

Also CASE 5909: DOME PETROLEUM CORPORATION *sh*
FOR POOL CREATION AND SPECIAL DEPTH
~~REVENUE~~ ALLOWABLE, SAN JUAN COUNTY,
NEW MEXICO.

Case Number

5909

Application

Transcripts

Small Exhibits

ETC.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

5709
CASE NO. ~~5810~~
Order No. ~~R-5401~~
R-5421
NOMENCLATURE

APPLICATION OF DOME PETROLEUM CORPORATION
FOR POOL CREATION AND ~~ASSIGNMENT OF A~~ *A SPECIAL DEPTH BRACKET*
~~DISCOVERY~~ ALLOWABLE, ~~McKINLEY~~ COUNTY,
NEW MEXICO. *San Juan*

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on ~~February 2, 1977~~ *April 20, 1977*,
at Santa Fe, New Mexico, before Examiner ~~Daniel S. Nutter~~ *RLS*.

NOW, on this ~~15th~~ day of ~~March~~, 1977, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Dome Petroleum Corporation, is the
owner of the ~~Federal 15~~ Well No. 1, located in Unit ~~6~~ of Section
20 ~~15~~, Township ~~21~~ North, Range ~~8~~ West, NMPM, ~~McKinley~~ County,
New Mexico. *San Juan*

(3) That said well was completed as an oil well capable of
producing from the Entrada formation on November ~~1, 1976~~ *February 1, 1977*, through
perforations from ~~5160~~ feet to ~~5169~~ feet.
5164 5172

(4) That the applicant seeks the creation of a new pool for
Entrada production for said well, ~~and the assignment of an oil~~
~~discovery allowable in the amount of 25,000 barrels of oil to~~

San Juan
(5) That a new pool in ~~McKinley~~ County, New Mexico, should
be created and defined, classified as an oil pool for Entrada
production, and designated as the ~~Papere Wash~~ *Papere Wash*-Entrada Oil Pool,
comprising the following-described lands:

2
TOWNSHIP ~~15~~ NORTH, RANGE ~~8~~ WEST, NMPM
Section ~~15~~ *NW 1/4*
20: N/2

- (6) That the applicant further seeks the establishment of a special depth bracket allowable of 750 barrels per day for said Snake Eyes - Entrada Oil Pool.
- (7) That the well completed in the Snake Eyes - Entrada Oil Pool is capable of producing large volumes of oil and water.
- (8) That the ultimate recovery of oil in said pool will not be adversely affected by high rates of production but will instead be improved thereby.
- (9) That approval of the application should serve to prevent waste and protect correlative rights.
- (10) That the subject application should be approved.

IT IS THEREFORE ORDERED:

(1) That a new pool in ^{San Juan} McKinley County, New Mexico, classified as an oil pool for Entrada production, is hereby created and designated as the ^{SNAKE EYES} ~~PAPER~~ Snake Eyes - Entrada Oil Pool, consisting of the following described area:

TOWNSHIP ²¹ 19 NORTH, RANGE ⁸ 7 WEST, NMPM
 Section 15: NW 1/4
 20: N 1/2

- (2) That effective May 1, 1957, a special depth bracket allowable of 750 barrels of oil per day is hereby established for the said Snake Eyes - Entrada Oil Pool.
- (3) Jurisdiction etc.

CASE 5905: (This Case will be continued to the May 11, 1977, Examiner Hearing)

Application of Palmer Oil & Gas Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Mesaverde and Dakota formations underlying the W/2 SE/4 and the E/2 SW/4 of Section 3, and the NW/4 of Section 10, and all mineral interests in the Pictured Cliffs and Fruitland formations underlying the NW/4 of Section 10, all in Township 31 North, Range 7 West, San Juan County, New Mexico, to be dedicated to a well to be drilled 1800 feet from the North line and 850 feet from the West line of said Section 10. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5906: (This Case will be continued to the May 11, 1977, Examiner Hearing)

Application of Palmer Oil & Gas Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Mesaverde and Dakota formations underlying the W/2 SW/4 of Section 2, the E/2 SE/4 of Section 3, and the NE/4 of Section 10, all in Township 31 North, Range 7 West, San Juan County, New Mexico, to be dedicated to a well to be drilled 1525 feet from the North line and 1850 feet from the East line of said Section 10. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5907: Application of Dome Petroleum Corporation for a special depth bracket allowable, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a special depth bracket allowable of 750 barrels of oil per day for the Papers Wash-Entrada Oil Pool, McKinley County, New Mexico.CASE 5908: Application of Dome Petroleum Corporation for a special depth bracket allowable, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a special depth bracket allowable of 750 barrels of oil per day for the Ojo Encino-Entrada Oil Pool, McKinley County, New Mexico.CASE 5909: Application of Dome Petroleum Corporation for pool creation and special depth bracket allowable, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the creation of the Snake Eyes-Entrada Oil Pool in Section 20, Township 21 North, Range 8 West, San Juan County, New Mexico, and the establishment of a special depth bracket allowable of 750 barrels of oil per day for said pool.CASE 5910: Application of Yates Petroleum Corporation for gas pool creations and downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of three Pennsylvanian gas pools in Townships 17 and 18 South, Ranges 24, 25, and 26 East, Eddy County, New Mexico, including the Richard Knob- and East Eagle Creek-Lower Penn Gas Pools with provisions in each for commingling Strawn, Atoka, and Morrow production in the wellbores of wells drilled therein, and the Eagle Creek Permian-Penn Gas Pool with provision for commingling Wolfcamp, Cisco, Canyon, and Strawn production in the wellbores of wells drilled therein.CASE 5898: (Continued from April 6, 1977, Examiner Hearing)

