

Good Oilfield Practice: its history and evolution

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ABSTRACT

Good Oilfield Practice sets the standards that oil and gas operators use to conduct their operations. This article provides a comprehensive, historical analysis of Good Oilfield Practice from its origins from more than a century ago to today's modern global industry. It has constantly evolved to cover all facets of the oil and gas industry, which reflects the risk, complexity, and uncertainty associated with the industry's operations. Good Oilfield Practice is often described differently with different names and consists of many standards. It is not a single standard. It is many. It is both an objective and a negligence standard. Good Oilfield Practice comes from a number of sources, including the industry's agreements and its regulatory framework. There is a distinction between good and best practices, even when there may be challenges in determining what is 'best'. Given the many similarities and synergies, the standards developed in the oil and gas industry are now migrating to other energy sectors.

DEFINING GOOD OILFIELD PRACTICE

Introduction

Good Oilfield Practice has a long history in the oil and gas industry. It has been widely recognized for more than a century as the standard that operators should use to conduct their oil and gas operations. One of the original reasons for establishing such a standard was the reality that oil and gas are inflammable and explosive substances, which can be dangerous if not handled properly. This standard continued to develop and evolve over many years because of the risk, complexity, and uncertainty associated with oil and gas operations, which require diligence and prudence on the part of operators. It continues to evolve to this day. Good Oilfield Practice therefore has many facets to it.

The concept of Good Oilfield Practice emerged from industry agreements, such as oil and gas leases, joint operating agreements (JOAs), service contracts, and government granting instruments. In addition, governments incorporated these kinds of standards into their legislation and regulations. Courts and arbitral tribunals have also imposed these standards in a long line of cases involving industry players.

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Different nomenclatures for Good Oilfield Practice

The term Good Oilfield Practice is often described differently with different names. Those names can vary from one agreement to another, and from one geographical region and jurisdiction to another.

Some examples of other names, terms, synonyms or titles that are used in the oil and gas industry for this standard are:

- good petroleum industry practices;
- good petroleum industry standards;
- generally accepted methods in the petroleum industry;
- generally accepted methods and standards of the petroleum industry;
- methods and practices customarily used in good and prudent oil and gas field practice;
- International Good Oil Field Practice;
- practices as generally accepted in the petroleum industry;
- as a reasonably prudent operator, in a good and workmanlike manner; and
- Good International Petroleum Industry Practices.

All of these and other similar terms essentially describe the same type of oilfield practice or industry standard, which is commonly referred to as 'Good Oilfield Practice' or 'GOP'.

Different definitions for Good Oilfield Practice

Good Oilfield Practice is sometimes described in detail in agreements and legislation, and sometimes it is not defined at all. It can be defined in various ways, as shown in the following examples from industry dictionaries, contracts, and legislation:

A practice generally accepted to be good, safe, and efficient in carrying out oilfield operations.¹

All those things that are generally accepted as good and safe in (a) the carrying on of exploration for petroleum or (b) petroleum recovery operations.²

The application of those methods and practices customarily used in good and prudent oil and gas field practice in the United Kingdom Continental Shelf (UKCS) with that degree of diligence and prudence reasonably and ordinarily exercised by experienced operators engaged in the UKCS in a similar activity under similar circumstances and conditions.³

All those uses and practices that are at the time in question then generally accepted in the international petroleum industry as good, safe, economical and efficient in exploring for, developing, producing, processing and transporting Petroleum.⁴

Adjectives such as 'good', 'safe', 'prudent', 'workmanlike', 'reasonable', 'ordinarily', 'generally accepted', 'customarily used', etc., are typically used to define Good Oilfield Practice in oil and gas contracts and regulations. When the term is defined in an agreement, that definition naturally applies to those parties and the operations governed by that agreement. However, it would not apply to other agreements or other parties based on the application of contractual principles, which means that parties with an agreement that does not define Good Oilfield Practice would need to look elsewhere for guidance to determine that standard.

As the above examples demonstrate, even when Good Oilfield Practice is defined, its meaning does not lend itself to a precise definition that can be universally applied to every kind of oil and

¹ Norman Hyne, *Dictionary of Petroleum Exploration, Drilling & Production* (2nd edn, PennWell 2014) 225.

² ch I, s 7, Offshore Petroleum and Greenhouse Gas Storage Act 2006, Australia, amended up to 2018. Similar language is found in the Petroleum (Submerged Lands) Act 1982 (South Australia), 1982/033, s 4(1).

³ UKCS 2009 JOA art 1.1, cited in Greg Gordon and others, *Oil and Gas Law: Current Practice and Emerging Trends* (2nd edn, Dundee University Press 2011) para 12.23.

⁴ Kazakstan PSA cited in Peter D Cameron and Michael C Stanley, *Oil, Gas, and Mining: A Sourcebook for Understanding the Extractive Industries* (World Bank Group 2017) 294.

gas operation. Instead, one must turn to the many standards that exist in the industry, which apply different criteria to a wide variety of activities, to select the appropriate standard for the particular operation being assessed.

It has been observed that:

[T]he exact nature of what counts as ‘good oilfield practice’ will depend upon the circumstances and will also change as technology changes.⁵

There is no doubt though that a vast pool of constantly proliferating and changing industry (and non-industry) standards is a major source for determining what ‘good oilfield practice’ and similar concepts mean in the particular circumstances.⁶

The [Good Oilfield Practice] GIPIP standard is clearly a flexible one, meant to apply to the particular circumstances of the setting in which a petroleum operation is conducted. It also allows scope for change in the environmental management of a project over time as knowledge and technology advance.⁷

The Good Oilfield Practice standard is thus a flexible one to ensure that the particular operation being assessed is properly evaluated with the proper standard. One size does not fit all. It is one that evolves and changes over time so as to properly reflect the standards prevalent in the industry at the time of the event in question.

A proper assessment of whether an oil and gas company complies with Good Oilfield Practices in the conduct of its operations is therefore a highly fact-specific inquiry that needs to look at the particular circumstances of the event being reviewed, investigated or disputed.

Expanding oilfield operations

The term Good Oilfield Practice was initially used to describe the standard expected of actual field operations for the exploration, development, production, processing, facilities maintenance, transportation, and marketing of oil and gas. Hence, the inclusion of the word ‘oilfield’.

Good Oilfield Practice has expanded significantly in recent years to encompass the overall management of oil and gas operations and projects using a multitude of guidance and governance systems developed by both industry and government. This includes procedures to protect the environment such as:

- environmental and social impact assessment;
- environmental management systems;
- environmental performance evaluation;
- environmental monitoring and auditing; and
- environmental reporting.⁸

Its application has also been expanded to cover the social impact of oil company’s operations on local people and communities.⁹ It thus now covers a wide variety of activities in the conduct of oil and gas operations.

⁵ Gordon and others (n 3) para 12.23.

⁶ Djakhongir Saidov, *The Standardisation of Oil and Gas Law: Transnational Layers of Governance*, National University of Singapore Centre for Maritime Law, Working Paper 17/10/National University of Singapore Law Working Paper 2017/017, 27.

⁷ Owen L Anderson and others, *International Petroleum Law and Transactions* (Rocky Mountain Mineral Law Foundation 2020) 673.

⁸ ‘The development by major oil industry associations of internationally acceptable environmental standards and best operating practices, contained in industry guidelines, voluntary codes of conduct and statements of environmental principles, is part of a broader and growing trend among industry in general.’ Alexandra S Wawryk, ‘Adoption of International Environmental Standards by Transnational Oil Companies: Reducing the Impact of Oil Operations in Emerging Economies’ (2002) 20 *Journal of Energy & Natural Resources Law* 404, 406.

⁹ ‘Express provisions that contractors and/or governments undertake a social impact assessment (SIA) are less commonly found in HG laws and contracts, but they are a growing trend. In some contexts, they may be what good oilfield practice requires. An SIA

THE EVOLUTION OF GOOD OILFIELD PRACTICE IN DIFFERENT JURISDICTIONS

Good Oilfield Practice has evolved over time in hydrocarbon provinces around the world. Examples of these developments include the following jurisdictions, starting with the USA.

USA

The US's experience with Good Oilfield Practice and its equivalent terms is both lengthy and extensive. It first emerged in the early 1900s as an issue in oil and gas leases, which operating companies acquired from the owners of mineral rights. It also evolved in JOAs used in the US industry. These agreements were litigated in the US courts, which resulted in a significant body of case law around these standards.

The standard is also found in US hydrocarbon laws and regulations, mostly at the state level. These largely deal with operational and conservation measures, such as drilling, development, production, abandonment, and decommissioning, which are designed to prevent reservoir damage and pollution, and to provide environmental protection. They are primarily applied in the regulatory context, but are also referenced in contract case law and tort disputes.

There are two main streams of US court cases that deal with this standard. The first stream of cases addressed the *Reasonably Prudent Operator* standard in oil and gas leases in US states, which was created by the courts as common law rather than by the industry in its agreements. There are literally hundreds of them. The second set of US cases dealt with the reconciling of the Good Oilfield Practice obligation (a negligence standard) with the gross negligence standard found in the *exculpatory* clause of JOAs. There are dozens of these cases.

Despite dealing with different issues under different kinds of agreements and using a different nomenclature, the standard of a Reasonably Prudent Operator is often considered to be similar to the standard of Good Oilfield Practice:

To common law lawyers, especially in the U.S., the [Good Oilfield Practice] standard is like the "reasonably prudent operator" (RPO) standard that governs the conduct of lessees in virtually all U.S. leases on both private and public lands.¹⁰

Prudent Operator Standard in US O&G leases

The term *Reasonably Prudent Operator* (RPO) or what is sometimes referred to as the *Prudent Operator Standard* first arose in litigation regarding oil and gas leases, which reflected the unique ownership of oil and gas rights on the continental USA. Private individuals and corporations (rather than governments) predominantly own these rights in states such as Texas, Kansas, Pennsylvania, and Oklahoma. These individuals and entities granted the exclusive right to drill for and produce oil and gas to operating companies using an oil and gas lease (or what is sometimes referred to as a freehold lease, since these companies leased freehold mineral property rights to explore for and produce oil and gas).

Historically, it made more sense for an oil company to lease those rights from the mineral owner, rather than purchase the mineral rights outright by way of fee simple. A lease provides a sufficient grant and term to permit the oil company to produce the oil and gas while protecting the interests of the mineral owner by imposing time limitations on the operator and by providing a royalty. A lease, rather than a property purchase, accomplished this with minimal risk and capital for the parties.

focuses on impacts on people—their livelihoods, subsistence food sources, cultural identity, whether the harms and benefits of a project are equitably shared, gender impacts, and the like.' Anderson and others (n 7) 678.

¹⁰ Gary B Conine, 'The Prudent Operator Standard: Applications Beyond the Oil and Gas Lease' (2001) 41 *Natural Resources Journal* 673.

The early leases were brief documents that provided limited information and obligations.¹¹ They first emerged in the 1850s as illustrated by what is considered the first oil lease ever recorded:

Agreed, this fourth day of July, 1853, with J.D. Angier, of Cherry tree township, in the county of Venango, Pa., that he shall repair up and keep in order, the old oil spring on land in said Cherry tree township, or dig and make new springs, and the expense to be deducted out of the proceeds of the oil, and the balance if any, to be equally divided, the one half to J.D. Angier and the other half to Brewer, Watson & Co. for the full term of five years from this date. If profitable.

Brewer, Watson & Co.

J.D. Angier

This basic lease included a requirement to drill, ie, to *dig and make new springs*, the designation of a fixed term and the recovery of expenses with a sharing of any resulting profits. But not much else. It certainly did not establish a standard of care on the part of the company that would drill and operate the oil well.

The fundamental duties to operate, manage and administer the leased premises, protect them against drainage from offsetting properties, drill development wells, and market production have historically never been fully expressed in freehold oil and gas leases in the USA. Instead, US courts have implied these sweeping obligations into the lease when they have been disputed by the parties.

The reasons why lessors, who own the oil and gas rights, and lessees, who are the oil companies operating the leases, never expressly provided for these obligations in their leases are twofold:

First is its fundamental uncertainty. In spite of technological progress, it is impossible to determine in advance whether a drilling operation will be successful. This inherent uncertainty makes an express formulation of a sensible development program, offset well provisions, and marketing requirements exceptionally difficult The second aspect of the oil and gas business which has led to the development of implied obligations is the difference between the interests of the lessor and those of the lessee. The principal consideration received by the lessor for executing the oil and gas lease is the right to receive an expense-free share of oil and gas production. The lessee's interest, on the other hand, bears all risks and costs of the enterprise. These different interests quite often lead to conflicts over the proper pace of development activities.¹²

In response to this lack of certainty and the inherent differences in the parties' interests, US courts developed a number of implied covenants, which they applied when disputes arose over an oil and gas lease. The first case to enunciate the *Reasonably Prudent Operator* standard was the *Brewster* case¹³ issued by the Eighth Circuit Court of Appeals for the District of Kansas in 1905. Based upon general contractual principles, the court established that the oil and gas lease contained an implied term that an operator should conduct its operations using a standard of reasonable diligence and workmanship.¹⁴

There were no provisions in that disputed lease that (i) imposed additional obligations on the lessee after it drilled an initial well during the primary term or (ii) a standard of conduct for the lessee to develop the oil and gas. The court rejected rulings from prior cases that the necessary

¹¹ Leslie Moses, 'The Evolution and Development of the Oil and Gas Lease' Second Annual Institute on Oil and Gas Law (1951) 6-7. A. W. Walker, 'Defects and Ambiguities in Oil and Gas Leases' (1950) 28 Texas Law Review 895.

The original oil and gas lease migrated from the salt industry, which had developed a form of lease to test the salt-bearing potential of land owned by individuals. It was common practice in the 1800s for land owners to grant salt merchants the right to explore and produce in return for a portion of any salt that might be obtained. The lease document used by the salt business was easily adapted for the drilling of oil.

¹² Ernest E Smith and Jacqueline L Weaver, *Texas Law of Oil and Gas* (LexisNexis2019), ch 5 Oil & Gas Lease: 'Implied Covenants' 5.1(A).

¹³ *Brewster v Lanyon Zinc Company*, 140 Fed. 801 (8th Cir. 1905).

¹⁴ *ibid* 8, citing *Harris v Ohio Oil Co*, 57 Ohio St 118, 127, 47 NE 502, 505.

degree of diligence could be determined subjectively by a party individually, even when it acted on a good faith basis.

This conclusion was based on the recognition that a sharing arrangement could be relied upon only when both the benefits and burdens of the agreement were evenly shared. That was not the case for an oil and gas lease, where the lessee takes a disproportionate share of the risk with its cost-bearing interest, while the lessor's royalty is a riskless, cost-free interest.

As a result, the Prudent Operator Standard was set in which the lessee's duties were determined on an objective basis, not a subjective one applied by any individual party relying upon its acting in good faith:

In adhering to Brewster and the prudent operator standard, courts have insisted that the lessee's duties must be determined on an objective basis, using the actions that a hypothetical, prudent operator would follow as the guide for what should be expected of the lessee. To the Brewster court, this was essential because the interests of the lessor and lessee were in conflict as long as the lessee was to bear a disproportionate share of risks and costs. For this reason, the transaction could not rely on the good faith judgment of the lessee to determine how the property should be operated.¹⁵

The Brewster court's ruling on the standard expected of an oil and gas operator has been adopted by most US jurisdictions over the past century, resulting in the Prudent Operator Standard becoming a basic concept in US oil and gas law. This has since been developed and expanded upon through the decisions of many cases.

The most popular form of oil and gas lease in the USA for more than a 100 years has been the *Producers 88* oil and gas lease form,¹⁶ which was the industry's response to the *Brown v Wilson* case¹⁷ handed down by the Supreme Court of Oklahoma in 1916. It was short and simple, with the industry using many different forms of it. Despite these numerous variations, for many years these lease forms did not include a requirement that the lessee, that is the oil company, act 'as a reasonably prudent operator, in a good and workmanlike manner'. It was for the courts to impose this obligation through the use of implied covenants.

An important early case on this standard is the *Sauder v Mid-Continent* case¹⁸ rendered by the US Supreme Court, which dealt with whether an operator failed to comply with an implied covenant to develop an oil and gas lease with reasonable diligence. Philip Sauder, as lessor, brought suit in a Kansas state court for the partial cancellation of his oil and gas lease made on 6 June 1916, that covered his two adjoining properties. The lessee, Mid-Continent Petroleum, paid an annual rental until it drilled two wells in 1921 and 1922 on the smaller of the two adjoining properties. On the date of the expiration of the fixed primary term, Sauder wrote Mid-Continent stating that the lease had expired and that it should release all the tract except the smaller portion on which the two wells were producing oil.

Sauder claimed in his suit that there had been development and production of oil on adjacent tracts owned by other parties, which drained oil from his leased land, and that Mid-Continent was obligated to explore and develop his land to protect it from drainage, which it had failed to do. Mid-Continent denied that the lease was being held for speculative purposes, denied the operations on surrounding tracts were causing drainage, claimed that the drilling of its two wells was a fulfilment of the obligation to offset wells likely to drain from his lands, and denied any breach of the lease.

After conflicting decisions between the trial judge and the court of appeal, the Supreme Court held that:

¹⁵ Conine (n 10) 37.

¹⁶ See: Moses (n 11) 27 and Walker (n 11) 896–97 for an explanation on why this lease form was developed. Also: T Murray Robinson, 'A Review of Oil and Gas Lease Forms' (1952) 28 North Dakota Law Review 84.

¹⁷ *Brown v Wilson*, 58 Okla 392, 160 Pac 94 (1916).

¹⁸ *Sauder v Mid-Continent Petroleum Corp*, 292 US 272 (1934).

- a lessee who has produced oil in paying quantities from a fraction of the land and continues such production after the expiration of the primary term remains under an implied obligation to prosecute the development of the other part;
- a lessee cannot hold the undeveloped part of the land indefinitely, as against the lessor, merely because it may contain oil, and without drilling or any present intention to drill at any time in the future; and
- a lessor is equitably entitled to cancel the larger undrilled part of a lease unless, within a reasonable time, an exploratory well was drilled upon it.

One of the first cases to directly link implied covenants under the Prudent Operator Standard to the operator's obligation to apply Good Oilfield Practices in its operations is the *Baldwin v Kubetz* case.¹⁹ It dealt with whether a lessee should have requested an exception to zoning ordinances that restricted the drilling of wells on the lessor's property so that the lessee could perform its continuous drilling obligation. That oil and gas lease was located in Los Angeles, California and provided that:

Lessee agrees at all times to use diligence and observe customary oilfield practices and modern methods, appliances and equipment to save all oil, gas or other products produced from said premises, which may be saved at a reasonable profit.

Applying the Prudent Operator Standard, the court first found that there was an implied covenant under oil and gas leases in the state of California for the diligent operation of oil wells. Included in this implied covenant was the obligation to obtain necessary drilling permits through a zone variance. Since the industry had not developed such specific technical codes on its own at the time of the event, the court reached out to relevant government regulation to establish that objective standard, which in this case was the statutory fire code of Los Angeles County. The court determined that the Los Angeles County Fire Prevention Code reflected oilfield practices customary and standard in Los Angeles County, California at the time. In other words, the zoning or spacing requirements under the LA fire code were the Good Oilfield Practice required of the operator.

A leading case in this area of US oil and gas law is the *Amoco Production* case.²⁰ It is worth noting for several reasons. First, it was issued by the Texas Supreme Court, which is the most experienced court in the USA that has dealt with this issue. Secondly, it succinctly summarized the standard expected of oil and gas operators in conducting their operations, regardless of how one categorizes that duty. And finally, the court addressed the balance that a Reasonably Prudent Operator should strike between its commercial interests and the benefits due to the lessor.

The Texas Supreme Court determined that a Reasonably Prudent Operator could not solely take its other commercial interests into consideration when making decisions on its field operations, regardless of whether it was more economical or profitable to do something different. Instead, a Reasonably Prudent Operator was expected to consider the interests of both the lessee and the lessor in its operations.

In its analysis of the Prudent Operator Standard, the court considered the division of the lessee's obligations into three broad categories, which consisted of the implied covenants to (i) develop the premises, (ii) protect the leasehold, and (iii) manage and administer the lease. In doing so, the court determined that it was somewhat arbitrary to classify a specific duty under one category or another. In holding that a lessee (ie, Amoco) should have applied for permits to drill at another location under the Texas Railroad Commission's rules according to the circumstances of this lease, the court stated:

The duty to seek favorable administrative action may be classified under the implied covenants to protect the lease, or to manage and administer the lease. Regardless of the category, the

¹⁹ *Baldwin v Kubetz*, 307 P.2d 1005 (1957).

²⁰ *Amoco Prod Co v Alexander*, 622 SW 2d 563 (Tex 1981).

standard of care in testing Amoco's performance is that of a reasonably prudent operator under similar facts and circumstances.²¹

The Texas Supreme Court thus succinctly summarized this standard of care imposed upon an operator as one of a hypothetical reasonably prudent operator under similar facts and circumstances using an objective standard.

