State University of New York at Buffalo
School of Law

Environmental Law

Professors Meidinger and Shannon

Final Examination
December 20, 2001

Instructions

1. This is a closed book examination. While taking it, you may not consult any sources of information or analysis outside your own mind, and you may not use a computer. Even after the exam is over, be careful in discussing it with others, since some students may have gotten permission to take the exam later due to illness or other problems. You are on your honor and are subject to the rules of the Law School Honor Code.

2. The exam consists of 25 pages numbered consecutively. Make sure no pages are missing.

3. The exam consists of 22 short-answer questions, each worth 3 to 50 points, for a total of 166. It is divided into two parts. Part 1 consists of a number of discrete short answer and true-false questions. These are based entirely on the readings, films, lectures, and discussions of the past semester. Part 2 involves a long fact pattern that is the basis for a single traditional "issue spotter" question.

4. Write each answer legibly in the space provided on the exam.

5. When a question calls for a true-false, yes-no, or agree-disagree response, you must choose one or the other and circle it. You can then justify or qualify your choice in the explanatory part of your answer. As usual, your reasoning and analysis in reaching a conclusion are more important than the conclusion itself.

6. You have 4 hours to complete the exam.

7. Good luck!

Part 1

1. Water quality standards under the Clean Water Act must be established by the state is which the water is located. (3 points)
   True of False?
   Explain.

2. *"Chevron* deference" is particularly likely to apply when agencies are making decisions that are arguably at the outer limits of Congressional authority. (3 points)
   True or False?
   Explain.

3. Property owners who have not been deprived all economically beneficial use of their property by government regulation can make a takings claim, but it is unclear whether interference with their investment backed expectations will be sufficient to allow them to prevail. (5 points)
   True or False?
   Explain.

4. Humans are one of the most important “keystone species” of all. (3 points)
   True or False?
   Explain.

5. In the video “Natural Connections” E.O. Wilson seeks to capture humankind’s effect on the environment with the acronym, “HIPPO.” What do the letters of the acronym stand for? (5 points).

H

I

P

P

O

6. Generally, when courts review agency decisions they apply the same standards to questions of law as they apply to questions of fact. (5 points)
   True or False?
   Explain.

7. Contrary to the holding in *Lujan*, when making standing determinations courts should recognize "ecosystem nexus" as a basis for injury in fact. (10 points)
   Agree or Disagree?
   Explain.

8. The Fish and Wildlife Service and the National Marine Fisheries Service have the responsibility to list wildlife species as threatened or endangered, and to designate critical habitat. The courts can review whether the evidence was sufficient to list a species, but the agencies alone choose what species to consider for listing and whether to designate critical habitat. (3 points)
   True or False?
   Explain.

9. In his presentation to the Conference on Learning Sustainability in Environmental Law, Professor Driesen argued that the most effective way to promote innovation in environmental protection is for the government to provide direct cash bonuses to companies that develop innovative technologies. (3 points)
   True or False?
   Explain.

10. Under the Endangered Species Act, an agency decision on whether to list a species must be supported by both biological and economic information, but the biological information is more important. (3 points)
   True or False?
   Explain.

11. The cases we read in this course showed that courts almost invariably defer to the expertise of administrative agencies regarding questions that depend on factual or scientific determinations, even when the agencies can cite little evidence to support their determinations. (5 points)
   True or False?
   Explain.

12. In prior appropriation states the “right is defined by use.” Therefore an appropriator who used low quality water for industrial purposes when establishing its water right is limited to an expectation of water quality sufficient for the original industrial use, and has no legal recourse for obtaining higher quality water. (5 points)
    True or False?
    Explain.

