May 1999

Correspondence

Denovo Case 11996

MILLER, STRATVERT & TORGERSON, P. A.

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PLEASE REPLY TO SANTA FE

May 21, 1999

BY FACSIMILE: 505-986-1367

J. E. Gallegos, Esq.
Gallegos Law Firm, P. C.
460 St. Michaels Dr., #300
Santa Fe, New Mexico 87505-7602

Re: NMOCD Case No. 11996; Application of Pendragon Energy, Inc., and J. K. Edwards Associates, Inc.; San Juan County, New Mexico

Dear Gene:

As discussed today, I understand you will review the Commission's May 19th Order Authorizing Reservoir Pressure Testing and will advise with respect to Whiting's position on seeking the District Court's permission to restore the Chaco No. 4 well to production and on the need for a bond. I'd appreciate knowing your clients' position as soon as possible so the testing can get under way.

With respect to your objections to attaching excerpts from the Division hearing to our most recent Reply brief, you must recognize that in your Response, Whiting raised the new claim that Pendragon had changed its position. We were fully entitled to respond to the issue and appropriately did so. However, I agree with your comments that in the context of this de novo proceeding, the Commission should not decide the merits of this case based on the record from other matters. Accordingly, I hope we may avoid the situation that arose in the Division Examiner hearing when Whiting sought to incorporate the entirety of the record from the hearing on the pool rules for the Basin-Fruitland Coal Gas Pool (Case No. 9420).

Finally, providing the Commissioners with copies of the pleadings filed by both parties was cleared by Lyn Hebert some time ago. I'm not sure why Whiting would object to my doing this, but I will certainly follow the directions of the Commission's counsel in this regard.

It is hoped we may receive a quick response from Whiting on the testing issue.

Very Truly Yours,

J. Scott Hall

JSH/ao

Cc: Marilyn Hebert, Esq.

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GALLEGOS LAW FIRM

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MAY 25 1999

& SON, [illegible]
SANTA FE, NEW MEXICO

May 21, 1999
(Our File No. 98-266.00)

J.E. GALLEGOS *

VIA TELECOPY
J. Scott Hall
Miller Stratvert, Torgerson
& Schlenker P.A.
150 Washington, Suite 300
Santa Fe, New Mexico 87501

Re: Whiting et al. v. Pendragon et al. SF-CV-98-01295
Application of Pendragon OCD No. 11996

Dear Scott:

This is in reply to your fax of this date and to two letters from you dated May 18, 1999 which were received today. I will try to cover all pending items.

Order Allowing Testing. I have faxed a copy of the Order received today to our clients and to Holditch and Associates. I will be discussing it with them by phone on Monday. Please be advised, however, that I have business travel out of state next Tuesday through Thursday, and meetings set on the Friday when I return. After Memorial Day I will get back to you in the first week in June on how we will proceed. This should not cause any time problem given the testimony filling and hearing schedule we are under.

Exchange of Data. By referencing only your subpoenas to our technical people you have perhaps forgotten what transpired at the March 30, 1999 pre-hearing conference in regard to the Whiting objection to your subpoenas. It was understood that there would be a mutual exchange of raw data and information. We received the materials from both Brad Robinson and Walt Ayers some time back, as I informed you, but it has been a very time consuming task to apply Bates numbers. Our paralegals are having to deal with items like long rolls of well log copies. The like materials (most of it duplication) is being transmitted to us by Whiting and Maralex. If you tell me when your clients and experts will be prepared to make a contemporaneous exchange we will have a date to aim for.

Ex-Part Communications With Commissioners. We thought and still believe that proper procedure is to file pleadings with the Commission secretary. If something needs to come to a Commissioner's attention before the hearing it is the function of the

* New Mexico Board of Legal Specialization
Recognized Specialist in the area of
Natural Resources-Oil and Gas Law

agency to distribute it. I regard it as improper, ex-parte communication for you to be sending pleadings to the Commissioners directly. While presumably, if they needed them, copies would be distributed, your Reply filed May 19, 1999 included a transparent attempt to introduce one very selective piece of testimony from the Examiner Hearing. There is no apt comparison (as you attempt in your fax) between that device and our offering in open hearing and the Examiner accepting the quite relevant hearing record on the Basin-Fruitland Pool Rules. I realize that you have taken it upon yourself to also send copies of our pleadings to the Commissioners. But let the agency do its job and decide what goes to the Commissioners.

I will be in touch week after next as indicated above.

Sincerely,

GALLEGOS LAW FIRM, P.C.

BY: J.E. GALLEGOS

JEG/rjr
Fxc: Lynn Hebert
John Hazlett
Sherwin Artus
Mickey O'Hare
loc: Michael J. Condon
Michael P. Gross
Caroline C. Woods

5-9-1999

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

CASE NO. 11996
DE NOVO

APPLICATION OF PENDRAGON ENERGY PARTNERS, INC., PENDRAGON RESOURCES, L.P., AND J. K. EDWARDS ASSOCIATES, INC. TO CONFIRM PRODUCTION FROM THE APPROPRIATE COMMON SOURCE OF SUPPLY, SAN JUAN COUNTY, NEW MEXICO.

ORDER ALLOWING RESERVOIR PRESSURE TESTING

This matter came before the Commission on April 22, 1999, on Pendragon Energy Partners, Inc., Pendragon Resources, L.P., and Edwards Energy Corporation's ("Pendragon") Motion to Conduct Reservoir Pressure Tests. Maralex Resources, Inc. and Whiting Petroleum Corporation ("Whiting") filed a response to the motion, and on May 19, 1999, Pendragon filed its reply. The pleadings have been reviewed and considered.

The proposed testing may yield information relevant to the issues in this case. Therefore, Pendragon's motion is hereby granted, and Pendragon may conduct the testing as proposed in its motion provided Pendragon meets the following conditions:

1. Pendragon must obtain permission of the District Court to restore to production the Chaco No. 4 well, which well was ordered shut in by the Court in *Whiting Petroleum Corporation et al. v. Pendragon Energy Partners, Inc., et al.,* First Judicial District, No. D-0101-CV-98-01295.

2. Pendragon must satisfy any financial security the District Court may order for the lost production from Whiting's three wells as well as the ten-day production of the Chaco No. 4 Well.
3. Pendragon must notify Whiting and the New Mexico Oil Conservation Division's Aztec District Office of the dates for the testing so that Whiting and the Aztec District Office can be present for the testing.

Done this 19th day of May, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

LORI WROTENBERY

MAY 19 1999
OIL CONSERVATION DIVISION

MILLER, STRATVERT & TORGERSON, P. A.

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JAMES J. WIDLAND, COUNSEL

PLEASE REPLY TO SANTA FE

May 18, 1999

Ms. Jamie Bailey
New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, New Mexico 87504

Dr. Robert Lee
Petroleum Recovery Research Center
New Mexico Institute of Mining Technology
801 Leroy Place
Socorro, New Mexico 87801-4796

Re: NMOCC Case No. 11996; Application of Pendragon Energy Partners, et al., San Juan County, New Mexico

Dear Ms. Bailey and Dr. Lee:

Enclosed to each of you are courtesy copies of Maralex And Whiting's Response To Pendragon's Motion [To] Conduct Reservoir Pressure Tests and Pendragon's Reply Pursuant To Motion To Conduct Reservoir Pressure Tests. Earlier, you were provided with copies of the original motion and your briefing packages on this matter are now complete.

Thank you.

Very Truly Yours,

J. Scott Hall

Cc: Lori Wrotenbery (w/o enclosures)
Marilyn Hebert (w/o enclosures)
J.E. Gallegos (w/o enclosures)

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ROSS B. PERKAL, COUNSEL
JAMES J. WIDLAND, COUNSEL

PLEASE REPLY TO SANTA FE

99 MAY 19 AM 6:34
OIL CONSERVATION DIV.

May 18, 1999

HAND DELIVERED
Lori Wrotenbery, Chairman
New Mexico Oil Conservation Commission
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: NMOCD Case No. 11996; Application of Pendragon Energy Partners, Inc. to Confirm Production from Appropriate Common Source of Supply, San Juan County, New Mexico (Order No. R-11133)

Dear Ms. Wrotenbery:

Enclosed for filing in the above-matter are an original and two copies of Pendragon's Reply Pursuant to the Motion to Conduct Reservoir Pressure Tests.

Very Truly Yours,

J. Scott Hall

JSH:ao
Enclosure:

cc: J. E. Gallegos (w/enclos.)
Lyn Hebert, Esq. (w/enclos.)

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STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

99 MAY 19 AM 6:34
OIL CONSERVATION DIV.

IN THE MATTER OF:

APPLICATION OF PENDRAGON ENERGY PARTNERS, INC., PENDRAGON RESOURCES, L.P., And EDWARDS ENERGY CORPORATION TO CONFIRM PRODUCTION FROM THE APPROPRIATE COMMON SOURCE OF SUPPLY, SAN JUAN COUNTY, NEW MEXICO

CASE NO. 11996
ORDER NO. R-11133
De Novo

PENDRAGON'S REPLY PURSUANT TO THE MOTION TO CONDUCT RESERVOIR PRESSURE TESTS

To facilitate the Commission's consideration of this case, the Applicants, Pendragon Energy Partners, Inc., et al., propose to conduct reservoir pressure tests on the subject Pictured Cliffs and Fruitland Coal reservoirs under the ambit of Order No. R-8768.[1] Utilizing pressure transient analysis, it is expected the data derived from the tests will determine the existence, location and extent of communication between these reservoirs. Pressure data obtained since the shut-in of Pendragon's Pictured Cliffs wells show that the Chaco No. 1, Chaco No. 4 and the Chaco No. 5 wells are

responding to production from the nearby Gallegos Fruitland Coal wells,[2] or in the Case of the Chaco No. 1, to production from other Pictured Cliffs wells. Consequently, the testing will focus on these particular wells.

Although its counsel resists the testing, Whiting's consulting Technical Manager recognizes that some test data would be helpful, but proposes testing by alternative methods. ("I agree that the proposed pressure tests will serve to prove...that there is pressure communication...". Para. 5 C, Affidavit of Bradley M. Robinson, Exhibit to Maralex's and Whiting's Response To Pendragon's Motion [To] Conduct Reservoir Pressure Tests.) Indeed, Whiting's consultant proposes taking bottomhole pressure measurements on all of the wells, which would require the shut-in of the Gallegos Fruitland coal wells. (Id., at Para. 5 D.) At the same time, Whiting expresses no opposition to temporarily restoring the Pictured Cliffs wells to production.

