

**WHY OIL COMPANIES DON'T
DRILL WELLS THAT THEY *SHOULD*
AND WHAT THIS MEANS FOR
ROYALTY OWNERS**

**By: W. Mark Cotham and
Mark C. Harwell**

ABOUT THE AUTHORS

Mark Cotham and Mark Harwell are founding owners of Cotham, Harwell & Evans, a law firm located in Houston, Texas. They practice oil and gas, commercial and constitutional litigation. Since 1982 and 1983, respectively, they have prosecuted and defended many oil and gas disputes. These cases include many royalty owner-producer disputes, including over a dozen successfully concluded failure to develop cases and three nationwide marketing class actions that collectively involved over 150,000 plaintiffs.

Mark Cotham is an honors graduate of the University of Texas School of Law, where he was on the Law Review and was Order of the Coif. Prior to attending law school, Mark received a bachelor's and master's degree in communication studies from Northwestern University in four years. While at Northwestern, Mark was President of the Debate Society and won the National Debate Championship in 1978.

Mark Harwell is an honors graduate of the University of Texas School of Law, where he represented the University on its National Moot Court team. He graduated with honors from Rice University in 1980. His first two years of undergraduate study were at the United States Military Academy where he was a Distinguished Cadet, on both the Dean's List and the Superintendent's List.

RELATED WRITINGS

Other presentations and related papers the authors have made concerning oil and gas royalties include:

Just Because They Call It "Royalty" Doesn't Mean You Always Get Treated That Way, a Presentation to the Panola County Royalty Owners Association, dated July 7, 1998;

Making and Responding to Failure to Develop Claims: Addressing the Three "E's" (29th Annual Ernest E. Smith Oil, Gas & Mineral Institute, March 21, 2003); and

Five Common Misconceptions About Producer "Control" of ANS Gas and Its Relation to the Pipeline, Testimony Before the Alaska Legislative Budget and Audit Committee, April 20, 2005.

**WHY OIL COMPANIES
DON'T DRILL WELLS
THAT THEY *SHOULD*
AND WHAT THIS MEANS
FOR ROYALTY OWNERS**

**By: W. Mark Cotham and
Mark C. Harwell**

© 2005

EXECUTIVE SUMMARY

Oil companies typically consider the expected value of future production in deciding whether or not to drill a well. This involves evaluating the risks and returns associated with drilling particular wells and is usually followed by ranking and committing to projects until all of a producer's capital budget is allocated. Oftentimes, other corporate goals such as finding new reserves, meeting earnings targets, cutting costs, etc. also enter into the evaluation process. This process does not always produce results consistent with lease obligations. Most oil and gas leases effectively require that a producer drill all of the wells as to which it has a reasonable expectation of profit.

Unfortunately, there are at least seven circumstances that commonly lead oil companies to not drill wells that they should drill from a "reasonable expectation of profit" perspective. These circumstances include corporate reorganization, wells being too small to garner attention, subjective return criteria, budget competition, issues relating to a company's size, impairment of net revenue issues, and lack of confidence in commodity prices. Often, these circumstances combine to form an almost insurmountable obstacle to drilling wells that are economically justified.

Fortunately, there are a series of steps that royalty owners can undertake to evaluate whether their properties should be the subject of additional drilling. With just a little bit of research, you can determine how active producers have been in your area. Furthermore, the law provides a relatively efficient and effective mechanism for royalty owners seeking relief against producers who fail to reasonably develop property. These steps and sources for information are outlined in this article.

INTRODUCTION

Oil companies sometimes communicate decisions about whether they will or will not drill to royalty owners in a way that is reminiscent of a scene in the Wizard of Oz. The victorious Dorothy returns to Emerald City with the vanquished Witch's broom-stick. Having done what was asked of her, Dorothy is told by an elaborate intimidating *projected* image:



“Go away and come back tomorrow.”

Dorothy, mustering her courage, rightfully responds to the Wizard:

“If you were really great and powerful, you’d keep your promises.”^{1/}

Notwithstanding their extraordinary technical proficiency and size, oil companies sometimes flatly overlook wells that they should drill. “Go away and come back tomorrow” is not a satisfactory response to royalty owners seeking reasonable development. For this reason, royalty owners need to know when and how to look behind the curtain at an oil company’s decisions to decide whether it has kept its promise to reasonably develop oil and gas properties.

As of this writing, oil prices are over \$60 per barrel and gas prices are above \$9 an mcf. Notwithstanding such prices, and indeed the favorable pricing circumstances that have generally prevailed now for a couple of years, domestic drilling activity has not ramped up as one would anticipate. On several levels, it is confusing why producers are not drilling what by all accounts should be profitable wells. After all, the usual diatribe against oil companies is that they are “money hungry” and that *all* they look at is their “bottom line.” Two simple answers to this confusing state of affairs are:

- (1) the truth is that the wells are *not* profitable and these producers' failure to drill these wells is the best proof of this point; or
- (2) producers are incompetent and have overlooked drilling opportunities that are really and truly profitable.

In any given case, either of these answers may be right. There is, however, a third, and in the authors' experience commonly encountered set of reasons for producers overlooking profitable drilling opportunities. This paper examines how oil companies decide when to drill, why they sometimes overlook profitable opportunities to drill, and what this means for royalty owners.

1. HOW DO OIL COMPANIES DECIDE WHEN AND WHERE TO DRILL A WELL?

Oil companies have different ways of deciding on when and where to drill. There are, however, certain common elements involved in how oil companies make this decision and, indeed, there is a generally applicable legal requirement that addresses when oil companies should drill a well.

A. Is a Well "Worth It" Generally?

The fundamental question that any producer will ask is whether it is economically worthwhile to drill a well. In order to answer that question, there are certain basic factors that have to be considered. "Historically, the Oil and Gas Industry has made investment decisions based on expected value (EV) or risk weighted average economics."^{2/} The "Expected Value" (EV) equation "includes probabilities as well as economic consequences of both success and failure."^{3/} It provides:

EV equals probability [of] success (project's present value) and probability [of] failure (costs of failure).^{4/}

To put it another way, this equation allows an oil company to handicap whether the reward it can reasonably anticipate is worth the cost, including the risk that it will get no return by drilling a dry hole.

