

Oil & Gas Law Study Guide

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This study guide is meant to give you guidance on a topic-by-topic basis for how to concentrate your studies. For more general advice, consult the [Exam Prospectus](#),¹ in particular §4 and the “Focus List” therein. As I said there, the main message is to not worry about small details but instead to work on having a thorough understanding of the major concepts.

With regard to thinking about things on a topic-by-topic basis, you will notice that I have disclosed “*Testing target*” information below. By doing this, I am giving you my projection about how I intend to test particular material on the upcoming exam. For many or most topics, I anticipate that the material could be tested on both the multiple-choice portion and either part of the essay portion (Essay Question 1 or Essay Question 2). But in many cases, a particular topic is targeted for less than the whole exam (For instance, see Topic S8: Economic Externalities and the Coase Theorem, which states “*Testing target: Multiple-choice portion. This material may also be useful to you for Essay Question 1.*”)

This brings up an important observation about studying for Essay Question 1. As will be clear from the description of Essay Question 1 in the Exam Prospectus, Essay Question 1 will necessarily allow you to largely choose your ground in composing an answer. So for a given reading or concept that we studied, you might choose to make use of it or you might choose to skip any mention of it in your answer to Essay Question 1. This naturally suggests the possibility of choosing your ground when you are studying – strategically skipping content that you anticipate you could omit to make use of in composing your answer to Essay Question 1. Indeed, that might make sense. But keep in mind that the difference between an okay answer to Essay Question 1 and an excellent answer may largely be a function of your ability to reach for the least obvious, most compelling, and most relevant arguments and rationales. So, to do the best you can possibly do, I encourage you challenge yourself to master the more difficult material and to be able to employ it in a deft manner, showing you appreciate its subtleties and ramifications, as well as its connections to other aspects of course content.²

¹ http://www.ericejohnson.com/courses/oil_gas_18/Oil_and_Gas_Law_Exam_Prospectus.pdf

² Also, note that just because a topic is not listed as having Essay Question 1 as its “testing target” does not mean that you can’t make use of it on Essay Question 1. If you’ve got a point that’s relevant and compelling, go for it. But I wouldn’t strain your argument just for the purpose of incorporating something offbeat or exotic.

SCIENCE AND SOCIETY TOPICS (THE “S” TOPICS)

Topic S1: Physics of Energy

Overall, understand the material at a conceptual level. (You won't have to do calculations.)

Understand the principle of the conservation of energy and be able to apply it in a basic way to what it is that the oil and gas industry does.

Understand potential energy as a form of energy, be able to describe what potential energy is, and be able to provide examples of how potential energy is converted into other forms of energy. In particular, be able to conceive of petroleum as chemical potential energy that can be usefully converted into other forms of energy, such as kinetic energy.

Be able to distinguish between useful energy (as the capacity to do work) from less useful forms of energy (such as waste heat).

Understand that *efficiency* describes the amount of useful energy remaining after an energy conversion process (such as how about 40% of the chemical energy contained in coal is turned into electrical energy in the context of a coal-fired power plant).

Be able to answer the conceptual questions and problems identified on the Chart of Assignments.

The slideshow may be useful for focusing you in on portions of the chapter that are particularly important.

Testing target: Multiple-choice portion.

Note: You won't need to do math for the questions you'll be asked about this (or any other) topic.

Topic S2: Oil & Gas History, Basics

Have an appreciation for the basic history of oil and gas exploration and production as discussed in the reading.

Testing target: This material may be useful to you in answering Essay Question 1. Additionally there might be one question on the multiple-choice question that should be fairly easy if you did the reading when it was assigned.

Topic S3: Geology Fundamentals and Topic S4: Petroleum Geology

Be able to do problems like the ones we did in class.

In particular, be able to interpret rock-layer diagrams and deduce conclusions from them.

Testing target: Multiple-choice portion.

Topic S5: Exploration and Extraction Technology Basics and Topic S6: Hydraulic Fracturing Technology and Enhanced Recovery

Understand the basics covered in the readings and videos.

Have the level of understanding such that you could explain hydraulic fracturing to a lay person and explain to them the difference between conventional production/extraction and hydraulic fracturing using horizontal drilling.