The consultants for the respective parties do not disagree that testing would be helpful. They merely disagree on the type of testing to be done and the conclusions that may be drawn from the data. The mere disagreement over testing methodologies is insufficient to overcome the showing made by Pendragon that the test data would be relevant to the issues in dispute.

---

[1] Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool
[2] Gallegos Federal 26-12-6 No. 2; 26-12-7 No. 1; and the 26-13-12 No. 1.

Typically, once such a showing is made, a broad array of testing is allowed. (See 8A Charles A. Wright & Arthur R. Miller, Federal Practice and Procedures, Section 2206 [2nd ed. 1994].) As demonstrated by the Supplemental Affidavit of Dave O. Cox, an accepted expert in well testing and reservoir engineering, (Exhibit 1, attached), the proposed testing is neither wasteful nor duplicative. Rather, the testing and analysis will be done according to accepted engineering practices and procedures that will, with all probability, yield useful and instructive information. Moreover, the testing procedures pose no risk of damage. On the other hand, the crossflow testing advocated by Whiting's consultant as an alternative would be costly and would introduce unnecessary risk by requiring additional perforations to be made in the casing of existing wells.

"In short..." as they state expressly in their Response, "... Maralex and Whiting do not contest the Commission's authority to order further testing...". (Page 3, Maralex's and Whiting's Response To Pendragon's Motion [To] Conduct Reservoir Pressure Tests.)[3] Similarly, Whiting and Maralex do not object on the basis that the tests involve risk of damage to the wells or reservoirs. Instead, the only concern expressed is that Pendragon has not addressed the posting of a bond in order to compensate Whiting for

"lost" (really, delayed) production for the short shut-in period. This particular objection is a rather bold one to make in view of the fact that last year, Whiting and Maralex argued just the opposite to the District Court. When Whiting and Maralex applied to the court for a preliminary injunction to shut-in Pendragon's Pictured Cliffs wells, they argued they "...should not be required to post a bond..." for the temporary[4] cessation of production. (See Excerpts from Whiting's Verified Application For Preliminary Injunction, Exhibit 2, attached.) If Whiting and Maralex are indeed serious about pursuing a bond, the matter can be easily taken up with the Court.

CONCLUSION

The arguments, exhibits and affidavits establish the proposed testing procedure will elicit meaningful reservoir data probative of the existence, location and extent of communication between the formations. Pendragon has demonstrated obvious relevance. The testing is authorized under the terms of Order No. R-8768 and the Commission's authority to permit the testing is not in dispute. On the other hand, Whiting has interposed no substantive objection and offers no good grounds why the testing should not

---

[3] Whiting and Maralex have recently begun promoting the argument that Pendragon has reversed its position. This curious contention is at odds with the background of this case, but is more appropriately, and briefly, addressed by way of an appendix (attached).

go forward. For these reasons, the Commission is requested to authorize the reservoir pressure testing according to the procedures proposed.

Respectfully submitted

MILLER, STRATVERT & TORGERSON, PA.

By J. Scott Hall

J. Scott Hall, Esq.
Post Office Box 1986
Santa Fe, New Mexico 87504
(505) 989-9614

ATTORNEYS FOR PENDRAGON ENERGY PARTNERS, PENDRAGON RESOURCES, L.P. AND EDWARDS ENERGY CORPORATION

[4] Because of time constraints, Pendragon was prevented from presenting any evidence at the preliminary injunction hearing. Pursuant to Whiting's application, Pendragon's Pictured Cliffs wells have now been shut-in for more than ten months.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Pendragon's Reply Pursuant to the Motion to Conduct Reservoir Pressure Tests was mailed on this 18 day of May, 1999 to the following:

Dr. Robert Lee
Petroleum Resource Recovery Center
801 Leroy Place
Socorro, New Mexico 87801

Jamie Bailey
New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, New Mexico 87504

Marilyn Hebert
New Mexico Oil Conservation Commission
2040 South Pacheco
Santa Fe, New Mexico 87505

J.E. Gallegos, Esq.
460 St. Michaels Drive, #300
Santa Fe, New Mexico 87505

J. Scott Hall, Esq.

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

SECOND AFFIDAVIT OF DAVE O. COX

IN THE MATTER OF:

APPLICATION OF PENDRAGON ENERGY PARTNERS, INC., PENDRAGON RESOURCES, L.P., And EDWARDS ENERGY CORPORATION TO CONFIRM PRODUCTION FROM THE APPROPRIATE COMMON SOURCE OF SUPPLY, SAN JUAN COUNTY, NEW MEXICO

CASE NO. 11996
ORDER NO. R-11133
De Novo

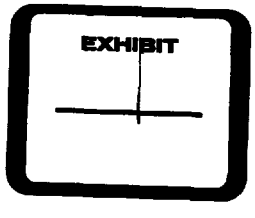
I, Dave O. Cox, having been duly sworn upon my oath, for my affidavit state:

1. I am a petroleum engineer with twenty-five years of experience in the oil and gas industry. Among my other experience, I have analyzed more than 200 well tests of Coalbed Methane wells, and have performed more than 50 Coalbed Methane evaluation projects.

2. I prepared a previous Affidavit on April 22, 1999 regarding proposed testing for this matter. A true copy of my résumé was attached thereto as Exhibit A. My cirriculum vitae have not changed materially since that time.

3. I have reviewed an "Affidavit of Bradley M. Robinson" dated May 5, 1999, and "Maralex's and Whiting's Response to Pendragon's Motion for [*sic*] Conduct Reservoir Pressure Tests", stamped May 6, 1999.

4. At the request of Pendragon Energy Partners, Inc., I have prepared this Affidavit to provide more details as to the reasons I proposed the testing outlined in my Affidavit



of April 22, 1999. Mr. Robinson apparently did not recognize the following important points:

a) Coalbed methane reservoirs have extremely high effective compressibility after gas begins desorbing. This high effective compressibility is a result of the large volume of gas that is released from an adsorbed state as the pressure is dropped. This is recognized in the petroleum industry literature. For example, page 5.8 of the Gas Research Institute's *Guide to Coalbed Methane Reservoir Engineering* discusses a well test in the Fruitland Coal where the desorption compressibility term (ϕc_d) was *70 times* greater than the free gas compressibility term ($\phi S_g c_g$).

b) The extremely high compressibility of the coal formations retards the movement of a pressure wave through the coal, so that it takes longer for a pressure wave to move through a coalbed methane reservoir than through a conventional oil or gas reservoir. In this case, the total porosity-compressibility product of the Fruitland Coal in the vicinity of the Gallegos Federal wells is more than twice as high as that of the Pictured Cliffs zone. Thus, pressure transients will move more than two times faster through the Pictured Cliffs than through the coal, because of the difference in compressibility.

c) In fact, the effect will be even greater than this, because the Pictured Cliffs also has greater permeability than the coal, and the area affected by a pressure transient through a formation at any given time is directly proportional to the permeability. Mr. Robinson's Exhibits 64 and 65 from the July 28, 1999 Division Examiner hearing suggest a permeability of 90 to 103 millidarcies for the Chaco No. 4 and Chaco No. 5 Pictured Cliffs wells, respectively. Core analysis from the Lansdale Federal No. 1 indicates the presence of permeability as high as 242 millidarcy. In contrast, I estimate the permeability of the Fruitland Coal to be between 10 and 25 millidarcy, based on comparison of the production rates of the Gallegos Federal wells to other coalbed methane wells in the basin. The greater permeability of the Pictured

Cliffs as compared to the Fruitland Coal causes pressure transients to move through the Pictured Cliffs many times faster than through the Fruitland Coal.

5. I have prepared Exhibit A-1 to illustrate the level of impact that the differences in compressibility and permeability have on pressure interference in the Pictured Cliffs wells, due to shutting in a nearby Fruitland Coal well. The following table summarizes the input data used in the analysis:

Parameter	Fruitland Coal	Upper Pictured Cliffs Sandstone
Permeability *k*, md	20	150
Thickness *h*, ft	18	3
Porosity-compressibility product ϕc, psi^{-1}	0.0025	0.0013
Well radius r_w, ft	0.33	0.10
Skin Factor *S*	-5	-5
Equivalent Interwell Distance *L*, ft	1000	1000
Production Rate *q*, Mcfd	700	0
Reservoir Pressure *P*, psia	160	120
Viscosity μ, cp	0.012	0.012
Langmuir Pressure *PL*, psia	1833	n/a
Starting Pressure *Pw*, psig	5	90

Using this information, I determined the pressure interference response that would be obtained at a shut-in Pictured Cliffs well from shutting in a producing Fruitland Coal well, depending on whether the pressure transients moved through the Fruitland or the Pictured Cliffs. As shown in Exhibit A-1, the pressure response at the Pictured Cliffs well should be observed in two to three days if the pressure transient is moving through the Pictured Cliffs. It will take 3 weeks or longer to observe a response if the pressure transient is moving through the Fruitland Coal. I have examined numerous cases with different values of permeability, skin factor, etc., and in all cases examined, similar results were obtained.

6. As described in my Affidavit of April 22, 1999, and not contested by Mr. Robinson in his response, pressure transients have in fact been observed at the Chaco No. 4 and Chaco No. 5 wells from time to time since July 1, 1998 when the Gallegos Federal

wells temporarily ceased production. The pressure analysis referred to in Point 5 above implies that this probably results from pressure transients moving from one or more of the Gallegos Federal coalbed methane wells, through the Pictured Cliffs, to reach the Chaco wells.

7. The testing I proposed in my Affidavit of April 22, 1999 is designed to confirm the pathway that the pressure transients are moving through (i.e., whether it is through the Pictured Cliffs or the Fruitland). Furthermore, it will determine which of the Gallegos Federal wells cause the pressure transients observed at the Chaco No. 4 and No. 5. By using higher resolution gauges in the Pictured Cliffs wells, these effects should be definitive.

8. Mr. Robinson states "it will not be possible to determine where the communication exists or the extent of the communication in any of these wells using conventional pressure transient analysis techniques." This is simply not true. With the advent of Laplace transform inversion techniques with fast personal computers and sophisticated computer-assisted well test analysis software, analysis of tests from multilayer reservoirs is now practicable and is accepted and performed by many expert well test analysts. In this case, the great differences in permeability and compressibility should permit an accurate determination of the flow paths using advanced well test analysis methods. A "detailed reservoir simulation study ... using a 3-D, two-phase, coal gas simulator" as suggested by Mr. Robinson will not be necessary.

