

Appeal from a decision of the Acting District Manager, Rawlins District Office, Wyoming, Bureau of Land Management, approving application for approval of revised participating area under unit agreement.

Affirmed.

1. Oil and Gas Leases: Unit and Cooperating Agreements -- Oil and Gas Leases: Well Capable of Production

Where BLM approves a revision to a participating area under a unit agreement based on a determination that a unit well is capable of producing unitized substances in quantities sufficient to repay the costs of drilling, completing, and producing the well with a reasonable profit, the decision will be affirmed on appeal unless the appellant establishes by a preponderance of the evidence the well is not a paying well.

APPEARANCES: Bruce F. Kiely, Esq., and Peter A. Moir, Esq., Washington, D.C., for appellants; Morris R. Massey, Esq., Casper, Wyoming, for W. A. Moncrief, Jr.; Lowell L. Madsen, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Denver, Colorado, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE FRAZIER

The Monsanto Oil Company (Monsanto), Coastal Oil and Gas Corporation, Texaco, Inc. (Texaco), and the Sohio Petroleum Company have appealed from a decision of the Acting District Manager, Rawlins District Office, Wyoming, Bureau of Land Management (BLM), dated January 22, 1985, approving, effective December 1, 1982, an application for approval of the Second Revision of the Mesaverde Formation Participating Area "A" for the Long Butte Unit Area (Second Revision), Fremont County, Wyoming, submitted by W. A. Moncrief, Jr. (Moncrief), the unit operator. 1/

1/ In their statement of reasons for appeal, appellants state Texaco is withdrawing its appeal and the Inexco Oil Company (Inexco) and the North Central Oil Company (North Central) are joining in the appeal. In the absence of any objection to the withdrawal of its appeal or any prejudice resulting therefrom, the appeal of Texaco is hereby dismissed. The substitution of Inexco and North Central as appellants is accepted. Appellants are owners of leasehold interests or operating rights committed to the Long Butte Unit Agreement.

By letter dated June 20, 1983, Moncrief requested BLM to approve a Second Revision based on the December 8, 1982, completion of Well No. 31-3, situated in the SE 1/4 SW 1/4 sec. 31, T. 39 N., R. 91 W., sixth principal meridian, Fremont County, Wyoming. Moncrief stated in the letter, and the attached geological and engineering reports, that the well, which is situated "on the West plunge of the Madden Anticline," had initial production of 3,519 cubic feet per day (MCFD) at a flowing tubing pressure (FTP) of 2,350 pounds per square inch (psi) from the Mesaverde Formation at a depth of 15,838 to 16,552 feet. ^{2/} Moncrief requested BLM to approve a revised participating area, totalling 3,352.19 acres, in accordance with an Exhibit "B" attached to the request, which set forth the various leases with participating percentages. Moncrief stated the revised participating area was justified by the fact well No. 31-3 is "capable of producing gas in paying quantities" under section 11 of the unit agreement (14-08-0001-15514). The revised participating area was designated as all 40-acre subdivisions of land or parts thereof 50 percent or more within a 1,280-acre circle around well No. 31-3 and tangent to an 800-acre circle around well No. 1-32, situated in the SE 1/4 SE 1/4 sec. 32, T. 39 N., R. 91 W., sixth principal meridian, Fremont County, Wyoming.

By letter dated December 13, 1984, the District Manager initially responded to Moncrief's request, "concur[ring] with [Moncrief's] determination that the LBU [Long Butte Unit] No. 31-3 well is capable of producing unitized substances from the Mesaverde Formation in paying quantities." However, the District Manager stated the revised participating area would not be approved until Moncrief changed the area to include all 40-acre subdivisions of land or parts thereof 50 percent or more within a 1,000-acre circle around well No. 31-3 and tangent to a 1,000-acre circle around well No. 1-32. The District Manager concluded the change in the revised participating area was necessitated by the fact that well No. 31-3 had only averaged 1,156 MCFD in the first year of production, rather than the projected 2,725 MCFD, and would not pay back the initial capital costs of the well "until after five years of production." The District Manager stated:

