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HEDGING OIL & GAS PRODUCTION

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I. INTRODUCTION

The recent, dramatic decline in the price of oil illustrates the risk that every oil and gas producer has to declining energy commodity prices. This paper discusses various methods for "hedging" or reducing price risk. In particular, we discuss transactions and methods that enable a producer to transfer some or all of its price risk related to its oil and gas production to a party that is willing and able to take an opposite position and assume that price risk. Importantly, these hedge transactions mitigate an existing risk and are distinguished from speculative transactions under which a party assumes, rather than transfers, price risk related to a commodity in hopes that the future increase or decrease in its price will be in its favor and will result in trading profits. We will not discuss the use of over-the-counter or exchange-traded transactions for speculating on oil and gas prices.

In this paper we address why oil and gas producers hedge and provide an overview of over-the-counter and exchange-traded transactions. We also include a summary of the regulations mandated by the Dodd-Frank Wall Street Reform and Consumer Protection Act that are relevant to producers.

II. WHY HEDGE OIL & GAS PRODUCTION?

A well implemented hedging strategy can provide an oil and gas producer with important benefits. The primary benefit of hedging oil and gas production is the producer's ability to reduce the impact of unanticipated price declines (known as price risk) on its revenue. Several methods exist that allow a producer to hedge its expected production against price risk. Some transactions, such as swap contracts, fixed-price physical contracts, and futures contracts (each discussed in detail below), have the effect of locking in the price the producer will receive in the marketplace for some percentage of its future production, but prevent the producer from benefiting if prices rise. Other transactions, such as put option contracts (discussed in detail below), have the effect of establishing minimum prices the producer will receive in the marketplace for its future production, which protect the producer from price declines while allowing it to benefit if prices rise, but require the producer to pay an upfront premium. Regardless of which method is chosen, hedging a percentage of a producer's production against price risk can reduce the extent to which a producer's revenue erodes in a downward market.

Appropriately hedging oil and gas production can provide a producer with a measure of financial certainty. The ability to lock in or establish a minimum price *in advance* that the producer will receive in the marketplace for a percentage of its expected production gives the producer the advantage of predictable revenue in a future period. This certainty allows a producer to service its debt, budget for drilling operations under its existing oil and gas leases, and plan for and fund future exploration and production activities and growth opportunities, even during a period of declining or volatile prices. Thus, hedging is a powerful financial management tool.

In some cases, producers may not have a choice about whether to enter into hedging transactions. Producers may be required to hedge a specified portion of their expected production by their lenders or investors. Lenders whose loans are secured by the producer's oil

and gas reserves often require producers to hedge production to provide lenders with additional certainty that the producer will have steady and reliable revenue from its production and, as a result, be more likely to meet its debt service obligations. Likewise, investors may require producers to hedge as a means of maintaining the producer's revenue and increasing the likelihood that investors will receive adequate returns on their investment.

In broad terms, hedging transactions can be separated into two major categories: (i) over-the-counter transactions and (ii) exchange-traded transactions. A producer's decision to hedge using one or both of these categories must be made on a case-by-case basis depending on the sensitivity of its business plan and capital structure to revenue fluctuations; its appetite for risk; its liquidity; any lender or investor imposed restrictions or requirements; its degree of confidence in engineering projections of future production; and the timing, location, and amount of expected oil and gas production. Each category varies greatly in its processes, procedures, and risk. We explore the principal differences between these categories in the following sections and comment on the advantages and disadvantages that may influence a producer's hedging strategy.

III. OVER-THE-COUNTER TRANSACTIONS

Over-the-counter transactions are bilaterally negotiated between counterparties to meet each counterparty's specific risk and financial management strategies. With exchange-traded transactions (discussed in detail in Section IV), standardization limits a party's flexibility to hedge risk because exchange-traded contracts are one-size-fits-all instruments and a party must implement hedging strategies based on a narrow range of contract terms.[1]

The ability to negotiate all aspects of an over-the-counter transaction gives an oil and gas producer control over how hedging transactions are structured, the exact quantity of production to hedge, the index price used, the collateral requirements securing the parties' obligations, the remedies in the event of a default, and so on. Over-the-counter transactions are especially useful for hedging producer risk because they can be used to hedge all or some of a producer's expected production farther into the future than may be practical with exchange-traded transactions. This flexibility allows the parties to structure a hedge that is highly correlated to the underlying commodity transaction and the business model of the producer.

Over-the-counter transactions are either financially or physically settled. Financially settled transactions result only in payment obligations between the parties, which are derived from the value of an underlying commodity as determined based on an agreed pricing mechanism. As the name implies, financially settled transactions do not involve the purchase or sale of a physical commodity. In many ways, they are less complicated than physically settled transactions, because they do not involve title transfer, transportation, quality, risk of loss, and other issues that must be considered with physical transactions.

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[1] Michael Durbin, *All About Derivatives* 24 (2011).

Physically settled transactions involve the purchase and sale of physical commodities. For a physically settled transaction to constitute a hedge the underlying commodity must be sold for some period into the future for a fixed price. All producers sell their oil and gas production through the use of physically settled transactions, but not all producers use physically settled transactions to hedge against price risk because the commodity is typically sold at an indexed price rather than a fixed price. This is partially because many in-field purchasers of oil and gas are not willing or able to accept the price risk associated with a fixed-price transaction. As a result, a very large percentage of oil and gas is sold in the field at the spot price. Hedging is then accomplished, to the extent desired, with a second, financially settled transaction.

The most common over-the-counter products are (i) swap contracts, (ii) option contracts, and (iii) fixed-price physical contracts. We explore each of these below and provide examples and commentary on the advantages and disadvantages of each.

A. Swap Contracts

Swaps are bilateral contracts negotiated between counterparties to exchange a series of cash flows at defined intervals. Swaps are aptly named because they involve exchanging or *swapping* cash flows. They are particularly attractive because they require no upfront costs (such as a premium) and because the relatively large number of swap counterparties and swap transactions in the marketplace foster an active trading market. Several types of swaps are available to help parties meet their hedging objectives. For purposes of this paper we focus on commodity price swaps, which can be utilized by producers to hedge price risk.

Commodity price swaps involve swapping, at defined intervals for a specified period into the future, a floating price for a fixed price based on an agreed (notional) quantity of an underlying commodity. Commodity price swaps are always financially settled by comparing the floating price of the underlying commodity (as published by an index selected by the parties) to the fixed price agreed on in the swap contract, and netting any payment obligations owing between the parties into a single payment paid at the defined intervals (typically monthly).[2] If the fixed price differs from the index price, the swap counterparty owing the net amount pays the other.

A producer can enter into a commodity price swap to transfer its price risk exposure to a swap counterparty. If the floating price is greater than the fixed price, then the producer is obligated to make a payment to its swap counterparty equal to the difference between the floating and fixed prices multiplied by the notional quantity. Conversely, if the floating price is less than the fixed price, then the producer will receive a payment from its swap counterparty equal to the difference between the fixed and floating prices multiplied by the notional quantity. Swap counterparties exchange a single payment at each defined interval, which is the net amount owed by one party to the other. The producer's payment or receipt of these amounts ensures that the net effective price for its production is locked in at the fixed price agreed on in the swap contract and guarantees the producer a steady, predictable, and consistent stream of revenue. However, the producer gives up the potential upside of increased revenue if prices rise.

[2] Neil C. Schofield, *Commodity Derivatives: Markets and Applications* 3 (2007).

As an example of how commodity price swap contracts are utilized by producers to lock in prices, consider a producer that expects to produce 25,000 barrels of oil during the month of February and has contractually committed to sell its February production at indexed-based spot prices. Assume the producer desires to hedge 100% of its expected February production at a fixed price of $50.00 per barrel and lock in $1,250,000 of revenue from its oil production ($50.00/bbl x 25,000 bbls = $1,250,000).[3] By entering into a commodity price swap, the producer is required to make a payment to its swap counterparty equal to the floating, indexed price multiplied by the notional quantity in exchange for receiving a payment from the swap counterparty equal to the fixed price multiplied by the notional quantity.

If the index price of oil is $65.00 per barrel at the time specified for valuation in the swap contract, the producer will owe its swap counterparty $375,000 ([spot price ($65.00/bbl) - fixed price ($50.00/bbl)] x notional quantity (25,000 bbls) = $375,000). Assuming that the producer's physical contract is tied to the same index, then the producer will have received enough additional revenue from the purchaser of its physical production above the $50.00 per barrel fixed price to pay the settlement obligation to the swap counterparty and still net it a $50.00 per barrel price. The swap payment by the producer ($375,000) will *offset* the producer's sale of oil at the spot price ($65.00/bbl x 25,000 bbls = $1,625,000) leaving the producer with $1,250,000 of revenue during the month of February ($1,625,000 - $375,000 = $1,250,000).

Conversely, if the spot price of oil decreases to $40.00 per barrel at the time the producer settles its commodity price swap, the swap counterparty will owe the producer $250,000 ([fixed price ($50.00/bbl) - spot price ($40.00/bbl)] x notional quantity (25,000 bbls) = $250,000). That payment, combined with the payment the producer receives from the purchaser of its physical production, again assuming that the physical contract price for that period is determined on the same index, will result in the producer receiving its targeted $50.00 per barrel. In other words, the swap payment ($250,000) will *supplement* the producer's sale of oil at the spot price ($40.00/bbl x 25,000 bbls = $1,000,000) leaving the producer with $1,250,000 of revenue during the month of February ($1,000,000 + $250,000 = $1,250,000).

