

ALASKA SUPREME COURT

ConocoPhillips Alaska, Inc. v. State, Department of Natural Resources

ConocoPhillips Alaska, Inc. v. State, Dep't of Nat. Res., 109 P.3d 914 (Alaska 2005) · Decided January 28, 2005

SUMMARY

The Alaska Supreme Court affirmed the Department of Natural Resources' denial of a discovery-royalty application for oil produced from the Midnight Sun Reservoir. The court held that the reservoir was part of the previously known Kuparuk C geologic structure and that the commissioner's decision was supported by substantial evidence and consistent with the lease and applicable regulations. The court also concluded that excluding the corporations' attorneys from participating in the administrative hearing was error, but harmless because the corporations failed to establish substantial prejudice.

CASE DETAILS

COURT	Alaska Supreme Court
WRITING FOR THE COURT	Bryner, Chief Justice; Bryner; Carpeneti; Eastaugh; Fabe; Matthews
JURISDICTION	Alaska
DECIDED	January 28, 2005
DISPOSITION	affirmed
PROCEDURAL POSTURE	The corporations appealed the Department of Natural Resources commissioner's denial of their application for a reduced discovery royalty rate. The superior court declined to conduct a trial de novo and affirmed the commissioner under deferential administrative-review standards. The corporations appealed to the Alaska Supreme Court.
STANDARD OF REVIEW	When reviewing an agency decision after the superior court acts as an intermediate appellate court, the Alaska Supreme Court directly reviews the merits. It applies substantial-evidence review to factual questions, the reasonable-basis test to legal questions involving agency expertise, the substitution-of-judgment test to legal questions not involving agency expertise, and a reasonable-and-not-arbitrary test to administrative regulations. Procedural due process issues are reviewed de novo.
PRECEDENTIAL VALUE	published; precedential Alaska Supreme Court opinion

PARTIES

ConocoPhillips Alaska, Inc., Exxon Mobil Corporation, ExxonMobil Alaska Production Inc., Forest Oil Corporation v. State of Alaska, Department of Natural Resources

TOPICS

judicial review of agency action

administrative law

oil and gas

mineral rights

procedural due process

PRACTICE AREAS

administrative law

oil and gas

mineral rights

contracts

constitutional law

QUESTIONS PRESENTED

1. Whether the commissioner's interpretation and application of the lease and former 11 AAC 505.741(b) correctly treated the Midnight Sun Reservoir as part of the known Kuparuk C geologic structure rather than as a new geologic structure qualifying for a discovery royalty.
2. What standard of review governed the commissioner's decision concerning the meaning and application of geologic structure.
3. Whether the commissioner's factual findings were supported by substantial evidence.
4. Whether the administrative hearing violated procedural due process by barring counsel from participating, prohibiting cross-examination, and denying post-hearing argument, and whether any error required a de novo hearing or reversal.
5. Whether the commissioner's decision constituted an unconstitutional impairment or modification of the corporations' lease rights.

HOLDINGS

1. The lease and former 11 AAC 505.741(b) permitted the Department of Natural Resources to apply a flexible, expertise-based standard for determining whether an oil discovery occurred in a new geologic structure. The commissioner properly considered physical separation, the existence of a structurally distinct entrapping mechanism, and commercial exploration risk, and correctly concluded that Midnight Sun was part of the known Kuparuk C geologic structure.
2. The commissioner's decision was subject to deferential administrative review rather than de novo judicial review because the lease made discovery royalty entitlement contingent on an agency determination involving agency expertise and discretion.
3. Substantial evidence supported the commissioner's finding that Midnight Sun was part of the Kuparuk C geologic structure, so the court was required to affirm that finding.
4. The commissioner improperly barred the corporations' counsel from participating in the administrative hearing, but the error was harmless because the corporations failed to show substantial prejudice.
5. The commissioner's decision did not constitute an unconstitutional legislative impairment of the lease because the lease itself authorized the Department to determine discovery royalty awards subject to the

governing regulations.

KEY QUOTATIONS

“We affirm the commissioner’s decision, holding that it is supported by substantial evidence and correctly construes the terms of the lease according to the law in effect when the lease was signed.” (109 P.3d at 914)

“We also hold that the commissioner improperly barred the corporations’ counsel from participating in the administrative hearing, but we conclude that this error was harmless because the corporations have failed to show substantial prejudice.” (109 P.3d at 914)

“The commissioner looked at three basic factors: whether the Midnight Sun Reservoir was a physically separate accumulation of oil; whether it had a structurally distinct entrapping mechanism; and whether its discovery entailed commercial risk.” (109 P.3d at 922)

“On this record, we conclude that the procedural error was harmless.” (109 P.3d at 924)

FACTUAL BACKGROUND

The corporations held a 1965 Alaska DL-1 oil-and-gas lease containing a discovery royalty clause for the first commercial discovery of oil or gas in a geologic structure. In 1997, the Sambuca No. 1 well discovered oil in the Midnight Sun Reservoir, a geographically discrete Kuparuk C sandstone accumulation north of the Prudhoe Bay bounding fault. The Department of Natural Resources concluded that Midnight Sun shared the entrapping mechanism and structural characteristics of the previously known Kuparuk C geologic structure and denied the requested reduced royalty. The commissioner also found that the well was drilled from an existing pad in a developed area, with Ivishak as its primary target, and therefore did not involve the type of commercial risk the discovery royalty program was intended to reward.

