

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:	)	
	)	
APPLICATION OF GP II ENERGY, INC., FOR	)	CASE NOS. 12,112
APPROVAL OF A WATERFLOOD PROJECT, EDDY	)	
COUNTY, NEW MEXICO	)	
	)	
APPLICATION OF GP II ENERGY, INC., FOR	)	and 12,113
STATUTORY UNITIZATION, EDDY COUNTY, NEW	)	
MEXICO	)	
	)	(Consolidated)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

February 4th, 1999

Santa Fe, New Mexico

OIL CONSERVATION DIV.  
99 FEB 18 AM 7:56

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, February 4th, 1999, 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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## I N D E X

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 Examiner Hearing  
 CASE NOS. 12,112 and 12,113 (Consolidated)

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## A P P E A R A N C E S

## FOR THE DIVISION:

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## FOR THE APPLICANT:

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P.O. Box 2208  
Santa Fe, New Mexico 87504-2208  
By: WILLIAM F. CARR

FOR CHASE OIL CORPORATION OF ARTESIA,  
STAPLES OIL COMPANY and K.M. JONES COMPANY:

LOSEE, CARSON, HAAS & CARROLL, P.A.  
311 West Quay  
Post Office Box 1720  
Artesia, New Mexico 88210  
By: ERNEST L. CARROLL

## ALSO PRESENT:

MARK W. ASHLEY  
NMOCD Petroleum Geologist  
2040 South Pacheco  
Santa Fe, New Mexico 87505

\* \* \*

1           WHEREUPON, the following proceedings were had at  
2   1:37 p.m.:

3           EXAMINER CATANACH: At this time I'll call Case  
4   12,112, which is the Application of GP II Energy, Inc., for  
5   approval of a waterflood project, Eddy County, New Mexico.  
6           Call for appearances in this case.

7           MR. CARR: May it please the Examiner, my name is  
8   William F. Carr with the Santa Fe law firm Campbell, Carr,  
9   Berge and Sheridan. We represent GP II Energy, Inc., in  
10   this matter, and I have two witnesses.

11           At this time I would request that the case be  
12   consolidated for the purposes of hearing with Case 12,113,  
13   which is statutory unitization case unitizing the project  
14   area for the waterflood.

15           EXAMINER CATANACH: At this time I'll call Case  
16   12,113, which is the Application of GP II Energy, Inc., for  
17   statutory unitization, Eddy County, New Mexico.

18           Call for additional appearances in either of  
19   these cases.

20           MR. ERNEST CARROLL: Mr. Examiner, I'm Ernest  
21   Carroll of the Artesia law firm of Losee, Carson, Haas and  
22   Carroll, and I am here today on behalf of three companies  
23   in opposition to these Applications. They are Chase Oil  
24   Corporation of Artesia; additionally I represent Staples  
25   Oil Company and K.M. Jones Company.

1 I have no witnesses for any of these three  
2 parties.

3 EXAMINER CATANACH: Okay. Any additional  
4 appearances?

5 Okay, will the witnesses please stand to be sworn  
6 in at this time?

7 (Thereupon, the witnesses were sworn.)

8 ROBERT LEE,  
9 the witness herein, after having been first duly sworn upon  
10 his oath, was examined and testified as follows:

11 DIRECT EXAMINATION

12 BY MR. CARR:

13 Q. Would you state your name for the record, please?

14 A. My name is Robert Lee.

15 Q. Mr. Lee, where do you reside?

16 A. In Midland, Texas.

17 Q. By whom are you employed?

18 A. I'm a consulting engineer, and I'm working for GP  
19 II Energy.

20 Q. And how long have you been working on this  
21 project for GP II Energy?

22 A. Since September of 1998.

23 Q. Have you previously testified before the Oil  
24 Conservation Division and had your credentials accepted and  
25 made a matter of record?

1 A. Yes, I have.

2 Q. And at the time of your prior qualification were  
3 you qualified as a petroleum engineer?

4 A. Yes, I was.

5 Q. Are you familiar with the Applications filed in  
6 these consolidated cases --

7 A. Yes, I am.

8 Q. -- on behalf of GP?

9 A. Yes, I am.

10 Q. Are you familiar with the status of the lands  
11 involved in the proposed Square Lake Unit area and the  
12 Square Lake-Grayburg-San Andres Pool?

13 A. Yes, I am.

14 Q. Have you made a technical study of the area which  
15 is the subject of this Application?

16 A. Yes, I have.

17 Q. And are you prepared to share the results of your  
18 work with Examiner Catanach?

19 A. Yes, I am.

20 MR. CARR: Mr. Catanach, are the witness's  
21 qualifications acceptable?

22 EXAMINER CATANACH: Mr. Lee is so qualified.

23 Q. (By Mr. Carr) Mr. Lee, would you first summarize  
24 what it is that GP II Energy seeks in this case?

25 A. What we're here today, we're seeking statutory

1 unitization of the proposed North Square Lake Unit area.  
2 It's comprised of about 620 acres, made up of federal and  
3 state lands, and we're looking for approval of a waterflood  
4 project for that unit.

5 Q. And how many acres are in the unit area?

6 A. 6120.

7 Q. What is the current status of that acreage?

8 A. Some of it has been under waterflood in the past.  
9 None of it has previously been put in any units. The wells  
10 are in an advanced stage of depletion. The prior  
11 waterflood approvals for this field can be found under R-  
12 1110, R-2920, R-2977 and R-3217.

13 Q. Mr. Lee, let's refer to what has been marked for  
14 identification as GP II Energy, Inc., Exhibit Number 1.  
15 I'd ask you to identify this and review it for Mr.  
16 Catanach.

17 A. This is a large map of the area. It has the unit  
18 boundaries shown in the heavy dark line. It shows the  
19 ownership of the lands in the area. It shows the lands  
20 within a two-mile area around the proposed unit.

21 As you can see, to the south we are bordered by  
22 the Devon-operated Grayburg Jackson field, and on the west  
23 side we are bordered by J. Cleo Thompson's West Square Lake  
24 Unit.

25 Q. When I look at this map, there's sort of a



1 scalloped effect going around the outside of the unit  
2 boundary. Would you explain that?

3 A. Yes. What I've done here is, I've gone around to  
4 all the proposed injection wells, which will be the  
5 existing wells within the unit -- they'll be converted --  
6 and I have drawn a half-mile radius around those injection  
7 wells, and this has defined my area of review for the  
8 project.

9 Q. How does the Devon operation in the Grayburg  
10 Jackson waterflood to the south compare to what GP II  
11 Energy, Inc., is proposing in this case?

12 A. It's very similar, it's almost exactly the same.  
13 They had an older flood that was drilled on 40s and  
14 basically had a fivespot pattern in there. And in the last  
15 recent, oh, several years, they have come in and they've  
16 filled in all the 40-acre areas that didn't have wells, and  
17 they've infill-drilled it on 20-acre spacing and saw good  
18 results from that.

19 And they have come in now, and they're starting  
20 to collapse down their patterns out here, and starting  
21 their full-scale flood on 20-acre spacing now.

22 Q. Let's go to Exhibit Number 2. What is that?

23 A. This is an ownership plat of the area. This  
24 shows the sections, the proposed tract numbers, and it  
25 lists the operators of some of the other tracts that are

1 not operated by GP II Energy.

2 Q. What is the character of the land in this unit  
3 area?

4 A. The lands in here are comprised of federal and  
5 state lands. There is 85.59 percent federal land and 14.41  
6 percent state land.

7 Q. Would you identify Exhibit Number 3, please?

8 A. This is a unit agreement for the North Square  
9 Lake Unit, and it's pretty much the typical form. It  
10 provides for waterflooding, and it sets out the basis for  
11 participation of each of the parties, and it provides for  
12 filing of periodic plans of development.

13 Q. Will GP II Energy, Inc., file plans of  
14 development with the Oil Conservation Division at the same  
15 time it files these plans with other governmental entities?

16 A. Yes, it will.

17 Q. Will you now identify Exhibit 4?

18 A. Number 4 is the unit operating agreement for the  
19 North Square Lake Unit. And within this agreement, it  
20 outlines the supervision and management of the unit,  
21 defines the rights and duties of the parties, shows how  
22 investments and costs will be shared.

23 There's a section in here that establishes the  
24 voting procedures to be made by the working interest  
25 owners, and they'll have an equal say in the unit, as per

1 their participation factor.

2 It also sets forth accounting procedures on how  
3 costs will be allocated and paid.

4 Q. Have you reviewed the GP II plans for the  
5 development of this area with the Bureau of Land  
6 Management?

7 A. Yes, we have, and we have Exhibit Number 5, which  
8 is a letter from the BLM to that effect where they  
9 designate this as a logical unit area for the proposed  
10 flood.

11 Q. Have you reviewed this Application and proposed  
12 waterflood with the New Mexico State Land Office?

13 A. Yes, we have. We met with Pete Martinez and his  
14 group yesterday, February the 3rd, and they did not have  
15 any problem with our proposed unit or plans.