When the EV is positive, and sufficiently great to justify the costs of capital and anticipated expenses, a reasonably prudent producer *should* be drilling a well. The “minimum rate of return” that an oil company should seek has been explained as equaling “the return on an AAA bond” plus “the risk premium for the investment.”^{5/} The bond rate is intended to reflect “the safe return that any investor can get” while the “risk premium...reflects the *perceived* risk of the investor.”^{6/}

Obviously, there are a number of risk components to be considered. Whether a well will be a producer or a dry hole is one risk. If it produces, how much it will produce is another. Future prices obtainable for oil and gas are still another risk. Producers consider all of these factors in determining whether a particular well is worthwhile.

Once a company has decided on whether a well makes sense as a general matter, it must consider where that well ranks amongst all of its prospects and other possible investments. This is not as straight forward an exercise as one might expect. As James R. DuBois and John I. Howell, III in *Portfolio Management, The Probability Perspective*, explain:

Once the pool of passing [projects] is assembled, how do we choose among them? A method often proposed in business schools is to rank the projects in descending order according to some measure of performance. Again, this is usually a derivative of NPV [Net Present Value]. This “rank table” is cut off at a predetermined spending limit, and projects above the cut-off form the

portfolio...While many oil and gas companies have value maximization as a stated objective, they subject this goal to a number of constraints. In fact, it is rare for NPV to play more than a supporting role in most upstream planning exercises. Planning targets are more likely to be along the lines of net income, net cash flow, annual production, reserve adds, finding and developing costs, exploration and capital spending, some sort of capital return ratio, and so on.^{7/}

With so many corporate objectives and so many alternative ways to for a producer to spend its capital, it is easy to see how the decision on whether or not to drill a particular well could be complicated by extraneous considerations.

B. Comparing a Well with Alternative Ways to Spend the Company's Money.

Depending on the size of the company, a well may be competing with thousands of alternative expenditures by a company. Take, for example, an international vertically integrated oil company such as Exxon or BP. It must make budgeting decisions on literally dozens of different levels. While a company probably does not explicitly compare whether to invest in say an upgrade to a Houston Ship Channel refinery versus drilling an offshore Angolan well versus drilling a well in East Texas, the company implicitly makes these decisions when it decides where it will deploy the company's capital.

In doing so, the choices that are implicitly made may include:

Upstream	<i>versus</i>	Downstream
(Exploration & Production)		(Refining & Product Marketing)

Assuming Upstream is chosen, the next choice may be:

Exploration *versus* **Development**
(Discovering new reserves) (Exploiting known reserves)

Assuming Development is chosen, a choice must be made on what to develop, for example:

Oil *versus* **Natural Gas**

Assuming Oil is chosen, a logical next choice is where in a global sense, for example:

Angola *versus* **the North Sea** *versus* **North America, etc.**

Assuming North America is chosen, a logical next choice is which geographic region, for example:

Onshore *versus* **Offshore** **Gulf Coast** *versus* **Rockies**

Note, at this and perhaps subsequent stages, competition between geographic divisions is almost certainly occurring. Also, geographic regions and production characteristics will undoubtedly go hand in hand. Certain regions have long-lived reserves. Others may return investments quickly and then be gone.

Assuming that the Gulf Coast is chosen, the next choices involve progressively more specific locales. These include choices between areas in the Gulf Coast region. Eventually the competition gets down to district, field, unit, lease and well-site levels.

For the less gargantuan companies, some levels of this competition may not exist. Some companies are not global and some are limited to E & P and do not have downstream assets such as refineries. Nevertheless,

independents of almost any size will have a series of choices to make concerning which projects will fit in their portfolios.

C. When Does the Law Say an Oil Company Should Drill A Well?

Producers are generally subject to an implied, if not express, covenant of reasonable development.^{8/} This requires that the lessee, upon securing production of oil or gas from a leasehold, must drill such additional wells to develop a lease as would a reasonably prudent operator under similar circumstances, bearing in mind the interests of both lessor and lessee.^{9/}

Courts addressing when a reasonably prudent operator will drill have focused on whether the producer has a “reasonable expectation” of profit. One author has explained:

The object of the court’s inquiry in these cases is to determine whether the proposed well would be drilled by a prudent operator. The modern operator is a risk taker. Both exploration and development wells are proposed and drilled on the basis of risk analysis. The risk of a dry hole is balanced against the potential reward of a producer. Even development wells are drilled by extremely prudent operators when a dry hole is more probable than a producer. A successful well may pay out in a short period of time. A two-to-one risk of a dry hole is more than balanced by a ten-to-one recovery of capital ratio. It could be argued that an operator should be required to drill a development well in that situation.^{10/}

It is worth emphasizing that the legal requirements to drill are “objective”—what a reasonably prudent producer would do, and do not allow for any lesser behavior based on a producer’s peculiar

circumstance.^{11/} For example, a producer cannot excuse what he does on one lease based on the “great” job done on another lease.^{12/} Likewise, a “cash-strapped” producer has the same duty to drill as does an operator who is cash rich.^{13/}

Notwithstanding their established legal obligations, producers sometimes overlook the drilling of wells that should be drilled. An understanding of the circumstances that lead to such mistakes is helpful to recognizing when wells are being overlooked.

2. WHY OIL COMPANIES SOMETIMES DON’T DRILL WELLS WHEN THEY SHOULD.

Experience combined with common sense suggests the circumstances where producers are most prone to overlook the drilling of wells that they are legally obligated to drill. These circumstances often occur simultaneously and help answer the perplexing question of why a producer fails to drill a well from which it might reasonably expect a profit. These can be described as the “Seven Reasons Why Oil Companies Overlook Profitable Drilling Opportunities.”

A. Management Changes (Turnover, Corporate Reorganization, Mergers and Acquisitions) Can Result in Overlooked Drilling Opportunities.

