



IIM Annual Investor Meeting

October 28, 2017

Transcript of Cale Smith's Slide Narration of Videos 1, 3, 4 & 5

Video #1 – Intro, Gecko (Briefly), Tarpon (In Detail)

Cover Slide

Welcome to the Islamorada Investment Management Annual Investor Meeting for 2017. It is October as we are recording this now. The original date for this meeting got pushed back for a couple of reasons, the big one being we were finishing up construction in our new office this spring, and then more recently Hurricane Irma blew through town.

Slide: Irma

I am specifically going to avoid talking about Hurricane Irma today. I'll just point out that because of the time of year we are doing this, you're all sort of getting a two-fer in these slides. We'll walk you briefly though 2016, even though it seems like a long time ago now, and then get you up to speed on 2017 so far, too.

So, here we go.

Disclaimer Slide

Here is our standard disclaimer. And that's about as long as I'm going to pause on this today.

Agenda

Here is what we'll be covering. You are watching video 1.

Video 1: Intro, Gecko (briefly), Tarpon (in detail)



Video 2: Retz on International Investing

Videos 3: Gale on Oil

Video 4: Q&A on Lower for Longer

Video 5: Q&A on Debt

And then there is also a PDF file that contains written answers to other questions that were sent in. The answers to most of those questions didn't really lend themselves to graphics, like those other two did, so written responses seemed better for those.

You do not have to view these videos in order, or even all at once. They are separate files. So if you want to hear from Retz, you can jump directly to Video 2. I also have a transcript posted for videos 1 and 3...this intro, including Tarpon and Gecko comments, and then everything on oil, too...so you can download and read that if it's more convenient than watching the videos.

I believe we've answered every question we've gotten to date. Some of those questions were addressed in the natural course of the planned presentations, and others were explicitly discussed part of that PDF and Videos 4 and 5, specifically.

But let us know if we missed any, and otherwise, please let us know what questions you may have about this material, too.

So, let's get into it.

Performance Slides for Gecko

Slide: Gecko Performance

Compared to Tarpon, Gecko has a far small number of investors and assets, so I'm going to size my commentary appropriately here. Gecko you may remember is the equity income portfolio I manage here, which emphasizes dividends and distributions more than growth per se. In certain times – and early 2016 was



one of them – we can buy companies with very attractive yields and the potential for excellent capital appreciation, too.

We had a very good year in 2016, returning just under 60% for the year, net of fees, and the current yield on Gecko is still attractive at just under 7%, also after fees, as of this past Thursday. Over the last year and change we have seen two of our Gecko companies get acquired at nice premiums...PennTex Midstream Partners, which I will talk more about in a minute, as well as JP Energy Partners – which was actually bought out by another company we owned, American Midstream Partners...so not only did we see some excellent appreciation on those shares (or units, in this case)...but because the JPEP buyout was a unit-for-unit deal, and we kept most of our position in American Midstream after the deal, our effective yield on those low original cost JPEP units will continue to increase. Gift that keeps on giving and what-not.

Gecko is not as directly tied to oil prices as Tarpon, but we do own a number of securities that are in that energy sector – MLPs, that I'll get into here - and so Gecko has not done much in terms of capital appreciation so far in 2017, largely due to the same oil price woes that have impacted Tarpon, although that yield has remained solid.

Slide: Pros and Cons of MLPs

A quick refresher on MLPS.

In Gecko, we own a number of Master Limited Partnerships or MLPs, and most of those are pipeline companies which move oil, gas and liquids around the country. But because MLPs issue K-1s at tax time every year instead of the usual 1099, I limit Gecko to just taxable accounts. So no IRA or tax deferred money in Gecko. Owning Gecko in a tax deferred or IRA account can cause headaches with the IRS when it comes to something called UBTI, or unrelated business tax income...and because for whatever reason these MLP companies can't see to get their K-1s out before April 15th every year, anyway, that can be annoying for some folks and their CPAs, too.

Still, though, those inconveniences are worth it.

For those of you who haven't spent much time in the Master Limited Pipeline or MLP sector, it's a great place to find inefficiencies in the market, because so



many investors assume that you evaluate them the same way you would a regular C Corp. Really, though, those MLP capital structures are often built more for tax efficiency, leverage, or operational flexibility, so as a class they end up with misconceptions and misunderstandings. But if you combine that unique structure with the fact that many institutions are restricted from buying partnerships - whether by prospectus or by law - it's one of those underfollowed and inefficient parts of the market that can be well worth the time.

If the supply of oil, NGLs or gas in the basin or region a pipeline is located in exceeds the takeaway capacity, then you've got a true toll both of a business. If supply is less than take away capacity, even just a bit, you'll see MLPs compete with each other and drive each other's revenue down. So pipelines can be excellent businesses, but I also wouldn't be indiscriminate or tempted by every attractive distribution yield you see. And I say that specifically because the marginal costs for these guys are effectively zero, which means they view unused pipeline capacity as almost criminally wasteful, so you'll see competition crimp things a bit in certain regions – at least until there is a bit more balance between supply and takeaway capacity there.

Slide: Headscratchingly Good

In any case, the uncertainty in the oil market hurt the MLPs in Gecko in early 2016 when oil hit \$26. But it also opened up some headscratchingly good opportunities if you didn't let yourself get caught up in the panic.

That panic around \$26 created some truly amazing opportunities in the market – even among companies like MLPs that don't have exposure to spot prices. I want to hit two quick examples that we saw in Gecko...because I feel like right now, Tarpon is also full of opportunities that seem almost too good to be true...and after the panic and fear goes away, you find out, "Yeah, turns out those things really are true."

First - "Slow motion buyout with a big margin of safety (PTXP acquired)"

PennTex Midstream Partners was acquired by Energy Transfer Partners or ETP in what was as unsurprising a buyout I can remember. But we still earned about a 47% premium on our shares, plus an attractive yield in the slightly over a year we owned them. And I say it was not real surprising for a number of reasons, including the quality and rarity of their assets, attractive cash flows, etc...but



really it shouldn't have surprised the market because ETP already owned 65% of PTXP units, and 100% of its General Partner. So already there was either takeout potential...or big confirmation that PTXP was very undervalued. Energy Transfer made a standstill agreement until May of 2017 (meaning ETP would not buy more shares of PTXP prior to then), and they were signaling just about as clearly as you could without hiring a skywriter that it made no sense for them to do anything other than buyout the rest of PennTex.

So, in the middle of May, sure enough, Energy Transfer bought the rest of PTXP. Seemed obvious and relatively easy...yet I never read or heard a thing about it. Probably because most investors were too busy fretting about oil prices.

Second "Nearly doubling our money and still earning 19% a year (CEQP)"

On that one – Crestwood Equity Partners or CEQP. They announced a 1:10 reverse split in November of 2015, and shares started falling further – both because traders don't like reverse splits or something and then oil was on its way to \$26. As near as I could tell, people got so panicked that they just couldn't multiply 55 cents by ten, because the annual distribution was solid, and the post-split distribution of \$5.50 on a share price of \$12 was simply just bonkers. But there it was, staring us in the face. So we bought a bunch between December of 2015 and April of 2016, and through yesterday, on our cost basis of \$12.72, we have seen capital appreciation of 90%. But, wait. The yield on CEQP today is 10%. The yield on our shares is 18.9%. And it is solid. And it will grow. The point being that if I'd told you in February of last year that we were buying something that would basically double in a year, and then would soon be paying us 20% a year, forever after that, as long as we held it...you'd have probably thought I'd lost it.

My point is this:

Only fear in the market creates real opportunities. Full stop. And you're not going to read about any of them in the newspaper, or see them on CNBC. But if you have a good process, do the work, keep plugging away, stay calm and above all be patient, then the results should eventually take care of themselves.

So if even shares like those of PennTex and Crestwood can be so stunningly volatile – these companies had no exposure to the spot price of oil, had secure and growing cash flows, are well hedged for years, have no liquidity issues and



own basically brand new assets – then imagine how mispriced things can get in companies that do have more direct exposure to oil prices.

Which brings us to Tarpon.

If long-term growth and not yield is the primary objective, Tarpon is a superior alternative to Gecko for the foreseeable future.

Performance Slides for Tarpon

Slide: Tarpon Performance

In calendar year 2016, Tarpon was up 107%, after fees. Our 2016 performance was excellent, and in the bigger picture sense, it also was a good look at how inefficient the oil market is these days. More specifically, 2016 was notable in that we had two ten-baggers in Tarpon...stocks whose shares prices went up more than 10-fold, or 1,000%. We still own all our shares in one those ten baggers - Resolute Energy, which has since come down a bit from it's highs early this year, but which I think is still worth considerably more - and the other, Clayton Williams, was acquired earlier this year - which was a little bittersweet, in that I was hoping we'd see continued gains there as oil kept rising the next few years...but I can't really complain. We took that profit from Clayton Williams and redeployed it elsewhere in Tarpon this spring.

So in 2016 we had a banner year, but at this point, it's old news.

And as much fun as 2016 was, 2017 has been an exercise in patience and then some.

