Editor's note: 88 I.D. 550; appealed - remanded to DOI for KGS determination, Civ.No. 81-0682-JB (D.N.M., Dec. 28, 1982); aff'd, remanded to DOI, No. 83-1306 (10th Cir. Sept. 28, 1984); 744 F.2d 1424; vacated on judicial remand, referred to Hearings Division by order dated Feb. 5, 1985 -- See 54 IBLA 389A & B below

JACK J. BENDER

IBLA 80-146 Decided May 19, 1981

Appeal from decision of the New Mexico State Office, Bureau of Land Management, rejecting noncompetitive oil and gas lease offer. NM 30069. Exceptions filed to the recommended decision of Administrative Law Judge Robert W. Mesch.

Affirmed.

1. Oil and Gas Leases: Generally--Oil and Gas Leases: Discovery--Oil and Gas Leases: Known Geologic Structure

   A determination by the Geological Survey of the known geologic structure of a producing oil and gas field will not be disturbed in the absence of a clear and definite showing that the determination was improperly made.

APPEARANCES: John F. Welborn, Esq., and Phillip Barber, Esq., Denver, Colorado, for appellant.

OPINION BY ADMINISTRATIVE JUDGE HARRIS

Jack J. Bender has appealed from a decision of the New Mexico State Office, Bureau of Land Management (BLM), dated July 13, 1977, rejecting his noncompetitive oil and gas lease offer, NM 30069, because the land was determined to be within an undefined known geologic structure (KGS) of a producing oil or gas field, based on a determination by the Geological Survey (Survey). 1/

Under 30 U.S.C. § 226(b) (1976), land within the KGS of a producing oil or gas field may only be leased by competitive bidding. When land is determined to be within a KGS either before a noncompetitive offer was filed or while such an offer is pending, the noncompetitive offer must be rejected. Richard J. DiMarco, 53 IBLA 130 (1981), and cases cited therein.

In his statement of reasons for appeal, appellant challenged Survey's determination that the land was within an undefined KGS. He also presented data from which we concluded in Jack J. Bender, 40 IBLA 26, 29 (1979), that "it is not clear whether the land herein should be classified KGS." Accordingly, we granted appellant's request for a

1/ "Known geologic structure" is defined in Departmental regulation 43 CFR 3100.0-5(a): "A known geologic structure is technically the trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptively productive." (Emphasis added.)

hearing in order "to resolve the issue as to whether this land was properly included within a known geologic structure." Jack J. Bender, supra at 29. The case was referred to the Hearings Division, Office of Hearings and Appeals, for a hearing and recommended decision.

On August 15, 1979, Administrative Law Judge Robert W. Mesch held a hearing. On December 3, 1979, he transmitted his recommended decision to the Board. In the decision he held that appellant had failed to make a clear and definite showing of error in Survey's determination that the land was within an undefined KGS and, accordingly, dismissed the appeal. By order dated January 15, 1980, the Board transmitted the recommended decision to the parties and established time periods for submission of exceptions to it.

[1] An applicant for an oil and gas lease who challenges a determination by Survey that land is situated within the KGS of a producing oil or gas field has the burden of showing that the determination is in error. The determination will not be disturbed in the absence of a clear and definite showing of error. Donnie R. Clouse, 51 IBLA 221 (1980); United States v. Alexander, 41 IBLA, 1, 11 (1979).

Judge Mesch described the basis for Survey's determination as follows:

> The land in question is lots 1 and 2 or the west half of the northwest quarter of section 30, Township 20 South, Range 29 East, New Mexico Principal Meridian, Eddy County, New Mexico. This land, together with other land, was determined to be within an undefined KGS addition to what has been designated as the Scanlon KGS. The determination was effective January 24, 1977, and was triggered when a producing gas well was completed on that date in the northeast quarter of section 20. The well produced gas from the Pennsylvanian Morrow formation. When production was established, at least some of the lands surrounding the well had to be included in a KGS. Accordingly, geologists in the Office of the Area Geologist of the Conservation Division of the GS studied the logs of all wells in the immediate area that had penetrated the Morrow formation in order to determine what, in their opinion, would be a reasonable area that could be considered presumptively productive. As a result of their interpretation of the logs and based on other information relating to the Morrow wells, the approximately 80 acres in question, together with an additional approximately 1440 acres, were included within the undefined KGS addition to the Scanlon KGS.

(Recommended Decision at 3-4).