13. In reference to our discussion of Coase’s article, The Problem Social Cost, what is the difference between “allocation” and “distribution”? Which of the two is Coase interested in, and why? (6 points)

14. The public trust doctrine applies only to activities in navigable waters. (3 points)
    True or False?
    Explain.

15. In cases such as *Columbia River Fishermen's Protective Union v. City of Saint Helens,* private actors are allowed to bring cases to vindicate public rights. Make four brief arguments for why allowing private interests to do this is a bad idea. (8 points)

16. The Court in *Hercules* noted that Congress wanted the EPA to set "categorical" standards for water pollution (i.e., discharge standards applicable to general categories of sources), rather than standards tied to specific waters. Reflecting on what you have learned about how our pollution regulation system works, list four basic advantages of relying on categorical as opposed to place-specific standards. Be specific enough so that we know what you are saying. (10 points)

    (1)

    (2)

    (3)

    (4)

17. As you answered the above question you were probably also aware that recently the focus has shifted to implementing standards tied to specific receiving waters (e.g., TMDLs). Again reflecting on what you have learned about how our pollution system works, list four basic advantages of relying on place-specific standards. Be specific enough so that we know what you are saying. (10 points)

    (1)

    (2)

    (3)

    (4)

18. Based on Dean Olsen's lecture and the materials regarding the Stillwater Mine agreement, what would you say are the most important reasons companies are willing to go along with Good Neighbor Agreements? Explain. (5 points)

19. In 1994, Judge Dwyer in Seattle Audubon v. Lyons had to rule on the adequacy of the Forest Ecosystem Management Assessment Team report as the basis for the EIS and ROD for a conservation strategy for the spotted owl as well as other endangered species and associated habitats, including the Marbled Murrelet, salmon, and old growth forests. When examining the question of whether the plan was adequate given scientific uncertainty and lack of complete data, he found that the reliance on an adaptive management approach through continuous monitoring and review was a reasonable approach. But he also found that without a strong monitoring program, the lawfulness of the plan would be seriously jeopardized. In 1999, the Oregon Natural Resources Council charged the Forest Service and Bureau of Land Management with a lack of adequate compliance with "survey and monitor" requirements. The court granted an injunction and required the agencies to complete the survey requirements before undertaking management actions. List three important lessons for ecosystem management that emerged from this pair of decisions. (10 points)

20. The Magnuson Act (Magnuson Fishery and Conservation Act 1976) called for the establishment of "individual fishing quotas" as a mechanism to conserve fish. The Department of Commerce promulgated IFQs for halibut and sablefish in 1993. The plaintiffs in Alliance Against IFQs v. Ronald Brown, Sec. of Commerce objected to the allocation of IFQs to boat owners rather than individual fisherman. What analysis did the court use in upholding the allocation to boat owners? (6 points)

21. Under Section 7 of the Endangered Species Act, when an action is proposed by a federal agency that could affect a protected species, the agency primarily responsible for administering the ESA (FWS or NMFS) must develop a Biological Assessment for species considered to be at risk. Based on this scientific assessment, the agency must issue a Biological Opinion as to whether a proposed action is likely to jeopardize the viability of the species (a jeopardy call). Is an EIS also required? (5 points)
    Yes or No?
    Explain.

Part 2

This part of the exam draws on an excerpt from an article that recently appeared in *High Country News*. We have edited and embellished upon the article for purposes of this exam. We thank the author for the informative article on which this problem is based.

FEATURE ARTICLE, November 5, 2001

Wyoming's powder keg

by Hal Clifford

(Excerpted from *High Country News*. Full article available at:

http://www.hcn.org/servlets/hcn.Article?article_id=10823)

Coalbed methane splinters the Powder River Basin

SHERIDAN, Wyo. - Buck Brannaman is an angry man. The world-traveling horse trainer sits on a chestnut quarter horse in an indoor arena. Behind him, students quietly practice their riding skills. Brannaman, who modestly admits he was the inspiration for Nicholas Evans' novel and later the movie *The Horse Whisperer*, does not mince words. His gray eyes are smoldering. "I am the poster child for torn-up ranches," he says bitterly.

The cause of his anger is apparent over the hill behind the arena. A 600-acre draw has been ripped up by earth-moving machines. Small reservoirs have been bulldozed into the creek bottom and a half-dozen drill pads carved out of the surrounding hillsides, each big enough to allow a tractor-trailer rig to turn around. Several gas wellheads jut out of the ground, but none of the wells is producing. At one, fencing falls into an unfilled drilling spoil pit. Nearby, lengths of pipe rust on a staging pad cut out of the pasture. Roads run haphazardly across the sere, grassy slopes.