PROCEDURAL HISTORY

The Department of Natural Resources director denied certification of a discovery royalty for the Midnight Sun Reservoir. The corporations appealed to the commissioner, who affirmed after an administrative hearing in which counsel was barred from participating. The superior court treated the matter as an ordinary administrative appeal, declined a de novo hearing, and affirmed. The Alaska Supreme Court directly reviewed the agency decision and affirmed.

DISPOSITION

affirmed

CASES CITED

- *Arkla Exploration Co. v. Texas Oil & Gas Corp.*, 734 F.2d 347 (8th Cir. 1984)
- *Exxon Corp. v. State*, 40 P.3d 786 (Alaska 2001)
- *Alyeska Pipeline Serv. Co. v. DeShong*, 77 P.3d 1227 (Alaska 2003)
- *Jager v. State*, 537 P.2d 1100 (Alaska 1975)

- Tesoro Alaska Petroleum Co. v. Kenai Pipe Line Co., 746 P.2d 896 (Alaska 1987)
- Pan Am. Petroleum Corp. v. Shell Oil Co., 455 P.2d 12 (Alaska 1969)
- Commercial Fisheries Entry Comm'n v. Baxter, 806 P.2d 1373 (Alaska 1991)
- Mathews v. Eldridge, 424 U.S. 319 (1976)

OPINION

BRYNER, J.

OPINION

BRYNER, Chief Justice.

I. INTRODUCTION

ConocoPhillips Alaska, Inc., Exxon Mobil Corporation, ExxonMobil Alaska Production Inc., and Forest Oil Corporation (the corporations) applied to reduce the rate of lease royalties they owed the State of Alaska under a state lease initially executed in 1965. They claimed that they were entitled to a “discovery royalty” rate because they were the first producers to discover oil in a new geologic structure, the Midnight Sun Reservoir. The Commissioner of Natural Resources denied the application, finding that the Midnight Sun Reservoir belonged to a known geologic structure, the Kuparuk C sandstone formation. We affirm the commissioner’s decision, holding that it is supported by substantial evidence and correctly construes the terms of the lease according to the law in effect when the lease was signed. We also hold that the commissioner improperly barred the corporations’ counsel from participating in the administrative hearing, but we conclude that this error was harmless because the corporations have failed to show substantial prejudice.

II. FACTS AND PROCEEDINGS

A. Background

1. The discovery royalty program

In 1959 the legislature enacted the Alaska Land Act.¹ A provision of the Act formerly codified as AS 38.05.180(a) established a reduced royalty rate for state leaseholders making the first commercial discovery of oil in a geologic structure:

the holder of a lease who shall drill and make the first discovery of oil or gas in commercial quantities in any geologic structure shall pay a royalty on all production under the lease of 5 per centum for ten years following the date of such discovery and thereafter the royalty rate shall be not less than 12½ per centum.[2]

This discovery royalty encouraged the exploration and rapid development of Alaska’s oil resources. Between 1959 and 1964, the Department of Natural Resources adopted regulations implementing the discovery royalty statute.³ Among these regulations was the DL-1 competitive oil and gas lease form.⁴ The DL-1 lease included a discovery royalty *916clause nearly identical to the provisions of subsection.180(a), and also provided that its terms would be interpreted according to regulations in force at the time the lease was entered.⁵

The regulations established a process allowing lessees to apply for discovery royalties and set the guidelines for the department to determine whether an award was warranted.⁶ The new regulations required applicants to provide the department with data “to determine the geologic structure from which the oil and/or gas is being produced”⁷ — a requirement echoing subsection.180(a)’s language authorizing the department to award discovery royalties only for “the first discovery of oil... in a geologic structure....”⁸

As then defined in 11 AAC 505.741(b), “geologic structure” meant “any structural and/or stratigraphic entrapping mechanism containing one or more intervals, zones, strata, formations, or fault blocks which has the necessary physical characteristics to accumulate and prevent the escape of oil and/or gas.” The regulation further stated: “It is intended that the meaning shall be similar to that as used by the United States Geological Survey in the administration of the Federal Mineral Leasing Act of February 25, 1920.”⁹

The Federal Mineral Leasing Act¹⁰ uses the “geologic structure” concept to differentiate types of oil and gas leases before leasing occurs. If the Secretary of the Interior determines that government lands are not within a “known geologic structure of a producing oil or gas field”¹¹ they may be leased without competitive bidding.¹² As of 1959, the United States Geological Survey (USGS) defined the Act’s term “known geologic structure” as “the trap, whether structural or stratigraphic, in which an accumulation of oil or gas has taken place. The limits of such structure include all acreage that is presumptively productive.”¹³

In 1967 and 1969 the Alaska legislature curtailed and then repealed the Alaska Land Act’s discovery royalty provisions.¹⁴ The department’s regulations implementing the discovery royalty program were repealed in 1979.