As these examples illustrate, the producer's per barrel net effective revenue is equal to the agreed on fixed price ($50.00/bbl) set forth in the commodity price swap ($1,250,000 / 25,000 bbls = $50.00/bbl), regardless of whether the spot price of oil is higher or lower than the fixed commodity price specified in the swap contract for that month. For this reason, commodity price swaps are commonly used by producers to protect against falling oil and gas prices. However, as these examples also illustrate, the producer gives up the potential upside of increased revenue if oil prices rise. Hence, there is an opportunity cost. Nevertheless, producers often make the decision to hedge using swaps because certainty and predictability for a period of time may be more valuable than a potential increase in future oil and gas prices.

B. Option Contracts

Option contracts provide the holder of the option the right, but not the obligation, to either purchase (a call option) or sell (a put option) a specified quantity and quality of an

[3] Note that the "fixed price" established by the swap contract will usually vary from month-to-month during the term of the swap contract, thus it is typically fixed for one month not for the life of the swap.

underlying commodity at a specific location and on a specific date (or series of dates) in the future at a price specified for each such date (the strike or exercise price).[4] For example, call options can be entered into by end users to hedge against the possibility that the price of an underlying commodity will rise in the future; put options can be entered into by producers to hedge against the possibility that the price of an underlying commodity will decrease in the future.

Depending on the movement of the underlying commodity's price, an option holder will choose one of the following three ways to close out and liquidate its position: (i) exercise the option, (ii) resell or offset the option,[5] or (iii) let the option expire.[6] American-style options may be exercised at any time on or before the option expires, while European-style options may only be exercised on the date they expire. If and when the holder properly exercises the option, the seller of the option (the option writer) is obligated to fulfill the contractual obligations under the option contract. The price of the option paid by the option holder to the option writer at the time the position is established is known as the premium.[7]

Over-the-counter option contracts are often financially settled and do not involve physical delivery of the underlying commodity. For example, financially settled option contracts do not give an oil and gas producer holding a put option the right to sell physical oil and gas to the option writer. Instead, if floating prices drop below the strike price in the option contract, the option contract entitles the producer to receive a payment from the option writer equal to the difference between the strike price and the floating price of the commodity multiplied by the notional quantity. Thus, in this scenario, while the producer must still sell its physical oil and gas production at the spot price, it will receive from the option writer a payment offsetting the difference between the strike price and the floating price (assuming the option is timely exercised).

Continuing the example above, consider the producer expecting to produce 25,000 barrels of oil during the month of February. Assume that instead of locking in prices with a commodity price swap the producer desires to hedge all of its production to ensure at least a *minimum amount* of revenue from its production during the month of February, while retaining the benefit from increased revenue if oil prices rise. Assume further that the producer has determined, based on a review of its budget, that it needs to protect itself from oil prices generating revenue below $40.00 per barrel or a net revenue of $1,000,000 ($40.00/bbl x 25,000 bbls = $1,000,000) during the month of February and enters into an American-style, financially settled, put option contract with a strike price of $45.00 per barrel at a premium of $5.00 per barrel or $125,000 ($5.00/bbl x 25,000 bbls = $125,000). The strike price minus the premium gives the producer its revenue target of $40.00 per barrel.

[4] Schofield, *supra* n. 2 at 4.
[5] When considering whether an over-the-counter option is an appropriate hedging strategy, the producer should always consider how liquid and robust the market is for such options in the event the producer wants to sell or offset the option contract prior to the time the option expires or goes to physical delivery.
[6] New York Mercantile Exchange, *A Guide to Energy Hedging* 51 (1999).
[7] Robert D. Aicher, *Derivatives: Legal Practice and Strategies* §2.02 (2011).

If the floating price of oil remains at or above the strike price during the term of the put option contract, the option is said to be "out of the money." The producer, choosing not to exercise its option and allowing it to expire (assuming the spot price of oil remains above the strike price), will sell 25,000 barrels of oil at the spot price. The producer's cost for the unexercised put option contract is the premium paid to the option writer ($125,000).

Conversely, if the floating price of oil falls below the strike price during the term of the put option contract, the option is said to be "in the money." Assuming the floating price of oil is $30.00 per barrel at the time the producer timely exercises its American-style, financially settled, put option contract, the option writer will owe the producer $375,000 ([strike price ($45.00/bbl) - floating price ($30.00/bbl)] x notional quantity (25,000 bbls) = $375,000). The option payment ($375,000) will *supplement* the producer's sale of oil at the spot price ($30.00/bbl x 25,000 bbls = $750,000) leaving the producer with $1,125,000 of revenue during the month of February ($750,000 + $375,000 = $1,125,000). The producer's cost for the put option contract is the premium paid to the option writer ($125,000); thus, its net revenue during the month of February is $1,000,000 ($1,125,000 - $125,000 = $1,000,000) or $40.00 per barrel ($1,000,000 / 25,000 bbls = $40.00).

As these examples illustrate, the producer's put option contract is intended to ensure that its net revenue from its oil production during the month of February never falls below $40.00 per barrel (or $1,000,000) after considering the premium paid for the option contract, while simultaneously allowing the producer to benefit from increased revenue if oil prices rise. In other words, option holders are protected from changes in a price in one direction while retaining the ability to benefit from movement of the price in the other direction.[8] If an option contract is out of the money, the option holder's only cost is the premium paid for the option. Thus, a put option protects against downside price risk while preserving the opportunity to benefit from increased revenue if oil prices rise to the extent that they exceed the option premium.

For these reasons, many people think of entering into option contracts like purchasing insurance. However, option contracts differ from insurance in that options do not require a party to suffer an actual loss for payment to occur.[9] It is also not necessary that the option holder have an insurable interest in the subject (such as ownership in the underlying commodity) of the option.[10] Thus, option contracts are appealing to some producers that are willing to pay a premium for downside price protection without having to give up the potential upside of increased revenue if oil and gas prices rise by an amount greater than the option premium.

C. Fixed-Price Physical Contracts

Fixed-price physical contracts are traditional purchase and sale transactions and can be entered into in lieu of swap or option contracts. The primary distinguishing features of fixed-price physical contracts are the use (as the name implies) of a fixed price rather than a floating price and considerations related to physical delivery of a commodity. For example, a

[8] Schofield, *supra* n. 2 at 4.
[9] ISDA, *Product Descriptions and Frequently Asked Questions*, http://www.isda.org/educat/faqs.html (last visited Mar. 1, 2015).
[10] *Id.*

producer that expects to produce 25,000 barrels of oil during the month of February could simply enter into a fixed-price physical contract with a counterparty willing to purchase and take physical delivery of the February production at an agreed on location and for a fixed price. Thus, the producer hedges itself against price risk and benefits from the certainty of predictable future revenue. However, as with all fixed-price contracts, the producer gives up the potential upside of increased revenue if prices rise, and, as with all physically settled contracts, the producer must consider issues such as title transfer, transportation, quality, risk of loss, and force majeure. The use of the term "fixed price" does not necessarily mean that there is one price per unit of volume for the life of the contract, but rather that the price per unit of volume is specified in advance for each time period during the term of the contract.

It is important to keep in mind, however, that the elimination of price risk that results from a fixed-price physical contract does not eliminate all other risks that the producer faces. Because fixed-price physical contracts involve physical delivery of oil and gas, the producer is subject to the risk that the counterparty will take delivery and fail to pay for all or part of the production, known as settlement risk. Additionally, because fixed-price physical contracts establish a fixed price at which the production is purchased, the producer is subject to the risk that the counterparty may refuse to perform the contract if the spot price of oil and gas is less than the fixed price, known as mark-to-market risk. Settlement risk and mark-to-market risk (collectively known as credit risk) are discussed in detail in Section III.E.

To protect against credit risk, producers should seek only the most creditworthy purchasers and to secure credit support. This may exclude in-field purchasers of oil and gas because they are unwilling or unable to post sufficient credit support needed to cover a producer's credit exposure. Furthermore, in-field purchasers of oil and gas are often reluctant to enter into fixed-price physical contracts with producers, as the assumption of the producer's price risk may be outside of the purchaser's core business and beyond its risk tolerance. Thus, fixed-price physical contracts are infrequently entered into between producers and in-field purchasers. Instead, it is often the case that producers enter into floating-price physical contracts with in-field purchasers and hedge exposure to price risk using financially settled transactions with large, financially sophisticated counterparties, such as commodity trading companies, banks, and financial institutions that are willing and able to post sufficient credit support needed to cover a producer's credit exposure.

D. How are Over-the-Counter Transactions Transacted?

Unlike exchange-traded transactions, over-the-counter transactions are not traded on or supervised by organized exchanges. Instead, over-the-counter transactions are bilaterally negotiated through private contracts tailored to each counterparty's specific risk and financial management strategies. Three of the most widely used types of over-the-counter contracts are (i) the general terms and conditions ("***GTCs***") of individual energy companies, (ii) the Base Contract for Sale and Purchase of Natural Gas ("***Base Contract***") published by the North American Energy Standards Board ("***NAESB***"), and (iii) the ISDA Master Agreement published by the International Swaps and Derivatives Association ("***ISDA***").

