MICROFILM DIVIDER

OMB/RECORDS MANAGEMENT DIVISION
SFN 2053 (2/85) 5M

ROLL NUMBER

DESCRIPTION

1145

2003 HOUSE NATURAL RESOURCES

HB 1145

2003 HOUSE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. 1145

House Natural Resources Committee

☐ Conference Committee

Hearing Date January 16, 2003

Tape Number	Side A	Side B	Meter #
3	xx		all
		xx	0-2656
Committee Clerk Signature Eli Moen			

Minutes:

Chair Nelson: opened HB 1145 relating to a temporary exemption from the gross production tax for gas produced from shallow gas wells.

Lynn Helms: Director, NDIC Oil & Gas Division. **(see attachment).**

John P. Bluemle: State Geologist. **(see attachment).**

Chair Nelson: Where was Montana and Wyoming at before the incentive.

Lynn Helms: Those numbers were from Wyoming when they had 600 cbm wells. Prior to that two dozen wells. They rescind the incentive when they reached 4500 wells.

Chair Nelson: Was the tax situation the only factor.

Lynn Helms: It was not based on that. It was part of an entire package. The technology has moved far in the last decade.

Rep. Clark: What is the typical life span of a well.

Lynn Helms: 15 to 20 years.

Rep. Porter: What is the cost of the impact on the local economy.

Lynn Helms: $600,000 per well. Big money.

Ron Ness: ND Petroleum council. Spoke in favor of HB 1145.

Jim Arthaud: Billings County Commissioner. Spoke out in support HB 1145. 90% of our revenues come from oil and gas. There has been no true gas play in Williston.

Vickey Steiner: ND association of Oil and Gas Counties. Spoke out against HB 1145. **(see attached testimony).**

Mickey Steward: Wyoming CBMCE. Gave neutral presentation. **(see attached testimony).**

Dan Bose: **(see attached testimony).**

Chair Nelson closed the hearing.

2003 HOUSE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. 1145

House Natural Resources Committee

☐ Conference Committee

Hearing Date January 17, 2002

Tape Number	Side A	Side B	Meter #
1	xx		1,841
Committee Clerk Signature			

Minutes:

Robert Harms: Counsel to the Governor. **(See Attached Testimony).**

Rep. Nottestad: Asked about concerns from the counties relating to road maintenance. What answer do you have for them.

Robert Harms: Those impacts are not there now. It is not happening now.

Rep. Nottestad: If the roads have to go in. The money has to be up front.

Robert Harms: The state is trying to achieve economic development. There will be revenue streams going back to the counties to fulfill the impact. You have to give a little to get a little.

Rep. Kelsh: Our tax rate is significantly lower than WY. Are we going to give it away. If there is a 24 month holiday how will we handle the upfront costs.

Robert Harms: We are not comparing apples to apples. Wyoming's tax rate is based on conditions existing in Wyoming. The market will bear more.

Rep. Keiser: Was there any discussion of impact funds from the DOT?

Robert Harms: No, there is impact funding available from DOT.

Rep. Drovedal: I congratulate the Governor on looking at developing the oil industry in North Dakota. Will you work with us on these issues.

Robert Harms: Absolutely.

Chair Nelson: Has there been any thought within the governor's office of creating an opt in process. This would minimize any impact problems by giving the counties more options.

Robert Harms: Not really, The state does not have shallow gas wells. They do not exist. Going from county to county would minimize the willing investors.

Rep. Kelsh: Have you looked to grant programs.

Robert Harms: We can explore that further.

Chair Nelson closes the hearing.

2003 HOUSE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. 1145

House Natural Resources Committee Sub Committee on HB 1145

☐ Conference Committee

Hearing Date January 30, 2003

Tape Number	Side A	Side B	Meter #
2	xx		0-4048
Committee Clerk Signature Eric Meyer			

Minutes:

Rep. Klein called the meeting to order introduces an amendment on HB 1145.

Lynn Helms: The sunset clause is a little short for getting this program off the ground. The pilot would not be complete by the time this would sunset.

Rep. Solberg: When would you window start.

Lynn Helms: The first gas sales.

Vickie Steiner: When would that be.

Lynn Helms: Mar-April 2004 we could sunset this before the project gets started. If we extended it we could wait to see the impact. If you waited until the next session we would be able to get a better read on the effectiveness in the next legislative session.

Rep. Klein: This would be before the next legislative session. We will not know anything by this.

Rep. Klein: There is little possibility that there would be a county commission that would opt out of this plan anyway. I don't think the people would stand for it.