Our performance from the first of the year thru the end of September in Tarpon was a negative 31%. This has been a long, frustrating year so far, and it's all about oil. The fundamentals, the actual data, is unequivocally positive, but sentiment is excessively bearish, and the good news is that data will rule in the end – and we're close to the point where it will impossible to overlook soon.

I'll talk about oil a lot more soon, but let's stay focused on Tarpon a bit longer here.

Slide: Executive Summary on Tarpon



Here is an Executive Summary version of the next parts of this presentation – in three questions.

First – what went wrong in 2017?

I utterly failed to predict the sentiment shift in the oil market.

Second question – How are we picking these stocks?

We are focused on capital-efficient shale oil producers with good management that can survive “lower for longer” and have significant torque to oil prices.

Final question – How do I intend to fix this?

The data would suggest there’s not a lot of support for the high level of bearishness that is currently out there in the oil market. In fact, we are now in a bull market for oil - but you certainly would not know that if you look at oil prices today. So I strongly believe that with the continuation of big drawdowns in U.S. and global oil storage inventories, we’ll soon see a big shift in sentiment and an oil price that better reflects reality. And while it is frustrating to be unable to identify ahead of time when exactly that shift in sentiment will get here, we’re staying long and grinding it out here – because the cause of that inevitable shift is probably only going to be visible in the rear-view mirror, anyway. But the more inventories drain, like they are now, the higher the likelihood that the shift is imminent.

So I am trying hard not to sound too cavalier about my answer to that “how will I fix this” question. But the good news is that we simply don’t have to do anything to correct this underperformance this year. This is a problem that will self-correct – specifically because U.S. oil production is falling way short of what Wall Street and the three main reporting agencies had previously forecast. And I’d also remind you that this is not a basketball game. There is no 24 second shot clock. Relative to the size of gains we should see, these months of frustration we’re going through right now are not going to matter in the end. In a minute I’ll show you some slides about the expected future returns in Tarpon that underscore why I think we will be so well rewarded for our patience.

So that’s the short version of everything that follows.

Now let’s dive a little deeper into Tarpon.



Slide: Asymmetric Expected Returns 1

I didn't get a single question before the meeting this year about any of our individual companies in Tarpon. That's probably a good indicator that I'm focusing too much on oil, and not enough on our companies, when I write my quarterly updates to you all. I'll try to fix that in my next few letters. In the meantime, it gives me a chance to talk about Tarpon at the portfolio level, instead of at the company level, which I do even less but which I think you might especially appreciate right now.

So...this may look like a pretty simple table, but there is a lot going on behind the scenes.

At a high level - this shows you what returns we could in theory expect out of Tarpon, given the portfolio's correlation to two big variables. So the first point I'm trying to make here is that we have a rare chance to earn large, asymmetric returns here.

What do I mean by "asymmetric returns"?

I mean that in the statistical sense, the distribution of our future returns is heavily skewed towards large positive numbers. Or, more simply, we have orders of magnitude more to gain than we stand to lose. So it's not that there is no downside here...we're living it right now, really...but that the downside is both limited, and dwarfed by the potential upside.

Which, if you step back, makes at least a little intuitive sense, I hope. Oil can be awful volatile, but the price is also never going to go to zero, right? Contrast that with, say, something like Radio Shack, where their revenues are probably going to be indistinguishable from zero before too long, if they aren't already, and in a table like this for them, more than half of it would be full of big negative numbers. So there are certainly risks in owning E&Ps, but obsolescence is not one of them – and when you are buying in the bottom of a cycle, assuming you have full price transparency, the profile of your future returns looks much more appealing, like this.

So, let's look at this table. We've got a number of different WTI oil prices across the top there – from \$40 to \$45 all the way over to \$100 a barrel on the right. Now, realize that no producer actually gets to realize WTI price in selling their oil, and not all of their production is exclusively oil, but this table is an illustrative



exercise. I'm ignoring things like pricing differentials and production mix because I'm after rough accuracy, and true precision isn't practical here.

In the left hand column, running vertically up and down there in the column labeled "EV/EBITDA Multiple", is the other big variable that will determine our returns in Tarpon – the valuation of our companies.

EV stands for Enterprise Value, which tells you how much the market believes a whole company is worth...its similar to "market cap," only it also includes the value of debt a company has outstanding, too. If you were going to buy a whole company outright, you would pay its Enterprise Value.

EBITDA stands for Earnings Before Income Taxes Depreciation and Amortization, but you can think of it as rough proxy for core cash flow.

Now, there is a whole nuther slideshow we could do on the pluses and minuses on using EBITDA in valuing companies, and why you really shouldn't consider it equivalent to actual cash flow, and how EBITDA margins might be impacted by a number of other variables...but I'm using it here, in spite of some reservations, because it's the simplest way to do this sort of table, and also because, frankly, it's a pretty popular metric among E&Ps.

So this table shows what the future returns of Tarpon could be, in theory, at a number of different oil prices, and at a number of different valuations. For instance, if you think WTI will be at \$55 a barrel, and our companies on average deserve to trade at an Enterprise Value/EBITDA multiple of 7x...then Tarpon has an expected return of 127%...as measured from about a week ago, when I last updated all the numbers here.

Behind the scenes, the expected return numbers in this table are linked to a number of different valuation multiples for each individual Tarpon company we own, as well as these different oil prices...and then those expected return numbers also already reflect the actual percentage weightings of each holding we have in Tarpon, too – again, as of prices a week ago. So, all in all, it's a pretty good proxy of real-world sensitivity.

To be clear...in Tarpon some of our companies are absolutely more sensitive to oil prices than others. Typically, you'll see larger variability in a company's EBITDA the more oil it produces – compared to gas or other liquids – and it's operating costs on a per barrel of oil equivalent basis, too. So when I talk about owning companies that are geared to oil prices, that gearing is related to a higher oil mix, and higher operating leverage in the business. And then, if you add financial leverage to the equation, too, in the form of some-but-not-too-much debt



at the company level, then you can get this lallapalooza kind of effect on returns as oil prices increase.

So where oil prices will be is one question I tried to address in this table, and so is the question of the appropriate multiple the market should assign to U.S. shale oil drillers. The two are not necessarily independent, either. Higher crude prices mean higher valuations – just as lower crude prices mean lower valuations.

On the appropriate valuation levels - by way of contrast there...the average EV/EBITDA multiple of five of the biggest Wall Street darling shale oil companies, as per that note at the bottom, is over 15. I cut off this table at 10x, just to keep it conservative – but realize that almost all of our companies operate in the same oil basin that those 5 Wall Street darlings do. All things being equal, our guys arguably should merit a valuation multiple a lot closer to 15 than 4 – especially if you are surrounded by other 15s when you look out your front porch.

In any case, in the very big picture sense...when I say or write things like “hang in there, it will be worth it” this is the core of what I’m getting at.

And while I’m not pleased with being down like we are so far this year, in the context of these possible future returns, this current lousy period we are in will end up being a small bump in the road.

If oil gets back to \$100 in a few years, you can bet the market will also reward these guys with a multiple much closer to 10x or above, in which case our returns will, in theory now, be spectacular. And even though our expected returns here are also pretty asymmetric already, the reality is that if data starts coming in that indicates that oil, might in fact, stay at \$40 or \$45 or even \$55 for a long time, we would be out, hopefully long before those negative returns in the upper left quadrant show up in Tarpon.

So...if I were forced to come up with a forecast for oil prices, and then translate that forecast into what it might mean for Tarpon...here is what that would mean.

Slide: Asymmetric Expected Returns 2

Assuming oil gets to \$60 in the second quarter of next year, our expected returns would be theorized by the shaded purple cells there in the middle of the table.

Slide: Asymmetric Expected Returns 3

And if oil reaches \$75 a year after that...



Slide: Asymmetric Expected Returns 4

And here are our theoretical returns when we finally see the supply shock arrive in the first quarter of 2019.

Hope that all makes sense. Just stay patient, folks.

Now let's talk about breakevens.

Slide: Acreages and Breakevens (1)

Another couple of slides that I think should either directly or indirectly answer a few more questions about Tarpon.

Look-thru acreage and breakevens. This table shows the acreage owned by our oil producing companies in Tarpon – on a portfolio-weighted basis.

Some of our companies are pureplays, meaning they own acreage in just one oil basin in the U.S., and some own acreage in several different areas.

Next to those acreage numbers are the oil breakeven prices for that acreage – as published by a third party. I'm not just taking the companies' word for it when it comes to what they think are their breakevens. And there is more at work than just operating costs in those breakeven numbers here, too, but that's probably another discussion.

The cells in this table highlighted in orange represent where the company is either currently drilling, or will drill. That is where they are exclusively focusing their drilling efforts for the foreseeable future.

So, as per the second part of this same table...

Slide: Acreages and Breakevens (2)

Even though a few of our companies own a little acreage with breakevens in the low \$50s...they aren't drilling it. No orange cells here.

Slide: Total Acreage We (Fractionally) Own

On a look-through basis...if you categorize the acreage holdings of all our companies in Tarpon, weighted by our position sizes, here is the distribution of breakeven prices we are looking at. 84% of the total acreage our companies own is economic to drill even when oil is between \$38 and \$45. Lower than \$38, well



then, drilling stops. Between \$38 and \$45, we will earn an internal return of 15% on each well drilled. And when WTI oil prices are higher than \$45, like now, our companies' internal returns on new wells start increasing rapidly.