Application of Chase Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Ballard-Pictured Cliffs and South Lindrith Gallup-Dakota production in the wellbore of its Jicarilla 70 Well No. 3 located in Unit C of Section 33, Township 24 North, Range 4 West, Rio Arriba County, New Mexico. In the alternative, applicant seeks authority to commingle said production at the surface without prior measurement and waiver of the gas-oil ratio test requirement.

CASE 5911: Application of Odessa Natural Gas Company for special pool rules, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the adoption of special pool rules for the Chacon-Dakota Oil Pool, Rio Arriba County, New Mexico, to provide for 160-acre spacing for oil wells and for reclassification of wells from oil to gas and the removal of such gas wells to the Basin-Dakota Pool.

BEFORE THE
OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF DOME PETROLEUM CORPORATION FOR
AN ORDER FOR CREATION OF A NEW
POOL CLASSIFIED AS AN OIL POOL
FOR ENTRADA PRODUCTION, ASSIGNMENT
OF AN OIL DISCOVERY ALLOWABLE AND
ASSIGNMENT OF A SPECIAL DEPTH BRACKET
ALLOWABLE OF 750 BARRELS PER DAY,
SAN JUAN COUNTY, NEW MEXICO

A P P L I C A T I O N

COMES NOW Dome Petroleum Corporation by and through its
attorneys, White, Koch, Kelly & McCarthy and in support of its
application, states:

1. Applicant is the operator and has drilled and is currently producing oil from the Entrada formation from its discovery well, Santa Fe 20-1, located 1800 feet from the north line and 2100 feet from the east line, Section 20, Township 21 North, Range 8 West, San Juan County, New Mexico.
2. Applicant seeks the creation of a new pool designated as the Snake Eyes Entrada Pool for the production of this well and other wells that may drilled from this common source of supply.
3. Applicant's discovery well Santa Fe 20-1 is eligible for discovery allowable and applicant requests that it be granted such allowable.
4. The reservoir conditions found in the proposed Snake Eyes Entrada Pool are such that high production rates will promote greater operational and recovery efficiency and the discovery well has the potential to produce in excess of the normal allowable without causing waste and, therefore, applicant requests a special depth bracket allowable allowing a total production of 750 barrels per a day be assigned.

The applicant is the only operator in the pool and there are no offset operators that would be effected by the approval of this application and, therefore, the approval of this application will result in the recovery of oil that would not otherwise be recovered and will prevent waste and protect correlative rights.

WHEREFORE applicant requests that this matter be set down for hearing and that the Commission enter its order granting the application as requested.

WHITE, KOCH, KELLY & MCCARTHY

By: Booker Kelly
BOOKER KELLY
Attorneys for Dome Petroleum
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Phone in Application⁽³⁾ Booker Kelly
3-28-77

(1) Appl of Dome Petroleum Corporation
for a special depth bracket allowable
McKinley County, NM. Applicant in
the above styled cause seeks the
establishment of a special depth
bracket allowable of 750 barrels
of oil per day for the Papers Wash-
Entrada^{oil} Pool, McKinley County, New
Mexico.

(2) As above for Ojo Encino-Entrada
Oil Pool, McKinley County, New
Mexico.

(3) Application of P P C
for pool creation and special
depth bracket allowable ~~McKinley~~
San Juan County, New Mexico. Applicant in
the above styled cause seeks
the creation of a ~~new pool~~
~~for the production of oil from the~~
~~Entrada formation. Said pool~~
~~The Snake Eyes - Entrada Oil Pool~~
~~is to consist of the~~
in the SW¹/₄ NE¹/₄ of Section 20,
Township 21 North Range 8 West,
San Juan ~~McKinley~~ County, New Mexico. The
applicant further seeks the
establishment of a special depth
bracket allowable of 750 barrels
of oil per day for said Snake Eyes-
Entrada Oil Pool.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 20, 1977

EXAMINER HEARING

IN THE MATTER OF:

Application of Dome Petroleum Corpora-
tion for a special depth bracket allow-
able, McKinley County, New Mexico.