Lynn Helms: A project by project proposal would be a nightmare.

Vickey Steiner: The Bowman county commissioners would like to know what part of the county is being impacted.

Rep. Solberg: There is way more enthusiasm for this bill than against it.

Gary Preszler: Discussed the impact of this bill on the impact fund. This would fit into the definition. There are not enough funds to pay for it all.

Rep. Klein: Can this fund be prioritized?

Gary Preszler: The director determines this.

Lynn Helms: We can move money into the fund.

Chair Kelsh adjourns the meeting.

2003 HOUSE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. 1145

House Natural Resources Committee

❑ Conference Committee

Hearing Date January 31, 2003

Tape Number	Side A	Side B	Meter #
1		xx	2,413-4327
Committee Clerk Signature			

Minutes:

Chair Nelson called the meeting to order.

Rep. Klein: gave an overview of the subcommittee meeting the day before.

Rep. Klein moved an amendment **Rep. DeKrey** seconded the motion.

Rep. Porter: Expressed concern over the expiration clause because they rarely sunst.

Chair Nelson: Expressed suprise over the fact that the counties did not make the case concerning the opt in clause. Both sides of this issue were at the table.

The motion passed by voice vote.

Rep. Dekrey moved a **Do Pass** with amendment. **Rep. Nottestad** seconded the motion. The motion carried by a vote of 11-1-2.

Rep. DeKrey will carry.

FISCAL NOTE

Requested by Legislative Council
02/11/2003

REVISION

Amendment to: HB 1145

1A. **State fiscal effect:** *Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.*

	2001-2003 Biennium		2003-2005 Biennium		2005-2007 Biennium	
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds
Revenues			($13,300)	($2,700)		
Expenditures			$28,000			
Appropriations						

1B. **County, city, and school district fiscal effect:** *Identify the fiscal effect on the appropriate political subdivision.*

2001-2003 Biennium			2003-2005 Biennium			2005-2007 Biennium		
Counties	Cities	School Districts	Counties	Cities	School Districts	Counties	Cities	School Districts
			($24,000)					

2. **Narrative:** *Identify the aspects of the measure which cause fiscal impact and include any comments relevant to your analysis.*

HB 1145 provides a 24-month exemption from Gross Production tax for new or recompleted shallow gas wells. Overall, the fiscal impact is an expected reduction in gross production tax revenues totalling $40,000 for the 2003-05 biennium.

The revised fiscal note is relative to a reduction in the expected IT costs for modifying the processing system only.

3. **State fiscal effect detail:** *For information shown under state fiscal effect in 1A, please:*
   A. **Revenues:** *Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.*

   B. **Expenditures:** *Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.*

   C. **Appropriations:** *Explain the appropriation amounts. Provide detail, when appropriate, of the effect on the biennial appropriation for each agency and fund affected and any amounts included in the executive budget. Indicate the relationship between the amounts shown for expenditures and appropriations.*

Name:	Kathryn L. Strombeck	**Agency:**	Tax Dept.
Phone Number:	328-3402	**Date Prepared:**	02/11/2003

FISCAL NOTE

Requested by Legislative Council
01/02/2003

Bill/Resolution No.: HB 1145

1A. **State fiscal effect:** *Identify the state fiscal effect and the fiscal effect on agency appropriations compared to funding levels and appropriations anticipated under current law.*

	2001-2003 Biennium		2003-2005 Biennium		2005-2007 Biennium	
	General Fund	Other Funds	General Fund	Other Funds	General Fund	Other Funds
Revenues			($13,300)	($2,700)		
Expenditures			($59,000)			
Appropriations						

1B. **County, city, and school district fiscal effect:** *Identify the fiscal effect on the appropriate political subdivision.*

2001-2003 Biennium			2003-2005 Biennium			2005-2007 Biennium		
Counties	Cities	School Districts	Counties	Cities	School Districts	Counties	Cities	School Districts
			($24,000)					

2. **Narrative:** *Identify the aspects of the measure which cause fiscal impact and include any comments relevant to your analysis.*

HB 1145 provides a 24-month exemption from Gross Production tax for new or recompleted shallow gas wells. Overall, the fiscal impact is an expected reduction in gross production tax revenues totaling $40,000 for the 2003-05 biennium.