But that's different than where our companies are drilling now.

Slide: Surviving Lower For Longer*

This is where our companies are drilling now – and where they each have enough inventory keep drilling for the next three years at a minimum.

The majority of the acreage we own has a breakeven of between \$38 and \$40 a barrel – and all the rest has a breakeven of between \$40 and \$45. There is no need to drill anywhere else. And as oil prices rise past \$45 and higher, then, again, the internal returns these companies can earn on drilling new wells become significantly higher.

Tarpon has the most look-through acreage in the Permian Basin in West Texas – the most prolific oil play in North America.

Our emphasis on the Permian, and then in the STACK and MERGE plays in Oklahoma, mean that even if I am way off on my own thoughts about oil prices rising significantly here, and it stays stuck at \$45 for a few years – our guys will survive. None of our E&Ps need to see \$60 oil to survive.

I should point out that one of our recent portfolio additions this summer is not an E&P, and that company, Ensco, owns offshore drilling rigs that are contracted by the big oil companies. The big driver of their earnings – dayrates – isn't driven as directly by oil prices as it is tied to utilization rates – and it will probably take utilization rates crossing the 80% level again before we see a step change increase in their earnings...and that will likely be at oil price levels closer to \$70 than \$60. But the company's big backlog also makes them somewhat immune to lower prices in the near-term here. And given Ensco's valuation, I'm willing to wait.

In any case, the point is our companies can make things work at today's oil prices. They won't make a lot of money if WTI gets stuck at this recent \$50 a barrel level, and neither will we, but (1) that's highly unlikely for reasons I'll get into in a bit, and (2) you don't need to lose sleep wondering what will happen to our companies if oil stays stuck for longer than expected, either.

We own the best rock and have the lowest breakevens in all of unconventional North American oil production. We do not need high oil prices to survive...and we're obviously looking to do more than just survive here.



In the words of the irrepressible Irish pugilist Connor Macgregor – “We did not come to take part. We came to take over.”

Slide: Multiple Levers

Okay, lowering the testosterone here.

Finally, on our companies as a group – I think it’s important to point out that stability in oil prices, even at \$50, makes things significantly easier on our companies, too, than volatile swings. Our companies are seeing higher margins this year versus last year, and are that much closer to free cash flow if they aren’t there already. So, even at \$50, EBITDA will improve, making their valuations that much more attractive. Higher volumes from our companies also mean lower per unit costs (lease operating expenses most likely, plus G&A in most cases) – and that means wider margins. So valuation multiples for our guys in 2017 in many cases are less expensive than they were last year.

And even though I expect service costs to increase for U.S. E&Ps, it’s worth pointing out that higher service costs do not necessarily mean lower margins. They could, if not offset by efficiencies...but, again, we’re already emphasizing that in the companies we select for Tarpon. So, lower oil prices mean lower margins but higher production volumes do help with costs. And margins are a function of price versus operating costs, not capital costs - like when it comes to oilfield services. That in particular is a pet peeve of mine about one of the bears’ arguments these days.

Last, our average company size in Tarpon is skewed towards the small cap end of the spectrum for sure. That’s because that’s where the value is, but it’s also worth pointing out that as smaller companies like ours grow, their operating costs come down on a per unit basis, increasing their economics and metrics like EBITDA/barrel for the same given price. And then as they move from small company to big company, the IRRs on their drilling efforts can get a boost because those operating costs become stretched over more barrels, too.

Look – an E&P is a reinvestment business. I want to take barrels of oil out of the ground, convert them to dollars, keep some and put the rest of the dollars back into the next well. Rinse. Repeat. And I want to do these because I can get some really impressive internal returns in certain parts of the oil cycle, like now. Over time I also want to do it with increasing efficiency. If I can do that, then I can grow, and my cash flows should grow even if oil prices are flat because the costs are spread over a bigger production base (up to a point). So we focus on smaller names that can grow and expand margins even if prices are flat or down a bit.



All of which is a long-winded way to say, there are multiple levers our companies have to ensure we are maximizing our long-term compounded returns as oil prices increase.

Slide: What We Want To See

And in the end, what do we want out of our companies?

- 1: Higher pricing surprises (above strip)
2. Better or improving free cash flow stories
3. More capital efficient growth

We have 3. We are seeing more 2. And in video three, we'll talk more about #1 – oil. But now, here comes Retz on International Investing.

-- Video #2 [Break for Retz on International Investing] --

Video #3 - On Oil and Staying Stubborn

Slide: Executive Summary on Oil Prices

Okay, let's talk about oil.

Here is the Executive Summary version of this next group of slides on oil:

Oil supply is falling short of consensus expectations. This is a big deal.

More specifically, U.S. shale oil production is not growing nearly as fast as expected. Further, the ability of U.S. shale oil to respond to a growing global deficit will be lagged and constrained by labor and capital. I'll show you some related regressions I did here, too, that put to bed this silly "lower for longer" argument the bears have.

All of which means supply problems are brewing. A temporary shortage and subsequent price spike is likely in either late 2018 or early 2019.

So let's get into all that.

Slide: OPEC Shipments to the U.S. right after the "cut"

I would summarize most of the volatility in the first half of the year by saying that



the early bump we saw in prices at the beginning of year due to the OPEC deal...and then the subsequent drop in oil prices due to floating storage unloading here in the U.S...was just confusing to a lot of people.

As a reminder, prior to the OPEC agreement last November, several OPEC producers (the biggest being Saudi) gamed things a bit by ramping up their production in the period just prior to the cut taking effect – the net effect being that their cuts began off a higher base of production. You can see pretty clearly in this chart that the ships carrying that increased production from OPEC made it to the U.S. in January and February of this year, which, again, was unexpected and confusing to a lot of folks. And yeah, that production bump before the cut – and even calling it a cut, really, was kinda of sneaky, but it's just part of the game.

Slide: Floating storage

Here's a quick slide on floating storage, which further exacerbated things in terms of unexpected increases in U.S. inventories earlier this year as well. Floating storage is difficult to track – again, it's all the crude oil that is literally being stored on storage ships around the world - and combined with the ramp in OPEC production late last year just prior to the cut, it meant numbers for U.S. crude oil storage increased by about 1 million bopd for the first two months of this year – as floating storage around the world emptied, and got sent to the U.S. to be refined, or stored for longer, more cheaply. So, in the end, the OPEC production cut and floating storage offloadings increased U.S. oil inventories by a huge 56.5M barrels in Q1 of this year.

Slide: 2015 - 2017 Monthly U.S. Crude Oil Inventory Changes

And here you can see the impact of those OPEC shipments and floating storage on US inventories early this year. Not only were those purple bars the first 3 months of 2017 higher than the market thought they would be, but my hunch is that because so many hedge funds and traders were upset by being caught offguard, that triggered this massive shift to negative sentiment that we are still working through today. The irony is that without the sneaky production surge by Saudi and others before the OPEC quote-unquote cuts, we would be that much further along in rebalancing the market.

Now we are finally getting traction on the U.S. inventory drawdowns, though. As



you can also see in more recent months, the rebalancing did not disappear, it just got delayed. From the chart, you can see in 2017 we are drawing down on stocks that we haven't in the previous few years, and the size of those drawdowns is increasing. We actually are seeing the fastest drawdown in U.S. crude stocks in Q2 and Q3 in history.

And even though that global floating storage surplus is now shrinking rapidly, as per this graphic from the IEA, the U.S. oil market did have to work through a higher starting point for inventories early this year – which incidentally, is going to push out my own previous estimates for a price spike due to a supply shock until late 2018 or early 2019.

And that gets to the heart of the question that I think a lot of you are asking...if supply and demand and all the other fundamentals have been unequivocally positive, like I keep telling you it is, then why have oil prices been stuck in this band of \$45 to \$50 for so long?

And it's a two-part answer. Part one of the answer is just "sentiment" – which is basically a more professional way to say, "Everyone just hates oil. Hates it." I don't have much to say about sentiment. One of the downsides of being overly analytical is that I'm an emotional midget, so I'm going to punt on that whole discussion...and will leave it to someone else to try and describe why the market might be feeeeeeling a certain way.

Slide: Comparative Inventory Analysis

The second factor that explains why oil prices seem stuck, though, is easier. It's inventories.

Let me explain the background behind this slide a little.

First, understand that strip pricing is not a forecast! Making forecasts or basing valuations based on the futures curve can easily result in wildly incorrect conclusions. Yet it happens all the time, all over Wall Street – because it's easy, not because it's correct. Email me on this if you want to talk more about it.

In any case - if oil's current price on any given day is not just a derivative of the strip, how is it being priced?

This graph is my best guess.



It represents a rough but rational way to estimate a fair value for what crude prices should be when oil is trading below the marginal cost barrel, which, you may remember, is closer to \$80.

It's called comparative inventory analysis, and it basically estimates oil prices based on current supply-and-demand, as well as current (or near-term) storage levels - and then sees how that data compares to previous periods of time that had similar characteristics.

So, take U.S. oil inventory levels today, see how they compare to the 5 year average for storage, and then see what the WTI price of oil was at other periods over the last five years when the difference between them was the same.