16 They have not given us preliminary approval yet,  
17 because we had not written them a letter requesting  
18 preliminary approval. But we'll do that in the next few  
19 days, and once we get that from them, why, we'll send that  
20 to the Division.

21 Q. You've provided the unit agreement and the C-108  
22 and the technical report, but you just haven't formally  
23 requested it; is that correct?

24 A. That's correct.

25 Q. And once you make that formal request, did they

1 indicate they had any problems with what you're proposing?

2 A. No, Pete said he had no problems, he would give  
3 us preliminary approval once we got that letter to him.

4 Q. Okay. Let's refer now to what has been marked as  
5 GP II Exhibit Number 6. Will you identify that and review  
6 the information on this for Mr. Catanach?

7 A. Yes, this is an Exhibit "C" out of the unit  
8 agreement, and it shows the working interest owners and  
9 their unit working interests. There's 28 working interest  
10 owners, and to date we have a little over 80-percent  
11 approval.

12 Q. When did GP II actually contact the working  
13 interest owners concerning their participation in this  
14 unit?

15 A. In September of 1998.

16 Q. And why was no contact made prior to September of  
17 1998?

18 A. We were establishing what the boundary needed to  
19 be with the BLM.

20 Q. GP II, or Sirgo Lake Partners, initially was  
21 proposing a unit comprised strictly of their own acreage;  
22 isn't that right?

23 A. That's correct.

24 Q. And there were meetings with the BLM in which  
25 additional acreage was required by that agency to be

1 included in the unit?

2 A. That is correct.

3 Q. And then you finally reached an agreement on the  
4 unit boundary and received preliminary -- or BLM approval  
5 in September?

6 A. Yes, to go forward with the project.

7 Q. And that's when you went out to the other  
8 interest owners?

9 A. That's correct.

10 Q. Let's refer now to what has been marked as  
11 Exhibit Number 7. Could you identify this, please?

12 A. This is a list of the royalty interest owners in  
13 the proposed unit.

14 Q. And how many royalty interest owners are there in  
15 the unit area?

16 A. There's about 166 of them.

17 Q. And what percentage of the royalty interest  
18 ownership presently has indicated they will commit to the  
19 unit plan?

20 A. Right about 50 percent.

21 Q. And that includes the governmental entities?

22 A. That is correct.

23 Q. In your opinion, has a good-faith effort been  
24 made to secure voluntary unitization and participation of  
25 the working interest owners and royalty interest owners in

1 the area affected by this Application?

2 A. Yes.

3 Q. Is Exhibit Number 8 a copy of an affidavit with  
4 attached return receipts confirming that notice of this  
5 Application was provided to the affected interest owners in  
6 accordance with Division rules?

7 A. Yes, it is.

8 Q. Now, the hearing on the Application that's before  
9 the Examiner today was originally scheduled for hearing in  
10 January, correct?

11 A. That is correct.

12 Q. And why was that continued to today's date?

13 A. Prior to the hearing in January, the BLM  
14 contacted us and had a few additional questions concerning  
15 the unit. So we went to Roswell and met with them and took  
16 care of their questions, and then they went ahead and gave  
17 us the preliminary approval or said that what we were  
18 looking at doing was a logical waterflood unit.

19 Q. And you continued the case to enable you to  
20 conclude discussions with the BLM?

21 A. Yes.

22 Q. Let's go now to Exhibit Number 9. Would you  
23 identify that?

24 A. Yes, this is a type log of the formations here in  
25 the area. And what I'm showing here is the unitized

1 interval, top and bottom.

2 As per the unit agreement, the unitized formation  
3 is going to be determined by intervals in the Zephyr "ZQ"  
4 State Number 1 well, showing that the top of the unitized  
5 interval will be in the Grayburg at a depth of 3050 feet,  
6 and the bottom of the unitized interval will be in the San  
7 Andres at a depth of 4206 feet.

8 Q. Let's go now to Exhibit Number 10, and I would  
9 first ask you just to identify and explain what this is.

10 A. This is a study that I had prepared on the infill  
11 development and waterflooding of the North Square Lake  
12 Unit.

13 Q. And has this study been provided to the other  
14 owners who are affected by the Application?

15 A. Yes, it has.

16 Q. Let's go in this exhibit and turn to the exhibits  
17 behind the tab marked -- it's entitled "Maps" --

18 A. Uh-huh.

19 Q. -- and I'd ask you first to go to Exhibit L.

20 A. Exhibit L is a -- It's in two parts, actually,  
21 and it is a structure map across the area of the proposed  
22 unit, going down onto the Devon acreage, showing how our  
23 proposed unit, the structure is -- just follows right along  
24 with what they have down there.

25 Also on this map, you can see areas that are

1 colored in dark yellow, which will be the federal acreage,  
2 and then in a lighter shade of yellow, which will be the  
3 state acreage.

4 Q. How important is structure in this area?

5 A. It's not very critical.

6 Q. And this basically shows that the structure in  
7 the area --

8 A. Yes, it shows that we're dipping to the east at a  
9 rate of about 85 feet per mile, and the structure was done  
10 on the top of the San Andres formation.

11 Q. Okay, let's go back to the first plat or map  
12 behind the "Maps" tab in the Exhibit, Exhibit F.

13 A. Uh-huh.

14 Q. What is that?

15 A. This is an isopach map of the Premier sand out  
16 here. The Premier is the predominant productive horizon,  
17 and this is a map, isopach map, showing the pay greater  
18 than 10-percent porosity. And it shows that the thickness  
19 of the zone ranges from zero to 50 feet in thickness.

20 Q. The proposed unit boundary basically follows what  
21 is believed to be the zero line in the Premier sand; is  
22 that right?

23 A. That's correct, except where we're bounded by  
24 units or the other waterfloods to the south.

25 Q. Okay, let's go to the next plat or map, marked



1 Exhibit G. Would you identify and review that?

2 A. This is a -- Yes, this is an isopach map on the  
3 Lovington sand, once again using a net pay greater than 10  
4 percent, and it shows the thickness of the Lovington  
5 ranging from zero to 20 feet in thickness, a little thinner  
6 than the Premier.

7 Q. And again, the boundary is consistent with the --  
8 of the unit, is consistent with this geological  
9 interpretation?

10 A. That's correct.

11 Q. All right. We have a structural cross-section.  
12 It's on the wall, and I'd ask you to, if you need to, go to  
13 that and review it briefly for the Examiner.

14 A. Okay.

15 MR. CARR: Now, Mr. Catanach, the slope to the  
16 east was not intentionally exacerbated by the way we hung  
17 the cross-section.

18 THE WITNESS: Bill did that end, and the end is  
19 short.

20 This is a structural cross-section kind of  
21 through the heart of the field, running east-west. And it  
22 shows, as we come across here, we've got dip to the east,  
23 once again at that rate of about 85 feet per mile.

24 The lower Premier is going to be one of the main  
25 sands that we're looking for waterflooding. The Lovington

1 is underneath it here. And as we move to the east, you can  
2 see that our Premier is thinning as we're moving to the  
3 east, a little bit thinner.

4 Q. (By Mr. Carr) Does this exhibit show that we  
5 have continuity in these two major sands across the entire  
6 unit area?

7 A. Yes, it does, the sands are very continuous  
8 through here.

9 Q. In your opinion, can the portion of the pool  
10 which we're proposing to include in the unit area, can this  
11 portion of this reservoir be effectively and efficiently  
12 operated under a unit plan of development?

13 A. Yes, it can.

14 Q. Let's go now to Exhibit 12. Will you identify  
15 and review this?

16 A. Yes, this is a map showing the status of the  
17 wells in the area, showing the wells that are shut in or  
18 active injection wells, P-and-A'd, TA'd, and active  
19 producing wells.

20 Q. And Exhibit 13, your comparative production  
21 table, would you explain to Mr. Catanach what this shows?

22 A. Yes, this is a table showing the projected oil  
23 production in MBOs per year for the next 25 years, where I  
24 have a column showing the base case production, and it  
25 shows to go uneconomic in the year 2009.

1 reserves of the project is about 11.7 million barrels.  
2 We're going to spend nearly \$26 million in capital,  
3 generating \$96 million in undiscounted income, with a  
4 present-value profit 10 percent, of a little less than \$29  
5 million.

6 And the price scenario that you can see under  
7 there is probably more reflective of what we're looking at  
8 right now. Hopefully, it will be on the low side, but --

9 Q. Looking at these figures, is the project still an  
10 attractive project from an economic point of view?

11 A. Yes, it is.

12 Q. Let's go to what has been marked GP II Exhibit  
13 14. Would you identify and review that, please?

14 A. This is a table showing the reserves of the  
15 unsigned tracts, and what I'm showing here will be the  
16 tract numbers on the left-hand side, and showing the  
17 cumulative reserves of those tracts, of all tracts, and  
18 then the non-GP II tracts are shown over here in the right-  
19 hand column. And what I'm doing here is trying to get a  
20 handle on the reserves, waterflood reserves, that would be  
21 attributable to the tracts that are not operated by GP II.