9. Even if more sophisticated analysis methods were not available, the differences in the responses that will be observed at the Chaco No. 4 and No. 5 as the Gallegos Federal wells are sequentially shut-in will allow the relative impact of each well to be determined. The response at the Chaco No. 5 when the Chaco No. 4 is temporarily returned to production will also be compared to the response from shutting in the Gallegos Federal wells. In this manner, it will be possible to determine whether the communication between the zones is the result of communication at the Chaco wellbores, or at one or more of the Gallegos Federal wellbores.

10. In my April 22, 1999 Affidavit, I did not request high-resolution gauges in the Gallegos Federal wells. There were several reasons for this. First, those wells

produce both gas and water, which will complicate the analysis of their buildups. Secondly, it would be necessary to shut down the wells and run a bottom-hole gauge, and then restart them in order to get a full buildup. Thirdly, the buildup response of those wells will be virtually the same regardless of whether the communication is through the Chaco wells or the Pictured Cliffs wells, as shown on Exhibit B-1. This Exhibit was prepared to show the buildup response of a Fruitland well using the same reservoir parameters as noted in Paragraph 5 above. Finally, it would be expensive and time consuming to shut down the wells to run gauges, and would also introduce additional pressure transients into the system. Accordingly, if Maralex or Whiting wish to run high resolution gauges, they should be installed only after each well is shut in.

11. As regards Mr. Robinson's statements about the Chaco No. 2R, the accuracy of the surface pressure measurements has been confirmed by running a static pressure survey in the well, which shows it to have only a very small amount of water in the last joint of tubing. Accordingly, I still affirm that the observed buildup in that well is a true physical effect, indicating it has little or no communication with the Fruitland.

12. Similarly, Chaco No. 1 has no liquid in it, so the surface pressure data there should be correct. My proposed test design includes Chaco No. 1 as an observation well, in the event that pressure transients might be discernable with a higher resolution gauge.

13. The Chaco No. 1J is so close to the Gallegos Federal No. 26-13-1 No. 2 that significant pressure communication would have occurred if the completions of either of these wells had passed into the zone completed in the other well. Because such communication has not been observed over more than 9 months, I remain convinced that the completions in these two wells did not communicate with other zones.

14. The final point raised by Mr. Robinson was an alternative test design that involves adding Fruitland perforations to an existing Pictured Cliffs well, or adding Pictured Cliffs perforations to an existing Fruitland well, and then testing for crossflow. I consider this proposal to be completely unacceptable. It is more likely than not that perforating alone would not establish communication between the well and the formation, but that a breakdown would be needed. Mr. Robinson's test might easily create communication between zones that doesn't currently exist.

15. Accordingly, I still affirm that the testing I proposed in my Affidavit of April 22, 1999, should be carried out to determine the location and extent of communication between the Fruitland and the Pictured Cliffs formations in the subject area. The test procedure and analysis are of a type that should be acceptable to well testing experts as reliable methods. Neither the test data nor the analysis duplicate any presently available data or other evaluation. The testing poses no risk of damage to the wells or the reservoirs.

FURTHER AFFIANT SAYETH NAUGHT.

Dated: May 18, 1999

Dave O. Cox

STATE OF COLORADO)
) ss
COUNTY OF JEFFERSON)

Subscribed and sworn before me this 18th day of May, 1999, by Dave O. Cox.

Diane Milner
Notary Public

My commission expires: 02-01-2003

Exhibit A-1:
Interference Response between Fruitland and Pictured Cliffs for Fruitland Coal Well Producing then Shut-in

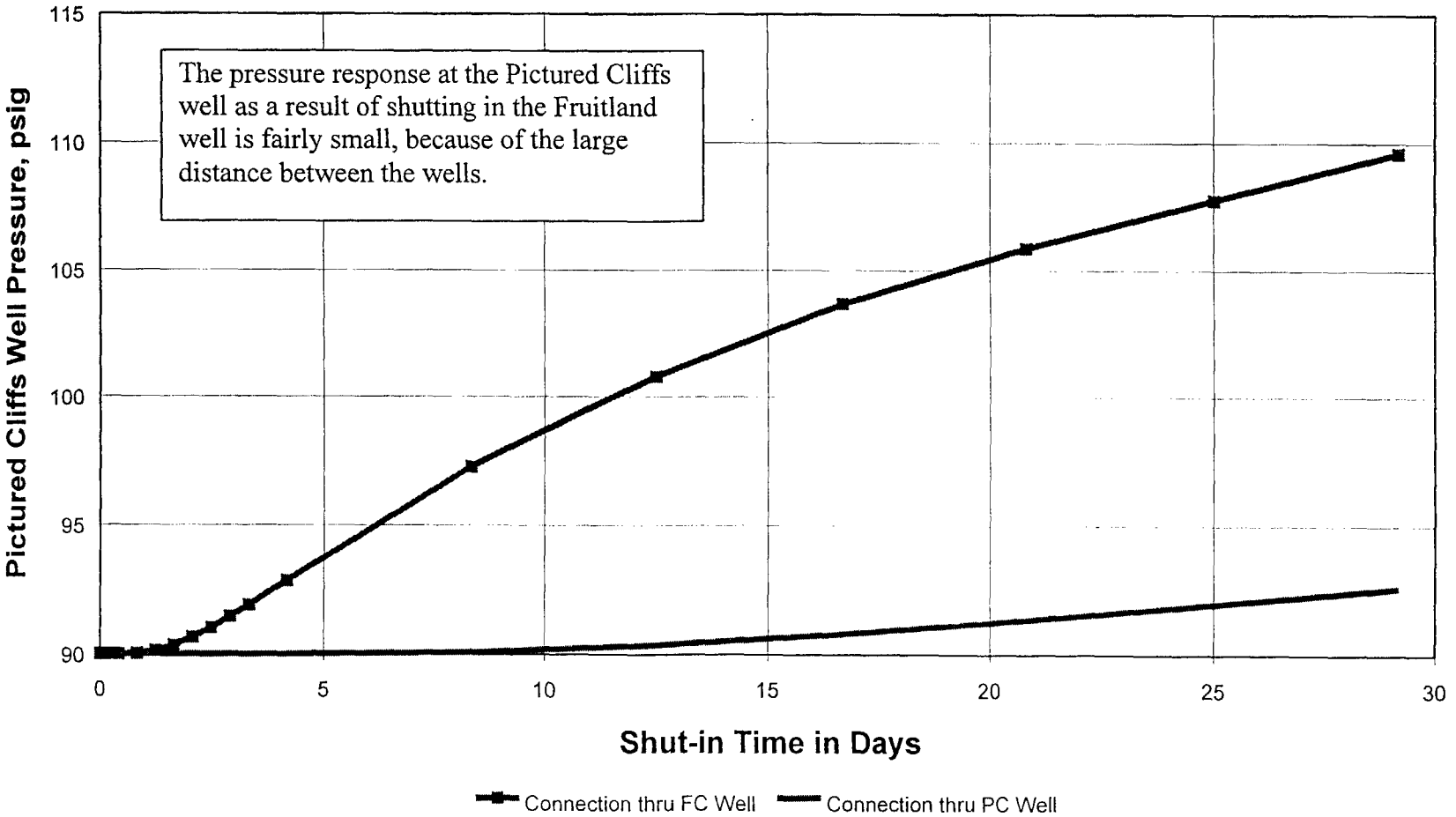
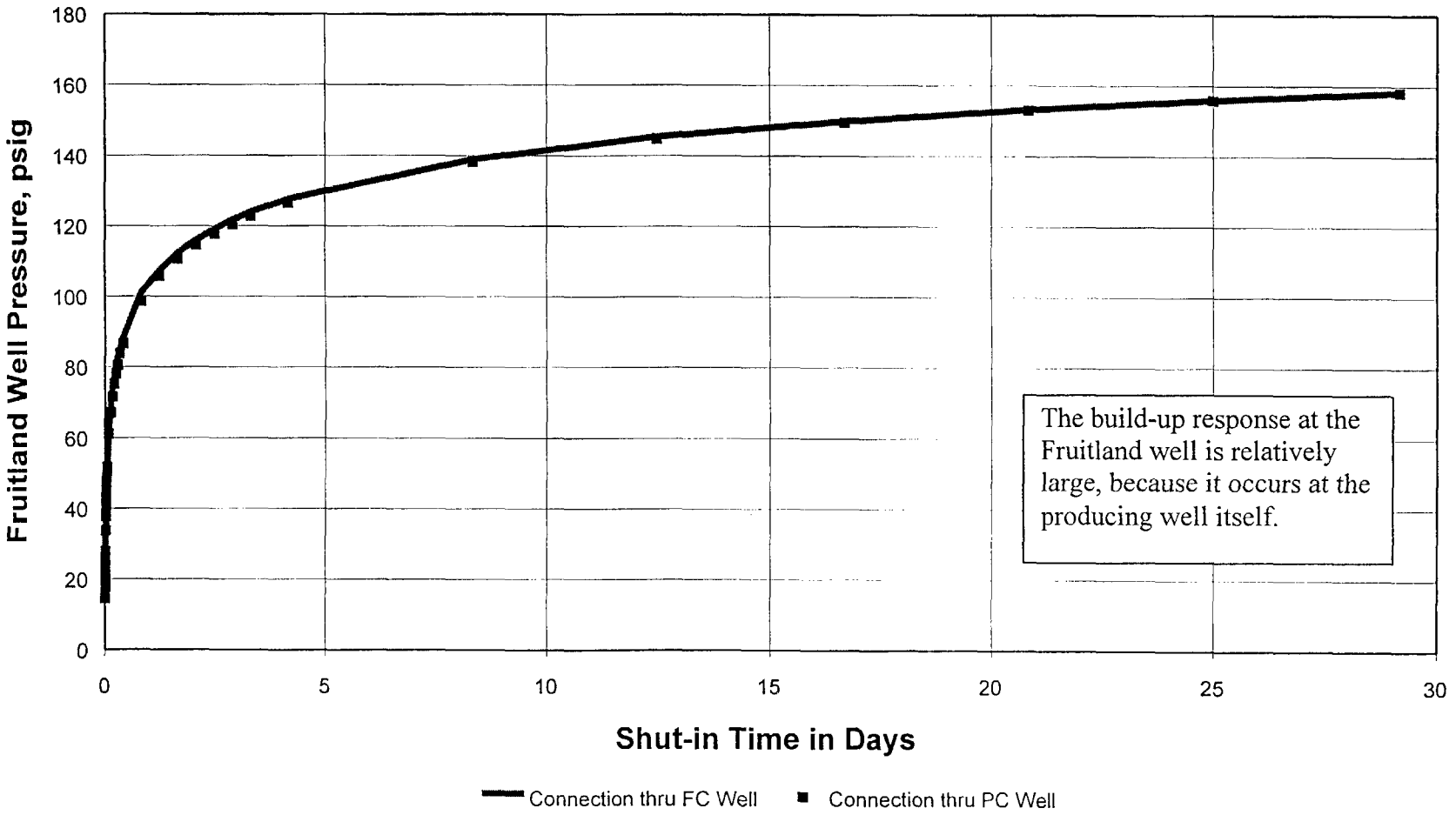


Exhibit B-1:
Fruitland Coal Well Buildup Response, with or without Pictured Cliffs Connection



FIRST JUDICIAL DISTRICT COURT
COUNTY OF SANTA FE
STATE OF NEW MEXICO

WHITING PETROLEUM CORPORATION, a corporation, and MARALEX RESOURCES, INC., a corporation,

Plaintiffs,

vs. No.