1. General Terms and Conditions

The purchase and sale of physical oil has traditionally been transacted under the GTCs of individual oil companies. Thus, every time a new relationship is established for the purchase and sale of physical oil the parties must first determine which party's GTCs to use. Problems sometimes arise because each party's form of GTCs differs and parties are required to review and negotiate each provision of the GTCs until it is acceptable to both parties. Although it is the current market standard for transacting in physical oil, some may argue that the use of GTCs is both an inefficient way to conduct business—leading to increased expense and unnecessary delay in establishing new transactions—and results in GTCs that are different between one party and its various other counterparties.[11]

Fortunately, various trade associations have developed over the years as over-the-counter transactions have become increasingly sophisticated. With the help of industry professionals, these associations have standardized many of the contractual provisions required in physical oil transactions, thereby greatly simplifying the contracting process. For example, ISDA has published the U.S. Crude Oil and Refined Petroleum Products Annex ("***Crude Oil Annex***"), which addresses transactions for the purchase or sale of physical oil.[12] However, despite its publication and standardized terms, the Crude Oil Annex has yet to be widely adopted by the energy industry for purposes of documenting physical oil transactions.

2. NAESB Base Contract

The NAESB Base Contract is commonly used in the energy industry to document physical gas transactions. The Base Contract itself is a preprinted document that contains general terms and conditions governing the purchase and sale of physical gas including transportation, nominations, imbalances, quality and measurement, title, and force majeure. The preprinted text is tailored by the parties to meet their specific needs by entering each party's information on the first page of the Base Contract and selecting the appropriate boxes on the second page with respect to, among other things, transaction procedures, confirmation deadlines, performance obligations, payment dates, netting, events of default, and early termination damages. The Base Contract may be further amended and tailored to each party's needs through the negotiation of the Special Provisions, which are attached to and become part of the Base Contract. Special Provisions contain other elections, additions, and amendments to the Base Contract specifically agreed to by the parties, such as additional representations and warranties, payment obligations, and termination events.

The Base Contract's focus on physical gas transactions limits its use by parties. Unlike the NAESB, ISDA's documentation architecture allows parties to trade both physical and financial transactions under a single agreement. The benefits inherent to single-agreement structure often prompt over-the-counter market participants to use the ISDA Master Agreement and its various commodity annexes instead of, or in addition to, the Base Contract.

[11] Craig Enoch & Paul Vrana, *Standardized Physical Gas and Power Agreements*, in *Energy and Environmental Trading: US Law and Taxation* 116 (Andrea S. Kramer and Peter C. Fusaro eds., 2008) [hereinafter *Standardized Physical Gas and Power Agreements*].

[12] ISDA, *ISDA U.S. Crude Oil and Refined Petroleum Products Annex* Pt. (a)(i) (2008).

3. ISDA Master Agreement

The ISDA Master Agreement documents the overall terms governing the relationship between counterparties and is structured to provide a framework around which the rest of the ISDA documentation is built (collectively referred to as the "***Master Agreement***"). They are considered "master," overarching agreements because they enable parties to transact multiple transactions under a single agreement.

There are two versions of the Master Agreement that market participants can use to document over-the-counter transactions: the 1992 Master Agreement and the 2002 Master Agreement. The primary differences between the two versions relate to settlement (or close-out) procedures, force majeure, termination events, events of default, and setoff. Both the 1992 and 2002 Master Agreements contain preprinted terms that are never altered except to insert the date of the Master Agreement and the names of the parties. The preprinted text contains general terms and conditions governing over-the-counter transactions, including payment provisions, representations and warranties, events of default, and termination events.[13]

The preprinted text of the Master Agreements is primarily drafted for financial transactions. The requisite provisions regarding physical energy transactions are found in ISDA's various commodity annexes that are attached to and form part of the Master Agreements, such as the Crude Oil Annex, North American Gas Annex ("***Gas Annex***"), Global Physical Coal Annex, and North American Power Annex.

Each commodity annex was drafted with the support of their respective industries. For example, the Gas Annex was drafted with the assistance and input of NAESB and incorporates most of the Base Contract's terms relating to the purchase and sale of physical gas transactions that are not otherwise found in the Master Agreements.[14] Because the Gas Annex contains provisions similar to the Base Contract, parties using the Gas Annex can purchase and sell gas on terms that align with industry-standard NAESB provisions, while receiving the benefits of trading various physical and financial energy products under a single agreement.[15] These similarities advance greater efficiency in the gas marketplace and streamline the documentation of gas transactions. These benefits have also caused the ISDA and its commodity annexes to become more widely accepted and used in the energy industry.[16]

The Master Agreement provides a standardized framework to document and expedite the negotiation of over-the-counter hedging transactions, while providing parties with great flexibility to tailor provisions to meet their specific hedging strategies. The preprinted text of a Master Agreement is tailored through negotiation of its Schedule, which forms part of the Master Agreement and contains important elections, amendments, supplemental terms, notice information and closing deliverables.

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[13] *Standardized Physical Gas and Power Agreements*, *supra* n. 11 at 116, 131; ISDA, *supra* n. 9; Paul E. Vrana, Craig R. Enoch & Fundi A. Mwamba, *How To Use The ISDA Master Agreement* 6-7 (2002) [hereinafter *How To Use The ISDA Master Agreement*].

[14] *Standardized Physical Gas and Power Agreements*, *supra* n. 11 at 116; Craig Enoch & Kevin Page, *ISDA and its Commodity Annexes: The New EEI or NAESB?* 2-3 (2009) [hereinafter *ISDA and its Commodity Annexes*].

[15] *ISDA and its Commodity Annexes*, *supra* n. 14 at 1, 3.

[16] *Id.*

There are multiple ways a producer can secure its obligations under the Master Agreement. Sometimes a producer may choose to secure its obligations by pledging liens to its counterparties on the producer's oil and gas reserves and other assets pursuant to the security instruments under its credit facility. Alternatively, a producer may choose, in combination with or in lieu of a lien on its assets, to secure its obligations by utilizing ISDA's Credit Support Annex, which governs the exchange and management of collateral to secure a party's payment obligations. Like the preprinted text of a Master Agreement, the Credit Support Annex contains preprinted terms that are tailored through negotiation of a separate instrument, known as Paragraph 13. Paragraph 13 contains terms such as the types of collateral that may be used, the treatment and use of collateral by the secured party, the return of collateral, and the parties' other elections, additions, and amendments to the Credit Support Annex.

The Master Agreement is quite lengthy and the negotiation process can be burdensome, but once a Master Agreement is signed the documentation of future transactions between parties is reduced to an instrument, known as the Confirmation. A Confirmation confirms the economic deal terms of each transaction and automatically forms part of and is governed by the terms of the Master Agreement. Without a master-type agreement structure, the parties are required to enter into a separate legal agreement each and every time a physical or financial transaction is consummated.

As mentioned above, the preprinted text of a Master Agreement is tailored by the parties through negotiation of the Schedule to the Master Agreement. In the following paragraphs, we provide practical suggestions and tips for negotiating and drafting the Schedule. This is not intended to be an exhaustive summary of every provision that is negotiated, but rather a guide for negotiating some of the more important sections of the Schedule, with a special emphasis on issues relevant to oil and gas producers.

a. *Part 1(a): Specified Entities*

Each party to the Master Agreement designates its Specified Entities with respect to three Events of Default (*i.e.*, Default Under Specified Transaction, Cross Default, and Bankruptcy) and one Termination Event (*i.e.*, Credit Event Upon Merger) in Part 1(a) of the Schedule (collectively, the "***Part 1(a) Designated Events***"). The occurrence of any Part 1(a) Designated Event between a designated Specified Entity and a party to the Master Agreement under any other agreement gives the non-defaulting party the right to terminate all of the transactions under the Master Agreement.[17] A producer's counterparty will most likely request (or even insist) that the producer list all of the producer's affiliates (*i.e.*, parents, subsidiaries, and sister companies) as Specified Entities, since its aim is to draw in other parties whose relationship is so close to the

[17] In most cases, a producer wants to avoid triggering an event that gives its counterparty the right to terminate the transactions under the Master Agreement. If the producer is out of the money on its transactions, then a counterparty would more likely exercise its termination rights. An out-of-the-money termination results in the producer owing its counterparty a termination payment, which can create an immediate and possibly catastrophic liquidity event for the producer. Furthermore, a loan agreement may likely include a cross default to the producer's hedging documents, so a termination under the Master Agreement would cross default the loan agreement.

producer that if any Part 1(a) Designated Event occurs with respect to the other parties it could affect the producer's counterparty.[18]

It is in the best interest of the producer to minimize the Master Agreement's scope as to its affiliates. If a producer designates all of its affiliates as Specified Entities, it increases the likelihood that one of the Part 1(a) Designated Events will be triggered, which could result in the termination of some or all of the transactions documented under the Master Agreement. A producer can try to reduce its risk of triggering one of the Part 1(a) Designated Events by designating no Specified Entities. This is accomplished by simply listing "None" as its Specified Entity with respect to each of the Part 1(a) Designated Events. If the producer's counterparty insists on listing a Specified Entity, then the producer should try to list as few affiliates as possible, such as those it is in the best position to monitor and control, to reduce the risk that a rogue affiliate enters into and defaults under another agreement with the producer's counterparty.

b. *Part 1(c): Cross Default*

The Cross Default provision in Part 1(c) of the Schedule deserves special attention. Since most producers rely on financing and are party to loan agreements, their ISDA transactions are vulnerable to the Cross Default Event of Default. A Cross Default occurs under the Master Agreement when either party (including the producer), its Specified Entities, or its Credit Support Providers,[19] default or fail to make a payment with respect to an obligation for borrowed money (*e.g.*, a loan agreement). Although the Schedule provides the parties with the option to elect to have the Cross Default provision apply, a producer's counterparty will almost certainly insist that the Cross Default provision apply to the producer, especially if the producer or its affiliates are party to a loan agreement or other agreement documenting an obligation for borrowed money. Since it is unlikely to negotiate itself out of the Cross Default provision, the producer should try to reduce the chances of triggering a Cross Default by modifying the language to reflect a less burdensome, cross-acceleration provision.