Wells on the crest of the Madden structure have produced in excess of 5 BCF [billion cubic feet] and have payouts of less than one year. These wells deserved the larger circles to determine participation. However, the flank wells are not as prolific as the crestal wells and have payouts in excess of five years. Also, several flank wells had initial potentials that appeared to be paying wells but have declined rapidly and are not paying wells. A point will be reached and has been

^{2/} The attached engineering report disclosed a multipoint, backpressure test conducted on Jan. 4-6, 1983, also yielded an open-flow rate of 3,800 MCFD and an 18-hour flow rate of 2,296 MCFD at a wellhead pressure of 4,450 psi. Based on this test, Moncrief estimated an average production rate of 2,725 MCFD in the first year, declining gradually to 1,470 MCFD in the eighth year, resulting in a payback on the initial capital costs of \$ 7 million for the well by the "second year of production." The anticipated payback was based on operating costs of \$ 3,000 per month and an average gas price of \$ 7 per MCF. Moncrief estimated the gas-in-place at 31.5 billion cubic feet (BCF).

reached in several cases that as you go down dip, the wells will not payout. This acreage should not be included in the participating area according to the unit agreement.

However, the District Manager concluded that a larger circle around well No. 1-32 was justified "because of a large initial production of 6,362 MCFD, cumulative production of 7.7 BCF through July, 1984, and the well is updip from LBU No. 31-3 well."

On January 7, 1985, Moncrief filed with BLM an amended application for approval of the Second Revision, totalling 3,215.36 acres. Monsanto objected to BLM approval of the Second Revision based on well No. 31-3. In his January 1985 decision, the Acting District Manager approved Moncrief's application for approval of the Second Revision, based on BLM's earlier determination that well No. 31-3 is a "paying well." Appellants have appealed that decision.

In their statement of reasons for appeal (SOR), appellants contend BLM improperly approved Moncrief's application for approval of the Second Revision because well No. 31-3 is not capable of producing gas in paying quantities as required for designation of a participating area under section 11 of the unit agreement. Appellants point out that production and flowing tubing pressures from well No. 31-3 have "failed to stabilize at anywhere near the rate [originally] projected by Moncrief" during two periods of extended production since the well was connected to a gas pipeline on September 28, 1983:

The first such period lasted 56 days, from April 26, 1984 to June 20, 1984. During that period the LBU #31-3 came on at about 1,400 MCFD at a FTP of 1600 psi. By the end of that period the well had dropped precipitously to 821 MCFD at 1,300 psi FTP. Likewise, during a second 86-day period of extended production from November 9, 1984 to February 2, 1985, production from the well plummeted from 1,663 MCFD at 2,750 psi FTP to 748 MCFD at 1,375 psi FTP (SOR at 5). ^{3/}

Appellants argue such production is typical of a tight gas well, i.e., one with low permeability, which is incapable of "ever achieving production in paying quantities." *Id.* at 11. The limited nature of the gas reservoir was, appellants also argue, supported by the fact there was a significant drop in the wellhead shut-in pressure from 8,050 psi at the time of the January 1983 multipoint back-pressure test to 6,600 psi in October 1984, when the psi had apparently stabilized. This translates into a drop of 5 psi per 1,000 MCF of gas produced, given 276 MMCF produced during that time interval. By comparison, well No. 1 (the best Mesaverde well in the Long Butte Unit) had experienced a drop of .4 psi per 1,000 MCF of gas produced during its first 7 years of production. *Id.* at 16.

^{3/} Appellants also note a deliverability test conducted by the pipeline company, American Natural Resources Pipeline Co. (ANR), in March 1984, had indicated a productive capacity of 958 MCFD. Appellants argue the results of the periods of extended production show this figure is "unrealistically high" (SOR at 5).