I particularly recommend re-watching the videos “Animation of Hydraulic Fracturing” and “How does fracking work?” Aim for understanding the material well enough that if the volume were turned off you could explain to someone what’s going on in the pictures.

In particular, make sure you are able to define and use these terms: *operator*, *roughneck*, *roustabout*, *blowout preventer*, and *pad*. (See pp. 34-38 of Ch. 1.)

Testing target: Multiple-choice portion. Also, you will need to understand the basic concepts and vocabulary to parse the facts of Essay Question 2. Additionally, you may find that this material may be at least indirectly useful to you for Essay Question 1.

Topic S7A: Land Descriptions

This topic will not be tested.

Topic S7: Supply and Demand Basics

Be able to recognize and label the parts of a traditional supply-and-demand diagram.

Understand what the diagram means, what it represents about markets, and why it has the rough shape that it does – as explained by the slideshow.

In particular, understand the main concepts about supply and demand that are communicated in the round-corner textboxes in the slideshow.

Testing target: Multiple-choice portion.

Topic S8: Economic Externalities and the Coase Theorem

Be able to recognize and define what economic externalities are.

Be able to recognize a formulation of the Coase Theorem.

Understand the content as represented in the slideshow.

Be able to do Coase Theorem analysis under the assumption of zero-transaction costs like the examples in the slideshow.

Appreciate what Coase’s thinking means for economic analysis concerning externalities.

Testing target: Multiple-choice portion. This material may also be useful to you for Essay Question 1.

Topic S9: Economics and Politics of Regulation

Be able to think about regulation in a critical way, considering its economic and political context.

Using the arguments and examples from the readings, and be able to support and attack posited rationales for regulation on the basis of market failures.

Testing target: Essay Question 1. This material could also come up on the multiple-choice portion.

Topic S10: Property Theory

Be able to identify the arguments about property theory presented in the readings.

Along these lines, I would encourage you in particular to be able to recall the basic position of John Locke, Jeremy Bentham, and Harold Demsetz.

Be able to draw connections among the readings for this topic and the legal doctrines we have learned.

Use the discussion questions (in the Chart of Assignments) as a guide for seeing what kinds of things you should have gotten out of the readings.

Be able to use the readings and the theoretical arguments within them in making arguments for and against given positions on the desirability or justifiability of given aspects of oil and gas legal doctrine.

Testing target: Essay Question 1 and the multiple-choice portion.

Topic S11: Supply, Demand, Surplus and Efficiency

Understand the main concepts in the assigned chapter, the videos, and – in particular – the slideshow.

Be able to recognize consumer surplus, producer surplus, and deadweight loss on a supply-and-demand diagram, and be able to articulate what each represents.

Be able to articulate the argument for why price ceilings and price floors lead to an inefficient outcome.

Using the economic concepts and terminology presented, be able to articulate an explanation for why market participants might lobby for price ceilings and/or price floors despite orthodoxy that pronounces price ceilings and price floors as inefficient.

Be able to do problems and answer questions like those assigned for this topic.

Testing target: Multiple-choice portion and Essay Question 1.

Topic S12: Hydrocarbon Chemistry

(Note that you can get all of the following out of the posted slideshow, "Hydrocarbon Chemistry.")

Understand what it is that makes a hydrocarbon a hydrocarbon.

Be able to recognize a ball-and-stick model of a hydrocarbon, and be able to recognize the ball-and-stick models of these molecules, which were presented in the slideshow:

- methane
- propane
- cyclooctane
- hexane

Be able to distinguish alkanes, cycloalkanes, alkenes, and alkynes.

Be able to characterize the following as alkanes and be able to state whether their room temperature form is gas, liquid, or wax:

- methane
- propane
- hexane
- octane
- triacontane

Know the combustion reaction of methane, including its inputs (reactants) and outputs (products), and be able to tell the energy story (i.e., that chemical potential energy in the bonds is released and converted into heat energy).

Understand that making hydrocarbons requires an input of energy (i.e., sunlight that shone on Earth millions of years ago).

Testing target: Multiple-choice portion.

