

APPRAISING OIL & GAS PROPERTIES

A Newsletter for Appraisal Professionals

Richard J. Miller & Associates, Inc.

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Ah, Summer!! Long, warm, sunny days moderated by ocean breezes, eau de Coppertone wafting in the air, and the smell of fires on the beach bring back happy memories of yesteryear; catching a few waves during the day but mostly visiting on the beach and, in the evening, sitting about the fire ring roasting hotdogs and/or marshmallows and, maybe later, cruising the route between Bob's Big Boy and the A&W. Today (late August) seems particularly nice; surf was up this morning. So why am I sitting here in this office?

As Time Goes By The first Christmas catalogue showed up a few days ago. Time goes by far too quickly these days and not all of it, sad to say, is billable. We seem to have been rather busy although it is difficult to point to any one or two projects that have so occupied our time that we have gone eight months without a newsletter. Looking back at the calendar, we have done some traveling to exotic places like Santa Maria, San Luis Obispo, and Bakersfield; then there was Oregon for the SPEE Annual Meeting. A trip to Alaska that held some promise got scuttled when the parties settled. We have even had the opportunity to do some extraordinary time traveling - back to Charleston in 1864. There is a fair amount of news to pass along, a story or two, a report from our old buddy Rocky Stone, and an extensive discussion of some interesting technical issues. The latter is, after all, supposed to be our purpose. We have gotten into some pretty esoteric stuff in the last few issues and it seems that perhaps a return to the bigger picture would be a good idea. It also became obvious that we should have some discussion of the latest "Reserves" debacle, at least as a starting point, so I decided to take a broad look at our whole process of evaluation. We will also talk a bit about an issue that has surfaced before but which may now have come of age - Professional Accreditation.

Arnold! So, how is our new governor doing, you ask? Not too awful bad. The entertainment value is worth the price of admission. That loud gasp you heard from Sacramento a few weeks ago was in response to Arnold's proposal that our full time legislature be returned to part-time status, a la Texas. Imagine, legislators who actually have to hold real jobs - like the rest of us. Arnold later said he was just kidding - for now - but, he will be back, Baby.

Pine Palace The good news is that neither Mother Nature nor the juvenile delinquents from the Forest Service have burned us down, yet. Knock on wood - but not too hard. We only had about 2 ft. of snow this year and no rain to speak of. The prolonged drought not only increases the fire danger but makes the pine trees susceptible to Bark Beetle infestation which in turn kills the trees. Much of the damage from the California fires last year occurred in forests with a lot of dead trees due to bark beetle. On the upside, the Grand Plan is still on track. Our latest contribution to Home Depot is upgrading the bathrooms. We brought them indoors a few years back but now we are going uptown with fancy fixtures in a woodsy motif. I will not bore you with the details. Suffice to say that there have been some plumbing changes and, well, there is a reason that the upper right quadrant of the Miller - Lillie family crest has three dripping faucets rampant on a wavy blue field. The biggest change is that we finally got an honest-to-goodness water softener. Not that our water is hard mind you. The (really) local water company gets all its supply from wells down the road and, while it is treated, the mineral content is a bit high. There are times when, if the pipes were glass, you could watch the chunks go by; as it is they are copper and one can only listen. Our first water softener was a rather simple affair - I put a piece of chicken wire over the inlet to the house. It caught most of the big pieces - smaller screens tended to plug up too fast. This situation was not all bad. For example, hosing down the deck after pollen season had the benefits of both sand-blasting and instant clean up. Alas, all that fun is in the past but there is a new problem - now everything is slippery.

Movie Reviews "Troy" (the movie) was a great disappointment. Not a single football in sight and the horse was a real stiff. Speaking of football; Guess who is Number 1?