2. History of the lease before the discovery well

The corporations’ predecessors-in-interest purchased ADL 28299, a DL-1 form lease, in 1965. Like others of its kind, the lease includes a discovery royalty clause that is nearly identical to former AS 38.05.180(a) (1965).¹⁵ Moreover, according to paragraph 43 of the lease, “As used in this lease words which are defined in the regulations have the meaning assigned by such definition except where the context clearly requires a different meaning.” And paragraph 42 provides that “in this lease ‘regulations’ mean the applicable and valid oil and gas leasing regulations of the Commissioner of the Department of Natural Resources in effect on the effective date of this lease unless otherwise specified.”

*917The corporations’ lease contains approximately four square miles, divided into four sections. The North Prudhoe Bay bounding fault transects the leased land. Three of the lease sections, those south of the fault, overlay the Prudhoe Bay reservoir. The northeast section, section 30, lies north of the fault and outside the Prudhoe Bay reservoir. In 1977 the sections south of the fault were committed to the Prudhoe Bay Unit Agreement.¹⁶

While oil development was concentrated south of the fault in the Prudhoe Bay reservoir — the largest accumulation of oil in North America — discoveries at Niakuk and Pt. McIntyre in 1985

and 1988 proved that the Kuparuk C sandstone north of the fault was also a source of commercial quantities of oil. These discoveries were not within section 30 of the lease. The Kuparuk sands do not form a continuous layer north of the fault, but rather a series of depositions in noncontinuous geographic depressions.

In 1997 the corporations drilled the Sam-buca No. 1 well, which aimed at land north of the fault in section 30. The target of Sambuca 1 was Ivishak sandstone, but it tapped quantities of oil in an intervening layer, a geographically discrete bed of oil-bearing Kuparuk C, the Midnight Sun Reservoir.

B. Proceedings

Based on this find, the corporations began the application process for a discovery royalty, applying formally for certification of the Midnight Sun Reservoir discovery royalty in 1999. The Department of Natural Resources Director denied the application, finding that the Reservoir was not a newly discovered geologic structure as defined by former 11 AAC 505.741(b) (1965).

The corporations appealed the director's decision to the commissioner under 11 AAC 02.030.17 In accord with 11 AAC 02.030(b), they submitted additional materials in support of their appeal, including: a fifty-six-page legal brief, a fifteen-page expert report, a list of discovery royalty statistics, an affidavit, and research supporting an old discovery royalty application.

Under 11 AAC 02.050(b) (2004),¹⁸ the commissioner set the following hearing procedure: the Division of Oil and Gas was allowed two and one-half hours to explain the director's decision denying the application; then the corporations' technical personnel were allowed thirty minutes to question the division's technical personnel; followed by a two-and-one-half-hour presentation by the corporations and thirty minutes of questioning by the division's technical personnel. The commissioner described his goal as "to allow [the corporations] to present all relevant facts about North Slope geology that could assist me in determining whether the Sambuca No. 1 well was the first discovery of oil or gas in commercial quantities in a geologic structure."

The corporations objected to the commissioner's choice of procedures by letter. They asked that the commissioner reconsider his requirements that "no attorney be allowed to *918make a presentation or to question any of the persons presenting information during the hearing" and "that questions not be posed ½ the form of cross-examination." The commissioner declined to alter the hearing's procedural rules, stating, "[t]he facts will be most helpful to me if presented by the geologists, engineers, and other persons with technical expertise bearing on these facts, rather than by attorneys."

Following the hearing, the commissioner issued a written decision affirming the director's ruling. Initially, the commissioner's decision found that whether the Midnight Sun Reservoir was a previously undiscovered geologic structure depended on former 11 AAC 505.741(b)'s definition. The commissioner discussed the USGS's 1959 definition of the federal Act's reference to a "known geologic structure" — which focused on the presence of a "trap... in which an accumulation of oil or gas has taken place"¹⁹ — but found it unhelpful. Noting that

[e]xperts could validly differ on the boundaries of a [known geologic structure], depending on their view of geology and terminology.... [T]he regulatory reference to the old federal laws is of limited assistance in finding the precise definition of geologic structure that was intended by the Alaska statute and regulations.