CASES
5907 & 5908

Application of Dome Petroleum Corpora-
tion for pool creation and special
depth bracket allowable, San Juan
County, New Mexico.

CASE
5909

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil
Conservation Commission:

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State Land Office Building
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I N D E XPageWILLIAM E. BABYAK

Direct Examination by Mr. Bateman

4

Cross Examination by Mr. Stamets

18

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1 MR. STAMETS: At this time we will call Case 5907.

2 MS. TESCHENDORF: Case 5907, application of Dome
3 Petroleum Corporation for a special depth bracket allowable,
4 McKinley County, New Mexico.

5 MR. STAMETS: Call for appearances.

6 MR. BATEMAN: Mr. Examiner, I'm Ken Bateman of White,
7 Koch, Kelly and McCarthy appearing for the applicant.

8 In the interest of time I would point out to the
9 Examiner that Cases 5907, 5908 and 5909 have a common issue
10 involving a special depth bracket allowable and those cases
11 will have virtually identical testimony and if the Examiner
12 please, I would like to combine those three cases if there
13 is no objection and present testimony.

14 MR. STAMETS: We will call then Cases 5908 and
15 5909.

16 MS. TESCHENDORF: Case 5908, application of Dome
17 Petroleum Corporation for a special depth bracket allowable,
18 McKinley County, New Mexico.

19 Case 5909, application of Dome Petroleum Corporation
20 for pool creation and special depth bracket allowable,
21 San Juan County, New Mexico.

22 MR. STAMETS: Is there any objection to the consoli-
23 dation of these cases? They will be consolidated for purposes
24 of testimony.

25 MR. BATEMAN: Thank you. I have one witness and ask

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1 that he be sworn.

2 (THEREUPON, the witness was duly sworn.)

3 MR. BATEMAN: Mr. Examiner, one further preliminary
4 matter, I would point out also that Case 5909 involves an
5 additional matter and that's the creation of a new pool with
6 the proposed name of Snake Eyes-Entrada and we will present
7 testimony on that at the conclusion.

8
9 WILLIAM E. BABYAK

10 called as a witness, having been first duly sworn, was examined
11 and testified as follows:

12
13 DIRECT EXAMINATION

14 BY MR. BATEMAN:

15 Q Would you state your full name please, and place of
16 residence?

17 A My name is William E. Babyak, that's B-a-b-y-a-k. I
18 live at 5160 West Quarles in Littleton, Colorado.

19 Q Have you previously testified before the Commission
20 and had your qualifications made a matter of record?

21 A Yes, I have.

22 Q And are you familiar with the area in question in
23 these three applications?

24 A Yes.

25 Q And how are you presently employed?

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1 A I'm employed as District Engineer for Dome Petroleum
2 Corporation in Denver.

3 Q And have you been involved in the development of the
4 three pools in question?

5 A Yes, I have.

6 MR. BATEMAN: Are the witness' qualifications
7 acceptable?

8 MR. STAMETS: They are.

9 Q (Mr. Bateman continuing.) Mr. Babyak, would you
10 please briefly review what Dome Corporation seeks by its
11 application here today?

12 A Basically with this application Dome Petroleum
13 Corporation is requesting a seven hundred and fifty barrel of
14 oil per day per well special depth bracket allowable for three
15 fields involving eight wells in McKinley and San Juan Counties,
16 New Mexico.

17 The current depth bracket allowable for these wells
18 is one hundred and seven barrels of oil per day. However, six
19 of the eight wells to be mentioned are capable of making oil
20 rates in excess of the current depth bracket allowable even
21 with the beam pumping equipment which is relatively low
22 capacity.

23 The three fields in question are Papers Wash,
24 Snake Eyes and Ojo Encino. All fields produce from the
25 highly porous and permeable Jurassic Entrada formation.

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1 Previously this Commission has granted the special
2 depth bracket of seven hundred and fifty barrels per day to
3 the other two known Entrada producers in Northwest New Mexico,
4 these being Eagle Mesa and Media.

5 The thrust of our testimony today will be toward
6 demonstrating three factors, one, the similarity, almost
7 duplication, of rock and fluid properties of Papers Wash,
8 Snake Eyes and Ojo Encino compared to the Eagle Mesa-Entrada
9 Pool. Two, the evidence in Eagle Mesa that increased rates
10 has had no harmful effects on oil recovery. In fact, as it
11 will be demonstrated in one case in the Media-Entrada Pool,
12 there may be beneficial effects to high volume, to high rate
13 capacity lift. And, three, sufficient market does exist
14 for all of the Entrada crude which can be produced at this
15 time or in the future.

16 Dome now has plans to instill high volume lift
17 capacity on all of its producing wells, probably sometime in
18 July of this year. Both Eagle Mesa and Media are in the main
19 being produced by high volume lift, which in this case is
20 Reda Pumps, submersible pumps, and currently plans are being
21 implemented for subsurface disposal of produced water.