The Further Adventures of Bertram and Percival

Not all our critter encounters occur up in the mountains - the urban forest is home to lots of furry four-legged denizens. Possums are pretty common in our neck of the woods. Some mornings there are more possums in the road than Bott's dots. Sort of like armadillos but without the bump. Anyway, getting on with the story, some weeks ago one of our neighbors found a Mamma Possum with her litter in her garage (the neighbor's garage not the possum's). After a day or two they (the possums) packed up and left and no one thought anymore about it. A week or so later, we were enjoying the evening in our family room watching who knows what on the boob tube when Madam got up to go out to the kitchen. (This requires rising from the couch, executing an about face and marching three paces). The eventide peace was shattered by, "!!\$@*", there's an animal in the kitchen." I jumped up, turned around and there, parked in the middle of the tile floor, was a rather small possum (about 6-8 inches, campfire roasting size) who definitely looked out of place. He was apparently very concerned about the cause of Madam's alarm and was looking all around for the source of the problem. Acting on a "Get it Out!" directive - a chase ensued. Now, herding a possum is not hard; they tend to be slow, respond well to the working end of a broom, and generally know when it is time to head for the egress, so after about 5 minutes and a few detours, we got him out the front door. The little guy was last seen ambling out the patio gate toward the street. Since it was obvious that Bertram (so named - in our house anything that stands still for 5 seconds gets a name thereby saving all that need for description) had gotten into the house through the gap at the bottom of the screen door, we plugged that up and went back to our cultural repast.

Next morning, after hearing some scuffling and bumps in the night, it was (rather strongly) suggested that either Berty had gotten back in or there may be another critter in the house. Nothing like a varmint hunt to start the day. So I got into my best Peter and the Wolf mode and headed upstairs looking for tracks, armed with my trusty broom and my genuine USC wastecan. I was searching the wilds of the guestroom when I heard, from the bathroom, "He's in here!" Sure enough there was Percival (see above) sitting up as tall as he could on the commode. After failing to cajole him to jump directly into the wastecan - a chase ensued. He ran into the office and got behind the computer cabinet, following which we got into one of those I go right, he goes left things. Finally, I laid the wastebasket down at one end and threatened him with the broom on the other. He ran into the wastebasket so fast it clanged when he hit the end. The wastecan was a good way to haul him down to the park where I turned him loose.

Now, this story goes on - the next morning Madam opened the front door to find Berty curled up on his back between the front and screen doors snoozing away and rather annoyed at being awakened! He got a free ride down to the park, too. We have not seen either of them since. Stand by.

Bringing Oil and Gas Evaluation the 21st Century

In the last (December, 2003) issue we noted the 10th Anniversary of our little newsletter and indicated that we might digress occasionally from nuts and bolts appraisal to rummage around in some of the more philosophical corners of evaluation.

Great and historic changes of political, cultural, and even personal significance are often triggered by relatively modest and localized happenings which set in motion a chain of events which have transformed the world as we know it. The dinosaurs were reportedly wiped out by (speaking of ripples) a rock falling in the water off of Cancun; the future of the United States was changed by the invention of the cotton gin; baseball was ruined by the designated hitter; and (on the human level) Charlie could not get off the subway because the MTA had raised the fare to 15¢ but he only had 10 cents. Not too many issues in petroleum property evaluation are on the scale of mass extinctions. The possible exception would be if those who think we are running out of oil sooner, win out over those who think we will run out later. A petroleum based economy is not going to fare too well if the well goes dry sooner than expected. On the other hand our industry does have a few issues that rise above the nickel-and-dime variety that plagued Charlie.

This is a long way (my favorite route) of leading up to a discussion of evaluation practice in general, and particularly, how we can modernize those practices to benefit the people who depend upon the accuracy and reliability of evaluation work, while at the same time fending off the ever grasping arms of regulation and litigation. I speak, of course, of the central role of reserves and the estimation thereof to evaluation work. The trigger for this discussion in the following paragraphs and in other journals, articles, and professional debates (collegial and otherwise) is the reserves write-down flap started by Shell and aided by El Paso and others. The news was not that reserves changes occurred; after all, reserves are usually revised every year as alterations in product prices, along with on-going production and development efforts, add to or reduce remaining reserves. The news was that the reduction(s) were so large and occurred primarily in the Proved category. The media reporting about Shell, combined with reports of reserves having reductions at other companies (the stimulated imagination of journalists), caught the attention of regulators and politicians. This is not a good thing! Shell, and later El Paso et al, were castigated for "hiding reserves problems" and for misleading investors and (worse) analysts. All of a sudden, the business press was in a dither followed closely by "shocked" officials at the SEC and the inevitable politicians who expressed dismay at this betrayal of the public trust. Goodness!

