STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
IN THE MATTER OF THE HEARING CALLED BY) THE OIL CONSERVATION DIVISION FOR THE) PURPOSE OF CONSIDERING:) CASE NO. 12,506
APPLICATION OF SAPIENT ENERGY CORPORATION FOR MODIFICATION OF DIVISION ORDER R-10,432 TO EXPAND THE AREA EXEMPT FROM THE SALT PROTECTION STRING REQUIREMENTS OF DIVISION ORDER R-111-P TO INCLUDE THE ENTIRE WEST TEAS (YATES- SEVEN RIVERS) UNIT AREA BOUNDARY, LEA COUNTY, NEW MEXICO
) <u>REPORTER'S TRANSCRIPT OF PROCEEDINGS</u> <u>EXAMINER HEARING</u> <u>9</u>
BEFORE: DAVID R. CATANACH, Hearing Examiner
October 19th, 2000
Santa Fe, New Mexico
This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner on Thursday, October 19th, 2000, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico. * * *

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A	PPEARANCES	
FOR THE APPLICANT:		
CAMPBELL, CARR, BERGE Suite 1 - 110 N. Guad P.O. Box 2208 Santa Fe, New Mexico By: MICHAEL FELDEWER	lalupe 87504-2208	
ALSO PRESENT:		
DAN MOREHOUSE IMC Potash P.O. Box 71 Carlsbad, NM		
	* * *	

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1	WHEREUPON, the following proceedings were had at
2	8:22 a.m.:
3	EXAMINER CATANACH: At this time I'll call Case
4	12,506, which is the Application of Sapient Energy
5	Corporation for modification of Division Order Number
6	R-10,432 to expand the area exempt from the salt protection
7	string requirements of Division Order Number R-111-P to
8	include the entire West Teas (Yates-Seven Rivers) Unit area
9	boundary, Lea County, New Mexico.
10	Call for appearances in this case.
11	MR. FELDEWERT: Mr. Examiner, my name is Michael
12	Feldewert. I'm with the law firm of Campbell, Carr, Berge
13	and Sheridan, representing the Applicant in this case,
14	Sapient Energy. I have a brief opening statement and two
15	witnesses.
16	EXAMINER CATANACH: Okay. Will the witnesses
17	please stand to be sworn in?
18	MR. MOREHOUSE: Sir, I'd also like to appear.
19	I'm Dan Morehouse of IMC.
20	EXAMINER CATANACH: I'm sorry, Mr. Morehouse. Do
21	you have any witnesses today?
22	MR. MOREHOUSE: No, sir, I'm just here by myself.
23	EXAMINER CATANACH: Okay. And you're
24	representing IMC?
25	MR. MOREHOUSE: I am IMC.

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1	(Thereupon, the witnesses were sworn.)
2	MR. FELDEWERT: Mr. Examiner, Division Order
3	R-111-P, which is the existing potash order and which is
4	our Sapient Exhibit Number 1, requires at paragraph D (3) a
5	salt protection string for oil and gas wells drilled in the
6	known potash leasing area.
7	Paragraph C (4) of that order also states that
8	the Division may waive this requirement "upon satisfactory
9	showing that a location is outside the Life of Mine
10	Reserves", what they call the LMR, "and surrounding buffer
11	zone", and upon a showing "that no commercial potash
12	resources will be unduly diminished."
13	And the reason for this exemption is found in
14	paragraph 22 of the Potash Order, which notes that R-111-P
15	brought "under the purview of its order areas where potash
16	is either absent or non-commercial", and it states that
17	"such areas should granted less stringent casing, cementing
18	and plugging requirements"
19	Now, Sapient Energy operates the West Teas
20	(Yates-Seven Rivers) Unit area, which is the area that you
21	will see outlined in red in Sapient Exhibit Number 2. This
22	area was recently approved by the Division for a waterflood
23	project by Division Order R-11,375, and Sapient Energy is
24	the successor-in-interest to Falcon Creek Resources, who
25	applied for that waterflood order.

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1	Now, the exception that Sapient seeks by this
2	Application is certainly not unprecedented in the unit
3	area.
4	You will see on Exhibit 2 that the areas in
5	yellow, brown and purple are all areas which were developed
6	without salt protection strings, and the acreage in blue is
7	currently being developed without salt protection strings
8	under Division Orders R-10,432 and R-10,432-A, which were
9	entered by this Division in 1995, in Case Numbers 11,323
10	and 11,338, upon application by Stevens and Tull, who is a
11	predecessor to Sapient Energy.
12	And these Stevens and Tull orders, Mr. Examiner,
13	exempt from the salt protection string requirement any well
14	drilled on the acreage which is shown in light blue on
15	Exhibit Number 2.
16	There was extensive testimony and evidence taken
17	in that Stevens and Tull case which supported the orders,
18	including testimony from an expert on the potash industry,
19	Mr. Gary Hutchinson, who testified that no potash mining is
20	expected to occur in the nine square sections surrounding
21	and including Section 16. And by this Application, Sapient
22	asks that the Stevens and Tull orders be extended to
23	include the area beyond the light blue in Exhibit 2, but
24	to include all of the area within the unit.
25	And as support, we formally request that the

