This is a “living” syllabus; some elements may change, particularly as new governmental policies are enacted, and if we see potential for site visits to power plants or for guest lecturers. If changes occur, we will discuss them in class or post them on the Canvas web site for the course. You are responsible for accepting your Canvas invitation and periodically reviewing the site for updates. You should also sign up to automatically receive all announcements to your VLGS email.

Class Times
Monday and Wednesday
9:55 am – 11:10 am
Oakes 210

Contact Information
Professor:  Mark James
            831-1060
            mjames@vermontlaw.edu

Assistant:  Will Fridlund
            831-1151
            wfridlund@vermontlaw.edu

Offices: Eaton House, Room 103

Office Hours:  By appointment

Course Description & Overview
The oil and gas industry has been:
   i)       a driver of economic development and growth across the world for more two centuries; and
   ii)      one our world’s most significant sources of greenhouse gas emissions and other pollutants.

To transition to a clean energy system requires addressing the environmental and social impacts of oil and gas while finding alternative ways to supply the services provided by them. In this course, we will look at the history of oil and gas development and how it shapes our current relationship with fossil fuels. We will trace the process of exploring, extracting, and transporting oil and gas and the efforts to address the negative externalities of those processes. We will investigate if and how American laws and policies can consider and balance the environmental impacts of the oil and gas industry in its policy and decision-making processes. We will explore how the safety of the oil and gas system is regulated. We will examine the financial structure of the oil and gas industry amongst calls for a phasing out of our dependence on oil and gas. In each of these elements, we will review the different roles of the state and the federal government. Getting to a clean energy system requires grappling with our existing system and its history. That will be a theme throughout the class and a focus at the end of the course.
Textbooks

Course Expectations:
Grading
Grading will be based on a 60–100-point score, converted to a letter grade. This score will be based on these elements: class performance and professionalism grade (15%), an in-class mid-term (20%), and a take-home final examination (65%). Grading will be anonymous only on the final exam.

Grading of Professionalism and Class Performance
We will discuss what professionalism means in the first class. Your class performance grade will evaluate your knowledge of assigned materials and pre-class thought about their significance. In addition, participation that indicates an ability to learn from and encourage input from others will be valued highly. Comments that use an understanding of earlier readings to address later ones are particularly likely to make a favorable impression. Grading class performance is inherently subjective, but my conceptual model is very simple: how happy would an employer be to have had you as part of a taskforce that needed to resolve a hard, uncertain, and important problem?

To help me grade your class performance, you must bring and display an easily readable tent-card with your full name upon it for each class. If you do not do this, your class-performance credit and your overall grade will suffer.

Grade Allocations
Written Projects: Twenty percent (20%) of your base grade in this course will be based on in-class exam on private lands leasing and royalties. The date for the exam will be set at the beginning of the semester.

Final Examination: The final examination will count for 65% of the base grade. The final exam will be a take-home, multi-day exam with essay topics and short questions. It is likely to require you to consider several of the topics addressed during the course and may require you to focus on tensions and/or synergies between and among the topics. In other words, if you have not kept up with the readings throughout the course, you will have a very difficult time doing well on the final examination.

Participation and Professionalism
There are several participation elements to your class performance grade which are set forth below:
1. Students will be paired up to make a 7-minute presentation on a current news story from the oil and gas industry. This assignment is worth 5% of the overall grade.
2. Overall participation in class discussions. I expect you to attend and be prepared to participate in each class. The course requires a great deal of reading upon demanding subjects; however, our class time will not be spent merely on going over each day’s assigned material. Instead, I expect to spend most of our class time in discussions that compare different readings and that go beyond the texts themselves. That expectation is linked to the fact that this course is not just about
learning an accepted body of knowledge; rather, it is about searching for better answers in areas where disagreements are persistent, among both experts and lay-folk. Importantly, contributing to these discussions is not just a way for you to learn the underlying material; it is also a valuable skill that the course seeks to build – and grade. Students will rotate through presenting at the start of each class an issue or fact of note that they gleaned from the assigned readings. The presenting student will also provide five words or phrases for inclusion in the course glossary. Your participation is worth 10% of your grade; 5% for general contribution and 5% for submitting questions for guest lecturers and words for the glossary.

3. Professionalism. You should treat class like you would treat a job. First and foremost, treat everyone with respect. Come prepared to participate and if you are not prepared, notify your supervisor. Everyone receives two opt-out passes that they can use at any time during the course to avoid class participation responsibilities. Notify your supervisor if you must be late to or absent from class. Failure to notify me of an absence will result in a 0.5% deduction on the first occasion and 1.0% on each subsequent occasion.