22 In addition, Dome is requesting the creation of a
23 new pool and assignment of a discovery allowable in the
24 Snake Eyes-Entrada Pool located in Section 20, Township 21
25 North, Range 8 West in San Juan County.

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1 Q Mr. Babyak, have you prepared an exhibit by which the
2 rock and fluid properties are compared?

3 A Yes, I have, Exhibits One-A, One-B and One-C give
4 rock and fluid property comparisons between Papers Wash, Snake
5 Eyes and Ojo Encino as compared to Eagle Mesa.

6 Going into the Exhibit One-A, the Papers Wash field
7 is located in Sections 15 and 22 of 19 North, Range 5 West of
8 McKinley County and going down the list we can see that the
9 depth is approximately the same, three hundred feet of difference.
10 Porosities are high, twenty-five percent in the case of
11 Eagle Mesa as determined from a core and twenty-six point one
12 percent for Papers Wash as determined from a log. We have no
13 cores taken in the Papers Wash field. The permeability for
14 Eagle Mesa is four hundred and ninety-three millidarcies. This
15 is core permeability to air while the Papers Wash it is two
16 hundred ninety millidarcies and this is a build-up calculation
17 permeability and it is calculated permeability to oil.

18 Here I would like to mention that in general a
19 permeability to oil will show up somewhat different or lower
20 than a permeability to air, simply because of the resistance
21 factor of a liquid versus a gaseous substance.

22 The reservoir pressure, twenty-one ninety for Eagle
23 Mesa and twenty-one twenty for Papers Wash, very similar. The
24 gradient point four oh one psi per foot for Eagle Mesa and
25 point four one psi per foot for Papers Wash. The reservoir

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1 temperature, nearly identical, two degrees difference. The oil
2 gravity, we are dealing essentially with the same oil, thirty-
3 two and a half degree api, oil viscosity, four centipoise, which
4 has been previously demonstrated to this Commission on Eagle Mesa
5 and nine centipoise correlation viscosity which we have on
6 our oil in Papers Wash. The pour point of the oil again is
7 very similar, eighty degrees for Eagle Mesa and seventy-five
8 degrees for Papers Wash. Gas in solution again, nil in both
9 cases. Water salinity eighty-seven hundred parts per million
10 for Eagle Mesa and three thousand parts per million for Papers
11 Wash. Water viscosity appears to be the same.

12 Exhibit One-B is the rock and fluid property comparison
13 between Eagle Mesa and Snake Eyes. I would like to mention
14 that the Snake Eyes-Entrada is the proposed pool designation
15 for the discovery in 20, 21, 8. The porosity is essentially the
16 same, twenty-five percent versus twenty-four point nine percent.
17 Those are both core porosities. Permeability, four hundred and
18 ninety-three at Eagle Mesa and six hundred and sixty-five at
19 Snake Eyes. The reservoir pressure, twenty-one ninety at
20 Eagle Mesa, twenty-three sixty-two at Snake Eyes. The gradient
21 point four oh one and point four two two. The reservoir
22 temperature again, nearly the same. The oil gravity thirty-two
23 and a half at Eagle Mesa and twenty-nine point three at Snake Eyes.
24 The oil viscosity, four centipoise versus nine at Snake Eyes.
25 The oil pour point again very high, eighty degrees at Eagle

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1 Mesa and seventy degrees at Snake Eyes. Essentially no gas
2 in solution in either case. Water salinity very close, less
3 than twenty-five hundred parts per million difference and water
4 viscosity, again, the same.

5 And Exhibit One-C is a comparison of rock and fluid
6 properties with Ojo Encino as compared to Eagle Mesa Field.
7 Ojo Encino is about four hundred feet deeper and the porosity
8 is a little bit lower but again high, twenty-four percent
9 versus twenty-five. The permeability is somewhat lower than
10 Eagle Mesa. The reservoir pressure a little higher for
11 Ojo Encino. The fluid gradient about the same. The reservoir
12 temperature is slightly higher at Ojo Encino due to the depth.
13 The oil gravity the same. The viscosity, some difference. The
14 oil pour point, again we have this high pour point crude which
15 is characteristic of the Jurassic-Entrada in this area. Gas
16 in solution, nil. Water salinity essentially the same, just
17 two thousand parts per million difference and water viscosity
18 the same.

19 Q Mr. Babyyak, in your opinion is there any significant
20 difference between the rock and fluid properties which you have
21 demonstrated in these comparisons?

22 A No significant differences, no, sir.

23 Q Have you prepared an exhibit showing the production
24 data in the pools in question?

25 A Yes, I prepared Exhibits Two-A, Two-B and Two-C which

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1 essentially on a per well basis summarize the initial potential
2 data of the wells along with their current capacities and
3 and their cumulative.

