> 760 sx	4400°/420 sx	2400*	P & A
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* Calculated	. · · · ·			
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#1 E. Tom Tom YATES -660' FNL E 1980' FEL  $\overline{\mathbb{N}}$ SEC. 6, TES, R 32E CHAVES Co., NEW MERICO Dry hole marker PEA - SEPT. 26, 1977  $\langle \cdot, \cdot \rangle$  $// \langle \rangle$ 8 sr Cmt in top of Ste. (sg. -8%, 24# Stc. Cag. in 12.4" Hole Set @ 1725' Cmtd w/760 Sr. Two Cart Plugs - - First Didnot Hold .. (Cement Circulated to Ste.) 1) 35 Sy (mt @ 1762-1680 2) 50 5+ (m+ @ 1762' \$ 1725' ₹. WELL PEA - Sept 26, 1977 7 1/3 "Hale HEAVY DALS MUD Top of (mt Reported @ 2400' 4/2" (sg Cut off @ 2875' 35 Sx Cint Plug @ 2881-2782 Xiv 5 (Top of Cut off 4/2 (5).) CIBP @ 4080' w/2 Bailers-of Cmt on top. 4'2" 10,6" (sg. Set@ 4400' Contol w/ 420 Sx. والمحادث والمحارث والمتحارث والمحالية

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17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent, data including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations at measured and true vertical depths for all markers and zones pertinent to this work.)*         Intend to convert well to a water disposal well.         Subsurface Safety Valve: Manu, and Type         18. I hereby contify that the foregoinglis true and correct         Signed         Signed         Michard O., Dimit         (This space for Federal or State office use)         Title         PPROVED BY			÷		76		
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Title I Sec 39/	Wal of the Minera	E APPLICATION AND P 1 Leasing Act of 1920, 30 94-579, October 21, 1976	U.S.C. 185, as amend-		
		PPLICATION		INSTRUCTI	ONS ON REVERS
	I, middle initial		Address (incl Suite 510,	ude zip code) 1776 Lincoln	Street
	OIL COMPANY	······································	Denver, CO	80203	
TOWNSHIP	RANGE	public lands for which y	ou are applying	SUBDIVISION	
7 South	32 East		FSL and 660' F		
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Meridian		State New Mexico	County Roosevel	t	Acres (number)
3. Proposed	date(s) of use:			February, 19	89
Are you 2	L years of age o			zen of the United SI	tates or have you
4a. [XX] Yes [	No No		b. your intention		
			ssociation [XX] Corp tate Government		
d. Are the st	atements require	ed by Instruction Numbe	r 2 attached? XX Y	'es 🗌 No 🗌 N	lot applicable
5. Are you m	aking this appli	cation for your own use	and benefit? 🕅 Y	'es 🗌 No (1/ ''n	10,'' explain)
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Permission is hereby granted to				
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o use the following-described lands:				
TOWNSHIP RANGE SECTION		SUBDIVISIO	8	
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eridian State		County	Acres (number)	
or the purpose of	~ ~ ~	I		
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		and sub	ject to the following conditions:	
. This permit is issued for the period spec t is revocable at the discretion of the author f the Bureau of Land Management, at any time his permit is subject to valid adverse claim	ized officer upon notice.	Interior, other Federal ager	ives of the Department of the ncies, and game wardens shall at o enter the premises on official	
r hereafter acquired.		7. Permittee shall not en public use.	close roads or trails commonly in	· .
<ol> <li>Permittee shall pay annually, in advance, horized officer the sum of</li> </ol>	<i>(</i> .	its property resulting from th	•	
ollars as rental or such other sum as may be r ental adjustment is made.	equired if a	change immediately.	the authorized officer of address	ter .
3. Permittee shall observe all Federal, State aws and regulations applicable to the premises ion or maintenance of signs or advertising displa he regulations for the protection of game bird	and to erec- ys including	<ol> <li>10. This permit is subject to all applicable provisions of the regulations (43 CFR 2920) which are made a part hereof.</li> <li>11. Permittee agrees to have the serial number of this permit</li> </ol>		
mimals, and shall keep the premises in a neat, anitary condition.		maintained under the author	h advertising display erected or ity of such permit. t any timber on the lands without	
4. Use or occupancy of land under this permi		prior permission from the au	thorized officer.	
nence within months from date hereof a exercised at least days each year.	nd shall be	Order No. 11246 of Septem	t to the provisions of Executive ber 24, 1965, as amended, which rtunity clauses. A copy of this the signing officer.	
5. Permittee shall take all reasonable precaution and suppress forest, brush, and grass fire and ution of waters on or in the vicinity of the lands.	ns to prevent prevent pol-	14. This permit may not be	assigned without prior approval of the Bureau of Land Management.	1.8
5. Special Conditions:			а, •	<u>à</u>
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Permit issued for period		- 2		
From		(Authorized C	Mficer)	
То	:	·		
		(Title)	(Date)	<u>.</u>
	INSTR	UCTIONS		ن د ا

2. An application by a partnership or association must be accompanied by a statement by each member that he is a citizen of the United States or has filed a declaration to become a citizen. An application by a corporation must be accompanied by a statement showing that the corporation is authorized to hold land in the State in which the land is located and that the person making the application is autho-rized to act for the corporation.

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3. If applicant is other than a Federal, State, or local gov-ernmental agency, this application must be accompanied by a

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4. If this application is for permission to erect an adver-tising display or sign, the applicant must: (a) attach an accurate and fully descriptive diagram, sketch, or photo-greph (at least  $3^{u} \times 5^{u}$ ) of the sign or display to be erected showing the dimensions, type of construction, estimated cost, the advertising material to be included thereon, the plan of illumination, if any, and the manner of attachment to the land; and, (b) a photograph (at least  $3^{u} \times 5^{u}$ ) showing the site on which the sign or display is to be erected.

GPO 841-243

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Dec. 1973		Budg	et Burez	u No. 42-R	1424
UNITED STATES	5. LEASE	<u>à 6 8 1</u>	č.	ō÷ /	
DEPARTMENT OF THE INTERIOR	<u>NM-1501</u>	9 3786	2	337 8	
GEOLOGICAL SURVEY	6. IF INDI	AN, ALLOTTEE	ORT		
			<u></u>	3. 16 2	
SUNDRY NOTICES AND REPORTS ON WELLS		GREEMENT N	AME		
(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)	O FADIA	DR LEASE NAM		852	
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1. oil 🔲 gas 🔲 other Salt Water Disposal	9. WELL N	10		32.5	<u> </u>
2. NAME OF OPERATOR	8	10. 4 E M - 50	E.	5.55 5.15	
SUNDANCE OIL COMPANY		OR WILDCAT N			
3. ADDRESS OF OPERATOR	Tomahaw	k, San An	dres	w a n	
Suite 510, 1776 Lincoln St., Denver, CO 80203	11. SEC., T	., R., M., OR E	BLK. A	ND SURVE	YO
4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17	AREA	3 3 8 9	3	50 N	
below.) AT SURFACE: 660' FSL, 660' FEL Unit P		<u>31, T.7</u> S		<u>.32E.</u>	
AT SURFACE: 660' FSL, 660' FEL UNIT P AT TOP PROD. INTERVAL:		Y OR PARISH		STATE	
AT TOTAL DEPTH: Same	Rooseve			Mexico	
16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE,	14. AFI NU		<u>ಕೆ.</u> ನ್	ig ver	
REPORT, OR OTHER DATA	15 FLEVA	TIONS (SHOW			w
	4469' G			3303	***
REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF:	L_11020		<u> </u>	<u>.</u>	
TEST WATER SHUT-OFF		o dot o pututo pututo pututo	······································	122	
FRACTURE TREAT		3101 2101 2101	bluer	t copie	
	(NOTE: Rej	port results of m		ompletion o	r zo
PULL OR ALTER CASING	cha	inge on Form 9- 아이 5 아이 5	330.)		
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(other) CONVERT TO SALT WATER DISPOSAL	5	유 강물 문	S		
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		n 2920-1 e 1977)	DEPART	UNITED STATES				M APPROVED	
	(Jun	e 19//)	BUREAU	OF LAND MANA	GEMENT	_		NO. 42-R0996	
	Title	e 1, Sec. 28	2Vo) of the Mine	ISE APPLICATIO ral Leasing Act of L. 94-579, Octobe	[ 1920. 30 U.S.C	. 185. as amend-	Serial Number		
	ed;S	secs, 302(b	)and 504(a) of P.	APPLICATION	:1 21, 1970, 43 0	.5.0.1752,1704.	INSTRUC	TIONS ON REVER	SE
	1.	Name (/ir:	t, middle initi	al, and last)		Address (incl			
	S	UNDANCE	OIL COMPAN	Y	ц.,	Denver, CO	1776 Lincolr 80203	1 Street	
	2.	Give lega	l description o	f public lands fo	r which you ar	e applying			
	T	OWNSHIP	RANGE	SECTION			SUBDIVISION	······································	
	7	South	32 East	31	660' FSL	and 660' F	EL, Unit P		
			и						
								•	
			•						
	Merio	fian		State		County		Acres (number	)
				New Mexico		Roosevel			
	3.	Proposed	date(s) of use	From Febru	iary, 1979	to	February, 1	1989	
		Are you 2 XX Yes	1 years of age	or over?	Ъ.		en of the United	States or have yo	oudeclar
	1	$\overline{VV}$ res				your intention			
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	UNITED STATES MENT OF THE INTERIOR OF LAND MANAGEMENT			APPROVED D. 42-R0996
TEMPORARY USE APPLICATION AND PERMIT Citle I, Sec. 28(2)(e) of the Mineral Leasing Act of 1920, 30 U.S.C. 185, as amend-			Serial Number	······································
Title I, Sec. 28(2)(e) of the Miner ed; Secs. 302(b) and 504(a) of P.	al Leasing Act of 1920, 50 0.5.C. 1 L. 94-579, October 21, 1976, 43 U.S.(	C. 1732, 1764.	INSTRUCTO	ONS ON REVERSE
	APPLICATION			
Name (first, middle initio	S	Suite 510,	<i>ude zip code)</i> 1776 Lincoln (	Street
SUNDANCE OIL COMPAN		lenver, CO	80203	
	public lands for which you are a	applying		
TOWNSHIP RANGE	SECTION		SUBDIVISION	· · · · · · · · · · · · · · · · · · ·
7 South 32 East	31 660'FSL a	ind 660° F	EL, UNIT P	
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				5
	· · · · · · · · · · · · · · · · · · ·			
Meridian	State New Mexico	County Roosevel	+	Acres (number)
B. Proposed date(s) of use:		· · · · ·		J
		to	February, 19	
Are you 21 years of age         XX Yes         No	16	re you a citi our intention		ates or have you declared
As applicant, are you a c. or an agency of Fe			oration; [] Individ Political subdivis	
d Are the statements so-	red by Instruction Number 2 attac		es No N	ot applicable
5. Are you making this app	lication for your own use and ber	nefit? 🕅 🏾 🗛	es [] No (1f ''n	o,'' explain)
1.4				
* d	14 <sup>10</sup>			
	с. С			
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poses, identi y users an	ved, occupied, or used? XX Ye d occupants)			
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ermission	is	hereby	granted	to
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of the state of th

to use the following-described lands:

TOWNSHIP	RANGE	SECTION	1 101 24	 SUBDIVISION	4

PERMIT

Meridian	State	County	Acres (number)
-			<u>.</u>

for the purpose of

and subject to the following conditions:

122

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Sector Action

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1. This permit is issued for the period specified below. It is revocable at the discretion of the authorized officer of the Bureau of Land Management, at any time upon notice. This permit is subject to valid adverse claims heretofore or hereafter acquired.