Legal scholars and courts have attempted to make sense of all these cases. There is no universally accepted method of classifying these implied covenants, but they are often listed as obligations on the part of an oil and gas company to:

- drill an initial test well;
- develop the premises;
- protect against drainage;
- operate diligently and properly;
- market production; and
- in some US jurisdictions, further exploration.²²

Other legal commentators have divided the lessee's obligations into three broad categories, which are to (i) develop the premises, (ii) protect the leasehold, and (iii) manage and administer the lease.²³ This particular categorization was referenced in the Amoco case. The US courts have also held that lessees have an implied obligation to use new and appropriate technology and to ensure the further development of the lease.²⁴

Regardless of what classification system is used, these implied covenants are to be viewed simply as different aspects of the lessee's underlying duty to act as a Reasonably Prudent Operator. Amongst these many cases, US courts have opined that an implied obligation of the oil company's duty to manage and operate the lease is to adhere to good or customary oil field practices:

Care in conducting operations and adherence to good oil field practices are also an implicit part of the lessee's duty to manage and operate the lease obligations.²⁵

What is noteworthy about these covenants is the willingness of US courts to imply obligations onto a lessee to fill the gaps in a petroleum granting instrument when the parties have not expressly agreed on the standard of care required of an operator. Texas courts have justified imposing these implied covenants on the presumption that this must have been the intent of the parties.²⁶ This is despite the fact that these courts have historically tended to stay within the 'four corners of the contract' when dealing with other oil and gas disputes.²⁷

The US courts have rejected arguments from lessees that they know best what operations to conduct based on their experience and judgment, in response to the demands of lessors, even when the lessees claim to have acted in good faith. Instead, the courts have set the Prudent Operator Standard by determining the lessee's duties on an objective basis, rather than a subjective one unilaterally applied by the lessee, regardless of whether the lessee acted in good faith.

²¹ *ibid* 570.

²² Smith and Weaver (n 12) 5.1(B) citing: Eugene O Kuntz, *A Treatise on the Law of Oil and Gas* (LexisNexis 1978) s 55.1; John S Lowe, *Oil and Gas Law in a Nutshell* (West 2nd edn, 1988) 309–10; Howard R Williams and Charles J Meyers, *Oil and Gas Law* (Martin & Kramer) (LexisNexis rev 1997) s 804.

²³ *ibid* 5.1(B) citing: Richard W Hemingway, *The Law of Oil and Gas* (2nd edn, 1983) s 8.1.

²⁴ *ibid* 5.4(C)(2) citing: *Rhoads Drilling Co v Allred*, 123 Tex 229, 70 S.W.2d 576 (1934), *Clifton v Koontz*, 160 Tex 82, 325 S.W.2d 684 (1959) and *Superior Oil Co v Devon Corp*, 604 F.2d 1063.

²⁵ *ibid* 5.4(C)(2) citing: *Empire Oil & Ref Co v Hoyt*, 112 F.2d 356 (6th Cir. 1940) and *Baldwin v Kubetz*, 307 P.2d 1005 (1957).

²⁶ *ibid* 5.1(C)(2) citing: *Danciger Oil & Refining Co v Powell*, 154 S.W.2d 635 (Tex. 1941): 'An implied covenant must rest entirely on the presumed intention of the parties as gathered from the terms as actually expressed in the written instrument itself, and it must appear that it was so clearly within the contemplation of the parties that they deemed it unnecessary to express it, and therefore omitted to do so, or it must appear that it is necessary to infer such a covenant in order to effectuate the full purpose of the contract as a whole as gathered from the written instrument.'

²⁷ In Texas, the principle of contractual interpretation is that an 'agreement will be enforced as the parties have made it, without regard to whether they contracted wisely' *CMS Partners, Ltd v Plumrose USA, Inc*, 101 S.W.3d 730, 733 (Tex App 2003).

This standard is set by determining the actions that a hypothetical, prudent operator would have applied in its operations.²⁸

This standard is now so widely accepted in the US industry that it is expressly referenced in the industry's model oil and gas leases being used today, instead of being an implied term as in earlier leases. It can be found in the most recent American Association of Professional Landmen model oil and gas lease:

Lessee shall drill such additional wells on the leased premises or lands pooled therewith as a reasonably prudent operator would drill under the same or similar circumstances ...²⁹

The result is that the 'reasonably prudent operator' standard used in the USA is a helpful reference point for the Good Oilfield Practice standard used in other oil and gas operations. These cases arose early in the oil industry, which provided historical context on how this standard developed. However, they developed under a different fact matrix with an agreement that did not define what that standard was, quite unlike the lengthy, detailed granting instruments used by governments in other parts of the world. The US courts dealt with these *de minimis* oil and gas leases by developing implied covenants to fill the gaps that the parties had not expressly included in their agreements.

Even though it is now established law in the USA that oil companies must meet the Prudent Operator Standard in conducting their operations under an oil and gas lease, the cases did not provide a detailed description or lists of those operational standards. They could not, since there are so many different circumstances and so many different standards in the industry, which are constantly evolving. As the Texas Supreme Court observed in the *Amoco* case:

[B]ecause of the complexity of the oil and gas industry and changes in technology, the courts cannot list each obligation of a reasonably prudent operator which may arise.³⁰

As a result, in order to determine that standard, reference must be made to the specific standards developed by the industry for the particular operation being considered, assessed or disputed.

Prudent Operator Standard in US JOAs

The second set of US cases dealt with the reconciling of the Good Oilfield Practice obligation in industry JOAs with the gross negligence standard under the 'exculpatory' clause of those agreements. It is customary industry practice to limit the operator's liability to its participating interest with the inclusion of this clause in JOAs. This protects the operator from full exposure to catastrophic liabilities that sometimes arise in oil and gas operations. As an example, in one of the articles of the most recent version of the AAPL Onshore JOA Form 610, its first sentence provides for the Prudent Operator Standard while the immediately following sentence provides for the exculpatory exception:

Operator shall conduct its activities under this agreement as a reasonably prudent operator, in a good and workmanlike manner, with due diligence and dispatch, in accordance with good oilfield practice, and in compliance with applicable law and regulation. However, in no event shall it have any liability as Operator to the other parties for losses sustained or liabilities incurred in connection with authorized or approved operations under this agreement except such as may result from gross negligence or willful misconduct.³¹

²⁸ Conine (n 10) 24, 31, 32, 36, and 37.

²⁹ art 7 (Operations) in AAPL Texas Oil & Gas Lease Model Form 658-85.

³⁰ *Amoco v Alexander* (n 20) 568.

³¹ art V.A of 2015 AAPL Onshore JOA Form 610.

An exculpatory clause is designed to result in the operator being responsible for only its share or participating interest in the JOA, and not being exposed to a 100 per cent liability, even if it is negligent in its operations.³² Only if the operator is found to be grossly negligent, is it fully responsible for any such loss. An operator who takes on the added responsibility and risk of operating an oil concession would naturally want to limit its liability to the non-operators, particularly with respect to the consequences of its decisions that entail the exercise of prudent discretion, skill, or judgment.³³

It is commonly accepted in the industry that such exculpatory clauses are meant to limit the liability of the operator to the other JOA parties in relation to claims made by third parties. However, there has been continuing controversy (and many disputes) on whether this clause is intended to shield an operator from a breach of its duties owed to non-operators under the JOA.

Operators have argued that the exculpatory clause is overarching and covers all of their activities, not just their field operations. The typical position of an operator is that it can only be fully liable if found grossly negligent in any of these activities. In contrast, non-operators have taken the position that such a contractual provision is not intended to allow an operator to carry out its administrative, planning, budgeting, contracting or accounting obligations in a negligent manner and that an exculpatory clause cannot be used by an operator to limit its liability on the basis of a gross negligence standard for such administrative duties.

There has been a series of US cases that addressed when the gross negligence standard under the 'exculpatory' clause overrode the negligence standard set in the Good Oilfield Practice provision in the JOA. The conclusions reached in the various court decisions often differed depending on changes in the wording of the particular version of the JOA used by the parties.

In very general terms, the cases demonstrate an approach that changed from a broad reading of the applicability of the exculpatory clause, which applied to anything done under the JOA by the operator, to a more narrow view that restricts the operator's limitation of liability to operational matters:

The 'broad bucket' encompasses cases involving any sort of a non-operator's claim against an operator for all manner of alleged fault, including a breach of the administrative or accounting duties under the JOA. In contrast, the 'narrow bucket' is typically limited to claims pertaining to the manner in which the operator executed 'operations' on a well, yet excluding breach of contract claims.³⁴

In resolving these disputes between operators and non-operators, the courts made a number of observations on these JOA provisions, which are helpful in setting the parameters of Good Oilfield Practice.

The first US cases in the 1980s and 1990s interpreted the exculpatory clause to broadly apply to anything that occurred under a JOA. The leading case from that time period was *Stine v Marathon Oil Co.*,³⁵ where the court stated that:

Marathon is not liable for any action taken in connection with the completion, testing or turnover, or any well drilled under the provisions of the JOA unless Stine can prove that Marathon's actions were grossly negligent or willful. This protection extends to Marathon's various administrative and accounting duties, including the recovery of costs under the authority of the JOA.³⁶

³² International JOAs often have a second component to this operator protection, which is an indemnity clause that indemnifies the operator for any such loss or liability. This combination of disclaimed responsibility and indemnity coverage provides robust protection to the operator. See: art 4.6.B in the AIPN Model JOA.

³³ Patrick S Ottinger, 'Don't Blame Me—I Have Been Exculpated: "Exculpatory Clauses" in Operating Agreements' Institute for Energy Law (2021) 21.

³⁴ *ibid* 30.

³⁵ 976 F 2d 254 (5th Cir 1992).

³⁶ *ibid* 261.

This broad approach in applying the exculpatory clause was followed in *Huggs Inc v LPC Energy, Inc*,³⁷ *Caddo Oil v O'Brien*,³⁸ *Grace-Cajun Oil Co No Two v Damson Oil Corp*,³⁹ *Palace Exploration Co v Petroleum Dev Co*⁴⁰ and *PYR Energy Corp v Samson Resources Co*.⁴¹

In parallel, a series of US cases applied a narrower interpretation of the operator exculpatory clause. The leading case, *Abraxas Petroleum Corp v Hornburg*,⁴² described the purpose of an exculpatory clause: 'Generally, exculpatory clauses in a contract are utilized to exempt one party from future liability for negligence.' It then held that the exculpatory clause in question only applied to the actual conduct of drilling operations, and not administrative matters.

Other cases that reached similar conclusions included *Amoco Rocmount Co v The Anschutz Corp*,⁴³ *Cone v Fagadau Energy Corp*,⁴⁴ *Castle Texas Production Ltd Partnership v The Long Trusts*,⁴⁵ *Shell Rocky Mountain Prod LLC v Ultra Res Inc*,⁴⁶ *R & R Res Corp v Echelon Oil & Gas LLC*⁴⁷ and *Forest Oil Corp v Union Oil Co*.⁴⁸ The latter court held that:

[I]t is nonsensical to apply such a standard to administrative and accounting duties where the operator can profit by cheating, or simply overcharging, its working interest owners ... A broader reading of the clause would allow a party to act negligently (just not grossly) in following its express contractual administrative and accounting duties.⁴⁹

The courts in this line of cases considered the following factors in determining the Prudent Operator Standard pursuant to the article that set out the responsibilities of the operator, which was typically Article V.A in a JOA based on the AAPL Onshore Form 610 or an equivalent article in a Unit Operating Agreement:

- i) the specific facts and circumstances of the case;
- ii) the manner in which the operator conducted operations on the joint property;
- iii) the applicable contract language;
- iv) government regulations or legislation governing operations; and
- v) a heightened or enhanced standard if the operating environment required it.

The trend to narrow the scope of exculpatory clauses was reversed in 2012 with the *Reeder v Wood County Energy* case⁵⁰ where the Texas Supreme Court held that:

The exculpatory clause in this case, however, is taken from the 1989 Model Form JOA, referring to 'its **activities** under this agreement' instead of 'all such **operations**' Reading the clause as written, we conclude that the model form transformation is significant, as the change in language broadens the clause's protection of operators. The model forms from 1977 and 1982 both contained clauses that protected operators from 'all such **operations**', while the 1989 model form protects 'its **activities**' The modification implicates a broader scope of conduct following the language of the contract. The agreed standard exempts the operator from liability for its activities unless its liability-causing conduct is due to gross negligence or willful misconduct.⁵¹

³⁷ 889 F 2d 649 (5th Cir 1989).

³⁸ 908 F 2d 13, 17 (5th Cir 1990).

³⁹ 897 F 2d 1364 (5th Cir 1990).

⁴⁰ 316 F 3d 1110 (10th Cir 2003).

⁴¹ 470 F Supp 2d 709 (ED Tex 10 Jan 2007).

⁴² 20 SW 3d 741 (Tex App – El Paso 2000, no pet.).

⁴³ 7 F 3d 909 (10th Cir 1993).

⁴⁴ 68 SW 3d 147 (Tex App – Eastland 2001, pet. denied).

⁴⁵ 134 SW 3d 267 (Court of Appeals Texas, 2003).

⁴⁶ 415 F 3d 1158 (10th Cir 2005).

⁴⁷ No 03-05-00479-CV, 2006 WL 66458 (Tex App – Austin 2006, no pet.).

⁴⁸ 2006 US Dist. 101568 (D Alaska 2006).

⁴⁹ *ibid* 10, citing *Shell Rocky Mountain Production v Ultra Resources* 1171.

⁵⁰ 395 SW 3d 789 (Tex 2012).

⁵¹ *ibid* 3 (emphasis added).

A return to a narrower interpretation of the exculpatory clause was subsequently taken by the U.S. District Court for the Southern District of Texas in *MDU Barnett Limited Partnership v Chesapeake Exploration Limited Partnership*.⁵² That court cited the Reeder case but concluded that the clause in question was similar to the earlier 1977 and 1982 AAPL Model forms because they all specified that the operator ‘shall conduct all such **operations** in a good and workman-like manner’.

Applying and distinguishing from the Reeder case, this district court found that ‘[i]n 1989, the [AAPL] Model Form Operating Agreement’s exculpatory clause dropped the reference to “all such **operations**” and substituted the phrase “**activities** under this agreement” and as a result, found that the exculpatory clause in this JOA was limited to ‘defendants’ conduct as the well operator’ and did not protect the operator against ‘accounting breaches’. The court therefore applied a narrower interpretation of the exculpatory clause based on the wording from an earlier AAPL model JOA.

In all of these cases, the courts have found that when the exculpatory clause with its gross negligence standard does not cover a particular activity of an operator, the Good Oilfield Practice provision in the AAPL JOA, which is a negligence standard, must be applied. That provision, which sets out the responsibilities of the operator, states that an operator shall conduct itself as ‘a reasonably prudent operator, in a good and workmanlike manner, with due diligence and dispatch, in accordance with good oilfield practice, and in compliance with applicable law and regulation’.

These courts have also described what they mean by a Reasonably Prudent Operator while instructing juries on how to apply that standard:

The term ‘reasonably prudent operator’ as used in this charge, means an operator of ordinary prudence, that is having neither the highest nor the lowest prudence, but on the contrary an operator of average prudence and intelligence, acting with ordinary diligence under the same or similar circumstances.⁵³

They have also held that ‘the duty of care owed by an operator is not a matter within the knowledge of the average juror but is instead an area of specialized knowledge requiring expert testimony’.⁵⁴

The US cases and agreements therefore show that the Prudent Operator Standard is:

- i) similar to the Good Oilfield Practice standard;
- ii) a negligence standard;
- iii) determined on an objective basis, rather than a subjective one unilaterally applied by a party, regardless of whether it acted in good faith;
- iv) a standard that is widely accepted and applied in the industry by an operator of average prudence; and
- v) one that requires expert knowledge of that particular standard to properly apply.

Canada

Similar to the US cases that dealt with the Prudent Operator Standard, Canadian cases follow two distinct lines of issues that have been disputed. The first line of cases dealt with the standard of care required of a lessee, that is the oil company operator, in a freehold oil and gas lease. The second line of cases dealt with whether a negligence standard (ie, the Good Oilfield Practice standard) or a gross negligence standard (ie, the ‘exculpatory clause’ standard) applied to various activities of the operator under the Canadian version of a JOA.

⁵² No Civ H-12-2528, 2014 WL 585740 (SD Tex 14 February 2014).

⁵³ *Shell Oil Co v Stansbury*, 401 SW2d 623, 629 (Tex App – Beaumont), writ ref’d NRE, 410 SW 2d 187 (Tex 1966) and *Good v TXO Prod Corp*, 763 SW 2d 59, 60 (Tex App – Amarillo 1988), writ den’d (14 June 1989).

⁵⁴ *Bonn Operating Co v Devon Energy Prod Co, LP*, 2009 WL 484218, 15 (ND Tex 26 February 2009).

Standard of care in Canadian O&G leases

Most mineral rights in Canada, including oil and gas, are owned by the government, either at the provincial or federal level. However, there is some private ownership of oil and gas rights in Canada where operating companies lease those rights from the mineral owner. The first oil well drilled in Canada was near the village of Petrolia in the province of Ontario in 1858. The Canadian oil and gas industry was relatively small and localized in nature from its start in 1858 until 1947 when Imperial Oil Limited, a subsidiary of Standard Oil of New Jersey or what is known today as Exxon, discovered the Leduc oil field near Edmonton, Alberta. It was this major discovery that began the modern Canadian oil and gas industry. That discovery was on sub-surface lands owned by private individuals.

The first oil leases used in Canada during its early stages were rudimentary in nature. They were apparently based on agricultural leases.⁵⁵ That changed with the Leduc discovery. In order to pursue a major land acquisition after that discovery, Imperial assembled a group of experts to prepare a form of freehold lease that would be acceptable in Alberta. This group included a number of American representatives who brought with them a form of the Producers 88 lease. This was the basis of the freehold oil and gas lease that is now commonly used in Canada.⁵⁶

Canadian courts have historically distinguished an oil and gas lease from a conventional property lease. In a conventional lease, the lessee has the use of the property for a limited time, which it must return to the lessor at the end of the lease term in an unchanged state except for normal wear and tear. In contrast, a lessee under an oil and gas lease requires the right to possess and remove the minerals. The Supreme Court of Canada has thus characterized the oil and gas lease as a *profit a prendre*, which means the right to take a profit from the soil of another.⁵⁷ This has resulted in Canadian courts viewing these kinds of leases quite differently.

Despite the Canadian freehold oil and gas lease being derived from the US lease form, Canadian courts have paid little attention to the precedents set by American courts regarding the oil and gas leases used in the USA. In particular, Canadian courts have not relied upon implied covenants or considered the intention of the parties. Instead, the approach of Canadian courts has been to look only at the actual words of the lease and to exclude any outside influences or considerations:

The common theme that runs throughout all the judgments is that of strict attention to the actual wording of the particular lease itself, and a determinedly literalistic application of that language. The literalistic approach is subject to one further refinement in that if the language creates an ambiguity it should be construed against the party who prepared and tendered the document. The lessee, almost invariably, will be the party who proffers the document, so that if there is any ambiguity it will be resolved in favour of the lessor.⁵⁸

In addition, the oil and gas leases that originated after the Leduc discovery contained an 'entire agreement' clause that expressly excluded implied covenants:

The terms of this Lease express and constitute the entire agreement between the parties, and no implied covenant or liability of any kind is created or shall arise by reason of these presents or anything herein contained.⁵⁹

This language was incorporated into a 'standard' industry lease form published in 1988 by the Canadian Association of Petroleum Landmen (CAPL) that replaced the company-specific forms

⁵⁵ DE Lewis, 'The Canadian Petroleum and Natural Gas Lease' (1952) 30 Canadian Bar Review 965, 968.

⁵⁶ John B Ballem, *The Oil and Gas Lease in Canada* (4th edn, University of Toronto Press 2008) 11.

⁵⁷ *ibid* 15 citing *Berkheiser v Berkheiser*, [1957] SCR: 387, 7 DLR (2d) 721, [1957] SCJ No 22 (SCC).

⁵⁸ *ibid* 109.

⁵⁹ John B Ballem, *The Oil and Gas Lease in Canada* (1st edn, University of Toronto Press 1973) 321 providing an example of 'The Most Common Form of Standard Lease'.

used from the Leduc discovery up to that time.⁶⁰ As a result of this clear language and the Canadian courts' approach to interpreting oil and gas leases, it can now be assumed that implied covenants in such leases are a non-starter under Canadian law.⁶¹

The history of the development of freehold oil and gas leases in the USA is quite different from what occurred in Canada. The American approach to implied covenants occurred when the oil and gas lease was still in its formative stage and was silent on many of the lessee's obligations. Also, conservation legislation was either non-existent or in a very rudimentary stage at the time. At the beginning of its oil and gas industry in the early 1900s, American courts were therefore faced with the following challenges:

- The first leases used in the US industry had long terms, had no delay or other rental provision and covered very large tracts of land.
- There were no express covenants in these leases for the exploration and development of the lessor's mineral rights.
- There were no well spacing requirements, and other conservation laws and practices in US states at that time.
- The US courts were therefore faced with the problem of determining what the intentions of the parties were in the absence of such express provisions and conservation regulations.⁶²

In contrast, most of the implied covenants relied upon in the US cases were either covered by the express terms found in the Canadian oil and gas lease or by conservation legislation in Canadian provinces such as Alberta, which was well developed by the 1950s. As an example, the typical "operations" clause that was included in the first Canadian lease agreements used after the Leduc discovery provided that:

Lessee shall conduct all its operations on the said lands in a diligent, careful and workmanlike manner and in compliance with the provisions of law applicable to such operations, and where such provisions of law conflict or are at variance with the provisions of this Lease, such provisions of law shall prevail.⁶³

The CAPL lease form replaced 'provisions of law' with 'provisions of any statutes, regulations, orders or directions of any government or governmental agency', but essentially remains the same as the earlier Canadian lease forms.

The standard of care required of an oil company under the Canadian oil and gas lease as described in its 'operations' clause is in effect the common law duty of care, which is that of the reasonable person. In applying that standard, Canadian courts would typically take an objective test and apply it to the facts before it:

For operations under an oil and gas lease, the standard of care of the reasonable man would be that employed by a reasonable and prudent oil operator. The fact that oil and gas are highly dangerous substances would necessarily impose a greater degree of care

The reference to 'diligent, careful and workmanlike manner' obviously demands an objective standard by which it can be determined whether the operations were in fact 'careful and workmanlike.' The first question that the court must address itself to is whether the operations of the lessee complied with those methods and precautions that would be utilized by other operators within the oil industry. This, of course, requires expert testimony, but in most instances should

⁶⁰ Ballem (n 56) 3: 'The CAPL lease form now enjoys almost universal acceptance in the Canadian oil and gas industry.' It has been updated several times.