PENDRAGON ENERGY PARTNERS, INC., a corporation, and J.K. EDWARDS ASSOCIATIONS, INC., a corporation

Defendants.

VERIFIED APPLICATION FOR PRELIMINARY INJUNCTION REQUIRING DEFENDANTS TO SHUT-IN GAS WELLS ILLEGALLY PRODUCING FROM THE FRUITLAND FORMATION AND TO CEASE AND DESIST FROM PRODUCING GAS FROM THE FRUITLAND FORMATION

Plaintiffs Whiting Petroleum Corporation ("Whiting"), and Maralex Resources, Inc. ("Maralex") by and through their counsel, hereby apply to the Court for a Preliminary Injunction, pursuant to Rule 1-066(A) NMRA 1998, requiring defendants to shut-in six (6) gas wells which are wrongfully producing gas from the plaintiffs' Fruitland formation, and cease and desist producing such gas thereafter. As is more particularly alleged in plaintiffs' Verified Complaint, filed contemporaneously and incorporated herein by reference, injunctive relief is necessary to prevent defendants' ongoing trespass, conversion of plaintiffs' minerals and other continuing wrongs.

As grounds for this Application, plaintiffs would show the Court as follows:

EXHIBIT 2

15. Defendants' actions result in the drainage of coalbed gas belonging to plaintiffs and impair plaintiffs' ability to produce their coalbed gas from the Fruitland formation on the properties and leases at issue. Defendants' actions have resulted, or may result, in permanent and irreversible damage to the producing capability of plaintiffs' Fruitland formation reservoir and to plaintiffs' ability to produce gas therefrom in the future. Defendants' actions have resulted, and will, if not abated, continue to result in the day by day irretrievable loss to plaintiffs of tax credits pursuant to 26 U.S.C. Section 29 of the Internal Revenue Code, which credits apply to coal seam gas produced and sold before January 1, 2003.

16. A request for injunctive relief is directed to the sound discretion of the trial court. Wilcox v. Timberon Protective Association, 111 N.M. 478, 806 P.2d 1068 (Ct. App. 1990). The factors to be considered by the Court and the balance of existing equities and hardships, clearly favor the allowance of equitable relief to plaintiffs and against defendants.

D. **BOND SHOULD NOT BE REQUIRED**

17. Plaintiffs should not be required to post a bond as a condition for the issuance of a Preliminary Injunction because a temporary, finite cessation of defendants' wrongful production from the Fruitland formation will not harm or injure defendants, and any resultant harm is measurable by the value of gas production lost during the preliminary cessation of production.

E. **NOTICE TO DEFENDANTS AND HEARING**

18. Plaintiffs have contemporaneously filed and served their Complaint for Tortious Conduct, and for Damages and Equitable Relief, and have expressly

APPENDIX

In recent filings, Whiting and Maralex have begun to argue that there has been a "complete reversal in position taken by Pendragon." The argument is little more than a tactical misdirection that ignores not only the pleadings and applications filed in this case (including Whiting's in Case No. 11921), but disregards previous evidence and important components of the order entered by the Division. Whiting has made similar arguments in the past, unsuccessfully. (See, June 15, 1998 Motion Of Whiting Petroleum Corporation and Maralex Resources, Inc. To Dismiss Application For Lack Of Jurisdiction.)

Pendragon's Application in this case was filed within the specific, but broad reach of the Special Pool Rules and Regulations for the Basin-Fruitland Coal Gas Pool (Order No. R-8768) seeking an order confirming that the subject Pictured Cliffs wells and the Fruitland Coal wells were completed in and producing from their respective common sources of supply. Pendragon has cited to Rule 3 of the Special Pool Rules for the Basin-Fruitland Coal Pool, to the Division's statutory authority at Section 70-2-12(B)(2) to maintain segregation between gas pools, and has requested the Division to provide "such other and further relief" as deemed appropriate. The Division and Commission have broad discretion to determine the scope of relief necessary to bring the wells back into regulatory compliance, and such relief could include requiring Whiting and Maralex to account for each Mcf of Pictured Cliffs gas they have produced through their Fruitland coal wells. Indeed, Whiting and Maralex, themselves, have argued for an allocation of production from the two pools, both prospectively and retroactively.

The issue of communication between formations has been central to this case from day one. Pendragon has not made the argument that there was no communication; rather, it has said if there is communication, it did not cause it. ("[I]t is the specific position of Pendragon and J.K. Edwards that the drilling and fracture stimulation of their Pictured Cliffs Sandstone wells did not result in the communication between zones." Pendragon's May, 1998 Motion for Consolidation.)

At the time of last year's hearing before the Division, Pendragon's Pictured Cliffs wells had been shut-in for only a few days. Up to that time, there was no compelling evidence based on pressure or production data tending to show that either the Pictured Cliffs wells or Fruitland Coal wells were producing out of zone or that the Fruitland Coal wells were experiencing any interference from Pictured Cliffs production.[5] Arguments based on this set of facts are far apart from Whiting's mischaracterization that Pendragon "...had strenuously argued that no communication...existed". To the contrary, Pendragon suspected that it did exist.

At the Division hearing, Pendragon presented testimony establishing that, although the evidence available at the time did not demonstrate the coal wells were experiencing interference, it was probable the Maralex coal wells had fractured into the Pictured Cliffs formation. (See July 28, 1998 Testimony Excerpts for Roland Blauer and Jack McCarthy, NMOCD Case No. 11996, Appendix Exhibits A and B, attached.) Following the hearing, Pendragon accordingly submitted a draft order containing findings and conclusions entirely consistent with this evidentiary state of facts. (See, e.g., Para. 57, Pendragon's draft order, [excerpt], Appendix Exhibit C.)

It is clear that Whiting's argumentative diversion is designed to direct attention away from the unavoidable set of facts that surround the heavy, highly aggressive fracture stimulation treatments that Maralex allowed to be run on its coal stringers. The side by side comparison of the relatively light fracture stimulation treatments Pendragon applied to the Pictured Cliffs sandstone (average: 31,248 gallons at proppant weights of 38,421 pounds injected at rates from 22 to 34 BPM), versus the larger, high-volume, high-rate frac jobs that Maralex put to the coal (*e.g.* 41,030 gallons with a 121,700 pound proppant weight injected at rates from 45 to 60 BPM) is an inconvenient set of facts to ignore. As reflected by portions of its Order, these facts were not lost on the Division:

> [G]iven the close proximity of the Pictured Cliffs formation to the Fruitland Coal formation, and given the parameters utilized by

[5] Since that time, ten months of instructive shut-in pressure data have been collected. The pressure data irrefutably establish the ongoing drainage of Pictured Cliffs gas reserves by Whiting's Fruitland coal wells. (See March 1, 1999 Motion For Partial Stay of Order R-11133).

Whiting in the fracture treatment of its wells, it is possible that the fracture stimulations performed on the Gallegos Federal wells did result in the fracturing of the Pictured Cliffs formation. (Finding Paragraph 47, Order No. R-11133, in part.)

converted to a higher viscosity fluid.

Q. Mr. Blauer, from what you presented today, your fracture-treatment data compared against the Nolte plots, can you conclude whether the fracture-treatment jobs that Pendragon performed on its wells remain contained within the Pictured Cliffs sandstone?

A. Yes, sir, and I say that for three reasons.

The wells were treated with low rates, relatively low viscosity fluids.

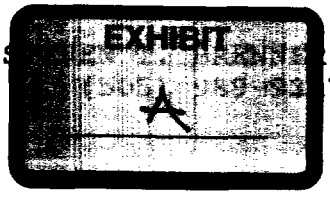
They were treated into a low-pressure reservoir, which is in itself a containment.

The reservoir -- The Pictured Cliffs reservoir had a shale or coal at the top of that reservoir which would arrest any growth, any upwards growth.

And we have from an offset well indications that Pictured Cliffs fractures grow downwards into the Pictured Cliffs as it is, which, from stress considerations, we would agree with.

So for those three reasons, we believe that the Pendragon fractures did not breach the Fruitland Coals, stayed contained. The small size of the treatments and the upward slopes of the Nolte show that we had fracture extension length, which is also consistent with strong increases in productivity from the wells.

Q. Can you make the same conclusion with respect to



the fracture-treatment jobs that Maralex did on their coal formations? Did they remain contained within zone?

A. Based on my analysis and experience, the Maralex fractures grew out of zone. I cannot say for a certainty whether they grew upwards, downwards, or both; but they clearly grew out of zone.

If they breached the top of the Pictured Cliffs formation, because the reservoir pressure is much lower in the Pictured Cliffs than the Fruitland, there would be a tendency to grow rapidly into the Pictured Cliffs.

And also, once you've breached into the sand of the Pictured Cliffs, you would probably have growth until you reached a significant lithology change. And we could go into some detail of where that might occur, but if it breached it went down into the Pictured Cliffs quite well.

Q. Mr. Blauer, in your opinion were the fracture-treatment jobs applied on the Pendragon Chaco wells done in a reasonable and prudent manner?

A. Absolutely.

Q. And were those fracture-stimulation jobs necessary to recover additional Pictured Cliffs formation reserves that would have otherwise gone unrecovered?

A. Yes, they were.

Q. Were Exhibits B1 through B7, B10 through B14 prepared by you and at your direction?

the surface pressure line?