3. **State fiscal effect detail:** *For information shown under state fiscal effect in 1A, please:*
   A. **Revenues:** *Explain the revenue amounts. Provide detail, when appropriate, for each revenue type and fund affected and any amounts included in the executive budget.*

The fiscal note assumes 20 new wells qualify for this exemption during the 2003-05 biennium, and 20 recompletions qualify for this exemption. Wells will qualify beginning at different times throughout the biennium, so all 40 wells were assumed to qualify for an average of 12 months' exemption in the biennium, computed at historical average production rates and using the current gas tax rate.

   B. **Expenditures:** *Explain the expenditure amounts. Provide detail, when appropriate, for each agency, line item, and fund affected and the number of FTE positions affected.*

If enacted, HB 1145 will cause an estimated -$59,000 of one-time administrative costs associated with modification to existing computer systems to administer the exemption.

   C. **Appropriations:** *Explain the appropriation amounts. Provide detail, when appropriate, of the effect on the biennial appropriation for each agency and fund affected and any amounts included in the executive budget. Indicate the relationship between the amounts shown for expenditures and appropriations.*

Name:	Kathryn L. Strombeck	**Agency:**	Tax Dept.

Phone Number: 328-3402

Date Prepared: 01/15/2003

38099.0102
Title.

Prepared by the Legislative Council staff for
Representative F. Klein
January 28, 2003

PROPOSED AMENDMENTS TO HOUSE BILL NO. 1145

Page 1, line 3, after "wells" insert "; and to provide an expiration date"

Page 1, line 16, after "**exemption**" insert "**by county**" and replace "Shallow" with "If approved by the board of county commissioners for production of gas within a county, shallow"

Page 1, line 18, replace "the effective date of this Act" with "June 30, 2003,"

Page 1, after line 21, insert:

"**SECTION 3. EXPIRATION DATE.** This Act is effective for gas wells completed or recompleted through June 30, 2005, and is thereafter ineffective."

Renumber accordingly

Date: 1/31/03
Roll Call Vote #: 1

2003 HOUSE STANDING COMMITTEE ROLL CALL VOTES
BILL/RESOLUTION NO. 1145

House House Natural Resources Committee

☐ Check here for Conference Committee

Legislative Council Amendment Number

Action Taken Do Pass as Amended

Motion Made By Klein Seconded By Norland

Representatives	Yes	No	Representatives	Yes	No
Chairman Jon O. Nelson	✓				
Vice-Chairman Todd Porter		✓			
Rep. Byron Clark	✓				
Rep. Duane DeKrey	✓				
Rep. David Drovdal	✓				
Rep. Lyle Hanson	✓				
Rep. Bob Hunskor	✓				
Rep. Dennis Johnson	✓				
Rep. George Keiser					
Rep. Scott Kelsh	✓				
Rep. Frank Klein	✓				
Rep. Mike Norland	✓				
Rep. Darrell Nottestad	✓				
Rep. Dorvan Solberg					

Total (Yes) 11 No 1

Absent 2

Floor Assignment Rep. Klein

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

HB 1145: Natural Resources Committee (Rep. Nelson, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (11 YEAS, 1 NAY, 2 ABSENT AND NOT VOTING). HB 1145 was placed on the Sixth order on the calendar.

Page 1, line 3, after "wells" insert "; and to provide an expiration date"

Page 1, line 18, replace "the effective date of this Act" with "June 30, 2003,"

Page 1, after line 21, insert:

"**SECTION 3. EXPIRATION DATE.** This Act is effective for gas wells completed or recompleted through June 30, 2007, and is thereafter ineffective."

Renumber accordingly

2003 HOUSE APPROPRIATIONS

HB 1145

2003 HOUSE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. HB 1145

House Appropriations Committee

❑ Conference Committee

Hearing Date 02-11-03

Tape Number	Side A	Side B	Meter #
1		X	28.7 - 41.1
Committee Clerk Signature Chris J. Nyhus			

Minutes:

Chairman Svedjan Opened HB 1145 for discussion. A quorum was present.

Rep. Nelson Bill exempts counties from a gross production tax for a period of 4 years. There were some concerns for the length of the exemptions. The fiscal impact came from ITD.

Rep. Svedjan The way I read the fiscal note is looking at a reduction in revenues, but there is an increases expenditure which really is not an appropriation.

Rep. Nelson Yes, there is no state money generated thro h taxes in this.

Chairman Svedjan This $28,000 increase is not an additional appropriation. Will it be absorbed by ITD?

Rep. Nelson I can't answer that question.

Rep. Skarphol I assume what is required for that $28,000 is to modify the software for the exemption. There are already some exemptions in state law in regards to oil and gas production. This would be a total exemption for 4 years.