⁶¹ *ibid* 300.

⁶² J. C. Bjornson and others, 'Problems in Development of Leased Lands' (1965) 4 *Alberta Law Review* 302, 312.

⁶³ Ballem (n 59) 317: 'The Most Common Form of Standard Lease'.

be reasonably easy to establish since, over the years, the industry has built up a vast body of experience and operational techniques.⁶⁴

There are several Canadian cases that addressed Good Oilfield Practice and the standard of care required in freehold oil and gas leases. The first case is *Canadian Superior v Crozet*,⁶⁵ which dealt with whether Canadian Superior's lease was a valid and subsisting lease or whether it had lapsed in accordance with its terms. Crozet's interest in the lease stemmed from its acquisition of a 'top-lease' with respect to the same leased substances as were included in the Canadian Superior lease.

The Court held that prior to the expiration of the primary term of the original lease, 'good oilfield practice' required an operator to take a number of preparatory steps with 'reasonable diligence and dispatch'. In considering what those steps were, the court considered the fact matrix, expert testimony on drilling practices and the terms of the *habendum* clause in the oil and gas lease, which included a definition of 'operations' as meaning: 'drilling ... or operations for or incidental to any of the foregoing'.

The operator under the Canadian Superior lease had undertaken significant preparation of the lease area and the drilling rig, but had failed to 'spud' the well prior to the expiration of the primary term of the lease. The court found that the actions completed prior to the expiry date of the Canadian Superior lease were clearly preparatory to drilling an oil well on the leased lands, and were carried out in good faith and with diligence. The court therefore determined that the Canadian Superior lease was valid and subsisting, and that it continued beyond its primary term.

The second case, *Durish v White*,⁶⁶ dealt with whether a gas lease was terminated in circumstances where a producing gas well was shut in during its secondary term. Durish was the lessor of natural gas within two parcels of land contained in two freehold leases with White Resource, the lessee. A well was drilled on the leases and went into production. The leases were subsequently pooled with other lands for production purposes with another company (Gulf Canada Resources) which operated all of the pooled lands. Several years later, Gulf shut-in the gas well on the leases in question because of an unresolved dispute between Gulf and White Resource concerning transmission and processing fees charged by Gulf.

The *habendum* clause in the lease provided that if the leased substances were not being produced, then the lease could only continue under certain conditions; one of which was: 'if any well on the said lands or on any spacing unit of which the said lands or any portion thereof form a part, is shut-in, suspended or otherwise not produced for any cause whatsoever which is in accordance with good oil field practice'.

The Court held that the failure of White, the lessee, to resolve its dispute with Gulf over transmission and processing fees was not in accordance with 'good oil field practice'. The Court found that both leases were accordingly terminated.

The next case, *Kensington v B & G*,⁶⁷ dealt with whether shutting-in an uneconomic well was in accordance with Good Oilfield Practice, which could have resulted in the continuance of a freehold oil and gas lease during its secondary term. The trial judge found that the parties to the lease could not have intended that a corporate decision to shut down a dry hole would have been in accordance with Good Oilfield Practice. Since shutting down a dry hole was not, in his view, the kind of cause contemplated by the lease, he found that it did not matter whether the well was shut-in in accordance with Good Oilfield Practice. Accordingly, the trial judge refused to allow expert testimony on that issue and determined that the lease was terminated.

The *habendum* clause in the disputed lease read as follows:

TO HAVE AND ENJOY the same for the term of Five (5) years (hereinafter called the "said term") from the date hereof and so long thereafter as the leased substances or any of them are

⁶⁴ *ibid* 266.

⁶⁵ *Canadian Superior Oil Ltd v Crozet Exploration Ltd* (1982) 34 AR 256, para 45, 18 Alta LR (2d) 145.

⁶⁶ *Durish v White Resource Management Ltd* (1987) 82 AR 66, para 14, 55 Alta LR (2d) 47, *aff'd* 63 Alta LR (2d) 265.

⁶⁷ *Kensington Energy Ltd v B & G Energy Ltd*, 2008 ABCA 151.

produced from the said lands ... , subject to the sooner termination of the said term as hereinafter provided:

... that notwithstanding anything hereinbefore contained or implied to the contrary, if drilling or working operations are interrupted or suspended as the result of any cause whatsoever beyond the Lessee's reasonable control or if any well on the said lands or on any spacing unit of which the said lands or any portion thereof form a part, is shut-in, suspended or otherwise not produced for any cause whatsoever which is in accordance with good oil field practice, the time of such interruption or suspension or non-production shall not be counted against the Lessee.

The Alberta Court of Appeal reversed the trial decision. In doing so, it stated:

Each dispute must be resolved by reference to the terms of its own lease. Previous decisions are often of little assistance because, although the general terms of freehold leases are similar, there is considerable variation in their specific language.⁶⁸

The majority of the appeal court concluded that the above proviso to the habendum clause dealing with 'good oil field practice' did not establish a condition precedent that the lessee had to fulfil before it could rely upon the shut-in well clause (another clause in the lease), as long as the language in the shut-in well clause did not track the language in the above proviso, which it did not. Since the lessee had made the required payments under the shut-in well clause throughout the secondary term, the court determined that the lease was continued and valid. Given its decision on the effectiveness of the shut-in well clause to continue the lease, the appeal court did not consider any evidence of what was Good Oilfield Practice.

The fourth case, *Burns Resources v Locke, Stock & Barrel*,⁶⁹ revolved around the level of production required to continue a freehold oil and gas lease beyond its primary term and not be terminated. The oil and gas lease provided that after the expiration of the one-year primary term, cessation of production for a period of more than 90 days would terminate the lease except in limited circumstances. The plaintiff, Burns Resources, alleged that there were two periods where production had ceased for more than 90 days and claimed that the lease was thus terminated. The issue was on the level of production required to comply with the lease's terms.

In rendering her judgment, the chambers judge stated that:

The parties failed to provide any case law on courts' interpretations of the meaning of 'any cause outside the lessee's control' or 'in accordance with good oilfield practice'. The case law is sparse in this area. I can find no decision analysing the meaning of a cause outside the lessee's control and only several cases on the meaning of good oilfield practice. What case law exists is not particularly helpful I note that good oilfield practice appears to be a highly factual area in which courts will consider the knowledge and expectations of the parties, as well as their actions and omissions.⁷⁰

On appeal, the Alberta Court of Appeal held that the chambers judge erred in discounting the expert's testimony entirely; and her finding that the lack of production for two extended periods of time cannot consist of Good Oilfield Practice. There was no evidence before her to support that finding. The expert's evidence presented by Locke, Stock & Barrel was relevant to the analysis of whether there was a genuine issue for trial. The Court was satisfied that Locke, Stock & Barrel had met its evidentiary burden of adducing sufficient evidence to defeat summary judgment. As a result, the appeal was allowed and the partial summary judgment terminating the Burn's lease was set aside.

⁶⁸ *ibid* para 15.

⁶⁹ *P Burns Resources Limited v Locke, Stock & Barrel Company Ltd*, 2013 ABQB 129 and 2014 ABCA 40.

⁷⁰ *ibid* paras 28 and 32.

Good Oilfield Practice standard in Canadian JOAs

Three cases of note dealt with when the Good Oilfield Practice standard applied in the Canadian version of a JOA instead of the gross negligence standard found in the JOA's exculpatory clause. In particular, the cases revolved around two provisions of the Canadian Association of Petroleum Landmen (CAPL) Operating Procedure, which is the standard JOA used throughout the Canadian oil industry.

The first provision, Clause 304, obligated the Operator to carry out all operations 'diligently, in a good and workmanlike manner, in accordance with good oilfield practices'. If the Operator did not meet its obligation to conduct its operations in accordance with this Good Oilfield Practice standard, then it was negligent and in breach of its contract.

The second provision was Clause 401, the 'exculpatory' clause, which provided that: '... the Operator shall be solely liable for any loss or damage of whatsoever nature when such loss or damage is caused by the Operator's gross negligence or wilful misconduct'.

The issue was which of these two clauses applied when the Operator carried out its contractual obligations under the JOA to the other non-operating parties with regard to administrative matters such as accounting for JOA costs, etc. All the parties agreed in the three cases that the exculpatory provision in Clause 401 with a gross negligence standard would apply to third-party tortious claims. The non-operators argued, however, that it could not apply to the operator's contractual obligations to its co-venturers, and that the appropriate standard was the negligence standard found under Clause 304, the Good Oilfield Practice standard. In contrast, the operators argued that the gross negligence standard under the exculpatory clause applied in all circumstances, regardless of whether it was a third-party claim, or a simple accounting or administrative matter. This was a replay of the same issues in the US cases.

The first case, *Erehwon v Northstar*,⁷¹ concerned allegations that the operator levied inappropriate charges under the accounting provisions of the 1981 CAPL Operating Procedure. The court rejected the suggestion that Clause 401 was meant to relate to the standard of care applicable to the relations between the joint parties themselves, and in particular to the Operator's duty to the Non-Operators in carrying out the joint operations. Instead, Clause 401 was most likely intended to deal with third-party losses.

The court determined that it was hard to imagine that the parties could have intended Clause 401 to mean that the Operator could carry out its accounting obligations in a grossly negligent fashion. That they would agree, by contract, to stand behind the Operator for uninsured third-party losses arising from actions that are 'negligent' as opposed to 'grossly negligent' was more understandable. Many operations carried out under the JOA are high-risk and the Non-Operators may be willing to accept that, as a 'first among equals' acting on behalf of co-venturers, it would be expecting too much for the Operator to have responsibility for losses caused by its negligence.

The court considered the fact matrix along with expert reports and testimony on marketing, accounting and operations to determine whether the operator acted as a prudent operator and made decisions that were consistent with Good Oilfield Practice and in conformity with industry standards. The court referenced industry model contracts to determine standards for accounting and operational matters. It also referenced 'community standards of honesty, reasonableness or fairness' with regard to an operator's duty of good faith.

As a result, the court concluded that (i) the parties could not have intended the limitation in Clause 401 to override the obligation to act in accordance with 'good oilfield practice' as set out in Clause 304 and (ii) Clause 401 was intended to deal with third-party losses and not losses between the co-venturers. Since the operator under Clause 304 was required to carry out joint operations in accordance with 'good oilfield practices', it was unlikely that 'the parties could have intended Article IV to mean that the operator could then carry out its accounting obligations in a grossly negligent fashion'.

⁷¹ *Erehwon Exploration Ltd v Northstar Energy Corp* (1993), 15 Alta LR (3d) 200, paras 57–66.

The issue of operator liability under the same clauses of the same 1981 version of the CAPL Operating Procedure was revisited in the second case, *Morrison v Phoenix*.⁷² The non-operator claimed that the operator was negligent in the preparation of an authority for expenditure (AFE) cost estimate and in the planning and drilling of a deep well in the difficult foothill region of the Rocky Mountains. It therefore refused to pay for cost overruns of more than a million dollars on the drilled well. The operator argued in response that its liability was limited under Clause 401 to instances of its gross negligence or wilful misconduct.

Although the Erehwon case dealt with ‘accounting matters’, the judge in this case held that the same reasoning applied equally to the question of the standard of care imposed upon an operator by the requirement in Clause 304 of the 1981 CAPL Operating Procedure to employ ‘good oilfield practices’ with respect to ‘all operations’.⁷³

The major issue in this case was whether the operator planned and conducted its drilling operations in accordance with Good Oilfield Practice. The court considered expert testimony on drilling operations and practices to determine whether that standard had been met. In making that determination, the court found that the ordinary standard of care imposed upon an operator for drilling wells was higher in the foothills area of the Rocky Mountains than in the flatlands of Alberta. The court also considered industry model contracts in setting accounting standards for an operator’s cost estimates and its accounting to non-operators.

The court eventually decided, on a preponderance of evidence, that Morrison, in its capacity as operator, had failed to adhere to Good Oilfield Practices and that it was negligent in (i) the preparation of its AFE/cost estimate, (ii) its planning and preparation for the well, and (iii) its conduct of drilling operations. In deciding what was ‘good oilfield practice’ or not, the judge stated that ‘I equate negligence with not following good oilfield practices’.⁷⁴

The third case, *Adeco and Shaman v Hunt Oil*,⁷⁵ dealt with an operator’s failure to renew two oil and gas leases issued by the province of Alberta, Canada. Hunt Oil, Adeco and Shaman jointly owned the two leases. Hunt Oil was the operator of the leases under a JOA, which incorporated the terms of the 1990 version of the CAPL Operating Procedure. Hunt Oil filed a deficient renewal application to continue the leases. Alberta Energy advised Hunt Oil of those deficiencies, which it failed to address. Alberta Energy subsequently terminated the leases after providing Hunt Oil with two further notices.

After Hunt Oil failed to renew the leases, Adeco and Shaman commenced legal proceedings against Hunt Oil for losses incurred by them. They alleged Hunt Oil breached its contractual duty to keep the leases in good standing, that Hunt Oil was negligent in its renewal process and that Hunt Oil owed them a fiduciary duty to maintain the leases in good standing. Hunt Oil defended itself on the basis that it met the standard of care contemplated by the JOA, both on a negligence standard and a gross negligence standard. With respect to any contractual duty to keep the leases in good standing, Hunt Oil claimed that its obligations were met so long as it was not grossly negligent in its performance.

Since the CAPL Operating Procedure did not govern standards of care in dealings with third parties, nor contracts between the operator and third parties, Adeco and Shaman argued that the only possible purpose of Clause 304 was to require the operator to use Good Oilfield Practices vis-a-vis the non-operators. However, Hunt Oil argued that because of Clause 401, the operator was only responsible to non-operators if its breach involved gross negligence, meaning it need not use the Good Oilfield Practice standard at all, since everything short of gross negligence was without consequence.

In determining the standard to be applied to the continuation application for the two leases, the trial court considered the Alberta government’s regulations on lease continuations and its

⁷² *Morrison Petroleum Ltd v Phoenix Canada Oil Company Limited*, 1997, 198 AR 81 and 1998 ABQB 624.

⁷³ *ibid* 106–08, paras 89–91 and 96.

⁷⁴ *ibid* 108, para 96.

⁷⁵ *Adeco Exploration Company Ltd and Shaman Energy v Hunt Oil Company of Canada, Inc*, 2008 ABCA 214.

practice in administering such applications. It also considered expert testimony on standard practices in the industry with regard to land administration.

The trial court agreed with Adeco and Shaman. It found that Clause 401 should be interpreted narrowly and that the operator was liable for the non-operators' damages as a result of the operator's ordinary negligence in failing to maintain title documents in accordance with its obligations. It also found that Hunt Oil owed Adeco and Shaman a fiduciary duty with respect to the renewal of the leases.

Hunt Oil appealed the trial decision. The appeal court disagreed with the trial court's narrow interpretation of Clause 401 and instead found that a gross negligence standard applied under the circumstances. The appeal court distinguished this case from the Erehwon case, which was based on the 1981 version of the CAPL Operating Procedure; whereas in this case, the parties had used the 1990 version of the CAPL Operating Procedure. The revised language in Clause 401 of the updated CAPL Operating Procedure provided that:

The operator ... shall not be liable to the [non-operators] ... for any loss ... whether contractual or tortious ... arising out of any act or **omission**, whether negligent or otherwise, of the operator ... in conducting or carrying out the joint operations, **except**: when ... such loss ... is attributable to ... the **gross negligence** ... of the operator ... (emphasis added)

The appeal court found that pursuant to the plain and ordinary meaning of the words in Clause 401 of the 1990 CAPL, Hunt Oil was only responsible to Adeco and Shaman if its omission amounted to gross negligence. It agreed with Hunt Oil that failure to renew the leases in question was an omission relating to a joint operation, and that omission was caught by the revised Clause 401. In order to succeed on the basis of either contract or tort, Adeco and Shaman had to therefore show that Hunt Oil had been grossly negligent when it failed to continue the leases, rather than meet the negligence standard in Clause 304.

The different result in this case from the prior two cases arose from the parties using different versions of the CAPL Operating Procedure (1981 v 1990 versions) with different wording used in each version. This divergence was remarkably similar to the different approaches taken in some of the US cases.

Unfortunately for Hunt Oil, this was a pyrrhic victory. The appeal court ultimately held that Hunt Oil was both negligent and grossly negligent by failing to continue the leases. In applying the test for gross negligence, the appeal court described it as a 'conscious wrongdoing', a 'conscious indifference', or 'a very marked departure from the standard of care required'. It thus determined that Hunt Oil was liable to Adeco and Shaman under their JOA.

The Canadian cases and agreements show that the Good Oilfield Practice standard:

- i) requires an operator to conduct its operations diligently in a good, careful and workmanlike manner and in compliance with the provisions of law applicable to such operations;
- ii) requires an objective standard as to whether an operator complied with those methods and precautions that would be utilized by other operators within the industry;
- iii) is a negligence standard since it equates with not following Good Oilfield Practices;
- iv) is a standard found in the industry's model contracts or in the regulatory framework governing oil and gas operations;
- v) can vary depending on the area of operation and its complexity; and
- vi) requires expert testimony based on the industry's experience and operational techniques.

UK

The term Good Oilfield Practice is found in oil and gas contracts in the UK North Sea. One such definition can be found in the Model UK Joint Operating Agreement:

The Operator shall ... conduct the Joint Operations in a proper and workmanlike manner in accordance with Good Oilfield Practice.

Good Oilfield Practice means the application of those methods and practices customarily used in good and prudent oil and gas field practice in the United Kingdom Continental Shelf with that degree of diligence and prudence reasonably and ordinarily exercised by experienced operators engaged in the United Kingdom Continental Shelf in a similar activity under similar circumstances and conditions.⁷⁶

This particular definition has not yet been tested in the English courts.⁷⁷

There are variations of this standard found in UK North Sea agreements. One such variation is a 'Reasonable and Prudent Operator' (RPO) standard, which sounds somewhat similar to the phrase 'Reasonably Prudent Operator' found in US case law, leases and JOAs. A Reasonable and Prudent Operator is typically defined in these agreements along the following lines:

[A] party seeking in good faith to perform its contractual obligations, and in so doing and in the general conduct of its undertaking, exercising that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances and complying with applicable law.⁷⁸

This particular definition of an RPO standard consists of two parts. The first part or 'limb' of this standard requires the operator 'to perform its contractual obligations ... in good faith'. The second part or 'limb' of this standard is more along the lines of the first definition of Good Oilfield Practice and contemplates an objective assessment of how a reasonable and prudent operator engaged in an oil and gas operation under the same or similar circumstances would ordinarily act. This second part is closer to the standard used in the US and Canadian cases and is in effect a Good Oilfield Practice standard.

There are only two cases on the RPO standard that the English courts have considered. Both cases dealt with relatively similar definitions of the RPO standard as described immediately above. These two English cases did not provide guidance on how a Good Oilfield Practice standard, that is the second limb of this definition, is to be applied under English law. Instead, they focused on the first part of this definition, that is the requirement for the operator to perform its contractual obligations in good faith.

In the first case, *Scottish Power v BP Exploration*,⁷⁹ Scottish Power was the buyer of natural gas produced from the Andrew Field, an oil and gas field in the North Sea, under four similar long-term gas sale agreements dating from 1994. The sellers were the consortium in the Andrew Field ('Sellers'), of which BP was the operator who held the largest interest.

Between May 2011 and the end of 2014, BP shut down the Andrew Field to tie its facilities into the adjacent Kinnoull oil and gas field, which it also operated, and to complete work to produce additional gas from a deeper Lower Cretaceous reservoir beneath the Andrew Field. Throughout the shut-in period, Scottish Power made proper nominations of natural gas under its agreements for delivery on every day of the period. There was, accordingly, an under delivery in respect of every such day. Scottish Power, as a result, became entitled to Default Gas in respect of the amount nominated under those agreements.

Scottish Power claimed against the Sellers for their failure to deliver gas during the shut-in period based upon their breach of Article 7.1 of their gas sales agreements, which read:

⁷⁶ 2016 OGUK JOA, paras 6.2.2(a) and 1.1.

⁷⁷ There is limited English legal authority addressing the application of the GOP and RPO standards. See: David Lewis QC and Daniel Bovensiepen, 'Oil & Gas: Case Law Review, Reasonable and Prudent Operator' Practice Notes, 20 Essex Street Chambers (2019 Thomson Reuters).

⁷⁸ Oil & Gas UK (OGUK) Model Pipeline Crossing Agreement.

⁷⁹ *Scottish Power UK Plc v BP Exploration Operating Co Ltd*, EWHC 2658 (Comm), WL 5702851 (2015), and EWCA Civ 1043 [2016].

Throughout the Contract Period the Seller will, in accordance with the Standard of a Reasonable and Prudent Operator, provide, install, repair, maintain and operate those Seller's Facilities which are ... necessary to produce and deliver ... the quantities of Natural Gas from the Andrew Field which are required ... to be delivered to the Buyer ...

Article 1 of the gas sales agreements defined a 'Reasonable and Prudent Operator' as:

[A] Person seeking in good faith to perform its contractual obligations and, in so doing and in the general conduct of its undertaking, exercising that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances and conditions, and the expression the 'Standard of a Reasonable and Prudent Operator' shall be construed accordingly.

The trial judge addressed a number of issues, the primary one being whether the Sellers had complied with the RPO Standard as defined in the gas sales agreements. As described above, Scottish Power argued that there were two limbs to the definition of a Reasonable and Prudent Operator and that if the operator had not met the first limb, it could not also meet the second limb of the definition.