Appellants submit two reports in support of their contention that well No. 31-3 is incapable of producing gas in paying quantities -- one of which is a report, dated May 9, 1985, prepared by a consulting petroleum engineer with the Arnjac Corporation (Arnjac Report) and the other is a report prepared in-house by appellants (Engineering Report). Based on continuous production since November 9, 1984, the Arnjac Report (Exhibit 1) projected the present net value of future production at \$ 2.667 million given a steady decline in production, operating costs of \$ 3,000 per month and an average gas price of \$ 5.50 per MCF. This amount was insufficient to cover the unrecovered cost of the well as of January 1, 1985, i.e., \$ 5.6 million. ^{4/} The Engineering Report (Exhibit 2), at page 4, stated that, whether the gas reservoir is tight or limited in size, the "extended production history of this well indicates that stabilized flow is not in excess of the current deliverability rate of 958 MCFD, and in reality is much closer to a rate of 800 MCFD or lower." The report noted the deliverability test rate of 958 MCFD established by ANR was itself "not a true indication of the well's long term, stabilized production capability" given the 7-day duration of the test. *Id.* at 3. The Engineering Report concluded that assuming gas-in-place of 18.576 BCF, determined by a volumetric calculation, an initial stabilized flow rate of 800 MCFD which would steadily decline, operating costs of \$ 3,000 per month, a profit of 6 percent, and an average gas price of \$ 5.50 per MCF, the operator would not recover its unrecovered cost of the well as of January 1, 1985, by year 20. See Table II (Paying Well Determination) of Exhibit 2. ^{5/} However, the Engineering Report, at page 3, stated the gas-in-place, determined by using the initial wellhead shut-in pressure of 8,050 psi calculated at the time of the January 1983 multipoint back-pressure test and the psi drop of 5 for every 1,000 MCF of gas thereafter produced, which method is "more accurate than volumetric calculations of the gas-in-place," is 2.9 BCF. Based on this reserve calculation, the Engineering Report concluded that, even assuming a gas price of \$ 7.00 per MCF beginning in 1986, the operator would not recover its unrecovered cost of the well as of January 1, 1985, by year 20. See Table II (Paying Well Determination), Case 1 of Exhibit 2. ^{6/} Appellants summarize this evidence as follows:

The first paying well determination attached to Appellants' Engineering Report uses a \$ 5.50/MCF gas price because that is the price paid under the gas purchase contracts to which the well is dedicated. That first paying well determination also assumes an unrealistically high, volumetrically derived, 18,600 MMCF gas-in-place volume estimate. Despite an unrealistically high gas-in-place volume estimate, the well is shown not to reach payout, even after twenty years. The second paying well determination

^{4/} This figure for the unrecovered capital cost was based on the original cost of \$ 7 million, subtracting out that amount already recovered by virtue of the 335 MMCF cumulative gas production from completion to Jan. 1, 1985.

^{5/} The report indicated that in year 20, the unrecovered cost would be \$ 357,370, with production of only 355 MCFD, and concluded "it does not appear that the well ever would pay out in this case" (Engineering Report at 6).

^{6/} The report indicated that in year 20, the unrecovered cost would be \$ 2.522 million, with production of only 60 MCFD.

attached to Appellants' Engineering Report assumes a presently non-existent \$ 7.00/MCF gas price and a realistic, pressure-derived, 2,900 MMCF gas-in-place estimate. Again, the well is shown not to reach payout, even after twenty years. Observe that in order for Moncrief to project both payout and a reasonable profit, he must assume both an unrealistic, presently nonexistent gas price and an unrealistic and inflated gas-in-place estimate. Obviously, any price increases projected by Moncrief would be purely speculative, and appellants' Engineering Report makes it clear that a gas-in-place estimate of 18,600 MMCF, let alone the 31,521 MMCF estimate originally used by Moncrief, is grossly overstated.

Thus, Moncrief cannot demonstrate that the LBU #31-3 well is capable of producing in paying quantities without assuming factual predicates that are wholly unsupported by the evidence (SOR, at 18 (emphasis in original)).