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1	record from the Stevens and Tull cases be incorporated as
2	part of the record in this case.
3	Mr. Examiner, granting this Application will
4	allow Sapient to continue with their waterflood project in
5	the most efficient fashion and eliminate the need for
6	Sapient Energy to appear before this Division each time
7	they wish to drill either an injection or a production well
8	in the unit area without salt protection string.
9	So in support of this Application we incorporate
10	the record from Case Numbers 11,323 and 11,338 and call two
11	witnesses here today.
12	EXAMINER CATANACH: Mr. Morehouse, do you
13	understand the implications of that request, incorporating
14	the record of the previous case? I don't know if you were
15	familiar
16	MR. MOREHOUSE: Probably not.
17	EXAMINER CATANACH: They're just asking that we
18	incorporate all that was testified and presented in those
19	two previous cases into the record in this case, to help
20	them support their Application.
21	MR. MOREHOUSE: My only objection is, Mr.
22	Hutchinson I understand that is evidence that he's
23	saying one thing, where his accuracy may be in question.
24	EXAMINER CATANACH: Okay, we'll go ahead and
25	incorporate the records, then, in Case Number 11,323 and
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1	11,338.
2	MR. FELDEWERT: At this time, then, I call my
3	first witness, Mr. Lynn Becker.
4	LYNN D. BECKER,
5	the witness herein, after having been first duly sworn upon
6	his oath, was examined and testified as follows:
7	DIRECT EXAMINATION
8	BY MR. FELDEWERT:
9	Q. Mr. Becker, would you please state your full
10	name, address and your present occupation?
11	A. Lynn David Becker, 14085 Berry Road, Golden,
12	Colorado 80401. I'm the land manager for Sapient Energy
13	Corporation in the Denver office.
14	Q. Mr. Becker, have you previously testified before
15	this Division or one of its Examiners and had your
16	credentials as a petroleum landman accepted and made a
17	matter of record?
18	A. Yes, I have.
19	Q. Are you familiar with the Application filed by
20	Sapient Energy in this case?
21	A. Yes, I am.
22	Q. And are you familiar with the status of the lands
23	in the subject area?
24	A. Yes.
25	Q. Have you made yourself knowledgeable and familiar

with the location of the potash reserves and the potash
leases in and around the subject area?
A. Yes.
Q. And have you familiarized yourself with the
notice requirements of Order R-111-P?
A. Yes, I have.
MR. FELDEWERT: Are the witness's qualifications
acceptable?
EXAMINER CATANACH: Mr. Becker is so qualified.
Q. (By Mr. Feldewert) Mr. Becker, what does Sapient
Energy seek with this Application?
A. Sapient seeks the modification of Division Order
R-10,432 and R-10,432-A to expand the area exempt from the
salt protection casing string requirements of Division
Order R-111-P, to include the entire West Teas (Yates-Seven
Rivers) secondary recovery unit area, located in portions
of Sections 9, 4, 16 and 17 of Township 20 South, Range 33
East, in Lea County, New Mexico.
Q. Would you identify and describe for the Examiner
Sapient Exhibit Number 1?
A. Sapient Exhibit Number 1 is a copy of the Order
R-111-P. This is the potash order, with the salt
protection string requirement that we seek exception to.
Q. And the area that you seek an exception for is
the West Teas Unit area; is that correct?

1	A. Yes, on our Exhibit 2 we have Exhibit 2 is a
2	map. The area inside of the red outline is the West Teas
3	Unit area. That's a waterflood project that was approved
4	by the OCD under R-11,375, entered on May 18th, 2000.
5	That's the area in which we seek the exception.
6	Q. Prior to the adoption of R-111-P, was any of this
7	unit area outside the boundaries of the potash area?
8	A. Yes, all of the area was outside of the potash
9	area.
10	Q. And what is the status of the acreage comprising
11	the West Teas Unit?
12	A. 54 percent of it is federal, 39 percent is state,
13	and the rest is fee.
14	I might make note that prior to the entry of R-
15	111-P, wells drilled within the current unit area of the
16	West Teas Unit would not have been subject to the casing
17	and cementing requirements of that order.
18	Q. Have you sought approval from the BLM to exclude
19	the salt protection string requirement?
20	A. Yes, we have, and we were informed that all
21	approvals are done through the OCD.
22	Q. Why don't you identify and describe for the
23	Examiner Sapient Exhibits Number 3 and 4?
24	A. Sapient Exhibits 3 and 4, 3 is Order Number
25	R-10,432, and Exhibit 4 is R-10,432-A. These are the

1	orders that Sapient wishes to expand to include the entire
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2	West Teas Unit area.
3	MR. FELDEWERT: I neglected, Mr. Examiner, to
4	give you a notebook.
5	Q. (By Mr. Feldewert) Would you explain to the
6	Examiner what's contained in the notebook that I just
7	handed to him?
8	A. The notebook is a compilation of Case Numbers
9	11,323 and 11,338. These notebooks and the exhibits
10	contained therein have just been put together for your
11	convenience. It's a copy of your record already.
12	Q. This is the record that we wish to incorporate
13	into this case; is that right?
14	A. Correct.
15	Q. Okay. Mr. Becker, are you familiar with the
16	potash development and leasing unit around the unit area?
17	A. Yes, I am. Going back to Exhibit 2, the area
18	shown in the gray shading is the existing potash leases of
19	record in and around the unit, mostly to the west and
20	northwest of our current unit.
21	Q. Mr. Becker, do you know whether any of the potash
22	leasees shown on this exhibit have designated any of the
23	West Teas Unit area to be part of a designated life-of-mine
24	reserve?
25	A. Under R-111-P, the maps of the designated life-

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1	of-mine reserves are privileged and confidential.
2	Therefore, I cannot provide a map showing the LMR to the
3	OCD. But to the best of my knowledge, the West Teas Unit
4	Area is not part of any LMR.
5	Q. Have you undertaken an effort to identify where
6	the nearest active potash workings are located?
7	A. Yes. Based on conversations with the BLM, I
8	believe that the closest active mining operation is
9	approximately 12 miles to the southwest.
10	Q. Turning now to Exhibit Number 2, have wells been
11	drilled within the unit area without the salt protection
12	casing requirements?
13	A. Yes, referring again to Exhibit 2, the area in
14	yellow shows an area where wells were drilled prior to the
15	potash order, and no salt protection casing string was
16	required. These wells are now operated by Sapient.
17	The brown area shows areas where the BLM has made
18	exceptions. The wells were drilled, again without the
19	potash protection string, on this federal acreage pursuant
20	to their exceptions on a well-by-well basis.
21	Q. Are these wells now operated by Sapient Energy?
22	A. Yes, they are.
23	Q. And were these exceptions granted I think you
24	said on a well-by-well basis?
25	A. Yes, they were, although Order R-111-P

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1	contemplated approval from the OCD, or their district
2	supervisor. The practice for a period of time was that if
3	a well was on federal acreage, operators would go to the
4	BLM in Carlsbad for an exception.
5	Q. And what is represented by the purple area?
6	A. The purple area represents an area of exception
7	that was sought by Mitchell Energy for nine wells in
8	Section 4. Four wells were drilled. Three are currently
9	producing, one was plugged out.
10	Again, this was a well-specific order, covering
11	wells to be drilled in the south half of 4 and the south
12	half of the northeast of 4. Sapient Energy is now the
13	operator for the three active producing wells in that
14	purple area.
15	The
16	Q. What is Sapient Exhibit Number 5?
17	A. Sapient Exhibit Number 5 is a copy of that
18	Mitchell Energy Corporation order that was entered. It's
19	R-10,122.
20	Q. And that was the order that provided the
21	exemption for the purple area; is that correct?
22	A. Yes, it is.
23	Q. Okay. What is the blue area on the map?
24	A. The light blue area on the map is that area that
25	we're actually seeking to expand.