2. Permittee shall pay annually, in advance, to the au-

thorized officer the surf of dollars as rental or such other sum as may be required if a rental adjustment is made.

3. Permittee shall observe all Federal, State, and local laws and regulations applicable to the premises and to erection or maintenance of signs or advertising displays including the regulations for the protection of game birds and game animals, and shall keep the premises in a neat, orderly, and sanitary condition.

4. Use or occupancy of land under this permit shall commence within months from date hereof and shall be exercised at least days each year.

5. Permittee shall take all reasonable precautions to prevent and suppress forest, brush, and grass fire and prevent pollution of waters on or in the vicinity of the lands.

15. Special Conditions:

6. Authorized representatives of the Department of the Interior, other Federal agencies, and game wardens shall at all times have the right to enter the premises on official business.

7. Permittee shall not enclose roads or trails commonly in public use.

8. Permittee shall pay the United States for any damage to its property resulting from this use.

9. Permittee shall notify the authorized officer of address change immediately.

10. This permit is subject to all applicable provisions of the regulations (43 CFR 2920) which are made a part hereof.

11. Permittee agrees to have the serial number of this permit marked or painted on each advertising display erected or maintained under the authority of such permit.

12. Permittee shall not cut any timber on the lands without prior permission from the authorized officer.

13. This permit is subject to the provisions of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the Equal Opportunity clauses. A copy of this order may be obtained from the signing officer.

14. This permit may not be assigned without prior approval of the authorized officer of the Bureau of Land Management.

nonreturnable filing fee of \$10 made payable to the Bureau of Land Management.

4. If this application is for permission to erect an advertising display or sign, the applicant must: (a) attach an accurate and fully descriptive diagram, sketch, or photograph (at least  $3^{\prime\prime} \times 5^{\prime\prime}$ ) of the sign or display to be erected showing the dimensions, type of construction, estimated cost, the advertising material to be included thereon, the plan of illumination, if any, and the manner of attachment to the land; and, (b) a photograph (at least  $3^{\prime\prime} \times 5^{\prime\prime}$ ) showing the site on which the sign or display is to be erected.

Permit issued for period		
From	(Authorized Officer)	
То		<b>e</b> .
	(Title)	(Date)

#### INSTRUCTIONS

1. Submit, in *duplicate*, to any local office of the Bureau of Land Management having jurisdiction of the lands.

2. An application by a partnership or association must be accompanied by a statement by each member that he is a citizen of the United States or has filed a declaration to become a citizen. An application by a corporation must be accompanied by a statement showing that the corporation is authorized to hold land in the State in which the land is located and that the person making the application is authorized to act for the corporation.

3. If applicant is other than a Federal, State, or local governmental agency, this application must be accompanied by a



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT STATE OFFICE 7 AM 8:40 P. O. Box 1449 Santa Fe, New Mexico 87501

32.5

NM 0558400 Qualifications File

IN REPLY REFER TO

943b-4

LIM

STATE SCE March 27, 1975

Sundance Oil Company 1430 Denver Club Bldg. Denver, Colorado 80202

Gentlemen:

Your corporate qualifications have been removed from the case record NM 040080 and are now of record in our General Qualifications File under serial number NM 0558400. You must refer to this new number on all your future oil and gas filings.

If your statements need up-dating or if you have any questions, please let us know.







Save Energy and You Serve America!

Form C-108 Revised 3-1-68

NEW MEXICO OIL CONSERVATION COMMISSION

APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR		- <u></u>	ADDRESS		·····		
SUNDANCE OIL COMPAN	Υ	WELL NO.	Suite 5	Suite 510, 1776 Lincoln St., Denver, CO 80203			
Cone Federal		8		wk, San Andr	es	Roosevelt	
UNIT LETTER	<u>Р</u> , we	LL IS LOCATED 6	50 FEET FR	South South	LINE AN	660 FEET FROM THE	
East LINE, SECTION	31 тож	NSHLP 7 South				· · · · · · · · · · · · · · · · · · ·	
NAME OF STRING	SIZE	SETTING DEPTH	AND TUBING DAT		CEMENT	TOP DETERMINED BY	
SURFACE CASING Wt. 24#	8 5/8"	1817'	390 sx	Surfa	се	Circulated 10 sx	
None							
Wt. 10.5#	4 1/2"	4368'	300 SX	3900 I	ER	Schlumberger Perf. Depth Control Log	
4.70#, J-55	2 3/8"	3960'	Howco R-4	, 4107'		OM OF FORMATION	
San Andres		£	3391			68'	
IS INJECTION THROUGH TUBING, CASIN	-		OR OPEN HOLE? PR	OPOSED INTERVAL(S)			
TUDING		4207-42	28 42	207-4228	HAS ZONE TION	WELL EVER BEEN PERFORATED IN AN OTHER THAN THE PROPOSED INJEC- ZONE?	
NO LIST ALL SUCH PERFORATED INTERVA	Oil Wel	MENT USED TO SEAL O	FF OR SQUEEZE EAC	н	L	No	
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA AND MONY impto]	V 2501	DEPTH OF BOTTOM OF OIL OR GAS ZONE IN T	NEXT HIGHER This Area	DEPTH OIL OR Anny	OF TOP OF NE GAS ZONE IN	EXT LOWER THIS AREA LV 10 0001 (Micc.)	
ANTICIPATED DAILY MINIMUM (18815.) 600 200			ED TYPE SYSTEM	AUDI IS INJECTION TO BE PRESSURE?	DA TILLA LE	THIS AREA 1 y 10,000' (Miss.) R APPROX. PRESSURE (PS10	
ANSWER YES OR NO WHETHER THE FO	1500	Closed	TO BE DISPOSED OF	Gravity		VACUUM WATER ANALYSES ATTACHED?	
ANSWER YES OR NO WHETHER THE FO ERALIZED TO SUCH A DEGREE AS TO E STOCK, IRRIGATION, OR OTHER GENER	BE UNFIT FOR DOMEST	Yes Sa		SAL ZONE	1	Yes	
NAME AND ADDRESS OF SURFACE OWN	TER (OR LESSEE, IF S	TATE OR FEDERAL LAN	») n 88122				
LIST NAMES AND ADDRESSES OF ALL						· · · · · · · · · · · · · · · · · · ·	
<u>Champlin Petroleum</u>	Co., 300 Wi	lco Bldg., M	idland, TX	79701	· · · · · · · · · · · · · · · · · · ·		
Yates Petroleum Com		07 4th St.,	Artesia, Neu	Mexico 88	3210		
	• <u>1998</u>					·	
 		Exhibit Case 6	- 3 503				
HAVE COPIES OF THIS APPLICATION B	EEN I SURFACE OWN				EIV		
SENT TO EACH OF THE FOLLOWING?	I Yes	<b>ER</b>	LOF THIS WEL		AR 0 5 1	979	
ARE THE FOLLOWING ITEMS ATTACHE THIS APPLICATION (SEE RULE 701-B)	D TO PLAT OF AREA	· · · · · · · · · · · · · · · · · · ·	ELECTRICAL	16 199	DIAG	RAMMATIC SECTICE OF WELL	
Yes d hereby c	Yes	ormation above in	Yes	OIL CON to the best of my	SERVATIO	BE DIVISION	
finha		<b>/</b>	esident, Pr		1	/26/79	
(Signature)	Richard 0:	<u></u>	Tille)		<u> </u>	(Date)	
NOTE: Should waivers from the Mexico Qil Conservation at the end of the 15-day w the application will be se	surface owner and Commission will ho vaiting period no pro	ld the application fo piest has been receiv	r a period of 15 day yed by the Santa Fo	ys from the date of re e office, the applicat	ceipt by the	company this application, the New Commission's Santa Fe office. I rocessed. If a protest is received	

## NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102 Supersedes C-128 Effective 1-1-65

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All distances must be from the outer bounderies of the Section.

		All distances Bust be from	وكالمساد وسادهم والياد بشاهه مراجعتها وعتي المتهولين وا		
Operator			910 Court Fre		Well No.
Vnit Letter	UNDANCE OIL C	Township	CONE FEI	County	8
P	31	7 SOUTH	32 EAST	ROOSEVEL	r
Actual Footuge Los					······································
660	leet trom the SC		القياد القبير الشارية المتواذلة ليهر التقاصي المرجب المتواد والمحمو المحمو	trom the EAST	line
Ground Level Elev.	Producing Fo			1	Dedicated Acreage:
4469.4	San And	والمتكرار المسير فيستكم والمتكر والمترك فيتركم ومتابعا والمتكر مكرته والرائ	Tomahawk	L	40 Acres
		ated to the subject well	• •	1	
	han one lease in ind royalty).	s dedicated to the well, o	utline each and ide	ntily the ownership the	ereof (both as to working
		different ownership is ded unitization, force-pooling.		have the interests of	all owners been consoli-
· · · · · · · · · · · · · · · · · · ·				•	- 
Yes	No If	answer is "yes," type of c	onsolidation		
		owners and tract descrip	tions which have a	ctually been consolidat	ted. (Use reverse side of
	if necessary.)				
		ned to the well until all in			
	oling, or otherwise	e) or until a non-standard u	nit, eliminating suc	h interests, has been	approved by the Commis-
sion.			·····		
Г <u> </u>			and the second sec		CERTIFICATION
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	1			KILL	a VI puni
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	1			Position	<u>O. Dimit</u>
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	· 1		1 Î		e Oil Company
	in the second		1	Date	e orr company
	L		1	Novemb	er 9, 1978
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		MAR 0 5 1979	1	I hernby	certify that the well location
		MARU		shown on i	his plat was plotted from field
	INEED O	CONSERVATION DIVISION SANTA FE			ictual surveys mode by me or
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#### CONE FEDERAL #8

On original completion, perforated 4207' to 4228' with 2 shots per foot. Spotted 6 barrels acid at 4228'. Pulled up and set R-4 packer at 4107'. Acidized with 4500 gallons 20% NE acid using 84 ball sealers. Had good ball action. Average injection rate 2.5 BPM. Average treating pressure 2500#. ISIP 2100#. FSIP 1770# in 13 minutes. Swab tested for five days. Recovered salt water with only a trace of oil.