Of course the real problem is that reserves estimates should NEVER have been put into corporate financial statements in the first place. Reserves are only estimates and are somewhat subjective at that, but they tend to be treated by many in the financial community and the business press as being on a par with audited balance sheet items. Alas, this argument was lost

back in the late 70s'. One could pass the whole episode off as a gunglous blunder by management and let it go at that; but in the post-Enron Age, conventional error molehills get magnified into malfeasance mountains and, if spun by the right (or wrong) people, can result in all sorts of consequences.

Which brings me to my point. Maybe it is time for the oil and gas evaluation community to consider taking a few steps forward into the 21st Century in terms of evaluation practice and (possibly of more importance) how we relate to those in the outside world who, by desire and/or necessity, must make use of the results of our work. Bear with me a bit. I know that we have made significant technical strides, particularly in the application of computer technology to evaluation work. We can now model virtual reservoirs and examine the progress of projects (planned and underway) in real time from the comfort of an ergonomic chair. And, we do a pretty good job of communicating that technology among ourselves. The problem, at least it appears to me to be a problem, is our ability to communicate what we know and why (or how) we know it to those who depend upon our results.

Shortly after the Shell write-down announcement, the Wall Street Journal (WSJ) ran a couple of stories on the reserves issues. In one or more of those articles, there were quotes from several articulate and respected industry consultants whom I expect spent some time trying to educate the writer(s). When the story came out in the WSJ, the quotes were included but so was the description of the assignment of risk classifications to reserves based on the old Fishing Story (Proved reserves are the fish in the boat, etc.)

Now I happen to like the Fishing Story (I used it just last week). It is a reasonably good metaphor for Proved, Probable, and Possible reserves definitions that can provide a basis for understanding of the uncertainty relationship but without the need for intricate probability discussions. In other words, it works well for judges, jurors, regulatory board members, lawyers, journalists and others, particularly if their time and/or attention span is limited. [Authors Note: According to the industry folklore I have heard, the Fishing Story was originated by Jerry Sherrod at Republic Bank but for all I know it could have started with Colonel Drake]. Unfortunately, when the Fishing Story becomes the centerpiece of a major media story about reserves and why they can change, it has the effect of (1) diminishing the more factual story content, and (2) reducing the product of our profession to the level of anecdote with the implication that there is a credibility problem. This is not the first time that WSJ and others have portrayed the reserves estimation process as something less than reliable. During the oil price decline of 1986-87, amid property shut-ins and large reserve restatements, the same WSJ referred to evaluation as "black magic" among other things.

Sticks and stones did not inflict much damage then and maybe the recent flap will blow over too but, just in case, it would not hurt to take a hard look at how petroleum evaluation is presented to those who do not share our knowledge and experience. It is time to move beyond colloquial terminology and the use of anecdote as description of the evaluation process.

The Basis for Our Profession

Where to start! Let's begin with one of my old favorites and see if by removing it from our lexicon a few others will follow:

"Petroleum evaluation is more an art than a science."

We have all heard this expression used, often in the worst possible context, and the majority of evaluators know it is wrong. Yet, because we tend to be too casual about allowing the phrase to be used, it still finds continued expression as both an excuse and a hiding place.

Not every reader of our little newsletter is a professional evaluator of oil and gas properties but it is a safe bet that the few readers who are not evaluators depend upon such work as a source of necessary information. So it should be possible to agree that there is no Art involved - even geologists have put away their colored pencils. Petroleum evaluation is a coming together of science and engineering (applied science) to achieve a knowledge-based result. Art is none of that. The left brain vs. right brain argument. But you knew that.