A. Yes, sir.

Q. I guess it's red. And that climbs up to something that you might read as being 2100 p.s.i.?

A. Yes, sir. We were in the process of screenout in this well. We were filling up the fracture.

Q. All right. And so that amount of pressure, 2100 p.s.i. at the formation, would not be sufficient to break into the coal?

A. Well, clearly in this case it did not, because had it broken into the coal we would have seen a sudden decline in pressure. In fact, you see that sometimes when you're fracturing wells: If you break across a barrier you'll be seeing some kind of a pressure increase; when you break across the zone you'll see a very rapid decrease in pressure.

And had we broken across this shale/coal barrier, we would have seen a very rapid drop in our pressure. And this is pretty clear that in this particular reservoir, that the breaking pressure of a boundary of a fracture initiated in a sand is going to be in excess of 1000 p.s.i. net.

Q. Now, I thought you already told us that these formations were in communication because back a couple years earlier Whiting's fracture treatments had frac'd down

into the Pictured Cliffs?

A. Well, I didn't exactly say that. I think the question I answered was, based upon my analysis of the data, were the Whiting wells contained? And my answer was, based upon my analysis, no, they are not contained. I do not know if they grew up, down, both.

My belief in my study -- I have no data to support that, though -- is that the probability is that they grew both upwards and downwards, and they did grow into the Pictured Cliffs.

Q. Okay. So assuming that that was the case, then you already had formations that were in communication, and you wouldn't see anything by way of a break in the plot, because there was no breaking to do. The Pendragon treatment --

A. Well --

Q. -- was flowing on up into the coal formation because channels were already made?

A. Huh?

Q. When you said -- you said that Pendragon -- the Pictured Cliffs had been fractured by the fracture stimulations on the Whiting wells back in 1992, 1993, when they were completed.

A. Okay, at the location of the Whiting wells --

Q. Okay.

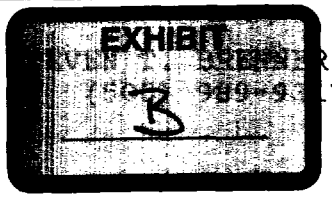
But anyway, one of my concerns initially, particularly initially was, because of the pressure profiles as explained by Roland Blauer, and actually because of Roland Blauer's explanation of the frac jobs and the likelihood that the fracs in the Fruitland Coal grew out of zone, I had concerns that the Fruitland Coal fracs themselves may have grown down as well as up, and you don't have to go down very far before you invade the Pictured Cliffs formation.

The concern was that if that happened, possibly two things could happen.

One, the fluids from the Fruitland Coal could invade the Pictured Cliffs formation, because we're showing here that we anticipate the pressure to be higher in the coal.

Or, number two, fluids from the Pictured Cliffs formation could be produced out of the Fruitland Coal wells, because they're on pump, they hopefully have fairly low bottomhole pressure. They bottomhole pressure of the coal wells is undoubtedly lower -- or I believe it would be lower than the shut-in pressures, the pressures of the PC formation. So you have that crossflow potential.

From analysis of this pressure and this well sitting 200 feet away, we don't see that. I don't see any evidence in this particular area of communication between



basically a kind of water block or a decrease to permeability such, and the low pressures, that it never moved very far away from the wellbore, and we didn't see any appreciable communication even in the Maralex fracs.

Q. So that's what your data shows, that you don't believe that the Maralex wells are even communicated?

A. I think they're communicated, but I don't think there's any -- I mean, I -- Well, let me put it this way: I suspect that the Maralex wells may have frac'd down into the PC, but I don't see any material communication resulting from that frac into the PC.

It doesn't show up in the performance data that I can see, it doesn't show up in the pressure data that I see, and I don't see where the Fruitland Coal itself, because of the performance aspects, particularly in this area, that it has been subject to a loss of significant resource from the coal.

We have a hard enough time accounting from the coal itself, let alone losing that resource to an outside source such as the PC.

Q. Okay. On -- Still on Exhibit 2, on the Chaco 4 and 5 wells, I just want to make sure I understand the pressure points you have listed on that exhibit. The first three, the triangles are pre-frac?

A. Yes.

STATE OF NEW MEXICO
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 11996

APPLICATION OF PENDRAGON ENERGY PARTNERS, INC., AND J. K. EDWARDS ASSOCIATES, INC. TO CONFIRM PRODUCTION FROM THE APPROPRIATE COMMON SOURCE OF SUPPLY, SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 28, 1998 at Santa Fe, New Mexico, before Examiner David R. Catanach.

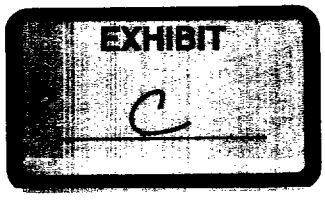
NOW, on this _____day of August 1998, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) The Applicants, Pendragon Energy Partners, Inc. and J.K. Edwards Associates, Inc. seek the issuance of an order determining that six of the Pictured Cliffs Formation Wells owned and operated by them are completed in and producing from the appropriate common source of supply pursuant to Rule 3 of the Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool, Order No. R-8768, as amended, and 19 NMAC 15.E.303.A of the Division's Rules and Regulations requiring the segregation of production from separate sources of supply.

(3) The Applicant, Pendragon Energy Partners, Inc. ("Pendragon") is the operator of the following wells (The "Subject Pictured Cliffs wells" or the "Chaco



greater viscosity. By comparison, the Pendragon fracture treatments were accomplished at relatively low rates and low volumes.

(53) The evidence established that data derived from Nolte Plots are an effective and reliable means for determining vertical height growth and extension of formation fractures.

(54) The Nolte Plots for the Subject Pictured Cliffs wells showed a slight incline in pressure over the time of the treatment, indicating restricted height growth and lateral extensions of the fractures.

(55) The data derived from Nolte Plots for the Maralex fracture completions on the Subject Coal wells show negative slopes, indicating unrestricted, vertical growth and in one case, "run-away" vertical fractures.

(56) The evidence further established that coal is an effective barrier to fracture growth because it is more elastic than the surrounding sandstones. The cleat systems within the coal body also allow for the pressure at the fracture tip to become diffuse, negating the ability of the tip and fluids to fracture into the coal itself.

(57) The evidence established that the fracture treatments for the Subject Pictured Cliffs wells were designed specifically to utilize the thin coal and shale stringers as effective barriers to maintain containment of the fracture. The effective use of shale and coal sequences as fracture containment barriers was adequately demonstrated by the fracture profiles made available from the Eureka 33-32 well and the Don 44-7 well in the Raton Basin. The use of shale barriers as a reliable means to contain fracture growth was also demonstrated by the fracture profile on the Dome Federal 17 well completed in the WAW Pictured Cliffs formation in Section 17, T-27-N, R-13-W. Moreover, the fracture containment in the Pictured Cliffs sandstone in the Dome Federal 17 well was verified by a tracer survey.

(58) While Nolte Plots are regarded in the industry as a reliable means of determining fracture containment, the testimony and professional engineering literature evidence established that the use of fracture simulators such as "Frac-Pro" regularly exaggerate the height of actual fracture growth, thus making them a less reliable means for determining whether fractures remained contained within zone.

(59) The evidence and data presented were sufficient to support the conclusion that the fracture treatment jobs on the Pendragon Pictured Cliffs wells did not escape out of zone and remained contained within the Pictured Cliffs formation. The evidence available on the date of the hearing was insufficient to allow for a determination whether the significantly heavier fracture treatments on the Whiting/Maralex coal wells actually penetrated into the Pictured Cliffs formation. However, the evidence supports the conclusion that it is more likely than not that the Maralex frac jobs escaped out of the basal coal.

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

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OIL CONSERVATION DIV.

APPLICATION OF PENDRAGON ENERGY PARTNERS, INC., PENDRAGON RESOURCES, L.P., AND J.K EDWARDS ASSOCIATES, INC. TO CONFIRM PRODUCTION FROM THE APPROPRIATE COMMON SOURCE OF SUPPLY, SAN JUAN COUNTY, NEW MEXICO

OCD CASE NO. 11996

AFFIDAVIT OF BRADLEY M. ROBINSON

STATE OF TEXAS)
)ss.
COUNTY OF)

I, Bradley M. Robinson, being first duly sworn and under oath, state as follows:

1. I am a petroleum engineer and Technical Manager for Stimulation with Holditch – Reservoir Technologies. My background, education, and credentials are attached to this affidavit. I am writing this affidavit for Whiting Petroleum Corporation, Maralex Resources, Inc. in opposition to the motion for further testing.

2. I have previously testified for plaintiffs in this matter. I am familiar with the data that was provided through previous testing and with the testimony of the professionals previously given in this matter.

3. I have reviewed the Motion to Conduct Reservoir Pressure Tests submitted by Pendragon Energy Partners, Inc., et al., together with the attachments including the affidavit of Dave O. Cox, dated April 22, 1999.

4. In my professional opinion based on the standards of the petroleum engineering profession, I believe to a professional engineering certainty that Mr. Cox is correct in concluding that there is communication between certain wells involved in this proceeding. In my view there is no further need to determine that point. However, the testing proposed by Mr. Cox will not determine where the communication exists nor which reservoir is the source of the gas.

5. Further, as opposed to Mr. Cox's other conclusions:

A. I disagree that the *increase* in pressure observed since shut-in of the Chaco 2R is sufficient evidence to prove that there is no pressure interference or communication with the Fruitland Coal. There are many factors that can affect the observed wellhead pressure including a changing liquid level in the wellbore and the rate of de-watering of the coal in the area of the well. In reviewing Exhibit C, there is an obvious pressure disturbance in Chaco 2R during the 1 to 2 week period after 9/23/98, during which time there were operational changes to various Chaco wells, the El Paso plant and several Gallegos wells. The level of pressure interference may seem small when compared to pressure responses from other wells in the field. However, we must remember that the reported pressures are measured at the surface and the accuracy of the wellhead gauge and the wellbore fluid mixture could be masking the true bottomhole pressure response. To prove Mr. Cox's position that there is no pressure communication in this well, a high resolution pressure gauge would need to be installed near the Pictured Cliffs perforations during a similar series of operational changes or planned pressure interference tests.

B. It is my opinion that the *degree* to which pressure communication exists cannot be determined from the quantity of change in surface pressure measurements as was concluded for Chaco 1J (Exhibit D) and Chaco 1 (Exhibit C). As previously mentioned, the accuracy of the surface pressure gauge, as well as the gas/water mixture in the wellbore and/or changing liquid levels, will influence these measurements.