As the preprinted text of the Master Agreement is written, Cross Default can occur even if there is a *possibility* of borrowed money being declared due and payable. This means that the occurrence of an event of default under a loan agreement, even one that is waived by the lender bank, can trigger the Cross Default Event of Default. For example, if a financial covenant in a loan agreement is breached and the lender bank agrees to waive the breach of covenant, a Cross Default Event of Default is nevertheless triggered under the Master Agreement and the producer's counterparty has the right to terminate all of the transactions under the Master Agreement. Cross acceleration, on the other hand, only occurs when the lender under the loan agreement accelerates payment of the loan. The Cross Default Event of Default can be modified to reflect a cross-acceleration provision by adding the following language to Part 1(c) of the Schedule: "Section 5(a)(vi) is amended by deleting the words ', or becoming capable at such time of being declared,' from sub-clause (1) thereof."

[18] Paul C. Harding, *Mastering the ISDA Master Agreements (1992 and 2002): A Practical Guide for Negotiation* 56 (3rd ed., FT Press 2010).

[19] "Credit Support Provider" means, with respect to a party, an entity designated in the Schedule that provides security under such party's credit support document, such as a party's guarantor.

c. *Part 1 (h)/(g): Additional Termination Event*

One of the most negotiated provisions of the Schedule is the Additional Termination Event language. Appearing in Part 1(h) of the Schedule to the 1992 Master Agreement and Part 1(g) of the Schedule to the 2002 Master Agreement, it is a provision that the parties can elect to have apply or not apply. A producer's counterparty will likely require that an Additional Termination Event apply to the producer; however, it is uncommon for an Additional Termination Event to apply to the producer's counterparty, especially if it is a bank or an affiliate of a bank that is party to the producer's loan agreement.

As with other provisions in the Schedule, a producer's objective is to minimize the likelihood of an Additional Termination Event. Counterparties will try to give themselves as much discretion as possible in determining whether an Additional Termination Event has occurred, so a producer must insist that the criteria for triggering an Additional Termination Event is as objective and narrow as possible. For example, a producer-specific Additional Termination Event is often triggered when the producer's obligations under the Master Agreement cease to be secured by the security package that is securing the producer's loan obligations under its loan agreement. Another common producer-specific Additional Termination Event is if the producer's counterparty or its bank affiliate ceases to be a party to the loan agreement. The producer should resist this latter Additional Termination Event, since it essentially penalizes the producer if the counterparty or its bank affiliate voluntarily leaves the producer's credit facility. Most loan agreements and the related security documents provide that the hedging agreements entered into between a producer and a lender bank or its affiliates will continue to be secured by the security documents even if the lender bank ceases to be a lender under the loan agreement. In other words, in many, if not most, cases, a counterparty will continue to be secured with respect to the producer's hedging obligations even if the bank ceases to be a lender under the loan agreement.

Producers should try to negotiate a cure provision into their Additional Termination Event language that provides them with an opportunity to cure the Additional Termination Event before the transactions under the Master Agreement are terminated by the counterparty. One iteration of a cure provision that can be added to Part 1(h)/(g) of the Schedule is as follows: "Notwithstanding the foregoing, no Additional Termination Event will occur if the [producer] posts collateral to [counterparty] or arranges for the novation of Transactions under this Agreement to a third party [subject to a negotiated cure period]."

d. *Incorporation by Reference of Loan Agreement Covenants*

Since many producers' obligations under a Master Agreement are secured by security documents that secure their loan obligations, counterparties often include a provision in Part 5 of the Schedule incorporating by reference the loan agreement covenants into the Schedule. Producers should try to negotiate this provision out of their Schedule since it increases the chances of triggering a Breach of Agreement Event of Default under the Master Agreement. A producer's counterparty already benefits from the Cross Default Event of Default (which, as mentioned above, the producer should try to downgrade to a cross-acceleration provision), which gives the counterparty the right to terminate all of the transactions under the Master Agreement if

the producer (or its Specified Entities or Credit Support Providers) defaults with respect to its obligations for borrowed money. If the producer is successful in negotiating a cross-acceleration provision in lieu of the standard Cross Default language, then the inclusion, by reference, of loan agreement covenants defeats the purpose of the cross-acceleration provision, since it permits the counterparty to terminate transactions under the Master Agreement by virtue of a covenant default regardless of amendments made to the Cross Default provision. Additionally, a producer does not want to tie its Master Agreement to its loan agreement at any particular point in time, since loan agreements are often amended as the credit profile and the value of the loan agreement's borrowing base changes over time.

E. Managing Risks Associated with Over-the-Counter Transactions

Hedging with over-the-counter products does not result in a risk-free transaction. Though a properly executed hedge eliminates a producer's exposure to price risk for any hedged production, it is important to keep in mind that price risk is simply replaced by other risks that the producer assumes and should consider, namely (i) credit risk, (ii) production risk, (iii) counterparty risk, (iv) basis risk, and (v) bankruptcy risk.

1. Credit Risk

Generally speaking, credit risk is the risk that a counterparty will fail to meet its payment obligations. In a hedge transaction, this risk of non-payment manifests itself in two ways: settlement risk and mark-to-market risk.

Settlement risk is the risk that a counterparty will take physical delivery of the producer's oil and gas and fail to pay for any or all of the commodity. Thus, settlement risk is unique to physically settled contracts only, including fixed-price and floating-price contracts. Settlement risk is inherent in the sale of any goods where delivery precedes payment. A producer's exposure to settlement risk can be estimated in advance of delivery by multiplying the volume to be delivered by the price to be paid by the purchaser. The producer can mitigate settlement risk by obtaining a guaranty, a prepayment, a letter of credit, or other collateral in advance of delivery in an amount equal to its settlement risk exposure.

Failure by a purchaser to pay under a physically settled contract can impact the producer's ability to satisfy its obligations under a financially settled hedging contract. When the producer enters into a swap contract it relies on its physical purchaser to take and pay in a timely manner for the oil or gas produced. As discussed above, when the index price specified under the swap is greater than the fixed price under the swap for a period the producer owes the difference to the swap counterparty. The producer often secures the funds to make that payment from the physical purchaser. The physical transaction and the swap transaction are separate distinct transactions. As a result, failure of that purchaser to perform under its contract does not excuse the producer's obligation to make payment under the swap. The resulting necessity to fund that obligation from other sources creates liquidity problems, sometimes very severe liquidity problems.

Mark-to-market risk arises for an oil and gas producer when the spot price of oil and gas is less than the fixed price agreed on in the contract, such that the counterparty may be incentivized to walk away from the contract and default on its obligations. Thus, mark-to-market risk is unique to fixed-price contracts only, including financially settled and physically settled contracts. A producer's exposure to mark-to-market risk can be estimated at any time by determining what price it has to sell oil or gas to a third party to induce the third party to enter into a replacement transaction having the exact terms of the transaction in question.[20] Mark-to-market risk is forward looking and is an estimate of the difference between the fixed price and the future spot price multiplied by the notional quantity and discounted back to a present value based on a reasonable discount rate determined by the producer. Both counterparties to a fixed-price contract are exposed to mark-to-market exposure as spot prices fluctuate over the term of the contract.

Provisions designed to mitigate credit risk can be just as (or even more) complex than the commercial terms of the underlying over-the-counter transaction and must be customized to accommodate the specific needs of the parties. Factors to consider include (i) the type of credit risk the parties are exposed to in the transaction, (ii) the maximum potential credit exposure created by the transaction, (iii) the liquidity of any collateral to be provided by a counterparty under the terms of the contract, (iv) whether collateral is required at the time of execution of the over-the-counter contract or only if the credit exposure of a party increases during the term of the contact, (v) the possibly that the posted collateral may change in value over the term of the contract, and (vi) the likelihood that a party will be able to realize on the collateral in the event the posting party fails to make a required payment.[21] Fortunately, standardization of over-the-counter contracts has made it easy for parties to establish terms that mitigate credit risk. In the case of a price swap, the maximum credit exposure that the producer has to the swap counterparty, that is, the most the counterparty could owe to the producer, is the product of the fixed price for each future month multiplied by the notional volume for that month. This would occur if the specified index went to zero for the remaining term of the swap contract. However, the maximum credit exposure that the swap counterparty has to the producer is unlimited because there is no theoretical limit to how high the index price could rise. The producer's potential obligation is unlimited.