In response, BP argued that the economic costs and benefits of the project for its business were not to be taken into account in applying the RPO standard. Instead, a Reasonable and Prudent Operator in deciding whether to carry out works to tie in another oil and gas field should take account of and seek to comply with (i) a voluntary industry code of practice, in this case, the Code of Practice on Access to Upstream Oil and Gas Infrastructure on the UK Continental Shelf, and (ii) the possibility of a referral to a regulatory authority, the Department of Energy and Climate Change, in order to ensure access to upstream oil and gas infrastructure for third parties. This argument was somewhat hollow because in this case, BP was one of the third parties. BP and its JV partner, Eni, held a 79 per cent interest in the Andrew field, while jointly owning a 93 per cent interest in the adjacent Kinnoull field.

The judge rejected BP's arguments and determined that:

There is nothing in the language of the definition to support such an interpretation. In particular, there is nothing in the definition which provides any basis for disregarding any factor which a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances and conditions would have taken into account. The effect of excluding economic factors from consideration seems to me to be to divorce the RPO standard from commercial reality and render it totally artificial.⁸⁰

Based on the evidence, the judge found that it was clear that the Sellers stood to gain substantial financial rewards from carrying out their planned works and that their decision to shut in the Andrew field was reached for reasons that were predominantly if not entirely concerned with their own commercial interests, rather than concern around a potential regulatory requirement to grant access to their facilities to a third party, which they had cited as the reason for their decision.

As a result, the judge rejected the Sellers' argument that they did not violate Article 7.1 when they decided not to provide, install, operate, repair and maintain their Andrew Field facilities, even if it was to their financial advantage, provided only that they did not act in bad faith.

In making his decision, the judge relied on the first limb of the RPO definition, which was an express requirement that the Sellers perform their contractual obligations. He did not rely upon or even determine what 'good faith' meant, and did not rely upon the second limb of the RPO definition, which would have equated to a 'Good Oilfield Practices' standard:

⁸⁰ *ibid* para 118.

It is not necessary to decide what, if anything of substance, the words ‘in good faith’ add to the requirement of seeking to perform contractual obligations. What is clear is that those words do not subtract from that requirement: a person seeking to perform its contractual obligations in good faith must on any view be a person seeking to perform its contractual obligations ... It seems to me entirely understandable, and only to be expected, that an operator who takes a deliberate decision not to perform its obligations under the Agreement and does not carry out one or more of the activities specified in Article 7.1 because of that decision should be treated as in breach of contract.⁸¹

In doing so, the court never addressed ‘how’ an operator must conduct its operations under the second limb of the definition, which is the Good Oilfield Practice standard. The trial judge’s decision in the High Court of Justice was appealed to the Court of Appeal who confirmed the trial decision without commenting on the trial judge’s analysis of the issues.

The second English case, *BP Gas Marketing v Sonatrach*,⁸² also raised the Reasonable and Prudent Operator standard. However, it was a relatively minor issue in the proceedings and did not influence the ultimate decision of the court. It arose in one of the ancillary agreements and not the agreement that was at the heart of the dispute, which was a Joint Shipper’s Agreement (JSA) between BP and Sonatrach.

The case dealt with the discharging of Liquefied Natural Gas (LNG) from tanker ships at a terminal located on the Isle of Grain in the UK, which was operated by a company called Grain. BP and Sonatrach had jointly contracted for the use of the Grain Terminal’s initial discharge, storage, re-gasification and send-out capacity under a 20-year Specific Terms Agreement (STA) with the Grain company, which was the operator under the STA. The dispute revolved around an LNG property called the Wobbe number (or index), which is a measure of an LNG’s energy by volume and which was required under the UK Gas Safety (Management) Regulations 1996 (GSMR).

The STA had General Terms and Conditions, which included an RPO standard, which was similar to the definition found in the Scottish Power case and which read as follows:

Reasonable and Prudent Operator means a person seeking in good faith to perform its contractual obligations and, in so doing, and in the general conduct of its undertaking, exercising that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experience[d] operator, complying with all applicable international standards and practices, engaged in the same type of undertaking under the same or similar circumstances and conditions.

One of the side issues in this dispute was whether Grain, the operator of the LNG terminal and the named operator under the STA, acting in accordance with the RPO standard, would be expected to blend regasified LNG to a Wobbe value within, but as close as possible to, the upper limit specified in the GSMR. The Grain company was also contractually required to comply with the GSMR under a Network Entry Agreement with Transco, which ran the National Transmission System. Reducing the Wobbe value below the limit required blending the LNG with nitrogen, so the lower the value targeted, the more expensive the process. The LNG supplied by BP and Sonatrach were both above the GSMR limit, but each one had different Wobbe values. This impacted the sharing of the extra costs of the nitrogen to either BP or Sonatrach, which was at the heart of their dispute.

BP submitted that in acting as an RPO, the Grain company, as operator under the STA, would reasonably be expected to take into account the following factors:

- The nature of its contractual obligations (to blend within a range of Wobbe values of which the GSMR maximum was the upper limit).

⁸¹ *ibid* paras 79 and 81.

⁸² *BP Gas Marketing Ltd v La Société Sonatrach*, WL 06397422 [2017].

- The adverse financial consequences for itself and its contractual counterparties if the GSMR limit was breached, as compared to the relatively low cost of injecting more nitrogen than was strictly necessary.
- Its risk of exposure to sanction for breach of the GSMR.
- The wider social and economic context in terms of potential interrupted gas supply if the GSMR limit was breached.
- The absence of any established industry benchmark practice in relation to nitrogen blending.

The judge held that as a matter of interpretation, the Grain company was not under an obligation to act under an RPO standard in relation to nitrogen blending concerning cargoes delivered by BP and Sonatrach into the terminal under the STA. The RPO standard was therefore moot to the resolution of this dispute. If it did apply, however, the judge concluded that these factors meant that an RPO would adopt a cautious approach to blending by avoiding the upper GSMR limit and that it would try to eliminate the risk of putting off-spec gas into the national gas networks.⁸³

Despite not fully elaborating on what an RPO standard is, the English cases do indicate that courts will consider regulations and industry codes of practice as RPO standards. However, they will not necessarily consider them as an appropriate defence when the court is of the view that a party is only considering its own financial benefits and not meeting its contractual obligations to its counterparty.

Other international jurisdictions

Good Oilfield Practice has a long history in the international oil and gas industry. It emerged in the Middle East when oil concessions were first granted to international oil companies (IOCs) more than a century ago. Since then, host governments from around the world have required oil and gas companies to meet the standard of Good Oilfield Practice in one form or another in either their contracts or legislation and sometimes both. They have used different nomenclatures and terms to describe this standard. Sometimes they defined this standard; more often they did not.

Host Government Contracts may state one overall requirement for a Good Oilfield Practice standard. Sometimes they state it multiple times for various phases of petroleum operations, such as for exploration, development, production, marketing, abandonment, and decommissioning. They may also have separate requirements for financial, accounting, and insurance standards.

Host governments may also require a Best Oilfield Practice standard, rather than a Good Oilfield Practice standard. Sometimes they require both standards in the same contract or in separate legislation or regulations. They may define what they expect from a Best Oilfield Practice standard, even though their definition may look more like a Good Oilfield Practice standard. And sometimes they do not define what that Best Oilfield Practice standard means.

There are countless examples of Good and Best Oilfield Practice standards required by host governments from various jurisdictions. The following review provides a sampling of the range of standards and language used in Host Government Contracts throughout the world.

Iran

Standards on conducting oilfield operations first began to emerge in the Middle East in 1901 with the signing of the D'Arcy concession agreement in what is today modern Iran.⁸⁴ That agreement provided for an Imperial Commissioner appointed by the Government who 'shall inform [the Concessionaire] of the best course to be adopted in the interest of the undertaking. He shall

⁸³ *ibid* paras 198–99.

⁸⁴ William Knox D'Arcy acquired an oil concession in Iran in May 1901, where he and his investor group discovered oil in 1908. That discovery established the oil industry in the Middle East and was the beginning of the Anglo-Persian Oil Company (later called the Anglo-Iranian Oil Company), which was the origin of the company known today as British Petroleum or BP.

See: A Timothy Martin, 'Oil & Gas Disputes in the MENA Region' in Gordon Blanke and Habib Al Mulla (eds), *Arbitration in the MENA* (Juris 2021) for more detail on that concession and its ensuing arbitrations. Those arbitrations did not deal with the Good Oilfield Practice standard, but rather the expropriation of this concession by Iran.

establish by agreement with the Concessionaire such supervision as he may deem expedient to safeguard the interests of the Imperial Government'.⁸⁵

Saudi Arabia

The Standard Oil Company of California signed a concession agreement with the Saudi Arabian Government on 29 May 1933, which became the foundation for Aramco, the largest oil company in the world. That agreement provided in multiple places that the concessionaire was obligated to carry out its operations in Saudi Arabia 'in accordance with first-class oilfield practice'.⁸⁶

The Aramco concessionaires had a virtual monopoly on oil production in the Kingdom of Saudi Arabia for more than half a century until they agreed to a transition of ownership to the Government in the 1980s. In the early 2000s, the Government of the Kingdom of Saudi Arabia entered into a series of Upstream Project Agreements with a number of IOCs along with Saudi Aramco for the exploration and production of non-associated gas in selected areas of the Kingdom. Those agreements and their accompanying rules required those participants to conduct their operations in accordance with International Industry Standards, which were defined as:

International Industry Standards shall mean such practices and procedures employed generally in the petroleum industry throughout the world by prudent companies under conditions and circumstances similar to those experienced in connection with Operations in the Kingdom of Saudi Arabia.⁸⁷

Kuwait

On 23 December 1934, Kuwait granted an oil concession covering most of its country to the Kuwait Oil Company (KOC), which was jointly owned by BP and Gulf Oil. That concession provided that:

The Company shall conduct its operations in a workmanlike manner and by appropriate scientific methods

Producing wells or borings at the time of such expiry shall be handed over in reasonably good order and repair.⁸⁸

Kuwait granted another oil concession to the American Independent Oil Company (Aminoil) in an area known as the '*Kuwait-Saudi Arabia Neutral Zone*' on 28 June 1948 that provided for a number of these same standards.⁸⁹ This concession agreement and its amendments obligated

⁸⁵ art 11 of the D'Arcy Concession Agreement between the Government of His Imperial Majesty of the Shah of Persia and William Knox D'Arcy cited in Appendix 1.1 of Ronald W Ferrier, *The History of the British Petroleum Company* (vol 1, CUP 1982) 640–43.

⁸⁶ arts 10, 13 and 16 of the Concession Agreement between the Saudi Arab Government and Standard Oil Company of California dated 29 May 1933.

A copy of the original concession agreement is provided in Volume V, Annex 1 of Aramco's First Memorial in the *Saudi Arabia v Arabian American Oil Company (Aramco)* Arbitration, all of which can be found in the Law Library, University of California at Berkeley. The concession agreement can also be found at the British Library in its India Office Records and Private Papers under the file: Coll 6/48 Oil Concessions in Saudi Arabia (Hasa), Ref: IOR/L/PS/12/2115 and online at the Qatar Digital Library: https://www.qdl.qa/en/archive/81055/vdc_100000000555.0x00028d.

More detail on the 1933 Concession Agreement, the Aramco arbitration and the development of the oil industry in the Kingdom of Saudi Arabia can be found in: A Timothy Martin, 'Aramco: The Story of the World's Most Valuable Oil Concession and Its Landmark Arbitration' (2020) 7 BCDR International Arbitration Review 3. That arbitration dealt with the transportation rights under that concession, rather than the Good Oilfield Practice standard.

⁸⁷ Definition in Upstream Rules for Non-Associated Gas Activities in the Kingdom of Saudi Arabia.

⁸⁸ arts 2, 12, and 13 of the Concession Agreement between the State of Kuwait and the Kuwait Oil Company Limited dated 23 December 1934. Reproduced in Archibald HT Chisholm, *The First Kuwait Oil Concession Agreement* (Cass and Company 1975) in Note 155 at 243. No arbitrations arose from this concession. Instead, BP and Gulf entered into an agreement to transfer their rights back to the Kuwaiti state. The Good Oilfield Practice standard was therefore never tested in this Concession Agreement.

⁸⁹ 'The Concession Agreement granted to Aminoil in 1948 was an oil concession agreement in the classical form. It was modelled, article by article, on an earlier oil concession which had been granted by Sheikh Ahmed in 1934 to a company known as the Kuwait Oil Company.' See: Alan Redfern, 'The Arbitration between the Government of Kuwait and Aminoil' (1985) 55 British Yearbook of International Law 66.

Aminoil to conduct its operations ‘in a workmanlike manner’, using ‘appropriate scientific methods’, ‘all reasonable measures’, and ‘according to good oil-field practice’.⁹⁰ These particular standards were tested in the *Aminoil* case discussed below.

Qatar

Qatar provides a good example of how Good Oilfield Practice evolves over time with governments imposing this obligation in both their contracts and legislation. On 5 August 1949, Shaikh Abdullah bin Qasim al Thani, the Ruler of Qatar, entered into a concession agreement with the Central Mining and Investment Corporation and the Superior Oil Company of California, who subsequently assigned and consolidated their rights to the International Marine Oil Company. The concession covered an offshore area contiguous to the territorial waters of Qatar. That agreement required the company to conduct its operations ‘according to good oil field practice’.⁹¹

Its circa 1990s Model Exploration and Production Sharing Agreements (EPSAs) continued with a Good Oilfield Practice standard by requiring the Contractor to:

... conduct the Petroleum Operations in a diligent and workmanlike manner and in accordance with generally accepted methods and standards of the petroleum industry.

... conduct the Petroleum Operations in accordance with sound oil field conservation practices as generally accepted in the petroleum industry.⁹²

Contractors also agreed to comply with Qatari laws under these EPSAs.⁹³ One of these laws was Decree-Law No 4 of 1977 which required a Contractor to conduct its operations on a ‘best practices’ standard:

... according to the prevailing technical traditions, rules and standards in the oil industry which guarantee the best practices for the optimal exploitation, investment, preservation, development and production of the State’s oil resources, as well as the prevention of their loss, damage or waste.⁹⁴

The ‘best practices’ standard has now moved to a contractual requirement in Qatar. The following definitions regarding the standards required of an operator are provided for in the most recent Qatari Development and Fiscal Agreement:

“Industry Best Practices” means the best practices, methods, standards and procedures generally accepted and followed by diligent, expert and prudent operators with experience in operations equivalent to Development Operations, Production Operations, Decommissioning and more generally Petroleum Operations, which, in the exercise of reasonable judgement and in light of the facts known at the time a decision is made would, inter alia, be expected to obtain the anticipated results and increase the economic benefits of the recovery of Petroleum inside the Contract Area, maximising the recovery factor of such Petroleum throughout the life of the Reservoirs, without causing excessive reduction of pressure or Reservoir energy.

‘Reasonable and Prudent Operator’ means a person undertaking a given task with that degree of skill, diligence, speed, prudence, and foresight that would reasonably and ordinarily be expected

⁹⁰ *Government of Kuwait v American Independent Oil Company (AMINOIL)*, Award of 24 May 1982, 66 International Law Reports (1982) 596.

⁹¹ *Ruler of Qatar v International Marine Oil Company* (1953) 20 ILR 535. This arbitration dealt with amounts due and owing to Qatar after the termination of the concession agreement, and not with the Good Oilfield Practice standard.

⁹² arts 12.1 and 19.1 of Qatari Model Exploration and Production Sharing Agreement (circa 1990s). This requirement is repeated in other provisions of the Qatari Model EPSA: ‘... on the basis of good oil field practices’ (art 4.4), ‘... obligations of an operator under good petroleum industry practice’ (art 12.1.1), ‘... measure all Crude Oil Net Production by a method customarily used according to good petroleum industry practices’ (art 17.4.1). There has been at least one unreported arbitration that dealt with the imposition of these standards.

⁹³ arts 12.1, 19.1, 30, and 34.11 of Qatari Model EPSA.

⁹⁴ art 3 of Decree-Law No 4 of 1977 on Preserving Petroleum Resources.

from a skilled and experienced operator engaged in the same type of undertaking in accordance with Industry Best Practices under the same or similar circumstances and conditions, including environmental, operational, conservation of hydrocarbons, health and safety standards.⁹⁵

As a result, in Qatar, its contractors/operators were initially required to meet Good Oilfield Practice, then both Good and Best Practice standards and finally Industry Best Practices pursuant to contractual and statutory obligations. This approach has been repeated in a number of jurisdictions.

Yemen

The Yemen PSA uses a variety of terms sprinkled throughout the agreement, which are equivalent to the standard of Good Oilfield Practice, such as:

- sound and accepted Petroleum Industry production practices;
- Good Petroleum Industry practices;
- accepted Petroleum Industry practices;
- generally accepted methods in the Petroleum Industry;
- accepted accounting practices generally used in the Petroleum Industry; and
- generally accepted and recognized accounting principles consistent with modern Petroleum Industry practices.⁹⁶

The Yemen PSA does not define any of these terms. The standard of a Reasonably Prudent Operator, which is equivalent to the above GOP standard, was addressed in the *Hunt Oil v Yemen* case discussed below. There were a number of other arbitrations arising from Yemeni PSAs that included Good Oilfield Practice claims. A leading case in this area is the *Yemen v Nexen* arbitration, which is also discussed below.

Egypt

The Egyptian Production Sharing Agreement provides for the following standards:

CONTRACTOR shall be responsible for the preparation and performance of the Exploration Work Program which shall be implemented in a workmanlike manner and consistent with good industry practices.

Development operations shall upon the issuance of a Development Lease granted following a Commercial Oil Discovery, be started promptly by Operating Company and be conducted in accordance with good oil field practices and accepted petroleum engineering principles, until the field is considered to be fully developed ...⁹⁷

Morocco

The standard required of the Operator under the Moroccan PSA is the following:

In order to conduct Joint Operations diligently, the Operator shall take all necessary steps in conformity with decisions of the Management Committee, which role is defined in Clause 5 of this Contract, with the laws and regulations of Morocco that are in force and in conformity with sound practices generally followed by the international petroleum industry and within the limits fixed by the programs and budgets examined and/or approved.⁹⁸

⁹⁵ art 1.1 of 2016 Qatari Model Development and Fiscal Agreement.

⁹⁶ arts 1.7, 1.8, 3.6, 4.4, 7.6, 8.3, 11.1, 13.1, 17.3, 19, 21(a)S, 27.2(a), 28.2(b)iii, and Annex F, 1.3.1 of Yemen Model PSA.

⁹⁷ art III(e) and IV(e) of Egyptian Model Concession Agreement for Petroleum Exploration and Exploitation.

⁹⁸ art 3.1.1 of the 2009 Morocco Model Association Contract.

Nigeria

Nigeria's oil and gas regime provides for the enforcement of international standards of Good Oilfield Practice, both in its petroleum regulations and its contractual arrangements such as the Traditional Joint Venture (TJV) and the Production Sharing Contract (PSC) currently in common usage in the Nigerian industry.

From a regulatory perspective, the validity, conversion, renewal or revocation of petroleum licences and leases under the Nigerian Petroleum Industry Act 2021 and supporting regulations are predicated on the licensee or lessee conducting operations in a proper and workmanlike manner in accordance with relevant regulations, methods and practices accepted by the regulator. There is no express provision that a breach of requirements set out in a development programme after the licensee has had a reasonable period to effect such development shall be grounds for revocation of the lease. Nevertheless, there are general provisions relating to revocation for factors including failure to conduct operations continuously in a vigorous and business-like manner and in accordance with Good Oilfield Practice.

On the contractual side, the TJV arrangement, which has been the pre-eminent contractual device in Nigeria between the Nigerian National Petroleum Corporation (NNPC) and IOCs since its inception in 1990/91, contains a JOA representing a basic consortium agreement between the NNPC and IOCs as co-venturers. The TJV JOA forms the basis of the JOAs generally used in the Nigerian oil and gas sector. This JOA contains clauses that provide for the conduct by the operator of all joint operations in a 'good and workmanlike manner in accordance with good industry practice'. The expression 'good industry practice' in this context is akin to the concept of Good Oilfield Practice. It includes various factors, particularly the compliance with the upstream petroleum safety regulations and the various environmental statutes and regulations governing the exploration and production of oil and gas.

The Nigerian PSC terms, which were negotiated and executed between 2001 and 2002 for deep offshore acreages, requires Contractors to prepare and carry out their operations in accordance with internationally acceptable petroleum industry practices and standards:

In accordance with this Contract, the CONTRACTOR shall ... Prepare Work Programmes and Budgets and carry out approved Work Programmes in accordance with internationally acceptable petroleum industry practices and standards with the objective of avoiding waste and obtaining maximum ultimate recovery of Crude Oil at minimum costs ...⁹⁹

This PSC proforma also forms the basis for widespread PSC arrangements reached between indigenous licensees and IOCs under indigenous licensing regimes such as the marginal fields licensing.

Angola

The Angolan PSC requires the Contractor Group, through the Operator, to meet the following norms and standards:

With due observance of legal and contractual provisions and subject to the decisions of the Operating Committee, Contractor Group, through the Operator, shall act in the common interest of the Parties and shall undertake the execution of the work inherent in Petroleum Operations in accordance with professional norms and standards which are generally accepted in the international petroleum industry.

Contractor Group, through the Operator, shall carry out the work inherent in Petroleum Operations in an efficient, diligent and conscientious manner and shall execute the Work Programs and Budgets under the best economic and technical conditions, and in accordance with professional norms and standards which are generally accepted in the international petroleum industry.¹⁰⁰

⁹⁹ art 8.1(c) of Nigerian Production Sharing Contract.

¹⁰⁰ 2008 Angolan Model Production Sharing Contract.