C. I agree that the proposed pressure tests will serve to prove what the District Court and New Mexico Oil Conservation Division have already concluded, namely, that there is pressure communication with the Fruitland Coal from the Chaco 1, Chaco 4 and Chaco 5 wells. (It is also noted that the District Court and Division found communication with the other three wells as well.) However, unless high resolution bottomhole pressure gauges are installed in a similar fashion in all Chaco wells during the proposed tests, as well as the Gallegos Federal wells that have been recommended for shut-in, it will not be possible to determine conclusively any pressure communication.

D. By completing the proposed tests, it will not be possible to determine *where* the communication exists or the extent of communication in any of these wells using conventional pressure transient analysis techniques. These techniques were developed for single-phase fluid flow in homogeneous, isotropic reservoirs. In this area, there are multiple layers in communication, one of which is the Fruitland coal which is generating gas by desorption while producing both gas and water through a complex system of natural fractures. The Pictured Cliffs sandstone, which is in communication with the coal via restimulation of the Chaco wells, is a depleted reservoir that has experienced some re-pressurization through crossflow over the past few years. Given such a complex

reservoir system, it will not be possible to determine where or to what extent communication exists from an analysis of the proposed tests. The only possible way that these issues might be resolved is to measure accurate bottomhole pressures on all of the wells involved in this proceeding as well as the Gallegos Federal wells. Then, a detailed reservoir simulation study must be performed using a 3-D, two-phase, coal gas simulator that reproduces the complete production history and pressure data for the entire area. Such a study would be extremely complex, time consuming and expensive. In addition, if all the production and pressure data are not accurately reproduced with the reservoir simulator, then the issues of "where" and "to what extent" communication exists will not be resolved. Given the District Court's and Division's findings that communication already exists in all the wells involved in this proceeding and the large expense associated with gathering the required data and performing a complex simulation study that may not, in fact, resolve the issues raised by Pendragon, it is my opinion that the proposed tests are not feasible.

6. I believe the only testing method that has a reasonable chance of determining *where* the communication exists is a crossflow test within the same wellbore. Such a test would involve adding perforations to the Fruitland coal in a well that has existing Pictured Cliffs perforations (or adding Pictured Cliffs perforations in an existing Fruitland coal well) and isolating the two sets of perforations with a packer and tubing. A special bundle carrier would need to be installed containing bottomhole pressure gauges, so that the pressure in one interval could be monitored while producing the other zone. Such a procedure would probably be feasible only on flowing wells. In addition, the fracture that has grown from the Pictured Cliffs to the Fruitland coal would have to be

within a few feet of the wellbore at the same depth as the new Fruitland coal perforations. Given these conditions, a pressure response should then be observed fairly rapidly while producing the other interval, thus indicating near wellbore communication.

FURTHER AFFIANT SAYETH NOT.

Bradley M. Robinson

Bradley M. Robinson

SUBSCRIBED AND SWORN before me on this 5 day of May, 1999 by Bradley M. Robinson.

Brenda J Hedrick

Notary Public

My Commission Expires:

10-28-99

NOTARY PUBLIC STATE OF TEXAS

BRENDA J. HEDRICK
Notary Public, State of Texas
My Commission Expires
OCTOBER 28 1999

CERTIFICATE OF SERVICE

I hereby certify that I have caused a copy of the Affidavit of Bradley M. Robinson to be served by U.S. Mail on this 10th day of May, 1999 to the following counsel of record:

J. Scott Hall
Miller, Stratvert, Torgerson, P.A.
Post Office Box 1986
Santa Fe, New Mexico 87504-1986

MICHAEL P. GROSS

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

APPLICATION OF PENDRAGON ENERGY PARTNERS, INC., PENDRAGON RESOURCES, L.P., AND J.K EDWARDS ASSOCIATES, INC. TO CONFIRM PRODUCTION FROM THE APPROPRIATE COMMON SOURCE OF SUPPLY, SAN JUAN COUNTY, NEW MEXICO

OCD CASE NO. 11996

OIL CONSERVATION DIV.
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MARALEX'S AND WHITING'S RESPONSE TO PENDRAGON'S MOTION FOR CONDUCT RESERVOIR PRESSURE TESTS

Maralex Resources, Inc., and Whiting Petroleum Corporation ("Whiting"), the Fruitland Coal producers, object to Pendragon's Motion to Conduct Reservoir Pressure Tests and urge the Commission not to grant it. This case involves an application – as the style depicts – by an operator of gas wells to confirm that its production is "from the appropriate common source of supply," that is the Pictured Cliffs formation. This Motion represents (a) a complete reversal in position by Pendragon, which previously had strenuously argued that no communication between the Fruitland and Pictured Cliffs formations existed, and seeks (b) the ordering of tests which are unnecessary, wasteful, duplicative in part, and unlikely to lead to discovery of the source or location of communication between the Fruitland and Pictured Cliffs formations as represented.

In the face of back-to-back resolutions by the District Court and Division against Pendragon, the Applicant has completely switched its position. It now wants to conduct further testing, at great expense and inconvenience to the Respondents and without any credible, scientific assurance that the new program will do anything other than

confirm the communication already found before the two tribunals. The motion should be rejected on grounds of judicial estoppel. Baca v. Velez, 114 N.M. 13, 16, 833 P.2d 1194 (N.M. App. 1992); Citizens Bank v. C & H Construction & Paving Co., 89 N.M. 360, 366, 552 P.2d 796, 802 (N.M. App. 1976).

This Response is supported by the Affidavit of Bradley M. Robinson, Technical Manager for Stimulation with Holditch - Reservoir Technologies. Mr. Robinson is thoroughly familiar with the evidence in this case and with the geology and engineering problems associated with the communication issue central to this matter. He has previously testified twice in this matter, once before the District Court, which, based in part on his testimony, then issued a preliminary injunction shutting in Pendragon's wells, and then before the Division, which similarly confirmed the communication complained of by Whiting. There is no doubt communication between the formation exists. That has been Whiting's position and proof from the outset.

Mr. Robinson disputes that anything more will be shown than what is already known and challenges the central assumptions of Pendragon's motion: "I disagree that the *increase* in pressure observed since shut-in of the Chaco 2R is sufficient evidence to prove that there is no pressure interference or communication with the Fruitland Coal". . ."It is my opinion that the *degree* to which the pressure communication exists cannot be determined from the quantity of change in surface pressure measurements as was concluded for Chaco IJ (Exhibit D) and Chaco I (Exhibit C)" . . ."By completing the proposed tests, it will not be possible to determine *where* the communication exists or the extent of communication in any of these wells using conventional pressure transient analysis techniques." To determine precisely where the communication exits, Mr. Robinson offers

a suggestion going far beyond what Pendragon has proposed saying his approach is "the only testing method that has a reasonable chance of determining *where* the communication exists". However, such an elaborate testing program is, we submit, completely unnecessary given the two prior rulings and the evidence on which they were based. These prior rulings determined that the Pictured Cliffs formation was largely depleted before fracturing took place and that communication exists, caused by Pendragon's fracturing, with the indisputable conclusion that the communication comes from gas flowing from above (the Fruitland Coal formation) down to the Pictured Cliffs formation as shown by the voluminous pressure data summarized in the Division Order No. R-11133.

In short, Maralex and Whiting do not contest the Commission's authority to order further testing, provided adequate financial safeguards to recompense Whiting and are included, but do contest its necessity. The proposed tests would shut-in one of Whiting's good coal gas producers for 30 days, one for 20 and one for 10 – a total of 60 days lost production and tax credits -- to demonstrate nothing more than what Whiting has already proved, and the district court and the Division confirmed. Pendragon has pointedly omitted any bond or other offer to compensate Whiting for that loss.

The most striking thing about this motion is the complete reversal in position taken by Pendragon. In the District Court and before the Division, Pendragon insisted there was no communication at all. Now they adopt the Whiting-Maralex view (as well as the Court's and the Division's) that communication exists, but its source is uncertain and will not be determined by its tests. Given the proven depletion of the Pictured Cliffs formation, such a determination is both unnecessary and fruitless. The motion should be

seen as a desperation tactic born of the realization that it, Pendragon, has lost the principal battle and can only succeed if it confuses the issue. Such a reversal in litigation position runs afoul of the judicial estoppel doctrine and should result not only in denial of the motion for more testing but in dismissal of its total application. Baca v. Velez, supra; Citizens Bank v. C & H Construction & Paving Co., 89 N.M. 360, 366, 552 P.2d 796, 802 (N.M. App. 1976) ("judicial estoppel" simply means that a party is not permitted to maintain inconsistent positions in judicial proceedings.) Now that Pendragon has come to the Whiting and Division side of the issue there is no longer any dispute to be resolved. Possibly one remaining issue exists and that is an allocation of the production which was suggested by the Division Order No. R-11133, but has never been acted upon by Pendragon.

FOR THESE REASONS, Maralex and Whiting respectfully oppose Pendragon's motion and ask that it be denied.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have caused a true and correct copy of the foregoing Maralex's and Whiting's Response to Pendragon's Motion for Conduct Reservoir Pressure Tests to be mailed on this 6th day of May, 1999 to the following:

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STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

APPLICATION OF PENDRAGON ENERGY PARTNERS, INC., PENDRAGON RESOURCES, L.P., AND J.K EDWARDS ASSOCIATES, INC. TO CONFIRM PRODUCTION FROM THE APPROPRIATE COMMON SOURCE OF SUPPLY, SAN JUAN COUNTY, NEW MEXICO

OCD CASE NO. 11996

AFFIDAVIT OF BRADLEY M. ROBINSON

STATE OF TEXAS)
)ss.
COUNTY OF)

I, Bradley M. Robinson, being first duly sworn and under oath, state as follows:

1. I am a petroleum engineer and Technical Manager for Stimulation with Holditch – Reservoir Technologies. My background, education, and credentials are attached to this affidavit. I am writing this affidavit for Whiting Petroleum Corporation, Maralex Resources, Inc. in opposition to the motion for further testing.

2. I have previously testified for plaintiffs in this matter. I am familiar with the data that was provided through previous testing and with the testimony of the professionals previously given in this matter.

3. I have reviewed the Motion to Conduct Reservoir Pressure Tests submitted by Pendragon Energy Partners, Inc., et al., together with the attachments including the affidavit of Dave O. Cox, dated April 22, 1999.