Petroleum engineering and the evaluation of oil and gas properties are based solidly on the sciences of geology, geophysics, and fluid mechanics supplemented by a heavy dose of mechanical engineering, and a modest degree of practical economics. Assuming there is data with which to work, any evaluation can use geology, geophysics and fluid mechanics to build an initial estimate of recoverable volumes and production rates which can be continually improved as data is accumulated. While we maybe forced to use analogy from other properties and interpret less than perfect data, this is the initial premise in an application of the scientific method. Continual testing and interpretation of results allows the next test to proceed with greater certainty. This is, after all, how reserves move from Possible to Probable to Proved. So maybe, instead of the Fishing story, we should concoct a more appropriate metaphor based on the scientific method.

Actually, the science part of evaluation, difficult as it may be to explain, is not the area that creates the perception problems. The real issues are economic. The concept of reserves and, by extension, the value of future oil and gas production is difficult for most people to grasp. The idea that the volume of reserves (which is oil to be produced over the ensuing 10, 20, or 30 years) is dependent on the price of oil last December 31st is not immediately intuitive.

Thirty years ago when I was a new engineer at the bank, it was often difficult to explain the basis of a proposed oil loan to the senior committee folks who approved such things. The entire approval procedure was set up for the kind of commercial loans that were supported by balance sheets, income statements, and real estate. For many small oil companies, the only significant assets are reserves in the ground. The future production is the basis for the proposed loan. However, without the reserve value on the balance sheet, the company's assets often looked pretty puny. We developed the subterfuge of showing one year of future production as Inventory which helped to some degree. Of course, reserves are not cans of peas on a shelf, so the characterization of reserves as a form of inventory was misleading. But that is the way many financial analysts and others have come to view the reported reserves.

Over the past few months, numerous commentators and analysts in newspapers, business journals, on CNBC and other media have expounded on how these reserve changes, replacement rates, and reserve-to-production ratios are so important to oil company financial statements. Of course, all this discussion is in the context of a stock market whose long horizon is the next quarter not the 10 or 20 years it will take to produce the reserves.

Issues for the 21st Century - Or at least for the next Decade

Moving away from anecdote as a means of communication will not be easy or comfortable; many of our anecdotal approaches serve as a shorthand among practitioners. But, perhaps if we were to concentrate on four issues, the need for anecdote would be reduced.

- Resolve the Probabilistic - Deterministic Debate into a Rational Approach
- Standardize both Reserves Definitions and Assignment of Risk Classification
- Standardize Economic Terms and Applications
- Expand the Use of Financial Methods in Evaluation

These issues are not new and there is ongoing debate on each one; just tune in to the SPE TIG site sometime.

Resolve the Probabilistic - Deterministic Issue

This issue must be resolved before we can move on to standardization. The P-D debate and its numerous sub-squabbles have been going on for years. It is a good and worthwhile debate and has contributed to a better understanding of the reserves concept. The exchanges on the SPE-TIG site and in various books and journals are intellectually stimulating and, for the most part, have advanced the debate. But sooner or later there needs to be a decision that a Probabilistic determination of reserves at X% is Possible and Y% is Probable. There must be a consensus that input data A, B, and C should be derived from a normal

distribution while D, E and F should be derived from a log-normal array. There should be a commandment that all statistical discussion will use the language and definitions of the mathematics and statistical disciplines that developed the methods, and not the colloquial terms used by a particular company or the software package in place. This part should be simple, but for the past few weeks the TIG site has been debating which direction to plot cumulative risk curves. There must be a standard that defines the minimum quantity and quality of data needed for use in a Probabilistic estimate. Finally, there must be agreement about the economic constraints to be applied to the estimate. To those who are involved in this debate on an ongoing basis these may seem simple concerns and cogent arguments can probably be made on every side of each issue; but, until resolution is attained, the ability of evaluators to discuss higher risk reserves will be compromised.

As something of an outsider on this issue, I fail to see why there needs to be a debate at all. It seems apparent that Probabilistic methods have the best application to evaluation of Possible and Probable reserves but that, as the information base is increased, the statistical approach can be replaced by an experience-based methodology. In the end, regardless which method is used, someone has to pick a number which is, by necessity, a Deterministic result.