A couple of generations ago, people often went to work for a producer and thirty to forty years later retired from *that* producer. Those days are, however, long gone. Turnover and corporate restructuring are the rules of today. John Elting Treat explained how the pace of reorganization has changed in the oil and gas industry in his book *Creating the High Performance International Petroleum Company: Dinosaurs Can Fly*, when he stated:

“When in doubt, reorganize.” Organizational change has been such a constant in the oil industry over the last 25 years that many have come to view this phrase as a managerial mantra. One cartoonist suggested major company organizational charts changed so often and unpredictably that they should serve as screen savers rather than strategic enablers.^{14/}



This type of change can be counterproductive to reasonable development. “Because of downsizing, consolidations, reorganizations, joint ventures and mergers, the older, smaller or nonstrategic fields are often sold, traded, or perhaps worse, ignored.”^{15/} As Mr. Treat also explained, there has been a predictable impact on productivity from the “cost-cutting” measures normally associated with such reorganizations:

In order to take out any work (and the costs that go with it), careful coordination among all the functions involved is required. And that is difficult and time consuming. In the 1980s, oil and gas companies either did not have the luxury of performing such detailed analysis, or they were unaware of the need for it. Instead, they relied on across-the-board cost cutting, telling each department to cut, for instance, 20% of their costs in order to bring the bottom line back into the black. And...this kind of cost cutting set the stage for some of the dramatic performance problems the industry is currently experiencing.^{16/}

On a related level, an oil company's corporate politics arising from the need to see immediate "bookable" reserves, can also work against the development of certain otherwise profitable prospects. Credit (read "promotion," "compensation," "prestige," etc.) is not always doled out in response to "developing" a lease. Mature fields, lacking in spectacular upside, are rarely seen as the place to "make a name" or begin a climb up the corporate ladder. Also, many companies directly tie executive compensation to reserve additions^{17/} thereby denigrating, in a relative sense, efforts to turn proven undeveloped reserves into proven producing reserves.

Over-looking a million dollar well here or there, in these circumstances, is entirely possible and predictable.

B. Big Companies Sometimes Cannot be Bothered with "Small" Multi-Million Dollar Drilling Opportunities.

While being a multi-billion dollar international vertically integrated oil company must have its moments, it has its challenges as well. *The* overarching challenge is the need to successfully explore for and develop reserves – *huge* reserves. As David Black, with the energy consulting firm of Wood Mackenzie, has explained:

Replacing the volume of reserves produced...is a critical issue for companies...[T]o put the scale of the challenge into context, BP needs to add around 1.3 billion barrels of oil equivalent each year – or more than 100 million barrels each month – to sustain its position. Between them, the western majors need to find the equivalent of the current remaining reserves in Angola every 15 months or a UK North Sea every 18 months just to replace production. But most companies want to do better than that: they want to grow.^{18/}

This challenge can quickly become the arch enemy of drilling where only *relatively* small production is possible. According to Mr. Black “[a]lthough small finds can give attractive returns given a benign fiscal regime, the net present value – and reserves added – are just too small to be worthwhile for the larger companies.”^{19/} Dr. Robert R. Wheeler and Maurice Wited put the conclusion a bit more bluntly when they stated:

If it were left to the major oil companies, with their requirements for high reserves and large drilling blocks, the mediocre reservoirs comprising much of the remaining oil prospects of the country would never be discovered or developed. Yet, these prospects support innumerable individual livelihoods and even create occasional fortunes.^{20/}

Precisely when the issue of materiality interferes with development varies. However, it does seem apparent, as Matthew Simmons, of Simmons & Company International has observed, that “getting extremely big in exploration and production makes *most* projects too small.”^{21/} Likewise, the interplay between being understaffed and bias against small projects cannot be ignored. “Commonly a highly profitable but small-volume venture may be rejected in favor a larger scope project that has a lower profit-to-investment ratio, especially when the screener is pressed for time.”^{22/}

From the author’s perspective, most of the majors and even the larger independents do a lackluster job of timely disposing of properties that are “too small.” Precisely because the property is too small to garner attention in the first place, offers to buy or farmout are often reviewed at a snail’s pace, if given any attention at all. Ironically, the same lack of attention often leads big companies to a false impression that small holdings are not profitable so that when they do dispose of them the big companies realize less than fair value.^{23/} This results in a genuinely unacceptable situation for royalty owners. While smaller companies are ready, willing and able to

drill their properties, the large companies that own these leases hold on to and thereby prevent drilling activity on such properties.

C. Arbitrary Investment “Hurdles” Can Lead to Overlooking Wells that Should be Drilled.

“Return on investment” is the scoreboard by which modern businesses, including oil and gas companies, are routinely measured. Virtually every producer establishes prospective targets for returns that existing business units are required to meet. Consistent failure to meet these targets means that the unit will be sold or “reorganized.”

New investments, such as proposed wells, often go through rigorous evaluations concerning their potential return. At any given time, it is possible that the investment criteria can unwittingly become insurmountable barriers to drilling wells that would in all likelihood prove profitable. Peter R. Rose, a geologist for over 40 years, author and managing partner of Rose and Associates in Austin, explained how otherwise viable prospects can be subjected to “hidden hurdles” as follows:

“Hidden Hurdles” is a term I proposed about 15 years ago for arbitrary economic requirements that are inserted into the project evaluation process, ostensibly to help screen out less worthy projects.

“Hidden Hurdles” are:

- Commonly employed by well-meaning business people who see their task as guardians protecting the firm against irresponsible explorationists, even though they themselves are not actually accountable for exploration performance.

- Insidious, because their existence is generally not apparent to prospect-generators.
- Dangerous, because – ironically – they often have impacts on project evaluations that are different from what was intended. Usually, they select against growth projects – and successful exploration is mostly about creating growth.

Here are some examples of “Hidden Hurdles”:

Arbitrarily elevated discount rates...

Arbitrarily depressed oil-price forecasts...

Overly pessimistic drilling-cost estimates...

Excessive minimum economic field-size requirements...

Secret minimum prospect-reserves requirements...^{24/}

These “hidden hurdles” can exist for many reasons. Often, they are a managerial reaction to perceived past mistakes. Sometimes they are a means to steer limited funds.