4. In my professional opinion based on the standards of the petroleum engineering profession, I believe to a professional engineering certainty that Mr. Cox is correct in concluding that there is communication between certain wells involved in this proceeding. In my view there is no further need to determine that point. However, the testing proposed by Mr. Cox will not determine where the communication exists nor which reservoir is the source of the gas.

5. Further, as opposed to Mr. Cox's other conclusions:

A. I disagree that the *increase* in pressure observed since shut-in of the Chaco 2R is sufficient evidence to prove that there is no pressure interference or communication with the Fruitland Coal. There are many factors that can affect the observed wellhead pressure including a changing liquid level in the wellbore and the rate of de-watering of the coal in the area of the well. In reviewing Exhibit C, there is an obvious pressure disturbance in Chaco 2R during the 1 to 2 week period after 9/23/98, during which time there were operational changes to various Chaco wells, the El Paso plant and several Gallegos wells. The level of pressure interference may seem small when compared to pressure responses from other wells in the field. However, we must remember that the reported pressures are measured at the surface and the accuracy of the wellhead gauge and the wellbore fluid mixture could be masking the true bottomhole pressure response. To prove Mr. Cox's position that there is no pressure communication in this well, a high resolution pressure gauge would need to be installed near the Pictured Cliffs perforations during a similar series of operational changes or planned pressure interference tests.

B. It is my opinion that the *degree* to which pressure communication exists cannot be determined from the quantity of change in surface pressure measurements as was concluded for Chaco 1J (Exhibit D) and Chaco 1 (Exhibit C). As previously mentioned, the accuracy of the surface pressure gauge, as well as the gas/water mixture in the wellbore and/or changing liquid levels, will influence these measurements.

C. I agree that the proposed pressure tests will serve to prove what the District Court and New Mexico Oil Conservation Division have already concluded, namely, that there is pressure communication with the Fruitland Coal from the Chaco 1, Chaco 4 and Chaco 5 wells. (It is also noted that the District Court and Division found communication with the other three wells as well.) However, unless high resolution bottomhole pressure gauges are installed in a similar fashion in all Chaco wells during the proposed tests, as well as the Gallegos Federal wells that have been recommended for shut-in, it will not be possible to determine conclusively any pressure communication.

D. By completing the proposed tests, it will not be possible to determine *where* the communication exists or the extent of communication in any of these wells using conventional pressure transient analysis techniques. These techniques were developed for single-phase fluid flow in homogeneous, isotropic reservoirs. In this area, there are multiple layers in communication, one of which is the Fruitland coal which is generating gas by desorption while producing both gas and water through a complex system of natural fractures. The Pictured Cliffs sandstone, which is in communication with the coal via restimulation of the Chaco wells, is a depleted reservoir that has experienced some re-pressurization through crossflow over the past few years. Given such a complex

reservoir system, it will not be possible to determine where or to what extent communication exists from an analysis of the proposed tests. The only possible way that these issues might be resolved is to measure accurate bottomhole pressures on all of the wells involved in this proceeding as well as the Gallegos Federal wells. Then, a detailed reservoir simulation study must be performed using a 3-D, two-phase, coal gas simulator that reproduces the complete production history and pressure data for the entire area. Such a study would be extremely complex, time consuming and expensive. In addition, if all the production and pressure data are not accurately reproduced with the reservoir simulator, then the issues of "where" and "to what extent" communication exists will not be resolved. Given the District Court's and Division's findings that communication already exists in all the wells involved in this proceeding and the large expense associated with gathering the required data and performing a complex simulation study that may not, in fact, resolve the issues raised by Pendragon, it is my opinion that the proposed tests are not feasible.

6. I believe the only testing method that has a reasonable chance of determining *where* the communication exists is a crossflow test within the same wellbore. Such a test would involve adding perforations to the Fruitland coal in a well that has existing Pictured Cliffs perforations (or adding Pictured Cliffs perforations in an existing Fruitland coal well) and isolating the two sets of perforations with a packer and tubing. A special bundle carrier would need to be installed containing bottomhole pressure gauges, so that the pressure in one interval could be monitored while producing the other zone. Such a procedure would probably be feasible only on flowing wells. In addition, the fracture that has grown from the Pictured Cliffs to the Fruitland coal would have to be

within a few feet of the wellbore at the same depth as the new Fruitland coal perforations. Given these conditions, a pressure response should then be observed fairly rapidly while producing the other interval, thus indicating near wellbore communication.

FURTHER AFFIANT SAYETH NOT.

Bradley M. Robinson

Bradley M. Robinson

SUBSCRIBED AND SWORN before me on this 5 day of May, 1999 by Bradley M. Robinson.

Brenda J Hedrick

Notary Public

My Commission Expires:

10-28-99

NOTARY PUBLIC STATE OF TEXAS

BRENDA J. HEDRICK
Notary Public, State of Texas
My Commission Expires
OCTOBER 28 1999

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

APPLICATION OF PENDRAGON ENERGY PARTNERS, INC., PENDRAGON RESOURCES, L.P., AND J.K. EDWARDS ASSOCIATES, INC. TO CONFIRM PRODUCTION FROM THE APPROPRIATE COMMON SOURCE OF SUPPLY, SAN JUAN COUNTY, NEW MEXICO

OCC CASE NO. 11995

OIL CONSERVATION DIV.
2004 APR 6 AM 9:54

WHITING'S RESPONSE IN OPPOSITION TO APPLICATION FOR REHEARING

Whiting Petroleum Corporation and Maralex Resources, Inc., ("Whiting"), hereby submit this Response in opposition to the Application for Rehearing filed by applicants (collectively "Pendragon"). There are no legitimate grounds for rehearing on the issues argued by Pendragon in this case. Such action would constitute further administrative waste, an unnecessary delay in implementing the Commission's ruling, and a further drain on the financial and human resources of Whiting. Whiting has already been forced to expend huge sums of money to establish facts which are obvious to every decision maker who has considered the evidence. The fact that Pendragon cannot accept the obvious does not argue for rehearing.

INTRODUCTION

The parties have now presented this case to three separate fact finders: The Honorable Art Encinias, District Judge, Santa Fe County District Court; Examiner David Catanach of the New Mexico Oil Conservation Division; and the Commission itself. Each of the fact finders reached the same conclusion on the following salient facts: the Pictured Cliffs formation, in which Pendragon owns an interest, was depleted prior to

1995; when Pendragon fracture stimulated its Chaco wells in 1995, it caused communication with the Fruitland Coal formation; and Pendragon produced coal seam gas beginning in 1995 to which it was not entitled through its Chaco wells until those wells were shut-in by court order in 1998. It is time for Pendragon to concede the obvious and scientifically demonstrable facts. Now that administrative proceedings have run their three year course, Whiting is entitled to prosecute its claim for damages in the district court for the coal seam gas Pendragon has illegally produced.

In support of its request for rehearing, Pendragon spends several pages respinning the evidence. Pendragon does not provide a single cite to the record to support its supposed "facts." Pendragon does not identify any exhibits which support its claims of error. Pendragon argues from unidentified witnesses who supposedly gave unidentified testimony. Of course, Pendragon fails to acknowledge the abundant contradictory evidence which supports the Commission's Findings.

Pendragon's argument in support of rehearing rests upon its own failure to recognize and deal with two Commission finding areas that are amply supported by the evidence in this case: (1) that the Pictured Cliffs formation was depleted prior to 1995; and (2) that even if the Whiting fracture stimulations may have caused communication with the Pictured Cliffs formation, "these possible gas migrations [from the Pictured Cliffs formation to the Whiting wells] were not significant, as evidenced by steady gas production from the Pendragon Chaco wells." Findings 35 and 45. The Commission found that the Whiting wells could not produce any significant volume of Pictured Cliffs gas. Pendragon fails to adequately address either finding in its Application.

Because it fails to recognize Commission findings about the depleted state of the Pictured Cliffs formation prior to 1995, Pendragon contends that Order No. R-11133-A "is an order that is at war with itself." While Pendragon may be congratulated for its creative hyperbole, Pendragon's mischaracterization of the Commission Order is plainly wrong, and cannot support a rehearing. Whiting will address each of the points raised by Pendragon in sequence to demonstrate the futility of Pendragon's arguments.

RESPONSE TO PENDRAGON'S POINTS

1. Pendragon first contends that the Commission must afford Pendragon some relief because the Commission has made an affirmative determination that Whiting is not producing from its appropriate common source of supply. This contention by Pendragon is based on a mischaracterization of the Commission's findings, and ignores Decretal ¶ 5 of the Commission's Order.

Contrary to Pendragon's assertions, the Commission did not definitively determine that Whiting is producing Pictured Cliffs gas from its wells. Paragraph 35 of the Order finds that "[G]as in the Pictured Cliffs formation **may** have migrated to the Fruitland Coal formation through the communication channels **if** the production pressure at the Whiting Fruitland coal wells were low." Decretal ¶ 5 similarly provides that "[I]nasmuch as Whiting's wells **may** produce only minor amounts of gas from the already depleted raw Fruitland Sand-Pictured Cliffs Pool, Whiting's wells are not to be shut-in." Not only did the Commission not enter a definitive finding that Whiting was producing gas from the Pictured Cliffs formation, it expressly found any gas flow from that formation would be insignificant. The Commission based its decision on the

compelling evidence of the lack of recoverable reserves in the Pictured Cliffs formation. The Commission is entirely authorized in doing so.

2. Pendragon complains that the Order omits any provision requiring Whiting to demonstrate how its five Fruitland coal wells may be produced without interfering with the Chaco wells. Again, Pendragon's argument ignores findings 35, 44, 45 and 46 in the Commission's Order. Those findings, all of which are supported by substantial evidence, establish that the Pendragon Chaco wells have already produced their fair share of gas in the Pictured Cliffs formation, that the Pictured Cliffs formation was depleted in the area of these wells prior to 1995, and that the gas now capable of production from the Pendragon Chaco wells is primarily, if not entirely, gas from the Fruitland Coal formation that has migrated to the Pictured Cliffs formation. There is no similar finding in the Commission's Order that Whiting is producing gas from the Pictured Cliffs formation, nor was any substantial or competent evidence to support the proposition submitted by Pendragon during the Commission proceeding. The Commission is not required to address a non-issue in its Order.