22 The cumulative reserves comprise about 8.5  
23 percent, or the non-GP II tracts comprise about 8.5 percent  
24 of the cumulative reserves. If I use this ratio for my  
25 incremental waterflood reserves and say that if I can't get

1 the entire amount of acreage in this unit, I will end up  
2 losing about a million barrels in reserves out there, once  
3 again using 8.5 percent of my projected waterflood  
4 reserves.

5 Q. Mr. Lee, let's now go to the unit performance  
6 curve, which is marked as GP Energy, Inc., Exhibit 15.  
7 Will you review that for the Examiner?

8 A. Yes, this shows some recent production history,  
9 shows what the current rate is right now, about 150 barrels  
10 a day. And the dashed line, starting in 1999, shows the  
11 increase that we hope to see from the drilling and  
12 waterflooding of these horizons.

13 Q. Now, the unit participation formula is set out in  
14 the unit agreement, Exhibit 3, correct?

15 A. That is correct.

16 Q. What is the basis for the participation formula  
17 in this agreement?

18 A. What we used was five percent, based on acreage;  
19 47.5 percent was based on the cumulative oil at 1-1-98; and  
20 47.5 percent is based on the oil rate from 1-1-98 through  
21 and to 7-1-98.

22 Q. A six-month period?

23 A. A six-month period, yes.

24 Q. In your opinion, does this formula allocate  
25 production to the separately owned tracts in the proposed

1 unit on a fair, reasonable and equitable basis?

2 A. Yes, it does.

3 Q. Is unitized management, operation and further  
4 development of that portion of the pool which is the  
5 subject of this Application reasonably necessary to  
6 effectively carry on the proposed secondary recovery  
7 operations?

8 A. Yes, it is.

9 Q. Does GP Energy seek authority to commit  
10 additional wells to injection at orthodox and unorthodox  
11 locations, pursuant to the Division's established  
12 administrative procedures?

13 A. Yes, they do.

14 Q. Let's now turn to the waterflood project portion  
15 of this case, and I'd ask you to refer to what's been  
16 marked for identification as GP II Energy Exhibit 16 and  
17 identify that for Mr. Catanach.

18 A. This is the information compiled pertaining to  
19 the OCD Form C-108.

20 Q. Is the proposed waterflood project an expansion  
21 of an existing project?

22 A. Yes, it's going to entail, once again, infill  
23 drilling on 20-acre spacing and waterflooding the reservoir  
24 based on that 20-acre spacing.

25 Q. Let's go in Exhibit 16 to the plat behind the tab

1 marked "Section V". It says "Map" on the tab.

2 A. Yes.

3 Q. Will you identify that?

4 A. Yes, once again, this is the map of the area, and  
5 once again showing the area within two miles around the  
6 proposed unit boundaries, which is marked in the dark,  
7 heavy line.

8 And once again on this map, you can see where  
9 I've gone around the future injection wells, all the wells  
10 out here on the -- existing wells out here along the edge,  
11 and drew a half-mile radius outside the unit area to  
12 delineate the area of review.

13 Q. And this map is the same as what was marked as  
14 our Exhibit Number 1?

15 A. That is correct.

16 Q. What is the present status of the wells you're  
17 proposing be utilized for injection?

18 A. Some of them are the existing producers, which  
19 will be converted to injection. There's also plans to re-  
20 enter P-and-A'd wells, converting -- or re-establishing  
21 some shut-in injection wells that were injectors but are  
22 just TA'd right now, and there will be six new injection  
23 wells drilled here in the project.

24 Q. Are you planning to drill new producing wells in  
25 the unit area?

1           A.    Yes.  All the infill 20-acre wells will all be  
2           producing wells.

3           Q.    Let's now go to the material behind the tab  
4           marked "Section" -- the tabs are marked "Section III" in  
5           Exhibit 16, and I'd ask you to identify those and review  
6           what they show.

7           A.    Section III of the C-108 pertains to information  
8           for the injection wells.  Directly behind the tab labeled  
9           just "Section III", since there's so many wells that will  
10          be injectors, I have compiled a table where I address all  
11          the generic information that's repetitive for all the  
12          wells.

13                   Behind Section III where it says "CONV" for  
14          "conversion", I have put together a table where I show for  
15          all of the proposed conversions the location, the other  
16          information required in Section III.  The casing program,  
17          the perforation, like I say, those vary from well to well,  
18          and I have enough wellbore diagrams I didn't want to have  
19          to put a tabular table in for every well.

20                   And then behind that, under Section III  
21          schematics, I have included a schematic diagram of every  
22          well that will be converted.  And the very first sheet is a  
23          generic new well where I show the casing program, cementing  
24          program that will be used on all the new drills.  And once  
25          again, behind that I've got every well that will be

1 converted, a schematic for each one.

2 Q. Will all injection wells -- Will you be injecting  
3 through lined tubing?

4 A. Yes, we'll be injecting through plastic-lined  
5 tubing.

6 Q. And will the annular space be filled with an  
7 inner fluid and pressure gauge on the well to monitor the  
8 well?

9 A. Yes, it will be.

10 Q. And will otherwise equip wells in the fashion  
11 that complies with the requirements of the Federal  
12 Underground Injection Control Program?

13 A. Yes, they will.

14 Q. All right. Let's go now to the material behind  
15 the tab marked Roman numeral VI.

16 A. This is a table that shows all the data for all  
17 of the wells within the area of review as established on  
18 our map, and here I show what type of well it is, when it  
19 was drilled, what kind of casing program they had,  
20 completion zones, stimulation, things of that nature.

21 Q. And behind that is a section, Roman numeral VI,  
22 "P&A"?

23 A. That's correct.

24 Q. Review that, please.

25 A. Back in this section, I've compiled wellbore



1           For the others that we maybe can't or are maybe  
2 points of contention, what we would ask is an opportunity  
3 to sit down with the OCD and review those on a kind of a  
4 well-by-well basis, to determine what would be required to  
5 get that done. And like you say, you know, GP II Energy  
6 recognizes that -- and will do whatever's reasonable to  
7 protect the fresh water out here.

8           Q.   Mr. Lee, what formations are there that you  
9 propose to inject into?

10          A.   It would be the Grayburg-San Andres formation.

11          Q.   And that interval is what?

12          A.   About 1200 feet thick, and --

13          Q.   As shown on the type log?

14          A.   Yes, it is.

15          Q.   Are there any other oil-productive zones in the  
16 immediate vicinity?

17          A.   No, there are not.

18          Q.   What is the source of the water which you propose  
19 to inject in the subject wells?

20          A.   We're going to be using the produced water from  
21 the field and purchasing water from a commercial water  
22 service, the Double Eagle water line.

23          Q.   And what volumes do you propose to inject?

24          A.   We anticipate using about 150 barrels of water  
25 per day --

1 Q. Per well?

2 A. -- per well, which will be a little over 12,000  
3 barrels of water a day.

4 Q. And what would be the maximum daily injection  
5 rate for a well that you're considering?

6 A. Three hundred barrels of water per day per well  
7 or, for the unit, just under 35,000 barrels of water a day.

8 Q. Will this be an open or a closed system?

9 A. It will be a closed system.

10 Q. Will you be injecting under pressure or by  
11 gravity?

12 A. I anticipate that the wells initially will  
13 probably go on a vacuum but will then pressure up.

14 Q. What proposed average injection pressure would  
15 you be using?

16 A. Around 500 pounds.

17 Q. And the maximum injection pressure?

18 A. Around 600 pounds, but at no time will we exceed  
19 the .2 p.s.i.-per-foot gradient going to either the upper  
20 perf or the top of the open-hole interval.

21 Q. Now, if you're not just re-injecting water into  
22 the formation from which it was produced, is the injection  
23 fluid compatible with the water in the injection zone?

24 A. Yes, it is. We have some water analysis behind  
25 the last table in the C-108. And what we did here, we had

1     Enviro-Chem take samples of the produced water and combine  
2     them with the proposed fresh water that we'll be using out  
3     of the Double Eagle line, and mix those at different  
4     ratios. And other being slightly corrosive, they did not  
5     see any serious scaling tendencies here.

6           Q.     And so you're not anticipating any compatibility  
7     problems?

8           A.     No, we are not.

9           Q.     Have you included an analysis in this exhibit of  
10    the water in the proposed injection horizon?

11          A.     Yes, I have, it's going to be back in that group,  
12    and it will be labeled "Produced H<sub>2</sub>O". It's the last  
13    table, last sheet in that group.

14          Q.     What are the freshwater zones in the area?

15          A.     There's some Ogallala zones in the area. None of  
16    -- There are no freshwater zone below the proposed  
17    injection interval, but there are some freshwater shallow  
18    zones, based upon records with the State Engineer's office.