Chairman Svedjan This falls below the threshold for the Appropriations Committee to look at it. We don't need to see this.

Rep. Nelson Today is the first day that I have seen the revised fiscal note.

Rep. Monson If we don't need to see this, then we should kick it out of here with no recommendation.

Rep. Wald Some of the comments I've heard back home, as I understand, a 24 month reduction in the tax, these wells have a short life span. If we put a 24 month exemption on here, that is the major production for some of these smaller wells.

Rep. Nelson This is experimental drilling going on in the Amadon area. A 2 year exemption wasn't long enough from the industry standpoint. A lot of water comes out of the well first with coal bed methane drilling. That is when a lot of the gas builds up in the veins. Wyoming expanded methane production like this. This is a responsible bill and policy.

Rep. Wald The gas can't be trucked, you need lines. Gas lines can't be taxed.

Chairman Svedjan How are expenditures handled?

Jim Smith The agency affected would have to ask for additional spending.

Rep. Skarphol There won't be an adjustment for the 03-05 biennium because the pumping out of water lasts about 2 years on average. This software change wouldn't have to happen until after the 03-05 biennium.

Rep. Monson I move a Do Pass. 2nd by Rep. Wald Motion carries on a voice vote. Rep. Frank Klein will carry this bill.

REPORT OF STANDING COMMITTEE (410)
February 11, 2003 12:00 p.m.

Module No: HR-26-2259
Carrier: F. Klein
Insert LC: . Title: .

REPORT OF STANDING COMMITTEE

HB 1145, as engrossed: Appropriations Committee (Rep. Svedjan, Chairman) recommends **DO PASS** (23 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HB 1145 was placed on the Eleventh order on the calendar.

(2) DESK, (3) COMM

2003 SENATE FINANCE AND TAXATION

HB 1145

2003 SENATE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. HB1145

Senate Finance and Taxation Committee

☐ Conference Committee

Hearing Date March 4, 2003

Tape Number	Side A	Side B	Meter #
1	X		3115-end
1		X	1-1790
2	X		1-550
Committee Clerk Signature			

Minutes:

Chairman, Senator Urlacher opened the hearing on HB1145. A quorum is present. This bill relates to a temporary exemption for the gross production tax for gas produced from shallow gas wells.

Bill Goetz, Chief of Staff, Governor's Office (mtr #3180) - Testified in support of HB1145. Explained the intent of the bill. This bill is a result of a periodic review of the state energy policy. HB1145 addresses the tax policy for shallow gas wells in the state. Tax policy is used to encourage gas well production. Urges the committee's support.

Lynn Helms, Director Industrial Commission, Oil and Gas Division (mtr #3596) - Testified in support of HB1145. Addressed the methane economy and the shallow gas potential in ND. Written testimony is attached.

Ed Murphy, North Dakota Geological Survey (mtr #4080) - Testified in support of HB1145. Provided background information on the coalbed methane potential of the Williston Basin. Written testimony is attached.

Senator Urlacher (mtr #4625) - Question regarding the number of new wells needed to get a handle on production.

Mr. Murphy - Not just the number of wells, but also the spacing. Proposed pilot project that looks at thirteen producing wells in one section. Need to get wells closely spaced.

Senator Urlacher (mtr #4701) - Question regarding the procedure/requirement for hole plugging.

Mr. Murphy (mtr #4716) - Deferred to Mr. Helms to answer that question.

Senator Urlacher (mtr #4739) - Question regarding keeping a log when drilling a well.

Mr. Murphy - Will defer to Mr. Helms.

Mr. Helms (mtr #4810) - Resumed testimony on page two of written testimony with additional information on shallow gas wells in ND. Feels this is an important piece of legislation. In response to question on how wells are drilled and plugged, they would be treated as oil wells are treated.

Senator Nichols. (mtr #5502) - Question regarding the type of delivery system.

Mr. Helms (mtr #5525) - Natural gas is problematic from the delivery stand point. Requires a pipeline infrastructure and treating in order to be marketable. The natural gas that we are talking about is quite different than the natural gas that comes out of the oil wells. Gave detailed information on the differences between oil well gas and coal bed natural gas and what is needed to move the product to market.

Senator Nichols (mtr #5906) - Questioned if natural gas is imported by the United States.

Mr. Helms (mtr #5945) - Gave numbers detailing the amount of gas produced in the U.S.(85%), the amount imported from abroad (1%) and the amount imported from Canada (14%).

Senator Tollefson (mtr #) - Question regarding the thickness of the base.