Shut-in pending approval to convert to salt water disposal well.

1342-A	N .
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#### HALLIBURTON DIVISION LABORATORY HALLIBURTON SERVICES MIDLAND DIVISION HOBBS, NEW MEXICO 88240 LABORATORY WATER ANALYSIS

No. W79-174

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Sundance Oil Comrany 2-14-79 To\_ Date\_ 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 Box 115 Roswell, New Mexico course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company. ATTN: Mr. Jim Akins Date Rec. <u>x 2-14-79</u> Submitted by\_\_\_\_ Well No. Cone Federal #8 \_\_\_\_ Depth\_\_ Formation San Andres Tomahawk Field\_ \_ Source\_ County\_ 0.047 @ 74°F. Resistivity 1.184 Specific Gravity ..... r 6.8 pH ..... \_ ~ 36,500 Calcium (Ca) \_\_\_\_\*MPL 6,300 Magnesium (Mg) \_\_\_\_\_ 171,000 Chlorides (Cl) 400 Sulfates (SO<sub>4</sub>) 290 Bicarbonates (HCO<sub>3</sub>) \_\_\_\_\_ Nil Soluble Iron (Fe) 5 \*Milligrams per liter **Remarks**: DANCE OIL CO. Respectfully submitted, Analyst: Brewer HALLIBURTON COMPANY CC: By. NOTICE THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.
) <u>2000 # Gauge</u> Cone Fed. # 8 SWD Well To PUMP -> 2" × 2000 # Gate Value Slips & Pockoff for 2 3/1 Tubing 2 × 2000 Ball Value 2" x 2000 # Bull Plug De Larkin 2 3/2 × 4 1/2 Well head Larkin 41/2" x 8 46" Coring Head 2" x 2000 # Ball Value 21712 ) 2" x 2000 # Bull Plug 41/2 Casing INSLips 8 5/8 × 24 # Casing 2 7/2" Tubing Lived w/ bonded Cement Circ. 390 SKS Total PVC plastic liners w/ Rubber Seals 8 1/8" set at 1807' G.L. inserted in tubing collars 41/2" Casing Cemented w/ 300 SKS. X 9,000 ANNULUS displaced w/ KCI Water 50/50 Pozmiz " U/8# Salt, treated w/ Howco 1gal. HAI-50, 1/4 # Floseal, + 270 Gel plus 5 gal. AN-HID INhibitor 3 HOWCO R-4 PKR @ 4107 41/2" × 10.50 \* K-55 (25/109 Perforated 4207 - 4228 w/2 SPF 41/2 Float Collar @ 4326' 41/2 Casing Landed @ 4368'



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Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wélls: Cone Federal #1 Cone Federal #2 Cone Federal #3 Cone Federal #4 Cone Federal #5 Cone Federal #6 Cone Federal #7

Langley Federal #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203 Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Chambers Federal #1 Chambers Federal #2 Chambers Federal #3

Lessor's of Mineral Rights:

Sundance Oil Company, Suite 510, 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904, 1776 Lincoln Street Denver, CO 80203

Jerry Chambers 1720 Lincoln Center Building Denver, CO 80264 Lease Status: State

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: State #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203

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		:	WELLS WITHIN ONE-HALF MILE	OF CONE FEDERAL #8	
	Well Name	Surface	ace Casing/Sx Cement	Production Casing/Sx Cement	Producing Interval
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	Cone Federal #7 SE NE 31-7S-32E 1980' FNL, 660' FEL Roosevelt County, New Mexico		1835'/450 sx	4400 <sup>°</sup> /300 sx	4251' to 4278'
	Yates #1 E. Tom Tom NW NE 6-8S-32E 660' FNL, 1980' FEL Chaves County, New Mexico (P&A 9/26/77)		1725'/760 sx	4400'/420 sx	Р & А А
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#1 E. Tom Tom YATES -660' FNL E 1980' FEL SEC. 6, T85, R 32E CHAVES CO., NEW MEXICO Dry hole marker P&A - SEPT. 26, 1977 ////\\ 8 sucht in top of Ste. Cog. -858", 24# Ste. Cag. in 124" Hole Set @ 1725' Cmtd w/760 Sr. Two Cant Plugs -- First Didnot Hold .. (cement Circulated to Ste.) 1) 35 Sy (mt @ 1762-1680' 2) So Sy (mt @ 1762' 1725' WELL PEA - Sept 26, 1977 7% "Hole HEAVY DALS MUD Top of (mt Reported @ 2400' 412" (sg Cut off @ 2875' 35 Sx Cont Plug @ 2881-2782 (Top of Cut off 4/2 (Sg.) XV  $\overline{\mathcal{T}}$ CIBP @ 4080' w/2 Bailers-of Cmt on top. 41/2" 10,6" (sg. Set@ 4400' Critical w/ 420 Sx.

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Dockets Nos. 14-79 and 15-79 are tentatively set for hearing on April 11 and 18, 1979. Applications for hearing must be filed at least 22 days in advance of hearing date.

#### DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 28, 1979

#### 9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The fo lowing cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 6500: Application of Gulf Oil Corporation for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the Division waived existing well-spacing requirements and found that the drilling of additional wells was necessary to effectively and efficiently drain those portions of the provation units in the Central Drinkard Unit located in Sections 28, 29, 32 and 33, Township 21 South, Range 37 East, Lea County, New Mexico, which could not be so drained by the existing wells.

CASE 6501: Application of Delta Drilling Company for directional drilling, Lea County, New Nexico. Applicant, in the above-styled cause, seeks authority to re-enter the Williamson State Unit Well No. J, the surface location of which is 660 feet from the North and West lines of Section 30, Township 16 South, Range 33 East, Lea County, New Mexico, and directionally drill said well in such a manner

lines of said Section 30, the N/2 of the section to be dedicated to the well.

CASE 6502:

Application of Stevens Oil Company for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the SW/4 SW/4 of Section 30, Township 8 South, Range 29 East, Chaves County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

as to bottom it in the Morrow formation within 100 feet of a point 1980 feet from the North and West

Application of Sundance Oil Company for salt water disposal, Roosevelt County, New Mexico.
 Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the
 San Andres formation through the perforated interval from 4207 feet to 4228 feet in its Cone Federal
 Well No. 8 located in Unit P of Section 31, Township 7 South, Range 32 East, Tomahawk-San Andres
 Pool, Roosevelt County, New Mexico.

CASE 6504: Application of Phoenix Resources Company for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Buckhorn Canyon Unit Area No. 2, comprising 23,009 acres, more or less, of Federal and State lands in Township 19 South, Ranges 19 and 20 East, Chaves County, New Mexico.

CASE 6505: Application of Doyle Hartman for vertical pool limit redefinition, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order extending the vertical limits of the Langlie Mattix Pool in Lea County, New Mexico, to include the lowermost 200 feet of the Seven Rivers formation and the concomitant contraction of the vertical limits of the Jalmat Gas Pool underlying the following described lands in Township 23 South, Range 36 East: Section 35: SW/4, S/2 SE/4, and NW/4 SE/4; Section 36: W/2 SW/4; and in Township 24 South, Range 36 East: Section 1: NW/4, S/2 NE/4, and NW/4 NE/4; Section 2: W/2.

<u>CASE 6506</u>: Application of Bedford, Inc. for approval of infill drilling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks a waiver of existing well-spacing requirements and a finding that the drilling of its Ram Well No. 1-A located in Unit G of Section 8, Township 26 North, Range 12 West, WAW-Fruitland Pictured Cliffs Pool, San Juan County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

CASE 6507: Application of Harvey E. Yates Company for an NGPA determination, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir or in the alternative a new onshore production well determination for its Hanlad State Well No. 1 located in Unit K of Section 2, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

CASE 6508: Application of Harvey E. Yates Company for an unorthodox well location and a non-standard proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 62.75-acre non-standard gas proration unit comprising Lots 1 and 2 of Section 19, Township 18 South, Range 29 East, Eddy County, New Mexico, FC be dedicated to its Depco Federal Well No. 1 to be located 330 feet from the North line and 660 feet from the West line of said Section 19.

CASE 6503:

1997 (1997) - San Barrison (19

Page 2 of 3 Examiner Hearing - Wednesday - March 28, 1979

Docket No. 13-79

CASE 6509: Application of Marvey E. Yates Company for pool creation and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order creating a new gas pool in the Yates formation for its Depco Federal Well No. 1 located in Unit D of Section 19, Township 18 South, Range 29 East, Eddy County, New Mexico, and for promulgation of special pool rules, including provision for 80-acre gas well spacing.

CASE 6480: (Continued from February 28, 1979, Examiner Hearing)

Application of Harvey E. Yates Company for an NGPA determination, Lea County, New Nexico. Applicant, in the above-styled cause, seeks a new onshore reservoir or in the alternative a new onshore production well determination for its State 22 Well No. 1 located in Unit P of Section 22, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

CASE 6482: (Continued from February 28, 1979, Examiner Hearing)

Application of Harvey E. Yates Company for an NGPA determination, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir or in the alternative a new onshore production well determination for its Mobil 27 State Well No. 1 located in Unit A of Section 27, Township 18 South, Range 35 East, Queen formation, Lea County, New Mexico.

#### CASE 6072: (Continued from March 14, 1979, Examiner Hearing)

In the matter of Case 6072 being reopened pursuantto the provisions of Order No. R-5643 which order created the Travis-Upper Pennsylvanian Pool, Eddy County, New Mexico, with provisions for 80acre spacing. All interested parties may appear and show cause why the Travis-Upper Pennsylvanian Pool should not be developed on 40-acre spacing units.

#### CASE 6492: (Continued from March 14, 1979, Examiner Hearing)

Application of Yates Petroleum Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the NE/4 NW/4 of Section 13, Township 17 South, Range 25 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

- <u>CASE 6510</u>: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location for the Wolfcamp through Mississippian formations of its Rio Pecos Federal "KO" Well No. 1, to be located 660 feet from the North line and 1300 feet from the East line of Section 28, Township 18 South, Range 27 East, Eddy County, New Mexico, the E/2 of said Section 28 to be dedicated to the well.
- CASE 6511: Application of Yates Petroleum Corporation for a dual completion and downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Tom Brown "CO" Com. Well No. 1 located in Unit C of Section 22, Township 17 South, Range 26 East, Kennedy Farms Field, Eddy County, New Mexico, to produce gas from the Lower Morrow formation through tubing and to commingle and produce the Strawn and Upper Morrow zones in the annulus of said well.

CASE 6512: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Hilliard "BF" Federal Well No. 2, to be located 330 feet from the North line and 2310 feet from the West line of Section 14, Township 21 South, Range 22 East, to test the Wolfcamp through Mississippian formations, Eddy County, New Mexico, the W/2 of said Section 14 to be dedicated to the well.