It's analytically convenient, and while simple, it also has a respectable amount of explanatory power to it in the past.

This is my own comparative inventory analysis model that I built. It is a much simpler model than some of the more advanced ones that are out there, but the results are surprisingly similar, so it works for me.

Here's how to interpret this:

That transparent red vertical band represents where I think U.S. crude oil inventories will be at the end of this December or January. Call it 445M barrels, conservatively – which would be about 70 million barrels above the 5 year average.

And as per this chart, and that purple line-of-best fit running thru those data points, this level could (and has) supported \$60 oil in the past. So if the market is pricing oil rationally – or on a historically consistent basis - then by the end of this year, or January, WTI will trade at \$60 a barrel – right on that red star there.

Now you may also note the blue diamonds a little below the big red star. Some of those are in the \$45 range. Those prices below that trend line were associated with a period of rising oil prices (and horrible “sentiment”) – as opposed to the current trend of falling inventories. So that sentiment context is important when looking at this, too.

You can also see, though, how – at least under this coolly rational take on the oil market – prices should rise as oil inventories fall closer to the five year average. So...if we can figure out when inventories will fall below certain levels, we can, all things being equal, figure out where prices should be. And to fast forward, once U.S. inventory levels are equal to or below the 5 year average, oil prices should move from that red star, up and to the left on that purple line,



approaching triple digits. According to this sort of modeling.

However...and this is a big asterisk – even this approach is still subject to the same chronic problems inherent in oil inventory reporting – one of which is that it relies on data that is several months old. Another big issue is that relying on this sort of thing to explain current WTI pricing also violates one of the core tenets of finance in general, which is that prices should be forward-looking. This, again, is all backward looking.

So, I personally think it's a little too simplistic to accurately and consistently predict prices, but, right or wrong, I mention it because I believe it's this, or something like this, that a lot of high frequency trading algorithms in the sector seem to key off of. It could be something a little more weighted to gasoline or oil products, than just oil like here per se... this idea of “the shale band” where because WTI prices have seemed stuck between \$45 and \$50 forever now – comes from here. But if you believe in the shale band theory, I guess you can also consider this to be notice that the band will soon be no more, because WTI prices should, according to this framework, start moving north of the band within a month or two.

And let's be clear – it absolutely is algorithms in the paper market, as opposed to the physical oil market – who have the most influence in setting daily oil prices.

Slide: Size of the Paper Market

And I say that because, first, the future market is 30 times bigger than the physical oil market. It's enormous...and a giant net negative for the system, but that's another slideshow. The paper market dwarfs the actual market, so in the short-term, things like market length and trader positioning can be more important than fundamentals in the short term.

Slide: Rise of the Machines – Algos & CTAs

Also, by definition, now that computer algorithms control more than 55% of the energy futures market, they are the dominant force when it comes to the setting of oil prices. They've got to key off something. Inventory analysis seems like it could be one of those key factors. And, yeah, the negatives of letting the algos run amok is a whole nuther slide show, but the reality is that they're also just part of the deal these days.

Actually – we wouldn't even need another slideshow. Just go watch the movie *The Big Short*. You'll learn everything you need to know about how counterparty



risk can make Wall Street way too slow to correct some very complicated models in spite of overwhelming evidence to the contrary.

Slide: Global Oil Stocks

Okay, moving on. Comparative inventory analysis seems reasonably explanatory in the trough of the oil cycle, like now, but its not real predictive when it comes to timing.

The north star when it comes to predicting oil prices in the long-term is still the marginal cost of supply in the market. Prices are well under that now, however, in which case that comparative inventory framework seems to explain some things right now, even though it still tells you nothing about the expected rate of change of inventories.

Which brings me to this:

In 2017 we are seeing a massive reduction in global oil inventories, and a likely return to historical averages by year-end. Here is a graph of inventories for the OECD countries (basically the top three dozen market-based democracies), not just the U.S.

Slide: U.S. Inventories: Draining Like Rum on Duval Street

Couple of quick bullets to underscore just exactly how much oil is being drained from inventories around the world lately...

In the U.S., in 2017 thru last week, we have never seen a bigger peak-to-trough decline in oil inventories. U.S. inventories have fallen 79 million barrels from the peak (that spike in Q1 caused by OPEC imports related to the production cut) thru last week – and that is even after absorbing 23 million barrels of oil that Uncle Sam put into the system from the country's Strategic Petroleum Reserve.

Forward prices and my own estimates indicate significant drops in Q4. I have been expecting we will draw at least another 40 million barrels here, making 2017 the year with the highest wire-to-wire drawdowns in the U.S. in history...again, in spite of that massive OPEC build in Q1. And I say I was expecting that, but I should probably bump that number up, because U.S. inventories have fallen 32 MM barrels in just the last 4 weeks. And by way of reference...a 50M drawdown in U.S. oil inventories in Q4 would be about 150x the average seasonal draw for the same period over the last 14 years.



So the pace of this current drawdown is unprecedented here. It's also the same story in the rest of the world.

Slide: Inventories Outside the U.S.

When it comes to inventories in the rest of the world, which are difficult to accurately track at the country level, I'm going to skip how you could create a ratio for the rates of change between inventories here, and overseas, to guesstimate where global inventory levels really stand real-time... and instead just jump to this.

Here is the head of OPEC, this past week:

“In the last 4 months, global inventories have fallen by 130M barrels.”

Which historically speaking, is an extremely fast pace.

In fact, if you did another comparative inventory analysis, only instead focusing on just the U.S. like I showed you, your data set consisted of the entire world's inventory storage, you would learn that at the end of 2017, the world's oil storage levels will have fallen to the same storage levels that just a few years ago supported global oil prices above \$90 a barrel.

Again, not a forecast, just an observation. And the real importance of that little nugget is that it confirms that inventories in the rest of the world are falling off at a pace even faster than in the U.S.

And we know that because U.S. storage accounts for more than half of the inventory above the OECD 5 year inventory average, and because the U.S. is the last place in the world that storage will drain from – because it's the cheapest place to store oil.

So let's skip the raw numbers, which are probably pretty abstract, anyway, and just look at rates of change.

By definition, by the time U.S. oil inventories reach their five year average here...global inventories will be in significantly greater deficit – well below their five year band.

So a good question at this point might be...once they are in deficit, how will global inventories get back in balance...especially if OPEC extends its current production cut agreement until the end of 2018?



And the answer cannot be U.S. shale oil. The math doesn't work. As per the comments from the OPEC SecGen – global inventories are declining at a rate of drainage of just over 1M barrels of oil per day.

And there is simply no quick and easy way for the 5.5M barrels of oil production per day from U.S. shale to grow enough to backfill an inventory hole caused by a 1M barrel of oil per day decline – nor will the other 90M bopd of production from the rest of the world be of much short-term help - both because it takes a while to turn that spigot even if oil was priced closer to those breakevens - and because 45M bopd of that market (OPEC and Russia) are intentionally sitting on their hands as part of the current production cut agreement, which they are likely to extend for another nine months in about 4 weeks.

All of which makes \$50 WTI sound a bit ridiculous, especially cuz the ghost in the machine...the magic U.S. shale production that will appear at the end of the play to plug the big hole in the plot...isn't coming. U.S. shale production is not growing nearly fast enough at these price levels to stop what's coming. More on that in a second.

But first – another reminder.

Slide: No Geopolitical Risk Premium – Despite No Buffer

The more global inventories decline, the more susceptible the oil market becomes to supply shocks. Unplanned outages are, right now, at a six-year low – in spite of more risks building up in the Middle East. Leaving aside the tension between Iran and Saudi, the newly developing conflict between the Kurds and the Iraqis, as well as the U.S.'s likely non-renewal of the key parts of the previous Iran deal in January...the market is assuming Libya will do 1 to 1.2M bopd throughout 2018, which seems questionable given talks in Tunisia between their two main political factions are unraveling. And I think the best way to somewhat morbidly summarize the risk to Venezuela's 2M barrels of production per day is that people are so hungry that they are breaking into zoos to find animals to eat. Really – Google it. And color me skeptical that the maintenance of Venezuelan oil infrastructure has been on point the last year.

To say that the oil market has been lulled into a false sense of security here is a large understatement.

And so to tie these things together - even though you can see in the data all this happening, it's as though because those inventories are not at the 5 year average levels yet, the algos are not responding and boosting oil prices. Yet. Or something. I really can't explain it.



But I do know it's not because we're missing something. And I also know the only answer to that question of how do things get back in balance once inventories have fallen through that equilibrium point is – the market has to incentivize a lot of oil to come online, quickly, through much higher oil prices.

But wait, you're saying. What about all this increased production out of the U.S.? Won't that fill this coming hole in supply?

I'm glad you asked.

The short answer is no. The U.S. will not be able to fill that gap. U.S. shale is not growing nearly as fast as expected, and its response to a growing global deficit will be lagged and constrained by both labor and capital.

And why do I believe this?

Because you can see it in the data. But you've gotta dig a little. And then you've gotta do a couple of regressions, to see for yourself whether or not the consensus thinking on oil prices really makes sense or not. More on those in a bit.