The commissioner thus opted for a more recent approach emerging from the department's own royalty decisions. Relying on this precedent, the commissioner found that the Midnight Sun Reservoir was not a newly discovered geologic structure, in part because it shared an entrapping mechanism with other discoveries of commercial oil in the Kuparuk C formation.

The commissioner explained that the Midnight Sun Reservoir exhibited the same entrapping mechanism as the previously discovered Kuparuk formation, in part, because they shared the same stratigraphic elements: "[They] are all overlain by Gamma Ray Shale[,],... [which] acts as a seal and is part of the stratigraphic trap that makes the Ku-paruk sands a reservoir." Also, the Midnight Sun shared structural characteristics with the previously discovered Kuparuk sands, since "the controlling faults fit a pattern, and all of the Kuparuk accumulations are part of an apparent trend north of the Prudhoe Bay bounding fault." The commissioner noted that this finding was consistent with much of the evidence presented by the corporations, and while the corporations' expert arrived at a different conclusion, "[his] argument... is one of several working hypotheses regarding the timing of depositional topography, erosional truncation, and faulting in the area, and is not determinative of whether the two are on different geologic structures."

The commissioner went on to reject the corporations' contention that the Midnight Sun Reservoir automatically qualified for a discovery royalty because it was "separate." He reasoned that although the Midnight Sun is a separate reservoir, "it is not trapped by a geologically different entrapping mechanism." In the commissioner's view, the corporations' narrow approach would prove unworkable:

The broader interpretation of the term "geologic structure" that is adopted here is the most sensible because it avoids the unreasonable outcomes that could result from Lessees' interpretation, outcomes that were not intended by the Legislature. That is, it could be that innumerable "pockets," or accumulations, are isolated from other reservoirs on the North Slope; each cannot be considered a separate geologic structure, or scores of small pockets of oil would qualify under the program. That was not the program's intent, and interpreting the term that way now would simply lead to incongruities, both from the regulatory and fiscal standpoint of the state.

Applying the broader approach he gleaned from the department's prior decisions, the commissioner described the "scale of this [geologic] structure as the Kuparuk C sands north of the Prudhoe Bay bounding fault... [including] Kuparuk C sands at West Beach, Niakuk, Pt. McIntyre and Gwydyr Bay." While recognizing that this broader approach might lead the department to reach different results now than it reached in the past, the commissioner justified the differing outcomes by emphasizing that "[o]ur increased knowledge and ability to incorporate new information has led us to a more sensible view of the geology and of the role that the discovery

royalty program should play in North Slope exploration.” The commissioner pointed to advances in data collection (e.g., 3-D seismic technology), to the establishment of industry infrastructure that makes drilling wells easier, and to the general development of the North Slope as a mature oil province in the years since the program was established.

The commissioner also found that drilling the Sambuca 1 did not present the same commercial risk as earlier discoveries in the Kuparuk. Pointing to “the risks that the companies undertook and how that risk might further the policies behind the discovery royalty program,” the commissioner explained that, “since the program was created when Alaska was young as an incentive to encourage companies to explore for and develop our resources, this decision must consider whether those inducements would be promoted by granting the application.” The commissioner noted that the Sambuca 1 well had been drilled “from an existing pad in a well-developed and densely-drilled area of the North Slope on a lease that had been included in the Prudhoe Bay Unit for 20 years.” While acknowledging that the Kupa-ruk sands were not the well’s primary target, he stressed that “seismic information showed the Lessees that something else was present — they tailored their directional drilling plan to evaluate the anomaly on the way to the well’s primary Ivishak objective.” Because Ivishak “was relatively low risk,” the commissioner reasoned that the corporations’ decision to drill had not actually been motivated by the possibility of obtaining a discovery royalty. Given these circumstances, the commissioner concluded:

[I]t would be neither wise nor fair, nor in keeping with the Department’s policies, to reward drilling a well for which the potentially lower royalty rate was apparently not considered, and which would have been drilled regardless of this accumulation. The discovery royalty was intended to reward companies for taking risks, not for a “routine” evaluation of additional formations en route to a formation known to be productive. Because the discovery royalty provided no incentive to the drilling of the Sambuca No. 1 well, the Lessees should not be rewarded with an incentive payment.

The corporations appealed the commissioner’s decision to the superior court and requested a trial de novo, arguing that the department’s appellate procedures were unconstitutional and inadequate for resolving a contract dispute in which the department was an interested party. Superior Court Judge Donald Hopwood declined to conduct a de novo hearing, finding no showing that the department had been biased or that evidence had been improperly excluded. The superior court thus treated the case as an ordinary administrative appeal, reviewing the commissioner’s decision deferentially.

The superior court later issued a decision affirming the commissioner’s ruling. The corporations appeal.