TORN UP: Mary Brannaman surveys roads laid and wells dug on the ranch she and her husband, Buck, own near Sheridan, Wyoming (Kevin Moloney photo)

The reason for all this is coalbed methane, a form of natural gas that can be cheaply and easily extracted from coal-rich landscapes such as northeastern Wyoming's Powder River Basin. Although Brannaman and his wife, Mary, own the surface rights to this ranch, they do not own the rights to the minerals

underneath, and they, like many of their neighbors, are at the mercy of energy markets hungry for natural gas.

This boom, fueled by Wyoming's lax state regulations and enthusiasm for energy revenues, could be bigger than anything the region has ever seen. It is throwing a net of industrial development over country that until now has been wide-open and empty. It is an experiment not just on the environment, but on the society and economy here.

"I didn't have this place given to me," says Brannaman, who has sued the drilling company that he claims has abandoned its work on his property. "I worked for every damn dime, riding some of the most difficult horses in the world and eating bad food on the road. I've given up my body and my health for this place."

So far, says Brannaman, his legal fees and lost income amount to $180,000, and he's running out of patience. Pointing to tree-sitter Julia Butterfly Hill's success at protecting an old-growth forest grove in California, Brannaman says, "If it takes bringing 200 environmentalists into town and having them live in tents on my creek, I'll do it. I've never been one for siding with the wackos, but things change when you're protecting your home."

Landscape-changing development

SCARS: Energy workers dig a trench for gas and water pipelines on the Sorenson family homestead in the Powder River Basin (Kevin Moloney photo)

Bigger than Vermont and New Hampshire combined, the 20,000-square-mile Powder River Basin spreads east from the Bighorn Mountains to Thunder Basin National Grassland and laps north across the border into Montana. The entire basin is underlaid by multiple coal seams in the rough shape of a bowl. In the center, around the broken hills of the Powder River Breaks, the seams are 1,200 feet deep, and they join to form a massive underground coal deposit known as Big George.

The landscape slowly smooths out as you drive east from the Powder River, at first resembling hundreds of huge bread loaves huddled together, then easing down into the long, rolling grasslands around Gillette. Here, along the eastern edge of the basin, large strip mines pock the land. The coal mines, opened during the 1970s, brought the first large-scale energy bonanza to the region. Commercial coalbed methane technology dates to the late 1980s, when drillers sank relatively shallow 350- to 1,200-foot-deep wells in the Black Warrior Basin in Alabama and the San Juan Basin in southern Colorado. But in northeastern Wyoming, gigantic coal reserves and skyrocketing demand combined over the past two years to ignite the first big coalbed methane boom.

Geologists have sharply upgraded their estimates of recoverable coalbed methane in the Powder River Basin in recent years, to as many as 39 trillion cubic feet, or more than a year's gas supply for the entire nation. The deregulating electricity industry, in its search for fast and flexible power sources, is battling to get at this massive amount of methane. While coal-fired plants can take a decade to plan and construct, natural-gas fired plants - often no more than aircraft turbines mounted on concrete pads - can be put up in months.
This demand has helped to push up gas prices. An average coalbed methane well produces 100,000 cubic feet of gas each day, worth between $1,200 and $10,000 during the past year, depending on market price.

Industry analysts say the cost of finding and developing coalbed methane ranges from 20 cents to 40 cents per thousand cubic feet, about one-third the cost of traditional deep-well natural gas. Coalbed methane companies, one analyst declares, are "just beautiful economically."

Not everyone is so thrilled. "We're playing God with the environment," says Walter Merschat, president of Scientific Geochemical Services in Casper and a critic of the haphazard approach to coalbed methane development in Wyoming. "This is shooting yourself in the foot with both barrels."