Slide: Supply Will Fall Short of Consensus

But first, oil prices are where they are today largely because of the belief that U.S. shale oil production is growing rapidly. That belief, which is common on Wall Street and the media, comes directly from the EIA's own forecasts – based on their models, and then gets reinforced and amplified through confirmation and selection bias, particularly on Wall Street.

This is a powerful narrative. The consensus forecast is that U.S. shale will simply continue expanding its production unabated for the next few years...which means then oil prices will stay low, in which case it doesn't matter that OPEC wants significantly higher oil prices...and apparently it's being interpreted to mean that we can probably ignore whatever else may be going on with the other 90% of oil production around the world outside the U.S., too.

The reality, however, is that this narrative is not true. Not even close.

Slide: Where's the Beef?!?!



Here is U.S. production growth in 2017 so far.

It was up 2.8% in the first six months of this year. And that little jump up you see in the most recent bar was exclusively from the Gulf of Mexico, on a big traditional offshore oil drilling project whose planning began years ago. It's not shale oil. So you can't count that.

And so you look at that and think, hunh. Never mind that weird little Gulf of Mexico blip. Where is this massive growth in US shale oil production I keep hearing about? And the answer is...it doesn't exist. To be clear, U.S. production is growing, but only a little bit...it's just nowhere near as fast as the EIA and Wall Street believe.

And if you're saying to yourself...that doesn't jibe. I must have heard at least a dozen times or read a dozen articles this year about how oil production is growing in the U.S.

And what I'm saying is...the data doesn't lie. And here it is. It has been extremely underreported, but if you look at the data you'll see a surprising thing: total U.S. shale production has been flat for seven months running. And nobody on Wall Street or any of the big 3 reporting agencies would have predicted this six months ago.

So, it is clear to anyone bothering to even track the oil market lately that recent production growth claims of U.S. shale have been exaggerated. And the reason for the exaggeration gets a little bit wonky, but stay with me.

Slide: Blind Faith in a Bad Model

The short version is that the EIA - the Energy Information Administration, the statistical arm of the U.S. government - puts out weekly forecasts of oil production. These reports, as silly as it sounds, are watched extremely closely by the fast money crowd...the kind of people who would rather trade than think.

The problem is those weekly EIA reports are based off a model has some big short-term flaws. And that's not due to incompetence or government bureaucracy or any other cynical takes on this issue - it's just due to the complexity of what they are trying to model.

So the weekly EIA reports have a big problem I'll show you in a second. And you



can tell their model is flawed by looking at other, better data they publish. The EIA also puts out better, much more accurate monthly production data – on a lag of a couple of months – that revises its own previously forecasted numbers and reflects what oil production actually was...and that more accurate, lagged monthly data is telling a different story than the weekly forecasts based off a flawed model.

Slide: Monthly Vs. Weekly EIA Data

So those headlines from the summer saying that shale is growing over 100k barrels per day each month were based on estimates from the US government – the EIA’s Drilling Productivity Report (DPR), specifically, which is derived from a flawed formula.

In a perfect world, there should be no daylight between the two lines on this chart. The blue line shows data from the flawed weekly projections, and the orange line shows what the actual data showed, once all revisions are incorporated and it’s published a few months later. So orange is reality, and blue is the forecast.

And the nutshell version of what I am saying here is that that blue line and the orange line have to meet. But with oil prices stuck where they are, then the blue line – again, representing production forecasts – has to come down to meet the orange line. So the EIA numbers – which are relied so heavily on by Wall Street – are coming down to reflect that shale oil growth is not growing anywhere nearly as fast as everyone (except we merry few) thought it would...and oil prices have to rise, because supply is significantly less than expected.

And if you’re curious – here is the flaw in the EIA weekly model: as drilling activity rises, the EIA overestimates future production by taking the last month for which it has compiled production and then uses the change in the rig count since that time to forecast the next four months. But changes in rig count only impact production 6-9 months later, so this forecast will be way off in periods when the rig count is changing rapidly. Like now.

Slide: Data Points on The Problem

Here are a couple of quick data points to underscore the problem with this discrepancy between weekly forecasted numbers and monthly actual



numbers...

I'm going to summarize them by saying...U.S. shale oil growth is going to end 2017 at half the level that the EIA and Wall Street thought it would. That's a huge miss and here's the net of what that wonky little problem means, though.

Slide: Big Consequences of a Little-Known Problem

The point is that these sorts of modeling issues have led the consensus to forecast that US shale growth in 2017 and beyond to be much higher than it actually will be. I see US onshore production ending the year at a rate that is from 300k to 500k lower (conservatively) than consensus estimates. And if that overstatement ends up being 500K barrels a day for 120 days this year, then that is a massive, 60 million barrel overstatement in projected storage inventories, too.

This is a big deal because it means (a) storage is emptying faster than expected and (b) because growth in US shale is one the main "plug" figures which EIA, IEA and OPEC use to make sure supply meets global demand the next few years. All three agencies' forecasts depend on some massive increases in U.S. shale oil volumes within just a couple of years, meaning these increases are going to be necessary to meet demand. But, well, expectations for that multi-year increase started falling dramatically short six months into things.

Looking out a bit, the implication is that if U.S. shale stalls from anything other than a really fast ramp, then we are in a longer-term oil shortage scenario.

And I kinda feel like we're seeing this happen right now, real-time, yet nobody seems to be noticing.

Slide: Bottom Line: Undersupplied and on a Knife Edge

Here is the bottom line:

If you take consensus expectations for oil supply, as shown in this table I put together, and adjust it to reflect just the realities of slower than expected growth in U.S. shale oil supply as per that purple line of cells at the bottom of this table...then it becomes evident that the world is actually undersupplied with oil today, and we are on a knife edge in terms of our ability to keep this deficit from getting away from us.

And I say that because all I adjusted from consensus expectations here was U.S. shale oil supply.



If OPEC extends production cuts from the end of Q1 2018 thru the end of the year, those quarterly deficits increase. Another adjustment.

We're not going to talk much at all about demand here, but keep in mind that is a whole 'nuther part of the supply-demand balance that, historically, is also chronically underestimated every year, and increased demand would make this consensus-adjusted deficit worse. So, another adjustment.

I'm also not even questioning consensus assumptions for supply out of the rest of the world here...but a proper reckoning here means those would likely need to be adjusted down, too. Even if you assume production out of Libya and Nigeria can stay elevated in 2018, and Venezuela somehow avoids imploding, so all three meet the expectations baked into here already – I think it's important to recognize that the White House is very much on a path right now to not renew sanctions waivers on Iran when they come up in January...and that it could get other countries in line pretty quickly again on those Iranian sanctions if resisting us meant getting locked out of our capital markets. So if President Trump goes continues down the same path he already appears to be on, then that's a big potential adjustment we'd have to make to Iran's contribution to world supply of 3.8M bopd, too. So, adjust downward again.

Finally – I would also just point out that there is absolutely room for U.S. shale to grow from here. Even if it was meeting expectations for 2017 growth, which it isn't, U.S. shale is not the boogeyman, and it's not all or nothing. The market needs U.S. shale oil to be a reliable and important part of the global market for years to come.

Slide: A Better Way to Estimate U.S. Supply & Demand Balance

To close out on this whole problem with production estimates - there is in my mind a much better way to estimate supply and demand balance in the U.S. than by relying on these crazy, crappy weekly EIA production reports.

And that is as per this graph. It is based on a different data set from the EIA.

It is basically a sum of all liquid hydrocarbons in U.S. storage. I think this is actually the best indicator of the state of balance between supply and demand in the U.S. - because it smooths out things like refinery maintenance, summer driving season, shifts between crude oil and gasoline, and transfers in and out of the Strategic Petroleum Reserve. It won't pick up any unusual activity in imports and exports, but over the long run, I'm assuming they would not have a huge impact on things.



I also used a 52-week average to get rid of any seasonality, and though that obviously makes it something of a lagging indicator, the upshot is that it takes a ton to move a 52-week average – so whatever signal you get is going to be reliable.

And how you interpret it is basically by looking at the slopes.

The slope of this line peaked in Nov 2015...the slope now, not the peak...showing you the point where U.S. supply most outstripped demand. And since then, the slope of that line, though still positive, has been on a slow and steady decline ever since...which basically implies that for almost two years now, the size of the oil oversupply in the U.S. has been steadily decreasing.

And the more interesting stuff has happened more recently. Starting this summer, the slope of that line finally flipped from negative to positive...meaning that since July, the U.S. has been moderately under-supplied. And over the last few months and weeks, you are seeing an acceleration of the inventory decline here in the U.S., too – meaning demand is now outpacing supply by about 300k barrels of oil per day. And by the end of this year, that deficit should increase more.

My points are (a) there are other, better ways to see what's really going on in the U.S. oil market, (b) those ways corroborate trends that are also bullish for oil prices, and (c) these recent drawdowns in U.S. storage are not a short-term phenomenon.

So, consider that another big chip on the side of the scale for higher oil prices soon.

Slide: Bullish Signs for Oil Prices

Quick slide here I'll let you read on your own - the top 12 bullish signs for oil prices. And don't worry – I will tackle the big two bearish points in the Q&A coming up here.

Slide: Potential Catalysts

And here is a quick list of things that could finally force a change to this overbearingly negative sentiment in the market about oil and E&Ps.