III. DISCUSSION

A. Standard of Review

When the superior court acts as an intermediate court of appeal in an administrative matter, we directly review the merits of the agency’s decision.²⁰ We apply a four-part standard to review the

merits of the agency's ruling, using (1) the "substantial evidence test" for questions of fact, (2) the "reasonable basis test" for questions of law involving agency expertise, (3) the "substitution of judgment test" for questions of law involving no agency expertise, and (4) the "reasonable and not arbitrary test" for review of administrative regulations.²¹

Here, the corporations devote a considerable portion of their arguments to protesting the superior court's reliance on a deferential standard of review. They argue that the commissioner's decision should be reviewed *de novo* because their royalty rights arise under their lease, not under the department's regulations. Since the terms of the lease became fixed when it was originally signed, the corporations insist, the lease's original meaning must now be determined and enforced under conventional principles of contract interpretation, which treat the issue as a pure question of law.

This argument seems unobjectionable as far as it goes, but it stops short of completely covering the matter at issue. The corporations are certainly correct in describing the lease as a contract, in insisting that its terms must be given their original meaning, and in observing that contractual interpretation generally presents a question of law. Yet these observations beg the key question of what measure the original lease adopts for determining the existence of first discovery rights.

As already mentioned, the lease unambiguously requires the lessees' royalty rights to be determined through an administrative process in which the department must apply a specified regulatory standard — one that gives the term "geologic structure" a meaning "similar to that as used by the United States Geological Survey in the administration of the Federal Mineral Leasing Act of February 25, 1920."²² The crucial question, then, is whether this standard describes a fixed and immutable test or a more flexible process — one grounded in the department's exercise of discretion and expertise and having the capacity to evolve as contemporary scientific knowledge advances. If the test was fixed and certain when the lease was signed, then Midnight Sun's status as a new discovery might well present a pure question of law to be decided *de novo*; conversely, if applying the test required agency expertise and discretion, then judicial review of the commissioner's ruling would need to be appropriately deferential.

The corporations separately argue that they deserved a *de novo* hearing because the department had a proprietary interest that prevented it from acting without bias, because the commissioner's hearing was procedurally flawed, and because his decision conflicted with the department's prior rulings. These points involve issues of procedural due process raising questions of law that we review *de novo*.

Last, in some of their arguments, the corporations ask us to review the commissioner's factual findings and legal conclusions. Where the question involves more than the choice of law, we will review these aspects of the commissioner's decision under the reasonable basis test.²³ This accords with both our usual deference to agency decisions and with the terms of the lease that make the award of a discovery royalty contingent upon an agency decision.²⁴

B. The Commissioner's Decision

We begin our review of the commissioner's decision that the Midnight Sun Reservoir was not a

newly discovered geologic structure by examining the terms of the lease and applicable regulations. Paragraph 12 of the lease states that the lessee will be entitled to a reduction in royalties owed the state upon making the “first discovery of oil or gas in commercial quantities in any geologic structure.” Paragraphs 42 and 43 make it clear that the terms of the lease should be defined according to applicable regulations “in effect on the effective date of this lease.”

The corporations argue that the commissioner’s decision is contrary to Alaska statutes, the lease provisions, and applicable regulations. According to the corporations, the decision failed to apply the federal “known-geologic-structure” test, and “instead proceeded in an ad hoc manner to create and apply several new tests for ‘awarding’ discovery royalties that were more in keeping with his views of what current agency policy *921should be.”²⁵ But the Alaska regulations in place when the lease was signed made it clear that the department was not confined to a mechanical application of the known-geologic-structure test. The then-current version of 11 AAC 505.741(b) set out a detailed definition of “geologic structure” and stated that this definition was intended to be “similar to ” the one used “in the administration of the Federal Mineral Leasing Act.”²⁶ The regulation qualifies its reliance on the federal standard. The Alaska definition of “geologic structure” need only be “similar to” the federal definition. And the regulation’s express directive that Alaska’s use of “geologic structure” was intended to have a similar meaning to the one used in “the administration of” the federal standard — rather than to the federal standard itself — strongly suggests that the department viewed the federal standard as an ongoing administrative process that was broad enough for agency discretion and flexible enough to evolve over time.

Further evidence supporting this flexible view of the Alaska regulation defining “geologic structure” can be gleaned by comparing its purpose to the one served by the Federal Mining and Land Act’s “known-geologic-structure” requirement. Alaska’s system of discovery royalties was designed to allow royalty reductions to be granted case by case in future administrative proceedings commenced after commercial quantities of oil and gas were actually found on lands already under state lease.²⁷ As exemplified by this case, these proceedings might occur decades after a lease was signed and would almost certainly require evaluation of detailed information that would not have been known, or even knowable, at the- time of signing. In the context of this forward-looking regulatory process, it would seem unrealistic for the parties signing the lease to expect that “geologic structure” would be defined in a static way that could -not adapt to changes in best available -techniques and technology. By contrast, as used in the federal act, the “known geologic structure” test is designed for an immediate determination — -one that classifies prospective lease lands before they are put up for lease. Given the federal act’s narrower, present-tense focus, it would seem reasonable to expect that the federal system would use a more concrete test: a test that would be practical to apply based on already available facts and would not need to adapt to future events.