1	Stevens and Tull, predecessor to Sapient Energy,
2	sought and received exception to the salt protection casing
3	string here. It was an area-specific order. It was this
4	Order Number 10
5	Q. Exhibits Number 3 and 4, right?
6	A. Yeah, Exhibits Number 3 and 4. And several wells
7	were drilled in this area. Sapient Energy is now the
8	operator of all the wells in the light blue area.
9	Q. Mr. Becker, have wells been drilled within the
10	unit area with salt protection casing strings?
11	A. Yes, eight wells have been drilled within this
12	area.
13	If you'll take a look at the notebook we provided
14	to you, Mr. Examiner, under Land Tab Map 1 it shows with
15	the green dots the eight wells that were drilled without
16	salt protection casing strings. To the best of our
17	knowledge, operators of these wells, when they were
18	drilled, did not request exceptions to the salt protection
19	casing strings.
20	Most of these wells are now located in areas
21	exempted from the salt protection casing strings by
22	Division Order R-10,432-A.
23	Q. These are wells that are now located in the light
24	blue area, or most of these wells are located in the light
25	blue area on Exhibit Number 2?

A. Yes, that's correct.
Q. Mr. Becker, has notice of this Application been
given pursuant to Order R-111-P?
A. Yes, it has, certified and registered letters
with the Application and the plat were sent to each potash
operator of record holding potash leases within a radius of
one mile of the unit area. Also, notice was given to the
State Land Office, the BLM and the OCD office in Hobbs.
Q. The green card for Mississippi Potash is missing.
Did you have any conversations with them?
A. Yeah, we've been in contact with a woman there
with Mississippi Potash, indicating that she had received
the letter and reviewed it, and that they did not have an
objection to today's Application and hearing.
Q. Is Sapient Exhibit Number 6 the affidavit of
notice?
A. Yes, it is.
Q. Mr. Becker, were Sapient Exhibits 1 through 6
prepared by you or compiled at your direction?
A. Yes, they were.
MR. FELDEWERT: Mr. Examiner, at this time I
would move into evidence Sapient Exhibits 1 through 6.
EXAMINER CATANACH: Exhibits 1 through 6 will be
admitted as evidence.
MR. FELDEWERT: That's all the questions I have

1	at this time of this witness, Mr. Examiner.
2	EXAMINER CATANACH: Mr. Morehouse, do you have
3	any questions of this witness?
4	MR. MOREHOUSE: No.
5	EXAMINATION
6	BY EXAMINER CATANACH:
7	Q. Mr. Becker, who was notice given to? Mississippi
8	Potash and IMC Potash?
9	A. Correct.
10	Q. And those are the only two potash lessees in this
11	area?
12	A. Currently. There were others in the area, but
13	their leases have either been released or have expired.
14	Those two companies are the only current holders of potash
15	leases within one mile of the boundary.
16	Q. Does your Exhibit 2 distinguish which leases are
17	owned by which potash company?
18	A. Yes, it does. To make it more clear, I'd like to
19	enter into the record, though, that Sections 5, 6, 7 and 8,
20	the totality of those sections, is currently leased to IMC
21	Kalium Potash.
22	Q. Okay.
23	A. The lands that are shaded gray in Section 4 are
24	leased to Mississippi potash, as are the lands in the north
25	half of the southwest of Section 18.

1	Q. Okay, and for the record, there is some The
2	acreage in Section 4 that belongs to Mississippi Potash, it
3	comprises the entire northwest quarter?
4	A. The northwest quarter, the west half of the
5	southwest, the southeast of the southwest, the north half
6	of the southeast, and the southwest of the northeast of
7	Section 4.
8	Q. Okay, as I understand it, the purple area
9	exempted under R-10,122, that was well-specific; is that
10	correct?
11	A. Correct.
12	Q. So you're seeking to include that land in this
13	Application?
14	A. We're seeking to include the southeast quarter of
15	Section 4.
16	Q. Southeast quarter of Section 4, okay. And the
17	orange acreage, was that also well-specific?
18	A. The Yes, it was.
19	Q. Okay, so you week to exempt that acreage as well?
20	A. Yes.
21	Q. Okay. And also the yellow needs to be exempted?
22	That was well-specific as well?
23	A. The yellow area represents an area where wells
24	were drilled prior to the potash order. So no exceptions
25	were granted because none were required.

1	Q. Okay.
2	MR. FELDEWERT: We do include that, Mr. Examiner.
3	THE WITNESS: Yes, we do.
4	Q. (By Examiner Catanach) Okay, the only area
5	within the unit that's already accepted is the acreage in
6	blue; is that correct?
7	A. Yeah, and that's an area-specific exemption.
8	Q. Okay.
9	A. Really, the intent here is that by expanding this
10	blue area to cover the entire unit area, we could drill
11	production and/or injection wells wherever necessary
12	without coming to a hearing every time. We have about
13	eight or ten such wells planned for this unit.
14	Q. You didn't get anything in writing from
15	Mississippi Potash, did you?
16	A. No, that's a verbal. But I do have the woman's
17	name and number, if that would be helpful.
18	Q. I would, if you would supply that to me I would
19	appreciate it.
20	A. The woman's name is Jill Farnsworth, and her
21	telephone number at the plant is (505) 234-3849. The
22	notice was actually sent to her supervisor, Randy Foote,
23	who then forwarded it to her for comment and action.
24	Q. You were not able to look at the LMR maps; is
25	that correct?