CASE 6513: Application of Yates Petroleum Corporation for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Morrow production in the wellbore of its Stebbins GQ Fed. Well No. 1 located in Unit B of Section 20, Township 20 South, Range 29 East, East Burton Flats Field, Eddy County, New Nexico.

CASE 6514: Application of Yates Petroleum Corporation for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of North Burton Flats-Atoka and East Burton Flats-Morrow production in the wellbore of its Williamson BC Fed. Well No. 4 located in Unit K of Section 7, Township 20 South, Range 29 East, Eddy County, New Mexico.

Page 3 of 3 Examiner Hearing - Wednesday - March 28, 1979

Docket No. 13-79

CASE 6515: Application of Southland Royalty Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the W/2 of Section 31, Township 31 North, Range 11 West, San Juan County, New Mexico, to be dedicated to its Grenier Well No. 23 drilled at a location 1190 feet from the South and West lines of said Section 31. Also to be considered will be the cost of drilling and completions said upli and the allocation of the cost thereof as well as actual courts. completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6516: Application of Union Oil Company of California for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Maduro Unit Area, comprising 2,560 acres, more or less, of Federal and State lands in Township 19 South, Range 33 East, Lea County, New Mexico.

CASE 6452: (Continued and Readvertised)

Application of Burleson & Kuff for a non-standard gas proration unit and approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the SW/4 of Section 25, Township 24 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico. Applicant further seeks a finding that the recom-pletion of its Harrison Well No. 2 located in Unit N or in the alternative, the drilling of its Harrison Well No. 4 in Unit L, of Section 25 is necessary to effectively and efficiently drain that portion of the previously approved 160-acre proration unit which cannot be drained by the old unit well.



# WOLFSON OIL COMPANY

OIL PRODUCERS S206 REPUBLIC NATIONAL BANK TOWER DALLAS, TEXAS 75201

March 21, 1979

311 C & K PETROLEUM BUILDING MIDLAND, TEXAS

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

and the second states to

SUBJECT: March 28, 1979 Hearing of Sundance Oil Company to inject water in Cone-Federal No. 8 well, Tomahawk Field, Roosevelt County, New Mexico

Gentlemen:

Wolfson Oil Company, the only other operator with producing wells in the Tomahawk Field, urges the Commission to approve the application of Sundance Oil Company to inject salt water in their Cone-Federal No. 8 well.

The injection of water below the oil-water contact in the No. 8 well should assist in the maintenance of bottom-hole pressure and could result in the enhancement of ultimate recovery in the Tomahawk Field.

Wolfson Oil Company plans to similarly dispose of it's water in the future and would assist Sundance in obtaining external water to further aid in the pressure maintenance of the Tomahawk Field.

Yours very truly,

WOLFSON OIL COMPANY man Freedman

ECEIVED WOLFSON OIL COMPANY MAR 2 3 1979 OIL PRODUCERS SECO REPUBLIC NATIONAL BANK TOWER SANTA CC

March 21, 1979

SANTA FE 311 C & K PETROLEUN BUILDING MIDLAND, TEXAS

Case 6503

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

SUBJECT: March 28, 1979 Hearing of Sundance Oil Company to inject water in Cone-Federal No. 8 well, Tomahawk Field, Roosevelt County, New Mexico

### Gentlemen:

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Wolfson Oil Company, the only other operator with producing wells in the Tomahawk Field, urges the Commission to approve the application of Sundance Oil Company to inject salt water in their Cone-Federal No. 8 well.

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Wolfson Oil Company plans to similarly dispose of it's water in the future and would assist Sundance in obtaining external water to further aid in the pressure maintenance of the Tomahawk Field.

Yours very truly,

WOLFSON OIL COMPANY G. Freedman

champlin c

March 8, 1979

R. L. Walker Exploration Superintendent West Texas District

ECEIVED MARI 1970 OIL CONSERVATION DIVISION SANTA FE

Case 6503

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

Subject: Application for Salt Water Disposal Sundance Oil Company No. 8 Cone Federal 660' FS&EL, Sec. 31, T-7-S, R-32-E Roosevelt County, New Mexico

Gentlemen:

By application dated February 26, 1979, Sundance Oil Company has requested permission to dispose of salt water into the San Andres pay in the subject well.

Champlin Petroleum Company owns a 320 acre lease diagonally offsetting (N/2 Section 5, T-8-S, R-32-E, Roosevelt County, New Mexico) the subject well and believes the injection of salt water in the field pay at this location will cause reservoir damage in this area resulting in a decreased incentive to drill the CPC lease and cause a consequent loss and subsurface waste of oil and gas.

For the reason stated above Champlin Petroleum Company wishes to protest the issuance of a permit to dispose of salt water into the San Andres pay zone in the Sundance Oil Company No. 8 Cone Federal well located in Unit P, 660' FS&EL of Section 31, T-7-S, R-32-E, Roosevelt County, New Mexico.

Yours very truly,

R. L. Walder

R. L. Walker

RLW:1d

Contraction and the second second

Champlin Petroleum Company 300 Wilco Building Midland, Texas 79701 915/682-3775





February 28, 1979

Mr. Dan Nutter Oil Conservation Commission Box 2088 State Land Office Building Santa Fe, NM 87501

> RE: Water Injection Application Cone Federal #8 SW SW Section 31, T.7S., R.32E. Roosevelt County, New Mexico

Case 6503

Dear Mr. Nutter:

I wish to thank you for your help and advise regarding the above water injection application. I am enclosing a copy of all the material sent to the District Office which, I am hopeful, they will in turn approve and forward to your office for the scheduling of the hearing.

If I have neglected to include additional information that you will need, I would appreciate you calling me collect so that we can expedite this matter as quickly as possible.

I really do thank you for remembering my father. I am looking forward to meeting you shortly.

Sincerely, ichard Nun

Richard O. Dimit Vice President, Production

ECEIVED MAR 0 2 1979

OIL CONSERVATION DIVISION SANTA FE

> 1776 lincoln street, suite 510 denver, colorado 80203 telephone (303) 861-4694

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Enclosure

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Form C-103 Revised 3-1-68

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East LINE, SECTION	21	WNSHIP 7 South		Inc	LINE AND FEET FROM THE
LASC CINE, SECTION			AND TUBING DATA	NMPM.	······
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEM	ENT TOP DETERMINED BY
Wt. 24#	8 5/8"	1817'	390 sx	Surface	Circulated 10 sx
None					
NG STRING Wt. 10.5#	4 1/2"	4368'	300 SX	3900'	Schlumberger Perf. Depth Control Log
	2 3/8"	3960'		· .	
4.70#, J-55	ATION		Howco R-4, 4	GN .	BOTTOM OF FORMATION
San Andres s injection through tubing, cas	ING, OR ANNULUS?	PERFORATIONS	S OR OPEN HOLET PROPO	SED INTERVAL(S) OF INJ	4368'
Tubing S THIS A NEW WELL DATLLED FOR ISPOSALT	IF ANSWER I	4207-42	28 420	7-4228'	HAS WELL EVER REEN PERFORATED IN ANY
NO	0il We	· ·			HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJEC- TION ZONE? NO
IST ALL SUCH PERFORATED INTERV			OFF OR SQUEEZE EACH		
EPTH OF BOTTOM OF DEEPEST RESH WATER ZONE IN THIS AREA		DEPTH OF BOTTOM OF OIL OR GAS ZONE IN	F NEXT HIGHER THIS AREA	DEPTH OF TO	OP OF NEXT LOWER ZONE IN THIS AREA
Approximate	1y 250'	None	ED TYPE SYSTEM	Approxi	ZONE IN THIS XAEA mately 10,000' (Miss.) AVITY OR APPROX. PRESSURE (PSIO
600 200	1500	Closed		Gravity	Vacuum
NSWER YES OR NO WHETHER THE FOR RALIZED TO SUCH A DEGREE AS TO TOCK, IRRIGATION, OR OTHER GENE	BE UNFIT FOR DOME	RE MIN- WATER	TO BE DISPOSED OF N	ATURAL WATER IN DISPO	- ARE WATER ANALYSES ATTACHED? YES
AME AND ADDRESS OF SURFACE OW	· · · · · · · · · · · · · · · · · · ·	STATE OR FEDERAL LAN	10)	June	
Tom Gainor, P.O. B	OX 206, Ken	na, New Mexic	THIS INJECTION WELL		
Champlin Petroleum	Co., 300 W	ilco Bldg., M	lidland, TX	79701	
Yates Petroleum Co	rporation,	<u>207 4th St.,</u>	Artesia, New	Mexico 88210	)
		CEIVED			
		MAR 0 2 1979		<u>-</u>	
AVE COPIES OF THIS APPLICATION SENT TO EACH OF THE FOLLOWING?		SANTA FE	OF THIS WELL	WITHIN ONE-HALF MILE	
YES RE THE FOLLOWING ITENS ATTACH HIS APPLICATION (SEE RULE 701-E	ED TO PLAT OF AR		LECTAICAL LOG		DIAGRAMMATIC SKETCH OF WELL
Yes	Yes		Yes	······	Yes
I hereby	certify that the in	formation above is	true and complete to	the best of my know	vledge and belief.
Kuharda	1. Alun		resident, Prod	uction	2/26/79
(Signature)		<u>Dimit</u>	(Tiile)		(Date)
Mexico Gil Conservation	Commission will i waiting period no p	hold the application for protest has been received	or a period of 15 days f ved by the Santa Fe of	rom the date of receipt	I not accompany this application, the New by the Commission's Santa Fe office. I vill be processed. If a protest is received
	, , , , , ,	- approved by regues	JEE RUEE /01,	•	

# NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C+102 Supersedes C-128 Elloctive 1-1-65

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perator		All distan	nces must be fi	rom the out-	er boundaries of	the Section.		••••••••••••••••••••••••••••••••••••••
	,			Lease				Well Ho.
the second se	INDANCE OIL CO	Contraction of the local distance of the loc	l	L	CONE FEE			8
init Letter	Section	Township		Rang		County		
P	31	7	SOUTH		32 EAST	Ro	OSEVE	<u>.</u> T
ictual Foetuge Loca 660								
	teet from the SOL		line and	660	[00]	from the E	AST	line
iround Level Elev. 4469.4	Producing Fer			Pool Tama k				Dedicated Acreage:
	San_Andı			Tomat				40 Acres
1. Outline d	e acreage dedica	ited to the	subject we	ell by col	ored pencil o	r hachure mar	ks on th	e plat below.
	an one lease is id royalty).	dedicated	to the well	, outline	each and ide	ntify the owne	ership tl	nereof (both as to working
	n one lease of d ommunitization, u				to the well, l	have the inter	ests of	all owners been consoli-
)								· · · · ·
Yes Yes	No If a	nswer is "	yes," type o	t consoli	dation			
		•			••••			
		owners and	d tract desc	riptions v	which have ac	tually been co	onsolida	ated. (Use reverse side of
	necessary.)							
								munitization, unitization.
forced-poo	ing, or otherwise)	or until a	non-standar	d'unit, el	iminating suc	h interests, h	as been	approved by the Commis-
sion.								· · · · · · · · · · · · · · · · · · ·
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	<b>I</b>							
	<b>1</b> ·							
	! 1		EIVEI		l e	·    '	heraby	certily that the well location
	1		4070			•	shown on	this plat was plotted from field
	EINEER &		<u>R 0 2 1975</u>			1 17		actual surveys mode by me or
						11	•	supervision, and that the same
		NIL CONT	ERVATION D	DIAIRIOM	he fear	11		nd correct to the best of my
		-M	SANTA FE	Ť d	l	· · · · · · · · · · · · · · · · · · ·	nowledge	and beliëf.
and the second s		211						
	GINEER & LAND	劉+						
KEC	676		·					
HEC PROF	676 ····		·			<b>1 1</b>	le Survey	
HEE PROF	676 A		·	  -  -	 	660	СТОВЕ	R 28,1978
ALL PROF	676 A			       	Q-	-660	CTOBE	R 28,1978 Professional Engineer
ALCO PARTY	676 A		<b>.</b>		<b>0</b> 4- 	-660	CTOBE	R 28,1978
ALC PARTY	676 C		<b>.</b>			-660	CTOBE	R 28,1978 Professional Engineer
ALC PROF	676 A				<b>6 0</b>	- 660	CTOBE	R 28,1978 Professional Engineer Surveyor

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# CONE FEDERAL #8

On original completion, perforated 4207' to 4228' with 2 shots per foot. Spotted 6 barrels acid at 4228'. Pulled up and set R-4 packer at 4107'. Acidized with 4500 gallons 20% NE acid using 84 ball sealers. Had good ball action. Average injection rate 2.5 BPM. Average treating pressure 2500#. ISIP 2100#. FSIP 1770# in 13 minutes. Swab tested for five days. Recovered salt water with only a trace of oil.

Shut-in pending approval to convert to salt water disposal well.

	LABORATORY WA	ATER ANALYSIS		No. <u>W79-174</u>
ToSundance Oil Comy	rany		Date	2-14-79
Box 115		it nor ar	y part thereof	ty of Halliburton Company and neith nor a copy thereof is to be publishe
Roswell, New Mexi	1co	or disclo of labora	sed without firs	t securing the express written approvent; it may however, be used in the so operations by any person or concern
ATTN: Mr. Jim Aki	ins	and emp Company	loyees thereof	receiving such report from Halliburto
Submitted by	-	•	_ Date Rec.	<b>x</b> 2-14-79
Well No. Cone Federal	#8 Depth		Formation	San Andres
County	FieldTomahaw	k	Source	
Resistivity				
Specific Gravity				
pH	and the second			
Calcium (Ca)	36,500	·		*MP
Magnesium (Mg)	6,300			<u> </u>
Chlorides (Cl)	171,000			
Sulfates (SO4)	400			
Bicarbonates (HCO <sub>3</sub> )	290	· · · · · · · · · · · · · · · · · · ·		. <del> </del>
Soluble Iron (Fe)	Nil		·	
······	· · · · · · · · · · · · · · · · · · ·			
				· · · · · · · · · · · · · · · · · · ·
Remarks:	FFR 10-			*Milligrams per liter
(12.13)	SUNDANION SUNDANION			
10 kg	Respectfully	submitted		<i>v</i>
Analyst <u>Brewer</u>	99486			N COMPANY /
CC:		By W. C		Brance
		- <b>,</b>	T. CHE	MIST
	NOT	NY USER OF THIS R		
NUT BE LIABLE FOR ANY	LOSS OR DAMAGE, WHETHER IT BE TO	AUT OR OMISSION, RI	SULTING FROM	I SUCH REPURT OR ITS USE.

2000 # Gauge Cone Fed. # 8 SWD Well TO PUMO > 2" × 2000 # GAte Value Slips & Packoff for 23/8 Tubing De 2" x 2000 # Bull Plug 2 × 2000 # Ball Value Larkin 2 3/2 × 4 1/2 Wellhead JELarkin 41/2" × 8 48" Cosing Head 2" x 2000# Bull Plug 2" x 2000 # Boll Value 41/2 Casing INSLips 8 5/8 × 24 # Casing 2 3/8" Tubing Lined W/ bonded Cement Circ. 390 SKS Total PVC plastic liners w/ Rubber Seals inserted in tubing collars 8 %" set at 1807 G.L. 41/2" Casing Cemented w/ 300 SKS. ANNULUS displaced w/ KCI Water 200 (0 X 50/50 Pozmiz "(" U/8 # Salt, treated w/ Howco 1gal. HAI-50, 1/4 # Floseal, \$ 270 Gel plus 5 gal. AN-HID inhibitor 3 HOWCO R-4 PKR @ 4107' 41/2" × 10.50 K-55 (25129 Perforated 4207 - 4228 W/2 SPF 41/2 Float Collar @ 4326 41/2 Casing Landed @ 4368'



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Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Cone Federal #1 Cone Federal #2 Cone Federal #3 Cone Federal #4 Cone Federal #5 Cone Federal #6 Cone Federal #7

Langley Federal #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

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Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203 Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Chambers Federal #1 Chambers Federal #2 Chambers Federal #3

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510, 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105 1

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904, 1776 Lincoln Street Denver, CO 80203

Jerry Chambers 1720 Lincoln Center Building Denver, CO 80264

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Lease Status: State

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: State #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203

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		Yat (P&	Con SE 198 Roo	Roo Roo	Well	24 - 
	· • • • • •	NE #1	Cone Feder SE NE 31-7 1980' FNL, Roosevelt	Sevel	1 Name	e <b>1</b>
		Yates #1 E. Tom NW NE 6-8S-32E 660' FNL, 1980' Chaves County, N (P&A 9/26/77)	Federal #7 E 31-7S-32E ' FNL, 660' FEI evelt County, 1	Cone Federal #4 NE SE 31-7S-32E 660' FEL, 1980' FSL Roosevelt County, New M	18	
			#7 32E 30' F unty,	32E 30- F		
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			to 4278'	333 333	erva	
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W. ANTANA

YATES - #1 E. Tom Tom 660' FNL E 1980' FEL SEC. 6, TBS, R 32E CHAVES CO., NEW MEXICO Dry hole marker P&A - SEPT: 26, 1977 8 sucmt in top of Stc. (sg. -8%", 24# Ste. Cag. in 12.4" Hole Set @ 1725' Cmtd w/760 Sr. Two Cant Plugs - - First Didnot Hold: (cement Circulated to Ste.) 1) 35 Sy (mt @ 1762-1680 2) 50 Sr (int @ 1762 1725' WELL PEA - Sept 26, 1977 7% "Hole HEAVY DALS MUD Top of (mt Reported @ 2400' 4" (sg Cut off @ 2875' 35 Sx Cmt Plug @ 2881-2780\_ (Top of Cut off 4/2 (5).) CIBP @ 4080' w/2 Bailers of Cmt on top. 4'2" 10,6" (sg. Set@ 4400' Contol w/ 420 Sx.

		Sectore Of the Sector			1	·····
•		Sundance Cil   Fuel Supply 3 - 1 - 82 8 - 83 1 - 150:5 1 - 1884	·		Nearburg Cabet Carbon Vincent To Seaa DA to Tetti / Icena	î c.
J.P. Southard All	LEASS CursSulford Mobiletol	Jesu et a Julius.	Mrs. A.M. Howard, etal, '2 Fou L.		1 1.252 . 0	
to Barnes, Hal Courcestingen	et al 12: 0 Withhere b		8 Potrick etal Yates	Mountain 9	10 Campana	e ç
T.J. Norbul			15 - 15 - 81	Fuel Supply 1 1 83 Midnest 18846 TD 650 0/4 4 30 56	L	Amero M Vinceni Toluzat DRS 1
PonAmer LinnieV. Soutpord Est, 1 Southord, Executive 49	F.R.Southard T.R. BurnizeGould	3c 70 8	Leello Stakes – I. E. Maarsur. Evalyn Whatley – C. A. Hatch ie	U.S.Min. Ednol.	ARCon US	· 🏵
T.R. Southord,Est.	Southard, Est & P. Hurthom, ela	P. Thurmand, etal	EvelynWhatley CA. Haich's Yates 12 12 97	TE. Tucke-1St Barnetle eta:	TE.TuckerISt Cont'l Exxon	ι. Εx
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Flag-Redfern HE Yotes	Southard, Est. J.P. Withempte H.E. Yates   Flag. Redfern	J II II	Excon	16 <sup>12</sup>	Mountain Fuel Supply	Fuel :
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P47 U.S.	Emme Jones, et al Abby Corp. E. Westin. Res. et al	T.E. Tucker/S)		T.E. Tucker.(S) \$2 Flog-Redfern Flog-Redfern	Seimet Andrews 72 7 Flag-Redfern Flag-Redfern	FISOR - 2
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71 1 8-1-83	(Union) (C.Lovekes, Jr-Vetomass <sup>4</sup> ) OSSADIR	(al Wilson Oil al Varas SAO SUL HBP For Tom Tom Dig 0341394 L	Champlin 5 • 1 • 79 1 10280 1	J.J.Grunberg 11 (-68) LG1397	WW Renck (Mecdanold Oil) El Ran, Inc.	
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So Light Care Co	C.Loveless Jr., etal, 3/4 to 10,438			J.C. MGANEH Sup-Fed TO2449 0/42 30 66	J. A. Carralletal	
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1- 1- 82 15034	Exuon Peortry Siberi 2- 1- 00 Shelf-Ted T04204	Superior	Phillips Phillips Phillips Phillips Phillips Amerada St. St.	19.000000000000000000000000000000000000	L 4406 133	

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#1 E. Tom Tom YATES -660' FNL E 1980' FEL SEC. 6, TBS, R 32E CHAUES Co., NEW MEXICO P&A - SEPT. 26, 1977 Dry hole marker 8 sr Cont in top of Ste. (sg. 85/8", 24# Ste. Csg. in 12.4" Hole Set @ 1725' Cmtd w/760 Sr. Two Cart Plugs -- First Didnot Hold .. (comment Circulated to Ste.) 1) 35 Sy (mt @ 1762-1680 2) 50 5+ (mt @ 1762 1725' WELL PEA - Sept 26, 1977 7% "Hale HEAVY DALS MUD Top of (mt Reported @ 2400' 4" (sg Cut off @ 2875" 35 Sx Crist Plug @ 2881-2780\_ (Top of Cut off 4/2 (5g.) CIBP @ 4080' w/2 Bailers-of Cont on top. 4%" 10,6 " (sg. Set@ 4400' (mtd w/ 420 sx.