Some companies, are evidently honing their hurdles to include the concept that some wells should be regarded as “peaker” projects in the sense that they “involve known but underdeveloped hydrocarbon reserves that can be brought into production fairly quickly to capture price increases that are likely to be temporary.”^{25/} This “timing” of drilling could easily involve *not* drilling wells for which a producer had “reasonable expectation of profit” albeit not the absolute “peak” expectation. As John McCormack and others have explained:

In a real options framework, it is necessary but not sufficient for a PUD [Proven Undeveloped Property] to be a positive NPV proposition (on a simple DCF [Discounted Cash Flow] basis). It often makes sense to defer the drilling of many positive-NPV opportunities because the leaseholder retains the right to drill in the future when conditions may be even better. In fact, one of the most important messages of the RO [Real Option] valuation framework is that companies can *destroy* significant shareholder wealth by drilling positive-NPV PUD's when well economies are marginal and leases still have years to run.^{26/}

For whatever reason such hurdles are used, they have the capacity to cause a company to overlook the drilling of wells that should be drilled.

D. Budget Competition Means Somebody's Wells Won't Get Drilled.

As noted, competition for capital occurs on several levels at every major oil and gas company. For the majors, this competition can include foreign versus domestic investments. As the IBM Business Consulting Service has explained:

The majority of the industry now works around the globe, enabling the company to spread the exploration risk across a more diverse portfolio. But geographical diversity can also generate tension between central and local management, inconsistencies in reporting and a fragmentation of management systems. Operations within a particular geographical area will often press for priority (and scarce resources) to be given to the development of projects in their own region rather

than standing back and considering what kind of project portfolio is best for the company as a whole.^{27/}

Recent trends suggest that the majors have been investing larger sums abroad and less domestically for the past few years. A Lehman Brothers survey of major exploration and production expenditures planned for 2004 by oil and gas companies world wide observed this fact:

The semi-annual Lehman Brothers survey of exploration and production spending, compiled in December, showed that spending is set to rise just 4 per cent this year...

Within the 4 per cent figure, US expenditure is expected to be flat, with a 2.5 per cent increase among the independent explorers offset by a 3.9 per cent decline among the ‘majors’. That fits in with a general trend: the larger companies are turning their back on the US, because the rising cost of finding and developing oil reserves there is threatening future profitability.

Instead, they are spending their money in Russia and around the coasts of Africa, where bigger reservoirs can justify expensive deepwater wells.^{28/}

The issue is not whether producers are making wise decisions in a world-wide sense. The pertinent fact is that competition exists amongst different geographical divisions and that this can contribute to overlooking opportunities. Peter Rose explains how such budget competition can creep into and interfere with optimal decisions in his November 2002 article entitled “*Incentives Had Better Be In Sync*”:

Understandably, business units want to maximize their autonomy, whereas headquarters wants to be sure project selection optimizes portfolio performance.

Commonly, the problem is that whereas the incentives for the headquarters staff are aligned with corporate performance, incentives for business units are focused more on local performance metrics than on corporate goals...At the local business unit level, the goal might be “to get three exploratory wells drilled this year.”

Such a goal focuses on activity rather than adding value. All too often, this sets up a “dash for cash” that results in business unit A’s good projects not getting drilled because available budget went to business unit B’s prospects, which were rushed through, overestimated and oversold.

Result: the corporate portfolio underperformed, even though business unit B may have achieved its own goals of getting more of the drilling budget.^{29/}

Given that competition for a company’s budget is occurring on so many levels, it is hardly surprising that sometimes a company may “overlook” a property that *should* be drilled.

Domestic drilling may be disproportionately overlooked since these wells are viewed as “discretionary.” Ken Thompson, a past Executive Vice President at Arco and former President of Arco Alaska, has explained how historically the process has worked in big oil companies:

How did large corporations like an ARCO make decisions? How did capital get approved when projects were commercial? Not all projects that were commercial were approved.

Another big factor..., boards also talk about is this a non-discretionary/discretionary [project]. We often had to break down our capital requests into those two buckets and then it made it to the discussion on those kinds of criteria – discretionary, non-discretionary. I will tell you, I've got that clock from the prime ministers of Malaysia and Thailand. We had a deadline to get the field on-stream or lose and turn it over to somebody else to develop. Why did it make our capital allocation? Actually, it was a pretty good rate of return because of profit sharing and they took risk. So it wasn't a rate of return issue but we also knew that we faced a deadline and maybe it was 18 months... This also matters – if it's discretionary, you can hold it and wait until it fits your portfolio in the future or let someone else do it.^{30/}

E. Company Size or Lack of It Can Work Against Drilling Certain Wells.

The size of a producer, big or small, can sometimes negatively impact its proclivity to drill a particular well. There are circumstances where “bigness” *or* “smallness” can work against drilling otherwise economic wells.

The problems with being “big.” Aside from the problem of small wells being “immaterial” to big companies, other economic issues can impede development by big companies. While “economies of scale” are more frequently discussed, the fact is that “diseconomies of scale” are also a fact of life in the oil and gas industry. Large companies have salary, overhead and in some cases safety and environmental policies that can make their costs of drilling significantly larger than some independents.

Mr. Treat describes how such costs have already affected the industry:

Most major oil companies – BP, Arco, Texaco, etc. – have left or greatly scaled back their onshore U.S. operations because their cost structures are simply too high to compete in small fields and because their comparative advantage lies in bigger, riskier projects that play to their technical and capital formation strengths.^{31/}

When major oil companies remain in onshore U.S. locations, their overhead allocations can literally sink the economics of otherwise profitable wells. As Dr. Robert R. Wheeler and Maurice Whited explain:

Another significant economic feature controlling major company policy is the magnitude of its overhead which, charged against producing properties, may show a lease to be dubious as to ultimate profit. The same property, operated more efficiently and with relatively small overhead charges, could be quite profitable to an independent. Consequently, the larger companies farm out semi-proven leases which may return two-or three-for-one on drilling and development investment to the independent; but calculated conservatively as to reserves and expensively as to

development, the property may appear unprofitable to the major oil company accountants.^{32/}

Obviously, the problems with these cost structures arise when they interfere with development and no effort at divestment/farmout is made.

The problems with being “small.” There are two related concerns that can discourage smaller producers from drilling wells that they “should” drill. First, there are substantial inefficiencies in capital markets that sometimes result in a lack of available capital for smaller companies in the oil and gas industry.^{33/} Lenders are less willing to finance “small” oil and gas ventures for a variety of reasons. These include: production risk aversion; inherent constraints on “risk spreading”; collateral monitoring issues and related costs; product pricing risk aversion and the perceived lack of an adequate “track record.”