Topic S13: Dakota Access Pipeline

Understand the broad outlines of the Dakota Access Pipeline controversy, particularly as represented in the slideshow.

Understand at a basic level the legal controversy in the litigation and the main arguments of the Standing Rock Sioux Nation as presented in the brief we read.

In particular, understand the concept of environmental justice, and understand the tribe's argument on that basis.

I recommend that you review your notes of Professor Jim Grijalva's guest lecture on this topic.

(Note that some of what we encountered in this unit—in particular, that portion regarding environmental regulation—is also relevant for Topic L15, Environmental Regulation and Liability.)

Testing target: Multiple-choice portion and Essay Question 1.

Topic S13A

[See listing under the "L" topics for Topic L12A/S13A SPECIAL GUEST LECTURE by Ken G. Hedge]

Topic S14: Energy, Economics, and Policy

The point of this unit was to help you practice how to make policy arguments in a lawmaking context about energy and economics; thus, aim for being able to form arguments and counter-arguments along the lines of those in the opinion pieces in the *Wall Street Journal* reading and to critique their effectiveness.

Note that the point of the second reading, the one from *Forbes*, was so that you could see what happened in the end with oil-and-gas taxation. I am not looking to test you on the current state of the federal tax code.

Testing target: Essay Question 1.

Topic S15: Thermodynamics

Understand the material at a conceptual level.

Aim for being able to explain the Second Law of Thermodynamics to a lay person.

In particular, understand that the principle of the conservation of energy does not imply that the amount of “useful” energy – energy available for work – remains constant.

Understand that the Second Law of Thermodynamics implies that the amount of energy available for useful work in the universe or any closed system must stay the same or decrease.

Testing target: Multiple-choice portion.

Topic S16: Oil & Gas Policy and Legislation in North Dakota

The point of this unit was to help you practice how to make policy arguments in a lawmaking context about oil-and-gas extraction and landowner relations; thus, aim for being able to form arguments and counter-arguments along the lines of those in the reading and to critique their effectiveness.

Testing target: Essay Question 1. I might also include a multiple-choice question on this that you should be able to readily answer if you engaged with the reading.

Topic S17: The North Dakota Bakken Experience

As I write this study guide, we have not yet done this unit. And since it is student-driven, I’m not quite sure what we will get out of it. But I hope it will be useful for helping you make policy arguments.

Testing target: What you learn in this unit may be useful for you in answering Essay Question 1. Additionally I might include a multiple-choice question that you should be able to readily answer if you paid attention and stayed engaged in class.

LAW TOPICS (THE “L” TOPICS)

Topic L1: Ad Coelum Doctrine

You should understand and be able to apply the ad coelum concept of property ownership.

Understand that ad coelum continues to apply in full force to hard-rock mining.

Be able to understand the relation of ad coelum to the rule of capture and be able to contrast the two approaches.

Testing target: Multiple-choice and essay.

Topic L2: Petroleum Ownership Theories

Understand that there are two basic ideas of petroleum ownership vis-à-vis the rule of capture:

- That the real property owner owns the untouched fugacious minerals residing within the 3-dimensional ad coelum section of Earth, but that these minerals are subject to capture by neighbors.
- That the real property owner does not own fugacious minerals in the Earth until they are captured.

Appreciate that this distinction is largely about terminology, and that distinction usually makes no difference to the application of the rule of capture and determinations of mineral ownership.

Testing target: There might be one multiple-choice question that addresses this directly. Otherwise it may be considered deep background for the essay portion.

Topic L3: Rule of Capture and Correlative Rights

Particularly useful for this topic is the slideshow, “Ad Coelum, Rule of Capture, and Subversions.” While the slideshow does not contain nearly the level of detail you should be striving for in mastering this material, it is a useful touchstone for the major concepts and how they relate to each other, and I think it makes sense to review it before wading back into the depths of the cases and other readings.

You should appreciate the foundational and pivotal role of the rule of capture in American oil and gas law.

You should be able to explain the rule of capture to a lay person, and you should be able to explain how oil-and-gas law is built up around it.