	·	Sundance Oil Fuel Supply			Nearburg Cobut Carbon
J. R. Southond M.M. L. B. L. E. Wasney 18 Barnes, Etal. L. Suvene Finsen et	Sallard, Mobil, etol	1 15015 1 18848 76 54 71 1 1 U.S.	Mrs.A.M. Howard,etal, FoyL. Patrick.etal	z EverettMaxinney Paul Miller, Jr.	UA to 1 Still Irene (1 J.T. Soyers Je Mell Hill, etc) + E. Ingrest Est, etc.
T J. Nerbut	12	FT FF J 7	8	Kłowniain 9 Fuel Supery 18846 Midwest Schuran 18846 Date Schuran	Cont'l Pigstel Amero Sizzins Pigstel Amero Homestoke Ord Union Tell Vicen
Southord Executive Star	Southard T.R. thard,Est R.Hurthem,ele		Lyello Stokes F.E.M.zors.Ur. EvelynWholley C.A.Hotchile		etor ARCO, 12 0558125 18 1.
		16.40 Z <sup>1</sup>	Yates 12 12 97	Flog-Redfern	Contil Exxon Ex 5-22-19 5 6 81 5 Homestate CeSML Manie Schuman UK Conc. etal. B Rain.
Sector Ere T.R. 114 Cases 4 Southard, Est. Sout	Southard T.R. thard.Est. E. Yates Flog.Redfern	311 3	7 C.A. Hatch	<sup>1</sup> 16 <sup>312</sup>	Manie Schumball UV Cone.etal.32 Rain. etal TE. Tucker.33 T.E. Tuc 15
5-30-65 IZ-5-62 R-16J Callier Flog.Rtdfern	12-5 82 (Coll, Inc., 1/2, M	JA Davidson Moroilco.etal 12:5:8: Tras zi Coquina 14:1: - 18: - 82 Tras zi Coquina 14:1: - 14: - 82	12-1- 80 12693 Pel Cora Monest-rec 18 To 4350 Da 1-27-70 Da 1-27-70		8 1 93 8 18846
Pearl Southard [masters, stal]	Flag-Redfern 8 - 12 - 80 9 - 80	T.E. Tuckers S) Lones Robinson Co The Copulation Marailco, et al. 104230 4 27 82 Duil 18-10 4 18	Ro; Westfall Fuel Supply HBP	Ray Westfoll Fuel Supply	32 T.E. Tucker (S) Amarillo Oil 1 19 19 5 3 40
S-20-85 13419 Emmodianes, elol 1 HE 1 Yotes 0-1-92	9 : <u>11</u> : <u>89</u> 9 : <u>24</u> : <u>89</u>	Dallo té 10 To 35 H Sundance Oil 3:1- 82 1509 Jones Rebinson Co Je 31 J 19	0392502 L 19846 L L	, 0392502   18445   	Emma Jones(WIAmocol Shell Lesnard Sil 1/2 0 1-73 HBP
23 <sup>3446</sup> Fige Redform stal 9 - 1-82 Fige Redform stal	24	Exxan • 1 12-1-60 1 17693	20	Flag: -21- Exxon Redfern 12-1 50 A 6 23 63 U.S. 12695	Flog-Redfern Shell-re Flog-Redfern Shell-re t 11 13 13 Filo U : Textina- thereis Flog Flog Flog Flog Flog Flog Flog Flog
Arrisco Fria Peart - A SADisc. 1111- Arr J.S.	Emme Janes, etal	36.33 T US. T.E. Tucker(S)	U. \$.	TFirst Noti East of Prell, Kak Laonard Oil Va T.E. Tucker (S) \$2	TE Tucker (Bong, W), 10 80 4 TE Tucker (Bong, W), 18 83 Selmo E. Andreas 72 2 Goochell,
ol Flag-Redfernetal Fe	yCorp. E.Westn.Res.Etal Franklin, Aston, E.Fair 8 9.80 7 23 80	37 35 11 Wolfson Ori (Mountoin Fuel Supply) 8 - 1 83 37 15 11 + 1 1844 1 1 Mountoin-Fed.*	Roy Westfall HBP 0392502 T.Schneider	Flog-Redfern Flog-Redfern 1 - 14 - 83	Flog-Reofern Flog-Reofern 2004
1 Southord Fise FoceBosher M.I. T.R.Southord, Est. Plag.Redfern 1 (Amoco)	Charley Paul	Tris I 30 defense	Soms Toasie Dasises 29	State Gome Cemm Wolds Vré Ed Herndon 1 Flog-28 Ex xon	Bionche Oddens Mi Weids Ist Not? Bank, Welsurin Proswell, Tr. Tome Sundance Ot
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P13 Anoco-Fed U.S. Fronktin Aston, 6. Foir Atbut	U.S. Heling	Cone Fed U.S. Compension		U.S. Mountain Fuel Supply 8 1 83 Jenry Chambers	U.S. Roswell, Tr. Heffler Amonisold Second
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	20 2 36 874   1   1   1   1   1   1   1   1   1   1	Gone Conne Sal	B.J. Sprenson 2 1 33 Moroilco, etal	Morcelco, etal 4-27-87 4-20-87 - 4- Satty Ignitioner	(W.W. Ranck,etal) 10 90 97 El Ran Inc 4 9 950 o <sup>3</sup> 51 8m El Ron, E
TOM-TOM For	linetai) Disc. SMil SJ. State	Spell Fed Janos en Cone Fed. e	535 4 27 87 535 4 20 87 State Mary Griffin	042-3-68	Game Comm. (S R. Byron, ela: M.I., wp Fla U.S. Jennie Territlerci W.A.Yeao-
	41 JI 21 (Union) (C.Loveless (retraining as a) OSSBOID	37 56 4139 52 1139 87 2139 82 (1 Wilson Oil 1 Yorks) SAD 5335 HBP 1 for Tan-Tom 54D 5335 HBP 2 for Tan-Tom 512 75 0341394 1 512 75 Cortus Drig.	338) 415283 313345 213941 7 Champlin 5 1 79 . <u>1</u> 10280 <u>1</u>	J. J. Grunberg 11-1-84 LG 1397	13.57 4127.82 3135.13 2135.52 714.45 4135 WW. Ranck (Mecdanold Oil) 7-1-61 El Ran, Inc. 1 13998 (WN. Ranck)
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ers CLARGERIAN	Union 6 1 63 18503 C Loveless (r. etal) 3/4 to 10,438	GALLINA	Wilson Oil HBP 0347354	Champlin 7-1-01 12999 J.C. Moxwell Sup-Frd	Mocdonal Oil 1 b to to 10 - 15 T7 W W Ronck Cho 11 21 3 - 74 81 Westing Ener. J. 4 Correlledol U.S. Correlledol U.S. Correlledol
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	4250 Eugenia 1-70-65 Shumway E.	Eugenio Shum Ja za wogu Morilym Chondler y Whatey Co's U.S.	Cactus Orig Gary-Fea V TO 285 WAS 7:66 U S.	U \$.	U.S. U.S. Mary Mary Mary Mary Mark
Sundance Oil 3 + 1 - 80 1(32 9	Phillips 10 - 1 - 83 19197	9 Phillips 8 - 1 - 43 18 - 43	Gulf Phillipa 5-1-86 LG-3576 7 4 83 5932 :8508	Yates Pet, 5 - 1 - 83 La - 2754 729	Champlin 4 - 21-80
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Marilyn Roberts	US. Name Program Sibert	2 - ps3 U.S. 3/39 / Superior 1 - s1-8 7-1-82 Phillips 15-01 Uther	U.S. State Phillips O'ultanke Amerado	J.M. Kelly J.M. Kelly J.K. J. Kelly J. K. J. K. J. Kelly J. K. J. K.	Howell Spear JO 4 - 22 - 60 1 - 4406
	1- 21 Snell-781 T04204	16	18508 SA	6	

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	Poosevelt County, New Mexico Yates #1 E. Tom Tom NW NE 6-8S-32E 660' FNL, 1980' FEL Chaves County, New Mexico (P&A 9/26/77)	660' FEL, 1980' FSL Roosevelt County, New Mexico Cone Federal #7 SE NE 31-7S-32E 1980' EMT 660' ET	Well Name Cone Federal #4	
· · · · · · · · · · · · · · · · · · ·	1835'/450 sx 1725'/760 sx	1827'/600 sx	Surface Casing/Sx Cement	
	4409'/300 sx 4400'/420 sx	4398'/300 sx	OF CONE FEDERAL #8 Production Casing/Sx Cement	
	4251' to 4278' P & A	4323' to 4333'	Producing Interval	
				• <b>1</b> • • • •

Case, 6503

# OIL CONSERVATION COMMISSION Hobbs DISTRICT

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40 1				- 100	March 6, 197	70
	OIL CONSERVATI BOX 2088	LON COMMISSION		DATE	Harter 0, 197	
	SANTA FE, NEW	MEXICO		RE:	Proposed MC	, 
				1	Proposed DHC	
		- A.S		•	Proposed NSL Proposed SWD	<del>x</del>
		C. C. Starting	Sil ingold		Proposed WFX	
			ON DIVIS		Proposed PMX _	
*			WATH FE	-		
		OIL CONSE	Con .	<i>.</i>	`	
	Gentlemen:	CIT		- -		
	I have ex	xamined the app	lication date	d		
					31-7-32	<u></u>
· • • • • •	for the Sunda		Cone Feder			
	υŗ	perator	Lease	and Well No.	Unit, S	9-1-R
	and my recomme	endations are as	s follows:			
	Will take k	hearingJ.S.				
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Form C+108 Revised 3+1+68