Equity markets, irrespective of a particular property’s desirability as a drilling prospect, may likewise not be readily accessible to smaller companies. The same risks that dissuade lenders are likely to concern potential equity investors. The transaction costs of an equity offering, including professional and underwriting fees, likewise often operate to make capital hard to attract and very expensive for smaller producers.^{34/}

Not surprisingly, the problem of capital being available *even for profitable opportunities* is worst when the industry is trying to “shake off” periods of low prices. As the Office of Technology Assessment explains:

In the short term – perhaps for 2 or 3 years – the level of cash flow from past investments and the effect it has on the industry’s basic financial health seems likely to have a very strong effect on the level of new investment even if prospects for profitable investments are basically good. Many of the financial entities generally responsible for U.S. drilling and other production activities have

[in the 1980's] been hurt badly because of the large cut in their revenues. Because these companies may hold land positions that could yield profitable drilling opportunities but no longer have adequate financial resources, new investment will suffer from a mismatch between opportunity and capability.^{35/}

Another problem with small size is the phenomenon known as “gambler’s ruin.”^{36/} This involves the fact that a company will naturally be averse to drilling any well that, if not successful, could bankrupt it. Small “Mom and Pop” companies may avoid drilling wells notwithstanding their “significant” upsides *if* drilling these wells nonetheless is a “bet the company” proposition for them.

F. Insufficient “Net Revenues” and Other Impediments to Revenue Streams.

There are several common circumstances that impair the revenue stream that a producer can anticipate from drilling a well. This kind of impairment can, if severe enough, be an insurmountable barrier to drilling. Even when not an insurmountable barrier, reduced anticipated revenue streams can competitively disadvantage a property versus other prospective wells and, in close calls, mean a well never gets drilled.

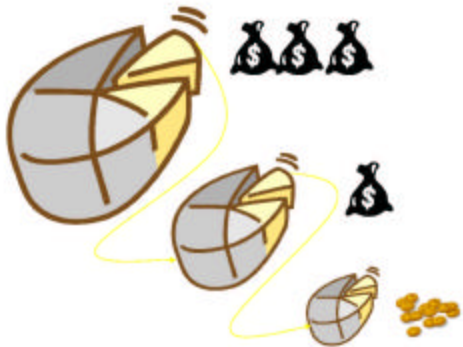
Big Overrides. Particularly in mature fields, substantial overriding royalties sometimes burden oil and gas leases. By way of illustration, a property starting with the traditional one-eighth royalty burden (12.5%) in the 1940’s, transferred once every twenty years, with the transferor retaining a one sixteenth override, would as of today, have a sub-seventy percent net revenue interest. This type of burden is especially common in mature East Texas fields.

From a royalty owner's perspective, the accumulation of such burdens is particularly unfortunate. The royalty owner is blameless for and powerless to prevent such transfers. These transfers can, however, sink the economics of developing a royalty owner's property.

Severed Depths. Severance of shallow and deep rights can compromise the economic viability of drilling prospects in a similar way. The *combined* chances of an "economic" completion are obviously greater when both shallow and deep potential zones exist. "Properly evaluated, drilling opportunities with multiple prospective zones can be significantly more attractive than single-objective proposals. The combination of the various zones can add pre-drill expected value (EV) to the portfolio by demonstrating the improved chance of a flowing discovery, increasing the estimated resource potential, or both."^{37/} The number of wells where the costs of drilling have been recouped by such shallower zones is legion. For obvious reasons, the shallower zones are often referred to as "bailout" zones *vis-à-vis* a deeper "target" zone. When a lessee severs the shallower rights from the deeper rights, this divides and compromises the economics of drilling a deeper well.

Fractionalized Working Interests. Another related net revenue interest based problem is the fractionalization of working interests. "Fractionalization and dilution of interest are buzz words frequently used to describe the transfer of mineral interests (and working interests, too) into smaller and smaller pieces, sometimes to the point where owners end up with practically zero interest. A large interest can, through several generations, become of little or no value to its owner."^{38/}

Fractionalized interests



The size of a non-operator's interests, not to mention the frequent perception of such a role as being "passive," also contributes to the diffusion of responsibility. In the author's experience, such diffusion leads to a situation where what is "everybody's problem" becomes "nobody's responsibility."

Mature fields sometimes have eight, ten or more working interest owners. As a practical matter, this can negatively impact a property's ability to compete for attention (geologist's and engineer's time) at the operator's headquarters. Why, all else being equal, would a producer dedicate time to a property where it owns only half as much working interest?

Adjacent Less Burdened Property. Occasionally, producers who own adjoining property with less royalty burdens will drill on that property to the exclusion of other property.^{39/} Anytime there is successful drilling on adjoining property this should be considered a "wake-up call," especially when the same producer is involved.

Sometimes the same effect – producing property while paying less royalty – can be accomplished by unitizing properties. If acreage with less royalty burden is unitized with more burdened, but perhaps more productive acreage, the net impact can be dilution of the overall royalty paid. This practice is not consistent with what most oil and gas leases permit in Texas.

G. Price Pessimism Can Prevent Drilling Profitable Wells.

A final reason that wells that can be economically justified are sometimes not drilled is a producer's price pessimism. Several times over the past three decades, oil and gas prices have seen dramatic advances, sometimes followed by equally dramatic declines. Whether out of a sense of history or corporate conservatism, oil companies (and more often their lenders) have sometimes shown a lack of confidence that prices will hold over the long-term.

There are a *large* number of relatively low-risk oil and gas wells that *are* economically justified at "today's prices," those being over \$60.00 per barrel and \$9.00 an mcf. While strong cases can be made that the fundamental supply and demand equation will continue to support relatively high prices, many companies' drilling activities are evidencing a lack of confidence in pricing. Several analysts have explained the current seeming non-responsiveness of exploration and production budgets to prices on this basis.