As of mid-August 2001, private companies had drilled 10,538 coalbed methane wells in the Powder River Basin, but the Bureau of Land Management's projection is that industry may sink 80,000 wells here by 2010. Eventually, up to 139,000 wells, one every 80 acres, could essentially cover the entire basin. Coalbed methane critics recite a litany of problems with the technology. Drilling a coalbed methane well typically disturbs four acres on each 80-acre parcel. Noisy well pumps and compressor stations spew nitrous oxide and other pollutants into the air, and Wyoming officials acknowledge that many of these emissions are unregulated and may violate air quality standards. Heavy vehicle traffic damages roads and throws up dust.

The biggest headache for many landowners is water disposal. Just as popping the top on a can of cola frees the dissolved carbon dioxide, pumping water from a coal seam to the surface frees the methane from the ground.

As of last March, well operators in the basin were pumping 1.85 billion gallons of water to the surface every day, causing an ironic problem: how to dispose of water in an arid landscape. In many places, the wastewater contains dissolved sodium, calcium and magnesium, and cannot be used for irrigation or dumped in waterways.

In Colorado, coalbed methane water is reinjected into deep strata, but in Wyoming, state law does not require reinjection, and some coalbed methane

operations have flooded hay meadows and killed trees. Other operators build reservoirs on private ranchland.

Once coal deposits are dewatered, says Merschat, gas migrates toward the surface in any direction it can, not just up well bores. It is odorless, colorless, tasteless. It can accumulate in buildings. The potential result? "Boom!" says Merschat, throwing up his hands.

A more mundane, but widespread, problem is salt. The state of Montana is worried about elevated salt levels from coalbed methane water in the Powder, Little Powder and Belle Fourche rivers, which flow north from Wyoming.
Then there's the way coalbed methane fields look. Each well pad may contain up to five wells, one for each distinct coal seam. Structures the size of garden sheds shelter the wellheads. A road leads to each pad, along with a gas-collection pipeline, a water-disposal pipeline and a power line. Every few hundred acres, larger buildings house truck-sized compressors to pressurize the gas for transport. At wells without electrical power, a refrigerator-sized portable power generator is required.

To understand what this sort of infrastructure does to the landscape, "visualize it as 80-acre ranchettes," says Mickey Steward. She is coordinator for the CoalBed Methane Coordination Coalition, which is composed of five county commissioners, two conservation districts, the state of Wyoming, and a representative of the industry. The group describes its goal as "effective information transfer for rational development of coalbed methane."

A driller empties water from a fresh well into a holding pond on a ranch near Sheridan. When the water is moved from a well, gas is released from the coal below (Kevin Moloney photo)

The simplest solution

The prospect of energy ranchettes blanketing the Powder River Basin horrifies many who live here. "This will turn into an industrial site," says Dale Ackels. A 60-year-old retired Army officer, Ackels raises hay on 100 acres along Lower Prairie Dog Creek, north of Sheridan. . . .

Although he has not experienced coalbed methane drilling on his property, [Ackel] is surrounded by wells, and expects it will only be a matter of time. "I'd be more comfortable with this," he says, "if the state of Wyoming had said, 'We have this wonderful opportunity and we're going to slow down and look at our options.' The approach Governor (Jim) Geringer took was basically to try to slicky it by us.

We're hunting for the easiest, simplest solutions the gas companies will approve."

The state of Wyoming, which has no income tax, earns 40 percent of its revenues from energy production. Because the Powder River Basin has been an energy source for decades - and a major source of state funds - there has been almost no public debate in Wyoming about whether coalbed methane development is a good idea or how it should proceed.

If state officials had any doubts, the numbers have convinced them: In 2000, the state was $183 million in the red. In 2001, Wyoming ran an estimated $695 million surplus, thanks to greatly increased energy production and prices. Coalbed methane now accounts for 12 percent of natural gas production in Wyoming - worth about $26 million in state revenue this year - and that number is likely to grow.