# NEW MEXICO OIL CONSERVATION COMMISSION

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			ADDRESS Suita 510	1776 Lincoln St	., Denver, CO 80203
SUNDANCE_OIL_COMPAN	ΥΥ	WELL NO.	FIELD		COUNTY
Cone Federal		8	Tomahawk,	San Andres	Roosevelt
UNIT LETTER	<u>P</u>	VELL IS LOCATED 66	D	South LINE A	660 FEET FROM 1
East LINE, SECTION	31 ,	OWNSHIP 7 South	RANGE 32 East	NMPM,	-
NAME OF STRING	SIZE	CASING SETTING DEPTH	AND TUBING DATA SACKS CEMENT	TOP OF CEMENT	
URFACE CASING	5126	SETTING DEPTH	JACKI CEMENT	COP OF CEMENT	TOP DETERMINED BY
Wt. 24#	8 5/8"	1817'	390 sx	Surface	<u>Circulated 10 sx</u>
TERMEDIATE					
None					Schlumberger Perf.
Wt. 10.5#	4 1/2"	4368'	300 SX	3900 1	Depth Control Log
4.70#. 1-55	2 3/8"	3960'	Howco R-4, 41	07'	
4.70# J-55	ATION		HOWCO R-4, 41		TOM OF FORMATION
San Andres	NG OR ANNULUST	CEREORATIONS	3391 <sup>•</sup>	O INTERVAL (6) OF INJECTION	368'
		4207-422			
TUDING	IF ANSWER		E WAS WELL ORIGINALLY D	RILLED? HAS	WESL EVER BEEN PERFORATED IN E OTHER THAN THE PROPOSED INJE
NO ST ALL SUCH PERFORATED INTERV	Oil We		FF OR SQUEEZE EACH	ŤIO	NO
PTH OF BOTTOM OF DEEPEST ESH WATER ZONE IN THIS AREA		DEPTH OF BOTTOM OF OIL OR GAS ZONE IN T	NEXT HIGHER HIS AREA	DEPTH OF TOP OF OIL OR GAS ZONE I	NEKT LOWER N THIS AREA
Approximate Approximate Incipated Dally (MINIMUM BLS.) ADD 200 200 200	1y 250'	None	O TYPE SYSTEM IS IN	Approximate	ely 10,000' (Miss.)
BLS.) 600 200	1500	Closed	PRES	Gravity	Vacuum
SWER YES OR NO WHETHER THE FO	BE UNFIT FOR DOME	RE MIN- WATER	TO BE DISPOSED OF NATU		WATER ANALYSES ATTACHED?
ALIZED TO SUCH A DEGREE AS TO		Yes ¦ Sa		Same	Yes
OCK, IRRIGATION, OR OTHER GENE	STR. Inc	STATE OR FEDERAL LAN	D)		4
OCX, IRRIGATION, OR OTHER GENER			00100		
OCK, IRRIGATION, OR OTHER GENER		INA, New Mexico	D 88122 THIS INJECTION WELL		· · · · · · · · · · · · · · · · · · ·
OCX, IRRIGATION, OR OTHER GENEL ME AND ADDRESS OF SURFACE GW TOM Gainor, P.O. B ST NAMES AND ADDRESSES OF ALL	OX 206, Ken	-		701	·
TOCX, IRRIGATION, OR OTHER GENEL TOM Gainor, P.O. B ST NAMES AND ADDRESSES OF ALL Champlin Petroleum	ox 206, Ken OPERATORS WITHIN CO., 300 M	lilco Bldg., M	idland, TX 79		· · · · · · · · · · · · · · · · · · ·
rock, Irrigation, or other gener I <u>me and address of surface ow</u> <u>Tom Gainor, P.O. B</u> St names and addresses of all	ox 206, Ken OPERATORS WITHIN CO., 300 M	lilco Bldg., M	idland, TX 79	xico 88210	
TOCX, IRRIGATION, OR OTHER GENEL TOM Gainor, P.O. B ST NAMES AND ADDRESSES OF ALL Champlin Petroleum	ox 206, Ken OPERATORS WITHIN CO., 300 M	lilco Bldg., M	idland, TX 79	xico 88210	EIVED
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# NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

Porm C+102 Supersedes C+128 Effective 1+1+65

			a the outer bounderies of		
Chetatot		1	*4**		Well No.
	Section	D <sub>o</sub> Township		County	8
Unit Letter	1		-	_	
P Actual Footage La		7 SOUTH	32 EAST	ROOSEVELT	
660	feet from the SO		660 /m		. <b>.</b>
Ground Level Elev	Producing Fe		000 [68	t from the EAST	line dicated Acreage:
4469,4	1		Tomahawk	Ue	(
	San And			<u></u>	40 Acres
1. Outline 1	he acreage dedice	ued to the subject well	by colored pencil o	r hachure marks on the p	lat below.
interest 3. If more t	and royalty). han one lease of c	dedicated to the well, lifferent ownership is de	dicated to the well,	• • • • •	
dated by		unitization, force-pooling			
🗉 🛄 Yes	No If a	nswer is "yes," type of	consolidation	· · · · · · · · · · · · · · · · · · ·	
this form No allow	if necessary.) able will be assign	owners and tract descrip ed to the well until all in ) or until a non-standard	nterests have been o	onsolidated (by commu	iitization, unitization.
sion.					
				I hereby certi tained hereig best Timy ha Name <u>Richard O</u> Position <u>Vice Pres</u> Company	ident, Production Cil Company
REG. PROF	HGINEER & LAND TATH OG 576 1 MEXICO OHN V. WEST	MAR 05 OL CONSERVATI SANT	1979 IL	shown on this notes of actu under my sup- is true and knowledge and Date Surveyed OCTOBER 2 Registered Prof and/or Land Sus	8.1978 essional Engineer veyor
	┉┎╌╌╌╴┥			PETER Conflicate No.	John W. West 67

# CONE FEDERAL #8

On original completion, perforated 4207' to 4228' with 2 shots per foot. Spotted 6 barrels acid at 4228'. Pulled up and set R-4 packer at 4107'. Acidized with 4500 gallons 20% NE acid using 84 ball sealers. Had good ball action. Average injection rate 2.5 BPM. Average treating pressure 2500#. ISIP 2100#. FSIP 1770# in 13 minutes. Swab tested for five days. Recovered salt water with only a trace of oil.

Shut-in pending approval to convert to salt water disposal well.

1342-A	
Diam	J'r

#### HALLIBURTON DIVISION LABORATORY HALLIBURTON SERVICES MIDLAND DIVISION HOBBS, NEW MEXICO 88240 LABORATORY WATER ANALYSIS

No. W79-174

Sundance Oil Comrany 2-14-79 To. Date\_ 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 Company. Box 115 Roswell, New Mexico ATTN: Mr. Jim Akins .\_\_\_\_ Date Rec.\_\_ n 2-14-79 Submitted by\_ Well No. Cone Federal #8 Depth\_ Formation San Andres Tomahawk \_ Field\_ \_\_\_\_\_ Source\_\_ County\_\_\_ 0.047 @ 74°F. Resistivity ..... Specific Gravity \_\_\_\_\_\_1.184 6.8 рН \_\_\_\_\_ 36,500 Calcium (Ca) -\*MPL 6,300 Magnesium (Mg) 171,000 Chlorides (Cl) 400 Sulfates (SO<sub>4</sub>) 290 Bicarbonates (HCO<sub>3</sub>) \_\_\_\_\_ Nil Soluble Iron (Fe) **Remarks**: \*Milligrams per liter Respectfully submitted, HALLIBURTON COMPANY Analyst: Brewer CC: NOTICE THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.
e 2000 # Gauge Core Fed. # 8 SWD Well TO PUMP > 2" × 2000 # Gate Value Slips & Pockoff for 2 3/8 Tubing 2 × 2000 # Ball Value De 2" x 2000 " Bull Plug Larkin 2 3/2 × 4 1/2" Well head Larkin 4/2" × 8 40" Cosing Head 2" x 2000" Ball Value -2" x 2000 # Bull Plug 41/2 Casing INSTips 8 5/8 × 24 # Cosing Cement Circ. 390 SKS Total 2 1/8" Tubing Lived W/ bonded PVC plastic liners w/ Rubber Seals 8 %8" set at 1807 G.L. inserted in tubing collars 41/2 Casing Cemented w/ 300 SKS. 8 ANNULUS displaced w/ KCI Water 50/50 Pozmiz " U/8 # Salt, treated w/ Howco 1gal. HAI-50, 1/4 # Floseal, \$ 270 Gel plus 5 gal. AN-HID INhibitor HOWCO R-4 PKR @ 4107 41/2" × 10.50 # K-55 (25109 Perforated 4207 - 4228 W/2 SPF 41/2 Float Collar Q 4326 41/2" Casing Landed @ 4368'



Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Cone Federal #1 Cone Federal #2 Cone Federal #3 Cone Federal #4 Cone Federal #5 Cone Federal #6 Cone Federal #7

Langley Federal #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

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Pegasús 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, C0 80203

Lease Status: Federal

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: Chambers Federal #1 Chambers Federal #2 Chambers Federal #3

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510, 1776 Lincoln Street Denver, CO 80203

Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904, 1776 Lincoln Street Denver, CO 80203

Jerry Chambers 1720 Lincoln Center Building Denver, CO 80264 Lease Status: State

Well Status: Producing

Formation: San Andres, P-2 zone

Wells: State #1

Lessor's of Mineral Rights:

Sundance Oil Company Suite 510 1776 Lincoln Street Denver, CO 80203

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Pegasus 1976-1 Oil Exploration Partnership Mr. Jonathan Butcher P.O. Box 957 Philadelphia, PA 19105

Schulein 1976-1 Oil Exploration Partnership Mr. Robert Schulein Suite 904 1776 Lincoln Street Denver, CO 80203

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(Do not use this form for proposals to drill reservoir. Use Form 9–331–C for such prop	osals.)	8. FARM OR	LEASE NAM	E	0 2 2	
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3. ADDRESS OF OPERATOR		Tomahawk,			<u> </u>	
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	Form 2920-1	UNITED STATES		FORM	APPROVED
	BURE/	RTMENT OF THE INTERIOR AU OF LAND MANAGEMENT USE APPLICATION AND PERM	u <b>t</b>	OMB NC Serial Number	), 42–R0996
•	Title I. Sec. 28(2)(e) of the Mir	neral Leasing Act of 1920, 30 U.S P.L. 94-579, October 21, 1976, 43	.C. 185, as amende	INSTRUCTIO	ONS ON REVERSE
***	1. Name (first, middle ini	APPLICATION tial and last)	Address (incl		
	<u>SUNDANCE OIL COMPA</u>		Suite 510, Denver, CO	1776 Lincoln S	Street
	2. Give legal description	of public lands for which you	are applying		
	TOWNSHIP RANGE	SECTION		SUBDIVISION	
(e. af e 1	7 South 32 East	31 660' FS	SL and 660' F	EL, Unit P	:
	· · · · ·				•
••	Meridian	State	County		Acres (number)
		New Mexico	Rooseve1	t	
	3. Proposed date(s) of us	e: From February, 1979	)to	February, 198	39
	4a. Are you 21 years of ag	e or over?		zen of the United Sta ? XX Yes [] No	ates or have you declare
<del>.</del>	c. As applicant, are you or an agency ofF			ooration; [] Individ Political subdivis	
	d. Are the statements req	uired by Instruction Number 2	attached? 🕅 Y	les No No	ot applicable
		·····			·
· · · · ·	5. Are you making this a	pplication for your own use an	d benefit? 🕅 Y	/es []] No (1f ''n	o,'' explain)
•	<ol> <li>Are the lands now imp poses, identify users</li> </ol>	roved, occupied, or used? [X] and occupants)	Yes ]] No	{1  "yes," describ	e improvements and pu
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TOWNSHIP RANGE	SECTION	SUBDIVISI	ON	
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leridian	State	County	Acres (nur	nber)
or the purpose of		<u></u>	L	
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		and su	ibject to the followi	ng conditions:
. This permit is issued for th	ne period specified below	6. Authorized represent	atives of the Depa	rtment of the
. This permit is issued for the t is revocable at the discretion of the Bureau of Land Management (his permit is subject to valid	n of the authorized officer nt, at any time upon notice.	Interior, other Federal ag all times have the right business.	encies, and game wa	rdens shall at
r hereafter acquired.		7. Permittee shall not e public use.	enclose roads or trail	s commonly in
2. Permittee shall pay annuall	y, in advance, to the au-	8. Permittee shall pay t its property resulting from	the United States for this use.	any damage to
horized officer the sum of Icliars as rental or such other s ental adjustment is made.	um as may be required if a	9. Permittee shall notif change immediately.	y the authorized offi	cer of address
3. Permittee shall observe all laws and regulations applicable t	o the premises and to erec-	10. This permit is subjec regulations (43 CFR 292	20) which are made	a part hereof.
tion or maintenance of signs or ad the regulations for the protection animals, and shall keep the prem	vertising displays including n of game birds and game	11. Permittee agrees to h marked or painted on ea maintained under the author	ach advertising disp	of this permit lay erected or
sanitary condition. 4. Use or occupancy of land u	nder this permit shall com-	12. Permittee shall not oprior permission from the		lands without
mence within months from exercised at least days each	date hereof and shall be year.	13. This permit is subj Order No. 11246 of Septe sets forth the Equal Op	ember 24, 1965, as a portunity clauses.	mended, which
5. Permitte: shall take all reaso and suppress forest, brush, and lution of wat.rs on or in the vicini	grass fire and prevent pol-	order may be obtained from 14. This permit may not t the authorized officer of	pe assigned without p	
15. Special Conditions;				
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Permit issued for period	• • • • •	· · · · ·		4
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То	·	1	·····	
		(Title)		(Date)
	LUCT OF	UCTIONS		
1. Submit, in duplicate, to any	local office of the Bureau of	nonreturnable filing fee	of \$10 made payabl	e to the Bureau
Land Management naving jurisdi	local office of the Bureau of	of Land Management.		
<ol> <li>Submit, in duplicate, to any Land Management naving jurisdi</li> <li>An application by a partner accompanied by a statement by citizen of the United States o become a citizen. An applicati accompanied by a statement sh authorized to hold land in the</li> </ol>	local office of the Bureau of ction of the lands. ship or association must be r each member that he is a r has filed a declaration to ion by a corporation must be owing that the corporation is		is for permission to the applicant must scriptive diagram, sl ) of the sign or displ is, type of constru- naterial to be includ	erect an adver- : (a) attach an retch, or photo- ay to be erected ction, estimated led thereon, the