Slide: Stubborn...for the Right Reasons



And a little summary slide to close out this video. So if you need a little pep talk from your portfolio manager, there you go.

That's the end of this video. Next up, I want to address some of the questions you all have asked, starting with one of the biggest things the oil bears are mistakenly hanging their hat on.

Video #4 - Q&A on “Lower for Longer”

Q&A on “Lower for Longer”

There are three parts to discussing this “lower for longer” idea. The first deals with U.S. shale’s sensitivity to oil prices, the second with DUCs or Drilled Uncompleted Wells, and the third with non-US, non-OPEC production. It gets a little wonky cuz I review a couple of regressions, but, hey, you asked for it, people. Let’s start with the first.

Slide: Question 1: Won’t U.S. shale grow fast again at \$60?

A real interesting question coming out of all those previous slides on U.S. shale oil production is...”why has U.S. production stalled?” It was supposed to grow 1M bopd in 2017, but it’s only going to do half that, so what happened?

There is not yet any conclusive data that explains it unequivocally. So in contrast to the earlier parts of the presentation, with a lot of data and facts, this answer, no matter the answer, is still somewhat speculative at the moment.

My own theory is there are a number of reasons behind that stall, ranging from our old friend the decline curve, to the industry having less “sweet” spot Tier 1 locations to drill wells in the U.S. than we did two years ago, to labor shortages among drilling crews in Texas. So I have some theories, but cannot definitively prove anything with data one way or the other yet...and neither can anyone else...though I do seem to spend a lot of time trying to answer this question in particular more definitively. I suspect we will know for sure within the next six months.

I mention that, because it gets at my own biggest frustration in 2017. It hasn’t been the volatility in Tarpon. I can live with that. It’s been the degree to which the consensus, without any evidence whatsoever, assumes that U.S. shale oil



companies will put a cap on global oil prices because, the theory goes, once oil gets to a high enough level – say \$55 or \$60 a barrel - these companies be unable to restrain themselves or something and will immediately ramp up oil production again.

You may recognize this as the “lower for longer” or more recently the “elasticity of supply” argument.

And I tell ya, it frustrating because it’s a flawed argument – there is clear evidence that flat out contradicts this take on things. But there’s no denying it’s also one which a lot of people assume to be valid, and it’s clearly a powerful driver of oil staying around \$50. So let’s discuss it briefly here.

Slide: The Massive Decline in Capex

This chart is probably the primary reason the lower for longer argument isn’t valid.

The full quote from the CEO of Saudi Aramco: “About \$1 trillion in investments has been lost in the current downturn, concurrent to growing oil demand and the natural decline of developed fields. Conservative estimates suggest we need about 20 million additional barrels per day over the next five years to counter these effects.”

So there’s that. Never mind the decline curve of shale wells and the law of large numbers. Plus a few other things.

Slide: Wall Street’s View versus My Take

The consensus view is that U.S. shale production is very simple: activity is a linear function of crude forward prices...meaning as soon as oil prices start to rise, shale producers will respond with higher output.

I disagree.

It sounds way too simple and reductionist, and as it turns out, it is, because the data says the opposite.

My own theory is that shale’s response to increased oil prices in this current cycle is – first of all – it’s going to take at least six months to show up, both because management teams want some assurance of stability in prices before moving forward on drilling, and because it simply takes a lot of time to plan a new well.



So the shale response certainly won't be immediate and then when it does happen, it will be predominantly determined by how much Tier 1 acreage (the best rocks) that an operator owns. If they own good rocks and want to drill, then, well, there need to be drilling crews and then completion crews available. Then, if the labor is there, they need to have the capital to drill. These wells don't drill themselves for free. Finally, once enough time has passed that higher oil prices look stable, and if you have the rocks, people, and money to do it, then oil prices will be the final factor in your decision.

Or, in other words, my take is that multiple bottlenecks exist. Shale production is not a spigot. You can't just flip a switch once oil hits \$60 and then see the floodgates open. That seems silly to me, and the Street knows it is, too, yet the sellside seems to keep pushing that argument for some reason or another.

I can't explain the Street's insistent belief in this...at least not without some real cynical commentary I'd just as soon skip...so let me just stick to explaining why I believe what I do.

Slide: On Those 3 Factors More Important Than Price (1)

Some quick thoughts about those three factors in red from that previous slide.

On the Tier 1 Acreage – this is a real governor on the growth of shale.

The simple fact is U.S. shale has only a small number of sweet spots that are productive at under <\$60 oil - and a short amount of total supply compared to conventional production. And the sort of dirty open secret in U.S. shale is that the improvements we have seen since 2015 are not due to technology, but due to selective drilling. If you are only going to drill 1/10th the number of holes as you did before, you obviously are going to select the best locations only.

So to speed up a little – all this is starting to become clear. Specifically, well productivity for U.S. shale is on the decline, as seen here. There are not enough sweet spots in the best rocks for all U.S. shale drillers.

To be clear, our guys have plenty of runway in the best rock, but others don't, and when they drill in acreage that is not Tier 1, average production per well declines for the industry.

For more proof, look at the latest EIA Drilling Productivity Report to see that anything over 180 rigs in the Permian is probably drilling in second tier property.

Slide: On Those 3 Factors More Important Than Price (2)



On labor – it's tight in the oil patch.

Lot of layoffs the past three years mean there is a shortage of completion crews. Drilling crews seem more available, but there seems to be a large bottleneck when it comes to getting wells completed, which is an entirely different crew and spreads and sets of skills. This may be why the rig count is declining again. You can Google newspaper articles labor shortages in the industry in Texas. The low unemployment rate, not to mention the cyclical nature of this business, make it hard to recruit workers. Also keep in the mind the number of construction workers that will be needed to rebuild Houston after the floods there. Pulling from the same pool. Not saying companies won't eventually be able to won't be able to find enough workers to service more completions over time. Just that it's going to cost them money. Which brings us to...

Slide: On Those 3 Factors More Important Than Price (3)

On Capital - Shale companies raised just \$5.7 billion in new equity in the first nine months of 2017, according to the FT, citing data from Dealogic.

That is down from a record-breaking year in 2016 at \$34.3 billion in new equity issuance.

Slide: "But Didn't Shale Grow by 1M bopd in 2014?"

This is also a follow-up question that deserves a proper response, so here one is. I'm not going to read it to you, will just keep moving here.

Slide: Supply Elasticities

Okay, on to some data.

The way the bearish argument about lower for longer goes is that it's all about the price elasticity of supply...which is econo-speak for how sensitive U.S. shale oil producers are to oil prices. And so one quick way an economist would test these claims that production growth in shale will cap prices would be to calculate something called the price elasticity of supply.

So, challenge accepted. I gave that a shot to try and test this idea out. I took ten years of monthly WTI prices, and compared them to ten years worth of monthly



production rate increases...and ended up doing it a number of times, with different lags – the theory being that in the real world there should be a three to six month lag between a rise in oil price and when production would increase. My own results were that there was nowhere near the sensitivity that is being assumed these days. And you can see those results here.

What I think an economist would say about those results is probably something like “ignoring the non-stationarity of the time series will significantly overstate the oil supply elasticity.” Which, incidentally, is exactly what I think the Street’s consensus expectation is doing...dramatically overstating how sensitive shale will be to a rise in prices in the short and medium term.

But, in the end, I’m a ham-and-egger of an economist, and wasn’t real confident I could hang my hat on my little table there. It was pretty simple and there could be plenty of spurious relationships in there instead of an actual correlation.

So then I did a regression. Cuz, sister, I can regress. And here’s what that showed.

Slide: Regression of WTI versus Production in Big 5 shale oil basins

Here are the raw results of a regression attempting to determine the relationship between WTI oil prices and production out of the big 5 shale oil states in the U.S...Texas, Oklahoma, New Mexico, Colorado, and North Dakota. Again, this is an attempt to see if the lower for longer argument – that a production ramp in shale oil growth will put a cap on oil prices – has any real analytical support.

We have some pretty recent data that came in handy. Specifically, from February of 2009 to September of 2013, oil went from a monthly average price of \$39 to \$106...and a regression based on just those months, which was the last big upcycle in the oil market, would give us more than 50 data points.

Also, I did this regression on a 6 month lag...meaning I assumed it would be six months before production would increase after a price signal...in order to amend budgets, identify sites, get a rig on scene, etc.

Here is what it looked like.

Slide: Regression With Commentary



And here are my conclusions:

- There is not a great fit. The power of prices to explain increases in U.S. oil production in the biggest shale oil states is not high enough to be anywhere nearly as confident in this idea of a price ceiling at \$55 as the Street seems to think.
- There appears to be no correlation between oil production and prices when prices are below that \$70 - \$75 range.
- If you want to get another 1M bopd of oil production out of the Big 5, you're going to need prices closer to \$80 a barrel.

So, in the end, I'm just not seeing the short-term ceiling on prices that Wall Street thinks will be there. I do not agree with the consensus opinion that shale oil companies will cap WTI prices by rapidly increasing their production – not in the short-term, and not until prices rise significantly. If there is a point at which we should start paying closer attention to the shale E&Ps getting ahead of themselves and negatively impacting prices, it seems like it's going to be at least six months after WTI hits \$70 to \$75 a barrel.