19          Q.     And have you included an analysis of this fresh  
20    water in Exhibit 16 with the other water-sample analyses?

21          A.     Yes, I have. I have a tab labeled "Water Data"  
22    where the location of the wells and depths of the wells and  
23    the chlorides for the wells are illustrated. But it's much  
24    easier to read on the typed sheet behind Section VII  
25    through XII, where I show that there's three freshwater

1 wells of record -- two are in Section 24 of 16-30, one's in  
2 33 of 16-30 -- ranging in depth from 45 to 385 feet. And  
3 then I show the chlorides that the State Water Board shows  
4 for those waters.

5 Q. Mr. Lee, have you examined the available geologic  
6 and engineering data available on this area, and as a  
7 result of that examination, have you found any evidence of  
8 open faults or other hydrologic connections between the  
9 injection interval and any underground source of drinking  
10 water?

11 A. No, I've found no evidence of any faults or any  
12 open hydrologic connections.

13 Q. Will the approval of these Applications, in your  
14 opinion, result in the recovery of hydrocarbons that  
15 otherwise will be left in the ground?

16 A. That is correct, they will.

17 Q. In your opinion, will granting the Application be  
18 in the best interest of conservation, the prevention of  
19 waste and the protection of correlative rights?

20 A. Yes, it will.

21 Q. Were Exhibits 1 through 16 either prepared by you  
22 or compiled under your direction and supervision?

23 A. Yes, they were.

24 MR. CARR: Mr. Catanach, at this time I move the  
25 admission into evidence of GP II Energy, Inc., Exhibits 1

1 through 16.

2 EXAMINER CATANACH: Any objection?

3 MR. ERNEST CARROLL: No objection.

4 EXAMINER CATANACH: Exhibits 1 through 16 will be  
5 admitted as evidence.

6 MR. CARR: And that concludes my direct  
7 examination of Mr. Lee.

8 EXAMINER CATANACH: Mr. Carroll?

9 MR. ERNEST CARROLL: I would have no questions of  
10 this witness.

11 EXAMINER CATANACH: No questions, okay. Let's  
12 take about a five-minute break here, Mr. Carr, break for  
13 about five minutes.

14 MR. CARR: Yes, sir.

15 (Thereupon, a recess was taken at 2:20 p.m.)

16 (The following proceedings had at 2:35 p.m.)

17 EXAMINATION

18 BY EXAMINER CATANACH:

19 Q. Mr. Lee --

20 A. Yes, sir.

21 Q. -- this is the -- What pool is this? Is this --

22 A. Square Lake.

23 Q. Square Lake, okay. Does Square Lake Pool, does  
24 that encounter -- I mean, is that a much bigger area than  
25 the unit is, do you know?

1           A.    I'm not sure. I think that it is, and the reason  
2 I say so is because there's the West Square Lake Unit  
3 adjoining us there where J. Cleo Thompson is listed under  
4 the Square Lake field in the production data.

5           Q.    How about to the south? Do you know if Devon is  
6 producing?

7           A.    That's Grayburg-Jackson.

8           Q.    That's Grayburg-Jackson. Okay.

9                    So the unit boundary to the north and to the  
10 east, that's going to be defined by the productive limits  
11 of the reservoir?

12          A.    Yes.

13          Q.    Okay. Now, we're talking about the Grayburg and  
14 San Andres formations?

15          A.    Yes.

16          Q.    And there are individual sands within both the  
17 Grayburg and San Andres that you're going to flood?

18          A.    Yes.

19          Q.    And which are those?

20          A.    Predominantly it will be the Premier.

21          Q.    Now, these are in the Grayburg?

22          A.    The Premier is in the Grayburg. The Lovington  
23 will be in the San Andres. And on our cross-section we're  
24 showing that there's also, you know, some Metex sands up  
25 there also, but they're not -- they're pretty spotty

1 through the field. But predominantly, it will be the  
2 Premier and the Grayburg and the Lovington, which will be  
3 in the San Andres.

4 Q. Okay. And how about the Loco Hills A and B? Is  
5 there anything in there?

6 A. I don't believe there's any production in the  
7 Loco Hills A and B.

8 Q. So you will be just injecting water into the  
9 Premier and the Lovington; is that your testimony? Or will  
10 you, in fact, inject into the Metex?

11 A. We will -- In areas as we drill these wells and  
12 get some decent logs across them, if it looks like that  
13 there is pay in the Metex we would, you know, be opening it  
14 up and flooding it also.

15 One of the problems we have ran across out here  
16 is the quality of the log data. You're trying to work off  
17 a bunch of old gamma-ray neutron logs, and it's very  
18 difficult to evaluate some of these other zones.

19 But we feel like the proposed unitized interval  
20 that we've shown on our type log will encompass everything  
21 that may reasonably be expected to be prospective.

22 Q. Okay. Does your unitized interval -- does that  
23 start at the top of the Grayburg formation?

24 A. No, it's not at the top of the Grayburg  
25 formation. It's just within the Grayburg formation.

1 Q. Is there no production above where you plan to  
2 unitize?

3 A. No, there's not, not to my knowledge.

4 Q. But it is included in the pool?

5 A. It is included in the pool. You know, it's one  
6 of those deals where you have -- the pool includes like the  
7 Yates-Seven Rivers-Grayburg-San Andres, whenever you look  
8 at the -- like I said, the production data, the way that  
9 it's listed in the books. So the pool may include more  
10 than what I am proposing -- than what GP II is proposing to  
11 unitize.

12 Q. That pool does, in fact, include the Yates and  
13 Seven Rivers?

14 A. I don't know that for a fact. The production  
15 data lists it that way. But I don't know that in *Byram's*,  
16 that it lists it that way. I'm not positive. We could  
17 find out, though, and let you know.

18 Q. Within the unit area you're not producing the  
19 Yates or Seven Rivers?

20 A. No.

21 Q. The depths, the unitized depths, again, are 3050  
22 feet?

23 A. Yes, down to 4206.

24 Q. 4206. And is that the base of the San Andres?

25 A. No.



1 Q. It is not?

2 A. That's not the base of the San Andres. And those  
3 depths are as found on the Zephyr "ZQ" State Number 1,  
4 located in Section 32 of 16-31.

5 EXAMINATION

6 BY MR. ASHLEY:

7 Q. Mr. Lee, where's the top of the Grayburg in that  
8 type log?

9 A. I'm not sure that the top of the Grayburg is  
10 shown on this type log. It may be there just below 2900,  
11 but I'm not sure. I'd need to look back on some other logs  
12 in the area.

13 Q. Okay, what about the top of the San Andres?

14 A. I picked the top of the San Andres at 33- --  
15 about -87.

16 FURTHER EXAMINATION

17 BY EXAMINER CATANACH:

18 Q. Okay, you started negotiating with the interest  
19 owners in September of last year; is that right?

20 A. They were -- A list was compiled, and they  
21 were -- the BLM was contacted as to what the unit area  
22 would need to be. And at that time, some of the offset  
23 operators were notified, and the people that were non-  
24 working interest owners with GP II, they were aware that  
25 there was a project in the works here.

1 Q. So it was at the request of BLM that these  
2 additional tracts were included in the unit?

3 A. Yes.

4 Q. And that occurred -- you went to these parties --  
5 Was that in September that you started talking to these  
6 parties about participating in the unit?

7 A. Yes.

8 Q. Okay. And you have at this point, I understand,  
9 80 -- is it 80 percent?

10 A. Yes. There's -- Of the 28 working interest  
11 owners, there's nine that have approved the unit so far.

12 Q. And they control 80 percent?

13 A. That's correct.

14 Q. Have they actually signed the operating  
15 agreement?

16 A. I'm not sure. I think they've signed the  
17 ratification of the operating agreement and the unit  
18 agreement.

19 Q. So you've got 19 working interest owners that  
20 you're still -- Are you still talking to these owners?

21 A. Yes, they've been contacted -- or there's one  
22 person that we haven't been able to contact yet, and that's  
23 Glenn Plemmons.

24 Q. I'm sorry, the name again, Mr. Lee?

25 A. Glenn Plemmons.

1 Q. You have not been able to locate Mr. Plemmons?

2 A. He's been -- No, I haven't been able to locate  
3 Glenn.

4 Q. And what efforts have you made to locate him?

5 A. GP II has contacted people in Artesia and have  
6 tried to locate him through members of his family.

7 Q. You don't have a -- Do you know where his last  
8 known address was or anything?

9 A. I'm not sure. GP II Energy has been working that  
10 end, and I know that they have contact- -- or have written  
11 letters, but they haven't gotten any response back.

12 EXAMINER CATANACH: Mr. Carr, your next witness  
13 isn't a landman by any chance?

14 MR. CARR: No, but he, I think, would be probably  
15 a better witness to address questions like Plemmons. He's  
16 been actually involved with that part of the effort.