Tape 1, Side B

Mr. Murphy (mtr #1) - Answered the question from Senator Tollefson regarding the thickness of the base.

Senator Urlacher (mtr #89) - Question regarding the old oil wells. Is information available from old oil wells if they have run into coal?

Mr. Helms (mtr #107) - Prior to year 2000, rules did not require a log to be run to the surface. A lot of information was missed. Rule implemented in 2000 that required a log to be run all the way to the surface on all oil wells drilled.

Senator Urlacher (mtr #190) - Question regarding the oil wells and availability of verifiable information from those wells.

Mr. Helms (mtr #213) - Pilot program proposes taking some wells significantly deeper.

Ron Ness, ND Petroleum Council (mtr #260) - Testified in support of HB1145. Gas wells are much cheaper to drill and operate than oil wells and the economics are better and not as volatile. Referenced charts included in written testimony. Written testimony is attached. Also introduced council members that would be able to answer questions asked on the previous bill.

Loren Kopseng, Owner, Missouri River Royality (mtr #498) - Testified in support of HB1145. Is a businessman that markets natural gas. Talked about the marketing, use, and fees associated with natural gas. It is very conceivable that shallow gas is in North Dakota. This bill would send a positive message to natural gas producers, that North Dakota is a supporter. Urges a do pass.

Vicky Steiner, ND Association of Oil and Gas Producing Counties (mtr #1270) - Is neutral on the bill Found that the membership counties are split in their support of shallow gas. Does support the sunset in the bill so that it can be reevaluated. Also support the economic development this would bring to the counties.

Senator Wardner (mtr #1533) - Gave an observation, that he feels methane production is different from oil production. Not sure that methane would be explored without an incentive.

Senator Seymour (mtr #1580) - Worried about the lose of revenue to counties, what is that impact?

Ms. Steiner (mtr #1608) - Explained the financial impact to the county when drilling takes place in a county.

Vice Chairman, Senator Wardner (mtr #1790) - Given no further testimony, closed the hearing on HB1145.

Tape 2, Side A

Senator Urlacher opened the discussion on HB1145 which relates to a temporary tax exemption for gas produced from shallow gas wells. Seems that we have to test to see what we have before we can gain. The potential is great, the direction is there. Feels this is a positive move.

Senator Wardner (mtr #70) - The fiscal note assumes there will be wells drilled.

Senator Syverson (mtr #89) - We heard discussion today about new fossil fuel plants in the state. One plant will not be built as it was built near the twin cities and is burning gas. Environmental pressures are demanding gas burning. This bill is a tool.

Senator Urlacher (mtr #188) - Wyoming has had some success with these wells. If we start small can deal with environmental impact. We have to move forward.

Senator Nichols (mtr #247) - There is a sunset in the bill. This makes sense.

Senator Wardner moves a Do Pass. Second by Senator Syverson.

General discussion followed by all Senators on how this bill would effect the counties.

Roll call vote 6 yea, 0 nay, 0 absent. Carrier is Senator Wardner.

Date: 3.4.2003
Roll Call Vote #: 1

2003 SENATE STANDING COMMITTEE ROLL CALL VOTES
BILL/RESOLUTION NO. HB 1145

Senate Finance and Taxation Committee

☐ Check here for Conference Committee

Legislative Council Amendment Number

Action Taken Do Pass + Rerefer to Appropriations

Motion Made By Sen. Wardner Seconded By Sen. Syverson

Senators	Yes	No	Senators	Yes	No
Senator Urlacher - Chairman	✓		Senator Nichols	✓	
Senator Wardner - Vice Chairman	✓		Senator Seymour	✓	
Senator Syverson	✓				
Senator Tollefson	✓				

Total (Yes) 6 No 0

Absent

Floor Assignment Sen. Wardner

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE (410)
March 4, 2003 4:23 p.m.

Module No: SR-38-3908
Carrier: Wardner
Insert LC: . Title: .

REPORT OF STANDING COMMITTEE

HB 1145, as engrossed: Finance and Taxation Committee (Sen. Urlacher, Chairman) recommends **DO PASS** and **BE REREFERRED** to the **Appropriations Committee** (6 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HB 1145 was rereferred to the **Appropriations Committee.**

2003 SENATE APPROPRIATIONS

HB 1145

2003 SENATE STANDING COMMITTEE MINUTES

BILL/RESOLUTION NO. HB 1145 & Vote

Senate Appropriations Committee

☐ Conference Committee

Hearing Date 3-7-03 11

Tape Number	Side A	Side B	Meter #
1	X		0-691

Committee Clerk Signature Sandra Dawson

Minutes: CHAIRMAN HOLMBERG opened the hearing to HB 1145. Attendance was called, a quorum was established. A bill relating to temporary exemption from the gross production tax for gas produced from gas wells.