Appellants also argue that well No. 31-3 cannot be considered a paying well applying the same standard BLM used to determine that the Quincy No. 1-34 well, recompleted August 11, 1982, is not a paying well. Appellants state the Quincy No. 1-34 well situated in the SE 1/4 NW 1/4 sec. 34, T. 39 N., R. 91 W., sixth principal meridian, Fremont County, Wyoming, within the Battle Butte (Deep) Unit, and immediately adjacent to the Mesaverde Formation Participating Area of the Long Butte Unit, is "similar in all material respects to the LBU #31-3 Well." SOR, at 19. Appellants note that during a 30-day production of the Quincy No. 1-34 well between September 20, 1984, and October 18, 1984, well production declined from 1,847 MCFD at a FTP of 1,600 psi to 910 MCFD at a FTP of 980 psi and that a deliverability test during that time period indicated a deliverability rate of 913 MCFD. Monsanto, the operator of the Battle Butte (Deep) Unit, in a November 21, 1984, letter to BLM (Exhibit 9) supporting its application for approval of a Mesaverde Formation participating area in that unit based on the Quincy No. 1-34 well, stated that the volume of gas-in-place was 12.5 BCF and, given a gas price of \$ 6.50 per MCF, operating costs of \$ 4,000 per month, a profit of 6 percent, the capital costs of the well in the amount of \$ 4.7 million would be recovered in 6.7 years. By letter dated December 7, 1984, (Exhibit 10) BLM denied the application for approval because "production is rapidly declining and has not stabilized" and because the shut-in tubing pressure had "dropped significantly from 7278 [psi] on September 18, 1984, to 6,080 [psi] on November 2, 1984, after only 30 days of production." Appellants argue this parallels the performance of well No. 31-3, even though it started out with higher flowing tubing pressures.

Appellants conclude that the Board should reverse the January 1985 BLM decision because well No. 31-3 is not capable of producing gas in paying quantities and, thus, cannot support designation of a participating area. In the alternative, appellants state that the Board should vacate the January 1985 BLM decision and remand the case to BLM to reconsider its paying well determination, taking into account the extended production history of well No. 31-3.

In an answer to appellants' statement of reasons, BLM states it determined the Quincy No. 1-34 well was not a paying well because, given the decline in production shown in data supplied by Monsanto, the well "would be depleted before producing the 255 MMCF that Monsanto estimate[d] as the first year's annual production." Answer at 2. However, BLM states it determined in its December 13, 1984, letter to Moncrief that well No. 31-3 would be a paying well:

Using 12 months of production data and a gas price of \$ 7.00/MCF, the BLM determined that the LBU #31-3 Well was a paying well * * *. The LBU #31-3 averaged 1,155 MCFD in the first 12 months of production [between October 1983 and September 1984], but it appeared that the well could produce at a higher rate based on August 1984 and September 1984 production averages of 1,307 MCFD and 1,536 MCFD, respectively. The BLM did not have the daily production rates to notice that the LBU #31-3 Well would decline when left on for extended periods of time. Id. (Emphasis added.)

BLM, thus, requested Moncrief to provide the "exact well data on the LBU #31-3 as of the date of completion" and recalculated whether the well would be a paying well, using average production rates declining from 680 MCFD in year 1 to 500 MCFD in year 8, operating costs of \$ 3,000 per month, a 6-percent profit, a capital cost of \$ 6.3 million, and a gas price of \$ 8.09 per MCF. Id. at 3. BLM states the "original gas price has to be used even though the price has been renegotiated to a lower gas price." Id. BLM concludes the well would reach payout between years 7 and 8 given this new data. On February 24, 1986, BLM provided the Board with 8-day gauge sheets for well No. 31-3 indicating daily production between October 2, 1985, and January 17, 1986, which, BLM says, supports its original paying well determination. These sheets indicate daily production ranging between 1,129 MCF at a FTP of 3,600 psi and 2,892 MCF at a FTP of 2,500 psi.