GPO 841-243

L.L.L.

Υ.



United States Department of the Interior BUREAU OF LAND MANAGEMENT STATE OFFICE 7 AM 8:40 P. O. Box 1449 Santa Fe, New Mexico 87501

NM 0558400 Qualifications File

IN REPLY REFER TO

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بالمفاقعة والعالية والمغالية والمراجا

943b-4

STATE SECTION March 27, 1975

Sundance Oil Company 1430 Denver Club Bldg. Denver, Colorado 80202

Gentlemen:

Your corporate qualifications have been removed from the case record NM 040080 and are now of record in our General Qualifications File under serial number NM 0558400. You must refer to this new number on all your future oil and gas filings.

Sincerel

Chief Minerals Section

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If your statements need up-dating or if you have any questions, please let us know.



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CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

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Form 2920–1 (June 1977) DEPAR BUREA	UNITED STATES RTMENT OF THE INTERIOR AU OF LAND MANAGEMENT			APPROVED 0. 42-R0996
TEMPORARY	USE APPLICATION AND PER	S.C. 185, as amend-	Serial Number	~
ed; Secs. 302(b) and 504(a) of 1	APPLICATION	3 U.S.C. 1732, 1764.	INSTRUCTIO	ONS ON REVERSE
. Name (/irst, middle ini		Address (incli	ude zip code)	
SUNDANCE OIL COMPA		Suite 510, Denver, CO	1776 Lincoln 3 80203	Street
2. Give legal description	of public lands for which you			
TOWNSHIP RANGE	SECTION		SUBDIVISION	·
7 South 32 East	31 660' F	FSL and 660' F	EL, Unit P	
			-	
	×			
* <b>*</b>	· .			
Meridian	State	County		Acres (number)
	New Mexico	Roosevel		L
3. Proposed date(s) of us	e: From February, 197	79 to	February, 19	<u> 39</u>
4a. Are you 21 years of ag	e or over?	b. Are you a citiz your intention		ates or have you declared
c. As applicant, are you a or an agency of F			oration; [_] Indivio Political subdivis	
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Permission	is	hereby	granted t

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to use the following-described lands:

TOWNSHIP	RANGE	SECTION

SUBDIVISION

		- -	
Meridian	Slate	County	Acres (number)

1. This permit is issued for the period specified below. It is revocable at the discretion of the authorized officer of the Bureau of Land Management, at any time upon notice. This permit is subject to valid adverse claims heretofore or hereafter acquired.

2. Permittee shall pay annually, in advance, to the au-

thorized officer the sum of dollars as rental or such other sum as may be required if a rental adjustment is made.

3. Permittee shall observe all Federal, State, and local 5. Fermittee shall observe all rederal, state, and local laws and regulations applicable to the premises and to erec-tion or maintenance of signs or advertising displays including the regulations for the protection of game birds and game animals, and shall keep the premises in a neat, orderly, and sanitary condition.

4. Use or occupancy of land under this permit shall commence within months from date hereof and shall be exercised at least days each year.

5. Permittee shall take all reasonable precautions to prevent and suppress forest, brush, and grass fire and prevent pol-lution of waters on or in the vicinity of the lands.

15. Special Conditions:

## and subject to the following conditions:

6. Authorized representatives of the Department of the Interior, other Federal agencies, and game wardens shall at all times have the right to enter the premises on official business.

Permittee shall not enclose roads or trails commonly in public use.

8. Permittee shall pay the United States for any damage to its property resulting from this use.

9. Permittee shall notify the authorized officer of address change immediately.

10. This permit is subject to all applicable provisions of the regulations (43 CFR 2920) which are made a part hereof.

11. Permittee agrees to have the serial number of this permit marked or painted on each advertising display erected or maintained under the authority of such permit.

12. Permittee shall not cut any timber on the lands without prior permission from the authorized officer.

13. This permit is subject to the provisions of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the Equal Opportunity clauses. A copy of this order may be obtained from the signing officer.

14. This permit may not be assigned without prior approval of the authorized officer of the Bureau of Land Management.

Permit issued for period

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INSTRUCTIONS

(Title)

1. Submit, in *duplicate*, to any local office of the Bureau of Land Management having jurisdiction of the lands.

2. An application by a partnership or association must be 2. An application by a partnership or association must be accompanied by a statement by each member that he is a citizen of the United States or has filed a declaration to become a citizen. An application by a corporation must be accompanied by a statement showing that the corporation is authorized to hold land in the State in which the land is located and that the person making the application is autho-rized to act for the corporation.

3. If applicant is other than a Federal, State, or local gov-ernmental agency, this application must be accompanied by a

nonreturnable filing fee of \$10 made payable to the Bureau of Land Management.

4. If this application is for permission to erect an adver-tising display or sign, the applicant must: (a) attach an accurate and fully descriptive diagram, sketch, or photo-graph (at least  $3" \times 5"$ ) of the sign or display to be erected showing the dimensions, type of construction, estimated cost, the advertising material to be included thereon, the plan of illumination, if any, and the manner of attachment to the land; and, (b) a photograph (at least  $3" \times 5"$ ) showing the site on which the sign or display is to be erected.

GPO 841-243

(Date)



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a. - 1

## United States Department of the Interior

BUREAU OF LAND MANAGEMENT STATE OFFICE 7 AM 8:45 P. 0. Box 1449

8:40 P. O. Box 1449 Santa Fe, New Mexico 87501

STATE STORE March 27, 1975

Sundance Oil Company 1430 Denver Club Bldg. Denver, Colorado 80202

## Gentlemen:

Your corporate qualifications have been removed from the case record NM 040080 and are now of record in our General Qualifications File under serial number NM 0558400. You must refer to this new number on all your future oil and gas filings.

If your statements need up-dating or if you have any questions, please let us know.

Sinc Rau E. Chief, Minerals Section





Save Energy and You Serve America!

IN REPLY REFER TO

NM 0558400 Qualifications File

943ъ-4

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

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

CASE NO. 6503

Order No. R- 5977

APPLICATION OF SUNDANCE OIL COMPANY FOR SALT WATER DISPOSAL, ROOSEVELT COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on <u>March 28</u> 19 79, at Santa Fe, New Mexico, before Examiner <u>Richard L. Stamets</u> NOW, on this <u>day of</u>, 1979, the Division Director, having considered the testimony, the record, and the recomendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Sundance Oil Company
is the owner and operator of the Cone Federal Well No. 8
located in Unit P of Section 31 , Township 7 South
Range 32 East , NMPM, Tomahawk-San Andres Pool
Roosevelt County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the San Andres formation, with injection into the perforated interval from approximately <u>4207</u> feet to <u>4228</u> feet.

(4) That the injection should be accomplished through  $2\frac{3}{8}$  -inch plastic lined tubing installed in a packer set at approximately 4/07 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge or approved leak detection device should be attached to the annulus in order

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to determine leakage in the casing, tubing, or packer.

(5) That the injection well or system should be equipped pressure highling swife 4.
 with a pop-off value or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1700 psi.

(6) That the operator should notify the supervisor of the <u>Hobbs</u> district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(7) That the operator should 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.

(8) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED;

(1) That the applicant, <u>Sundance Oil Company</u> is hereby authorized to utilize its <u>Cone Federal Well No. 8</u> located in Unit <u>P</u> of Section <u>31</u>, Township <u>7</u> South Range <u>32 East</u>, NMPM, <u>Tomahawk-San Andres Pool</u> <u>Roosevelt County</u>, New Mexico, to dispose of produced salt water into the <u>San Andres</u> formation, injection to be accomplished through <u> $2.\frac{3}{8}$ </u> -inch tubing installed in a packer set at approximately <u>4/07</u> feet, with injection into the <u>perforated interval from approximately 4207</u> feet to 4228 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus or the annulus shall be requipped with an approved leak detection orbilittopen device fin order to determine leakage in the casing, tubing, or packer.

(2) That the injection well or system shall be equipped presser / in the switch with a pop-off value or acceptable substitute which will limit the wellhead pressure on the injection well to no more than 1700 psi.

(3) That the operator shall notify the supervisor of the 740b55 district office of the Division of the date and time of the installation of disposal equipment so that the same may be inspected.

(4) That the operator shall immediately notify the supervisor of the Division's <u>Hobbs</u> district office of the failure of the tubing, casing, or packer, in said well or the leakage of water from or around said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

(5) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

 (6) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.
 DONE at Santa Fe, New Mexico, on the day and year hereinabove designated. Dan Nutter

Satt water Dirporal sundance Oil Co Suite 510 1776 Rincoln St. Denver Cald 80203

Cone Fed no. 8 P-31-75-32E Roosevello. San Andres Jærm Derf. int 4207-4228 Tomahank San Andres Poal

Dick Dinit