The ISDA Master Agreement, for example, provides several mechanisms to help reduce parties' credit risk to each other, each of which is subject to negotiation between the parties. These mechanisms include (i) the right to terminate and liquidate all of the transactions under the Master Agreement when a default occurs; (ii) the right to set-off obligations owing between the parties; (iii) the right to withhold payment after the occurrence of an event of default; (iv) the right to demand collateral from the counterparty under certain conditions; and (v) the ability to monitor and adjust the exchange of collateral as frequently and as specifically as the parties desire.[22] In addition to, or in combination with, these risk management tools, parties can require

[20] Timothy Damschroder, *Derivatives Transactions: A Basic Explanation of the Products Involved and a Summary of Pertinent Legal Compliance Considerations* 7 (1994).
[21] Craig Enoch & Paul Vrana, *Credit Tools Used in Structured Energy Transactions, in Energy and Environmental Project Finance Law and Taxation: New Investment Techniques* (Andrea S. Kramer & Peter C. Fusaro eds., 2010) [hereinafter *Credit Tools Used in Structured Energy Transactions*].
[22] *How To Use The ISDA Master Agreement*, *supra* n. 13 at 4.

prepayment, guarantees, letters of credit, or margining from counterparties to over-the-counter transactions to secure performance of the parties' obligations.[23] Given that its exposure is potentially limitless, a producer in a swap contract needs to pay particular attention to the rights granted to the financial counterparty to demand additional collateral.

2. Production Risk

All of the foregoing discussion is based on the assumption that the volumes to be produced from a set of properties during future time periods is known. This is, of course, the purview of petroleum engineers. Depending on a vast array of factors, the level of confidence appropriate to an engineering report of projected production is highly variable. In any event, the farther into the future that projection extends the lower the confidence level can be. This is a risk for a purchaser in a contract for physical delivery. If a producer suffers any setback with respect to its expected production—such as operational delays related to its drilling activities, the failure of existing or planned (at the time of the report) wells to produce the volumes reflected in engineering models, or events of force majeure—it may not be able to meet its physical product delivery obligations. Thus the purchaser bears production risk that the producer will be unable to produce the specified quantity of oil and fail to deliver all or part of the contract quantity at the time of delivery.

This production risk is critically important to the producer in the context of any of the financial hedging strategies. For example, the calculation of swap settlements is based on a notional volume of production for the month that is defined in the swap contract. As discussed above, the producer relies on the proceeds of sale of the physical volume to fund any payment due to the financial counterparty. If actual production is lower than the notional volume specified for the period in the swap contract then the producer may lack part of the funds needed to pay its obligations. In extreme circumstances, the producer could have total swap obligations in excess of total physical product revenue. For this reason, it is unusual for producers to enter into financial hedges for 100% of anticipated production. A producer who enters into transactions for volumes beyond those that it controls is no longer hedging, it is speculating.

3. Counterparty Risk

Counterparty risk is the risk that the other party will fail to carry out its contractual obligations. In physical transactions this could mean the purchaser's failure to take title of the producer's product. It could also mean the credit risk described above.

4. Basis Risk

In financial hedges, the producer is at risk if there is not an exact alignment between the price it receives under its physical sale contract and the price, usually based on an index, on which the obligations under the hedging contract are determined. Any number of physical and economic factors can occur that disrupt even long, stable price relationships. The subject of basis hedges is beyond the scope of this paper, but is a matter of great importance for the

[23] *Credit Tools Used in Structured Energy Transactions*, *supra* n. 21.

producer. Any producer with physical sales contracts whose pricing mechanisms do not align with the mechanisms in its hedging contracts is exposed to basis risk.

5. Bankruptcy Risk

While beyond the scope of this paper, one of the other considerations is how hedge obligations will be treated in bankruptcy. This is an especially important consideration for producers because hedge transactions are given special treatment by the bankruptcy code. Great care should be taken to structure hedge transactions to take full advantage of the bankruptcy code's safe harbor protections.

IV. EXCHANGE-TRADED TRANSACTIONS

Exchange-traded transactions utilize contracts that are traded on organized exchanges such as the Chicago Mercantile Exchange ("***CME***"), Chicago Board Options Exchange (CBOE), and New York Mercantile Exchange ("***NYMEX***"). Each exchange utilizes its own highly standardized processes to govern trading activities, including which commodities are traded on the exchange and the use of its own standardized contracts to enter into hedging transactions.[24] These contracts stipulate a specific set of volumes, grades and quality specifications, definitions, durations, delivery points and dates, and trading and credit procedures for each commodity available on the exchange.[25]

The standardization of exchange-traded contracts enables exchanges and market participants to quickly and effectively facilitate trading by matching, documenting, and processing various commodities in the marketplace under uniform and accepted terms. However, one of the principal disadvantages of standardized exchange-traded contracts is their inflexible nature.

The two most commonly utilized exchange-traded products are futures contacts and option contracts. We explore each of these below and provide commentary on the advantages and disadvantages of each.

A. Futures Contracts

Futures contracts are highly standardized, exchange-traded contracts to either take or make delivery of a specified quantity and quality of an underlying commodity at a specified location on a future date (or dates) at a price set forth in the futures contract.[26] There are six primary energy futures contracts, four of which are traded on NYMEX (*i.e.*, WTI crude oil, natural gas, heating oil, and RBOB gasoline) and two of which are traded on the Intercontinental

[24] Harding, *supra* n. 18 at 2-3; ISDA, *supra* n. 9.
[25] *Id*.
[26] Mercatus Energy Advisors, *The Fundamentals of Oil & Gas Hedging - Futures*, http://www.mercatusenergy.com/blog/bid/86597/The-Fundamentals-of-Oil-Gas-Hedging-Futures (Feb. 11, 2013) [hereinafter *The Fundamentals of Oil & Gas Hedging - Futures*]; Mercatus Energy Advisors, *Energy Hedging & Risk Management Glossary* 7 (2012); Mercatus Energy Advisors, *Energy Hedging - Back to the Basics Part I - Futures*, http://www.mercatusenergy.com/blog/bid/54865/Energy-Hedging-Back-to-the-Basics-Part-I-Futures (Mar. 2, 2011) [hereinafter *Energy Hedging - Back to the Basics Part I - Futures*].

Exchange (ICE) (*i.e.*, Brent crude oil and gasoil).[27] Futures contracts are utilized by producers to lock in oil and gas prices for a notional quantity of production and ensure a steady, predictable, and consistent stream of revenue during a given time period.

A party entering into a futures contract to purchase oil or gas (such as an end user) has the right and obligation to take actual delivery of the underlying commodity (known as the long position) at the price set forth in the contract, and a party entering into a futures contract to sell oil or gas (such as a producer) has the right and obligation to make actual delivery of the underlying commodity (known as the short position) at the price set forth in the contract.[28] In practice, however, it is uncommon for futures contracts to settle by physical delivery. One reason is because of the standardized delivery point set forth in futures contracts. NYMEX gas futures contracts, for example, require the purchase and sale of gas to take place at the Henry Hub pipeline interchange near Erath, Louisiana. Unless a producer's wells are located near the Henry Hub, it is unlikely the producer will want to incur costs related to transporting its gas to the Henry Hub, or incur costs related to otherwise procuring gas for delivery at the Henry Hub. Thus, in most cases, a party will exit its futures positions before the contacts mature and require the actual physical taking or making of delivery of the underlying commodity. This can be accomplished by selling those futures contracts on the open market. For example, a person holding an in-the-money put will typically sell that put as the delivery date approaches rather than undertake to deliver product on that date. The purchaser in that transaction might well be a counterparty in a put specifying the same volume who does not want to take physical delivery. As the delivery date approaches the price of such an in-the-money put will approach the difference between the strike price and the spot price. Of course, if the put is out of the money on the delivery date (that is the strike price is below the spot price) it will have no value.

Consider, for example, a producer that enters into a futures contract giving it the right and obligation to make delivery of a specified quantity of gas at a future date at a price set forth in the contract. If the spot price of gas is greater than the price set forth in the futures contract, then the contract is worth less to the producer, but the producer is able to sell its production for the higher spot price. Conversely, if the spot price of gas is less than the price set forth in the futures contract, then the contract is valuable to the producer and offsets the lower prices received for the physical production.

Entering into futures contracts provides the producer with the ability to lock in oil or gas prices for expected future production regardless of whether the prices of the commodities increase or decrease. However, the producer gives up the potential upside of increased revenue if oil or gas prices rise. One way to avoid this dilemma is to enter into an exchange-traded put option contract allowing the producer to hedge against decreasing prices while retaining the ability to benefit if prices rise.

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[27] *The Fundamentals of Oil & Gas Hedging - Futures*, *supra* n. 26; *Energy Hedging - Back to the Basics Part I - Futures*, *supra* n. 26.