At the hearing the Government offered the testimony of Donald M. Van Sickle, area geologist for the Conservation Division, Survey, who testified that Survey's determination was based on the fact that "all [seven] wells that have tested the Morrow in this area and within a two-mile radius of these lands tested some gas" (Tr. 25). Van Sickle presented a "cross-section" of the area and attempted to "correlate potential reservoirs" within each of three wells by placing the results of vertical logs taken in each of the three drilling holes side by side

(Tr. 18-20; Exh. 2 and 3). 2/ By placing the logs side by side, Survey determined that potentially productive intervals continued stratigraphically between the three wells, along the line of the "cross-section." Survey concluded that there were "three possible productive intervals across the area" (Tr. 38). The line of Survey's "cross-section goes within less than a quarter of a mile from the lots in question" (Tr. 38). With reference to the cross section, he explained:

> When we looked at all these -- well, after this well was completed and we studied this area to see which would be the lands which would be properly brought into the KGS, we naturally looked at all of the wells in this area that penetrated the Morrow formation and drew some, well, we put them on up on the wall and looked to see if we could correlate potential reservoirs or reservoirs where the wells were perforated. You will notice we have limited our cross-section to just two, Line A-A prime. Yet the well we based our undefined addition is way over in Section 20. The only reason we limited it to this was because the two lots that were under question are more nearly related to these three wells (indicating) than the wells over in this area (indicating). If the contest had been over in this (indicating) area, we would have naturally used a different cross-section showing wells closer to the land under appeal.
>
> The basis of our correlations, on the basis of the fact that all the Pennsylvanian test drills in this area had gas shows, all but one was completed as a gas well, our cross-section shows that we can correlate three sands across there or three possible productive intervals across this area. It became clear to us that this acreage in Section 19, 20, 29 and 30 should be included in the KGS

2/ From north to south the three wells used by Survey were the Yates Federal No. 2 located in sec. 18, the Stebbins Federal Deep No. 1 located in sec. 30, and the Fannie Lou Federal No. 1 in sec. 31. All three wells are located in T. 20 S., R. 29 E., New Mexico principal meridian, Eddy County, New Mexico (Tr. 18-19).

> because of the overwhelming evidence of productive sands or productive reservoirs in the Morrow.

(Tr. 37-38).

Van Sickle noted that the distance between the Fannie Lou Federal No. 1 well and the Stebbins Federal Deep No. 1 well is 1 mile, and the distance between the Stebbins Federal Deep No. 1 well and the Yates Federal No. 2 well is 2 miles (Tr. 21). 3/ Nevertheless, he stated that it was possible in this case to correlate potential reservoirs between these three wells, despite the distance involved (Tr. 23).

He also testified that records provided by the operator of the Stebbins Federal Deep No. 1 well, the closest well to the subject land, indicated "a substantial amount of gas" (Tr. 82). Although subsequently shut-in, the well was recompleted for production March 26, 1971, and at that time the well was tested at an "absolute open flow of 1,400,000 cubic feet of gas a day" (Tr. 82). The well was, therefore, considered "capable of producing" (Tr. 68).

Finally, he stated that Survey's KGS determination did not indicate that any one particular productive interval of the Morrow

3/ The Stebbins Federal Deep No. 1 well is located approximately one-half mile from the lots in question (Tr. 82).

formation would be situated under each area but that one or more "will be located under all of this acreage" (Tr. 42-43).

Appellant presented the testimony of Jack Grynberg, a petroleum and geophysical engineer with extensive experience in oil and gas development. Grynberg testified that Survey's "cross-section" of the area did "not correctly show what is happening with the Morrow reservoirs in the direction that we are most interested," because it was not run perpendicular to the dip in the Morrow formation (Tr. 110). He believed that it did not indicate to what extent potential reservoirs continued along the course of the dip or "pinched out" (Tr. 111). Furthermore, he stated that because of the lenticular nature of the Morrow sands, "over a two-mile distance, it has been my experience in southeastern New Mexico, that you simply cannot correlate that far a distance" (Tr. 119).

Grynberg also testified that the three potentially productive intervals identified by Survey as continuing along the line of its "cross-section" were not perforated and tested in the Stebbins Federal Deep No. 1 well (Tr. 122). He felt that those intervals would be "water productive," being below the producing interval which he had identified on Exhibit B (Tr. 123).