In a response to appellants' statement of reasons, Moncrief argues that well No. 31-3 is capable of producing gas in paying quantities and that production has been further enhanced by acidizing the well in April 1985 to open all perforations. Moncrief submits a "Performance Review and Economic Forecast" (PR), which states that, except for periods of time when the well was shut-in, production "leveled off at 800 MCF/D" by March 1984. PR at 1. Moreover, "[i]n April 1985, over one year later, the well was still producing at 800 MCF/D and, after acidizing perforations which were not contributing to production, is capable of producing in excess of 2,000 MCF/D." 7/ Id. The PR also states that since January 1984 the wellhead shut-in pressure has not declined despite production of over 350 MMCF, and that the sudden drop in

7/ The PR states a March 1985 temperature survey confirmed some of the perforated zones were not contributing to production. The well was acidized on Apr. 24, 1985, and a 7-day deliverability test was run between May 16 and 23, 1985. The well averaged 2,154 MCFD at a FTP of 1,950 psi. The well was then shut in for 19 days and the wellhead shut-in pressure was then 5,327 psi. The PR, at page 2, states this indicates there was "insignificant pressure loss" as a result of the test.

pressure soon after the well was placed in production might be explained by the fact the formation is characterized by "various and sundry lenses." *Id.* at 2. The PR recognizes the well can be classified as a tight gas well based on its performance for 20 months:

It is characteristic that a "tight well" will pull down to some threshold level soon after it is placed on production. It may then produce at this rate for many years to come. It is our belief the LBU #31-3 will exhibit such a performance. *Id.*

The PR also included a paying well determination "using actual production, revenue and cost data to June 1, 1985." *Id.* Moncrief estimated a reserve of 19.914 BCF using a reservoir pressure of 7,017 psi and a 1,000-acre area. The payout was determined as occurring in the sixth year of production based on actual production in the first year and the first 8 months of the second year, projected average production rates declining from 1,425 MCFD in the last 4 months in year 2 to 1,025 MCFD in year 8, actual operating costs for 20 months, projected operating costs of \$ 3,000 per month thereafter, a capital cost of \$ 6.3 million, and a gas price of \$ 5.80 per MCF. Moncrief finally argues a paying well determination with respect to the Quincy No. 1-34 well is not relevant to the question of whether well No. 31-3 is a paying well. Moncrief requests the Board to affirm the January 1985 BLM decision approving the Second Revision.

[1] Designation or revision of a participating area within the Long Butte Unit is accomplished pursuant to the unit agreement which was approved by the U.S. Geological Survey (Survey) on October 28, 1976. Section 11 of the unit agreement provides for designation of a participating area including "all land then regarded as reasonably proved to be productive in paying quantities," based upon completion of a "well capable of producing unitized substances in paying quantities," 8/ which will be "effective as of the date of completion of such well or the effective date of this unit agreement, whichever is later." In addition, section 11 provides:

The participating area or areas so established shall be revised from time to time, subject to like approval, to include additional land then regarded as reasonably proved to be productive in paying quantities or necessary for unit operations, or to exclude land then regarded as reasonably proved not to be productive in paying quantities and the schedule of allocation percentages shall be revised accordingly. The effective date of any revision shall be the first of the month in which is obtained the knowledge or information on which such revision is predicated, provided, however, that a more appropriate effective date may be used if justified by the Unit Operator and approved by the Supervisor.

8/ Production in paying quantities is defined in section 9 of the unit agreement as production in "quantities sufficient to repay the costs of drilling, completing, and producing operations, with a reasonable profit." See Yates Petroleum Corp., 67 IBLA 246, 89 I.D. 480 (1982).