Now, to be fair, you can come up with knocks against this regression. You might say, for instance, that the prices shale drillers ramp up today will be different, compared to the data used here, because drilling breakevens have fallen so much. To which I would say, the vast majority of those cost reductions have been on the backs of oilfield servicing companies, and are not permanent.

More to the point – we have this valid data on hand, that directly refutes this consensus opinion on lower for longer.

And then the next point that will almost certainly be raised by the bears here is the number of DUCs, or drilled uncompleted wells, which, if you believe the hype, are apparently supposed to represent instant inventory. Hold that thought. I'll talk more about DUCs later.

So, in the end, I would say to the bears...if you truly think the elasticity of supply of shale oil means there is a ceiling of \$55 or \$56 or \$57.50 or wherever on oil prices, then show me the data that supports it. Cuz this data is saying something significantly different.



And, if this regression discussion is all a bit too wonky, then just pull up a chart like this one.

Slide: WTI vs Big 5 Production: Plain Chart

This chart overlays WTI prices with shale oil production from the Big 5 shale states again. Production is dark blue, WTI is light blue. Show me where exactly is another example, any example, of this surge in short-cycle, just-in-time production from U.S. shale that Wall Street is worried about.

Shoot, oil prices averaged in the mid \$50s for the first-quarter of this year. Where was the shale growth? The Bakken was flat, and Eagle Ford and Permian grew at half the rate the Street thought it would.

Again, shale not a spigot. Shale producers cannot increase output rapidly because ramping production is not entirely in their own control – although decreasing production is, to a much greater degree. These guys are constrained from quick response in the upward part of the cycle by completion crews and capital – not to mention, royalties, taxes, and costs that are cyclical – which, incidentally, is probably why the response to prices below \$70 on that regression line don't go anywhere fast.

Now, shale output reacts to oil price faster than conventional plays, for sure, but it's still relatively slowly & and in longer-period cycles than the market currently seems to believe.

And I would also point out here that E&Ps do not know with certainty how productive a new well will be until it actually starts producing. So, using a well's actual, ex-post production as an explanatory variable is really saying that these companies would be responding to unobservable information. All of which is really just a nice way of saying – this whole notion is ridiculous.

Anyway, enough rallying against these silly bear arguments. I think you see my point. It's frustrating that this misconception exists...although it's kind of fun to play around and see what you can learn along the way. In the end, though, even this regression work is probably unnecessary. And I say that because of this:

Slide: What Are We Talking About Here?

U.S. shale does not set the global price of oil. It's 5% of production! What are



we talking about here, really? The disconnect between the Street and the real world on this, as per this pie chart, is almost comical. If I could have gotten away with it, this probably would have been my first and only slide in this whole section on Lower for Longer, and we'd all have the last 20 minutes of our lives back. But I suppose that tells you how engrained that false lower for longer narrative has become these days...lot of work to disprove something that a rational person should already know is bunk. Plus, the first person I sent this slide to in order to answer his question didn't see as much humor in it as I did...so regressions, here I come!

Anyway, moving on - at some point relatively soon, it won't matter how responsive the Street thinks U.S. shale production is or is not to price changes...because the world is going to need shale to come online in a big way to fill the gap. So, when it comes to staying focused on the things we can control - what I try to do is make sure that our companies will do fine between now and the period when either that "lower for longer" argument in the U.S. collapses on itself, or the global supply gap makes the question irrelevant. And we're getting there quickly.

Now, on to DUCs.

Slide: Question 2: But what about DUCs?

Slide: On Drilled but Uncompleted Wells

This one is pretty quick. In the industry, a DUC is a drilled but uncompleted well. So there is a hole in the ground, but nothing's coming out yet because you have a lot more work to do in that hole. You'll spend a third of your budget to drill that hole, and then you spend the other two thirds of your money to monetize what's in there by completing that well.

And no, DUCs do not represent a serious threat to oil prices, either.

Contrary to the Street's view on this - DUCs are not inventory. They are more like a pile of raw goods that just got dropped off at the warehouse door and then after the new guys spend a few hours on it, is still going to take a lot of money and labor to assemble. Two thirds of the cost of a well is in the completion stage, so by the Street's logic, if DUCs are inventory, then I'll sell you ten feet of a thirty-foot boat.



So - first, again, like in that pie chart a few slides ago, DUCs represent a fraction of a small piece of total supply. So, given the rate inventories are draining, before too long here, this question will be moot, too.

Second - DUCs are subject to the same three gating factors as I went through in the first answer. It will only take 2/3rds of your capital for a new well, because you previously spent the first third to drill it, but raising that capital is absolutely still going to be an issue in this environment. And then if your DUCs are not in prime Tier 1 acreage, it could be some time before it's even worth completing them. Finally, the labor shortage I mentioned before is specifically a shortage of completions teams. That's where the slowdown is...in turning DUCs into producing wells. And that is just going to take time and higher salaries to fix.

And third – the conclusions from any regression done on DUCs versus WTI would be the same as we ran through earlier as well. Oil production doesn't care if it comes from a well that is completed right after drilling, or a few months later. The sensitivity, or insensitivity, to oil prices won't change.

Look, here's how I think about DUCs in the big picture.

Those oil DUCs added to the backlog since 2016, drilled in the sweet spots and during the trough of this cycle, will be relevant to the supply equation, eventually. I estimate that there are about 1200 of those, most of which are in the Permian. Some of those will obviously get completed and put on production when completion services are available – which, given the current slowdown in the pace of drilling, should also happen at a measured pace. Drilling has outpaced completions since 2016 because of shortages and bottlenecks in completions, specifically. That labor thing again.

As for the other 4,000 DUCS: about 1000 of them are gas wells and another 3,000 are the remnants of the boom. And those wells are not a threat to anything.

Slide: Question 3: What About Non-OPEC Supply?

Slide: Non-OPEC Supply as Per Halliburton



We got into this a little bit before, but the short answer is that non-OPEC oil supply outside of the U.S. sure seems likely to disappoint next year - an opinion that oil service companies such as Halliburton strongly agree with.

At a high level, if I were forced to quantify non-OPEC numbers for next years, what I would say is this: consensus estimates assume that non-OPEC production will grow because of the large amount of gross capacity coming online from projects sanctioned several years ago.

And I would counter that this sort of analysis ignores decline rates and the amount of time it takes to ramp new projects toward peak production.

So in 2017 non-OPEC production (ex U.S. and Russia) is supposed to average slightly below 33M bopd, and after you take out the junk and what is supposed to be in ramping mode, and then 22M bopd of that number is subject to 5-7% natural decline rates.

Which means that in order for non-OPEC just to maintain current production, it will require 1.1-1.5M bopd of gross capacity additions. Yet only 800k bopd is slated to come on in 2018, which would leave us with net declines of 300-700kbd. Which, incidentally, corroborates with 2018 on this Halliburton slide, too, which is good.

That said, my experience doing that sort of back-of-the-envelope calcs on non-OPEC numbers isn't particularly satisfying - mostly because the data is so opaque you can't really learn anything if you're off later. So here is how I've come to think about it.

First, keep in mind that these capacity additions are from projects discovered and sanctioned several years ago - so absent a rise in oil prices, the decline in non-OPEC supplies should only get worse from here.

Slide: It's All How You Frame It

Then an even higher level, what really matters is how those non-OPEC supplies differ from consensus. And there, it's all in how you frame it.

And by that I mean this...there are a number of large, global oil projects scheduled to come online the next three years. Wall Street looks at that pipeline



and says – “Uh-oh. That 2.5M bopd of production coming online next year is going to swamp demand!”

But the reality is that in most years, we have about 5M bopd of new supply added.

So the correct response is not – “look out!” It’s, “Oh boy. New supply is only half what is needed. OPEC and shale don’t have the spare capacity to make up the difference. We’re gonna have a big supply problem soon.”

Anyway, enough talk, let’s go to the data and settle this once and for all.

Slide: International Rigs vs Oil Prices

Getting high quality, timely inventory and production data from anywhere outside North America is an exercise in frustration. One of the best proxies for oil production outside our area of the world, though, is the international rig count. And here’s what looking at that data tells you.

First, drilling outside North America has never really picked up. In September, the number of rigs drilling for oil decreased by 15 from August to 700 rigs even. International oil rigs bottomed at 666 in October of 2016, meaning the rig count has only picked up 5% over the last year – and is showing no signs of growth at recent prices.

The next thing you notice is that even in periods of rapid growth in oil prices and at \$90+ WTI (period 2009 to 2014 on the chart), the pace that international rigs come on is pretty slow. Only about 60 or 70 rigs per year, max...even when times were awesome in the oil patch.

So to me, that slow response time is yet another indicator that underscores the likelihood of a price spike in oil if either U.S. shale cannot meet global demand, or if some geopolitical event in the Middle East, say, materially impacts supply. International rigs historically have been unable to respond quickly to increases in price.