Grynberg indicated that the Yates Federal No. 2 well, used by Survey as the northern point of its "cross-section," was "a completely

different reservoir" and could not be used to determine potential reservoirs for the lots in question (Tr. 124). Grynberg characterized Survey's cross section as a "qualitative, visual comparison" rather than a quantitative study, taking into account calculated porosity and hydrocarbon saturation (Tr. 120, 123).

Grynberg stated that he had undertaken a "cross-section" of the area perpendicular to the dip, running in an updip northwest direction from the Pennzoil Federal No. 1 well, situated in sec. 32, T. 20 S., R. 29 E., New Mexico principal meridian, Eddy County, New Mexico, to the Stebbins Federal Deep No. 1 well. The lots in question were further updip from the Stebbins Federal Deep No. 1 well, along the line of the cross section (Tr. 110-112; Exh. B). Vertical logs were taken in each of the two drilling holes and placed side by side (Exh. B). Grynberg concluded that only one potentially productive interval in the Morrow formation continued between the two wells; however, due to the rate of disappearance of that interval it pinches out northwest of the Stebbins Federal Deep No. 1 well and does not reach the lots in question (Tr. 111-114). Grynberg stated that part of Survey's error was due to its failure to determine this rate of disappearance (Tr. 141).

Based on a set of "control wells," Grynberg established a line indicating the "up-dip pinchout" of the Morrow formation, running in a northeast direction through the area (Tr. 96; Exh. A). The Fannie

Lou Federal No. 1 well and the Stebbins "GQ" community well, situated in sec. 20, T. 20 S., R. 29 E. (both producing), were located southeast of the pinchout line (Tr. 113). The "Monsanto" well, situated in sec. 26, T. 20 S., R. 28 E., considered a "dry hole" well, was placed northwest of the pinchout line, and according to Grynberg, confirmed the location of the pinchout line (Tr. 117-118). 4/

Grynberg also challenged Survey's classification of the Stebbins Federal Deep No. 1 well. He contended that it was a "dry hole" well, having been shut in for 10 years despite the rise in the price of gas and the availability of pipeline hookups (Tr. 98-101, 103-104, 110). Furthermore, he contended that the calculation of "absolute open flow" in that well could be off substantially because "the word 'absolute' means calculated, that's what it is in reservoir engineering -- it is nearly a total extrapolation with an error factor of several thousand per cent to try and predict what a potential well might flow as an open flow" (Tr. 103).

4/ The "Monsanto" well was one of the seven included by Survey within a 2-mile radius of the lots in question. Concerning the significance of the 2-mile radius, Van Sickle testified:

"It is just an arbitrary distance to encompass a number of wells and to illustrate that of the seven wells that were drilled through the Pennsylvanian system in this area all were productive in the Pennsylvanian except one, a well in Section 26 of 20 south 28 east. It only had gas shows in the Morrow and the well was not completed. It was plugged and abandoned. However, when gas shows, it shows there is Morrow reservoir there, not commercial, but it had gas shows and therefore there was reservoir present. So that of all wells that have tested the Morrow in this area and within a two-mile radius of these lands tested some gas."
(Tr. 25).

On appeal appellant argues that the recommended decision contains a number of errors. Specifically, he states:

> 1. The burdens of proof and of production in the case were improperly allocated and create error as a matter of law.
>
> 2. The allocation of burdens deprives appellant of due process of law.
>
> 3. The Decision does not address a fundamental issue of the case: Whether a KGS determination is valid if the U.S.G.S. fails to follow its own internal guidelines and procedures for determining a KGS.
>
> 4. The Decision is not supported by substantial evidence on the record as a whole.

(Exceptions to Recommended Decision at 2).

Appellant's claim that the burden of proof and burden of production were improperly allocated is unfounded. At the hearing there was a discussion of the burdens and Judge Mesch made it clear that he felt that Survey should have the burden of going forward in order to narrow the issues concerning the basis for the KGS determination (Tr. 8). Appellant correctly understood that he had the ultimate burden of showing that there was clear and definite error in the Survey determination (Tr. 7). Following the discussion, Survey presented its evidence. Therefore, appellant's claim that the Judge incorrectly found that Survey had no initial burden to produce its reasons for the KGS determination is inapplicable in this case.