4 What I would like to point out basically here is
5 on Exhibit Two-A all of the wells in Papers Wash initially
6 potentialized at rates in excess of the current depth bracket
7 allowable and currently all of the wells are capable of
8 production in excess of the current depth bracket allowable.
9 The Federal 15-1 essentially produces half of the month for
10 the months of January, February and March and I would also
11 like to mention here that these wells are pumping from approxi-
12 mately three thousand feet with beam pumping equipment which
13 as I mentioned previously we hope to change in July to Reda
14 pump equipment.

15 Exhibit Two-B is a production data sheet on the
16 Snake Eyes-Entrada Field as proposed. This well initially
17 potentialized for two hundred and thirty-one barrels of oil per
18 day, no water, flowing. It is currently capable of a hundred
19 and thirty-two barrels of oil and three hundred and twenty
20 barrels of water per day.

21 And Exhibit Two-C is the initial potential data and
22 current data on the Ojo Encino-Entrada and here I would like to
23 say that the wells initially potentialized in excess of allowable
24 however, they are not currently capable of allowable rates,
25 however, with high volume lift they will be capable of oil

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1 rates in excess of the allowable rates.

2 Q You say in excess of the allowable rates, do you mean
3 in excess of the seven hundred and fifty?

4 A No, I mean in excess of a hundred and seven barrels,
5 current depth bracket allowable.

6 Q All right, what is the drive mechanism in these
7 pools?

8 A The drive mechanism in these pools appears to be
9 a strong water drive mechanism which again is the same as
10 evidenced in Eagle Mesa and Media.

11 Q Will you proceed with Exhibit Numbers Three-A, B
12 and C?

13 A These exhibits are brought to your attention mainly
14 to give the relative location of the wells within the sections
15 and the locations and also an idea of the horizontal limits
16 of the pools.

17 As you can see Papers Wash, there are four wells in
18 the northern pool area and one well in the southern pool area.
19 We do plan additional drilling in the future on this feature,
20 the exact location which hasn't been determined. There is a
21 slight possibility that these two may marry up.

22 On Exhibit Three-B, this is the structure map on top
23 of the Entrada formation, the proposed Snake Eyes-Entrada Field.
24 It shows the location of the Santa Fe 20-1 pretty much on top
25 of the structure, along with the productive limits, approximately

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1 plus ten twenty subsea.

2 And Exhibit Three-C is an Entrada structure map from
3 reflection seismic on the Ojo Encino-Entrada Field showing the
4 location of the Federal 21-1 and the 21-2. It's not colored
5 in on that one but the oil-water contact is at approximately the
6 eight hundred and twenty subsea contour.

7 Q All right, referring your attention again to Exhibit
8 Three-B does that show the horizontal limits of the proposed
9 Snake Eyes-Entrada Field?

10 A Yes, the horizontal limits are placed in there on
11 the basis of the observed oil-water contact in the Entrada
12 formation on top of the Entrada encountered in the 20-1.

13 MR. STAMETS: Would you be recommending as the pool
14 limits the north half of Section 20 and the southeast of
15 Section 17?

16 A The north half of Section 20 I believe would be the
17 pool. I sincerely doubt the existence of an economic location
18 in Section 17.

19 MR. STAMETS: The north half of 20 would be what
20 you desire?

21 A The north half of 20, yes.

22 MR. STAMETS: Thank you.

23 Q (Mr. Bateman continuing.) Have you made any calcula-
24 tion concerning the possible reservoir damage or waste in --

25 A Yes, I would like to refer to Exhibits Four-A,

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1 Four-B and Four-C. This data has been gathered from published
2 data on the Eagle Mesa Field, the Federal 13 C-1 and the
3 Federal 14 C-1.

4 Exhibit Four-A is a plot of cumulative water production
5 versus cumulative oil production on a log-log scale. As you
6 will notice on the line in the extrapolation you can see where
7 the Reda pump or high volume lift or higher than allowable
8 capacities were permitted. As you can see, this reasonably
9 demonstrates that there has been no harmful effect on the oil
10 versus water cum-cum relationship as a result of the higher
11 volume lift. If there had been a bad effect that line would
12 have essentially gone down to the right rather than maintained
13 its original attitude.

14 Q The decline of the scale then would indicate what?

15 A A decline in the scale would indicate a smaller oil
16 production or a greater water production which means there would
17 be a harmful effect to recovery because of the high volume
18 lift.

19 Figure Four-B again is the same type plot, cum oil
20 versus cum water on a log-log scale for the Federal 14 C-1 at
21 Eagle Mesa and again the relationship of oil versus water
22 production did not change at all with the inclusion of a Reda
23 pump.