1	A. No, they're privileged and confidential.
2	Q. And your assumption that the acreage that you
3	seek to accept is not in an LMR is based on what, Mr.
4	Becker?
5	A. It's based on conversations with Craig Cranston
6	with the BLM and Joe Mraz at the State Land Office.
7	Q. And did they specifically tell you that this was
8	not in an LMR?
9	A. Yes. They
10	Q. I assume they have the maps.
11	A. They have the maps, and they're privileged and
12	confidential. They could only indicate that it would
13	appear that I wasn't within an LMR. I mean
14	MR. FELDEWERT: Mr. Examiner, I would also note
15	in our Exhibit Number 3, on page 5, paragraph (16) (c)
16	indicates a finding by the Division that "the proposed
17	'excepted area'" which, of course, would have been the
18	area in blue, at the time of this order, was "not
19	located within an LMR or within 1/4 mile of any LMR"
20	EXAMINER CATANACH: Well, that still leaves a
21	considerable amount of acreage
22	MR. FELDEWERT: Correct.
23	EXAMINER CATANACH: Mr. Feldewert.
24	MR. FELDEWERT: Correct.
25	THE WITNESS: I don't mean to be evasive. It's

1	just that both of those gentlemen, you know, were trying to
2	be You know, they couldn't reveal information, yet I was
3	asking very specific information about buffer zones and
4	LMRs, which they couldn't actually, you know, let me know
5	where those lines were. So in my conversations with them I
6	came away with the impression that the lands within this
7	unit were not in an LMR. But they did not so state that
8	specifically.
9	Q. (By Examiner Catanach) Okay. Sapient operates
10	the entire acreage outlined in red, Mr. Becker?
11	A. Yes, there are 21 current wells.
12	Q. This is an approved waterflood project?
13	A. Yes, effective May 18th, 2000.
14	Q. What formation is that waterflood in?
15	A. Yates-Seven Rivers.
16	Q. Have you had any conversations with IMC about
17	this Application?
18	A. Other than locating the proper person to send the
19	notice to and the correct address in Carlsbad, no.
20	Q. Are you aware of their objection to this
21	Application?
22	A. I became aware of that yesterday afternoon about
23	2:30 when I saw a copy of their fax.
24	Q. You stated that the closest mining operation was
25	12 miles to the southwest?

1	A. That's my understanding, yes.
2	Q. And that's based on conversations, again, with
3	these BLM representatives?
4	A. Yes.
5	Q. And those are active mine workings that you're
6	talking about?
7	A. Yeah, that's where He indicated that was an
8	area that, to the best of his knowledge, where current
9	mining operations were taking place. I believe that's a
10	Mississippi Potash mine.
11	EXAMINER CATANACH: Okay, I have no further
12	questions of this witness.
13	MR. FELDEWERT: We then call Mr. Joe Cox.
14	JOE H. COX, Jr.,
15	the witness herein, after having been first duly sworn upon
16	his oath, was examined and testified as follows:
17	DIRECT EXAMINATION
18	BY MR. FELDEWERT:
19	Q. Mr. Cox, would you please state your full name,
20	address and present occupation?
21	A. Yes, my name is Joe Cox, Joe H. Cox, Jr. Address
22	is 7951 South Bemis Circle, and that's in Littleton,
23	Colorado, and the Zip Code is 80120. I'm the senior
24	engineer for Sapient Energy Corporation.
25	Q. Mr. Cox, have you previously testified before

1	this Division or one of its Examiners and had your
2	credentials as a petroleum landman accepted and made a
3	matter of record?
4	A. Petroleum engineer, yes.
5	Q. I'm sorry, petroleum engineer.
6	And are you familiar with the Application filed
7	in this case?
8	A. Yes.
9	Q. And are you familiar with the status of the oil
10	and gas reserves in and around the West Teas Unit area?
11	A. Yes, I am.
12	Q. And have you made a study of the opportunities
13	for Sapient to develop and produce for the reserves out of
14	the West Teas unit?
15	A. Yes.
16	Q. And have you made yourself knowledgeable and
17	familiar with the potash development in and around the
18	subject area?
19	A. Yes, through Mr. Becker.
20	Q. And have you reviewed the drilling requirements
21	of Order R-111-P?
22	A. Yes, I have.
23	Q. Have you studied, Mr. Cox, how to properly drill
24	and complete wells within unit area that will allow
25	additional recovery of hydrocarbons and prevent undue waste

1	of potash and protect miner safety?
2	A. Yes.
3	Q. And do you have a plan for drilling and
4	completing wells in the unit area with these concerns in
5	mind?
6	A. Yes.
7	MR. FELDEWERT: Mr. Examiner, at this time I
8	would tender Mr. Cox as an expert witness in petroleum
9	engineering.
10	EXAMINER CATANACH: Mr. Cox is so qualified.
11	Q. (By Mr. Feldewert) Mr. Cox, why don't you
12	describe for the Examiner the opportunities for Sapient
13	Energy to further develop and produce reserves from the
14	West Teas Pool?
15	A. Okay, I'll refer to Exhibit 7, which is a
16	structure map of the second Yates sand in the West Teas
17	Unit. The pink outline is the unit outline in this figure.
18	It's about 1320 acres within the unit. The contours show
19	the north plunging anticline with a structural high area in
20	the south part of the unit.
21	And the symbols, the red and blue well symbols on
22	the map, the triangles are injectors, the red triangles are
23	injectors proposed for the first stage of the flood.
24	Red circles are wells that will be producing
25	during the first stage of the flood.

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1	Blue triangles are wells that are proposed for
2	injection during the second stage of the flood, to be added
3	during the second stage.
4	And then the blue circles are wells that will be
5	added to production during the second stage.
6	Q. Mr. Cox, do you intend to drill any additional
7	wells in Stage 1?
8	A. We have one well in the northeast quarter of the
9	southeast quarter of Section 4, proposed for being drilled
10	during Stage 1.
11	Q. All the rest of the wells are existing wells that
12	are being converted into injection, or producing wells; is
13	that correct?
14	A. That's correct.
15	Q. Would you explain for the Examiner why these
16	additional wells in the unit are necessary?
17	A. Well, the waterflood, as it was analyzed, was
18	based on the Teas field, which is immediately to the east
19	of West Teas, and we feel in order to get the recoveries
20	that the analog field had, we needed to have a complete
21	development pattern, and the proposed wells just complete
22	that pattern.
23	Q. IMC Kalium has indicated that at least in
24	their notice of appearance, that they have a buffer zone
25	that extends into the west half of the west half of Section