The oil industry will face the challenge of adding 18 million b/d of new production by 2020 if demand rises at 1.8% [per year]...[but] low IOC [international oil company] exploration investment and lack of new discoveries raise questions over long-term production," WMRC [World Markets Research Centre] said. The analysts said IOC exploration investment "is not tracking prices as it has done in the past," primarily because of "a lack of confidence in long-term oil prices and limited opportunity."^{40/}

The disconnect between existing pricing and industry activity has recently reached historic proportions. As Bhushan Bahree, writing for *Alexander's Gas and Oil Connection*, recently reported:

With prices soaring as much as 50% this year and nearly hitting \$50 a barrel earlier, oil titans from Texas to Tehran are awash in record revenue. But as money floods in, they are spending little extra in finding and extracting more petroleum....

This has led to one of the biggest potential disconnects between supply and demand in the 150-year history of the oil business.^{41/}

This behavior is not entirely puzzling. As one commentator has explained:

Like many armchair warriors, major oil companies are still fighting the last war. In the late 1990s, OPEC overproduced – plunging to \$10 a barrel. Major oil companies became ultra-conservative – and remain so today because they distrust OPEC. As a result, they shun development projects with sub-15% returns.^{42/}

For smaller companies, the temptation to be overly conservative on price forecasts can be substantial given the potential consequence of “over optimism.” One chairman of an oil company has noted that basing projects on a price forecast that “proves to be ‘overly optimistic’” can mean that a company will “suffer from the potential malaise than can affect all small oil companies—insufficient critical mass to withstand a future downturn in product prices.”^{43/}

Only time will tell if such conservatism is justified in any given case. Nonetheless, “price pessimism” is a well known “hurdle” that sometimes prevents drilling wells that should be drilled.

3. WHAT DOES ALL OF THIS MEAN FOR ROYALTY OWNERS?

How royalty owners approach the development of their property involves at least three considerations. First, most royalty owners, as a matter of philosophy and often faith^{44/} believe in good stewardship and, as a result, resource development. Second, from a cold economic perspective, the value of a dollar today versus a dollar tomorrow also emphasizes the importance of action *today*. Third and finally, the average age of royalty owners is in the sixties and, being flesh and blood, such owners obviously do not share the “perpetual life” that corporations possess. Instead, royalty owners understandably view royalty income as everything from salvation (literally sometimes saving the family farm) to enabling (that vacation we always wanted to take) to legacy (the pride of providing well for the next generation).

In contrast to the royalty owners’ view, the saying that “the squeaky wheel gets the grease” reflects modern reality for many oil and gas producers. Limited budgets, changing priorities, downsizing and personnel turnover can all contribute to some wells and leases being simply “overlooked.” Any given lease or well is often one of thousands to a large producer. The fact that it is one of one, or one of a handful, for the royalty owner makes the royalty owner the logical best steward and spokesman for its careful management.

A. How to Research Your Property and Surrounding Oil & Gas Drilling Activity.

There are five sources of free or low-cost information that Texas royalty owners can avail themselves of concerning drilling activity and related issues. If monitored effectively, these can help a royalty owner understand the drilling that is going on around his or her acreage.

- (1) The MIMS Mapping Service available through the Texas Railroad Commission (www.rrc.org, (512) 463-7288) offers very low-cost maps and well summaries that will help put a given property in perspective.;
- (2) The Interactive Production Service available through the Railroad Commission's website at <http://www.rrc.state.tx.us/interactivedata.html> provides a comprehensive searchable Texas production data base. It contains historical (monthly) production from January 1993 forward and is searchable by county, lease and operator.;
- (3) Drilling permits are listed by month, county and producer online, see <http://www.rrc.state.tx.us/divisions/og/informationdata/wkly-qtry-mont-hly-reports/prod-drill/ogidrli.html> and also are available in complete form at the Railroad Commission local and central offices.;
- (4) Newspapers often offer a summary of the week/month's regional drilling activity. See e.g., the "East Texas Drilling Report" in the *Tyler Morning Telegraph's* Sunday edition, available at http://www.zwire.com/site/news.cfm?newsid=13489506&BRD=1994&PAG=461&dept_id=226362&rfi=6.html that summarizes drilling and completion data on a weekly basis.; and
- (5) The National Association of Royalty Owners ("NARO") offers a wealth of information and its chat board offers a means to compare notes with other royalty owners. See www.naro-us.org.

B. Asserting Your Legal Rights Effectively.

Most claims, if they go this far, involve initial demands by royalty owners sometimes followed by legal action.

Demanding Action. If you feel your property has not been adequately developed, and are comfortable doing so, consider sending a certified letter detailing your concerns. Three quick pointers on writing your letter to a producer are:

- (a) Be very specific about your development concerns.

EXAMPLE: “In view of the several wells that have been drilled near my property, I believe that your company has failed to reasonably develop my property.”

- (b) Be very concrete about what you want to happen.

EXAMPLE: “This is my formal request for you to begin drilling a new well on my property by ‘x’.”

- (c) Establish a firm reasonable deadline for a response.

EXAMPLE: “I look forward to receiving your response to this letter no later than _____.”

Without seeking legal advice, it is generally inadvisable to speculate in any letter on the consequences of a producer’s failure to drill. Instead, a royalty owner is well-advised to seek advice from a lawyer about the remedy, including the damages that are legally available.

Lawsuits. There are three things that you should consider about lawsuits concerning a producer’s failure to develop.

- (1) **What a lawyer, geologist or engineer needs to evaluate whether you have a claim.**

To get the most out of any professional you consult, it is best to go armed with certain key information. A quick checklist of materials that you should consider bringing when you first see a professional is:

- (a) your lease(s);
- (b) any division orders you have signed;
- (c) any unit designations or agreements;
- (d) check-stubs for at least a year; and
- (e) your property tax statements.

Bringing these materials to your first meeting will allow a professional to give you better advice, in the shortest period of time, at the least cost and trouble for everyone. Also, you are generally likely to receive better treatment if you appear to be organized and a person with which it will be easy to work.

(2) Legal claims, unlike fine wine, don't get better with age.

Many royalty owners are disappointed to find out that after a certain number of years royalty claims that are not the subject of a lawsuit are barred by the statute of limitations. Generally, royalty claims in Texas older than four years are barred. In fact, some types of claims are barred as quickly as two years.

The point is – the “time clock” is ticking and royalty owners need to promptly take action to ensure that their rights are preserved.

(3) What a lawsuit normally involves from a royalty owner's perspective.