In this regard, you should appreciate how misunderstanding of geophysical science helped lead to the adoption of the rule of capture. (Note that the portion of the reading that addresses this most directly is Ch. 1, pp. 5-6 – pages which were actually assigned as reading for Topic S4, but which we talked about repeatedly in relation to Topic L3.)

You should appreciate how the rule of capture subverts ad coelum but is itself subverted by other doctrines, including concepts concerning correlative rights.

In this regard, I refer you to the slideshow (“Ad Coelum, Rule of Capture, and Subversions”) which addresses this set of relations.

Understand and be able to apply the holding and reasoning of *Kelly v. Ohio Oil*.
Understand that the rule of capture does not privilege or protect a driller whose wellbore punctures the sub-surface boundaries of a neighbor's property.
Understand and be able to apply the holding and reasoning of *Coastal Oil v. Garza*.
Understand and be able to apply the reasoning of Willett's concurrence in *Coastal Oil v. Garza*.
Understand and be able to apply the reasoning of Johnson's dissent in *Coastal Oil v. Garza*.
Understand the limits of the holding of *Coastal* for wastewater trespass as described in *FPL Farming v. Environmental Processing Systems* (a note case, discussion starting at Ch. 1, p. 87).
Understand the holding of *Chance v. BP* for wastewater trespass and its implications vis-à-vis *Coastal*. (*Chance* is a note case, discussion starting at Ch. 1, p. 89).
Understand and be able to apply the holding and reasoning of *People's Gas v. Tyner*.
Understand and be able to apply the holding and reasoning of *Wrongski v. Sun Oil*.
Understand police power as a source of limits on the rule of capture (note 1 on Ch. 1, p. 99), but appreciate that there can be political and statutory limits to police power, as discussed under the heading of Topic S9.
Testing target: Multiple-choice and essay.

Topic L4: Ownership After Extraction

Appreciate the differences in how courts have looked at the rule of capture with regard to ownership of oil and gas that has already been extracted but then is intentionally or unintentionally put back into the ground.
Understand and be able to apply the holding and reasoning of *Champlin Exploration v. Western Bridge & Steel* regarding ownership after extraction.
Understand and be able to apply the holding and reasoning of *Texas American Energy v. Citizens Fidelity Bank & Trust* regarding ownership after extraction.
Appreciate the role of permitting and statutory schemes for underground gas storage and how this subverts or provides an exception to the rule of capture. Appreciate that obtaining a permit can allow a gas utility to take underground reservoir capacity by public domain.
Testing target: Multiple-choice and essay.

Topic L5: Common Patterns of Oil & Gas Ownership

Understand that the real property interest in a tract of land can be severed, separating the surface ownership from the mineral ownership.
Understand that both the surface and the minerals are real property interests capable of indefinite duration, ownable in fee.
Know and be able to apply the incidents of mineral ownership, commonly formulated as:
1. The right of access to and use of the surface
2. The right to incur costs and retain profits

3. The right to alienate (to transfer the mineral interest, such as by a “mineral deed”)
4. The right to lease and retain lease benefits (often called the “executive right,” as we found out in later reading)

Understand that a royalty interest by itself does not give its owner a right of access and surface use, or a right to lease.

Understand that a mineral lease creates a leasehold interest (or “operating interest” or “working interest”), which gives the lessee the present right of access and surface use.

(Note that these incidents of mineral ownership, sketched out briefly in this unit, are explored in more depth in later units.)

Testing target: Multiple-choice and essay.

Topic L6: Trespass and Trespass-Related Claims

Understand and be able to apply *Enron v. Worth* regarding the exclusive rights of mineral owners to enter the surface for geophysical exploration.

Understand that many states, by statute, require payments to surface owners for damage caused by exploration, development, and production. (See Ch. 1, p. 122, n. 4.)

Understand and be able to apply *Mosser v. Denbury* regarding the right of surface owners to compensation for salt-water disposal into pore space.

Understand and be able to apply *Lightning Oil v. Anadarko E&P Onshore* regarding whether it is trespass against the mineral owner of a tract of land for an operator, with permission of the surface owner, to drill through the subsurface of that tract to reach minerals in a neighboring tract, where the operator has the rights to those neighboring-tract minerals.