17 Q. (By Examiner Catanach) Okay, Mr. Lee, with  
18 regards to the royalty interest, you've got 50 percent tied  
19 up?

20 A. Including the governmental agencies, yes.

21 Q. Do you know how many, out of the -- I'm sorry, do  
22 you remember how many royalty interest owners there were?

23 A. The 166, and I believe we have ratifications on  
24 seven.

25 Q. Seven?

1           A.    Well, we have ratifications on five, I believe.  
2   That's correct.   And Manny has the actual numbers.

3           Q.    What is the status of negotiations with those  
4   parties?

5           A.    They have been notified, and we're just waiting  
6   to hear back.   Some of the people have verbally said that  
7   they would sign and join, but we just don't have anything  
8   in hand yet.

9           Q.    So you do anticipate some additional joinder from  
10   those parties?

11          A.    That's correct.

12          Q.    Okay.   The undesig- -- I'm sorry, the unsigned  
13   tracts, that represents the working interest owners who  
14   haven't participated or signed up?   Or who does that  
15   represent?

16          A.    That represents the operators of those tracts.

17          Q.    The operators of those tracts.   And is that  
18   current?   Is that as it stands right now?

19          A.    That is correct.

20          Q.    Mr. Lee, with regards to the participation  
21   formula, have the -- the working interest owners who have  
22   ratified the operating agreement, have they -- does that,  
23   in fact, include their approval of the participation  
24   formula?   Have you had any trouble with regards to anybody  
25   objecting to that?

1           A.    No.

2           Q.    So that has been agreed to by 80 percent of the  
3 working interest owners?

4           A.    That's correct.

5           Q.    Mr. Lee, this area has been previously  
6 waterflooded?

7           A.    That is correct.

8           Q.    And is it your understanding that it was four  
9 different projects, or --

10          A.    Yes, I think that -- You know, starting back in  
11 the early Sixties, Newmont had a project out here, and as  
12 expansions of those projects occurred, it seemed like there  
13 was new orders shown, and I got those order numbers out of  
14 like the *Bynam's* book, showing for the Square Lake area,  
15 pertaining to this area.

16          Q.    Okay, there aren't any existing units that are  
17 active right now?

18          A.    Within this area --

19          Q.    Right.

20          A.    -- no.

21          Q.    And your proposal will be to initially flood on  
22 40-acre fivespot; is that right?

23          A.    The wells are currently drilled on 40 acres.  
24 We'll infill drill them to 20-acre spacing and then  
25 collapse it down for the 20-acre well spacing.

1 Q. At this point, do you know how many wells will be  
2 drilled?

3 A. The proposal calls for about a hundred and -- I  
4 think it's about 110 producers and six injection wells.

5 And David, in Exhibit Number 10, under "Maps",  
6 Exhibit I, which I failed to mention earlier, shows the  
7 plat of the -- what we envision the final project to look  
8 like. And it has the proposed producing wells shown. And  
9 where the lines cross we'll have injection wells. You can  
10 see what the pattern is going to look like here.

11 Q. Okay, Mr. Lee, you've estimated recovery,  
12 additional recovery, of -- with waterflood operations -- I  
13 can't find that figure.

14 A. Currently it's about 367,000 barrels remaining as  
15 it is, and it's going to be about 11.2 million barrels with  
16 the infill drilling and the collapsing of the waterflood  
17 patterns.

18 Q. And you're proposing to spend \$34 million?

19 A. Okay, that was a prior estimate based upon some  
20 higher prices. The second to the last page in that group  
21 stapled together shows the capital to be \$25,800,000.

22 Q. Is that over a long period of time, or is that --

23 A. Three-year period of time.

24 Q. Three-year period?

25 A. Uh-huh.

1 Q. Is most of that going to be -- most of the oil  
2 that you're going to recover, is that mostly from the  
3 Premier, or is that -- Do you know how that's split or --

4 A. No, I don't. The wells are commingled. I don't  
5 know.

6 Q. Mr. Lee, there are no active injection wells in  
7 this area at this time?

8 A. There are a few that's being used to dispose of  
9 the produced water.

10 Q. So they're disposal wells, as far as you know?

11 A. They're injecting into the zones, the Premier and  
12 Lovington zones. So they're injecting into the reservoirs.

13 MR. ASHLEY: Is that within the proposed unit?

14 THE WITNESS: Yes.

15 Q. (By Examiner Catanach) Are those left over from  
16 an old project? Is that what that is?

17 A. Yes.

18 Q. Are you currently operating those wells?

19 A. GP II is.

20 Q. Are those wells -- Do you know how many there  
21 are?

22 A. No, not exactly, no.

23 Q. What's going to be done with those wells?

24 A. They will be maintained as injection wells in the  
25 new phase. Pretty much everything that is out there now

1 will be converted to injection, and all the new wells will  
2 be producing wells. And so you're going to be drilling the  
3 producing well in between the existing four wells sitting  
4 there.

5 Now, some of those are plugged, some are TA'd,  
6 and some are active right now. But if they're putting  
7 water in the ground now, they'll be kept as an injection  
8 well to support the new wells that will be drilled around  
9 them.

10 Q. Are those wells that are out there now, that are  
11 currently injecting, are those in your list of wells that  
12 you want to use as injectors, or are those not included?

13 A. They're not going to be included in here, because  
14 I only included the conversions where I take a well that is  
15 either P-and-A'd or a producing well now, and make it an  
16 injection well. So no, I don't have a list -- I don't have  
17 them on my list.

18 Q. So you'll actually have more than -- I think the  
19 ad says 147. You'll actually have more injection wells  
20 than that?

21 A. Yeah, probably so, yeah.

22 Q. Okay. I'm going to need you to provide me a list  
23 of those wells and maybe some schematic diagrams of the  
24 way --

25 A. Okay.



1 Q. -- they're completed at this point.

2 Mr. Lee, this was an area that was developed  
3 when? A considerable amount of time ago?

4 A. Yeah, some of the original wells were drilled in  
5 the late Thirties, early Forties. There was another round  
6 of development probably in the late Fifties and early  
7 Sixties.

8 Q. Some of the -- The P-and-A'd wells that you  
9 propose to re-enter and convert to injection, do you know  
10 how those were generally completed?

11 A. Yes, for the most part we do. They were, you  
12 know, drilled and surface pipe was set generally around 500  
13 feet and cemented in with 50 sacks, and then casing was --  
14 you know 5-1/2 or 4-1/2 was ran down to anywhere from 2700  
15 to 3100 feet, depending upon the area of the field, and  
16 cemented in place. And then a majority of these wells were  
17 drilled open hole.

18 Q. Drilled -- When you say "open hole", was it --  
19 the produced interval was left open hole and --

20 A. That's correct.

21 Q. So the casing --

22 A. After the casing was set, they drilled out  
23 underneath the casing.

24 Q. So the casing was generally set -- what? On top  
25 of the Grayburg or something?

1           A.    Yes.  It seemed to vary from operator to  
2 operator, different areas of the field.

3           Q.    Are you concerned with the condition of the  
4 casing in these wells?

5           A.    In some of the P-and-A'd wells it's pretty old  
6 and it will need to be checked out and make sure the  
7 integrity is adequate, yes.

8           Q.    So you do plan on using the existing casing in  
9 the P-and-A'd wells?

10          A.    If it tests out, yes.  A lot of these wells, as  
11 you get into them, you know, you'll need to find out sort  
12 of what the situation is with them, then a decision would  
13 need to be made.  And actually it will be, you know, GP II  
14 that will need to be making those decisions.  I don't know  
15 that I can sit here and speak for them in that matter,  
16 but...

17          Q.    In a lot of these P-and-A'd wells, the surface  
18 casing was not circulated?

19          A.    No, and a lot of the early wells that were  
20 drilled, no, it was not circulated.

21          Q.    So you've got fresh water that's probably not  
22 covered by cement?

23          A.    That's correct.

24          Q.    Any plans to do anything as far as the surface  
25 casing?

1           A.    I haven't spoke with GP II on that.  That's  
2 something that will need to be addressed.

3           Q.    Was there ever any consideration to drilling --  
4 to actually drilling the injection wells, rather than using  
5 the existing P-and-A'd wells?

6           A.    No, we were -- Pretty much the plan was always to  
7 drill new producers and put a -- you know, perforate and  
8 frac those zones, get a good completion on the producing  
9 wells.

10          Q.    Mr. Lee, are you aware of any water out of zone  
11 in this area?

12          A.    I'm not aware of any.

13          Q.    Any water flows that you know of?

14          A.    I know when Devon drilled some wells to the south  
15 here in the Grayburg-Jackson and talked to them, they did  
16 have some water flows in their wells.

17          Q.    Do you know where that might have been?

18          A.    No, I can't remember.

19          Q.    About how many of the injectors are going to be  
20 re-entries of P-and-A'd wells?

21          A.    I don't know exactly.  I can get that number for  
22 you.  I counted up my P-and-A'd wells here, like I said.  
23 It was about 133 of them within the area of review.  But I  
24 did not go back how many wells will be within the unit  
25 area.  But the bulk of them will be within the proposed

1 unit area.