The resolution of the Probabilistic/Deterministic issue carries with it certain perception problems. The Probabilistic approach implies a greater degree of precision and certainty than the results usually deserve, particularly given that the method is applied to evaluation efforts where hard data is limited at best.

Standardize Reserves Definitions

Reserves are not real - they are a function of the definition being used at the time the reserves are being estimated. There are, of course, the SPE and SEC definitions which differ only slightly but even that difference is enough to bring about significant confusion and endless debate about application. Then there are the many reserve definitions used by federal, state, and local taxing and regulatory authorities which, with a word change here and a phrase change there, manage to diverge from SPE/SEC definitions just enough to cause some very expensive arguments (read: litigation). Many companies have their own definitions of reserves or employ terminology that makes comparison of Company X to Company Y fraught with angst. Adding to the confusion, the Untied (the preceding word is a typo but I decided to leave it that way) Nations is getting into the act by promoting a set of "Resource" definitions - as if the UN did not have enough to do protecting peace, freedom, and human rights. Then there are differences in interpretation and application of the various definitions. The SPE definitions (1997) are easy to be read and seem to be reasonably clear about what is Proved, Probable, and Possible (and in between); but then

there is the interpretation of those definitions by SPEE and everyone else who uses them.

The SPE definitions are inherently Deterministic and should probably stay that way until there is a rational basis for another approach. But that does not mean that some improvements could not be made. The area needing the most attention and the easiest to resolve is the “current economic conditions” conundrum. Readers know that this is one of my favorite hobbyhorses but the seemingly simple phrase carries a lot of baggage. If, as some contend, it refers to the carrying forward or projection of prices and costs as they exist on or about the date of evaluation, then SPE should say so. SPEE suggests that otherwise PDP reserves based on changes in price (and costs) should be classed as UnProved. I have never quite understood that rationale but there in lies the problem in a nutshell. The phrase is open to interpretation. Interpretation is a handy tool. To me “current economic conditions” is a more expansive term that includes my perception of forward conditions that will effect future production and investment. If “current economic conditions” is intended to be static, then any use of market data is precluded. If that is the case, industry should just surrender to the SEC and be done with it.

There will eventually have to be some definition of “reasonable certainty.” I would like to think there is no need to rush but unless there is some progress on this point to quantify rational boundaries, the SEC or other government body (Congress comes to mind) will come up with some sort of half-baked arbitrary ranges that are functionally meaningless. How about Proved < 90%, Probable 90-50%, Possible > 50%. [In truth, discreet boundaries are also meaningless. Given the quality of most of our data, Why is 50% better than 49.5%?]

There has to be room in the definitions to allow differences in the experience and perceptions of evaluators to play a role. On the other hand, those evaluators should be working with the same definition AND interpretation. The 1997 SPE/WPC definitions are a good starting place. Maybe it is time to bring in all the serious players to update those definitions and then work on industry and government to adopt the same language.

Standardize Assignment of Classification

This is a sub-set of the definitions issue but deserves to be considered separately. Simply defining reserves of differing classes does not necessarily mean that reserves would always be classified in the same manner. To be sure there is no precise way to do so. Perhaps the effort here should be to articulate the quantity and quality of data and data interpretation that is necessary to (1) allow oil and/or gas in the ground to be considered a “reserve” and then (2) to establish that reserve as Possible, Probable, or Proved. Also, could we please do away with “Possible Producing”, etc. It is either producing or it is not, and if it is, then it is Proved.

Standardize Economic Terms and Applications

This really should be the easiest part of the standardization process. We can use software as a starting point. A few years ago SPEE held a symposium to, among other things, compare the various evaluation software packages then on the market - about 12 at the time. One of the obvious differences among the various packages was the variety of terms used for the same data inputs and, particularly, output results. The same column outputs, calculated essentially the same way, were found to be Net Income in one program, Net Revenue in another, and Cash Flow in a third. At the time, there was much talk about coming up with standard terminology for use in evaluation software. The difficulty is that most evaluators learn their terminology from the company where they started doing evaluations but textbooks and journals are no better. One argument that is occasionally heard is that certain terms are “accounting terms,” but why should that be a problem? Part of the difficulty with communicating oil property evaluation issues to the outside world is the propensity to use parochial terminology.