Mexico

The Mexican License Contract contains the following requirement for Industry Best Practices:

The purpose of this License Contract is to provide for the carrying out of the Petroleum Activities by the Contractor within the Contract Area, at its sole cost and risk, in accordance with Applicable Laws, Industry Best Practices and the terms and conditions of this Contract. Industry Best Practices shall mean the practices, methods, standards and procedures generally accepted and followed by diligent, expert and prudent operators with experience in Exploration, Appraisal, Development, Extraction of Hydrocarbons and Abandonment which, in the exercise of reasonable judgment and in light of the facts known at the time a decision is made, would be expected to obtain the anticipated results and increase the economic benefits of the Extraction of Hydrocarbons inside the Contract Area, maximizing the recovery factor of Hydrocarbons throughout the life of the reservoirs, without causing an excessive reduction of pressure or energy.¹⁰¹

Venezuela

The Venezuelan Concession Agreement defines the GOP standard as follows:

International Oil Industry Standards shall mean such practices and procedures employed generally in the petroleum industry throughout the work by prudent operators under conditions and circumstances similar to those experienced in connection with the relevant aspect or aspects of the Project.¹⁰²

Trinidad and Tobago

The Model Production Sharing Contract used in Trinidad and Tobago requires the following standard of a Contractor:

Contractor shall conduct Petroleum Operations in a continuous, diligent, and workmanlike manner ... [using] sound and current international Petroleum industry practices and environmental standards applicable from time to time in similar circumstances, all designed to achieve efficient and safe Exploration and Production of Petroleum and to maximize the recovery of Petroleum ...¹⁰³

Brazil

Brazil through its National Petroleum Agency (ANP) requires operators to adopt best practices in the conduct of their operations. It has stated this in its Petroleum Law, Pre-Salt Law and its various E&P contracts. This requirement has gone through a number of iterations, starting with the concession agreements ANP awarded solely to Petrobras, Brazil's NOC, in the 1990s:

Diligence in Conducting Operations: The Concessionaire will plan, prepare, execute and control the Operations diligently, efficiently and equivalently, in accordance with the best practices of the Petroleum Industry, always respecting the provisions of this Contract and laws, regulations and other standards in force, including those about operations, issued or that will be issued by the ANP, and not carrying out any act that constitutes or could constitute an infraction of the economic order.¹⁰⁴

¹⁰¹ 2015 Mexico Model License Contract for the Extraction of Hydrocarbons.

¹⁰² 1995 Venezuela Model Concession Agreement.

¹⁰³ Trinidad and Tobago Model Production Sharing Contract.

¹⁰⁴ art 13.2 in Concession Contract for Exploration, Development and Production of Oil and Natural Gas celebrated between AGÊNCIA NACIONAL DO PETRÓLEO—ANP and PETRÓLEO BRASILEIRO S.A.—PETROBRÁS.

Article 1.2.24 of the Concession Agreement for the Exploration, Development and Production of Oil and Natural Gas used in the 2008 Brazil 10th Round defined 'Best Practices of the Oil Industry' as:

Best Practices of the Oil Industry means the practices and procedures generally adopted in the oil industry worldwide by prudent and diligent Operators under conditions and circumstances similar to those experienced in connection with relevant aspect or aspects of the Operations aiming mainly at ensuring: the conservation of the Oil and Gas resources, which implies the use of adequate methodologies and processes to maximize the recovery of hydrocarbons in a technically and economically sustainable way, with the corresponding control of the decline in the deposits, and to minimize losses at the surface;

- a) the operational safety, which imposes the use of methodologies and processes which ensure the occupational safety and the prevention of operational accidents;
- b) the preservation of the environment and the respect for the populations, which imposes the adoption of technologies and procedures associated to the prevention and relief of environmental damage, as well as the environmental control and monitoring of the operations of exploration and production of Oil and Gas.

The most recent definition of 'Petroleum Industry Best Practices' used in the concession contract for the 4th Cycle of the Standing Offer states the following:

Petroleum Industry Best Practices: the best and safest procedures and technologies available in the Petroleum and Natural Gas Industry and Natural Gas Industry worldwide, which allow: (i) guaranteeing the operational safety of the preserving human life, physical integrity and health; (ii) preserving the environment and protecting the environment and protect adjacent communities; (iii) avoid or reduce as far as possible the risks of oil (iii) avoid or reduce as much as possible the risk of leaks of oil, natural gas, by-products and other chemical products that may be harmful to the environment; (iv) the conservation of oil and gas resources, which implies the use of methods and processes to maximize the recovery of hydrocarbons in a technical recovery of hydrocarbons in a technically, economically and environmentally sustainable manner, with control of the decline in reserves, and minimizing losses on the surface (v) minimizing the consumption of natural resources in Operations. To ensure Best Practices in the Petroleum Industry, Concessionaires must take the rules issued by the ANP and other Brazilian public bodies as a starting point, incorporating technical standards and recommendations from internationally recognized petroleum industry organizations and associations, whenever such measures increase the chances of achieving the objectives listed above.¹⁰⁵

As of July 2024, a new definition for 'Petroleum Industry Best Practices' is being considered through a public consultation process. It is to be used in concession contracts for exploration blocks with marginal accumulations and reads as follows:

Petroleum Industry Best Practices: the best and safest procedures, technical standards, recommendations and technologies drawn up by standardizing institutions, bodies and associations in the Petroleum and Natural Gas Industry worldwide, which stand out among those generally accepted, adopted under similar conditions and circumstances, and which enable: (i) guarantee the operational safety of facilities, preserving life, physical integrity and human health; (ii) preserve the environment and protect affected communities; (iii) avoid or reduce as far as possible the risks of leaks of Oil, Natural Gas, derivatives and other chemical products that may

¹⁰⁵ <https://www.gov.br/anp/pt-br/rodadas-anp/oferta-permanente/opc/4o-ciclo-oferta-permanente-concessao/edital>. Website citations in this article were last accessed on 8 July 2024.

be harmful to the environment; (iv) the conservation of oil and gas resources, which implies the use of appropriate methods and processes to maximize the recovery of hydrocarbons in a technically, economically and environmentally sustainable manner, with the corresponding control of the decline of reserves, and the minimization of losses on the surface, avoiding or reducing; (v) minimizing the consumption of natural resources in Operations; (vi) avoiding or reducing greenhouse gas emissions as much as possible.¹⁰⁶

In addition, these Brazilian Concession Agreements require the Concessionaire to conduct its operations in accordance with applicable Brazilian legislation and regulations such as ANP Resolution No 845 dated 14 June 2021 for the development of a Commercial Discovery.

Indonesia

There is no Indonesian law that expressly requires Good Oilfield Practice to be applied to oil and gas operations in the country. However, there are several regulations that refer to ‘good engineering principles’ with sanctions for failure to conform with the regulations. These regulations do not provide a clear definition of what that exactly means. Old Dutch laws remain as guidance in Indonesia after Independence in 1945 and may provide some assistance in interpreting these regulatory requirements.

In 1997, the Minister of Energy and Mining issued a Regulation on Safety in Petroleum Mining, which has been amended several times. It is now known as Ministerial Regulation No 32/2021 (MMR 32/2021). Article 1, number 7 of that regulation provides the following:

Technical Inspection is an activity carried out directly including document inspection, physical inspection, and testing of equipment and/or installations referring to the provisions of laws and regulations, standards and good engineering principles.

A related regulation, Minister of Mining Regulation No 26/2018 (MMR 26/2018), covers coal and mineral mining. It deals with ‘good mining principles’. Articles 3(1) and (2) of MMR 26/2018 provide:

- 1) Holders of Exploration IUP, Exploration IUPK, Production Operation IUP, and Production Operation IUPK at each stage of Mining Business activities are required to implement good mining principles.
- 2) Good mining principles as intended in paragraph (1) include:
 - a) Good mining engineering principles; and
 - b) Mining business governance.

The Indonesian Model PSC states that the Contractor shall be responsible for the execution of the Work Program, which shall be implemented in ‘a workmanlike manner and by appropriate scientific methods. and comply with all applicable safety and environmental laws and regulations’, which would equate to a Good Oilfield Practice standard. The Model PSC does not refer to a specific law or regulation, although the earliest ones did refer to the Dutch Mining Law.

Timor-Leste

The Timor-Leste Model PSA provides for Good Oilfield Practice in Petroleum Operations:

Good Oil Field Practice means such practices and procedures employed in the petroleum industry worldwide by prudent and diligent operators under conditions and circumstances similar to those experienced in connection with the relevant aspect or aspects of the Petroleum Operations, principally aimed at guaranteeing: conservation of petroleum and gas resources,

¹⁰⁶ <https://www.gov.br/anp/pt-br/rodadas-anp/oferta-permanente/opc/consulta-publica-audiencia-publica>

which implies the utilization of adequate methods and processes to maximize the recovery of hydrocarbons in a technically and economically sustainable manner, with a corresponding control of reserves decline, and to minimize losses at the surface;

- a) operational safety, which entails the use of methods and processes that promote occupational security and the prevention of accidents;
- b) environmental protection, that calls for the adoption of methods and processes which minimize the impact of the Petroleum Operations on the environment.¹⁰⁷

Cambodia

The standards and practices required under the Cambodian PSC are:

Good Petroleum Industry Practices means the standards and practices, and exercise of that degree of skill, prudence and foresight that would reasonably be expected of persons carrying out international petroleum operations, and adherence to generally accepted standards of the international petroleum industry, including sound environmental provisions.¹⁰⁸

India

The Indian Ministry of Petroleum and Natural Gas and its Oil & Natural Gas Corporation (ONGC) use the term ‘Good International Petroleum Industry Practices’ or ‘GIPIP’ in their PSCs, which requires the Contractor to conduct its Petroleum Operations as follows:

Contractor shall conduct all Petroleum Operations within the Contract Area diligently, expeditiously, efficiently and in a safe and workmanlike manner, in accordance with good petroleum industry practice pursuant to the approved Work Programme ... [and] ensure that all equipment, materials, supplies, plant and installations used by the Contractor, the Operator, and Sub-contractors comply with generally accepted standards in the petroleum industry ...

... the development plan is to be in accordance with ... sound engineering, economic, safety and environmental principles recognized in the generally accepted GIPIP.¹⁰⁹

Article 1.51 of the Indian PSC provides that: ‘What constitutes the GIPIP in a particular circumstance shall be agreed to by the Management Committee and failing which the same shall be decided by the Directorate General of Hydrocarbons or its assigns or successor and its decision shall be binding.’

In 2016, the Directorate General of Hydrocarbons in the Ministry of Petroleum and Natural Gas issued a 450-page booklet on Good International Petroleum Industry Practices (GIPIP). These guidelines were an attempt by the Ministry to codify good international petroleum industry practices that were relevant to the Indian petroleum industry and to establish high standards in its exploration and production operations. The Ministry was of the view that such guidelines would help Contractors as well as the Government to remove ambiguities, which would improve the administration of their PSCs. This booklet stated the following:

In the absence of codification of such guidelines, enforcement and adherence to GIPIP is fraught with subjectivity and prone to unnecessary disputes. Such guidelines will render objectivity to the decisions of the regulator, operator and other stakeholders ...

The objective of this work is to provide guidelines for practices that are considered technically and contractually responsible for different aspects of E&P. The guidelines are generally accepted

¹⁰⁷ 2005 Timor-Leste Model Production Sharing Contract.

¹⁰⁸ 2002 Cambodian PSC.

¹⁰⁹ arts 7.3(b) and 10.7(c) of Indian Model Production Sharing Contract.

practices that are used worldwide. The best and most applicable guideline for a particular scenario will be based on specific field and reservoir conditions.

This report provides a review of good international petroleum industry practices in the following areas:

- 1) Exploration;
- 2) Discovery;
- 3) Appraisal;
- 4) Declaration of Commerciality;
- 5) Field Development;
- 6) Production;
- 7) Testing and Analysis—Reservoir and Production;
- 8) Health, Safety and Environment (HSE)/Abandonment;
- 9) Procurement Procedure; and
- 10) Other Areas.¹¹⁰

Bangladesh

The Bangladeshi Production Sharing Contract provides that:

Contractor shall in addition to its obligations under other provisions of the Contract be obliged to ... while conducting Petroleum Operations, in a diligent, conscientious and workmanlike manner ... take necessary measures in accordance with generally accepted standards of the International Petroleum Industry for conservation, safety of life, property, crops, fishing and fisheries, navigation, protection of environment, prevention of pollution and safety and health of personnel ...¹¹¹

Kazakhstan

The Production Sharing Agreement for the North Caspian Sea defines International Good Oil Field Practice as:

[A]ll those uses and practices that are at the time in question then generally accepted in the international petroleum industry as good, safe, economical and efficient in exploring for, developing, producing, processing and transporting Petroleum.¹¹²

There have been reports¹¹³ that Kazakhstan initiated arbitration proceedings against the Contractors operating two major oil fields in the country, which amongst other claims includes the above-defined standard of Good Oilfield Practice. No details on these arbitrations or their resolution are in the public domain.

International arbitrations on the GOP standard

There are very few published international cases that have dealt with the Good Oilfield Practice standard:

Internationally, [Good Oilfield Practice] does not have a well-developed body of case law to help define its contours.¹¹⁴

¹¹⁰ Guidelines on *Good International Petroleum Industry Practices* (GIPIP) 15–17.

¹¹¹ Bangladeshi 1994 PSC.

¹¹² Kazakhstan PSA cited in Peter D Cameron and Michael C Stanley, *Oil, Gas, and Mining: A Sourcebook for Understanding the Extractive Industries* (World Bank Group 2017) 294.

¹¹³ Vladislav Djanic, 'Kazakhstan Reportedly Initiates Arbitration Proceedings against International Oil Companies over Oilfield Operation Dispute' IA Reporter, 5 April 2023.

¹¹⁴ Anderson and others (n 7) 673.

[B]ecause the application of such standards are applied in private forums such as arbitration and expert determination, there is a dearth of legal authority outlining the parameters of accepted international petroleum industry practice and other similar standards.¹¹⁵

There are three published international arbitration cases, however, that dealt with the application of the Good Oilfield Practice standard in the conduct of petroleum operations. They all arose from petroleum operations in the Middle East. The GOP standards were not considered the primary claims in the first two disputes. However, they do provide some insight into how such standards could be applied in international operations.

The first one is the *Aminoil v Kuwait* case¹¹⁶ issued in 1982. Interestingly, both sides claimed they won the case. And they were probably correct in their respective assessments. The Government of Kuwait got to keep the concession it nationalized, collected the royalties and taxes it thought were due, and received reimbursement for Aminoil's liabilities to third parties at the time of taking over the concession. All of these awarded amounts were equivalent to what the Government had claimed. Aminoil conceded in negotiating a new arbitration agreement for this case that it did not want its concession back. It simply wanted adequate compensation, which the tribunal provided to it, as evidenced by the declaration of victory by its lead counsel.¹¹⁷

The discussion of the Good Oilfield Practice claim was reduced to a footnote in an article written later by the lead counsel for the Government of Kuwait.¹¹⁸ So the issue of whether Aminoil, as operator of the concession, conducted its operations in accordance with the Good Oilfield Practice standard was relatively minor in the large scheme of things.

Nevertheless, the Government claimed damages from Aminoil for its failure to operate the oil fields and the oil terminal efficiently in accordance with 'good oil-field practice', resulting in 'lost oil' and increased expenditures.¹¹⁹ This involved two areas of operations: (i) surface installations that included a refinery and (ii) the oilfield and associated wells.

The Government's Good Oilfield Practice claim was based on an allegation according to which Aminoil was said to have failed in respect of certain usages applicable to the technological operation of the undertaking. The Tribunal characterized these usages as a body of rules that may be called in a general way the rules of 'good oil-field practice'.

The Tribunal stated that these rules could either emanate from the legislative or regulatory power of the State or be embodied in the Concession contract. In this case, the Tribunal broke them down as:

Regulatory: Kuwait introduced Law No. 19 on the Conservation of Petroleum Resources and its Regulations in 1974, which were to be applied in 1976 on a trial basis for 6 months. The Tribunal did not consider this law and its regulations in its analysis because of their lateness.

Contractual: The Tribunal described Aminoil's contractual obligations as "*professional standards and practices traditionally of general acceptance*". They arose from the original concession and subsequent amendments (Article 2(C) of 1948; Article 8, paragraphs (3) and (6) of 1961; and Article 6 of the First Part of the First Annex to the July 1973 Agreement). The standards used were: "*in workmanlike manner*", "*appropriate scientific methods*", "*all reasonable measures*", "*according to good oil-field practice*", etc.

¹¹⁵ King & Spalding, *Upstream Government Petroleum Contracts* (Juris 2017) 151, footnote 1.

¹¹⁶ *Government of Kuwait v American Independent Oil Company (AMINOIL)*, Award of 24 May 1982, 66 International Law Reports 518 (1982), and IX Yearbook Commercial Arbitration 71 (1984). Also see n 90.

¹¹⁷ Interview with William L Owen, former Aramco General Counsel in *American Perspectives of Aramco, The Saudi-Arabian Oil Producing Company, 1930s to 1980s* (University of California 1995) 338. Bill Owen was the lead counsel for Aminoil in this arbitration after his retirement from Aramco.

¹¹⁸ Redfern (n 89) 109, footnote 115. The discussion of the good oilfield practice claim was reduced to the following footnote: 'In addition, the tribunal disallowed the Government's claim based on alleged 'bad oil-field practice' on the part of Aminoil, so that the company succeeded in this part of its case also.' Alan Redfern and Martin Hunter, who were with the Freshfields law firm at the time, were lead counsel for the Government of Kuwait.

¹¹⁹ *Kuwait v Aminoil* (n 116) 596–99.

In addition, Article 36(C) of the 1973 Draft Agreement, which was never formally ratified by both parties, provided for the following:

The Company shall at all times conduct its operations in the Concession Area in a proper and workmanlike manner and by appropriate scientific methods in accordance with good oilfield practice and shall take all reasonable measures to prevent fire and to prevent the ingress of water into petroleum-bearing strata and to prevent the pollution of the sea and shall close all unproductive holes drilled by it and subsequently abandoned.

The Tribunal first noted that the Kuwait authorities did not complain of failure on the part of Aminoil to carry out its operations during the whole period of the Concession. In addition, all its oil-field operations in the Neutral Zone between Kuwait and Saudi Arabia were carried on by agreement and in common with Getty Oil who had the Saudi concession in that zone, subject to the superintendence of Saudi Arabia. Aminoil's operations never gave rise to any criticism coming from Getty or the Saudi authorities. This raised a strong presumption that the conduct of Aminoil had been correct.

The Tribunal further observed that:

- The standards governing the practices which should prevail in an oilfield undertaking must inevitably possess a considerable element of flexibility; and it scarcely needs saying that they undergo an evolution in the light of scientific progress.
- Standards concerned with safety and the protection of human life have an absolute character.
- Standards for the exploitation, in the economically most rational way, of natural resources are flexible. Thus, expenditures that would be quite unjustified when the barrel of oil was worth little more than a dollar, become normal when it rises to 30 dollars.

The Tribunal then considered the two areas of operation that the Government claimed Aminoil had failed to operate in accordance with 'good oil-field practice'.

Surface Installations: This consisted of conduit pipes, reservoirs for stocking, refinery, and sundry other plants. The Government experts claimed that these installations were not in a fit state to function at the date of the takeover. In particular, they complained that one of the components of the refinery (the desulphurizer) worked unsatisfactorily in a refinery itself of inferior design. The Tribunal noted that one of the Government experts was the same person who had carried out the task of planning and executing the work on the component and plant concerned. They commented in considering his testimony that 'such objectivity in the giving of evidence would have been more convincing if it had not been at the expense of his former clients'.

The Tribunal noted that:

- The management of Aminoil was extremely anxious to keep its expenditures down to the minimum—thus the general look of the plant would not have given an impression of opulence—and also, as much as practicable, to defer putting important works in hand until a later date.
- But no quarrel can be picked with the Company for operating under a regime of some austerity when a similar restrictiveness was being forced upon it in respect of its own final profits.

The Tribunal was alluding to the multiple times that the Kuwait Government had unilaterally changed the fiscal regime under the concession and had taken more of the profit away from Aminoil.

Oilfield and wells: The Government alleged that because Aminoil had failed to upkeep the oilwell casings against corrosion and had delayed in repairing leaking wells, etc., they collectively caused a major deterioration in one of the oil reservoirs because of infiltration of external water with a high degree of salinity. These infiltrations had led to a faster deterioration of the wells and an increase in the costs of treating and refining the oil. It also resulted in the loss of a large volume of otherwise recoverable oil, along with considerable expenditure for the drilling of new wells to recover deposits cut off from the main reservoir by the abnormal level of the water.

The legal question posed by the Tribunal was whether, at the time of the alleged bad oilfield practices, these practices were such as to be inconsistent with the course that should have been followed by a skilled and circumspect operator. The Tribunal decided that this was not affirmatively established:

The most that might be allowable in the light of the technology of today, and of the present price of oil, would perhaps be to regret that some extra care was not taken over certain of the operations of more than twenty years ago. But this could in no way affect the fundamental finding that neither a departure from the standards applicable at that time, nor the nexus of cause and effect between the practices followed and the actual condition of the oil reservoir concerned, has been established.¹²⁰

As a result, the Tribunal determined that the Government's claim that Aminoil had failed to observe 'good oil-field practice' was not substantiated by the evidence, and thus did not award any damages for this claim.

The second case of note is *Hunt Oil v Yemen*.¹²¹ Hunt Oil and Exxon (joint venture partners in Block 18 in Yemen) initiated an ICC arbitration in 2005 against the Ministry of Oil and the Republic of Yemen arguing that the PSA was validly extended or in the alternative that the PSA had been extended on its old terms. They made a damages claim of USD 1.6 billion equating to the value of oil it would have been entitled to during the 5-year extension period.

In response, the government made counterclaims of USD 8 billion on the basis that the joint venture had:

- i) caused environmental damage to Block 18 that resulted from its operations;
- ii) breached its duty to act as a reasonably prudent operator;
- iii) failed to withhold and pay certain taxes in respect of its local and expatriate employees for several years while the PSA was in force;
- iv) recovered cost oil that it was not entitled to under the cost recovery mechanisms of the PSA;
- v) failed to implement the required 'Yemenization' of the local workforce by not training Yemenis to obtain technical and skilled positions; and
- vi) failed to pay invoices in respect of goods and services rendered prior to the expiry of the PSA, and sums due to its local employees upon termination of their employment.