[28] Mercatus Energy Advisors, *A Beginners Guide to Fuel Hedging - Futures*, http://www.mercatusenergy.com/blog/bid/81549/A-Beginners-Guide-to-Fuel-Hedging-Futures (Aug. 22, 2012).

B. Option Contracts

Like futures contracts, exchange-traded option contracts are traded on exchanges under highly standardized contracts. The standardization of option contracts enables exchanges and market participants to trade contracts quickly and efficiently, but, unlike over-the-counter option contracts, exchange-traded option contracts do not provide the parties with flexibility to tailor these contracts to their specific hedging strategies. Additionally, exchange-traded option contracts differ from over-the-counter option contracts in that parties enter into trades with the exchange as a counterparty, all trades must be booked with a clearinghouse, and parties are subject to the exchange's mandatory margining requirements.

Consider, for example, a producer that, instead of locking in prices with futures contracts, desires to hedge its future gas production to ensure at least a *minimum amount* of revenue while retaining the benefit if prices rise. The producer can hedge by entering into an American-style put option contract giving it the right, but not the obligation, to make delivery of a specified quantity of gas at a future date at a price set forth in the contract. If the spot price of gas is greater than the price set forth in the option contract, then the contract is worth less to the producer, since the option is out of the money. The producer, choosing not to exercise its option and allowing it to expire (assuming the price of gas remains above the strike price), will sell its gas at the spot price. The producer's cost for the unexercised put option contract is the premium paid to the exchange. Conversely, if the spot price of gas is less than the price set forth in the option contract, then the contract is worth more to the producer, since the option is in the money. Assuming the price of gas remains below the strike price and the producer timely exercises its option, it will have the right to sell its gas at the higher price set forth in the contract.

C. How are Exchange-Traded Transactions Transacted?

The purchase and sale of exchange-traded products between market participants are facilitated by exchanges using one of two methods: open outcry or electronic trading. The basic steps of each method are essentially the same: Customers (such as oil and gas producers) establish relationships and enter into brokerage agreements with futures commission merchants (licensed brokers that are members of and registered with the exchanges) that, based on a customer's hedging strategy, submit orders (either bids to purchase or offers to sell exchange-traded products) to an exchange where trades are executed (*i.e.*, matches are made) with other market participants that take equal, but opposite, positions.[29]

The traditional method of trading in the U.S. is by the open outcry auction process. A futures commission merchant communicates its customers' purchase and sell orders to its representative trader standing in the appropriate trading ring on the floor of the exchange where traders conduct business. All orders are communicated by open outcry and various hand signals between traders in the same trading ring and are executed when the spread between the ask price (*i.e.*, the price at which they purchase) meets the bid price (*i.e.*, the price at which they sell). Executed trades are recorded by traders and submitted to the exchange where the information is

[29] New York Mercantile Exchange, *supra* n. 6 at 4-5.

entered into the exchange's central computer system. Trades are then booked with the exchange's clearinghouse and customers are notified of completed trades.[30]

In today's marketplace, however, it is more common for exchange-traded transactions to be executed by electronic trading where computers handle all trading activity. A futures commission merchant (that has been pre-approved for electronic trading) submits its customers' purchase and sell orders directly from its computer to an electronic marketplace offered by the exchange. Sophisticated computer software identifies matching bids and offers and generally fills orders on a first-in, first-out basis. In essence, the trading ring is replaced by a computer screen and the floor traders standing on the floor of the exchange are replaced by electronic market participants.[31]

Information about exchange-traded products that have been traded, whether by open outcry or electronic trading, is broadcast to the public and disseminated to various price reporting services.[32] Though electronic trading is significantly faster (often executed in milliseconds) than open outcry, both methods, through diverse market participation and efficient price discovery, give an accurate picture of the market and reflect the marketplace's collective valuation of what purchasers are willing to pay and what sellers are willing to accept.[33] Visible and transparent pricing information enables markets to be liquid and allows open positions on futures or option contracts to easily be valued and closed out.[34]

D. Managing Risks Associated with Exchange-Traded Transactions

One of the most important differentiating features of exchange-traded transactions is the role of an exchange's clearinghouse. Once a trade has been executed on an exchange it must subsequently be booked through the exchange's clearinghouse, which takes title to the trade in a process known as novation. The clearinghouse steps between two counterparties to replace and become the other counterparty to, what is now, two independent and distinct transactions. In other words, a party's purchase of an exchange-traded product is a transaction with the exchange's clearinghouse, not another market participant. With exchange-traded transactions, the clearinghouse is always the counterparty to all other counterparties and their transactions. Thus, a producer that desires to enter into futures contracts, option contracts, or other exchange-traded products does not need to evaluate the creditworthiness of another market participant, since it is not privy to the market participant's identity.

The clearinghouse mitigates credit risk that market participants are otherwise exposed to in over-the-counter transactions. By becoming a counterparty to all exchange-traded transactions, the clearinghouse assumes the risk that the other party will lack the financial capability to perform and be unable to meet its payment obligations. As a result, there is no

[30] Kenneth M. Morris and Virginia B. Morris, *The Wall Street Journal Guide to Understanding Money and Investing* 128 (1999).
[31] Ronald H. Filler and Jerry W. Markham, *Regulation of Derivative Financial Instruments (Swaps, Options and Futures) Cases and Materials* 683 (2014).
[32] New York Mercantile Exchange, *supra* n. 6 at 4-5.
[33] *Id.* at 6, 9.
[34] Contrarian Investors' Journal, *Difference between OTC and ET derivatives*, http://contrarianinvestorsjournal.com/?p=433 (2008).

credit risk between market participants. However, as before, hedging transactions are not risk free. Because clearinghouses absorb credit risks of all market participants, clearinghouses themselves are subject to potential default.

To mitigate counterparty risk, clearinghouses mandate that all market participants post an initial amount collateral, known as initial margin. As the daily price of oil and gas varies throughout the term of an exchange-traded contract, the underlying commodity is marked to market on a daily basis where the difference between the initial agreed-on price and the actual daily futures price is reevaluated daily. Market participants are also required to post variation margin throughout the term of the contract depending on the mark-to-market value resulting from the daily fluctuation of oil and gas prices. The clearinghouse either adds or subtracts funds from a market participant's account, depending on how much a contract's price has moved during the day, thus ensuring that the correct daily mark-to-market value is reflected in each party's account. If the margin account goes below a certain value set by the clearinghouse, then a margin call is made and the account must be replenished.[35] The daily true-up of accounts means that there will usually be very little additional payment due when closing out an exchange-traded transaction: only the final day's gain or loss, not the gain or loss over the life of the contract. The pooled capital of all market participants of the clearinghouse over-collateralizes the clearinghouse and mitigates counterparty risk.[36]

However, not all parties are capable of posing the mandatory initial and variation margin required by exchange-traded transactions. An oil and gas producer may find an exchange's initial margining requirements difficult to satisfy, and, depending on the magnitude of oil and gas price fluctuations during the term of an exchange-traded contract, may find it burdensome to satisfy the exchange's daily variation margining requirements and periodic margin calls. Thus, an exchange's margining requirements can be a prohibitive threshold to entering into exchange-traded transactions. In these circumstances, parties frequently elect to utilize over-the-counter products and negotiate security or margining requirements that are less burdensome and tailored to the specific creditworthiness of the parties and risk profile of the transaction. For example, a counterparty to an over-the-counter transaction may be willing to allow a producer to secure its obligations to the counterparty by pledging liens on the producers' oil and gas reserves and other assets rather than posting cash collateral, or the counterparty may be willing to accommodate the producer by not requiring the producer to post collateral until and unless the producer exceeds a specific threshold.

V. PRACTICAL IMPLICATIONS OF THE DODD-FRANK ACT

The Dodd-Frank Wall Street Reform and Consumer Protection Act[37] ("***Dodd-Frank***" or "***Dodd-Frank Act***") has introduced a sweeping set of regulations to the over-the-counter market. An in-depth analysis of the Dodd-Frank Act is beyond the scope of this paper. However, in this

[35] Durbin, *supra* n. 1 at 26-27.
[36] Federal Reserve Bank of Boston, *Tools of the Trade: A Basic Guide to Financial Derivatives* 8-9, https://www.bostonfed.org/education/pubs/toolsoft.pdf.
[37] *Dodd-Frank Wall Street Reform and Consumer Protection Act*, Pub. L. No. 111-203, 124 Stat. 1376 (2010).

section we outline some of the important Dodd-Frank issues producers must consider when entering into over-the-counter transactions.

A. Regulated Entities[38]

Dodd-Frank regulates, among other things, over-the-counter transactions and the entities that enter into these transactions. Two of the most highly regulated entities are Swap Dealers[39] ("***SD***") and Major Swap Participants[40] ("***MSP***"). The vast majority of producers are neither SDs nor MSPs and are thus referred to in Dodd-Frank regulations as "Non-SDs/MSPs."