Legal proceedings are understandably somewhat intimidating for people who have not been through the process before. However, with good representation, prosecution of a legitimate royalty claim is among the least burdensome forms of litigation. After the initial interview and investigation, most lawyers will be in a position to describe the types of claims, if any, they believe a royalty owner may possess. At this point, if not earlier, arrangements for paying legal fees and expenses will need to be addressed.

Royalty claims are usually brought on a "contingency fee" basis where lawyers are paid, if at all, from any recovery made. Depending on the case, lawyers may ask for and receive 25-40% of any recovery, with the percentage increasing as more attorneys' work is required. A very important consideration is how experts and other out-of-pocket costs of a case will be paid. While these can run into the thousands of dollars, some attorneys are willing, in the right case, to pay these costs and look for their repayment from the proceeds of any settlement or judgment.

Royalty litigation usually does not involve a great time commitment on a claimant's behalf. Royalty owners can expect to be consulted on a periodic basis about how the suit is going and the alternatives. A royalty owner's deposition may be taken and this usually involves limited preparation and answering some questions in front of a court reporter. It is normally completed in an afternoon. Finally, a small percentage of cases go to trial and this can require additional preparation and participation.

CONCLUSION

Many royalty owners are fortunate to have leased their property to responsible producers who have done a good job of meeting their development obligations. Unfortunately, some producers have and

continue to neglect the development of their leases. The only way to fight this type of neglect is with vigilance and a demand for fair treatment for your property.

Hopefully, the comments found in this brochure will assist you in understanding how and why oil and gas wells are drilled, or sometimes not drilled, and how royalty owners should approach this subject.

NOTES

^{1/} *The Wizard of Oz* (MGM 1939). The scene continues with dialog that also sheds a lot of light on how some oil companies portray their decisions. After Toto tugs away a curtain that covers a small booth, a white-haired, ordinary man is seen frantically pulling levers on an elaborate machine to control the Wizard's projected image. Being exposed, he tries to distract them, but then sheepishly identifies himself:

The Wizard (covering up with the curtain): **The Great Oz has spoken...Pay no attention to that man behind the curtain...the...Great...er ...Oz has spoken.**

Dorothy (pulling aside the curtain): Who are you?

The Wizard: I, I, I am the Great and Powerful Wizard of Oz.

Dorothy: You are! I don't believe you.

The Wizard: I'm afraid it's true. There's no other Wizard except me.

Dorothy: (scolding) **Oh, you're a very bad man!**

The Wizard (sadly): **Oh, no, my dear, I...I'm a very good man – I'm just a very bad Wizard.**

^{2/} DuBois, James R., Portfolio Derisions, Inc., *An Investigation of Risk and Probability in a Portfolio Management Context*, SPE Paper 71421, SPE Annual Technical Conference and Exhibition in New Orleans Louisiana, September 30-October 3, 2001; Tom Adams, et al, "Portfolio Management for Strategic Growth," *Oilfield Review*, Winter 2000/2001, p. 10 ("Common practice is for a company to rank individual projects either by net present value (NPV) at a given discount rate or by some other measure of worth, then initiate those projects that fit the current investment budget, starting with the best.").

^{3/} Rose, Peter R., Chapter 7 "Chance of Success and Its Use in Petroleum Exploration," *The Business of Petroleum Exploration*, p. 73 (AAPG 1992).

^{4/} *Id.*

^{5/} Megill, Robert E., *An Introduction to Exploration Economics*, (3d Edition 1988) pp. 136-7.

^{6/} *Id.*

^{7/} Oil & Gas Executive Report, October 2000, p. 42.

^{8/} This covenant can be modified by the lease language. Royalty owners should give special attention to the development requirements, if any, stated in their lease.

^{9/} *Lenape Resources Corp. v. Tennessee Gas Pipeline Co.*, 925 S.W.2d 565, 572 (Tex. 1996) ("to fulfill its obligations to lessors [under the "implied covenant to reasonably develop"] a gas producer must drill additional wells as would a reasonably prudent operator"); *Clifton v. Koontz*, 160 Tex. 82,

325 S.W.2d 684, 692-95 (1959); *Waggoner Estate v. Sigler Oil Co.*, 118 Tex. 509, 19 S.W.2d 27, 29 (1929).

^{10/} Vander Ploeg, Claude L., “*The Implied Covenant of Reasonable Development – A Delicate Balance*,” 3 Eastern Min. L. Inst. 181-3 (1982).

^{11/} *Shelton v. Exxon Corporation*, 719 F.Supp. 537, 549 (S.D.Tex. 1989)(“In its simplest form the holding of *Alexander* was that the lessee’s duty was to do that which would be done by a reasonably prudent operator holding only the lease in question.”), *aff’d, in part, and rev’d, in part, on other grounds, Shelton v. Exxon Corporation*, 921 F.2d 595 (5th Cir. 1991).

^{12/} *Amoco Production Co. v. Alexander*, 622 S.W.2d 563, 569 (Tex. 1981)(“The reasonably prudent operator standard is not to be reduced to the Alexanders because Amoco has other lessors in the same field. Amoco’s status as a common lessee does not affect its liability to the Alexanders.”).

^{13/} 8 Williams and Meyers, *Oil and Gas Law*, § 806.3 (2003), *citing Shelton v. Exxon Corp.*, 719 F. Supp at 549, explains:

This analogy to the reasonable man of tort law also helps to explain the meaning of the prudent-operator standard. The prudent operator is a reasonable man engaged in oil and gas operations. He is a hypothetical operator who does what he ought to do not what he ought not to do with respect to operations on his leasehold. Since the standard of conduct is objective, a defendant cannot justify his act or omission on personal grounds or by reference to his particular circumstances. It is no excuse that defendant failed to drill the offset well a prudent operator would have drilled because defendant is short of cash, over-committed on drilling programs, has no need for more production or prefers to spend his money on other things. In short, the question is not what was meet and proper for this defendant to do, given his particular circumstances, but what a hypothetical operator acting reasonably would have done, given circumstances generally obtained in the locality.

^{14/} (Penn Well 1994), p. 153

^{15/} Lower, Bruce W. and Gary L. Trotter, *New Tactics for Production Management*,” OILFIELD REVIEW, Autumn 1999, p. 5.