Gov. Geringer, R, has insisted that state agencies not stand in the way of development, saying the state would speak with a "unified voice" to move development along. In November 1999, assistant Wyoming state-land director Harold Kemp sent out a letter encouraging drilling companies to "Go Blue!" - to drill on the state sections, marked in blue on most land-use maps, rather than wade through the cumbersome permitting process for federally owned gas. Dennis Hemmer of the Department of Environmental Quality insists that "Wyoming has done coalbed methane development right." He cites Wyoming's Aug. 1 agreement with Montana to monitor salt levels in the Powder and Little Powder Rivers. If levels rise, he says, Wyoming will take action to get them back down. The agreement doesn't specify what that action would be.

But the state's boosterism hasn't just increased the number of wells in the basin. It's also created an enormous regulatory rift, one that the gas industry is exploiting to full advantage.

The state of Wyoming typically owns two square miles-worth of surface and mineral rights in each 36 square-mile township, while the Bureau of Land Management owns over half of the basin's mineral rights and 10 percent of the surface area. Private owners control the balance.

Though the federal government controls the lion's share of the resource, it has been slow to join the coalbed methane game. BLM officials have suspended drilling while they conduct an environmental impact statement on the 50,000 coalbed methane wells expected to be drilled on federal gas holdings in the Powder River Basin in coming years. That study isn't due until July 2002.

So the coalbed methane frenzy in the Powder River Basin has a patchwork quality: Coalbed methane developers have drilled on state and private (known as "fee") mineral holdings, but not on federally owned coal deposits. This has

created a problem known as drainage, where gas on federal mineral holdings drains toward and eventually up the wells on adjacent state or fee mineral holdings.

"In some places, we'd lost over 60 percent or more of our minerals over about two years," says Richard Zander, assistant field manager at the BLM office in Buffalo [Wyoming], which collects a 12.5 percent severance tax on coalbed methane production. "We were losing about $45,000 a day in (federal) royalties."

BLM officials completed a stopgap environmental assessment in March 2000 that permitted 2,500 wells to recover BLM-owned gas in the eastern part of the Powder River Basin, where the drainage is worst. The idea was to get those wells in the ground before surrounding state and fee wells took all the federal gas.

"I've never been one for siding with wackos, but things change when you're protecting your home."

-- *rancher Buck Brannaman*

"You have to drill to protect yourself," Zander explains. That argument makes environmentalists apoplectic. "I think that what went on up there was openly dishonest and deceitful," says Travis Stills, research director and staff attorney for the Oil & Gas Accountability Project in Durango, Colo. The BLM, he says, could have charged adjacent drillers for any federal gas they withdrew. "This was an end run around the need for an environmental impact statement."

The net effect of this mixed ownership and uneven regulation is that the boom feeds the boom: Once drilling starts, adjacent mineral owners are under pressure to drill on their own property or risk losing their gas to their neighbors. Even those who want to go slowly may not be able to afford to do so.

"We can do the federal review, but if we don't have the same constraints on state and private land, I don't think we're doing the Powder River Basin any favors," says Willy Frank, who supervises the dozen BLM staffers who monitor coalbed methane drilling and reclamation.

Frank is careful to make notes when he visits a well site, filling out complaint forms about a poorly built water bar or an improperly located water discharge point. But his concerns seem oddly small in a radically changing region. Landscape-level issues do not seem to be on the BLM's radar screen.

"Never before have I dealt with an environmental issue where the big picture was so obfuscated," says Mark Gordon, manager of the 22,000-acre Ucross Ranch north of Buffalo, a veteran of Wyoming environmental battles and a member of *HCN*'s board of directors.

A horse trade with industry

"If my (drinking water) wells that have been here since 1915 go dry," hay farmer Ackels says evenly, "I'm going to sue the bastards, if only so I can face myself in the morning." [End of Excerpt]

Question

22. Mr. Ackels has grown much more upset since this article was written. He is no longer worried only about his well water drying up. Now one of his biggest concerns is “too much water.” Mr. Ackels’ property is located on the east bank of Lower Prairie Dog Creek. Little Prairie Dog Creek is a tributary of the Powder River, which runs north into Montana, eventually joining the Yellowstone River, which then joins the Missouri River at the Montana-North Dakota border. The coal methane well on the property directly east of Ackels’ land has been in full production since summer, discharging approximately 10,000 gallons of water per day. That well, along with two wells on the Branaman property to the south, is operated by Envigor Corporation. Initially the discharged water simply seemed to soak into the land around the well, turning it into a marsh area, albeit one with very little vegetation.