Expand the Use of Financial Methods in Evaluation

This is not a serious problem within the large companies or some taxing/regulatory agencies where financial evaluation methods are commonplace. This newsletter is not the place to get into a discussion of the various approaches to financial risk management and asset selection; they are usually not part of an evaluator’s job in any case. Needless to say, the internal capital investment evaluation methods used by the major companies and large independents are based on their individual requirements and will not soon be influenced by the standards of an evaluation community. On the other hand, the adoption of financial methods by consultants, appraisers, taxing authorities and smaller companies might be a useful though probably not an urgent goal. The approach would mean a reduction in dependence on, in some cases, outdated rules-of-thumb for estimating value; application of commodity market data to price projections; and the adoption of modern cost-of-capital analysis for derivation of discount rates and risk adjustment.

Redux

The above comments could be read as a list of complaints and devoted readers will recognize some from previous discussions. But these issues keep coming up in conversations among regulators, in court hearings, in professional papers and journals, and in web-based discussion groups. They are not just one cranky person’s list of pet peeves. There is no question also that these issues are not languishing untended. The P/D debate is ongoing and, based on the point and counter-point of many of the discussions, the level of sophistication is increasing. This is an issue that will not be resolved by a committee over a weekend; but the concern is that some other group of folks- the SEC, Elliot Spitzer, or Congress out to “Do Something,!” will make the

decision for us. In regard to Reserves Definitions and related issues, the SPE Committee charged with that is hard at work but, there too, decision time may be closer than many people would prefer.

But even if, by some stroke of collective genius and motivation, industry were to settle the P/D debates, adopt universally acceptable definitions and economic terms, and start expanding our vocabulary with the works of Sharpe, Markowitz, and Fama & French, there would also need to be a collaborative basis for application of all this collective wisdom - which brings us to our next topic.

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Professional Certification or Accreditation

The reserves write-down by Shell, El Paso, and others earlier this year has triggered a series of events which has brought to the fore an issue that has been debated among professional evaluation engineers, off and on, since the late 1970's. That is, certification or accreditation of "evaluation engineers" as a professional group. Ordinarily, the "Shell case" would be old news in a short time and would become a classroom case of how or how not to classify reserves. However, in a post-Enron, Sarbanes-Oxley, high oil price environment, it should be expected that there will be enhanced scrutiny of reserves pronouncements and the methods used to make them. The SEC has announced that it is considering implementation of new evaluation rules and is being prodded by some in Congress (John Dingell, (D-MI) for one) to do so.

Without expanding into the debate about the adequacy of current regulations, [which would, in theory, only apply to SEC evaluation but which would ultimately filter into evaluations for other purposes] one consequence of the heightened visibility of reserves estimates has been the perception that reserves estimation is a less than exacting process which is best described by anecdote (see fish story in the Wall Street Journal).

Back in February my friend Ron Harrell wrote a very get-to-the-point article for the Oil and Gas Journal which raised the issue of Professional Certification of reserves evaluation engineers. The article and subsequent writings received a fair amount of discussion and has resulted in a rather impressive joint effort

among several industry organizations to explore the idea of Certification (or "Accreditation"-take your pick for now) as a broad industry goal. This initial effort culminated in a meeting on June 15, 2004, following the SPEE Annual Meeting in Oregon, that was attended by representatives of SPE, AAPG, SPEE, and the American Society of Appraisers (ASA).

The concept of certification is a touchy subject. Conversations with colleagues on the subject have elicited strong hostility, passive shrugs, and everything in between. No decisions have been suggested or made as yet, however, certification of petroleum evaluation engineers would be similar to the professional credentials that accrue to CPA's, architects, and appraisers among others and could/would/should? entail, in general terms:

1. A required level of education and experience
2. A test
3. Adherence to evaluation standards.
4. Continuing education
5. An ethics commitment

As envisioned, certification would not be required and, unlike registration, would be industry defined and controlled with standards set by peer groups. Testing and Continuing Education requirements could be specific and definitive. There is existing precedent for this procedure in that the ASA has accredited oil, gas and minerals appraisers for about 30 years and the ASA designation is recognized as representing a high level of knowledge and credibility.