1	9. Are there presently wells existing in that area?
2	A. We have two existing wells there.
3	Q. Mr. Cox, were those wells drilled without salt
4	string?
5	A. Yes, they were.
6	Q. They also have objected to or indicated that,
7	at least in their application, represented that they have a
8	buffer zone in the northwest quarter of the northwest
9	quarter of Section 16. Are there any wells drilled in that
10	area?
11	A. Yes, we have one existing well.
12	Q. And was that well drilled with or without a
13	casing string?
14	A. That well was drilled without a casing string,
15	without the salt protection string.
16	Q. Now, according to your map, then, you're
17	proposing to drill just two additional wells in that area;
18	is that correct?
19	A. That is correct. I might add, where the blue
20	triangles or blue circles are offset from a dryhole marker
21	or a plugged-and-abandoned symbol, that will be a
22	replacement well that will be drilled in there.
23	Q. Why is Sapient Energy seeking an exception from
24	the salt protection string requirements of R-111-P?
25	A. The deletion of that salt protection string

1	increases the rate of return on the project, and it
2	directly affects the economic viability of the project.
3	Q. What is the normal rate of return that Sapient
4	Energy uses in its projects?
5	A. They won't accept a rate of return lower than 15
6	percent.
7	Q. Okay, and why don't you describe for the Examiner
8	Sapient Exhibits 8 and 9?
9	A. Okay. Exhibit 8 is a discounted cash flow annual
10	report for a well that includes the investment for the salt
11	protection string. And down in the "Economics Information"
12	section at the bottom of the report it gives the rate of
13	return at 11.18 percent.
14	Q. And that rate of return would not be acceptable
15	to Sapient; is that correct?
16	A. That's correct.
17	Q. What is Sapient Exhibit Number 9?
18	A. Okay, Number 9, Exhibit 9, is the same format
19	without the investment for the salt protection string, and
20	that gives us a rate of return of 17.89 percent.
21	Q. Mr. Cox, how do these rates of return affect the
22	economic viability of Sapient's proposed Stage 1 and Stage
23	2 drilling projects?
24	A. We just, you know, would not be able to justify
25	drilling the proposed wells with the salt protection

26

1	string.
2	Q. Would you be able to drill the well in the
3	northwest quarter of the southeast quarter of Section 4
4	with a salt protection string?
5	A. Yeah, it would be the northeast of the southeast
6	of 4, and no, that by the current economic standards, we
7	would not be able to drill that well either.
8	Q. Would the same hold true for your proposed
9	drilling project identified in blue as Stage 2?
10	A. That would be true in all those, yes.
11	Q. In your opinion, Mr. Cox, are the wells that you
12	set forth as the Stage 1 and Stage 2 drilling program
13	necessary to most efficiently drain the reserves and
14	prevent waste?
15	A. Yes.
16	Q. If this Application is not granted, and thus the
17	economics are not present to allow Sapient to drill the
18	Stage 1 and Stage 2 wells, will there be oil reserves left
19	in the ground?
20	A. Yes, I believe there will be.
21	Q. Can you estimate how many barrels of oil will not
22	be recovered if the economics are not present to drill the
23	Stage 2 wells?
24	A. A rough estimate is about 640,000 barrels, just
25	proportionate to the number of wells we have to leave out.

1	
1	Q. In your opinion, does the deletion of the salt
2	protection string significantly improve Sapient Energy's
3	opportunity to drill these wells and recover oil that might
4	otherwise be lost?
5	A. Yes.
6	Q. Why don't you turn to Exhibit Number 1 and just
7	identify for the Examiner the drilling requirements of
8	R-111-P for which you are seeking an exception?
9	A. Okay, those requirements are in Section D (3), on
10	page 7.
11	Q. That's of Exhibit 1?
12	A. Of Exhibit 1, that's correct.
13	Q. Do you intend does Sapient Energy intend to
14	comply with all other aspects of this order?
15	A. Yes.
16	Q. Do you have a plan for drilling and completing
17	wells within the unit area that will allow additional
18	recovery of hydrocarbons and prevent undue waste of potash
19	and protect miner safety?
20	A. Yes, we do.
21	Q. Why don't you identify and describe for the
22	Examiner Exhibit Number 10?
23	A. Exhibit 10 is a well plan that was filed in the
24	Stevens and Tull case that led to Order 10,432. It just
25	details the mud systems, the casing string designs and the

1	cementing designs for drilling and completing these wells
2	with a surface casing string and a production casing string
3	only.
4	MR. FELDEWERT: Mr. Examiner, just for your
5	benefit, this exhibit is also found under the engineering
6	section of the notebook that I gave to you.
7	Q. (By Mr. Feldewert) Mr. Cox, was this a plan that
8	was approved and used by Sapient Energy's predecessor to
9	drill the wells in the blue area shown on Exhibit Number 2?
10	A. Yes, all the wells drilled by Stevens and Tull
11	were drilled under this plan.
12	Q. And does Sapient Energy intend to follow this
13	well plan for wells drilled within the unit area if this
14	Application is approved?
15	A. We do.
16	Q. Mr. Cox, in your opinion, will the deletion of
17	the salt protection string from Sapient's drilling program
18	constitute a risk to miners' health and safety?
19	A. No, and I refer to Exhibit 3 again.
20	Q. This is the Stevens and Tull order?
21	A. This is Yeah, R-10,432. In Finding (17) (a)
22	in that order
23	Q. Located on page 6?
24	A. This is on page 6, that's correct. It says, "the
25	wells within the proposed 'excepted area' can be drilled,
-	

cased, cemented, completed and produced by deleting the
salt protection casing string without risk to miner's
safety or causing the undue waste of commercial deposits of
potash"
Q. Mr. Cox, do you agree with that finding that was
made by the Division in 1995?
A. I do.
Q. In your opinion, will the deletion of the salt
protection string from Sapient's drilling program unduly
reduce the total quantity of potash which may reasonably be
recovered in commercial quantities or interfere with the
orderly commercial development of potash deposits?
A. No, it won't.
Q. And from what information, Mr. Cox, do you draw
this conclusion?
A. From reviewing some of the past data from the
Stevens and Tull and the Mitchell exception cases. It
indicates that the unit area is largely devoid of
commercial potash deposits.
Refer to Exhibit 5
Q. Is that the Mitchell Energy order?
A. That is the Mitchell Energy order, that's
correct. On page 5, paragraph (16), it basically states
that all of Section 4 is barren of commercial potash
deposits.