Regarding “geophysical trespass,” where the claim is in essence about the wrongful gathering of information about minerals (e.g., by seismic survey), appreciate the variety of theories that potentially could be used for such a claim, and have a sense of the possibility of bringing a successful claim on this basis. In this regard, pay particular attention to the slideshow “Geophysical Trespass” and the cases of *Grynberg v. City of Northglenn* and *Humble Oil v. Kishi*.

Regarding trespass involving wrongfully taken minerals, understand the relationship of a determination of good faith to the amount of damages recoverable. In other words, understand how the determination of whether the developer/operator can deduct development/operating costs often depends on the trespasser’s good faith. (See Ch. 1, p. 152-155.)

Know that an operator who had a lease who stays in possession after the expiration of the lease is usually treated as a trespasser, but in some states might be treated only as a party in breach of contract with limited damages. (See Ch. 1, p. 153.)

Understand and be able to analyze a cause of action for slander of title, particularly in the context of failure to release an expired lease as exemplified by *Kidd v. Hoggett*.

Testing target: Multiple-choice and essay.

Topic L7: Loss of Mineral Ownership

Be able to use and apply basic aspects of doctrine regarding adverse possession as set forth in Ch. 1, pp. 162-164, including what it takes to establish title by adverse possession and how adverse-possession analysis differs depending on whether the mineral interest has been severed from the surface estate.

Understand and be able to apply *Diederich v. Ware*, and appreciate the reasoning of the dissent.

Be able to use and apply basic doctrine regarding abandonment as set forth in Ch. 1, pp. 169-171. In particular, understand that abandonment can only be found where there is nonuse coupled with a finding of intent to abandon. And appreciate that because mineral interests are commonly held for very long time periods without being developed, nonuse alone tends not to support finding that the mineral-interest owner has abandoned the interest.

Appreciate the problem of the splintering of ownership of a severed mineral interest among a large number of co-owners, and understand that this can impede mineral development. (See Ch. 1, p. 176.)

Understand that many states have attempted solutions to the ownership-splintering problem with statutes called dormant mineral interests acts or mineral lapse acts, some of which allow termination of mineral interests that are unused for a long time coupled with a failure to file a statement of claim, and some of which are principally concerned with identifying mineral-interest owners. (See Ch. 1, p. 176-177.)

Testing target: Multiple-choice and essay.

Topics L8-L11A: Oil & Gas Leases (in general)

Be able to analyze a lease.

Perceive lessors' and lessees' interests in various lease provisions.

Be able to mark up a draft on behalf of a given party (i.e., lessor or lessee).

Be able to perceive which aspects of a lease agreement are fundamental to the object of leasing (and therefore will virtually have to be included in an agreed upon lease), and which provisions are potentially negotiable (and therefore might be varied depending on things like bargaining power, parties' knowledge of the law, etc.).

You should spend time going back to study the leases we reviewed in class as well as your notes about our discussions of them. Seek to understand why the leases are, in their variations, favorable to the lessee or favorable to the lessor, and to what extent the language harbors or avoids potential ambiguities.

Appreciate the role of caselaw in developing interpretations of common lease provisions, and appreciate that this law can differ among jurisdictions. In this regard, appreciate the historical role played by the Producer's 88.

Testing target: Multiple-choice and essay.

Topic L8: Oil & Gas Leases – Purpose and Nature of Rights

Concentrate on the doctrine and concepts found in the slideshow “Oil & Gas Leases - Purpose and Nature of Rights,” and allow that slideshow to guide you to the most important parts of the reading.

Testing target: Multiple-choice and essay.

Topic L9: Oil & Gas Leases – The Granting Clause

Concentrate on the doctrine and concepts found in the slideshow “Oil & Gas Leases - The Granting Clause,” and allow that slideshow to guide you to the most important parts of the reading.

Testing target: Multiple-choice and essay.

Topic L10: Oil & Gas Leases – The Habendum Clause

Concentrate on the doctrine and concepts found in the slideshow “Oil & Gas Leases - The Habendum Clause,” and allow that slideshow to guide you to the most important parts of the reading.

Additionally, understand the basics of “savings clauses” as substitutes for production for the purpose of keeping the lease from terminating. (See Ch. 1, pp. 90-114.)