The Yemeni Government's first two counterclaims involved Good Oilfield Practice. The Tribunal dismissed those two counterclaims, holding that they were either unproved or wrong on the facts of the case.

¹²⁰ *ibid* 599, para 133.

¹²¹ *Joint Venture (US) v State W*, ICC Case No. 14108, Final Award, August 2008, in *Yearbook Commercial Arbitration* 2011, Volume XXXVI, 135–201, paras 134–169, 18–21.

Environmental Damage: The pleaded environmental harm included alleged contamination of an aquifer. Yemen alleged that the Joint Venture had failed to conduct itself as a ‘good operator’ in light of industry practices and Yemen’s environmental law. It alleged that there was contamination in an aquifer because of the Joint Venture’s operation. Yemen was of the view that the Joint Venture breached standard practice and the Yemeni Environmental Protection law applicable by virtue of Article VIII(a) of the PSA:

Contractor shall be bound by the laws of Yemen and regulations issued for the implementation thereof, including the regulations for the safe and efficient performance of operations carried out for the execution of this Agreement and for the conservation of the resources of Yemen, provided that no such laws, regulations, modification or interpretation thereof shall be contrary to or inconsistent with the provisions of this Agreement.

Yemen alleged that the Joint Venture should have acted as a good operator and should have studied the possible impacts of its operations on the aquifer, which it failed to do. Moreover, it should have carried out an environmental impact assessment as a protection safety for the environment at the Area.

Since in Yemen’s view ‘the evidence of contamination before the tribunal is incomplete’ but liability established, Yemen requested, as a remedy of the alleged contamination, the cost of an independent investigation of water and soil contamination at the Area site, amounting to a certain sum. Alternatively, it sought the appointment of an expert to carry out an assessment of water and soil contamination in the Area.

The Tribunal concluded that Yemen failed to establish that the Joint Venture, by its conduct, caused the alleged contamination. In fact, no liability and no damage were ever established by Yemen. It had failed to bring any evidence in this regard. The Tribunal determined that it was clear that Yemen’s allegation of contamination of the aquifer was not proved.

Yemen also failed to provide evidence that the Joint Venture’s manner of operating was a source of contamination and that it caused any damage to Yemen. No evidence of any impact water and no evidence of losses that could have affected that water was produced to the Tribunal. Further, the report by Yemen’s experts even noted that the Joint Venture’s manner of operating was a normal practice.

As far as the obligation to act as a good operator was concerned, the Tribunal did not see how the fact that the Joint Venture did not, allegedly, study the possible impacts of its operations on the aquifer, could be a source of liability for violating the good relevant practice and breaching Yemen’s Environmental Protection Law, when in fact no contamination of the aquifer had been established.

Consequently, on the basis of the specific allegations made and the materials submitted in the proceedings, the Tribunal found that no breach of contract by the Joint Venture had been proven by Yemen and no liability established. In fact, the claim was not crystallized and its consequences not identified. This was not even denied by Yemen, which conceded that further investigation had to be undertaken. The Tribunal was not provided with any element that would justify that the cost of an independent investigation be paid by the Joint Venture. Yemen’s counterclaim to that effect was therefore dismissed.

Reasonably Prudent Operator: Yemen also claimed that the Joint Venture had not been a ‘reasonably prudent operator’ in relation to ‘area management’, thus causing lost production. The Tribunal concluded that Yemen did not sufficiently justify this counterclaim.

First, Yemen did not define with sufficient clarity the standards and requirements of a reasonably good operator, which in its view the Joint Venture breached, bearing in mind that such standards and requirements were actually not defined within the PSA.

Yemen instead merely indicated its expectations as to the method that it would have liked the Joint Venture to follow in order for the production of oil to increase. When referring to a reasonably prudent operator, Yemen had in fact in mind the best possible operator. As noted by the

Tribunal in citing the Joint Venture's expert, 'to be reasonable, an operator need not to be perfect. While with hindsight it may be easy to second guess a decision, the applicable standard requires an evaluation of the decision within the context of what was known at the time, judging how a reasonably prudent operator would have acted under the same or similar circumstances.'

Thus, Yemen could not allege that the Joint Venture breached its obligations to act as a reasonably prudent operator, as it was objecting to the fact that the Joint Venture did not obtain the best results in terms of production.

Yemen did not prove that the Joint Venture's choices were deliberately wrong and that it breached its obligations to (i) use suitable up-to-date equipment, machinery and methods; (ii) conduct operations in accordance with good relevant practices; and (iii) take all proper measures to prevent loss or waste of the product, in accordance with Articles III(b), IV(b), and XI(a) of the PSA. Instead, the Joint Venture strongly evidenced that it acted in both parties' interests and that it took all of its decisions in accordance with what it thought were good and prudent practice.

Additionally, Yemen did not prove that the actions taken by the Joint Venture presented any risks to the production and failed to evidence that these actions caused it harm. It failed to demonstrate convincingly that the Joint Venture's actions led to loss product and that its suggested improvements would have prevented such loss.

Yemen never indicated to the Joint Venture that Hunt Oil was not acting as a good and prudent operator and never suggested a change in its way of proceeding, except for one certain change. However, when the Joint Venture proposed such change, Yemen did not accept the Joint Venture's proposal in this regard.

Consequently, the Tribunal found that it was not demonstrated by Yemen that the Joint Venture acted in an imprudent manner and dismissed this counterclaim. Yemen therefore failed on all counts because first, it was not able to define the applicable Good Oilfield Practice standard, and secondly, it failed to bring any evidence to prove its counterclaims.

Yemen initiated a series of arbitrations against other contractors under their PSAs that included Good Oilfield Practice claims, most of which were apparently unsuccessful.¹²² One of those arbitration awards, the *Yemen v Nexen* case,¹²³ is in the public domain. It involved the termination and handover of Block 14 (the Masila Block) to the Yemen government by the operator Canadian Nexen Petroleum Yemen (CNPY) on behalf of itself and its co-venturers, Occidental and Consolidated Contractors.

In contrast to the two prior arbitrations described above, Good Oilfield Practice was one of the key issues disputed in this arbitration. The Claimant, Yemen, alleged that 'all facilities and equipment, including the wells, waste management facilities, and the other items which are the subject of the facilities and equipment claims, should have been transferred over to it in good working order, in a condition that complied with Good Oilfield Practice and in a condition safe for the environment in the Block'.¹²⁴

The tribunal described Good Oilfield Practice in the following terms:

- The Parties' experts agree that Good Oilfield Practice 'is an expression widely used in the petroleum industry to refer to good practice'.
- The Parties' experts further agree that the term does not appear in the PSA. However, they agree that the PSA referred to several synonyms of Good Oilfield Practice, such as *inter alia*

¹²² See: A Timothy Martin, *Oil & Gas Disputes in the MENA Region* (n 84) 4.14, 229–44.

¹²³ *Republic of Yemen and Yemen Ministry of Oil and Minerals v. Canadian Nexen Petroleum (China National Offshore Oil Corp), Consolidated Contractors (Oil & Gas) Company SAL, Occidental Peninsula, LLC and Occidental Peninsula II, Inc*, ICC Case No 19869/MCP/DDA. The awards from this arbitration were made public as a result of a Consent Judgment of the United States District Court for the District of Delaware dated 20 Sept 2023. See Jus Mundi for copies of those awards at: <https://jusmundi.com/en/document/decision/en-republic-of-yemen-and-yemen-ministry-of-oil-and-minerals-v-canadian-nexen-petroleum-china-national-offshore-oil-corp-consolidated-contractors-oil-gas-company-s-a-l-occidental-peninsula-llc-and-occidental-peninsula-ii-inc-final-award-tuesday-4th-february-2020>

¹²⁴ *ibid* Final Award, para 192.

‘generally accepted standards of the petroleum industry’. The Parties’ experts agree that the PSA did require the Respondents to comply with Good Oilfield Practice.

- Article 8.1 of the PSA provides an obligation to conduct petroleum operations according to Good Oilfield Practice as follows: ‘CONTRACTOR shall conduct Petroleum Operations diligently in accordance with rules as may be prescribed and in accordance with generally accepted standards of the petroleum industry’.
- The Parties’ experts agree that Good Oilfield Practice was defined as those practices which are generally accepted to be good, safe and efficient in carrying out oilfield operations.¹²⁵

The tribunal determined that the Good Oilfield Practice standard was a continuing obligation to keep the facilities and equipment in good working order throughout the term of the PSA up to its expiry date. The Parties’ experts agreed that good working order meant that equipment or a system should be working safely, reliably and according to its original design specification, and that there should be a reasonable expectation that it will not fail imminently. It is the actual condition of the equipment that is important to determine whether it is in good working order. Good Oilfield Practice recognized that the contractor/operator had an obligation to transfer and hand-over the PSA assets to the government in good working order, save ordinary wear and tear. The tribunal relied upon the Claimant’s expert statement that: ‘wear and tear represents the deterioration one would expect in everyday normal use in a defined environment (e.g. in an enclosure, or fully exposed to weather, etc.)’.¹²⁶

The majority of the tribunal dismissed most of Yemen’s claims, which totaled approximately USD 800 million, because: (i) a number of the claims were time barred, (ii) the dismantlement, abandonment and reclamation claims had been settled and no longer claimable as a result of a Settlement Agreement entered into by the parties in 1996, and (iii) the Claimant had failed to prove that the Respondents were in breach of their Good Oilfield Practice obligations with regards to certain operational and financial matters. The tribunal eventually awarded Yemen USD 8.8 million and GBP 951K on its successful claims, which were offset by Yemen having to pay its own legal costs, its share of the arbitration costs and part of the Respondents’ legal costs (which was in the amount of USD 6 million).

These arbitrations indicate that tribunals and courts may consider the following factors in determining the application of Good Oilfield Practice in international petroleum operations:

- i) GOP can be required both by contract and by statute, either under host government granting instruments or legislation or both;
- ii) GOP evolves with scientific progress;
- iii) The GOP standard is a continuing obligation to keep facilities and equipment in good working order throughout the term of a contract up to its expiry date;
- iv) Good working order means that equipment should be working safely, reliably and according to its original design specification, that there should be a reasonable expectation that it will not fail imminently, and that it is the actual condition of the equipment that is important to determine whether it is in good working order;
- v) There is an obligation to transfer and handover assets at the expiry of a contract in good working order, save ordinary wear and tear, which represents the deterioration one would expect in everyday normal use in a defined environment;
- vi) There needs to be clarity on the specific GOP standard to apply, in particular when they are not defined in the parties’ agreement;
- vii) The GOP standard to apply is the one known at the time of the incident; and
- viii) The GOP standard needs to be substantiated with the evidence.

¹²⁵ *ibid* paras 156–59.

¹²⁶ *ibid*, paras 272, 273, 275, 816, and 1328.

STANDARDS AND SOURCES FOR GOOD OILFIELD PRACTICE

Legal basis for Good Oilfield Practice

Good Oilfield Practice has legal grounds for its application in oil and gas operations. A contractor or an operator is obligated to conduct its operations in accordance with Good Oilfield Practice either by contract or by applicable legislation, and sometimes both.¹²⁷

Contractual obligations can arise either from express terms in the parties' contract or by courts recognizing implied terms to fill gaps in the contract to reflect the parties' intentions. The latter situation is illustrated by the decisions of U.S. courts that have set the Prudent Operator Standard as described in the section on 'Prudent Operator Standard in US O&G leases'.

Laws, statutes, decrees, or regulations of the host government can also impose on the contractor/operator the obligation to conduct petroleum operations in accordance with Good Oilfield Practice. That is especially the case where the contractor/operator expressly agrees to abide by such laws in its contract.

Objective standard

Despite the challenge in defining exactly what it is, Good Oilfield Practice can be determined to a reasonable degree of certainty for a particular situation or activity. Indeed, 'a reasonable degree of clarity and/or guidance as to their meaning is essential for the viability and effectiveness of all legal arrangements, incorporating them, and all the players affected by these arrangements'.¹²⁸

In order to be effective, it must therefore be an objective standard, rather than a subjective standard, that is it is not determined based on the subjective beliefs of what either party considers to be Good Oilfield Practice, even when that party claims to be acting in good faith. The US courts have followed this line of reasoning in establishing the standard for the Reasonably Prudent Operator:

The Brewster court rejected the suggestion that the necessary degree of diligence should be determined subjectively by either party individually, even on a good faith basis ... This 'prudent operator standard' establishes an objective test similar to the reasonable person concept found in tort law.¹²⁹

These objective standards have been incorporated into the industry's practices and operations. Over the last half century, the international oil and gas industry has developed several thousand objective standards to determine Good Oilfield Practice.¹³⁰ Prior to that, courts and tribunals had to rely upon expert testimony alone to determine the RPO or GOP standard.

These standards have been developed in industry and technical organizations, which reflect consensus amongst hundreds of companies (examples of which are listed in this article's [Appendix](#)). They can provide guidance and direction on what particular standard to apply to a specific operation that is being assessed or disputed.

There may be disputes around operational, administrative, financial or accounting matters that are not purely technical in nature and which do not easily relate to the kinds of industry standards listed in this article's [Appendix](#). The court, tribunal or regulator must still, however, apply an objective standard in resolving any such dispute. It can do this by relying on 'customary industry practice' for the matter being disputed. Some of these practices can be found in the industry's model contracts, guidance notes and guidelines. Such customary industry practice can be helpful in interpreting an ambiguous provision or resolving a number of competing interpretations. This is not without difficulty, but is achievable with support from credible, unbiased and objective expert evidence.

¹²⁷ *Kuwait v Aminoil* (n 116) para 122, 596.

¹²⁸ *Saidov* (n 6) 28.

¹²⁹ *Conine* (n 10) 31–32.

¹³⁰ *OGP: Regulators' Use of Standards*, Report No 426, 2010, 3.

As an example, English law allows the adducing of expert evidence on customary industry practice to determine how a contract should be construed. The English appeal court¹³¹ that allowed such evidence stated that it was necessary to identify ‘... a settled trade custom in the sense of an invariable, certain and notorious usage, such as could imply a term into a contract ...’, but also observed that ‘... it has been common practice ... to hear evidence of market practice, which does not amount to evidence of an alleged trade usage or custom, in order to assist the court with a full understanding of the factual background to the proper construction of a written contract’. This went with the caveat that ‘... if there is a disagreement on what a market practice is, then the judge must decide whether a particular market practice exists or not’.¹³²

The result of these developments is that determining Good Oilfield Practice under any oil and gas agreement is accomplished by looking at the fact matrix and language of that specific contract along with the particular event/circumstances in question, and by then applying the most relevant objective standard, which was developed by and widely used in the industry at the time of the event.

Negligence standard

Good Oilfield Practice is also a negligence standard, ie, if an operator fails to meet this standard, it is negligent. It is a minimum standard that is required of an operator in its oil and gas operations, health and safety management, and environmental compliance. If the Good Oilfield Practice standard is a contractual term, then a failure to meet that standard results in a breach of contract.

This is a widely understood and accepted principle in the oil and gas industry. Legal scholars have observed that both the ‘prudent operator standard’ under US oil and gas leases and the ‘good and workmanlike standard’ found in U.S. JOAs are negligence standards:

Both the prudent operator standard [under the oil and gas lease] and the standard of good and workmanlike performance [in a JOA] are based on a negligence standard. As a result, performance by the operator and the lessee is evaluated by the actions that would be taken by a reasonable person engaged in the same trade when confronted with the same circumstances. In that sense, the two standards are identical While both the good and workmanlike standard and the prudent operator standard require reasonable conduct by the performing party, they do not necessarily impose the same specific duties in every contract. The duties of the parties must be considered independently with respect to every type of transaction.¹³³

This principle has been applied by courts in both the USA and Canada when dealing with operators’ potential liability under industry JOAs, which arise from their conduct in oil and gas operations. In the USA, the *Abraxas* case¹³⁴ described the purpose of an exculpatory clause as: ‘Generally, exculpatory clauses in a contract are utilized to exempt one party from future liability for negligence’, which meant that an operator who failed to meet the Prudent Operator Standard was negligent and in breach of contract. In Canada, the court in the *Morrison Petroleum* case held that: “I equate negligence with not following good oilfield practices.”¹³⁵

These courts have in effect determined that Good Oilfield Practice is a negligence standard in industry JOAs. When the exculpatory clause does not apply and if an operator is found negligent, it is also in breach of contract. It would therefore be liable for the losses caused by its negligence and breach of contract on a 100 per cent basis for the particular matter, rather than just its participating interest in the JOA.

Sources of Good Oilfield Practice

Good Oilfield Practice comes from a number of sources within the industry. They can be found in:

¹³¹ *Thomas Crema v Cenkos Securities Plc* [2010] EWHC 461 (Comm); [2011] EWCA Civ 1444.

¹³² *ibid* Court of Appeal, paras 6, 43, and 46.

¹³³ *Conine* (n 10) 45–46.

¹³⁴ *Abraxas Petroleum Corp v Hornburg*, 20 SW 3d 741 (Tex App – El Paso 2000, no pet.).

¹³⁵ *Morrison Petroleum Ltd v Phoenix Canada Oil Co*, 1997, 198 AR 81 and 1998 ABQB 624, 108, para 96.

- The industry's agreements. A good indicator of operational standards can be found in the industry's model contracts, which reflect customary industry practice.
- Laws and regulations governing the industry in various jurisdictions.
- Industry manuals and guidance.
- Industry technical standards.
- Original Equipment Manufacturers' (OEM) operating and maintenance manuals.
- Companies' internal operating policies if they reflect industry standards.¹³⁶

Standards, which are developed by industry and technical organizations, reflect Good Oilfield Practice, and are routinely adopted and accepted by government regulators:

[A]ssociation codes tend to stimulate government response consistent with the codes because they represent consensus on the state of the art for environmental protection within an industrial sector.¹³⁷

The oil and gas industry, both at the domestic and international level, has developed a multitude of guidance and governance systems that reflect Good Oilfield Practice. Examples include:

Operating Management System Framework by OGP and IPIECA¹³⁸

Guidelines on Minimum Standards for HSE Governance in Joint Ventures by OGP and IPIECA¹³⁹

Sustainability Reporting Guidance for the Oil and Gas Industry by IPIECA¹⁴⁰

Industry Recommended Practices by Energy Safety Canada¹⁴¹

In addition, there are thousands of technical standards that have been developed by industry organizations, such as the American Petroleum Institute (API) and the International Oil & Gas Producers (OGP), and which government regulators rely upon, that address various technical aspects of petroleum operations in great detail:

[W]hat sources are available to define the [Good Oilfield Practice] standard of good practice? Industry-wide codes of conduct are one source that can provide a transnational minimum standard of conduct defining investors' obligations under [Good Oilfield Practice]. A multitude of industry guidelines and recommended practices exist, published by the American Petroleum Institute (API), the International Association of Oil & Gas Producers (OGP), the International Association of Drilling Contractors (IADC), national petroleum associations such as the Australian Petroleum Production & Exploration Association (APPEA), and many others.¹⁴²

The global oil and gas industry makes use of several thousand standards, plus an even greater number of company and project specifications. An investigation done by CEN in 1994 assisted by OGP (E&P Forum at the time) revealed about two thousand standards in use by a number of operators in Europe only.¹⁴³

¹³⁶ 'Today, borderless standards and practices can be found in both internal corporate policies and in transnational codes of conduct.' Anderson and others (n 7) 675.

¹³⁷ Michael S Baram, 'Multinational Corporations, Private Codes and Technology Transfer for Sustainable Development' (1994) 24 Environmental Law 33, 54, 53.

¹³⁸ <https://www.iogp.org/bookstore/product/operating-management-system-framework-for-controlling-risk-and-delivering-high-performance-in-the-oil-and-gas-industry/>

¹³⁹ <https://www.iogp.org/bookstore/product/guidelines-on-minimum-standards-for-hse-governance-in-joint-ventures/>

¹⁴⁰ <https://www.ipieca.org/our-work/sustainability/performance-reporting/sustainability-reporting-guidance/>

¹⁴¹ <https://www.energysafetycanada.com/Standards>

¹⁴² Anderson and others (n 7) 673–74.

¹⁴³ OGP (n 130) 3.

As an example, standards developed by API as of 2010 were referenced 225 times by government regulators around the world, including 49 API Manual of Petroleum Measurement standards. The International Standards Organization (ISO) provided 152 of the standards referenced by regulators at that time.¹⁴⁴ Those standards have proliferated since then. Some of the organizations that develop and issue standards widely used in the industry are listed in [Appendix](#) to this article.

Good Oilfield Practice can even be driven down to individual pieces of equipment by using the Original Equipment Manufacturer's (OEM) operating and maintenance manuals to determine whether an operator properly installed, operated, maintained, or replaced such equipment. They are considered Good Oilfield Practice for operating and maintaining specific pieces of equipment.

The development of these industry standards has potential legal implications:

The continuing development and use of standards and guidelines regarding best practices for the protection of the environment, drafted by IGOs such as UNEP [United Nations Environment Programme] and the ISO, often in conjunction with oil and gas industry bodies, has legal implications beyond the formal status of these documents as 'non-binding' guidelines. In both the international and national sphere, these non-legally binding guidelines have the potential to 'harden' into binding law.¹⁴⁵

These Good Oilfield Practice standards would apply to all oil and gas company operations, regardless of whether that particular company was a member of the industry organization that developed that standard:

If a practice or guideline is recognized as good international oilfield practice, it is irrelevant that a company is not a member of the organization that issued it. The practice has global reach under the [Good Oilfield Practice] standard.¹⁴⁶

GOOD OILFIELD PRACTICE IN THE INDUSTRY'S CONTRACTS

The Good Oilfield Practice standard is found throughout the oil and gas industry's contracts, whether they be between industry players or with governments.