24 And Figure Four-C just digressing a little bit back
25 to the Media-Entrada Field, this is a percent oil versus

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1 cumulative oil plot on the Fluid Power Pump Company No. 1 Well.
2 The extrapolation on line one indicates -- is extrapolated down
3 to one-half of one percent oil cut which we anticipate right
4 now is the economic limit on producing these wells. And line
5 one I think is a reasonably established relationship between
6 the percent oil versus the cum oil and it indicates a recovery
7 of seven hundred and fifty thousand barrels from this well at
8 a half a percent oil cut. You can see when the pump rate was
9 increased which means the Reda pump was put in the hole and
10 the pump rate was increased, the current extrapolation on
11 line two is approximately eight hundred and forty thousand
12 barrels, an increase in ultimate recovery from this well of
13 about ninety thousand barrels or fifteen or sixteen percent.

14 I think what this curve shows is there may be a
15 beneficial effect from the high volume lift.

16 Q Now, presuming you are able to produce additional
17 oil, is there a market for the oil?

18 A Yes, I would like to introduce Exhibit Five here
19 which is a letter to Dome Petroleum Corporation to my
20 attention, dated March 15th, 1977 from the Permian Corporation.
21 I'll just read this into the record. (Reading.)

22 In response to your inquiry about future market
23 potential for Entrada crude, I would like to make the following
24 comments: Plateau has assured me that they will be able
25 to take all production from Dome Petroleum by May 15th, 1977.

1 There are several other people that have been asking for some
2 of this crude, the local market will be real firm in the
3 future. (End of reading.)

4 I think that this demonstrates that counter to past
5 history on this Entrada crude, we do have a viable and an
6 unlimited market essentially for our capabilities.

7 Q Turning your attention to the application for the
8 proposed new pool, the Snake Eyes-Entrada, would you refer then
9 to Exhibit Number Six and identify it?

10 A Yes, Exhibit Number Six is a location and acreage
11 map on Township 21 North, Range 8 West. The discovery well
12 for the proposed Snake Eyes-Entrada Pool is located in Section
13 20 and is underlined in red. It was drilled to a depth of
14 fifty-eight hundred and sixteen feet, Santa Fe 20-1.

15 What I would like to point out here is that all of
16 the offset acreage owners are identified and all of the wells
17 previously drilled in this area are identified, none of which
18 are producing at this time. I would like to point out that all
19 of the other wells in this area that are shown to be plugged-
20 out oil wells produced from the Dakota sandstone reservoir.

21 In addition there is one other thing I would like to
22 apologize to the Commission for. This map should cover an
23 area two miles in radius from the Santa Fe 20-1, which would
24 mean at least the east half of Sections 13, 24 and 25. I have
25 checked into whether or not there are any wells over there and

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1 to the best of my knowledge there are not.

2 Q Now, have you been able to identify the vertical
3 separation between the old Dakota production and the new
4 Entrada production?

5 A Yes, I would like to refer to Exhibit Seven which is
6 a dual induction laterolog on a two inch equals one hundred foot
7 scale. The principal factors on this log I would like to point
8 out is the Dakota "D" reservoir. The Snake Eyes-Dakota "D"
9 reservoir occurs at approximately forty-six hundred and
10 eighty feet logged depth on this well which is the Santa Fe 20-
11 The Entrada occurs at a depth of approximately fifty-six oh
12 four. We have approximately nine hundred feet of vertical
13 separation between the previously producing and now plugged
14 out Dakota and the currently producing and discovered Entrada.
15 I believe this demonstrates adequate vertical separation.

16 Q Mr. Babyak, have you filed a Form C-109 on that
17 well?

18 A Yes, I have, it is Exhibit Eight. What this applica-
19 tion essentially shows is the location of the well which is
20 demonstrated on the map, the total depth and the initial
21 potential. In addition, the nearest production to the discovery
22 as I previously mentioned was the Snake Eyes-Dakota "D". The
23 top of the pay was about forty-six hundred and seventy-eight
24 feet, the bottom about forty-seven hundred feet. It is now
25 currently producing about nine hundred feet vertically from

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1 the Entrada and horizontally the nearest well in the Dakota "D"
2 is plugged out at about sixteen hundred and fifty feet away
3 from the Santa Fe 20-1 discovery well.

4 The nearest comparable production, meaning from the
5 Entrada, is at Ojo Encino which is in Section 20 North and
6 Range 5 West, it's about nineteen point six miles away.

7 Q Would you proceed then with Exhibit Nine?

8 A Exhibit Nine is a recap of pertinent rock and fluid
9 properties on the Snake Eyes-Entrada Pool. This data has
10 been gathered from the initial discovery well and it is pretty
11 much a recap of Exhibit One-B where I compared it with the
12 Eagle Mesa. Again we are dealing here with a high pour point
13 oil, twenty-nine point three degree api gravity and a reason-
14 ably, at least as far as dissolved solids, a reasonable water
15 as far as being able to handle it, again high porosity and
16 high permeability and about fifty-six hundred feet of depth.

17 Q Mr. Babyak, in your opinion will the granting of these
18 applications protect correlative rights and prevent waste?