3. Pendragon next contends that the Commission Order has policy implications for the use of hydraulic fracturing by Pictured Cliffs and Fruitland Coal operators. The Commission acted properly in issuing an order that has such policy implications. The problems caused in this case, and which have given rise to this lengthy and costly dispute, could have been avoided had Pendragon not stimulated through perforations in close proximity to the coals, had it used recognized testing procedures to test the fractures' growth, and had Pendragon given Whiting notification of its plans to fracture stimulate its wells and an opportunity to review the frac designs

and monitor those fracture stimulations. The proximity of untapped coalbeds to thousands of acres of directly underlying depleted Pictured Cliffs formations on the Basin begs policy guidance from the Commission. The Order should have a beneficial effect in encouraging operators to be sensitive to potential invasion and to design fracture stimulation treatments in a conservative way, and avoid fracture stimulations which cause communication with the coal formation. The Order will have no chilling effect on coal operators, who generally recognize the depletion of the Pictured Cliffs formation, and who have a disincentive to cause communication with a depleted, lower pressured formation. Coal operators would only stand to lose reserves through such communication. To the extent the Order will have a chilling effect on Pictured Cliffs operators who intend to fracture stimulate their wells to cause communication with the Fruitland Coal formation in which they own no interest, that is a valid and desirable chilling effect and precisely what the Commission's Order should accomplish.

4. Pendragon next contends that Commission findings 34, 45 and 46 presuppose that all the Chaco wells are uneconomic. To the extent the Order does contain that presupposition, it is supported by substantial evidence in the record. Pendragon's argument on this point is nothing more than a regurgitation of a position which now has been rejected by three separate fact finders. The Commission's Order on the state of depletion of the Pictured Cliffs formation in this area is supported by substantial evidence. Pendragon's complaint about the financial effect such a finding may have on other Pictured Cliffs operators in the area is a red herring.

5. Pendragon complains about ¶ 46 of the Order, and the finding that Chaco wells No. 1, 2R, 4 and 5 have produced their fair share of gas in the Pictured Cliffs

formation. This finding is supported by substantial evidence in this case. Pendragon contends that it is entitled to produce 100% of the gas reserves it owns. This is an inherent misstatement. Pendragon is only entitled to produce Pictured Cliffs recoverable reserves, which will never be 100% of the gas in place. The more important problem in this case, however, and one which Pendragon elects to ignore, is that Pendragon produced almost one billion cubic feet of Fruitland coal seam gas for several years to which it had no entitlement until stopped by a court order. The Commission's Order, like the prior Division Order, has invited Pendragon to appear before the Division and propose an allocation formula which will reimburse Whiting for coal seam gas which Pendragon has stolen, assure that Pendragon only produces Pictured Cliffs gas from its Chaco wells, and thereby allow Pendragon to produce the wells in the future. Nothing more is required of the Commission.

6. Pendragon complains that the Commission's Order gave little or no consideration to the reservoir and well pressure data presented. The Commission is under no obligation to make specific findings on every issue presented by the parties in the adjudicatory proceeding. In any event, the reservoir and well pressure data presented clearly supports the Commission's findings and ultimate determination in the case.

7. Pendragon clings to its story that the Chaco well fracs did not extend into the coal. Pendragon continues to ignore undisputed evidence, and complains that the preponderance of evidence does not support the Commission's finding. No specific evidence is cited by Pendragon. The Commission needed no fracture experts to conclude that the Pendragon stimulations invaded the coal. The objectively observable

dramatic upsurge in production and pressure in the four offending Chaco wells in 1995 told the story. It is clear that Pendragon will never accept the empirically demonstrable facts, but that does not warrant a rehearing. Substantial, competent evidence supports Commission Finding No. 33.

8. Pendragon contends that Finding 35 is inconsistent with the depletion finding in ¶ 45. This is absurd. The "steady gas production" from the Chaco wells referenced in ¶ 35 refers to production of Fruitland coal seam gas. That finding is entirely consistent with the Commission's Finding that the Pictured Cliffs formation in this area was depleted prior to 1995. Both findings are supported by substantial evidence.

9. Pendragon's complaint about the reference in Finding 37 to "high pressure gas compartments" is spurious. All the Commission is referring to are pockets in the Fruitland Coal formation, which is generally characterized by pressures higher than those exhibited in the Pictured Cliffs formation (given its present state of depletion). Again, substantial evidence supports the finding that the Pendragon fracture stimulations caused communication with and invasion into the Fruitland Coal formation. Pendragon has been afforded ample opportunity to present its evidence on this issue, and has lost.

10. Pendragon's complaint about the reference to a "gas bubble" is also spurious. Again, the Commission's Order is simply describing the process which Whiting established at both the Division and Commission hearings, i.e., that Pendragon caused communication between the two formations, and from 1995 until the Chaco wells were shut-in in 1998, produced significant volumes of coal seam gas through its

Pictured Cliffs wells. If the Commission is concerned about the "gas bubble" reference, it could delete the phase "At the edge of the resulting gas bubble," from ¶ 36 without losing any of the meaning. Pendragon makes only vague references to evidence it believes argues for a result different than that reached by the Commission, without citing to exhibits, the transcript, or specific witnesses.

As Whiting showed at the Commission hearing, the evidence on the Chaco Plant No. 5 is consistent with the Commission's finding that Pendragon has been knowingly fracture stimulating its Pictured Cliffs wells to cause communication with the coal formation, and has been operating coal seam gas wells illegally without reporting those wells as such.

11. Pendragon's complaint about the "third bench" portion of Finding 39 is similarly misguided, and again represents nothing more than an attempt by Pendragon to regurgitate its faulty theory of the case, which three neutral adjudicatory bodies, district court, the Division and now the Commission, have rejected. The "third bench" fantasy was so scientifically flawed that it said more about the desperation of Pendragon's position than positing a scientifically supportable untapped source of recoverable gas. Substantial evidence supports the Commission's rejection of Pendragon's assertion that the great increases in pressure and production in the Chaco wells following fracture stimulation were the result of communication with a so-called "third bench" in the Pictured Cliffs formation. Again, vague, general references to Pendragon's theory of the case, without record or exhibit cites, are inadequate to support a request for rehearing.

12. Pendragon's second complaint about Finding 39, on the extension of the hydraulic fractures into the Fruitland Coal formation, is similarly misguided. Pendragon bases its charge on vague generalizations, without reference to any specific transcript reference, exhibit reference, or witness testimony. While Finding 39 does reference a "possibility," Finding 44 reflects the Commission's specific finding that the Chaco wells 1, 2R, 4 and 5 produced gas from the Fruitland Coal formation which has migrated to the Pictured Cliffs formation through fractures around the Pendragon Chaco wells. No competent evidence was introduced which supports Pendragon's theory that the fracture stimulations in the Chaco wells extended only downward (against greater over-burden pressure), but not upward. Substantial evidence supports the Commission's findings on the effect of the Pendragon fracture stimulations.

13. Pendragon complains that Finding 40 rejected Pendragon's reservoir "damage" theory, which was actually three different varieties of speculation testimony from different witnesses who could not agree among themselves. The testimony was unsupported by any scientific evidence, and speculated in turn about scale precipitation, or water blockage, or migration of clay fines. The Commission's Finding is supported by substantial evidence, and was a proper rejection of the attempt by Pendragon to establish by guess work an explanation for the stimulated Chaco wells going from plug and abandon-sold at auction liabilities to producers of prolific low Btu gas.

14. Pendragon complains about Commission Finding 41, which holds that the Btu analysis of gas from the Chaco wells supports the conclusion that the fracture stimulation treatments in 1995 established communication with the Fruitland Coal formation. Pendragon complains because the Finding is allegedly "not supported by the

Btu data presented by both parties . . . ". No specific reference to evidence is given. Again, substantial evidence in the record supports the Commission's finding. The fact that Pendragon cannot accept that finding, which the Division also reached after hearing the testimony in this dispute, does not establish that the Finding is in error.

15. Pendragon attempts to utilize Commission Finding 43 to argue that the Pictured Cliffs formation was not depleted. This is absurd. With respect to the Chaco No. 4 well, which Pendragon cites, that well experienced a substantial pressure increase **after** the acidization, indicating that the acid job on that well caused communication with the Fruitland Coal formation. The Commission found that the Chaco 1J and 2J wells did not establish communication with the Fruitland Coal formation because they were not fracture stimulated. The distinction in the Commission's Findings between the Chaco 1J and 2J wells, on the one hand, and the Chaco 1, 2R, 4 and 5, on the other hand, is entirely logical and consistent with the evidence.

16. Pendragon's complaint about Finding 44 is again based upon a misreading of the Commission's Order. That finding does not establish three categories of gas, but rather two categories of gas, Pictured Cliffs gas and Fruitland coal seam gas, which were produced through the Chaco wells. The Fruitland coal seam methane is described as coming from two potential sources, including the fracture stimulations on the Chaco wells. The order provides for ongoing production from the Whiting wells because the Commission properly found that those wells cannot produce any significant amount of gas from the depleted Pictured Cliffs formation.

The Order does not simultaneously provide "for restoring four of the Chaco wells back to production." Instead, it orders Pendragon to shut in Chaco wells No. 1, 2R, 4 and 5. The Division might approve a method for putting the Chaco wells back into production if Pendragon reimburses Whiting for past coal seam gas production, and if Pendragon can establish a method of production where those wells would produce only Pictured Cliffs gas. In light of the Commission's finding that Pendragon caused communication with the Fruitland Coal, and that the Chaco wells have in the past produced significant amounts of Fruitland coal seam gas (whether as a result of the Whiting fracs or the Pendragon fracs), Pendragon is the party with the burden to establish a reasonable method of allocating production if it wishes to operate the Chaco wells. The burden is not on the Commission or Whiting to do that work for Pendragon.

17. Pendragon's complaint about Finding 46 is ridiculous. The Commission's determination that Pendragon has already produced its fair share of Pictured Cliffs gas from the Chaco wells is amply supported by competent evidence in the record. The implication is obvious: Pendragon should not be entitled to produce Chaco wells No. 1, 2R, 4 and 5 because such production will only constitute the illegal production of additional stolen gas from the Fruitland Coal formation. The Commission need not attach a numerical value to its determination in order for the determination to be valid. Finding No. 46, in connection with Findings 44 and 45, provides a substantial basis for the Commission's determination that Chaco wells No. 1, 2R, 4 and 5 must remain shut-in.

CONCLUSION

It is clear that Pendragon will never accept the scientific truth which Whiting has now been forced to establish before three separate tribunals. Pendragon's refusal to accept the obvious does not, however, constitute any grounds for rehearing in this case. Consequently, Pendragon's Application should be denied.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have caused a true and correct copy of Whiting's Response in Opposition to Application for Rehearing to be mailed on this 24th day of May, 1999 to the following counsel for defendants:

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