But as the state correctly points out, even given the federal system’s diminished need for flexibility, the federal test has never actually been “set in stone.” Under the federal test, areas

within a known geologic structure are subject to expansion and consolidation with advances in geologic knowledge.²⁸ In fact, even the publication that the corporations rely upon acknowledges that known-geologic-structure “boundaries are not to be taken as absolutely and accurately showing the extent in each instance of the geological structure producing oil or gas, but they may later be extended or reduced to accord with the facts.”²⁹ Moreover, decisions of the Department of the Interior Board of Land Appeals construing the federal definition of a known geologic structure recognize that a geologic structure may be composed of multiple accumulations that are physically separate yet share structural characteristics, such as entrapping mechanisms: “Delineation of a *922[known geologic structure] recognizes the existence of a continuous entrapping structure, on some part of which there is production, or of numerous related, but nevertheless independent, stratigraphic or structural traps.”³⁰ And pre-drilling risk may also be a consideration under the federal known-geologic-structure analysis.³¹

Despite the corporations’ contrary assertions, then, the commissioner’s method of determining geologic structure in the present case was similar to the federal test. The commissioner looked at three basic factors: whether the Midnight Sun Reservoir was a physically separate accumulation of oil; whether it had a structurally distinct entrapping mechanism; and whether its discovery entailed commercial risk. The commissioner’s finding that the Midnight Sun Reservoir belonged to the already known Kuparuk C geologic structure thus is consistent with the federally defined standard. The corporations nevertheless dispute the commissioner’s finding that the Kuparuk C sands comprised a single geologic structure; they claim that this finding conflicts with the plain language of former 11 AAC 505.741(b) by indiscriminately combining oil traps and non-trapping rocks. But former 11 AAC 505.741(b) specifically defined a geologic structure to include “any structural and/or stratigraphic entrapping mechanism containing one or more intervals, zones, strata, formations, or fault blocks.”³² Because this definition allows a “trapping mechanism” (such as the mechanism common to the Kuparuk C sands) to contain multiple accumulations of oil, it does not automatically require the department to award a discovery royalty to every newly discovered trap in the same entrapping mechanism.

It follows that the commissioner’s decision does not conflict as a matter of law with the definition of a geologic structure set out in former 11 AAC 505.741(b). The commissioner found that the Midnight Sun Reservoir did not have a geologically different entrapping mechanism from other Kuparuk C oil accumulations; a geologic structure is defined by the regulation primarily as an entrapping mechanism. The fact that such an entrapping mechanism may contain multiple geologic features and formations does not make it any less a single structure. The plain text of the regulation does not demand that each one of the structure’s “intervals, zones, strata, formations, or fault blocks” contain oil. The commissioner’s decision thus falls within the limits defined in former 11 AAC 505.741(b).

The corporations also contend that the commissioner’s decision cannot be reconciled with the department’s own decisions in other discovery-royalty cases involving the Kuparuk C sands —

specifically the Niakuk and Pt. McIntyre decisions. But the commissioner fully considered department precedent in his decision. He distinguished the Niakuk award from the present case, noting that the department was not bound to recognize the Midnight Sun as a new discovery simply because its location had been omitted from the area that the Niakuk decision described as the “Niakuk structure.” This finding appropriately recognizes that, under Alaska’s regulations and federal law alike, the boundaries of a given geologic structure may expand or contract with advances in knowledge and technique.

The commissioner distinguished the Pt. McIntyre decision on slightly different grounds, observing that the Pt. McIntyre well involved substantial commercial risk. As we have already indicated, commercial risk is a permissible factor to consider in determining whether a particular discovery lies within an already known geologic structure.³³

Accordingly, we conclude that the commissioner did not base his decision on a flawed legal standard. We turn next to the corporations’ additional criticisms of the commissioner’s decision.

The corporations argue that the commissioner’s failure to designate the Midnight Sun Reservoir as a separate geologic structure conflicts with the department’s actual treatment of the area before and after the discovery well was drilled. Specifically, the corporations contend, no information existed before drilling that would have allowed Midnight Sun to be included in any recognized participating area; yet after the discovery, the department approved Midnight Sun as its own participating area. But this argument conflates distinct rules governing discovery and participation. Participating areas are defined by regulation to include only lands that are “reasonably estimated... to be capable of producing... hydrocarbons in paying quantities.”³⁴ As the state explains, unit and participation areas are created by multiple developers with access to the same reservoir; their purpose “is to maximize production from individual reservoirs without waste.”³⁵ Because the criteria for participating areas differ in purpose and definition from those for awarding discovery royalty rights, a location’s exclusion from or approval as a participating area does not determine its status as a separate geologic structure.