2 Q. Well, will the bulk of your injection wells be  
3 re-entered P-and-A'd wells?

4 A. I don't know. I don't have that number in front  
5 of me.

6 Q. Okay --

7 A. We can get that, though.

8 Q. -- how do you guys plan on completing the  
9 injection wells -- or the re-entries of the P-and-A'd wells  
10 that were completed open hole? Do you plan on just leaving  
11 it like that?

12 A. That would be something that Manny will need to  
13 address, that's something that GP II Energy -- But it's my  
14 understanding that it will be left open hole and just  
15 inject into the zones that was originally there. If it was  
16 mine, that's what I'd recommend doing.

17 Q. Leave it open-hole?

18 A. That seems to be what Devon is doing to the south  
19 in some of their older wells, is converting them as they  
20 are.

21 Q. Do you know if Devon to the south didn't, in  
22 fact, drill most of their injection wells as new wells?

23 A. No, I don't.

24 Q. Okay.

25 A. I don't.

1 Q. You say "Manny". Who is Manny?

2 A. Manny Sirgo with GP II Energy.

3 Q. Mr. Lee, on some of the re-entries, wasn't it --  
4 do you have any knowledge of whether or not the production  
5 casing in a lot of these wells was basically just tacked  
6 in, and not -- I mean, the cement behind the casing is not  
7 raised very high?

8 A. It seems like most of them exceeded 500 feet, but  
9 they were typically cemented with 50 to 100 sacks on the  
10 long string.

11 Q. Is there any plans to try and determine the  
12 cement tops on a lot of these wells, or do you know the  
13 cement tops?

14 A. I've calculated the cement tops based upon using  
15 Halliburton book and estimating some hole sizes, and that's  
16 what we presented here.

17 Q. Did you run across -- I know in a lot of places  
18 they used to drill eight-inch holes, and they said they  
19 used to run seven-inch casing. Did you run into that in  
20 this area?

21 A. Where they set it and pulled it? I did. You  
22 could see in the record where they would drill down --  
23 They'd set their surface, they'd drill down and run 7-inch,  
24 drill through that and then run a 5-1/2 string, and cement  
25 that in place.

1 Q. And we've actually seen cases where they've said  
2 they drilled an 8-inch hole and run 7-inch casing.

3 A. Down to a depth -- I can't remember where they  
4 would drill that to and then set that, and then drill on  
5 down and set their 5-1/2. But yeah, there was some scout  
6 tickets that indicated that.

7 Q. But they would actually cement that 7-inch in  
8 place?

9 A. No, they would say it was just set, and then in  
10 certain instances they would say that they pulled the  
11 7-inch.

12 Q. Okay, we've seen some where they said they've set  
13 that and cemented it into place. You've not come across  
14 that in this area?

15 A. A few of them were. Typically not, though.

16 Q. Okay. So a lot of your injection wells were  
17 going to be open hole; is that right?

18 A. That's correct.

19 Q. In those instances where you have an open-hole  
20 completion, are you -- is that going to be contained within  
21 the unitized interval, if it's -- if your casing is set at  
22 the top of the Grayburg --

23 A. That would need to be looked at on a well-by-well  
24 basis.

25 Q. And how would you remedy that situation?

1           A.    It would be a decision that GP II would need to  
2   make at that point in time.

3           Q.    How many producing wells are going to be in the  
4   unit area, Mr. Lee?

5           A.    About 115.

6           Q.    One-one-five?

7           A.    Yes.

8           Q.    Are there a lot of open-hole completions in the  
9   producing wells?

10          A.    Currently there?  Yes.

11          Q.    So how many new producing wells are you going to  
12   drill?

13          A.    115.

14          Q.    Oh, they're all going to be new?

15          A.    Yeah, all the new wells -- Once the project is  
16   completed, pretty much all the new wells will be the  
17   producing -- all producers will be new wells.

18          Q.    So what are you going to do with the existing  
19   producing wells?

20          A.    They'll be converted to injectors.

21          Q.    So some of the -- Okay.  And in addition to the  
22   P-and-A'd wells, some of the producing wells will be  
23   converted to injectors?

24          A.    That's correct.

25          Q.    Of the P-and-A'd wells that you've looked at, did

1 you find any that weren't adequately plugged? I know that  
2 there's some that you couldn't find the reports on.

3 A. Right.

4 Q. I'm not talking about those, but are there any  
5 others that you found?

6 A. I think those are -- There are several, I think,  
7 that we're going to need to sit down and discuss how they  
8 were plugged. There's some that won't be adequately  
9 plugged.

10 There's a few in here where all I could find is  
11 that they ran ten sacks of cement at the surface. Others  
12 may have cut casing off and dumped -- set ten sacks, there  
13 where they cut the casing at about 2000 feet and then set a  
14 ten-sack plug at the surface.

15 And this was -- You know, I knew it would be a  
16 problem, and so, you know, that's why I've visited with you  
17 in the past on this, kind of like how to do this. And I  
18 think that, you know, here we are today, and we need to  
19 formulate some sort of a plan on how to remedy and how to  
20 address this, moving forward.

21 Q. Your new producing wells, how are those going to  
22 be completed? Are those open-hole, or are those --

23 A. No.

24 Q. They're going to be perforated?

25 A. Yeah.



1 Q. Okay. There is some Ogallala in this area?

2 A. That's what Eric Milstead with the State  
3 Engineer's Office said, that the fresh water out here, he  
4 felt, was Ogallala.

5 Q. And that's at depths, 300 feet?

6 A. It ranges -- There's fresh water out here ranging  
7 from 50 feet to 300, and I don't know what the name of each  
8 one of those zones would be, going down through there.

9 There is also some fresh water, he said, out of  
10 the Triassic in this area also.

11 EXAMINER CATANACH: Okay, I don't have anything  
12 further at this point.

13 Are there any other questions of this witness?

14 MR. ERNEST CARROLL: (Shakes head)

15 EXAMINER CATANACH: You may be excused.

16 MR. CARR: At this time, Mr. Catanach, we would  
17 call Mr. Sirgo.

18 MANNY SIRGO,  
19 the witness herein, after having been first duly sworn upon  
20 his oath, was examined and testified as follows:

21 DIRECT EXAMINATION

22 BY MR. CARR:

23 Q. Will you state your name for the record, please?

24 A. My name is Manny Sirgo.

25 Q. Mr. Sirgo, where do you reside?

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21 Q. And at all times have you been employed in the  
22 capacity of a petroleum engineer?

23 A. That is correct.

24 Q. Are you familiar with the Applications filed on  
25 behalf of GP Energy, Inc., in each of the consolidated

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1 A. I live in Midland, Texas.

2 Q. By whom are you employed?

3 A. I'm self-employed.

4 Q. And what is your interest in the GP II Energy,  
5 Inc., proposal to unitize and waterflood the North Square  
6 Lake Unit area?

7 A. I'm a principal owner in a company called Square  
8 Lake Partners, which is the largest owner in the proposed  
9 unitized area.

10 Q. And by professional training, what are you?

11 A. I'm a petroleum engineer.

12 Q. Where did you go to school?

13 A. Texas Tech.

14 Q. And when did you graduate from Texas Tech?

15 A. In May of 1978.

16 Q. And since May of 1978, by whom have you been  
17 employed?

18 A. I worked for Exxon, the First National Bank of  
19 Midland, a small public oil and gas company, and then I've  
20 been an independent oil and gas operator since 1984.

21 Q. And at all times have you been employed in the  
22 capacity of a petroleum engineer?

23 A. That is correct.

24 Q. Are you familiar with the Applications filed on  
25 behalf of GP Energy, Inc., in each of the consolidated

1 cases?

2 A. I am.

3 Q. Have you been active in the efforts to unitize  
4 this area?

5 A. Yes.

6 A. Are you familiar with the proposals and the plans  
7 of GP II Energy, Inc., for the re-entry and conversion of  
8 wells in the area to injection and the development of the  
9 acreage with new producing wells?

10 A. Yes, I am.

11 Q. Were you also involved in the efforts to contact  
12 and reach voluntary agreement with other interest owners in  
13 this area?

14 A. That is correct.

15 MR. CARR: We would tender Mr. Sirgo as an expert  
16 witness in petroleum engineering.

17 EXAMINER CATANACH: Mr. Sirgo is so qualified.

18 Q. (By Mr. Carr) Mr. Sirgo, were you the individual  
19 who first initiated an effort to unitize and start  
20 producing the acreage which is the subject of this  
21 Application?

22 A. Yes, I was.

23 Q. And when was that?

24 A. It actually started in the fall of 1997.

25 Q. And at that time, what acreage were you proposing

1 to develop?