Oil & Gas Learning Outcomes
By the end of this course, you should understand and be able to apply the following concepts:
1. The fundamentals of oil and gas production, pipeline networks, and environmental issues impacting such developments.
2. The role(s) and the relationship between federal, state, local, and industry actors in the regulation of the U.S. oil and gas industry.
3. Key common law principles applicable in U.S. oil and gas production concerning private property rights, torts, and contracts.
4. Key concepts related to the U.S. oil and gas industry, including the history and role of oil and gas in the domestic energy landscape.
5. The underlying domestic oil and gas policy objectives and their relationship to environmental, health, and safety regulations in onshore and offshore activities.
6. How the climate impacts of the oil and gas industry are regulated and what challenges existing for integrating climate considerations into oil and gas policy and decision-making processes at the federal and state level.
7. Emerging trends in unconventional ‘shale’ oil and gas law and policy, with a particular focus on environmental implications and economics.
8. Key technical terms used in the petroleum industry.

Class Attendance and Participation:
If you must be absent due to serious illness or a family emergency, please notify the Registrar’s Office (tmjohnson@vermontlaw.edu) which will notify all your professors. Absences resulting from religious observance, serious illness, and personal emergency will be excused if notice is given in advance or as early as possible, to the Professor or the Registrar. Absences for work, interviewing, exercise, or vacationing will not be excused even if prior notice is given. As per VLGS policy, students who are absent for more than 20% of classes will receive a F grade.
Recording Lectures
Lectures will not be recorded unless a student or student requests it when they have an excused absence. However, you may record the lecture on your own. My only request is to be informed that the lecture is being recorded.

Accommodations for Disabilities
If you have a disability and would like to request an accommodation, please review our Disability Policy at Vermont Law and Graduate School academic accommodations at: https://www.vermontlaw.edu/community/students/academic-success/accommodations.

On that webpage, there is also an on-line form you can complete and upload your supporting documentations. If you have questions, please make an appointment with the Vice Dean for Students. Please note that requests made within two weeks of a midterm, or a final examination may not be granted in time. Please make your request as soon as possible.

Plagiarism Policy
Students are cautioned to comply with the requirements of the Honor Code by avoiding plagiarism and other misconduct as provided in the student handbook. When in doubt about plagiarism, paraphrasing, quoting, or collaboration, consult the instructor. You all know not to plagiarize, but some of you may conceivably be confused as to what plagiarism means in this context. Of course, you all know that you cannot quote another author without attribution. This includes web sites! Merely altering a few words does not permit you to omit quotation marks. In addition, it is also improper to paraphrase or borrow ideas from another, without attribution. If you got an idea from another author, cite that work. It is often appropriate to explain either in text or footnotes how your own argument differs from that previously made by others. You will find other articles’ sources/footnotes to be a rich source of information. However, to the extent that you rely on another article’s footnotes you must read all such sources yourself to make sure they really say what the other author said they said. It is never proper to cite a source you have not yourself read, unless you note that you are “citing Source A citing Source B.” This should only be done rarely, when that second source is important but cannot be located. To the extent you use other authors’ footnotes as starting points you will often find you need to update such footnotes, e.g., by citing to a more current statute or version of the book. If you have any questions regarding when cites are and are not needed, please ask me, or err on the side of citation. Plagiarism is an Honor Code violation that will result in an F in the course and a referral to the Vice Dean for Students for further action.
NOTE: You will see that the course is grouped into different modules. Each module has a specific topic and a specific number of allotted classes. As the course goes on, I will provide more direction on which readings you are responsible for in each week. This structure should allow us flexibility to cover the required elements while exploring individual areas of interest.

**Class 1 – Introduction and History**
In the opening class, we will discuss the basics of oil and gas and have a short in-class discussion on the role of oil and gas companies in achieving the 1.5°C global warming target. You must read the materials on the basics of oil and gas, and you should familiarize with the debate materials so that you can offer an informed position.


**Class Debate Materials**

**Classes 2-6 – Private and Public Leasing**

**Private - Oil and Gas Lease**
- Standard Producers 88 Oil and Gas Lease (please print and bring to class)

**Private - State Conservation Laws**

**Federal – Onshore**
This lecture traces the federal onshore leasing process from start to finish. The process begins with the creation or updating of Resource Management Plans, which identify what lands are eligible to be leased for oil and gas development, continues through the process of leasing and lease auctions, and concludes with the process for securing the right to drill a well. Try to map out the process, identify key steps, and identify costs and timelines.