Survey satisfied its burden of going forward to establish a prima facie case by presenting evidence at the hearing. Contrary to appellant's assertion, we do not believe that the basis for Survey's KGS determination is uncertain. Admittedly, the basis is not set forth with specificity; however, Survey's evidence, as a whole, did establish a basis for the determination and also served to provide appellant with evidence which it could, and did, attack. Under the facts of this case it can hardly be claimed that appellant was denied due process of law.

Appellant also charges that Survey erroneously failed to consider "all controlling factors" in making its determination. It states that Geological Survey Circular 419 at page 1 (Exh. 6) requires such consideration. Even assuming the circular was more than a guideline for Survey, further examination of that exhibit indicates that Survey did all that was necessary for determination of an undefined KGS. The following appears at page 5 of Exhibit 6:

> Undefined known geologic structures are of two types, namely:
>
> 1. An area where discovery necessitates the defining of a new productive area, and revisions thereof.
>
> 2. An area where development around a previously established defined structure warrants an extension of the established known geologic structure.
>
> In connection with undefined geologic structures, available information, generally consisting of data relating to a single well or a few wells, together with available geologic information, is reviewed by geologists; and a

> memorandum is sent to the manager of the appropriate land making a determination that certain lands are as of a certain date "on structure" or within an undefined addition to a previously defined structure.

Appellant claims that the recommended decision was not supported by the evidence of record. We disagree. Despite the unpredictable nature of natural gas reservoirs in the area of the lots in question, Survey presented evidence to establish that the subject lands "were presumptively productive."

Such a determination does not guarantee the productive quality of the land but, rather, indicates the "existence of a continuous entrapping structure on some part of which there is production." James Muslow, Sr., 51 IBLA 19, 23 (1980). We note, in this regard, that the Morrow formation underlies the lots in question and that all wells drilled in this formation, within a 2-mile radius, have had production or, at least, shows of gas.

The fact that the Stebbins Federal Deep No. 1 well was shut in does not constitute a clear and definite showing of error in Survey's conclusion that the well was capable of production. Records provided by the owner indicated a substantial amount of gas. Furthermore, cessation of production or abandonment of wells in a given field are not conclusive evidence that the land is not productive. James Muslow, Sr., supra.

Appellant further contends that the lots in question were beyond the edge of potentially productive reservoirs in the Morrow formation; however, we agree with Judge Mesch when he stated:

> The [only potentially productive] reservoir [extending between the Pennzoil Federal No. 1 and the Stebbins Federal Deep No. 1 wells] thinned 5 feet over a distance of some 5900 feet or approximately 1 foot every 1200 feet. [5/] At the rate of thinning, it would seem that the reservoir would still be in existence and approximately 4 feet thick in the neighborhood of the land in question. The appellant's witness, however, concluded that the reservoir thinned from 7 feet to 0 feet over a distance of some 500 feet and abruptly pinched out immediately west of the Stebbins well. He arrived at this conclusion, not by considering the thinning rate of the one remaining reservoir but, by adding up the thicknesses of 8 separate reservoirs or bodies of sand found in the Pennzoil well, for a total thickness of about 50 feet, and then found a decrease in the total thickness of the 8 separate reservoirs from 50 feet to the 7 feet representing the one remaining reservoir. This gives a thinning rate of about one foot every 140 feet for the 7 minor and 1 major beds of sand as opposed to 1 foot every 1200 feet for the one major bed. I am not willing, without some justification, which is not apparent in the record, to accept the proposition that the thinning rate of the one major bed should be determined, not on the basis of the thinning rate of that bed but, by reference to other minor beds that were found in the Pennzoil well, but not in the Stebbins well.
>
> Furthermore, I cannot reconcile the appellant's evidence and conclusion that there are no producing Morrow reservoirs, or no geologic likelihood of such reservoirs, within lots 1 and 2 with the evidence presented by the GS relating to the establishment of the KGS. The Area Geologist stated that the reservoirs or sand bodies are very unpredictable. He said, "[y]ou can have sand there 20 feet thick in one well and you might drill a well

5/ Grynberg testified that the reservoir thinned from 12 feet to 7 feet between the Pennzoil Federal No. 1 and the Stebbins Federal Deep No. 1 wells.