The state additionally points out that prior decisions by the department and federal decisions under the known-geologic-structure standard have denied discovery royalty awards to isolated reservoirs that are nonetheless part of the same geologic structure. The record supports the state’s point, establishing that the department’s present application of the known-geologic-structure standard is consistent with its historical interpretation of that standard. Here, the commissioner similarly found that Midnight Sun was a separate accumulation included within the larger Kuparuk C structure. He noted that all the Kuparuk C sands share the same stratigraphic elements and structural characteristics. Because these determinations incorporate factual findings, we must affirm the commissioner’s decision as long as it is supported by substantial evidence.³⁶ For as we recognized in *Exxon Corp. v. State*, “when the finder of fact must determine the meaning of a contract based on extrinsic evidence that raises conflicting inferences, ‘our inquiry is limited to

determining whether the trier of fact's choice of inferences is supported by substantial evidence.'³⁷ On reviewing the record here, we find that substantial evidence supports the commissioner's decision.

C. Due Process

The companies separately argue that due process required the superior court to conduct a de novo hearing. Under 11 AAC 02.050(a) (2004), "[t]he department will, in its discretion, hold a hearing when questions of fact must be resolved." According to 11 AAC 02.050(b), the procedure for such a hearing "will be determined by the department on a case-by-case basis."³⁸

The corporations argue that they were denied their procedural due process rights in the hearing before the commissioner because the commissioner (1) prohibited counsel from participating, (2) prohibited cross-examination, and (3) prohibited all parties from presenting post-hearing oral or written arguments concerning the weight of the evidence. The corporations note that when a traditional contract dispute is filed in the superior court, the "regular rules pertaining to discovery, the conduct of trials, burden of proof, and the interpretation of contracts apply." They also argue that the balancing test enunciated in **924Mathews v. Eldridge*³⁹ tilts in their favor. That test requires consideration of three factors:

First, the private interest that will be affected by the official action; second, the risk of an erroneous deprivation of such interest through the procedures used, and the probable value, if any, of additional or substitute procedural safeguards; and finally, the Government's interest, including the function involved and the fiscal and administrative burdens that the additional or substitute procedural requirement would entail.^[40]

Applying this test to the present case, the corporations maintain that a valuable contract right is at stake, the procedural constraints created "a serious risk of erroneous deprivation of Lessee's valuable contract right," and allowing the additional argument "would have converted the one-day hearing into only a two-day hearing akin to the limited trial de novo requested by the Lessees of the Superior Court." As the corporations correctly claim, the private contract rights at issue are significant. The cost of a hearing with representation, cross-examination, and oral argument on the state would have been relatively small. Furthermore, the value of an attorney's representation to safeguard due process is certain.

But our review of the record convinces us that the commissioner's failure to allow representation at the corporations' hearing amounted to harmless error. The corporations made no specific offer of proof to establish potential prejudice below and have failed to identify any substantial prejudice in their current briefing. While they advance a general assertion that the presence of counsel would have enabled them to test the credibility of witnesses through cross-examination, the case does not appear to turn on credibility determinations, and the corporations point to no specific evidence that might have been susceptible to a different interpretation. Similarly, we fail to see how the corporations were prejudiced by their inability to have counsel present at opening and closing arguments — particularly since the commissioner allowed the parties to submit voluminous legal

briefing. On this record, we conclude that the procedural error was harmless.

IV. CONCLUSION

Because the commissioner's decision is supported by substantial evidence and comports with the lease and governing Alaska law, and because the corporations have failed to show that they suffered substantial prejudice from the commissioner's refusal to allow their counsel to participate in the hearing before the commissioner, we AFFIRM the commissioner's order denying the corporations' application for a discovery royalty.

. Ch. 169, SLA 1959.

. Former AS 38.05.180(a) (1959) (repealed 1969).

.See Former 11 Alaska Administrative Code (AAC) 505.74-11 AAC 505.748 (1964), (amended and renumbered as 11 AAC 83.200-11 AAC 83.230 (1974), and repealed in 1979).

.Former 11 AAC 517.1 (1960).

. Id.

. Former 11 AAC 505.74-,748 (1964).

. Former 11 AAC 505.744 (1964).

. Former AS 38.05.180(a) (1959).

. Former 11 AAC 505.741(b) (1964).

. 30U.S.C. §§ 181-287 (2004).

. Id. at § 226(b).

. Arkla Exploration Co. v. Texas Oil & Gas Corp., 734 F.2d 347, 349 (8th Cir.1984).

. Emmet A. Finley, The Definition of Known Geologic Structures of Producing Oil and Gas Fields, U.S. Geological Survey Circular 419, 1 (1959).

. See ch. 91, § 2, SLA 1967; ch. 65, § 1, SLA 1969.