2 A. Acreage that our company owned.

3 Q. Did you discuss your plans with the Bureau of  
4 Land Management?

5 A. Yes, we did, and at that time they indicated that  
6 they had some concerns that there were areas outside of our  
7 acreage that should be included within the proposed  
8 project.

9 Q. When were you able to reach an agreement with the  
10 Bureau of Land Management concerning the boundaries for the  
11 unit which is the subject of this Application?

12 A. That was in September of 1998.

13 Q. And in September of 1998, were you involved in  
14 negotiations or efforts to contact other interest owners in  
15 the unit area?

16 A. Yes, I was.

17 Q. Other than the interests -- Square Lake Partners,  
18 LLC, that's your group, is it not?

19 A. That's correct.

20 Q. Other than that group, who is the other principal  
21 interest owner in this area?

22 A. At the time in September, the records we had  
23 reflected Mack Chase.

24 Q. When did you first contact Mr. Chase concerning  
25 your plans to develop this area?

1           A.    I faxed Mr. Chase a letter on September 11th.

2           Q.    And basically at that time, did you advise him of  
3 your plans to go forward with the unit?

4           A.    In my letter I indicated to him that based on  
5 what the BLM had proposed as the unit boundary, that our  
6 records indicated what acreage that did not belong to us  
7 principally belonged to him, and asked for his input at  
8 that point, and also indicated to him that Robert Lee, who  
9 is our consultant, was working on the project and that, as  
10 it happened, Robert had previously scheduled a meeting on  
11 separate matters with Mr. Chase the following week and that  
12 Mr. Chase should feel free in that meeting to discuss our  
13 proposal with Robert at that time.

14          Q.    And it's your understanding that there were  
15 discussions about this proposal at that meeting?

16          A.    That's correct.

17          Q.    Since that time, have you had other  
18 communications with Chase concerning the ownership of the  
19 lands in the area that are subject to this unit plan?

20          A.    That's correct. We -- After contacting Mr. Chase  
21 and indicating that we felt like the majority of the  
22 remaining acreage belonged to him, it came to our attention  
23 that he had subsequently sold part of his acreage to a  
24 gentleman named Rodney Webb, which we then contacted Mr.  
25 Webb September 24th of 1998 and asked Mr. Webb to --

1 because the federal record did not reflect that transaction  
2 or the change of ownership, that Mr. Webb would provide us  
3 with information reflecting the tracts that he now owned.

4 Q. Did Mr. Chase at any time indicate to you what  
5 his position was in regard to the proposed unitization and  
6 waterflood project?

7 A. I think in his initial conversations with Mr. Lee  
8 he indicated he didn't have a problem with the unit,  
9 because he didn't own that much acreage in that area,  
10 particularly. And throughout most of our conversations,  
11 Mr. Chase indicated that he had no objection to the unit.

12 Q. In the latter part of December, certain documents  
13 were provided to Chase Energy, as well as other interest  
14 owners; is that right?

15 A. That's correct.

16 Q. What was sent at that time?

17 A. We sent out unit agreement, unit operating  
18 agreements, Robert Lee's engineering report on the proposed  
19 unit area.

20 Q. Have you heard or had contacts or communication  
21 with Chase Energy since that time?

22 A. We have pretty continual contact. After we  
23 contacted Mr. Webb trying to identify who owns exactly  
24 which acreage in the area we had some trouble getting that  
25 information, and we contacted Robert Chase in December to

1 ask for additional assistance in getting the ownership  
2 information. And following that discussion, Robert  
3 directed us to some people that were able to provide us  
4 with some additional information.

5 And in January of this year, January 14th, I  
6 think, we actually received, finally, the data as to what  
7 Mr. Webb's ownership was. My brother Brian had several  
8 conversations with Jim Brown, who worked for Mack Chase,  
9 and Mr. Brown, via the documents we had sent previously  
10 where we had identified the lease names as we had showed  
11 records, pointed out additional tracts that he felt the  
12 interests were different than we may have had in our  
13 records and was going to provide us with the data to adjust  
14 those properly.

15 And he did that. I think the last piece of  
16 information we received from him was on January 22nd.

17 Q. And is this concerning an exchange of property?

18 A. Well, this was still just providing us with data  
19 accurately reflecting the information they had.

20 In that discussion my brother was having at that  
21 time with Jim, which was basically in January, around the  
22 19th to the 22nd, it was in that conversation that Jim  
23 indicated that at this time Mr. Chase still has no  
24 objection to the unit but would prefer not to be involved  
25 in it, and if there were some basis that we could affect

1 the trade or make an arrangement that that could, you know,  
2 be caused to be happened. So the discussion basically  
3 centered around a property trade, which we indicated at  
4 that time we thought was something we could do.

5 Q. Where do these negotiations stand at this point  
6 in time?

7 A. Well, you know, as I said, the first time we  
8 actually understood exactly who owned what in Mr. Chase's  
9 tracts was January 22nd. And, you know, we indicated at  
10 that time, or my brother did when he talked to Jim Brown,  
11 that we had no objection to trying to effect the trade, and  
12 that was basically, we have other acreage in the area and  
13 Mr. Chase was willing to consider trading his interests,  
14 his tracts in the proposed unit area for other acreage we  
15 had in the area.

16 And so I talked to Jim Brown again before the  
17 hearing here recently and told Jim that that was still our  
18 position. And based on our previous discussions, which I  
19 don't view any of them as having been adversarial, you  
20 know, we were willing to let Mr. Chase review our acreage,  
21 and if he could find something he was interested in, we  
22 would certainly doing a trade with him.

23 Q. And are you still interested in doing that?

24 A. Absolutely.

25 Q. K.M. Jones and Staples Oil Company, what is their



1 interest in the unit area?

2 A. They're a nonoperated working interest owner in  
3 some of our acreage. We've been involved with them,  
4 obviously, since we got in the project, which was in 1997,  
5 and -- kind of a history of our discussions with those two  
6 parties.

7 We originally attempted to drill some infill  
8 locations out here, and within the course of that we had  
9 discussions with them, because they were nonoperated owners  
10 within our tract. And we proposed to buy them out, and  
11 they said they weren't interested at that time and that,  
12 you know, when we got ready to do some drilling, to let  
13 them know.

14 So as we went forward trying to determine what  
15 was the best way to develop the property it became apparent  
16 that we were going to have to unitize it. There's a  
17 tremendous number of leases in this acreage. A lot of the  
18 tracts were 40-acre leases and 80-acre leases, and you run  
19 into a very complicated problem of trying to drill infill  
20 locations.

21 So we went back to Staples and Jones, and this  
22 was probably in the time frame of early 1998, when we  
23 indicated to them that we felt like the best way to go  
24 forward was to form a unit. And at that time they  
25 indicated that was something they would probably want to be

1 involved in. That's when we went forward with an effort to  
2 try to unitize our own acreage, and the BLM directed us  
3 otherwise and required that we expand the acreage to  
4 include those tracts outside of our acreage.

5 We sent Staples the same information we sent the  
6 owners that have approved the unit.

7 Q. And that was in December?

8 A. That's correct. We've had numerous conversations  
9 with Vicki Osborne, who's the representative for both of  
10 those parties. Vicki actually asked us to re-run economics  
11 on the project, to show our different price scenario more  
12 reflective of today's prices, to show our economics with  
13 the -- reflecting costs that were maybe more representative  
14 of the cost environment we see today, and we provided those  
15 to her.

16 And the day before we were going to leave for the  
17 hearing she contacted us and said that, We would really  
18 like you to buy us out now.

19 And we said, Well, you know, we've had those  
20 discussions before, we'll have them again, but the hearing  
21 is in two days, so we can't do that between now and  
22 Thursday.

23 Q. Are you prepared to continue your negotiations  
24 and discussions with Jones and also with Staples Oil  
25 Company?

1           A.    That's what we told her when we talked to her  
2   Tuesday.

3           Q.    Now, Glenn Plemmons, the unlocatable working  
4   interest owner, could you just explain to Mr. Catanach your  
5   efforts to locate him and where they now stand?

6           A.    Well, the tracts that we currently show Mr.  
7   Plemmons owning currently, the records that were available  
8   to us through Federal Abstract indicated four other owners  
9   that owned previously, some of them people we knew, and we  
10   were able to contact them. They indicated to us they had  
11   sold the tracts to Glenn Plemmons, that they no longer  
12   owned it.

13                So Mr. Plemmons is most known in the Artesia-Locho  
14   Hills area, so we contacted people we knew there who knew  
15   him and actually through a web search located his mother  
16   who lives on Chicago Street in Lubbock, Texas, and  
17   contacted his mother, as we could find no listings for  
18   Glenn Plemmons in Texas or New Mexico, but were able to  
19   contact his mother and talk to his mother. And his mother  
20   indicated she had no idea where he was.

21           Q.    And that's where it stands?

22           A.    That's correct.

23           Q.    You're proposing to unitize and waterflood in an  
24   old area where the wells are in a fairly advanced state of  
25   depletion; is that fair to say?