B. Regulated Transactions[41]

The Dodd-Frank Act and related rules regulate swaps. The term "swaps" is broadly defined to include a number of different derivative products, including, but not limited to, interest rate swaps, commodity swaps, currency swaps, equity swaps, credit default swaps, foreign exchange swaps and forwards, foreign currency options, commodity options, cross-currency swaps, forward rate agreements, options to enter into swaps (a.k.a. swaptions), guarantees of swaps, contracts for differences, and certain forward contracts with embedded optionality. Thus, many of the derivative transactions producers enter into clearly fall within the definition of swaps while other transactions may not neatly fit into the definition and should be closely reviewed by the producer.

C. Clearing

1. General Rule[42]

Dodd-Frank requires all swaps listed in a clearing determination (see Clearing Determination below) by the U.S. Commodity Futures Trading Commission ("***CFTC***") to be centrally cleared through a Derivatives Clearing Organization (*i.e.*, a clearinghouse), unless the swaps are subject to an exemption.

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[38] 17 C.F.R. Pt. 240 (2012).

[39] "Swap Dealer" or "SD" means a person who (i) holds oneself out as a dealer in swaps, (ii) makes a market in swaps, (iii) regularly enters into swaps with counterparties as an ordinary course of business for one's own account, or (iv) engages in any activity causing the person to be commonly known in the trade as a dealer or market maker in swaps.

[40] "Major Swap Participant" or "MSP" means a person who is not a SD, and (i) maintains a substantial position in swaps for any of the major swap categories as determined by the CFTC or SEC, as applicable, excluding: (a) positions held for hedging or mitigating commercial risk; and (b) positions maintained by any employee benefit plan under ERISA for the primary purpose of hedging or mitigating any risk directly associated with the operation of the plan, (ii) whose outstanding swaps create substantial counterparty exposure that could have serious adverse effects on the financial stability of the U.S. banking system or financial markets, or (iii) is a financial entity that is (a) highly leveraged, (b) maintains a substantial position in swaps, and (c) is not subject to capital requirements established by a federal banking agency.

[41] 17 C.F.R. Pt. 1 (2012).

[42] 17 C.F.R. Pt. 50 (2012).

2. Clearing Determination[43]

Unless otherwise exempt, a particular type of swap will be subject to mandatory clearing after publication of a final clearing determination by the CFTC that identifies the swap as subject to clearing. The CFTC made a final clearing determination for interest rate swaps and credit default swaps in November 2012. The CFTC has yet to finalize clearing determinations for other types of swaps, including commodity swaps.

3. End User Exception[44]

A swap is not required to be cleared if one of the parties to the swap (i) is not a financial entity, (ii) is using swaps to hedge or mitigate commercial risk, and (iii) notifies the CFTC or a Swap Data Repository ("***SDR***") of how it generally meets its financial obligations associated with entering into non-cleared swaps.

The final prong of the end user exception requires that a counterparty to a swap report certain information to a SDR (*e.g.*, The Depository Trust & Clearing Corporation ("***DTCC***"), CME, and ICE) or to the CFTC. The reporting party (*i.e.*, the SD, MSP, or the more sophisticated swap counterparty) is responsible for reporting much of this information. In some cases, however, the reporting party may require the end user to make an annual filing to an SDR. The annual filing form, such as the one provided by DTCC, is relatively short and easy to complete.

4. Board Approval

Reporting companies under the Securities Exchange Act of 1934 ("***SEC Filers***") must obtain approval from the appropriate committee of its board or governing body to enter into swaps that are exempt from the mandatory clearing and exchange-trading requirements of Dodd-Frank. If a producer is an SEC Filer (or an entity controlled by an SEC Filer) that wants to benefit from the end user exception, it must obtain board approval (usually in the form of board resolutions). Furthermore, the board (or the appropriate committee of the board) must set appropriate policies for the use of uncleared swaps and review these policies on an annual basis (or more often when there is a change in the producer's swap trading strategy, such as the implementation of a new hedging program).

D. Documentation Requirements[45]

Many of the Dodd-Frank documentation requirements are addressed through protocols released by ISDA. A party can adhere to these ISDA protocols, and thus incorporate into their existing ISDA Master Agreements the documentation requirements mandated by Dodd-Frank, by following instructions in the Protocol Management section of ISDA's website. Some parties may choose to comply with the Dodd-Frank documentation requirements by using the protocols

[43] *Id.*
[44] 17 C.F.R. Pt. 39 (2012).
[45] 17 C.F.R. Pt. 23 (2013).

prepared by the International Energy Credit Association (IECA) or bespoke agreements prepared by their swap dealing counterparties.

E. Reporting and Recordkeeping Requirements[46]

All swaps are subject to mandatory reporting requirements. The party to the swap that is a SD, MSP, or financial entity is required to report swap data to an SDR. If neither party to a swap is an SD, MSP, or financial entity, then the parties to the swap must designate the reporting party. Hence, a producer is required to report swap data to an SDR only if the other party to the swap is not an SD or MSP and the other party and the producer have agreed that the producer report the swap data.

Non-SD/MSP counterparties must keep full, complete, and systematic records, including all pertinent data and memoranda, with respect to each swap to which they are a counterparty (i) throughout the existence of a swap and (ii) for five years after termination or expiration of a swap. Records may be kept in either electronic or paper form, so long as they are retrievable and the information in them is reportable.

F. Legal Entity Identifier[47]

Every party to a swap is required to have a legal entity identifier (LEI) for reporting and recordkeeping purposes. Producers can register for a legal entity identifier (also known as a CFTC Interim Compliant Identifier (CICI) number and Global Markets Entity Identifier (GMEI) number) at www.gmeiutility.org. Producers that have already registered for a legal entity identifier should make sure it is annually maintained.

VI. CONCLUSION

Hedging is a crucial component of any oil and gas producer's risk and financial management program. As discussed in this paper, there are many ways a producer can achieve its hedging objectives. Producers need to be familiar with the risks and benefits of over-the-counter and exchange-traded transactions. Planning ahead with the assistance of experienced financial and legal advisors who can identify the advantages and shortfalls of various hedging structures can prepare a producer to better manage volatility inherent in the energy commodities market.

[46] 17 C.F.R. Pt. 43, 45 and 46 (2012).
[47] 17 C.F.R. Pt. 45 and 46 (2012).

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Jackson Walker L.L.P.'s commodities and derivatives practice group has extensive experience representing foreign and domestic entities on matters ranging from plain vanilla trading to complex structured transactions.

Deep Bench: We have one of the largest dedicated derivative practices outside of New York. Jackson Walker has been recognized since 2007 in *The Best Lawyers in America* for Derivatives Law.

Who We Represent:

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- Hedge Funds
- Pension Plans
- Municipalities
- Endowments
- Energy Trading Companies
- Oil and Gas Producers
- Pipelines and Storage Facilities
- Utilities
- Electricity Generators
- Retail Gas and Electric Providers

Representative Matters:

- Swaps, options, forwards, and futures, relating to crude oil, refined petroleum products, natural gas, natural gas liquids, power, coal, metals, and weather.
- First-lien financing and hedging structures secured by oil, gas, and power assets.
- Sole-supplier natural gas and power transactions.
- Structured long-term energy transactions, including natural gas prepay transactions financed through the issuance of tax exempt municipal bonds.
- Processing, balancing, transportation, and storage transactions.
- Evaluate energy contracts and credit support documents in developing risk mitigation strategies.
- Draft and negotiate standard industry contracts (such as the ISDA, EEI, and NAESB agreements), as well as other risk mitigation and credit support documents (like energy management agreements, guaranties, security agreements, margin agreements, letters of credit, master netting agreements, mortgages, and custodial agreements).

Regulatory: We advise clients on the Commodity Exchange Act and Dodd-Frank regulations.

Multidisciplinary: The derivatives practice group works closely with the firm's bankruptcy, tax, litigation, corporate, securities, finance, private funds, and energy groups.

JESSE S. LOTAY

- *Associate*
- **Energy, Derivatives, Commodities, Structured Transactions**
- B.S., Trinity University
- J.D., University of Tulsa College of Law
- LL.M, University of Houston Law Center
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Jesse S. Lotay is a skilled transactional lawyer with focused experience in energy transactions and energy financing. Mr. Lotay takes a problem-solving approach to his practice, providing energy clients with innovative solutions in both financial and physical energy markets to mitigate exposure to volatile energy prices, improve energy marketing decisions, optimize assets, and maximize financial results.

Mr. Lotay advises clients in the area of energy transactions, with broad experience in the midstream and downstream sectors, including the acquisition, sale, and financing of crude oil and natural gas storage, pipeline, refinery, terminal, transportation, and other energy-infrastructure assets, and engineering, procurement, and construction contracts related to the development, financing, construction, and operation of power generation facilities and other energy-related projects.

In the area of energy financing, Mr. Lotay advises clients on energy-based derivatives, commodities, marketing, trading activities, assessing and minimizing financial and counterparty risk across transactions, reporting, clearing, and regulatory obligations under the Dodd-Frank Act, and financial and physical transactions under the ISDA Master Agreement.

His experience includes transactions involving asset-based and commercial lending, capital markets, securitization, and structured finance.

Mr. Lotay was recognized as a "Rising Star" in the San Antonio legal community and has been nominated as one of San Antonio's "Best S.A. Lawyers" (2015) by *S.A. Scene* magazine.