Host government contracts

The Good Oilfield Practice standard, or an equivalent term(s), is found in petroleum granting instruments, such as PSCs,¹⁴⁷ around the world:

Virtually every [Host Government Petroleum Contract] provides that the IOC must perform petroleum operations in conformance with what amounts to generally prevailing international petroleum practices.¹⁴⁸

The description of Good Oilfield Practice in these Host Government Contracts ranges from no definition whatsoever to detailed manuals running hundreds of pages describing every conceivable oilfield operation:

¹⁴⁴ *ibid* 1.

¹⁴⁵ Wawryk (n 8) 427.

See also: Kit Armstrong, 'The Green Challenge—Managing Environmental Issues in Natural Resource Projects in Developing Countries' (1996) 42nd Rocky Mountain Mineral Law Institute 3-1, 3-54; William Prince and David Nelson, 'Developing an Environmental Model: Piecing Together the Growing Diversity of International Environmental Standards and Agendas Affecting Mining Companies' (1996) 7 Colorado Journal of International Environmental Law and Policy 247; George Pring, James Otto and Koh Naito, 'Trends in Environmental Law Affecting the Minerals Industry (Parts I & II)' (1999) 17 Journal of Energy & Natural Resources Law 151.

¹⁴⁶ Anderson and others (n 7) 675.

¹⁴⁷ The terms Production Sharing Contract (PSC), Production Sharing Agreement (PSA), and Exploration and Production Sharing Agreement (EPSA) are used interchangeably by governments in the industry.

¹⁴⁸ *AIPN Host Government Contract Handbook*, Vol 2, s 6, para 6.6.1.

HG contracts continue to be dominated by the requirement that IOCs use ‘good oilfield practice’ or a similar standard in conducting operations. ‘GIPIP’ is the acronym sometimes used to designate this dominant standard of ‘Good International Petroleum Industry Practices.’ So pervasive is the use of this GIPIP standard in HG contracts of many countries that India’s Directorate General of Hydrocarbons published a 450-page guide entitled Good International Petroleum Industry Practices (GIPIP) in 2016. The guide collects GIPIP standards for all phases of the industry, based on documents used in many countries of the world.¹⁴⁹

Sometimes a host government contract lists a few standards that the contractor/operator is required to use in conducting its operations. That is the case in the 1997 Kazakhstan PSC, which lists the following industry standards: Oil Industry International Exploration and Production Forum (now OGP) guidelines on health, safety and environmental management systems; International Association of Drilling Contractors (IADC) safety and environmental guidelines; International Association of Geophysical Contractors (IAGC) safety and environmental guidelines; and The American Conference of Government Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment.¹⁵⁰

There is wide usage of Good Oilfield Practice, or an equivalent term, in Host Government Contracts as shown in the examples from around the world in the section ‘Other international jurisdictions’. They are typically brief in description, but can be supported by a lengthy, detailed set of guidelines as found in India.

Industry contracts

The global petroleum industry has developed model contracts through its various business organizations that reflect general acceptance and usage of terms and standards in the industry, and thus indicate customary oilfield practices.¹⁵¹ This would include terms that provide for Good Oilfield Practice.

The primary source that tribunals and courts have relied upon to determine how oil and gas agreements are interpreted based upon ‘customary industry practice’ has been the industry’s model contracts. In North American jurisdictions, courts and tribunals turned to model contracts developed by industry associations, such as the American Association of Professional Landmen (AAPL) in the USA and the Canadian Association of Petroleum Landmen (CAPL)¹⁵² in Canada, to establish customary industry practice. In the North Sea, it has been Oil and Gas UK (OGUK).¹⁵³ In international disputes, tribunals referenced the model contracts developed and published by the Association of International Petroleum Negotiators (AIPN),¹⁵⁴ which they considered the main source for confirming business practices in the international oil and gas business.

Model JOAs require the operator to act in accordance with ‘good oilfield practice’, ‘good and prudent petroleum industry practice’, ‘in a good and workmanlike manner’, or some other variation. Under various industry model contracts from different jurisdictions, the operator is obligated to conduct joint operations:

... in a diligent, safe and efficient manner in accordance with good and prudent petroleum industry practices and field conservation principles generally followed by the international petroleum industry under similar circumstances.¹⁵⁵

¹⁴⁹ Anderson and others (n 7) 670.

¹⁵⁰ Kyla Tienhaara, ‘Environmental Aspects of Host Government Contracts in the Upstream Oil & Gas Sector’ (2010) 4 Oil, Gas & Energy Law Intelligence 6.

¹⁵¹ See the following articles for a detailed history of how these model contracts were developed in the industry:

A Timothy Martin, ‘Model Contracts: A Survey of the Global Petroleum Industry’ (2004) 22 Journal of Energy & Natural Resources Law 284.

A Timothy Martin and J Jay Park, ‘Global Petroleum Industry Model Contracts Revisited: Higher, Faster, Stronger’ (2010) 3 Journal of World Energy Law & Business 6.

¹⁵² The CAPL changed its name to the Canadian Association of Land and Energy Professionals.

¹⁵³ The OGUK changed its name to Offshore Energies UK.

¹⁵⁴ The AIPN changed its name to the Association of International Energy Negotiators (AIEN) to reflect its broader scope in the energy sector.

¹⁵⁵ AIPN JOA para 4.2.B.2 in the 2002, 2012, and 2023 versions. The 1990 and 1995 versions have a slightly different language.

... in a proper and workmanlike manner in accordance with good oilfield practice [which is defined as] the application of those methods and practices customarily used in good and prudent oil and gas field practice in the UKCS with that degree of diligence and prudence reasonably and ordinarily exercised by experienced operators engaged in the UKCS in a similar activity under similar circumstances and conditions.¹⁵⁶

... as a reasonably prudent operator, in a good and workmanlike manner, with due diligence and dispatch, in accordance with good oilfield practice, and in compliance with applicable law and regulation.¹⁵⁷

... diligently, in a good and workmanlike manner, in compliance with the Title Documents and the Regulations and in accordance with good oilfield practice, including prudent reservoir management and conservation principles.¹⁵⁸

There have been a number of published and unpublished arbitral awards¹⁵⁹ that dealt with the application of this standard in JOAs based on the AIPN Model JOA. Those disputes dealt with the conflict between the negligence standard in the Good Oilfield Practice clause and the gross negligence standard in the exculpatory clause found in Article 4.6 of the AIPN Model JOA. These were similar to the disputes experienced in US and Canadian JOAs, which were discussed earlier. They mostly dealt with the administrative or accounting responsibilities of the operator and whether the negligence standard applied to them.

Service contracts between an operator and its sub-contractors, which do the actual operational work such as drilling etc., typically contain a requirement for conducting operations to a Good Oilfield Practice standard. An example is found in the AIPN Model Offshore Drilling Contract, which is a template used in international petroleum operations:

Contractor represents, warrants, and undertakes that ... it will perform all Work at all times diligently, safely, and in a Good and Workmanlike Manner in accordance with accepted good international oilfield practices and sound engineering principles and in compliance with all Applicable Law;

Good and Workmanlike Manner means services performed in a manner deemed proficient by those with the special skill, knowledge, training, and experience concerning services similar in nature to the Work.¹⁶⁰

Similar standards and language appear in the industry's model onshore drilling contracts used in other jurisdictions, such as Canada:

Contractor agrees to perform its work pursuant to each Drilling Program with due care and diligence, in a good and workmanlike manner, in accordance with good drilling practices ...¹⁶¹

Examples can also be found in company-specific service contracts in other international jurisdictions. A clause from the service contracts used by Caltex, one of the biggest operators in Indonesia, provides:

Contractor shall perform the Services in a thorough, efficient and workmanlike manner with due diligence and care according to sound engineering principles and good petroleum industry practices applicable to the conditions and in conformity with applicable laws and regulations and

¹⁵⁶ 2016 OGUK JOA paras 6.2.2(a) and 1.1.

¹⁵⁷ 2015 AAPL JOA Form 610, para 5(A).

¹⁵⁸ 2015 CAPL JOA para 3.04.

¹⁵⁹ See: ICC-FA-2019-005 and ICC-FA-2021-056 in A Timothy Martin, John Gilbert and Peter Roberts, *Joint Venture Disputes in the Energy and Natural Resource Sectors* (OUP 2023) 281–84.

¹⁶⁰ art 7.1.1 in the 2020 AIPN International Model Offshore Drilling Contract. This model contract also provides for quality management standards based on ISO 9001:2015 and ISO 10005:2018.

¹⁶¹ 2001 Canadian Association of Petroleum Producers (CAPP) and Canadian Association of Oilwell Drilling Contractors (CAODC) Master Daywork Contract para 5.1.

Company's directives. Contractor shall follow and observe all Company regulations regarding safety, waste, and environmental matters as they now exist or may exist in the future.

The Good Oilfield Practice standard is therefore not only expected of an operator, but also of the contractors and service providers that deliver the goods and services needed to conduct petroleum operations.

These agreements do not typically expressly define what exactly is 'good and prudent petroleum industry practices', 'accepted good international oilfield practices', 'sound engineering principles', 'good petroleum industry practices', or other nomenclatures used. These would therefore have to be determined by reference to the kinds of industry standards described in this article.

Wide acceptance of standard

These sample Good Oilfield Practice clauses from both industry and government contracts show the wide acceptance of such a standard throughout the oil and gas industry. It is what is expected of contractors/operators in the conduct of their petroleum operations.

Even if Good Oilfield Practice (or an equivalent term) is not provided for or defined in an agreement, a court or tribunal would likely apply such a standard in assessing the minimum standard expected of an oil and gas operator in its conduct of operations, since that would be the standard widely accepted in the industry.

And even if it was not defined, an objective standard of the relevant industry practice can still be determined and applied to that fact matrix using standards developed by and widely used in the industry.

GOOD VERSUS BEST OILFIELD PRACTICES

Best oilfield practice

Good Oilfield Practice is not to be confused with Best Oilfield Practice. If they were the same, then the term commonly used in the oil business would be 'best oilfield practice', which is not the case.

The term 'best practices' is used in many kinds of businesses, the sciences, academia, etc., and is not unique to the oil and gas business. The adjective this term uses to describe the kinds of practice to be achieved is 'best', which in this context would mean 'most excellent quality' in a company's operations compared to its peers.

In contrast, Good Oilfield Practice uses the adjective 'good', which means an 'approved, accepted or satisfactory quality' of practice. That is why the definitions of Good Oilfield Practice cited above use such descriptions as 'generally accepted' or 'customarily used' to describe the kinds of practices that are widely accepted in the oil industry.

These terms evolve over time and are dependent on the specific circumstances being assessed. Quite often the difference between the two standards is simply one of degree, which could be based on quality or frequency or both:

[T]he ambiguity of the phrase 'best practice' could provide considerable uncertainty where the phrase is used to interpret legislation, particularly in a country where the rule of law is absent. On the one hand, phrases such as 'internationally acceptable best practice' and 'good oilfield practice' are used to allow the legal system to incorporate changes in technology in the oil industry. There is a trade-off between the need for flexibility, encapsulated in such phrases as 'good oilfield practice', and the ambiguity inherent in these terms.

One source of ambiguity lies in determining which practices are or should be generally accepted as 'best practice'. Some areas such as environmental reporting are still in relatively early stage of development, and it is arguable that while environmental reporting is 'cutting edge' and desirable practice, it is not yet a 'generally acceptable' practice in the industry

Ambiguity also stems from the existence of many guidelines in the international oil industry, of varying detail and sophistication, so that there is no one international guideline that can be easily pointed to as representing ‘internationally acceptable practice’.¹⁶²

Distinguishing between good and best

A simple way to visualize the distinction between these two terms is to place Good Oilfield Practice in the middle of a spectrum that represents practices that are widely and generally accepted in the oil and gas business. Whereas Best Oilfield Practice in the industry is at the top end of a scale that represents the ‘most excellent’ or ‘best in class’ practices carried out by leading companies in their areas of expertise.

Over time, what was once considered Best Oilfield Practice becomes more widely accepted and used throughout the industry and is then viewed as simply Good Oilfield Practice.

By definition, a company that has committed to Best Oilfield Practice would not only have to meet the minimum standard set by the Good Oilfield Practice standard widely used throughout the industry, but would have to significantly exceed that standard by conducting its operations in the top percentile of its peers.

Both standards together

Sometimes parties enter into contracts that provide for both standards or they represent they will operate to the higher ‘best’ standard, even though they have only agreed to the Good Oilfield Practice standard.

An example of the first situation is when the contract expressly requires an operator or contractor to operate to a Good Oilfield Practice standard, or an equivalent term, while at the same time requiring that the operator/contractor also conform to that jurisdiction’s laws or regulations, which require a Best Oilfield Practice standard.

The second situation is where the contract provides for a Good Oilfield Practice standard, while the operator/contractor has promised to its counterparty in writing that it is a ‘best in class’ company and that it will only apply Best Oilfield Practices to its operations.

In both situations, the higher Best Oilfield Practice standard should apply since that is the standard that the operator/contractor either agreed to operate to or to which they represented they would (especially if that is the reason why the contract was awarded).

Other instances of mixing the two standards can be found in Clause 9.1 (a) of the 2016 UK model JOA:

[T]he powers and duties of the Joint Operating Committee shall include: (a) the consideration and determination of all matters in general relating to policies, procedures and methods of operation hereunder with the intent that all such operations should be undertaken in a manner consistent with Good Oilfield Practice and in compliance with best practice standards in respect of health and safety and of the environment ...¹⁶³

This would indicate that operational activities in respect of health, safety, and the environment must be conducted on a ‘best practices’ standard, while other operational activities must be conducted on a Good Oilfield Practice standard.

Increasing use of best oilfield practice

The Best Oilfield Practice standard is appearing increasingly more in host government contracts:

Some countries are starting to use the term ‘best international practices’ in their laws, regulations, or contracts. For example, article 18 of Mexico’s Hydrocarbons Law of 2014 requires that

¹⁶² Wawryk (n 8) 430–31.

¹⁶³ 2016 OGUK JOA para 9.1(a).

the Ministry of Energy establish an appropriate model contract for each bid round. Article 19 then lists many provisions that the model contract must contain. The fourteenth provision requires a contract clause governing the Contractor's and Operator's 'responsibility and liability pursuant to international best practices,' rather than the typical GIPIP standard of 'good' practices. Model contracts in Brazil sometime also refer to 'best' practices.¹⁶⁴

The result is that if a government requires a Best Oilfield Practice standard and a contractor/operator agrees to that standard, then a Best Oilfield Practice standard must be applied in assessing the conduct of petroleum operations.

The challenge in determining what is 'Best'

There are a number of challenges in determining what is Best Oilfield Practice. The first matter to determine is whether this standard applies or not. It can only be applied if the parties have expressly agreed to it. Unlike the Prudent Operator Standard in US cases, it does not arise from an implied covenant. Either it is included in the parties' contract or is found in legislation to which the parties have agreed to abide. Legislation with new standards that a Government has retroactively enacted in conflict with stabilization provisions in its Host Government Contract is questionable in both its validity and effectiveness.

If a 'best practices' standard is defined in contract or regulation, it needs to clearly set out a requirement for standards that are the 'most excellent' or 'best in class' practices. Some of the Host Government Contracts and accompanying legislation that attempt to require a Best Oilfield Practice standard speak of 'practices and procedures generally adopted in the oil industry worldwide by prudent and diligent Operators under similar conditions and circumstances' or 'practices, methods, standards and procedures generally accepted and followed by diligent, expert and prudent operators'. These are standards typically required of a Reasonable and Prudent Operator that applies Good Oilfield Practice.

Assuming that a 'best practices' standard applies, the next challenge is determining just exactly what that means in practice. The industry's organizations do not typically establish a two-tier system for each of its technical standards. That is, they do not for each of their standards have one for a Good Oilfield Practice standard and another one for a Best Oilfield Practice standard. As a result, the difference between the two standards would typically be one of degree, frequency or quality.

How would a tribunal, court or regulator determine the Best Oilfield Practice standard to apply when it is not clearly articulated in an industry standard? There are a number of ways to determine that higher standard:

- i) They could consider the internal corporate policies or operating manuals of a company that represents it is applying 'best practices'. If its operating policy standards are higher than the widely accepted industry GOP standard, then that higher standard can be applied in the assessment; or
- ii) The technical experts retained by the parties, court or tribunal could agree on what that Best Oilfield Practice standard is; or
- iii) If they failed to agree, then one of the experts could articulate what that Best Oilfield Practice standard is, along with demonstrating that the industry recognized that higher standard. Examples could be reference to leading articles in peer reviewed journals that establish a higher standard or a list of leading companies that use a clearly articulated higher BOP standard.

In any event, if there is any doubt on whether the Good Oilfield Practice standard has been met, then logically, the Best Oilfield Practice standard would not have been met.

¹⁶⁴ Anderson and others (n 7) 671.

GOOD OILFIELD PRACTICE OVER TIME

Good Oilfield Practice evolves and changes over time. What was considered Good Oilfield Practice in 1950, may not be considered as such in 2000 or 2025: ‘What was good practice only a few years ago may no longer be good practice today.’¹⁶⁵

This is driven by continually improving technology, ongoing scrutiny and demands from government authorities and communities in which IOCs operate, and by increasingly rigorous health, safety and environmental requirements. It is reflected in the industry constantly revising and upgrading its standards, and by government authorities following suit with increased regulatory requirements for higher and better standards of operation, or vice versa.

In the USA, the Interstate Oil & Gas Compact Commission¹⁶⁶ is a multi-state government agency that promotes the conservation and efficient recovery and storage of US domestic oil and gas resources while protecting health, safety and the environment. Its membership is made up of energy regulators from most US states along with energy regulators at the federal level. It also has affiliations with energy regulators in the Canadian provinces. Amongst other activities, it summarizes and coordinates state statutes and regulations for oil and gas production, which are widely used by states and the public in learning how oil and gas exploration and production are regulated. This coordination can determine Good Oilfield Practice standards at the regulatory level. The interaction between these regulators and the oil and gas industry in setting these standards can sometimes be controversial.¹⁶⁷

The United Kingdom Oil & Gas Authority (now known as the North Sea Transition Authority) published its OGA Strategy¹⁶⁸ in 2021 pursuant to Section 9G of the Petroleum Act 1998. That Strategy stated that one of its high-level principles was that: ‘holders of an offshore licence must still comply with their licence and other regulatory obligations, including the execution of all operations in a proper and workmanlike manner in accordance with methods and practice customarily used in good oilfield practice’. The central obligation of licence holders under that Strategy is to secure the maximum value of economically recoverable petroleum while assisting the UK government in meeting its net zero targets. The OGA Strategy describes those obligations in more detail under supporting obligations of licence holders in their exploration, development, asset stewardship, technology, and decommissioning operations.

Another example is the international offshore oil and gas industry, which has experienced continuous upgrading in its operational standards. Many of these increasingly higher standards resulted from a series of offshore catastrophic accidents in various jurisdictions around the world such as:

- Alexander Kielland—Norwegian North Sea (1980);
- Ocean Ranger—Grand Banks, East Coast Canada (1982);
- Piper Alpha—UK North Sea (1988);
- Petrobras P36—Brazil (2001);
- Montara—Timor Sea, Australia (2009); and
- Macondo (DeepWater Horizon Rig)—Gulf of Mexico, USA (2010).¹⁶⁹

¹⁶⁵ *ibid* 674.

¹⁶⁶ <https://oklahoma.gov/iogcc.html>

¹⁶⁷ See: <https://www.propublica.org/article/oil-industry-lobbying-unplugged-wells>

¹⁶⁸ <https://www.nstaauthority.co.uk/media/7105/the-oga-strategy.pdf>

¹⁶⁹ Much has been written about these accidents. A good compilation of those reports can be found on Wikipedia:

Alexander Kielland: [https://en.wikipedia.org/wiki/Alexander_L._Kielland_\(platform\)](https://en.wikipedia.org/wiki/Alexander_L._Kielland_(platform))

Ocean Ranger: https://en.wikipedia.org/wiki/Ocean_Ranger

Piper Alpha: https://en.wikipedia.org/wiki/Piper_Alpha

Petrobras P36: https://en.wikipedia.org/wiki/Petrobras_36

Montara: https://en.wikipedia.org/wiki/Montara_oil_spill

Macondo: https://en.wikipedia.org/wiki/Deepwater_Horizon_explosion

Both governments and the oil and gas industry responded to these operational events with upgraded standards. What was once considered Good Oilfield Practice was no longer sufficient to meet the minimum standards of operating in offshore environments.

Examples of governments that responded with increased regulatory standards are:

- UK Offshore Petroleum Activities & Installation Directives¹⁷⁰;
- EC Offshore Safety Directive¹⁷¹; and
- U.S. Bureau of Safety and Environmental Enforcement Regulations.¹⁷²

The oil and gas industry responded by both working with regulatory authorities and by developing and issuing its own upgraded standards for operating in offshore environments:

- The OGP formed the Global Industry Response Group (GIRG), which issued its own Offshore Recommendations.¹⁷³
- Other industry organizations issued new standards such as: API RP 75, NORSOK A-001, and ISO 1776.¹⁷⁴

The industry's contracts quite often refer to 'generally accepted methods and standards of the petroleum industry' or to a 'prevailing standard' without referring to a specific time or locking the parties into a specific standard set at a specific time. This recognizes the ongoing nature of changing standards.

It is also reflected in the case law:

On the legal place the question is one of establishing whether, at the time of the alleged bad oil-field practices, these practices were such as to be inconsistent with the course that should have been followed by a skilled and circumspect operator.¹⁷⁵

As a result, the Good Oilfield Practice standard that should be applied under a contract is the standard widely used at the date of the event, not the date of entering into the contract. It is also not the standard prevalent at the date of the investigation or of a dispute, which can be many years after the event in question. The contractor/operator cannot be held to a standard that did not exist at the time of the operations in question.