19 A Yes, sir, they will.

20 Q Were Exhibits One through Nine prepared by you or
21 under your direction?

22 A Yes, they were.

23 MR. BATEMAN: I offer Exhibits One through Nine at
24 this time.

25 MR. STAMETS: These exhibits will be admitted.

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1 (THEREUPON, Dome's Exhibits One through
2 Nine were admitted into evidence.)

3 MR. BATEMAN: I have nothing further.
4

5 CROSS EXAMINATION

6 BY MR. STAMETS:

7 Q Mr. Babyak, do you have any indication that the
8 discovery well in the Snake Eyes-Entrada Pool will be able to
9 produce seven hundred and fifty-five barrels a day, plus the
10 assigned discovery allowable?

11 A Well, at this point in time based on the initial
12 drill stem test of the well, the initial drill stem test of
13 the well unloaded at about twenty-five hundred barrels of oil
14 per day so I would say, yes, if we can install sufficient
15 lift. Our plans right now are to install Redas on all of
16 these wells with capacities between four and five thousand
17 barrels of fluid per day.

18 Q Referring back to your Exhibit Four-C, based on the
19 Media Field, you indicated perhaps an additional ninety
20 thousand barrels of production based on that decline curve.
21 Are the expenses associated with pumping this with Reda equip-
22 ment such that you would have to cease production at an earlier
23 date or at a higher oil-water cut?

24 A That is kind of a loaded question, Mr. Examiner. We
25 can produce economically to a lower water cut with Reda equip-

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1 ment mainly because we don't have the operational difficulties
2 inherent with beam pumping equipment. This will be a totally
3 electrified operation, we will have our salt water disposal
4 electrified and once you get above a certain level the
5 incremental cost to put away a barrel of water goes down, so,
6 therefore, actually it probably will -- if anything high volume
7 lift decreases the well, it will decrease your economic limit.

8 Q It will make for better operations?

9 A It will make for better operations.

10 Q Do you have injection wells already authorized here
11 in this area?

12 A No, I've got all of the papers ready for submission
13 to this Commission to get the necessary approvals for subsurface
14 disposals.

15 Q Would you anticipate that if you were granted
16 approval of your application, say in a couple of weeks, that
17 you would have your injection wells in operation before you
18 got the Reda equipment installed and increased your water
19 production rates?

20 A Well, we will not be ready to do this within a
21 couple of weeks, however, as I have previously demonstrated
22 with the current water disposal facilities which we have a
23 temporary permit for and do anticipate getting an extension,
24 we are currently capable of making in excess of the depth
25 bracket allowable and we would like permission to do that.

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1 Q And you are disposing of this water underground?

2 A No, right now it is just going into pit disposal.

3 Q Is there any fresh water in the area of these wells?

4 A None that I know of. Maybe Mr. Kendrick can offer

5 some comments on that.

6 MR. KENDRICK: I don't know just offhand.

7 A This water is reasonably fresh in itself.

8 MR. STAMETS: I wouldn't want to drink any of it.

9 I'm sure that Mr. Kendrick by judicious application

10 of his authority would be able to cause any production which

11 endangered fresh water to be halted or suspended or whatever

12 so perhaps we can handle it in that manner.

13 Any other questions of the witness? He may be

14 excused.

15 (THEREUPON, the witness was excused.)

16 MR. STAMETS: Is there anything further in this case?

17 The case will be taken under advisement.

18

19

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REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Certified Shorthand Reporter,
do hereby certify that the foregoing and attached Transcript
of Hearing before the New Mexico Oil Conservation Commission
was reported by me, and the same is a true and correct record
of the said proceedings to the best of my knowledge, skill and
ability.

Sidney F. Morrish
Sidney F. Morrish, C.S.R.

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Phone (505) 962-5212

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 5907, 5908, 6570,
heard by me on 4-30-77.
Richard L. Stamm, Examiner
New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

DIRECTOR
JOE D. RAMEY

LAND COMMISSIONER
PHIL R. LUCERO
April 28, 1977



STATE GEOLOGIST
EMERY C. ARNOLD

Mr. Ken Bateman
White, Koch, Kelly & McCarthy
Attorneys at Law
P. O. Box 787
Santa Fe, New Mexico

Re: CASE NO. 5909
ORDER NO. R-5421

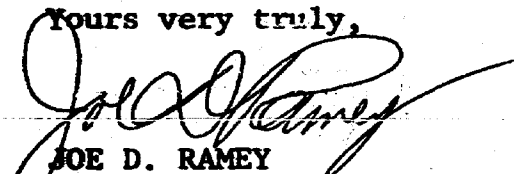
Applicant:

Dome Petroleum Corporation

Dear Sir:

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

Yours very truly,


JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC	<u>X</u>
Artesia OCC	<u>X</u>
Aztec OCC	<u>X</u>