1	Back to Exhibit 3, which is the Stevens and Tull
2	order, on page 5 of that order, finding (16) (a), "the vast
3	majority of Section 9 is within an area defined by the BLM
4	as being 'barren' of commercial potash"
5	And then finding (16) (e) in that same order, on
6	page 6, it says it's "highly unlikely" that the potash
7	deposits are economically minable in Section 16.
8	Q. Is there anything else that you base your opinion
9	on?
10	A. Yes, the report by Gary Hutchinson, which is
11	Exhibit 11 and that was part of the Stevens and Tull
12	presentation in his conclusions he says that "No potash
13	mining is expected to occur in the subject area in the
14	foreseeable future due to the declining economics of the
15	potash industry in New Mexico and the physical lack of
16	commercial potash in the Area of this report."
17	Q. And what was the area that was covered by his
18	report?
19	A. That's a nine-section area centered around
20	Section 16.
21	Q. Mr. Cox, will approval of this Application afford
22	Sapient Energy the opportunity to produce its just and
23	equitable share of hydrocarbons from the West Teas (Yates-
24	Seven Rivers) Pool?
25	A. Yes.

1	Q. And will approval of this Application prevent
2	waste and the economic loss caused by the drilling of wells
3	with unnecessary salt protection strings?
4	A. Yes.
5	Q. Were Sapient Exhibits 7 through 11 prepared by
6	you or compiled at your direction?
7	A. They were.
8	MR. FELDEWERT: Mr. Examiner, I would then move
9	the admission of Sapient Exhibits 7 through 11.
10	EXAMINER CATANACH: Exhibits 7 through 11 will be
11	admitted as evidence.
12	MR. FELDEWERT: And I have no further questions.
13	EXAMINER CATANACH: Mr. Morehouse, do you have
14	any questions of this witness?
15	MR. MOREHOUSE: I guess, yes.
16	EXAMINATION
17	BY MR. MOREHOUSE:
18	Q. You say you don't think there will be any risk to
19	the miners. Do you understand what risks that would be to
20	miners, due to hydrocarbons in this strata?
21	A. From R-111-P, my understanding is the concerns
22	would be any methane gas that might find its way into a
23	mining area, is the primary concern.
24	Q. And the way you come to the conclusion the miners
25	are not at risk is, other evidence that mining won't be

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1	occurring nearby, some distance away?
2	A. That, and there has been ample evidence within
3	this area that the wells drilled without the protection
4	string have kept their integrity and there has not been any
5	problem with those wells.
6	Q. So oil wells don't leak outside the casing?
7	A. That's correct, you know, we have no evidence of
8	any problems with those casing strings.
9	Q. Anywhere, or just in this immediate area?
10	A. Well, I can speak for this area.
11	Q. Did anybody indicate the quality of the potash in
12	the area to you, other than just a statement that nothing's
13	there?
14	A. All of the information I have seen is from this
15	Hutchinson report and from the cases we've referenced.
16	Q. Is that in conflict with what Craig Cranston or
17	Joe Mraz may have told you about what was in the adjacent
18	Section 8?
19	A. I have not spoken with Mr. Cranston or Mraz.
20	Q where the LMR was? Did they give you any
21	indication that there was an LMR at all in Section 8?
22	A. No, I have not gotten The information I have
23	gotten has been basically through Mr. Becker, but
24	MR. MOREHOUSE: I guess that's all I know to ask.
25	EXAMINER CATANACH: Okay.

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1	EXAMINATION
2	BY EXAMINER CATANACH:
3	Q. Mr. Cox, you cited the economic Mr.
4	Hutchinson, in his report you said that he didn't
5	foresee any potash mining in this area?
6	A. That's correct.
7	Q. Do you have knowledge about whether the economics
8	have remained the same, or have they changed at all in the
9	potash industry?
10	A. My understanding is that the economics, the
11	situation has stayed the same, where the Canadian potash
12	industry has a tremendous advantage economically and that
13	the market share hasn't changed any for the New Mexico
14	potash mining.
15	Q. So it's your opinion those economic factors are
16	still valid?
17	A. That's correct.
18	Q. How many wells are you guys going to drill,
19	total?
20	A. We have proposed nine additional wells.
21	Q. And those wells are identified on Exhibit 7?
22	A. Yes, Exhibit 7. They'd be the blue triangles or
23	well, the triangles or circles that are adjacent to or
24	on top of an open symbol or a plugged-and-abandoned symbol.
25	Q. Shown in blue, those are all shown in blue; is

1	that right?
2	A. Yeah, except for the northeast-southeast of 4 up
3	there, that's the only other
4	Q. Northeast of the southeast of 4. Is that an
5	injection well you're going to drill up there?
6	A. Yeah, it would be produced for a short period of
7	time and then converted to injection, just flush production
8	and then convert it.
9	Q. So a total of six injection wells will be
10	drilled?
11	A. Correct. Well, make that five. One, the Conoco
12	2, or the northeast northeast northwest-northwest of 16
13	would be a conversion of an existing well.
14	Q. Five injection wells and four producing wells; is
15	that correct?
16	A. That's correct.
17	Q. How do you run economics on injection wells?
18	A. I just took the average recovery and the average
19	cost of drilling and completing and then applied that to
20	the projected unit response, divided by the number of
21	wells.
22	Q. Gives you a number for each well, whether it's
23	injection or producing?
24	A. That's correct.
25	Q. Is this unit actively being flooded at this time?