. Paragraph 12 of the lease states:

12. REDUCTION OF ROYALTY RATES FOR DISCOVERY. If Lessee shall drill on said land and make the first discovery of oil or gas in commercial quantities in any geologic structure, the royalty rate under this lease shall, instead of the rates prescribed in Paragraph 11, be five per cent for a period of ten years following the date of such discovery, and thereafter the royalty rates shall be those prescribed in Paragraph 11. If this lease is committed to a unit agreement approved or prescribed by Lessor as provided in the regulations, the five per cent royalty rate shall not apply to all, but only, the production allocated to this lease under such agreement.

. Unit agreements and participating areas are organizational schemes approved by the Department of Natural Resources to efficiently extract oil from a common reservoir that is the subject of multiple leases. See 11 AAC 83.303 (2004).

. 11 AAC 02.030 (2004) provides the procedures for seeking "[a]n appeal or request for reconsideration" of a department decision. Beyond a written request, the regulation allows the petitioner to "include a request for an oral hearing...; the appellant may include a request for any special procedures to be used at the hearing; the appeal or request for reconsideration must describe the factual issues to be considered at the hearing." 11 AAC 02.030(a)(13). Furthermore, "[a]t the time an appeal is filed, and up until the deadline set out in 11 AAC 02.040(a) to file the appeal, an appellant may submit additional written material in support of the appeal, including evidence or legal argument." 11 AAC 02.030(b).

. 11 AAC 02.050 reads, in its entirety:

(a) The department will, in its discretion, hold a hearing when questions of fact must be resolved.

(b) The hearing procedure will be determined by the department on a case-by-case basis. As provided in 11 AAC 02.030(a)(13), any request for special procedures must be included with the request for a hearing.

(c) In a hearing held under this section

(1) formal rules of evidence need not apply; and

(2) the hearing will be recorded, and may be transcribed at the request and expense of the party requesting the transcript.

. Finley, *supra* note 13.

. Alyeska Pipeline Serv. Co. v. DeShong, 77 P.3d 1227, 1231 (Alaska 2003).

. Jager v. State, 537 P.2d 1100, 1107 n. 23 (Alaska 1975).

. Former 11 AAC 505.741(b) (1964).

. Tesoro Alaska Petroleum Co. v. Kenai Pipe Line Co., 746 P.2d 896, 903 (Alaska 1987).

. See Pan Am. Petroleum Corp. v. Shell Oil Co., 455 P.2d 12, 19-24 (Alaska 1969) (where statute suggests no criteria for "discovery in commercial quantities," the department's decision reviewed for reasonable basis).

. The corporations also contend that the commissioner's decision is "post-hoc contract modification," invalid under the contract clauses of the federal and state constitutions. See U.S. Const, art. I, § 10, cl. 1; Alaska Const, art. I, § 15. The lease grants the department the authority to determine discovery royalty awards subject to the regulations. Thus the commissioner's decision does not amount to a legislative impairment of contract of constitutional dimensions. See, e.g., Exxon Corp. v. State, 40 P.3d 786, 789 (Alaska 2001).

- . Former 11 AAC 505.741(b) (1964) (emphasis added).
- . See former AS 38.05.180(a) (1959); former 11 AAC 505.742 (1964).
- . See, e.g., B.A. Wilford, 110 IBLA 154, 169 (1989); Robert G. Lynn, 61 IBLA 153, 155 (1982) ("The initial boundaries of a [known geologic structure] are not preclusive of the possibility of future changes.").
- . Emmet A. Finley, The Definition of Known Geologic Structures of Producing Oil and Gas Fields, U.S. Geological Survey Circular 419, 1 (1959).
- . Source Petroleum Co., 112 IBLA 184 (1989).
- . Arkla Exploration Co. v. Texas Oil & Gas Corp., 734 F.2d 347, 360-61 (8th Cir.1984) ("[R]elative risk of exploration and exploration interest lie at the heart of the competitive/noncompetitive leasing dichotomy in the [Mineral Leasing Act].").
- . Former 11 AAC 505.741(b) (1964).
- . Arkla Exploration, 734 F.2d at 360-61.
- . 11 AAC 83.351(a) (2004).
- . See also Exxon Corp. v. State, 40 P.3d 786, 788 (Alaska 2001).
A unit agreement is a contract between the department and lessees that allows for the efficient development of a reservoir that underlies multiple leases owned by different lessees. The various lessees join together in exploration and drilling, and allocate costs and production.
- . Commercial Fisheries Entry Comm'n v. Baxter, 806 P.2d 1373, 1374 (Alaska 1991).
- . 40 P.3d 786, 792 (Alaska 2001).
- . The full text of 11 AAC 02.050 is set out above in note 18.
- . 424 U.S. 319, 96 S.Ct. 893, 47 L.Ed.2d 18 (1976).
- . Id. at 335, 96 S.Ct. 893.