^{16/} Treat at 121-2.

^{17/} See generally, *Shell Games: Corporate Governance and Accounting For Oil and Gas Reserves*, Hearing before the Committee of Financial Services of the U.S. House of Representatives, 108th Congress, Second Session, July 21, 2004.

A report by an energy consultancy in 2001 noted the pressure on managers of publicly traded energy companies ‘to push the envelope of credibility in efforts to buoy investor confidence and thus increase stock value.’ The consultants blamed the overbooking on incentive programs that offered bonuses for big reserve estimates.

^{18/} Black, David, “Value Creation Through Exploration,” Wood Mackenzie, 2003 available at http://woodmac.ecnext.com/coms2/summary_0251-161_ITM.

^{19/} *Id.*

^{20/} *Oil, From Prospect to Pipeline*, (3d Ed. 1979), p. 96.

^{21/} “Consolidation in Oil and Gas,” Offshore Technology Conference Presentation – May 7, 2003 available at <http://www.simmonsco-intl.com/files/Industry%20Consolidation.pdf>.

^{22/} Peter R. Rose, “Risk Behavior in Petroleum Exploration,” Chapter 9, *The Business of Petroleum Exploration*, p. 98 (AAPG 1992).

^{23/} Ronald M. Young, *Bad Fields or Bad Decisions: A Comment on the Selling of Producing Oil and Gas Properties by Large Oil Companies*, 45 OIL & GAS TAX QUARTERLY 279 (1996).

^{24/} “Hidden Hurdles Can Trip Prospects,” July 2002, available on the AAPG’s website: http://www.aapg.org/explorer/business_side/2007/07_july.html.

^{25/} John McCormack, Raoul LeBlanc and Craig Heiser, *Turning Risk into Shareholder Wealth in the Petroleum Industry*, 15 Journal of Applied Corporate Finance, pp. 67-69, Vol. 15, No. 2 (Winter 2003).

^{26/} *Id.*

^{27/} IBM Business Consulting Services, *Global Performance Management in Upstream Oil and Gas Sector*, available at <http://www-1.ibm.com/industries/cpe/download4/15815/GW510920601F.pdf>.

^{28/} “Bleak year ahead for oil service,” January 29, 2004, available at http://investorschronicle.co.uk/content/free/2003/news/article_gen_00887.html.

^{29/} Available at <http://www.aapg.org>.

^{30/} Marushack, Joe and Ken Thompson, *The Process of and Criteria Used in Making a Decision on Whether to Invest in an Upstream or Midstream Project*,” Testimony before the Alaska Legislative Budget and Audit Committee, October 14, 2004.

^{31/} *Creating the High Performance International Petroleum Company: Dinosaurs Can Fly*, p. 40.

^{32/} *Oil, From Prospect to Pipeline*, (3d Ed. 1979), p. 96-7.

^{33/} Toal, Brian A., “Small-Cap Capital,” *Oil and Gas Investor*, October 7, 2004 available at <http://www.oilandgasinvestor.com/comment> sums up the challenges small companies face quite well:

All too often, publicly traded small-cap producers and emerging private E&P companies have a remarkable upstream opportunity presented to them but find it difficult to quickly access the capital they need to act on it.

Sometimes relatively low-cost debt isn't an option. Maybe an operator doesn't have enough, independently verified, proved developed producing (PDP) reserves to approach a lender for the quick credit needed – or they've already reached the limit of their borrowing-base facility.

In other words, a producer with few PDPs on its books but plenty of proved undeveloped (PUD) reserves may not know which provider or intermediary of higher-priced capital – mezzanine debt or private equity – would be willing to step up to the plate in very short order.

Indeed, there are far fewer major mezzanine players around today than a few years ago. And, while it may be true there's now a virtual flood tide of private-equity dollars available from specialized funds, those funds are increasing in size and so are their threshold levels for making upstream investments.

^{34/} *Id.*

^{35/} *U.S. Oil Production: The Effect of Low Oil Prices*, Economic and Resource Factors Affecting U.S. Oil Production, U.S. Congress, Office of Technology Assessment (July 1987).

^{36/} Jones, Donald R., Chapter 19 “Annual Budget: A Short-Term Action Plan for Exploration,” *The Business of Petroleum Exploration*, pp. 245-7 (AAPG 1992).

^{37/} McKay, James A., *The More Zones, The Merrier*, AAPG Explorer, June 2003, available on the AAPG's website: http://www.aapg.org/explorer/business_side/2003/06jun.cfm.

^{38/} National Association of Royalty Owners and National Association of Division Order Analysts, *Making Mineral Interests: Solving the Fractionalization Puzzle*, Pamphlet available at <http://naro-us.org/resources/downloads/pdf/puzzle.pdf>.

^{39/} The circumstance where a producer drains one lease it holds by drilling on its own adjacent lease, is often referenced to under the law as “fraudulent drainage.” See generally, Williams & Myers, 5 *Oil and Gas Law* § 824 (1992).

^{40/} World Markets Research Centre in a September 2004 report. WMRC is part of the London-based Global Insight group of companies. See, “Oil supply seen threatened by limited E&P opportunity, low investment” October 6, 2004, available at <http://lists.gpus.org/pipermail/texgreen/2004-October/004834.html>.

^{41/} Bahree, Bhusan and Patrick Barta, *Alexander’s Gas and Oil Connections*, Vol. 19, Issue 19, October 5, 2004 available at <http://www.gasandoil.com/goc/features/fex44095.htm>.

^{42/} *Whither Crude?*, September 6, 2004 available at <http://www.itnetcentral.com/article.asp?id=13902>.

^{43/} Love, Andrew J., Chairman ROC Oil Company, ROC Annual General Meeting – Chairman’s Address, May 19, 2004, available at www.rocoil.com.au.

^{44/} The story of the servants and talents found in Matthew 25:14-30 and Luke 19:12-27 illustrates the principles of Christian stewardship that mean a great deal to many royalty owners.

Notes

Contact Information

COTHAM, HARWELL & EVANS,

A Professional Corporation

1616 S. Voss, Suite 200

Houston, Texas 77057

Telephone: (713) 647-7511

Facsimile: (713) 647-7512

Website: www.cothamharwellell.com