1	A. We have not started any waterflood yet.
2	Q. And when do you anticipate starting that up?
3	A. Well, one of the first steps that I have
4	recommended is the drilling of the well in Section 4, and
5	then I think we will begin waterflood installation probably
6	in the first quarter of 2001.
7	Q. The effect of not being able to drill these wells
8	Are you testifying that if this Application is not
9	approved, that these wells will not be drilled?
10	A. You know, looking at the wells the way I've
11	looked at them, which is just this average case, they would
12	not be drilled. There may be a well or two that we feel
13	has enough evidence to justify it, but the waterflood would
14	not be whole as we've projected it.
15	Q. So the 640-some-odd thousand barrels of oil, that
16	was just, again, taken take the average recovery per
17	well and just deducted that from there?
18	A. That's right, 31 percent of the ultimate unit
19	wells would be newly drilled. So by eliminating those the
20	projected secondary is about 2.05 million, just a
21	proportionate share of those.
22	Q. I'm sorry 2.5?
23	A. 2.05.
24	Q. That's for the whole unit?
25	A. That's correct.

1	Q. What is the additional cost per well to add that
2	casing string?
3	A. About \$97,000, but that includes the casing, the
4	cementing, the extra rig time, everything.
5	EXAMINER CATANACH: I don't have any more
6	questions of this witness, Mr. Feldewert.
7	MR. FELDEWERT: I don't either. I have a brief
8	closing statement, just to address the notice of appearance
9	that was filed. I don't know whether IMC intends to
10	present anything here today.
11	EXAMINER CATANACH: Mr. Morehouse, do you have
12	any evidence to present in this case?
13	MR. MOREHOUSE: I was hoping to be able to speak
14	towards it, but
15	EXAMINER CATANACH: Yes, sir, you'll have the
16	opportunity to do that. But you don't have any evidence to
17	present?
18	MR. MOREHOUSE: No, everything has already been
19	submitted to the state authorities.
20	EXAMINER CATANACH: Okay, why don't we do that
21	now, let you make a comment or a statement at this time?
22	MR. MOREHOUSE: Okay. We are required by R-111-P
23	to submit LMRs annually. We have submitted them.
24	In fact, when we picked up these properties,
25	approximately 1995, we received these properties from

 Noranda, the Canadian corporation that had held the the previous 20 or more years, I believe. They had on it. They had reserves designated on it during t 	l an LMR
3 on it. They had reserves designated on it during t	chat
4 entire time, and when an LMRs were required they ma	ide an
5 LMR for this area.	
6 We have not made appearances heretofore o	on any of
7 the previous applications for deletion of a salt pr	otection
8 string. During 1995, 1996, 1997, we were in intens	se legal
9 proceedings with the oil and gas industry down in	
10 Albuquerque.	
11 This area is remote from us, as was testi	fied
12 here. It is region reserves. We have submitted a	mining
13 plan to the State Land Office showing that we'll be	e mining
14 it and a guess of when. The guess is, we'll get in	to this
15 orebody, to the same orebody to the north, west and	where
16 this is at, in about 15 years, and the whole orebod	y will
17 be mined out in about nine years.	
18 The LMR actually does encompass more than	three-
19 quarters of Section 8. It does extend across the b	ottom of
20 Section 8, the south line, to a point approximately	1400,
21 1500 feet from the southeast corner, and then it tak	kes off
22 in a north northeast direction and curves back arous	nd. So
23 the LMR An LMR indicates minable reserves.	
24 Mr. Hutchinson, we met him down at the	
25 Albuquerque hearing. He's a I think a mining eco	onomist,

1 I believe	
I I Delleve	, maybe a mining engineer; I'm not sure. He has
2 not worke	d in potash, that I'm aware of, anywhere. His
3 sole expe	rtise in potash has been on the payroll of oil and
4 gas conce	rns, to argue with the potash.
5	He doesn't believe there's any ore left anywhere
6 down ther	e. That was four years ago. We're still mining,
7 we're sti	ll there, we're not dead yet.
8	Our reserves at IMC in sylvite which is the
9 type of o	re this is are depleting. This Noranda acreage
10 was picke	d up by us to have a future in sylvite once we
11 deplete o	ur ores. That's why the delayed startup. We
12 don't nee	d it at this moment, but it is part of what we
13 expect to	mine.
14	The R-111-P causes salt string protection to be
15 installed	anywhere where there could be an exposure to
16 mining an	d to the ore reserves.
17	Since If we would go to the State Land Office
18 to get th	e LMR line drawn out and we drew a depth-of-ore-
19 plus-ten-	percent line from that LMR, which is what R-111-P
20 designate	s as the buffer zone, one quarter mile or plus ten
21 percent,	whichever is greater, there would be about 2200-
22 foot buff	er line around it. It does take in most of the
23 expansion	of this request to the east I mean to the west
24 side, the	request to the east of us. That's just That's
25 the no-dr	ill area.

There isn't anything in R-111-P that I can see 1 that says how far away salt protection string must be 2 applied. But surely if drilling is not allowed in this 3 particular area, salt protection string should be installed 4 5 if the drilling was allowed, and even some distance beyond I'd say at least a mile. 6 that. Since we have allowed -- Since we haven't come up 7 8 here before, and there are wells drilled out there without the salt protection string, personally and IMC don't feel 9 10 that we could argue with drilling holes further away than the existing holes without salt protection strings, so 11 12 portions of this request would be accepted. 13 But those on the east side, the areas that they want to pick up in addition over on the west side of their 14 15 application, east side of us, we would object to. 16 We do expect to mine in the area. Oil and gas 17 drilling does present a potential risk to that mining, and a salt protection string offers an increase in protection 18 from the drilling. 19 20 EXAMINER CATANACH: Okay. Mr. Morehouse, would you be able to submit a map that shows the LMR at least in 21 22 this immediate vicinity? 23 Yeah, I could do that. MR. MOREHOUSE: 24 That might be helpful to this EXAMINER CATANACH: 25 case if you could submit that to us, and not identify

1	anywhere else, but just this specific area, would be really
2	helpful.
3	And also, if you would, you've conveyed your
4	objection today, but you might write a letter and be more
5	specific with regards to what your specific objections
6	were. You've seen where these wells are supposed to be
7	drilled, and you might specifically tell us which wells you
8	object to in that letter. That would be helpful too.
9	Mr. Feldewert?
10	MR. FELDEWERT: Mr. Examiner, I want to approach
11	you just one minute to give you a portion of the transcript
12	I want to refer to.
13	And I also would like to request that to the
14	extent that letter is submitted, that we be provided an
15	opportunity to comment, once it's received by the Division.
16	If they can make a copy to our office, that would be
17	appreciated. I'll give you my card afterwards.
18	MR. MOREHOUSE: All right.
19	MR. FELDEWERT: IMC Kalium here makes a claim
20	that they have an LMR whose buffer zone, according to their
21	definition, extends into what they call significant
22	portions of the west half, the west half of Section 9, the
23	northwest quarter of the northwest quarter of Section 16
24	and the north half of the north half of Section 17: in
25	other words, as I understand it, an area that surrounds

1 their leaseholding in Section 8.