> 200 feet from it and * * * not even find that sand" (Tr. 42). He testified that because of the unpredictable nature of the lenticular beds of sand "we have to assume that even though any one of these individual sands may not be situated under each one of the areas we included in the known geologic structure, we have to assume that one or more sands containing gas will be located under all of this acreage" (Tr. 42, 43). He explained that the assumption was made because "the overwhelming evidence * * * shows that all the wells in the area * * * were completed in the Morrow or tested gas from some sand interval or some productive interval in the Morrow [with the exception of one dry hole in the southeast quarter of section 32]" (Tr. 43). He further stated that they "looked at all of the wells in this area * * * to see if we could correlate potential reservoirs or reservoirs where the wells were perforated" (Tr. 37). One of the wells they relied on was a producing gas well in the northwest quarter of section 18, the Yates Federal No. 2. This well is over two miles north and west of the Stebbins well and about two miles due north of lots 1 and 2. The appellant's witness recognized that this well was producing from the Morrow formation and that if his cross section was continued in a straight line to the north and west it would encounter this well and the producing Morrow reservoirs in the well. He did not feel, however, that the well had any bearing on his conclusion that the producing Morrow reservoirs pinched out immediately to the north and west of the Stebbins well because, in his opinion, the well some two miles further north and west was producing from a different zone in the Morrow formation.
>
> (Recommended Decision at 10-13).

Appellant did not present specific evidence to establish that it was improper for Survey to presume that the producing reservoirs in the Yates Federal No. 2 extended under the lots in question, nor did appellant adequately explain why those same reservoirs should not be considered in establishing the KGS merely because they were allegedly in a different zone in the Morrow formation.

We cannot conclude that appellant has made a clear and definite showing of error in either Survey's methods or its conclusions regarding its KGS determination.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision appealed from is affirmed.

Bruce R. Harris
Administrative Judge

We concur:

Douglas E. Henriques
Administrative Judge

Anne Poindexter Lewis
Administrative Judge

February 5, 1995

IBLA 80-146	:	NM 30069
	:	
JACK J. BENDER	:	Oil and Gas
(ON JUDICIAL REMAND)	:	
	:	Previous Decisions Vacated;
	:	Case Referred to Hearings
	:	Division

ORDER

By decision dated March 9, 1979, this Board set aside a decision of the New Mexico State Office, Bureau of Land Management (BLM), rejecting Jack J. Bender's noncompetitive oil and gas lease offer NM 30069 because the lands applied for were within an undefined known geologic structure (KGS). We ruled determination, it was not clear whether the lands should be classified as a KGS. Accordingly, we referred the matter to the Hearings Division for hearing and recommended decision on the question. Jack J. Bender, 40 IBLA 26 (1979).

On August 15, 1979, Administrative Law Judge Robert W. Mesch held a hearing in Albuquerque, New Mexico, at which the parties presented evidence whether these lands are within a KGS. Following the filing of post-hearing briefs, on December 3, 1979, Judge Mesch issued his recommended decision, holding that Bender had not met his burden of proof and ruling that he therefore could not disturb the KGS determination despite some uncertainty surrounding it. On May 19, 1981, the Board issued a decision concluding that the Government established a prima facie case of the existence of a KGS and Bender failed to show by "clear and definite" evidence that the Government erred in its determination. Jack J. Bender, 54 IBLA 375, 88 I.D. 550 (1981).

On September 28, 1984, the United States Court of Appeals for the Tenth Circuit issued a decision holding that an incorrect standard of proof had been applied in reviewing the evidence presented by the parties concerning the KGS proceedings. Bender v. Clark, 744 F.2d 1424 (10th Cir. 1984). Accordingly, our earlier decisions (Jack J. Bender, 40 IBLA 26 (1979), and Jack J. Bender, 54 IBLA 375, 88 I.D. 550 (1981) are hereby vacated.

The matter is once again referred to the Hearings Division for assignment to Judge Mesch, who is familiar with the evidence presented by the parties concerning the KGS determination. Judge Mesch is directed to issue a decision which, in the absence of appeal, will be final for the Department. This decision should consider the evidence in light of the "preponderance of the evidence" standard imposed by the decision of the Tenth Circuit in Bender v. Clark, supra. 1/

Accordingly, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the matter is referred to the Hearings Division for further proceedings as described above.

_____
Bruce R. Harris
Administrative Judge

We concur:

_____
C. Randall Grant, Jr.
Administrative Judge

_____
Will A. Irwin
Administrative Judge

1/ On February 4, 1985, counsel for Bender filed a "Motion to Assign Case to Administrative Law Judge Robert W. Mesch and for Expedited Review." Our order refers the case to Judge Mesch for consideration. Counsel should direct his request to expedite to Judge Mesch.

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