MEMBERSHIPS

- Association of International Petroleum Negotiators
- Leadership Lab (2014)
- Leadership Organization of Professionals

JESSE S. LOTAY

- Leadership San Antonio (2015)
- San Antonio Young Lawyers Association
- State Bar of Texas' Oil, Gas and Energy Resources Law Section
- Trinity University Bar Association
- World Affairs Council of San Antonio
- Young Professionals of the World Affairs Council of San Antonio

COMMUNITY INVOLVEMENT

Mr. Lotay is extensively involved in the San Antonio community. He was recently selected as a member of Leadership San Antonio, an elite group of up-and-coming business professionals who have demonstrated leadership in their professions, as well as in community organizations that support San Antonio's growth and development.

He, and his wife, Megan, frequently participate in and contribute to the community through Haven for Hope, the San Antonio Food Bank, Slow Food South Texas, and the San Antonio Bar Association's Community Justice Program.

Mr. Lotay also serves on the Board of Trustees of the World Affairs Council of San Antonio and is the chairman of its Young Professionals group.

ADMITTED

- 2009, Texas
- 2007, Kansas
- 2006, Missouri

EDUCATION

Mr. Lotay received his B.S. from Trinity University and his J.D. from the University of Tulsa College of Law, where he served as the Editor-in-Chief of the *Tulsa Law Review*. He also received a Master of Laws (LL.M.) from the University of Houston where he concentrated in the areas of energy, environment, and natural resources.

PUBLICATIONS & SPEAKING ENGAGEMENTS

Mr. Lotay is a regular author, contributor, public speaker and guest lecturer, having written, contributed to and/or presented the following articles and presentations:

JESSE S. LOTAY

- *Subprime Carbon: Fashioning An Appropriate Regulatory And Legislative Response To The Emerging U.S. Carbon Market To Avoid A Repeat Of History In Carbon Structured Finance And Derivative Instruments*, 32 Houston J. Int'l. Law 459 (2010)

- *Quench My Thirst: Water Rights in the Context of Water Treatment Technologies*, TexasBarCLE 35th Annual Advanced Real Estate Law Course (San Antonio, Texas; July 12, 2013)

- *Water Recycling and Fracking: Finding Solutions*, Texas Lawyer (Vol. 29, No. 16) (July 15, 2013)

- *Understanding Oil and Gas Leases*, Lorman Education Services (Webinar; July 30, 2013)

- *Quench My Thirst: Water Rights in the Context of Water Treatment Technologies*, Section Report of the Oil, Gas & Energy Resources Law Section of the State Bar of Texas (Vol. 37, No. 2) (Winter 2013)

- *Recent Case on Safe Harbor Provisions in Swap Agreements: Michigan State Housing Development Authority v. Lehman Brothers Derivative Products Inc., et al.* (E-Alert; January 10, 2014)

- *Understanding the ISDA Master Agreement: Derivatives 101 & Structure of the ISDA Master Agreement* (Dallas, Texas; February 26, 2014)

- *Drafting Tips: Securities Lending Authorization Agreements* (E-Alert; May 06, 2014)

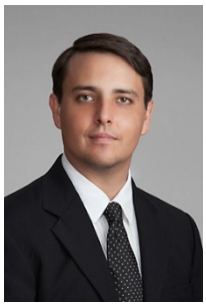
- *Commodity Repo Agreements for Crude Oil Inventory* (E-Alert; May 07, 2014)

- *Understanding the ISDA Master Agreement & The Basics of Dodd-Frank Derivatives Compliance* (Austin, Texas; May 22, 2014)

- *Understanding the ISDA Master Agreement: Frequently Negotiated Provisions* (Houston, Texas; December 16, 2014)

- *Hedging Oil & Gas Production*, UT Law 41st Annual Ernest E. Smith Oil, Gas and Mineral Law Institute (Houston, Texas; March 27, 2015)

DANIEL NOSSA



- *Partner*
- **Derivatives, Hedging, Structured Finance, Commodities, Funds, Dodd-Frank Regulatory Advice**
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Daniel Nossa advises public and private entities on financial and commodity transactions ranging from plain vanilla trades to complex multibillion dollar structured deals. Mr. Nossa has extensive experience negotiating and drafting trading documentation such as the ISDA, MSLA, EEI and NAESB agreements and many forms of credit support documents including CSAs, security agreements, guaranties and letters of credit. Mr. Nossa advises companies on oil and gas hedging matters. He also has experience with the restructuring and acquisition of distressed upstream oil and gas loans. Mr. Nossa advises dealers and end users on the Commodity Exchange Act and Dodd-Frank regulations.

Mr. Nossa's clients include:

- Banks
- Funds
- Investment Managers
- Endowments
- Pension Plans
- Municipalities
- Oil Majors
- Exploration and Production Companies
- Retail Gas and Electric Providers
- Transportation Companies
- Pipelines and Storage Facilities

REPRESENTATIVE MATTERS

Commodities

- Commodity swaps, options, forwards and futures, relating to crude oil, natural gas, power, coal, metals and weather products

DANIEL NOSSA

- Financing and hedging secured by oil, gas and power assets
- Structured prepaid gas swaps
- Retail gas and electric sole supplier transactions

Financial

- Equity derivative call-spread transactions
- Interest rate swaps and options
- Securities lending and repo transactions
- Acquiring and trading distressed debt and structured products
- Brokerage agreements

REGULATORY ADVICE

Mr. Nossa advises corporations, banks and funds on various aspects of the Dodd-Frank Act.

ADMITTED

- New York, 2002
- Texas, 2008

EDUCATION

Mr. Nossa received his A.B., *cum laude*, from Princeton University. He earned his J.D. degree from Stanford Law School.

PAUL E. VRANA

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- *Partner*
- **Energy Trading, Derivatives, Structured Commodity Transactions, Natural Gas Prepay Transactions**
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Paul E. Vrana is the co-chair of Jackson Walker's Energy practice group. He has worked in the energy industry since 1986 and has practiced energy law since 1992. Prior to joining Jackson Walker, Mr. Vrana was General Counsel for Tractebel Energy Marketing, Inc. Since joining Jackson Walker, he has served as lead outside counsel to several energy trading and marketing divisions of international and domestic energy companies and investor owned utilities.

Mr. Vrana has particular experience with deregulated power and gas markets and routinely advises organizations on legal and credit matters related to these markets. He has handled a broad range of energy transactions including wholesale and retail gas and power purchase and sale agreements, long-term fuel supply and power sales agreements, energy-based derivatives and gas processing, balancing, transportation and storage transactions. He also has extensive experience with credit and risk mitigation arrangements including guaranties, margin agreements, letters of credit, master netting agreements, letters of direction and prepayment arrangements. Mr. Vrana supported two large foreign utilities in the development of each of their U.S. energy trading and marketing operations. He has also assisted several U.S. entities in developing the infrastructure to begin commodity risk management activity and has provided ongoing legal support to these organizations.

Mr. Vrana has been extensively involved in helping clients mitigate their exposure to bankrupt trading counterparties. He has worked closely with Jackson Walker's bankruptcy and litigation teams to help clients evaluate their energy contracts and credit support documents, develop risk mitigation strategies and execute those strategies to optimize their utilization of the safe harbor protections of the bankruptcy code. He has also worked extensively with clients to draft energy contracts that provide maximum protection in the event of a bankruptcy.

Mr. Vrana has extensive experience with highly structured long-term energy transactions including natural gas prepay transactions financed via tax exempt municipal bonds, energy management agreements, first lien credit structures and sole-supplier natural gas and power transactions.

MEMBERSHIPS

Mr. Vrana is a member of the State Bar of Texas, the Houston Bar Association, and the American Bar Association (Sections on Natural Resources, Energy and Environmental Law and Business Law). Mr. Vrana is a Fellow of the Texas Bar Foundation.

AWARDS

Mr. Vrana is listed in *The Best Lawyers in America* under Derivatives and Futures Law, Energy Law, and Natural Resources Law. He has also been named a "Top Lawyer" by *H Texas* magazine.

ADMITTED

- Texas
- United States District Court for the Southern District of Texas

EDUCATION

Mr. Vrana received his B.S. degree from Oklahoma State University and his J.D. degree from the University of Oklahoma.

PUBLICATIONS & SPEAKING ENGAGEMENTS

Mr. Vrana has authored or co-authored the following:

- Standardized Physical Gas and Power Agreements
- Chapter 6: Standardized Physical Gas and Power Agreements
- Courts Continue to Question Meaning of "Forward Contract Merchants"
- Early Termination and Liquidation Provisions as Risk Tools in Master Energy Agreements
- Bankruptcy Code's Safe Harbor Provisions for Forward Contracts -- Are you Protected?
- Energy Agreements and Bankruptcy
- Early Termination and Liquidation Provisions in Energy Trading and Marketing Agreements
- How to Use the ISDA Master Agreement
- Energy Trading Puts on a New Face in the Wake of Regulatory Changes

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Founded more than 125 years ago, Jackson Walker L.L.P. is one of the oldest and largest Texas-based law firms. Today, the firm has more than 350 attorneys in seven Texas offices and represents Fortune 500 companies, multinational corporations, major financial institutions, insurance companies, and a wide range of public companies and private businesses.

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