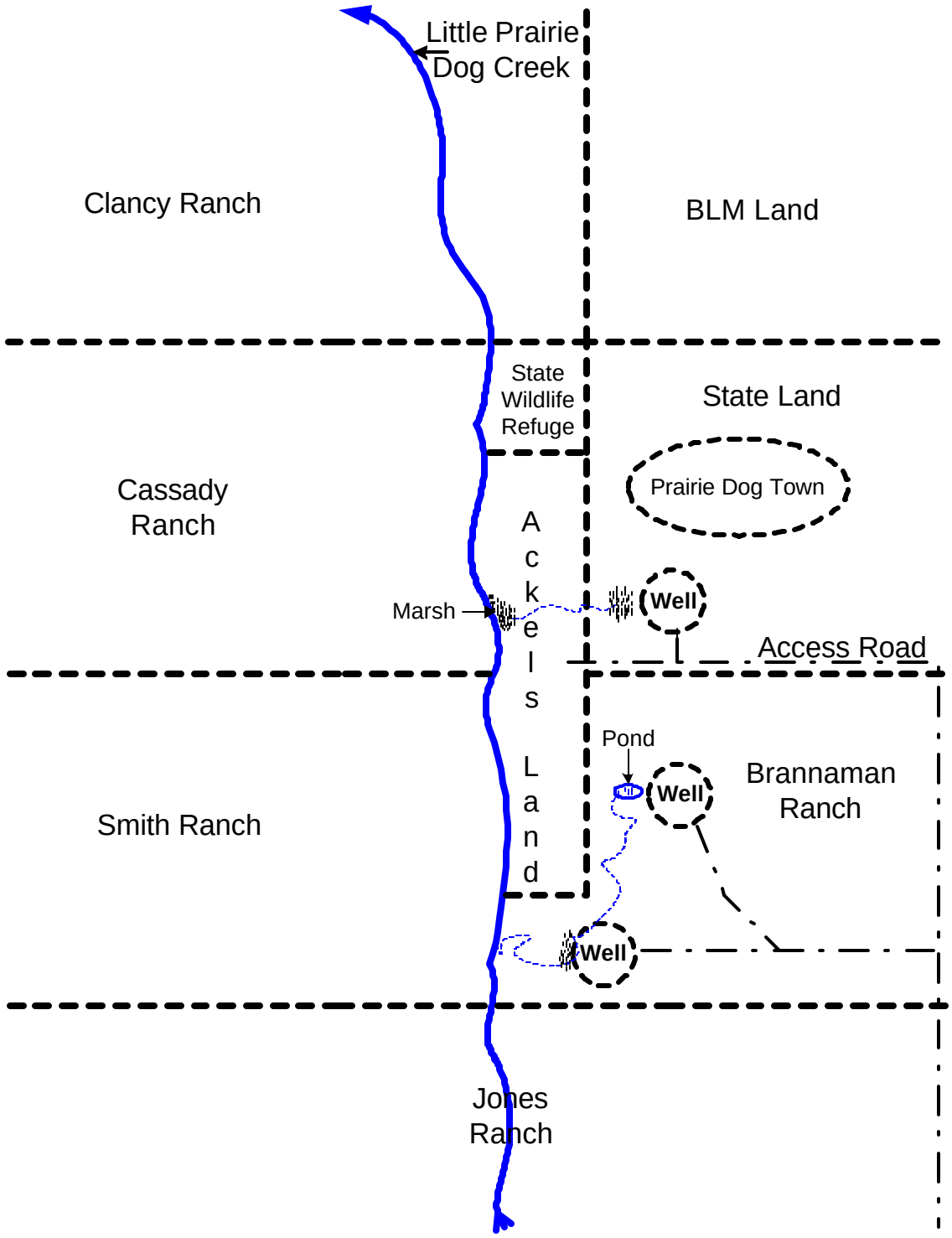
    In recent months the water has begun to flow across Ackels’ land, and indeed has cut a jagged-banked creek into it. As sketched in the diagram below, the creek flows westward into a marsh on the edge of the Powder River. Although there has long been a marsh on that part of the shore, the added flow from the well seems to have led to its considerable expansion. Ackels thinks it is likely to remove several acres of land from hay production next year. In addition, the creek has seriously eroded his land, and made it quite difficult to move between the northern and southern parts. Now that it is winter, an additional problem has become apparent; the water typically freezes at night and remains frozen on cold days. This makes it dangerous simply to walk in the area, especially since the ice functions as a dam causing the creek to overflow its banks and create sheets of ice on the ground. To top everything else off, the water seems to be killing the grass that it flows over. Ackels says it has a strong “chemical odor.”