2	I think it's important to note that their only
3	objection to a salt string exemption for wells is for that
4	west of the areas previously allowed. Well, if we look at
5	Exhibit Number 2, you'll see, Mr. Examiner, that the only
6	area west of the areas previously allowed are areas where
7	there's already wells drilled without a salt protection
8	string, encompass the west half of the northeast quarter of
9	Section 17 and the northeast quarter of the southeast
10	quarter of Section 17. So that's really the only area, as
11	I understand their application, or their notice of
12	appearance, that they're talking about.
13	They allege a buffer zone around their
14	undisclosed LMR based on their interpretation of, according
15	to his notice appearance, the proposed mining depth.
16	Buffer zones are not based on proposed mining
17	depths, they're actually based on the actual depth of the
18	ore. And IMC is not here today with any evidence before
19	this Division of the location of their LMR, although I
20	understand that they are now going to disclose that to you.
21	But they have provided no evidence of the depth of the ore
22	to support their alleged buffer zone and no evidence
23	whatsoever that any mining will ever occur in the southeast
24	quarter of Section 8 or any part of Section 8.
25	And indeed, the evidence in this case is directly

1	contrary to what they are representing. Paragraph 5 or
2	on page 5, paragraph (16) of the Stevens and Tull order, as
3	we reference, indicates that Section 9, which is right
4	adjacent to that Section 8, is completely "'barren' of
5	commercial potash"
6	Page 16, paragraph (16) of that Stevens and Tull
7	order [<i>sic</i>], there's a finding by the Division that it's
8	highly unlikely that mining will ever occur in Section 16.
9	And if you look at the transcript from that
10	hearing, Mr. Examiner, I'm referring to page 59, beginning
11	at line 20, the following question was asked of Mr.
12	Hutchinson, who is the only individual who has testified in
13	this case concerning the mining of potash, and he was
14	asked, "Do you see with your expertise any reasonable
15	probability that the potash resource as it exists within
16	this nine sections is going to be developed within any
17	portion of the time frame in which the hydrocarbon
18	reservoirs are being accessed and produced?"
19	And his answer, "I think the potash in this area
20	will never be developed."
21	He was also asked the following question on page
22	60, line 6: "Is there any reasonable probability that
23	existing mining operations will come close enough to this
24	area that as a result of their operations subsidence would
25	occur and any of these wellbores would be put to physical

1	pressures that would compromise their integrity?"
2	He answered, "Because of the distances involved
3	to existing operations, which are tremendous distances, and
4	my knowledge of subsidence studies in the general area, the
5	answer is no, there will never be a problem with subsidence
6	affecting the wellbores in this nine-section plat."
7	And the nine sections that he's talking about are
8	the nine sections surrounding Section 16, which includes
9	Section 8.
10	Their notice of appearance recognizes that salt
11	protection strings are not required if potash is either
12	absent or noncommercial. Mr. Examiner, the only evidence
13	in this record is that the potash in this area, to the
14	extent that it exists, is noncommercial and will not be
15	mined.
16	And they make no attempt to rebut this evidence.
17	They still admit today that the areas in which they were
18	mining are remote from this area and that there is no
19	mining here today, and they offer no plan for mining in the
20	future.
21	And finally, a portion of what they now claim as
22	their buffer zone has already been exempted from the salt
23	protection string requirements of Order R-111-P, and I'm
24	talking about the blue area in the northwest quarter of the
25	northwest quarter in Section 16. And that was done because

1	of the evidence presented in the Stevens and Tull record.
2	IMC and their predecessor had notice of that
3	hearing, they had the opportunity to present evidence, they
4	did not, and they have no evidence here today. They don't
5	object then, and they offer no evidence to support any
6	objection now.
7	So I would submit that their notice of appearance
8	here provides no reason for this Division to deny the
9	Application that's been filed by Sapient Energy.
10	We thank you for your time.
11	EXAMINER CATANACH: Mr. Feldewert.
12	Is there anything further in this case?
13	MR. MOREHOUSE: If I could one more time.
14	If the bore is not a is not it's just
15	you look at the core hole, you mine where the ore is. We
16	don't mine anything other than the ore.
17	So if According to the R-111-P regs, if
18	there's any disagreement about LMR, we can or you can
19	find out from the BLM what is true and what is not true
20	about the LMR, and I'm willing to submit what I can in the
21	area. And if there's any question about what this means,
22	how deep it is, all those answers can be answered by the
23	BLM.
24	The OCD is R-111-P provides that the OCD rely
25	on the BLM and state land office for the technical

	10
1	knowledge of the presence of ore. That's basically it.
2	On the subject of subsidence and Mr.
3	Hutchinson again, he stated it will never be mined. And
4	once stating that, the subsidence is moot. There Of
5	course, if he says it will never be mined, I guess the
6	progression would be subsidence is not a problem, and that
7	is true. However, he is in error about will it be mined?
8	The statement has been made that no plan has been
9	submitted for mining of this area. It has been submitted
10	to the State Land Office, so those plans do exist. I can
11	come up with those too.
12	EXAMINER CATANACH: You can present those as
13	well, Mr. Morehouse?
14	MR. MOREHOUSE: Yeah.
15	EXAMINER CATANACH: That would be beneficial to
16	us too in rendering this decision, if you could submit that
17	as well.
18	Okay, there being nothing further in this case,
19	Case 12,506 will be taken under advisement.
20	(Thereupon, these proceedings were concluded at
21	9:26 a.m.)
22	* * *
23	i to hereby conflict that the foregoing a conversion record of the prevention of the Associate bearing of a
24	the Drawiner bearing of Co No. bears by no on
25	A strange of the stra
	Of Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)) ss. COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL October 20th, 2000.

STEVEN T. BRENNER CCR No. 7

My commission expires: October 14, 2002