This process, if it were to go forward, would be a significant undertaking beyond the logistics of setting up testing and CE monitoring, processing applications, etc. The greatest challenges are in defining the purpose of accreditation, motivating individuals to apply, and convincing their employers that the effort is worthwhile. Certification cannot be restricted only to SEC work, or to consultants, or to those who appear in front of regulatory bodies.

A Letter from Rocky

Hey there, Good Buddy! Sorry I have not written lately but with oil prices up to where they are we have been pretty busy out in the old Oyl Patch if you know what I mean. We have been putting every well we own back on production, fixing up some idle ones, and selling oil as fast as we can squeeze it out of the ground. Of course, we have seen these price spikes before but they usually don't last this long. Keep your figures crossed and let's not blow it this time. Speaking of increasing production, I got an email from a friend back in the ancestral homeland (Oklahoma) wondering why California doesn't produce more oil. I got the idea that he was asking about offshore production but this was back when we had all that fuss about high gas prices so it could have been about onshore oil, too.

Anyway, I replied with a couple of points that I thought you might find interesting. First, I put him in mind that California is still the 3rd or 4th largest producing state and we do it all the hard way. I don't think there is a single wussy flowing oil well in the state - at least on purpose - and most all the others are in some kind of enhanced recovery. Speaking of which, Cousin Virgil is looking into starting a hot air injection project by having Barbara Boxer and John Kerry come on out and talk to some of our Tulare zone wells. It may not work but if we sell enough tickets maybe we could get a cappuccino machine for the dog house. Good Ole Virgil, thinking all the time.

Anyway, back to California oil - the offshore gets all the attention and every now and then makes the news. There are a whole bunch of Federal tracts offshore that were leased out years ago but never developed. I suppose some folks in other oil states can't understand why we don't get busy and start drilling and producing. That's a real good question until you think about it a bit. The political/regulatory obstacles get most of the blame and there is no question that a relatively small bunch of greenies and others have pretty much put the kibosh on new offshore development. But the oil industry has not made an obvious effort toward development or to illuminate the local folks regarding the value of offshore E&P, such as taxes and royalties. So, what's new? It is easy to forget that California has had offshore production for almost 100 years, starting with Rincon, and that fields in state waters have been pretty good producers. The lack of industry activity on the Federal leases, particularly lately (1990's), may be more of a wallet issue. The state leases were developed in shallow water in the 1950's and 1960's, before regulatory restrictions imposed major costs. Those leases started off producing from shallow water sand reservoirs. The federal leases are in deeper water, were developed after the Great Oily Bird Flap of 1968, incurred very significant platform and production investments, and found production primarily from the fractured shale Monterey. The oil is low gravity, high sulfur, and the Monterey likes to dump a lot of water on you just when you least need it. Making a long story short, while there have been some good fields at Dos Cuadros, Santa Ynez, and Pt. Arguello, they haven't exactly been world beaters - Pt. A was called a giant field when it was found and developed with 3 platforms in the early 1990's (not to mention a huge onshore facility) but there is currently a debate about remaining production life and the onshore facility is largely shut-down. The majors sold their interests in the offshore leases years ago probably because they saw that there were better places to put their bucks - even if the drilling ban was removed.

Well, gotta run. Take care and do not forget we got an election comin' up.

ROCKY



Time Travel

According to Einstein, Stephen Hawking, and others who dabble in theoretical physics, traveling backward or forward in time, outside of the usual clock cycle, is not possible - at least not in the manner usually envisioned. But one can come close. Come along with us for a short trip back to great-great-grandad's time. The place is Charleston, South Carolina; the date is February, 1864; the War Between the States is the fourth year. The tide has turned against the Confederacy, Federal ships blockade the harbor, and Union artillery has begun indiscriminate shelling of the city. You Are There.