The Initial Mesaverde Formation Participating Area "A" within the Long Butte Unit was approved by Survey effective June 4, 1977, based upon the June 3, 1977, completion of well No. 1-32 in the SE 1/4 SE 1/4 sec. 32, T. 39 N., R. 91 W., sixth principal meridian, Fremont County, Wyoming. The First Revision of this participating area was approved by BLM effective May 1, 1982, based upon the May 31, 1982, completion of well No. 10 in the SE 1/4 NE 1/4 sec. 4, T. 38 N., R. 91 W., sixth principal meridian, Fremont County, Wyoming. The only question presented by this case is whether well No. 31-3 is capable of producing gas in paying quantities, thereby justifying a further revision of the participating area in accordance with section 11 of the unit agreement. In adjudicating this question we will consider whether appellants have established by a preponderance of the evidence that BLM erred in concluding well No. 31-3 is a paying well. Woods Petroleum Co., 86 IBLA 46 (1985).

The BLM determination that well No. 31-3 is capable of producing gas in paying quantities was based largely on a calculation of the amount of gas-in-place in the Mesaverde Formation which could be tapped by that well and an economic forecast of production from the well, indicating when the well would "payout," i.e., recoup the costs of drilling, completing, and producing the well, and begin to return a profit.

BLM's original determination that well No. 31-3 is a paying well, set forth in its December 13, 1984, letter to Moncrief, was based on the fact average production during the first year had been 1,156 MCFD, rather than the 2,725 MCFD originally estimated by Moncrief in its application for approval of the Second Revision, which was based on initial production. Thus, BLM revised Moncrief's estimate of a payout in the second year, concluding payout would be "after five years of production." This BLM economic forecast is set forth in Enclosure 4 attached to BLM's answer. That forecast indicates well No. 31-3 is a paying well. However, appellants have challenged the assumptions that formed the basis for BLM's original determination, including the projection of production. BLM had projected that production of 1,250 MCFD in year 1 would decline gradually to 730 MCFD in year 6.

Appellants first challenge the calculation of the amount of gas-in-place. In its application for approval of the Second Revision, Moncrief estimated a reserve of 31.5 BCF using a volumetric formula which incorporated a psi of 10,082 and drainage acreage of 1,280. However, Moncrief revised that estimate in the PR submitted on appeal, again using the volumetric formula but incorporating a psi of 7,017 and drainage acreage of 1,000. The resulting estimate was 19.914 BCF. The acreage figure of 1,000 was apparently based on BLM's conclusion in its December 13, 1984 letter to Moncrief that only that figure could be justified due to the fact actual production during the first year (1,156 MCFD) was lower than originally estimated by Moncrief (2,725 MCFD) and due to the location of the well. In the Engineering Report attached to appellants' statement of reasons, appellants also computed gas-in-place using the volumetric formula which incorporated a psi of 6,432 and drainage acreage of 1,000. The resulting figure was 18.576 BCF. That figure compares favorably with Moncrief's revised estimate of 19.914 BCF. However, appellants argue that using pressure data to determine gas-in-place is "considered more accurate than volumetric calculations" (Engineering Report at 3). No support is offered for this statement.

Appellants also measured the decline in wellhead shut-in pressure from an initial figure of 8,050 psi to a stabilized shut-in pressure of 6,600 psi in October 1984 (decline of 1,450) and divided this figure by the number of MMCF produced (276 MMCF) over the interval to derive a rate of reservoir pressure decline (5 psi) per MMCF of gas produced. Dividing the initial shut-in pressure of 8,050 by the rate of decline in pressure per MMCF of gas produced, appellants project recoverable gas of 1,610 MMCF (Engineering Report at 3). Appellants' determination of recoverable gas is dependent on their calculation there will be a stable 5-psi drop per 1,000 MCF produced. In its PR, Moncrief provides data on wellhead shut-in pressure which supports its contention that, despite an initial drop in pressure, since January 1984 "there has been no decline in reservoir pressure," even with production of 350 MMCF "since this time" (PR at 1). ^{9/} Appellants have not rebutted this data.