In particular:

- Understand the basics of shut-in clauses (Ch. 1, pp. 91, et seq.), including that depending on the wording of the shut-in clause and the courts’ interpretation of shut-in clauses in that jurisdiction, a lease may or may not terminate for a shut-in payment being made late, or delivered to the wrong place or person. And understand how much money can be lost for the lessee or gained for the lessor if a shut-in payment isn’t made.
- Understand the “temporary cessation-of-production doctrine” built from an implied lease term. (See Ch. 1, pp. 100, et seq.)

Appreciate the role of the Producer’s 88 in creating problems along these lines.

Recall what we discussed as attributes for a transactional attorney: imagination, pessimism (or skepticism), creativity, perseverance, assertiveness, and curiosity. Appreciate how these attributes can allow a transactional attorney to avoid problems like those that motivated disputes in this unit.

Understand that modern leases use a cessation-of-production clause, a dry-hole clause, and an operations clause to provide for constructive production. (See Ch. 1, pp. 103.)

Testing target: Multiple-choice and essay.

Topic L11: Oil & Gas Leases – Other Issues and Concerns

Understand the doctrine and concepts found in the slideshow “Oil & Gas Leases – Other Issues and Concerns.”

Appreciate the means by which lessors and lessees come into dispute about lease royalties, including in ways that are inconsistent with lessor expectations, as explored in the ProPublica article we read.

Testing target: Multiple-choice and essay.

Topic L11A: Oil & Gas Leases – Pugh Clauses and Retained Acreage Provisions

Understand the doctrine and concepts found in the slideshow “Oil & Gas Leases – Pugh Clauses and Retained Acreage Provisions.”

Be able to do the problem in the slideshow.

Testing target: Multiple-choice and essay.

Topic L12: Titles and Conveyances in Oil & Gas Interests

Understand the doctrine and concepts found in the slideshow “Titles and Conveyances in Oil & Gas Interests.”

Understand and be able to apply *Veteran’s Land Board v. Lesley* regarding duties owed by the owner of the executive right to non-executive mineral-interest owners.

Understand and be able to apply *Moser v. U.S. Steel* regarding what qualifies as a mineral in the context of conveyances of mineral rights.

Also for this topic, review your notes of the special guest lecture by Ken G. Hedge (listed under Topic L12A/S13A).

Testing target: Multiple-choice and essay.

Topic L12A/S13A: SPECIAL GUEST LECTURE by Ken G. Hedge

Review your notes of the guest lecture. Pay particular attention to lessons Mr. Hedge drew while reviewing the packet of select title materials that was assigned as reading, and pay particular attention to what he had to say about mineral transactions and about his practice.

Testing target: Expect at least one multiple-choice question squarely on this, and possibly another multiple-choice question that implicates this material. Additionally, this material may be useful for you in answering Essay Question 1.

Topic L13: Conservation Law and Regulation

Concentrate on the doctrine and concepts found in the slideshow “Conservation Law and Regulation,” and allow that slideshow to guide you to the most important parts of the reading.

Understand, be able to apply, and be able to analogize to the administrative legal structure discussed in *Larsen v. Oil & Gas Conservation Commission*.

Testing target: Multiple-choice and essay.

Topic L14: Trade Secrets in Oil & Gas

Understand the doctrine and concepts found in the slideshows (“Trade Secrets in Oil & Gas (Part 1)” and “Trade Secrets in Oil & Gas (Part 2)”).

Be aware of the ways in which trade-secret law is used in the oil-and-gas context.

Appreciate how assertions of trade secrecy interact with environmental regulation, as explored in the Gosman article.

Testing target: Multiple-choice and essay.

Topic L15: Environmental Regulation and Liability

At the time of this writing, we have not yet covered Topic L15. But at this point I can say that you should certainly aim to take away big-picture-level information about environmental regulation – including how it is structured and its basic function – as explored in the Gosman article. Additionally, you should reference what we learned about environmental regulation in regard to the Dakota Access Pipeline (Topic S13), including the reading about that, the slideshow concerning it, and what Professor Jim Grijalva told us about it in his guest lecture.

Testing target: Multiple-choice and essay.