In an effort to break the blockade, the Confederate defenders of Charleston would employ something new in warfare - the first true submarine. The ship was the Hunley, owned by Horace L. Hunley, and built in his machine shop in Mobile, Alabama for use against the Yankee blockade there but shipped by rail to Charleston in the summer of 1863. The Hunley was designed to submerge and approach an enemy vessel underwater, attach an explosive charge, and sink the ship without being attacked herself. There were a lot of stories about her construction; she was not built from a steam boiler. Hunley was small, 35 ft. long and only about 4-5 ft. in diameter; power was supplied by a 7-8 man crew that cranked a shaft connected to the propeller. The explosive charge was mounted on a spar on the bow. During late 1863 and into the winter of 1864, Hunley engaged in sea trials and training runs. Two crews totaling 13 men, including Mr. Hunley, died as the result of accidents. The mission in February, 1864 would be the first combat voyage with a crew of eight volunteer officers and men.

*Seventeen February eighteen sixty four
George Dixon and crew set to sea
Though brave men died before,
they would try once more,
to strike at the enemy...
With the moonlight to guide,
they sailed with the tide toward the
blockaders anchored asleep**

Lt. Dixon and his crew submerged just off Sullivan's Island in Charleston Harbor and proceeded underwater past Ft. Sumter and out to the Union blockade line. They targeted a Union steam-powered sloop and headed toward her. The approach was flawless and the charge on the spar was stuck into the side of the ship. Hunley backed off, the charge detonated, and almost literally blew the Federal ship out of the water. Hunley then surfaced so that Dixon could flash a blue light - Mission Accomplished - to the watchers back on shore. The watchers saw the blue light but Hunley never returned.

*And the loved ones at home wept tears all alone,
and pondered their watery grave.
With only the seagulls to cry out their dirge,
and the sands for their funeral shroud.....
Now the years did pass like sands through a glass or 'e the
mystery there in the deep.
But adventures bold came with a new goal to waken the ship
from her sleep..
And the cannons will thunder and church bells will ring to
guide you home to the shore.*

*Lyrics from "Hunley Shine On," by Stan Clardy, 2001,
Gray Note Productions, Stateville, NC, www.stanclardy.com

In 1995, a team led by writer Clive Cussler found the Hunley and, in 2000, the ship was raised to the surface intact and was brought back with great public fanfare to a research lab in Charleston, a few miles from where she had sailed 135 years before. Subsequent excavation determined that the ship had been well preserved. Lt. Dixon and the crew was found to be still at their duty stations in the little ship. All eight men would be identified and likenesses would be created. Hunley and her crew had come home.

On a bright spring Saturday morning in April 2004, one hundred and forty years after Hunley was lost, the cannons did thunder and church bells rang as over 9,000 soldiers and sailors in grey and butternut escorted the eight horse-drawn gun carriages carrying Lt. Dixon and his crew from the old Battery, past the guns that fired on Ft. Sumter, through old Charleston to their resting place at Magnolia Cemetery.

It was a memorable experience. I was privileged to be in the Color Guard for the Gulf Coast Brigade - about 3,000 "boys" from Georgia, Tennessee and Florida. We had 5 miles to march on a warm day but there was a breeze. It was not hard, once we got started, to get into our chosen role and march rhythm. We had gone about a quarter mile and came up to the turn in the road at the Battery, the closest point to Ft. Sumter. We were all in step, no one was talking, the only sounds were the tread of boots and the clank of canteen cups; the spectators pressed in on both sides, quiet and respectful. Then we turned the corner; the breeze caught our First National standing it straight out from the staff; the band behind us made the turn and started to play "Dixie." The crowd erupted in cheers and flags; And - just for a moment - if you squinted a bit and held your rifle just right, you could hear quiet footsteps marching alongside and it was - probably, for the last time - 1864 once again.

This little story relating my personal experience is not really about that. It is about preserving our nation's history and celebrating the dedication and devotion to duty of eight brave men, not all Southerners, one a former Union sailor, who volunteered to undertake a hazardous mission in an experimental craft that had already lost two crews.