Slide: Correlating Int’l Rigs and WTI

To be clear, there is a good correlation between oil prices and international



rigs...here is a snapshot of my results from correlating the previous 12 month's average WTI oil price and the future 12-month's average international oil rig count. That correlation coefficient of 0.75 is a reasonably strong positive linear relationship between oil prices and int'l rigs – but it's on a one-year lagged basis. And though this sort of thing...calculating correlations...is sort of the working man's version of a linear regression, to make any sort of forward looking predictions, we've gotta actually do a regression.

Slide: Regression of Int'l Rigs and WTI

So, here it is.

Slide: Int'l Rigs vs WTI Regression Results

And based on it, here are the quasi-confident conclusions you can make...

- The international oil rig count today of 700 rigs is just about right for \$50 WTI
- To average 800 rigs in a future year, we'll first need a year with WTI closer to \$75
- To get back to the boom times of 1000 international rigs, and, ostensibly, max non-OPEC production, we'll first need a year with WTI closer to \$95 a barrel – and that's after a few years of high and growing oil prices

There are not a ton data points in this model, so the regression would be tighter if I used a lot more historical data...but I'm also not trying to answer a test question here so much as I am trying to make sure I'm not fooling myself into believing something that is not true.

And I am not. Assuming the international rig count is a good proxy for non-OPEC production, then all this is unequivocally supportive of significantly higher oil prices, too.

And I hope that helps answer that question.

Video #5 - Q&A on Debt at Tarpon Companies



Slide: Q&A On The Debt High By Our Companies and Future Ten Baggers

Okay, three questions in this section to address.

One was a multi-part question, in reference to the level of debt held by our companies in Tarpon. More specifically...“We’ve got some companies with a lot of debt, does it concern you, are you specifically looking for high debt companies?”

Second question: “How are you evaluating those companies?”

And then the third question...which wasn’t really related to any questions about debt at all by the investor who asked, but which I am going to lump in this same category here anyway, was “Which of our stocks are most likely to be 10-baggers from today?”

Slide: Comes with the Territory

First a little context.

Debt just comes with the territory in this industry. There is a total of about \$200B in debt held by unconventional oil companies all over the U.S., and the average debt to EBITDA ratio for oil & gas companies last year was 3x.

And so all debt is relative. At E&Ps, if you’re not comparing a company’s debt to its reserves and production, then yes, you could scare yourself. \$100 of debt is enormous to my nine year old, but I don’t think anything about it. So absolute levels of debt are meaningless without understanding the ability to service it.

To be clear – I am not an apologist for the sins of all U.S. E&Ps that have a lot of debt. I’m just saying that debt is not necessarily a bad word, and, historically, capital structures in this industry have heavily relied on the use of debt.

But it stands to reason that the companies that have gotten beat up the most in this cycle...the ones with the cheapest valuations...would be ones with leverage.

Slide: On Separating Good from Bad...



And no, I am not specifically looking for companies that have debt to invest our money in...I am looking for the best (meaning lowest) possible valuations first. Full stop.

If a very cheap company meets the rest of our criteria, though, in terms of rocks they own, management team, have a margin of safety, can survive lower for longer, have a runway for quickly increasing cash flows exclusive of a rise in oil prices...then if they happen to have debt on their balance sheet...I will absolutely spend some time to check out that balance sheet.

And you can see the debt pretty clearly, and you can create a bar chart showing all the maturities coming up easily enough - but you may not at first see that big old hidden asset that is the non-core acreage that they could sell today for two thirds of the value of all its debt. Which is interesting.

Also - when it comes to modeling a levered company, which I think was also a question someone had...the short version is - it's not that the model I build for a levered E&P is materially different, as much as it is that there is that much more to make sure you are looking at upfront. For instance, okay if you have debt that passes the basic checks, then you should also gotta have a track record of high production per debt adjusted share, and high recycle ratios and a couple of other metrics that are beyond the scope of this video. But also want to see pathways to pay off that debt quicker, like buying it back, for instance, or refinancing it with a non-credit hedge fund. And then there are operational things, too, I want to see at higher debt company - the prime example being using longer laterals in their drilling - because that will dramatically increase capital efficiency. So the core modeling isn't different, but there is just more that goes on before then.

And when you list the reasons an E&P might be cheap...I want that list to be of obvious, macro things that are temporary...like "low oil prices are crimping EBITDA"...so the nature of the problems that explain the cheapness means the problems can fix themselves...and then I want that list of "Reasons it's Cheap" to be generally the same at each one of our companies.

If you have a specific company, though, where the primary reason they are cheap is because they got over their skis when issuing bonds...then that problem has a higher bar to climb to be solved, and it's not going to be of interest.

Most of the time, at least earlier in this cycle - it's no thanks, move on, but there



are some that should be worth multiples more today.

In any case, here is a little more on what I mean when I say they check out okay.

Slide: Checklist for Investing In E&P Companies With Debt

So, among the companies most sensitive to an increase in oil prices are companies with debt. And if your goal is to maximize the long-term compound annual returns of your portfolio by taking advantage of the deepest, longest oil bust in history...then you can't call yourself a real value investor if you don't spend some time looking hard at balance sheets that look ugly at first glance.

So when it comes to the companies with the biggest possible returns coming out of this crisis...if you're hunting elephants, not squirrels...debt can be like valuation jet fuel when oil prices recover. And to be real clear - just having high debt is not the point – that's a recipe for heartbreak. Manageable debt, due far enough in the future to allow oil prices to rebound, at a company with good operating leverage run by good managers that own great rocks...that is the point.

So a certain degree of manageable debt held by a company which will survive low oil prices can, under certain circumstances, be a real boost to a company's equity value. And that's because as oil prices rise, a company's ability to repay its debt also increases, and its fixed interest payments further increase whatever operating leverage it may already have.

The trick is obviously figuring out which companies can handle their debt, and which cannot.

So if a company can make its interest payments with room to spare for the foreseeable future, if it is not at risk of running out of credit capacity, if there is no risk of breaching any covenants, and there is no risk of adding additional debt...if a company can manage these things well, then they should get serious consideration even if a slug of bonds they have is coming due in five years. Yet they've likely been completely abandoned in this market...which is an opportunity.

Because the market is indiscriminate right now. All debt is bad, period. More specifically, some of the greatest opportunities can be found in companies that at first blush have ugly-looking balance sheets. There are a number of babies being thrown out with the bathwater here, just based on debt – never mind that a company may have held and been successfully servicing that debt for years. Very few equity investors of late seem to be taking any time to actually unpack



the right hand side of a company's balance sheet to see what it really looks like or when debt actually deserves to become a real concern.

For instance, if you are an E&P in the U.S., and your debt metrics include a net debt to EBITDA ratio of greater than 3, then your shares have been pretty much abandoned here – regardless of when that debt may actually be coming due and/or how much risk it actually represents.

Now, all that said...the thing that concerns me most about debt at any E&P is not the “math” of it. My biggest concern about debt is whether or not it could represent a backdoor way for less-than-moral management teams to sell equity holders out by agreeing to reorganize in exchange for a bigger stake in their companies themselves. That sort of thing seemed to happen more than you might think in this industry, earlier in this cycle. So there are some additional things I screen for when it comes to debt in our companies' capital structures, too, to qualify that risk - and then there are some non-quantitative things when it comes to that debt that we look for in management teams, also.

Slide: Torque for the Rebound

To fast forward, we do own a number of these misfit toys with debt in Tarpon...those which screen poorly after a quick glance, but in reality have little debt-related risk at all over the next few years.

Also, and I should have mentioned this earlier – I just want to point out that none of the debt of our companies is distressed. So leaving aside what I think about them...the bond market itself is telling you that it doesn't think any of our guys will have trouble servicing their debt, either. Which is good confirmation, I suppose.

So here are the years in which their debt comes due. The point being – some of our guys have some debt, but they have even more time – especially if, as I'll get to in a minute, they are cash flow neutral at relatively low oil prices because their acreage has low breakevens.

So the first true debt (either bonds or notes outstanding) for any of our companies does not come due for three more years. (The one company asterisked there in 2019 is a bit of a longer, special situations story I will tell another time – but that is a revolving credit line, not a note, in any case.) And oil will be in a different place by 2020.



Financial leverage in the form of manageable debt can be a huge boost to a company in the upward leg of the next oil cycle.

Again, not all of our companies have debt, and among the ones that do, none of them have debt that will be an issue anytime soon.

So you can either let debt scare you off completely, or you can do the work and see where the kneejerk fears of other people might create some real opportunities.

And if the question is...where will the next ten-baggers in Tarpon come from, which is another question I got...then the answer is “from among these companies right here.”

Slide: The Next Ten-Baggers...?

I think you all understand that for compliance and regulatory reasons I need to be careful answering this sort of thing in public...so let me couch this a bit.

First – the fact that we had two ten-baggers last year was extremely rare...both that they returned what they did, and that it was in such a short period of time. Which I also think everyone gets. So let’s all resolve to be more than satisfied with one-baggers, and if things compound beyond that, great.

So let’s tweak that question into, “Which of our companies are the most undervalued today?”

And my completely unsatisfactory answer – in public, anyway - is going to be – the companies described on that last “Torque for the Rebound” slide.

Then if I had to pick one from there that might, as of today, in theory, see the most significant gains over the next few years - assuming a lot of stars align - it would be the only company we own that is headquartered in Canada.

And I think I should just leave it at that.