1           A.    That's correct.

2           Q.    Your proposal is to convert existing wells and  
3   drill new producing wells.  Why was that your decision?

4           A.    Well, most of our efforts since we've been in  
5   this business, in -- principally located in southeast New  
6   Mexico, have been redevelopment of old fields.  We've done  
7   probably seven or eight of these projects since the 1986-87  
8   area.  Most of them were units previously, waterfloods.  As  
9   we found over time, that the original 40-acre development,  
10   even though it was flooded, these fields were drilled on 40  
11   acres, half the wells were converted to injection, so you  
12   basically were trying to drain an 80-acre area with a 40-  
13   acre producer.

14                Our efforts determined that there was a  
15   significant of oil still located in these center fivespots  
16   that had been bypassed on the original floods and that  
17   infill drilling 20-acre producers, new 20-acre producers in  
18   those areas, were the best location to access from a  
19   production standpoint, and then to enhance that by also  
20   downspacing an injection to better flood that same area  
21   that was missed in the original spacing.

22           Q.    When you go about taking an old wellbore, a  
23   plugged and abandoned well, and converting it to an  
24   injection well, what do you do to assure that you have a  
25   reliable wellbore and a well that is not going to become a

1 problem in terms of contaminating water in the area?

2 A. Well, really, the -- you know, one of the  
3 additional benefits of drilling new infill producers, most  
4 of the vintage data of these fields in these areas is old,  
5 and when you look at a cross-section like this and you see  
6 numerous pay intervals, you know, a large percentage of  
7 those are not productive. New producers, you have modern  
8 logs, better data. You can better identify what is  
9 actually pay that you really going to ultimately be  
10 attempting in a waterflood.

11 So really the first step when you're drilling  
12 infill producers, you're getting a much better definition  
13 of what it is you want to put water into.

14 The practices of the Thirties and Forties, and  
15 even the Sixties, where we open-holed -- not me but prior  
16 operators, open-holed large intervals, you know, that  
17 definition wasn't available.

18 So as you go through an infill drilling program  
19 and you better define, you know, it's just the Premier sand  
20 and just the Lovington sand, well, that also becomes kind  
21 of your driving force on how you set up where you want your  
22 injection to be in a case where a P-and-A'd well -- and at  
23 that time a lot of P-and-A's were inside-pipe P-and-A's  
24 where they set plugs inside a casing and they've got an  
25 open-hole interval below there. The open-hole interval is

1 significantly larger than the selected interval that you've  
2 identified around it through infill drilling that you  
3 really want to flood. It's better to control that  
4 injection through perforations, and in old wells we  
5 typically run liners in open-hole situations so that we can  
6 selectively perforate what we feel is a better definition  
7 of the area we want to flood.

8 Q. Do you have anything further to add to your  
9 testimony?

10 A. No.

11 MR. CARR: At this time, Mr. Catanach, I would --  
12 that concludes my direct of Mr. Sirgo, and I pass him for  
13 cross.

14 EXAMINER CATANACH: Mr. Carroll, do you have  
15 anything?

16 MR. ERNEST CARROLL: I have no questions on  
17 cross.

18 EXAMINATION

19 BY EXAMINER CATANACH:

20 Q. Mr. Sirgo, you say that -- is that -- When you  
21 talk about these old injection wells, is that something you  
22 plan on doing? Do you plan on running liners in these old  
23 open-hole wells?

24 A. I think every well is different. As a rule, we  
25 feel better with liners. You know, the constraints there

1     become, if they left too small a casing size in the hole,  
2     that you can't affect the size liner that would do  
3     something or, you know, if you're down to running a very  
4     small liner sometimes that can create a bigger problem than  
5     the open hole that's there.

6             But as a rule, because I think controlling  
7     injection is easier through perforations, liners are a  
8     better alternative. And in some cases, depending on what  
9     size pipe was left in the hole, if it was 7-inch, you know,  
10    we run -- we clean the hole out to the TD where we want to  
11    go to and we just run new casing from surface.

12            Q.    Well, what has been your experience with regards  
13    to re-entering wells that were drilled in the Thirties and  
14    Forties, with regards to the condition of the casing?

15            A.    Most of those wells, like I said, were inside-  
16    pipe P-and-A's, they have a cement plug set inside the  
17    casing. Most of the places I've seen problems were where  
18    we had water flows associated with salt sections that  
19    weren't covered with cement. And in those cases, you know,  
20    if we have a situation where we could run 4-1/2, we could  
21    squeeze the casing, the old casing, where the waterflood  
22    was, and then we could run 4-1/2 pipe inside of that.

23                   But most of the problems I've seen in old  
24    injection wells where we've had casing leaks, it's usually  
25    where there's an active salt section. That seems to be the

1 most corrosive environment.

2 Q. Are you aware of any salt sections in this area?

3 A. I think there are some salt sections. I'm not  
4 aware of any waterflows associated with those salt  
5 sections. I've seen more of those in the Lea County area.

6 Q. Generally in these P-and-A'd wells, though, that  
7 salt section would be exposed?

8 A. If they ran as little cement as some of these  
9 cases indicate, that's correct.

10 Q. So you're suggesting that you make the  
11 determination based on a well-by-well basis whether or not  
12 you're going to run a liner or what else you're going to do  
13 to the well to make it effective?

14 A. Right. I mean, pipe integrity becomes the --  
15 kind of the guiding light there.

16 EXAMINER CATANACH: Okay, I have nothing further.

17 MR. CARR: Okay. That concludes our  
18 presentation.

19 EXAMINER CATANACH: Okay.

20 MR. ERNEST CARROLL: Mr. Catanach, as I've told  
21 you, we had no further -- we have no witnesses to present.  
22 My clients, in fact, the Jones Oil Company and the Staples  
23 Oil Company, only became clients as of yesterday.

24 The only thing that we point to is that the unit  
25 agreement, the unit operating agreement and the engineering



1 report for the proposed unit did not go out to any of my  
2 clients until the end of December and weren't received  
3 until the first of this year, and there just hasn't been  
4 the ability to have any meaningful negotiations with  
5 respect to doing anything with this unit, and my clients  
6 instructed me to -- that we couldn't appear here in support  
7 of either one of the Applications, and therefore we must  
8 necessarily be considered as in opposition. And that's  
9 about as strong as we can get right now, based on the  
10 information we've had and the time that we've had to review  
11 it and talk with the Applicants.

12 That's it.

13 MR. CARR: Very briefly, Mr. Catanach, as you can  
14 see from the testimony, for the last couple of years Mr.  
15 Sirgo and others have been attempting to figure out how to  
16 unitize and recover remaining reserves in this North Square  
17 Lake area, and in negotiation with the Bureau of Land  
18 Management we were finally able to reach an agreement on  
19 the boundaries of the proposed unit area in September and  
20 have been since that time going out and talking to working  
21 interest owners, royalty interest owners, in an effort to  
22 bring them into this effort.

23 We appreciate the concerns expressed by Mr.  
24 Carroll on behalf of his client, and we will and do intend  
25 to continue to work with them and attempt to either resolve

1 the issue through a property exchange or otherwise.

2 The bottom line is that we believe there are  
3 substantial reserves here that can be recovered. The  
4 problem is how to do that in a way that will protect water  
5 in the area, to do that that will maximize the use of the  
6 existing facilities that are there, and yet, while we're  
7 doing that, being mindful of the responsibilities we have  
8 to you and under the Oil and Gas Act.

9 And so we have brought the case to you. We are  
10 willing to meet with you or anyone you designate to address  
11 how we approach the wells on which we have limited data.  
12 But we are committed to going forward with a project that  
13 we believe will reap substantial benefits to the owners of  
14 the project and to the State of New Mexico, and therefore  
15 we request that you grant an order -- or enter an order  
16 granting the Application, both for the unitization and the  
17 waterflood project, with appropriate requirements and  
18 conditions on it so that we may go forward and complete  
19 what we believe is not only an ambitious but a project from  
20 which we will all reap great reward.

21 EXAMINER CATANACH: Okay, is there anything  
22 further in this case?

23 MR. CARR: Nothing further.

24 MR. ERNEST CARROLL: No.

25 EXAMINER CATANACH: Okay, there being nothing

1 further, this case, Number 12,112, will be taken under  
2 advisement.

3 MR. CARR: And 12,113.

4 EXAMINER CATANACH: And 12,113, I stand  
5 corrected.

6 And this hearing is adjourned.

7 (Thereupon, these proceedings were concluded at  
8 3:40 p.m.)

9 \* \* \*

10  
11  
12  
13  
14  
15 I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the examiner hearing of Case No. 12,112, 12,113  
16 heard by me on February 4 1998  
17 David R. Catnach, Examiner  
18 Oil Conservation Division  
19  
20  
21  
22  
23  
24  
25

## 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 February 10th, 1999.



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STEVEN T. BRENNER  
CCR No. 7

My commission expires: October 14, 2002