- [Suggested] 30 U.S.C § 21a – Policy of federal government on development of domestic mineral resources, [https://www.law.cornell.edu/uscode/text/30/21a](https://www.law.cornell.edu/uscode/text/30/21a). Review to see what the U.S. Code establishes as the policy of the federal government on empowering private operators.
• Inflation Reduction Act. Read pages 645-647. (Covering expressions of interest, elimination of non-competitive leasing, and lease term lengths.
• 30 U.S.C. § 226 (c, f, i) - Processes for additional rounds of competitive bidding, approving Application for Permit to Drill, and terminating lease.
• Bureau of Land Management, Proposed Rule, Fluid Mineral Leases and Leasing Process, Federal Register, Volume. 88, No. 140, July 24, 2023. Read II. Executive Summary (note all the applicable laws); IV. Background; and V. Discussion of Proposed Rule – 5. Section by Section (Sections 3103.21, 3103.22, 3103.31, 3103.32, and 3103.41)

Federal - Offshore

Climate Considerations in Federal Leasing Practices
• Kyle Tisdel, Western Environmental Law Center [September 25, 2023]
• Learning materials to come.

Class 7-8 – Leasing Bonuses and Royalty Payments

Private Lands

Federal
• U.S. Department of Interior, *Report on the Federal Oil and Gas Leasing Program: Prepared in Response to Executive Order 14008*, November 2021,
Inflation Reduction Act of 2022. Read Pages 641-644. Note the rise in minimum royalty rate and the cap placed on the maximum royalty rate.


30 U.S.C. § 226 (a-d) (This is where the changes made in the IRA are located in the U.S. Code)

Bureau of Land Management, Proposed Rule, Fluid Mineral Leases and Leasing Process, Federal Register, Volume. 88, No. 140, July 24, 2023. Read II. Executive Summary (note all the applicable laws); IV. Background; and V. Discussion of Proposed Rule – 5. Section by Section (Section 3103.31)


Offshore


Class 9 - Mid-Term (In-Class). Covering private leasing and royalties.

Date to be determined.

Classes 10-14 – Regulating the Environmental Externalities of Oil and Gas Air (Methane Emissions)


- What determines the monitoring frequency for periodic monitoring?
- Where does continuous monitoring take place at the facility?
- What is a super-emitter event?

Jeff St. John, Canary Media, Aerial and satellite imagery can find methane leaks. Will EPA bake the tech into new rules? October 5, 2021, https://www.canarymedia.com/articles/fossil-
fuels/aerial-and-satellite-imagery-can-find-methane-leaks-will-epa-bake-the-tech-into-new-rules


Air (Venting and Flaring)

• Krystal Vasquez, C&EN, *Methane flaring may be less efficient than previously thought*, September 30, 2022, https://cen.acs.org/articles/100/web/2022/09/Methane-flaring-less-efficient-previous.html.
• Assignment - Each student will be given a state’s venting and flaring regulations and the class will assess which state has the strongest set of regulations.

Regulating Methane – Guest Lecture

• Jon Goldstein, Environmental Defense Fund
• This lecture will occur on October 23, 2023.

Learning Materials

Water (Underground Injection Control)
• Megan Hunter, Earthjustice, Guest Lecture
• Earthjustice, *Before the Administrator of the United States Environmental Protection Agency: Petition to Determine by Rule that Ohio’s Class II Injection Well Permitting Program No Longer Represents an Effective Program to Prevent Underground Injection That Endangers Drinking Water Sources and Fails to Comply with the Requirements of the Safe Drinking Water Act*, October 11, 2022, https://earthjustice.org/sites/default/files/files/class_ii_petition_2022oct11.pdf. Read the Executive Summary, Regulatory Background, Class II Injection Wells, and Standards for Withdrawal. Read assigned in-depth section of the petition (assignments will be handed out in class).
• Watch Mini-Lecture based on the following resources:

**Land and Public Health**

- Energy, Economics and the Environment, 5th ed. Chapter 4: Oil and Gas Production. Read pages 219-230. This reading lays out how local governments may regulate public health and environmental externalities of oil and gas production.
- California, *SB-1137 An act to add Article 4.6 (commencing with Section 3280) to Chapter 1 of Division 3 of the Public Resources Code, relating to oil and gas*, September 19, 2022, [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1137](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1137). Read Legislative Counsel’s Digest; Sections 1, 3280, 3281, 3282.
Classes 15-21 – Oil and Gas Facilities and Pipelines

Introduction


FERC Pipeline Approval Process

- FERC, Docket No. PL18-1-000, *Certification of New Interstate Natural Gas Facilities*, February 18, 2022, [https://www.ferc.gov/media/pl18-1-000](https://www.ferc.gov/media/pl18-1-000). Read paragraphs 62-100. This reading will be broken up into the following assignments:
  - Assigned to everyone
    - Read paragraph 62
  - Assigned to individual students
    - Read paragraphs 63-70 – Pipeline Customers
    - Read paragraphs 71-76 – Environmental Impacts
    - Read paragraphs 77-85 – Landowner Impacts
    - Read paragraphs 86-93 – EJ Impacts
    - Read paragraphs 94-100 – Assessing Public Benefits and Adverse Effects
Greenhouse Gas Emissions Evaluations