Other _____



OIL CONSERVATION COMMISSION

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Santa Fe, New Mexico

Re: CASE NO. 5907
ORDER NO. R-5419

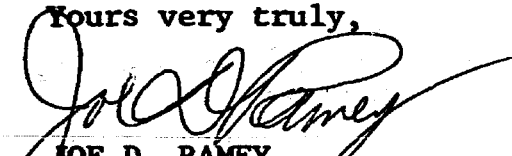
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Director

JDR/fd

Copy of order also sent to:

Hobbs OCC X
Artesia OCC X
Aztec OCC X

Other _____

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5907
Order No. R-5419

APPLICATION OF DOME PETROLEUM
CORPORATION FOR A SPECIAL DEPTH
BRACKET ALLOWABLE, MCKINLEY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 20, 1977, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 26th day of April, 1977, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Dome Petroleum Corporation, seeks a special depth bracket allowable of 750 barrels per day for the Papers Wash-Entrada Oil Pool, McKinley County, New Mexico.

(3) That the wells in said Papers Wash-Entrada Oil Pool are capable of producing large volumes of oil and water.

(4) That the ultimate recovery of oil in said pool will not be adversely affected by high rates of production but will instead be improved thereby.

(5) That approval of the application should serve to prevent waste and will not violate correlative rights.

(6) That the subject application should be approved.

-2-

Case No. 5907
Order No. R-5419

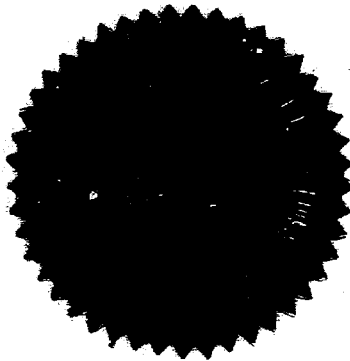
IT IS THEREFORE ORDERED:

(1) That effective May 1, 1977, a special depth bracket allowable of 750 barrels of oil per day is hereby established for the Papers Wash-Entrada Oil Pool, McKinley County, New Mexico.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE NO. 5909
Order No. R-5421

NOMENCLATURE

APPLICATION OF DOME PETROLEUM
CORPORATION FOR POOL CREATION
AND A SPECIAL DEPTH BRACKET
ALLOWABLE, SAN JUAN COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 20, 1977,
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 26th day of April, 1977, the Commission,
a quorum being present, having considered the testimony, the
recrd, and the recommendations of the Examiner, and being fully
advised in the premises,

FINDS:

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

(2) That the applicant, Dome Petroleum Corporation, is the
owner of the Santa Fe 20 Well No. 1, located in Unit G of Section
20, Township 21 North, Range 8 West, NMPM, San Juan County,
New Mexico.

(3) That said well was completed as an oil well capable of
producing from the Entrada formation on February 10, 1977, through
perforations from 5604 feet to 5612 feet.

(4) That the applicant seeks the creation of a new pool for
Entrada production for said well.

(5) That a new pool in San Juan County, New Mexico, should
be created and defined, classified as an oil pool for Entrada
production, and designated as the Snake Eyes-Entrada Oil Pool,
comprising the following-described lands:

TOWNSHIP 21 NORTH, RANGE 8 WEST, NMPM
Section 20: N/2

-2-

Case No. 5909
Order No. R-5421

(6) That the applicant further seeks the establishment of a special depth bracket allowable of 750 barrels per day for said Snake Eyes-Entrada Oil Pool.

(7) That the well completed in the Snake Eyes-Entrada Oil Pool is capable of producing large volumes of oil and water.

(8) That the ultimate recovery of oil in said pool will not be adversely affected by high rates of production but will instead be improved thereby.

(9) That approval of the application should serve to prevent waste and protect correlative rights.

(10) That the subject application should be approved.

IT IS THEREFORE ORDERED:

(1) That a new pool in San Juan County, New Mexico, classified as an oil pool for Entrada production, is hereby created and designated as the Snake Eyes-Entrada Oil Pool, consisting of the following described area:

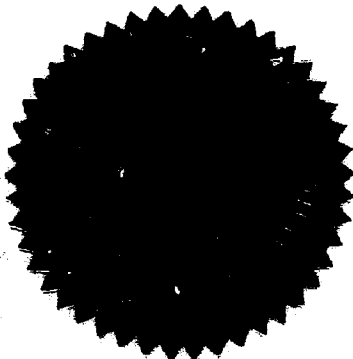
TOWNSHIP 21 NORTH, RANGE 8 WEST, NMPM
Section 20: N/2

(2) That effective May 1, 1977, a special depth bracket allowable of 750 barrels of oil per day is hereby established for said Snake Eyes-Entrada Oil Pool.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



PHIL R. LUCERO, Chairman

Emery L. Arnold
EMERY L. ARNOLD, Member

Joe D. Ramey
JOE D. RAMEY, Member & Secretary

S E A L

jr/