    Mr. Ackels is also very upset about the noise produced by the compressors and generators on the well site. He has tried to live with the continuous racket, but finds that he is having a hard time getting used to it, and particularly sleeping. In addition, both he and his wife find the frequent truck traffic on the nearby well site unnerving and invasive. More than once they have thought they were alone only to find the headlights of a truck beaming through their windows in the middle of the night. “Hell,” he says while sitting in your office, “I don’t think even the dam prairie dogs have any privacy. And god knows the ferrets are going to have a hell of time coming back from the brink of extinction with that racket day and night and all those

trucks running ‘em down whenever they wander a little.” He is referring to the prairie dog town located on the state land several hundred yards north of the well site. Several years ago, before the coal methane boom, the State of Wyoming reintroduced Black Footed Ferrets into the area of the prairie dog town. Black footed ferrets are an endangered species. They were on the verge of extinction when biologists decided to capture some of the few remaining individuals and breed them in captivity. Although the animals are quite skittish and easily disturbe, the breeding program ultimately succeeded. Eventually over a hundred ferrets were reintroduced into the wild near prairie dog towns in several different locations. The reintroductions were near prairie dog colonies because prairie dogs make up about 90% of Black Footed Ferrets’ diet. A family of four ferrets is estimated to eat about 800 prairie dogs per year. The near demise of the ferrets is generally understood to have been a function of the historical decimation of prairie dog populations by farmers and ranchers, who traditionally have seen them as competing for grass and destroying crops.

Ferrets live in abandoned prairie dog burrows. They are nocturnal, and often range a mile or more at night. When environmentalists objected to the location of a methane wells so close to prairie dog and ferret habitat, Assistant State Land Director Kemp issued a short statement: “If methane production can be proved to lead to a decline in ferrets we will make the necessary adjustments. Until then, however, we think the complaints we’ve heard are mostly environmentalists crying ‘wolf’ and we do not intend to let their bluster prevent us from pursuing the best interests of the State of Wyoming.”

Mr. Ackels is in your office to ask for your professional opinion on whether there is any way to stop the damage to his land and to his use and enjoyment of it. Based on the materials we read for this course, briefly list the different causes of action he might pursue. Note (1) each legal claim he could invoke, (2) who the defendant or defendants would be, (3) what the key issues would be, and (4) whether he would be likely or unlikely to prevail in court, and why. Base your assessments on the general principles of law we studied in this course. It is not necessary or appropriate for you to speculate about specific Wyoming state law or about areas of law we did not study, even if they might offer additional causes of action. Finally, we are leaving you more space than you should need, so do not feel it necessary to fill all of the pages. (50 points)


Little Prairie Dog Creek
Clancy Ranch
BLM Land
State Wildlife Refuge
State Land
Cassady Ranch
Prairie Dog Town
Ackels Land
Marsh
Well
Access Road
Pond
Well
Brannaman Ranch
Smith Ranch
Well
Jones Ranch

End of Exam
We wish you a very happy holiday break.