Appellants next challenge whether production would be sustained at any stable rate. Appellants point to production between April and June 1984 and between November 1984 and February 1985 as proof that, given extended production, both the flowrate and corresponding flowing-tubing pressure will decrease. Based on this, the Arnjac Report extrapolated a continuing decline. See Figure No. 3, Arnjac Report. Indeed, the Engineering Report, at page 3, states "there is still not evidence that the flowrate and pressure have stabilized" at 800 MCFD and 1,100 psi: "If the well were allowed to remain on production for a period in excess of 90 days, it is probable that the production rate would continue to decline." In rebuttal, Moncrief submits the PR, which states, at page 1, that, despite an initial "rapid drawdown" in flowrate and pressure, production leveled off at 800 MCFD in March 1984 "after being on production 144 days of the previous 153 days" and in April 1985, over 1 year later, "the well was still producing at 800 MCFD." Exhibit I attached to the PR indicates, except for intermittent periods when the well was shut in, there was a significant amount of production between March 1984 and April 1985. Moreover, Exhibit I indicates between November 1984 and June 1985, daily production was almost consistently above 800 MCF despite almost continuous production. This evidence establishes daily production will stabilize at an average rate above 800 MCF and will not necessarily decline as appellants project.

We note the Arnjac Report, which concluded well No. 31-3 would not be a paying well based on an income projection (Table I), based its estimate of the present net value of total "projected future production" (\$ 2.667 million) on the extrapolated decline in production, *i.e.*, "using the projected rates from this curve" depicted in figure No. 3. This projected income would not recover all the costs of drilling and completing the well. However, the evidence discussed *supra* belies the premise of the income projection, *i.e.*, the continued decline in production.

^{9/} Exhibit II attached to the PR indicates shut-in pressure actually fluctuated, going from 4,850 psi in January 1984 to 6,000 psi in September 1984, down to 3,800 and up to 6,600 psi in October 1984 and then down to 5,327 psi in June 1985. In any case, the exhibit does not show a stable decline.

We turn then to the various paying well determinations made by appellants in the Engineering Report and by Moncrief and BLM. The method used is that "routinely accepted" by BLM (Engineering Report at 5). Appellants do not dispute this method. There also appears to be no dispute that operating costs would be \$ 3,000 per month and that net operating income must be discounted by a factor of 12 percent. We note, however, Moncrief's revised calculations in its PR do not take into account a 6-percent profit. BLM, however, has taken this into account in its revised calculations submitted on appeal (Enclosure 5, Answer). Moncrief also has based its calculations on projected production starting at 1,425 MCFD in the last 4 months of year 2 declining gradually to 1,025 MCFD in year 8 (Exhibit VIII, PR). BLM's projected production closely parallels that of appellants starting at 680 MCFD in year 1 and declining to 500 MCFD in year 8. ^{10/} However, BLM has used a gas price of \$ 8.09 per MCF as opposed to appellants' price of \$ 5.50 per MCF. Appellants explain the latter is the average gas price under a gas purchasing contract which was renegotiated effective October 1, 1984. BLM argues in favor of its gas price, because it was the "original gas price" (Answer at 3). BLM contends that paying well determinations must be made "with data that is current as of the completion of the subject well." *Id.* We disagree. The effective date of a revised participating area will generally be the first day of the month "in which is obtained the knowledge or information on which such revision is predicated," in accordance with section 11 of the unit agreement. This date, when enough information has been generated to justify a revision, may be well after the date of completion of the well which supports the revision. Thus, in a February 5, 1981, letter to Monsanto, submitted by Moncrief as part of Exhibit 6, the Deputy Conservation Manager, North Central Region, Survey, stated that paying well determinations for flank wells "on the Madden structure" should not be made until some time after completion of a well:

Several wells on the flanks of the Madden structure that initially potentialed for what appeared to be commercial or paying unit quantities of gas have declined rapidly or have even been depleted over a short period of time. This is in striking contrast to the unquestioned commercial productivity of the wells located on the crest of the Madden structure. Therefore, we believe that six to twelve months production on a continuous monthly basis should be recorded before a determination is made on the unit paying status of flank wells.