GOOD OILFIELD PRACTICE AND ECONOMICS

The Good Oilfield Practice standard is no different from any other obligation undertaken by an operator under its contract. If it were subject to contractual conditions, then those conditions should be applied. If there were no conditions placed on that obligation, then it must be unconditional by definition.

This standard could only be restricted in its application if the parties expressly agreed that it did not apply in certain defined circumstances. As an example, if parties agreed in their contract that the Good Oilfield Practice standard did not apply when it was uneconomic to do so or if the

¹⁷⁰ <https://www.hse.gov.uk/offshore/directive.htm> and <https://www.hse.gov.uk/pubns/books/1154.htm>

¹⁷¹ https://energy.ec.europa.eu/topics/energy-security/offshore-oil-and-gas-safety/safety-offshore-oil-and-gas-operations_en

¹⁷² <https://www.bsee.gov/newsroom/latest-news/statements-and-releases/press-releases/bureau-of-safety-and-environmental-1>

and <https://www.hartenergy.com/exclusives/us-issues-new-offshore-well-control-safety-regulations-28546>

¹⁷³ <https://www.iogp.org/blog/press-releases/well-safety-press-releases/ogp-global-industry-response-group-updates-regulators-on-post-macondo-developments/> and <https://www.iogp.org/bookstore/product/oil-spill-response-global-industry-response-group-recommendations/>

¹⁷⁴ <https://www.api.org/products-and-services/standards/important-standards-announcements/recommended-practice-75;>

<https://www.centerforoffshoresafety.org/Guidelines-and-Reports/SEMS%20Good%20Practices/API%20Recommended%20Practice%2075;> <https://www.standard.no/en/sectors/energi-og-klima/petroleum/norsok-standards/#.YlhmCrhyb0o;> <https://www.iso.org/standard/63062.html>

¹⁷⁵ *Kuwait v Aminoil* (n 116) para 132, 598.

costs associated with complying with that standard were not cost recoverable, then it would not apply if those conditions were met. The parties could also expressly agree that only specific standards that existed at a certain date would apply.

There are a number of other examples where a contractor must meet its contractual obligations under a Host Government Contract, regardless of whether they are economical. For example, a concessionaire/contractor typically agrees to carry out a minimum work obligation in order to be granted the contract. It must carry out that obligation even if it is not economic. This contractor undertaking is usually secured with a bank or parent company guarantee or both to ensure that it meets this obligation, otherwise it will default on such guarantees.

A concessionaire/contractor also agrees to a specific, detailed fiscal regime in its contract, which both the contractor and government have agreed to apply in the allocation of production and revenue from an oil/gas field located in the contract area. This fiscal formula is always applied, regardless of whether it is economic. It can only be changed if the parties mutually agree to change it, which principle is often captured in a stabilization clause that ensures the maintenance of economic equilibrium.

A contractor/operator in a Host Government Contract or JOA is engaged in a commercial enterprise, and naturally, its business decisions will be based on what is in its best commercial interests. Depending on the economic circumstances of its investment, this could result in it increasing or decreasing its investment over time. It is free to do so, as long as it continues to meet its obligations under the contract, which would include the Good Oilfield Practice standard. Otherwise, the contractor/operator would be in breach of its contract.

The Good Oilfield Practice obligation must be consistently applied at the beginning, during and at the end of a contract. Even though both production and revenue typically decline in an oil/gas field over time, possibly making expenditures uneconomic, that obligation remains the same throughout the term of the contract. Likewise, expenditures required to meet the Good Oilfield Practice standard must be made regardless of whether they qualify for cost recovery at the end of the Host Government Contract term. Unless the parties expressly agreed otherwise.

If there are no conditions placed on it, the Good Oilfield Practice standard would be an unconditional and absolute one. That is therefore the standard that the contractor/operator must apply in its operations. Failing to do so would mean that the contractor/operator is engaging in unsafe and potentially damaging operations, and thus negligent in its conduct.

As a result, Good Oilfield Practice is determined and applied on a continuing basis throughout the term of a contract, using standards that are widely accepted and used in the industry, regardless of whether it is economic or not to do so.

STANDARDS IN OTHER ENERGY SECTORS

Similar standards are now being required in other energy sectors, such as in the solar generation and wind turbine industries. As an example, the International Renewable Energy Agency (IRENA) and the Terrawatt Initiative, in collaboration with more than 30 leading development banks, law firms and industry associations, launched the Open Solar Contracts Project in 2019.¹⁷⁶ These are model contracts for the solar energy sector similar to the model contracts developed by the petroleum sector. They cover the solar project development chain, which includes supply, financing, power purchases, implementation, installation, and operation and maintenance.

Included in these model contracts are requirements regarding 'Industry Standards' and 'Prudent Practice', along with defining what is expected of a 'Reasonable and Prudent Operator':

Reasonable and Prudent Operator means a person seeking in good faith to perform its contractual obligations and in so doing and in the general conduct of its undertaking, exercising that degree of skill, diligence, prudence, responsibility and foresight which would reasonably and

¹⁷⁶ The Open Solar Contracts can be found at: <https://opensolarcontracts.org/>

ordinarily be expected from a skilled and appropriately experienced developer, contractor, owner, operator or off-taker internationally who is complying with all applicable Laws and Authorisations, engaged in the same or a similar type of undertaking, in the same or similar circumstances and conditions and any references in this Agreement to the standards of a 'Reasonable and Prudent Operator' and 'Prudent Practice' shall be construed accordingly.

The Supplier shall carry out and complete the Supply Works with due skill, care and diligence so as to comply with the provisions of this Agreement, the Programme, all applicable Laws, the Lender's Performance Standards, Prudent Practice, Industry Standards including in relation to the applicable standards and technical requirements for the Works as set out in the Statement of Work, with properly equipped facilities and non-hazardous materials, except as otherwise specified in this Agreement.¹⁷⁷

The standards developed and lessons learnt by the petroleum sector with regards to Good Oilfield Practice are relevant, tested and appropriate for these developing energy sectors. This will be especially true as disputes emerge in these sectors.

CONCLUSION

The standards of Good Oilfield Practice and its derivatives have evolved over a period of more than a hundred years. They began at a rudimentary (and sometimes non-existent) level and developed into a wide range of sophisticated and detailed standards. They cover all facets of oil and gas operations, and now extend into the management and governance of the industry's relationship with communities and its impact on the environment.

Good Oilfield Practice will continue to evolve as the industry's requirements and the demands placed on operators by governments, mineral owners, non-operators, etc., continue to develop. This will be reflected in an ever-changing regulatory framework and updated standards issued by industry organizations.

In effect, there will always be a Good Oilfield Practice standard as long as an oil and gas industry exists. And as other energy sources grow in the energy mix, similar standards with different nomenclatures will emerge in these other energy sectors. That is simply because governments and communities expect operators in the energy field to consistently conduct their operations to a certain standard, regardless of the source of energy.

Appendix: Organizations that develop GOP standards

There are a number of industry, trade and technical organizations that develop and issue standards, which are widely recognized and applied as Good Oilfield Practice in oil and gas operations around the world. Some examples of such organizations and their technical standards are given below.

API

The API represents all segments of America's oil and gas industry. Its nearly 600 members produce, process and distribute most of the USA's energy. API was formed in 1919 as a standards-setting organization.

API has developed more than 700 standards throughout the oil and gas supply chain—upstream, midstream, and downstream—to enhance operational and environmental safety, efficiency and sustainability over the last 100 years.¹⁷⁸ Since 1924, the API has been a cornerstone in establishing and maintaining standards for the oil and gas industry worldwide. API is a global leader in convening subject matter experts across segments to establish, maintain, and distribute consensus standards for the oil and gas industry.

¹⁷⁷ art 1.1 (Definitions) and art 5.1 (Design and Workmanship) of Open Solar Model Supply Agreement. Similar definitions and provisions regarding applicable standards are found in other Open Solar model contracts for Operation and Maintenance, Installation, Implementation, and Power Purchases.

¹⁷⁸ <https://www.api.org/products-and-services/standards>

API standards are developed under the American National Standards Institute (ANSI) accredited process, ensuring that the API standards are recognized not only for their technical rigor but also their third-party accreditation which facilitates acceptance by US and international regulators. Because the development of API standards is ANSI-accredited, policymakers, and companies can trust that API standards meet the industry's stringent performance criteria, with appropriate margins for safety and environmental protection.

In an industry-wide survey conducted by the OGP in 2010, standards developed by API were referenced 225 times by government regulators around the world, including 49 API Manual of Petroleum Measurement standards.¹⁷⁹ Since then, API standards have been referenced more than 780 times in international laws, regulations, national standards, technical guidance and operational manuals by US and international regulators. In a 2020 report published by the API, 25 markets around the world were surveyed and confirmed the use of API standards in technical regulations by governments in those markets.¹⁸⁰

Examples of API standards used in the oil and gas industry include:

- API RP 2D: Operation and Maintenance of Offshore Cranes;
- API RP 2SIM: Structural Integrity Management of Fixed Offshore Structures;
- API RP 14C: Analysis, Design, Installation, and Testing of Safety Systems for Offshore Production Facilities;
- API 510: Pressure Vessel Inspection Code—In-Service Inspection, Rating, Repair and Alteration;
- API 580: Risk-Based Inspection;
- API STD 614: Lubrication, Shaft-Sealing, and Control-Oil Systems and Auxiliaries for Petroleum, Chemical and Gas Industry Services;
- API STD 617: Axial and Centrifugal Compressors and Expander-compressors for Petroleum, Chemical and Gas Industry Services; and
- API STD 619: Rotary-Type Positive-Displacement Compressors for Petroleum, Petrochemical, and Natural Gas Industries.

ISO

The ISO is an independent, non-governmental international organization with a membership of 167 national standards bodies. The ISO began in 1946 when delegates from 25 countries met at the Institute of Civil Engineers in London. It is now based in Geneva, Switzerland, and is made up of 806 committees and subcommittees that are responsible for standards development.¹⁸¹

Through its members, it brings together experts to share knowledge and develop voluntary, consensus-based, market-relevant international standards. It defines those standards as the distilled wisdom of people with expertise in their subject matter and who know the needs of the organizations they represent.¹⁸²

ISO standards are developed by groups of experts from all over the world that are part of larger groups called technical committees. The technical committees are made up of experts from the relevant industry and government organizations. These experts negotiate all aspects of the standard, including its scope, key definitions, and content. Developing ISO standards is a consensus-based approach and comments from all stakeholders are taken into account.¹⁸³ The ISO has developed and published nearly 25,000 standards, including ones used in the international oil and gas industry.

In the 2010 OGP survey, standards developed by the ISO provided 152 of the standards referenced by petroleum regulators.¹⁸⁴ The usage of those standards in the international oil and gas industry has proliferated since then.

¹⁷⁹ OGP (n 130) 1.

¹⁸⁰ *API Standards: International Usage and Deployment* (American Petroleum Institute 2020).

¹⁸¹ <https://www.iso.org/about-us.html>

¹⁸² <https://www.iso.org/standards.html>

¹⁸³ <https://www.iso.org/developing-standards.html>

¹⁸⁴ OGP (n 130) 1.

Examples of ISO standards used in the oil and gas industry include:

- ISO 10418: Petroleum and natural gas industries—Offshore production installations—Analysis, design, installation, and testing of basic surface process safety systems
- ISO 13702: Petroleum and natural gas industries—Control and mitigation of fires and explosions on offshore production installations—Requirements and guidelines
- ISO 15138: Petroleum and natural gas industries—Offshore production installations—Heating, ventilation, and air-conditioning
- ISO 21457: Petroleum, petrochemical, and natural gas industries—Materials selection and corrosion control for oil and gas production systems
- ISO 14224: Petroleum, petrochemical, and natural gas industries—Maintenance Data

DNV

Det Norske Veritas (DNV) was founded as a membership organization in Oslo, Norway in 1864. Norway's mutual marine insurance clubs banded together to establish a uniform set of rules and procedures, used in assessing the risk of underwriting individual vessels.

DNV expanded its expertise in setting maritime standards when commercial oil was discovered in the North Sea. It came to play an important role in the Norwegian offshore oil and gas industry as an advisor to both government authorities and oil companies. DNV used its experience and technological competence within the maritime industry to develop and introduce oil and gas verification, inspection and risk management services in more than 100 countries.¹⁸⁵

The world's first submarine pipeline rules were published by DNV in 1976, setting a global standard. The DNV submarine pipeline system standards provide an internationally acceptable framework for submarine pipeline systems in all lifetime phases, with a focus on structural assessment, with the aim of obtaining an appropriate and consistent level of safety. This includes standards on the requirements and recommendations for the concept development, design, construction, operation and abandonment of pipeline systems, with an emphasis on structural integrity.¹⁸⁶

Examples of DNV standards used in the oil and gas industry include:

- DNV-FP-F101: Corroded Pipelines;
- DNV-OS-F101: Submarine Pipeline Systems;
- DNV-RP-F107: Risk Assessment of Pipeline Protection; and
- DNV-RP-F116: Integrity Management of Submarine Pipeline Systems.

BSI

The British Standards Institute (BSI) was formed in 1901 and is the world's first National Standards Body. In 1946 it established the first Commonwealth Standards Conference, held in London and organized by BSI, which led to the establishment of the ISO. The BSI is now the UK national standards organization in the ISO.¹⁸⁷

BSI helped shape many of the world's management systems standards, including the three most widely adopted for quality, the environment, and health and safety. It is active in 193 countries at more than 128,000 sites, working with 12,200 committee members and thousands of organizations helping to shape codes and standards.¹⁸⁸

Examples of BSI standards used in the oil and gas industry include:

- BS 5839-1: Fire detection and fire alarm systems for buildings—Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises
- BS 779: Particulate air filters for general ventilation—Requirements, testing marking

¹⁸⁵ <https://www.dnv.com/about/in-brief/our-history.html>

¹⁸⁶ <https://www.dnv.com/oilgas/download/dnv-st-f101-submarine-pipeline-systems.html>

¹⁸⁷ <https://www.bsigroup.com/en-GB/about-bsi/our-history/>

¹⁸⁸ <https://www.bsigroup.com/en-GB/about-bsi/>

NFPA

The National Fire Protection Association (NFPA) is a US-based, global self-funded non-profit organization, established in 1896, devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and related hazards. It is widely known as a codes and standards organization, with more than 300 codes and standards designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation around the world.

The NFPA has more than 250 technical committees, comprised approximately 9000 volunteers, that review public inputs and vote on the revisions in a process that is accredited by the American National Standards Institute.¹⁸⁹ Its international offices cover Latin America, the Middle East, North Africa, and China, which work to advance the use and adoption of NFPA codes and standards throughout the world.¹⁹⁰

Examples of NFPA standards used in the oil and gas industry include:

- NFPA 72: National Fire Alarm and Signaling Code.
- NFPA 13: Installation of Sprinkler Systems.

IEC

The International Electrotechnical Commission (IEC) is a global, not-for-profit membership organization that brings together more than 170 countries and coordinates the work of 20,000 experts globally. It was founded in London in 1906 and is now based in Geneva, Switzerland.¹⁹¹

It has developed and published more than 10,000 international standards and issued more than one million certificates that represent a global consensus on electrical and electronic technologies. IEC publications are developed in over 200 technical committees and subcommittees and hundreds of working groups, each responsible for a specific technology area. Its standards describe the processes and methods to ensure the safety, reliability, and performance of electrical systems and information technologies.¹⁹²

Examples of IEC standards used in the oil and gas industry include:

- IEC 60079-17: Explosive atmospheres—Part 17: Electrical installations inspection and maintenance.
- IEC 61511-1: Functional safety—Safety instrumented systems for the process industry sector—Part 1: Framework, definitions, system, hardware, and application programming requirements.

EI

The Energy Institute (EI) is a UK-based chartered professional membership organization for people who work across the world of energy. The EI is a not-for-profit organization with tens of thousands of individual members and hundreds of company members. It was established in 2003 as a result of a merger between the Institute of Petroleum (IP) and the Institute of Energy (InstE).¹⁹³

The EI publishes a wide range of technical guidance documents, research papers, and standards to support the global energy industry. Its publications are set and steered by its Scientific and Technical Advisory Committee who facilitate technical discussions between different sectors of the industry and its regulators. The EI is seen as a world-class leader in test method development, developing and publishing international standard test methods (known as IP Test Methods) for petroleum and related products.

The EI's technical work is developed with a diverse range of organizations, including industry regulators such as the UK Health and Safety Executive, Environment Agency, Maritime and Coastguard Agency, and with other bodies and trade associations such as the Global CCS Institute, the Carbon

¹⁸⁹ <https://www.nfpa.org/overview>

¹⁹⁰ <https://www.nfpaglobalsolutions.com/en/our-portfolio/business-solutions/nfpa-global-advisors>

¹⁹¹ <https://iec.ch/about-us>

¹⁹² <https://iec.ch/understanding-standards>

¹⁹³ <https://www.energyinst.org/about>

Capture and Storage Association, UKPIA, and UK Oil and Gas, and with standards-setting bodies such as ASTM, BSI, API, and ISO.¹⁹⁴

An example of EI standards used in the oil and gas industry include:

- IP Model Code of Safe Practice in the Petroleum Industry, Part 15: Area Classification Code for Installations Handling Flammable Fluids.

ATEX

The ATEX standards are EU directives describing the minimum safety requirements for workplaces and equipment used in explosive atmospheres. The name is an initialization of the French term *Appareils destinés à être utilisés en ATmosphères EXplosibles* (French for 'equipment intended for use in explosive atmospheres'). These are produced by European Standardisation Organizations. Organizations in the EU must follow these Directives to protect employees from explosion risk in areas with an explosive atmosphere.¹⁹⁵ European-based and other multinational companies use these standards in other jurisdictions.

Examples of ATEX standards used in the oil and gas industry include:

- ATEX 114: Equipment Directive 2014/34/EU.
- ATEX 137: Workplace Directive 1999/92/EC.

ASTM

ASTM International, formerly known as the American Society for Testing and Materials, is a non-profit international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services. Founded in 1902 as the American Section of the International Association for Testing Materials 1 year after the BSI Group in Britain, ASTM International predates other standards organizations such as the IEC (1906) and ISO (1947). The organization's headquarters continue to be in the USA.

It has partnered with other standardization organizations in more than 110 countries and has more than 30,000 members. It has over 12,800 global standards that have been developed by more than 140 committees.¹⁹⁶

An example of ASTM standards used in the oil and gas industry include:

- ASTM D4378: Standard Practice for In-Service Monitoring of Mineral Turbine Oils for Steam and Gas Turbines.

ASME

Founded in 1880 as the American Society of Mechanical Engineers, ASME is a not-for-profit professional organization that enables collaboration, knowledge sharing and skill development across all engineering disciplines. ASME has more than 90,000 members worldwide and is active in more than 135 countries.¹⁹⁷

ASME is the leading international developer of codes and standards for the practice of mechanical engineering. ASME has been the globally recognized, trusted source of consensus standards since 1884, which has defined piping safety since 1922. It has more than 5500 engineers, scientists, government officials, etc., who contribute their technical expertise to develop mechanical engineering standards. ASME standards are accepted for use in more than 100 countries around the world. ASME's standards portfolio includes over 500 standards and associated products. These products cover a breadth of topics, including pressure technology and pipelines.¹⁹⁸

¹⁹⁴ <https://publishing.energyinst.org/about-us>

¹⁹⁵ https://ec.europa.eu/growth/sectors/mechanical-engineering/equipment-potentially-explosive-atmospheres-atex_en

¹⁹⁶ <https://www.astm.org/>

¹⁹⁷ <https://www.asme.org/about-asme>

¹⁹⁸ <https://www.asme.org/codes-standards/about-standards>

Examples of ASME standards used in the oil and gas industry include:

- ASME B31.8S: Managing System Integrity of Gas Pipelines.
- ASME B31.3: Process Piping.
- ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, Rules for Construction of Pressure Vessels.

ISA

The International Society of Automation (ISA) is a non-profit professional association of engineers, technicians, and management engaged in industrial automation. ISA Standards help automation professionals streamline processes and improve industry safety, efficiency, and profitability. Over 150 standards developed by ISA reflect its expertise from over 4000 industry experts in more than 140 committees around the world. Since 1949, ISA has been recognized as the expert source for automation and control systems, which reflect consensus in industry standards.¹⁹⁹

An example of ISA standards used in the oil and gas industry include:

- ISA-TR84.00.07: Guidance on the Evaluation of Fire, Combustible Gas, and Toxic Gas System Effectiveness.

UK Health and Safety Executive

The Health and Safety Executive (UK HSE) is a UK government agency responsible for the regulation and enforcement of workplace health, safety and welfare, and for research on occupational risks. The HSE was created by the Health and Safety at Work Act 1974.²⁰⁰

The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) are a set of regulations created under the Health and Safety at Work Act 1974, which came into force on 5 December 1998. These regulations are administered by the UK HSE.

The purpose of these regulations is to reduce the risk of injury from lifting equipment used at work. Areas covered in the regulations include the requirement for lifting equipment to be strong and stable enough for safe use and to be marked to indicate safe working loads; ensuring that any equipment is positioned and installed to minimise risks; that the equipment is used safely ensuring that work is planned, organized, and performed by a competent person; that equipment is subject to ongoing thorough examination and where appropriate, inspection by competent personnel.²⁰¹

Examples of UK HSA standards used in the oil and gas industry include:

- Lifting Operations and Lifting Equipment Regulations (LOLER).
- United Kingdom Health and Safety Executive, Offshore Technology Report—OTO 93 002 Offshore Gas Detector Siting Criterion, Investigation of Detector Spacing.

¹⁹⁹ <https://www.isa.org/standards-and-publications/isa-standards>

²⁰⁰ <https://www.hse.gov.uk/index.htm>

²⁰¹ <https://www.hse.gov.uk/work-equipment-machinery/loler.htm>