- FERC, Docket No. PL21-3-000, *Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews*, February 18, 2022, [https://www.ferc.gov/media/pl21-3-000](https://www.ferc.gov/media/pl21-3-000). The reading will be broken up into the following sections, each of which will be assigned to a student. Try to understand how FERC is defining how it will evaluate the different types of GHG emissions from projects seeking its approval.
  - Readings assigned to individual students
    - Read paragraphs 1-5 and 8-14.
    - Read paragraphs 21-31.
    - Read paragraphs 33-41.
    - Read paragraphs 43-45, 49-50, and 53-56,
    - Read paragraphs 79-87 and 97-99.

- [Supplemental] Sierra Club, et al., v. FERC, No. 16-1329, USCADC, August 22, 2017, [https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/FINAL%20ORDER%208-22-17.pdf](https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/FINAL%20ORDER%208-22-17.pdf) (This case is known as Sabal Trail and it confirms FERC’s statutory mandate to examine reasonable foreseeable direct and indirect GHG emissions.) Read pages 2-6, 10-12, and 18-27.


the old Pipeline Policy and may be of interest to you as to what was in place before FERC released the new policy guidance.)

**FERC, DOE, and LNG**

- **Natural Gas Act, Section 3**: [https://www.law.cornell.edu/uscode/text/15/717b](https://www.law.cornell.edu/uscode/text/15/717b). Read (a) through (e).
- Jacob Dick, Natural Gas Intelligence, NextDecade Urges FERC to Act on Rio Grande LNG Approval, February 7, 2023.
- [Supplemental] FERC, *Order on Remand and Amending Section 7 Certificate*, 183 FERC ¶ 61,046, April 21, 2023, [https://www.ferc.gov/media/c-1-cp16-454-003](https://www.ferc.gov/media/c-1-cp16-454-003). This is the order approving the Rio Grande LNG Facility and Pipeline.

**Natural Gas Pipeline Siting - Federal Eminent Domain**

• FERC, Docket No. PL18-1-000, *Certification of New Interstate Natural Gas Facilities*, February 18, 2022, https://www.ferc.gov/media/pl18-1-000. Review paragraphs 77-93 (you were assigned these sections in an earlier class).


**Oil Pipeline Siting - State Eminent Domain**


• Texas Railroad Commission, Form T-4.

**State Environmental Laws and FERC Licensing of Facilities**


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**Class 22 – Environmental Justice in Fossil Fuel Development - Guest Lecture – Roishetta Sibley Ozane**

• This lecture will occur on November 13, 2023

• Learning materials to come.
### Classes 23-24 – Safety in Pipelines and Drilling Rigs

#### Pipeline Safety - Integrity Management Plans

- NTSB.gov, YouTube, *NTSB Investigation - San Bruno Pipeline Explosion*, September 27, 2011, [https://www.youtube.com/watch?v=d-4B7DYVL2g](https://www.youtube.com/watch?v=d-4B7DYVL2g). Watch 0:00 to 2:40; 7:40 to 20:00.

#### Offshore Oil Safety Regulation - Deepwater Horizon

- National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Report to the President, Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling*, January 2011, [https://permanent.access.gpo.gov/gpo2978/DEEPWATER_ReporttothePresident_FINAL.pdf](https://permanent.access.gpo.gov/gpo2978/DEEPWATER_ReporttothePresident_FINAL.pdf). Read pages 1-19 (this section provides an eyewitness account of the hours leading up to the explosion), 67-85, 224-234,


• [Supplemental] U.S. Chemical Safety and Hazardous Investigation Board, YouTube, *Deepwater Horizon Blowout Animation*, June 6, 2014, https://www.youtube.com/watch?v=FCVCOWejlag. Watch this video if you would like to understand how the blowout occurred.

• [Supplemental] Jacqueline Weaver, *Offshore Safety in the Wake of the Macondo Disaster: The Role of the Regulator*, Houston Journal of International Law 36. (Read this article for a detailed breakdown of best regulatory practices in offshore drilling and what the U.S. had before and after the Deepwater Horizon accident.)

**Class 25 - Plugging Abandoned Wells**


**Class 26 – Demand Destruction and the Future of the Oil and Gas Industry**

- Guest Lecturer - Craig Segall, Evergreen Action
- Learning materials to come

This class will occur on November 29, 2023.

**Class 28 – The Big Wrap Up**