In the present case, Moncrief did not submit an application for approval of the Second Revision, with supporting documentation, until June 1983, considerably after the December 1982 completion of well No. 31-3. BLM then did not act on that application until January 1985. During the time period between completion of the well and a BLM determination that the well is capable of producing unitized substances in paying quantities, circumstances may change. A paying well may turn into a nonpaying well due to any number of circumstances, including a drop in the gas price or a precipitous decline in

^{10/} Appellants' projected production starts at 630 MCFD in year 1 and declines to 483 MCFD in year 8 (Table II, Engineering Report).

production. According to BLM's contention, BLM would essentially have to ignore any change in circumstances since completion of a well and conclude a well will be deemed to be a paying well if it was a paying well under those circumstances extant at the time of completion. This is at odds with the provision for designation of participating areas based on the completion only of paying wells.

A well which, after completion, becomes nonpaying should not be used to justify a revision to a participating area. Indeed, section 11 of the unit agreement provides that participating areas shall include "all land then regarded as reasonably proved to be productive in paying quantities." (Emphasis added.) Thus, the question to be addressed by the Board is whether well No. 31-3 was a paying well at the time it was originally determined to be so by BLM, given those circumstances then outstanding, and whether it continues to be a paying well, given any changed circumstances. We, therefore, cannot sustain BLM's across-the-board use of a gas price of \$ 8.09 per MCF, where that price has declined since completion of the well. Cf. In re Pacific Coast Molybdenum Co., 75 IBLA 16, 90 I.D. 352 (1983).

If we were to use the renegotiated gas price suggested by appellants, i.e., \$ 5.50 per MCF, it is unclear when the well would pay out given BLM's analysis contained in Enclosure 5 attached to its answer. BLM's analysis, however, does not incorporate actual production figures for the first year and 8 months of the second year given in Moncrief's revised analysis (Exh. VIII, PR). In addition, BLM has not evaluated Moncrief's higher projected production based on the April 1985 acidization of its well, the May 1985 7-day deliverability test and the increased production experienced between April and June 1985. We have thus taken Moncrief's revised analysis and incorporated a gas price of \$ 5.50 per MCF 11/ and a 6-percent profit. Moreover, the projected production given in Moncrief's revised analysis has been proven to be justified. Moncrief postulated production of 1,425 MCFD starting in the last 4 months of year 2 and declining gradually to 1,025 MCFD in year 8. Production figures for 23 days in May 1985 indicate an average production of 1,419 MCFD (Exh. VII, PR). In addition, the production figures supplied by BLM for 59 days of production between October 2, 1985, and January 17, 1986, indicate an average production of 1,746 MCFD. Appellants have not rebutted this evidence. Moreover, even adjusting Moncrief's revised analysis by incorporating a gas price of \$ 5.50 per MCF and a 6-percent profit, the well reaches a payout within 6 years. 12/ We conclude the preponderance of the evidence supports BLM's original determination that well No. 31-3 is capable of producing gas in paying quantities, i.e., it will produce in quantities "sufficient to repay the costs of drilling, completing, and producing operations, with a reasonable profit." See Amoco Production Co., 41 IBLA 348 (1979).

11/ Moncrief in its PR uses a gas price of \$ 5.80 per MCF, but has not substantiated this price.

12/ Moncrief reports the costs of drilling and completing the well are actually \$ 6.3 million, not the \$ 7 million given in its original application.

In reviewing BLM's determination that well No. 31-3 is a paying well, the Board did not find it necessary to review the BLM determination that the Quincy No. 1-34 well was a nonpaying well. 13/

We must deal with one final matter. On June 28, 1985, the Board issued an order granting a request by appellants to stay the effect of the January 1985 BLM decision. In view of our affirmance of the January 1985 BLM decision approving the Second Revision, the stay is hereby removed.

Accordingly, 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.

Gail M. Frazier
Administrative Judge

We concur:

Wm. Philip Horton
Chief Administrative Judge

C. Randall Grant, Jr.
Administrative Judge

13/ The decision is not before us. If Monsanto objected to the December 1984 decision regarding the Quincy No. 1-34 well, it had every opportunity to file an appeal. That it did not means the decision is final.