(Meter 125) BOB HARMS, Governor's office: Introduced this at the governor's requesting to promote energy industry.

(Meter 218) CHAIRMAN HOLMBERG commented about the interesting history of this bill. It was first heard in the House Natural Resources committee and referred to the House Appropriations, then to the Senate Finance and Tax committee, then to the Senate Appropriations.

(Meter 270) RON NESS, NDPC testified he is in support of this bill.

(Meter 299) SENATOR BOWMAN asked Ron if the appropriation to the counties lose money, where is this revenue going to be replaced from?

(Meter 333) RON NESS replied that the revenue loses will be replaced by the State Land fund and Bowman county is already going to max out on oil and gas taxes.

(Meter 453) SENATOR TALLACKSON asked with the price of gas, why does there need to be an exemption? (Meter 473) RON NESS replied that the shallow natural gas pricing is different. Piped gas is very costly because of the interstructure of having to pipe the gas not truck it. So the cost per pipeline feet is expensive.

(Meter 636) SENATOR BOWMAN as if the gas leases are the same as mineral right leases and RON NESS replied yes.

(Meter 651) SENATOR BOWMAN moved a DO PASS and SENATOR THANE seconded it. The bill passed with a vote of 13 yeas, 0 nays and 1 absent. The Finance and Tax Department, Senator Wardner will carry.

CHAIRMAN HOLMBERG closed the hearing on HB 1145.

Date: 2-7-03

Roll Call Vote #: 1

2003 SENATE STANDING COMMITTEE ROLL CALL VOTES
BILL/RESOLUTION NO. 1145

Senate Appropriations Committee

☐ Check here for Conference Committee

Legislative Council Amendment Number

Action Taken Do Pass

Motion Made By Bowman Seconded By Thane

Senators	Yes	No	Senators	Yes	No
Senator Holmberg, Chairman	✓				
Senator Bowman, Vice Chair	✓				
Senator Grindberg, Vice Chair	✓	✗			
Senator Andrist	✓				
Senator Christmann					
Senator Kilzer	✓				
Senator Krauter	✓				
Senator Kringstad	✓				
Senator Lindaas	✓				
Senator Mathern	✓				
Senator Robinson	✓				
Senator Schobinger	✓				
Senator Tallackson	✓				
Senator Thane	✓				

Total (Yes) 12 No 0

Absent 1

Floor Assignment Finance + Tax

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE (410)
March 11, 2003 8:54 a.m.

Module No: SR-43-4420
Carrier: Wardner
Insert LC: . Title: .

REPORT OF STANDING COMMITTEE

HB 1145, as engrossed: Appropriations Committee (Sen. Holmberg, Chairman) recommends **DO PASS** (13 YEAS, 0 NAYS, 1 ABSENT AND NOT VOTING). Engrossed HB 1145 was placed on the Fourteenth order on the calendar.

2003 TESTIMONY

HB 1145

POST OFFICE BOX 1306
WILLISTON, NORTH DAKOTA 58802-1306
PHONE (701) 577-8100
FAX (701) 577-8880
TDD (800) 366-6888
(State Relay)

CITY OF **Williston** NORTH DAKOTA

January 15, 2003

House Natural Resources Committee
State Capitol
Bismarck ND 58505

RE: HB 1145

Dear Committee Members:

The City of Williston supports the Governor's proposal to create greater coal bed methane production, but has concerns about using the 5% gross production tax as the funding mechanism. Our understanding is that the 5% gross production tax has never been exempted to support future development. We hope you can find ways to support additional development of our natural resources without asking local entities to waive their normal revenue sources as House Bill No. 1145 is doing.

Sincerely,

E. Ward Koeser
President
Board of City Commissioners
City of Williston

N. D. I. C.
Oil & Gas Div.

House Bill No. 1145

Testimony of Lynn Helms, Director, N.D. I. C. Oil & Gas Division,
Before the House Natural Resources Committee

January 16, 2003

Bob Harms from the Governor's office is not able to be here today. He plans to follow up, hopefully tomorrow, with the Governor's objectives for this bill.

Mr. Ed Murphy of the North Dakota Geological Survey and I have been asked to share information with you about potential for shallow natural gas development in North Dakota and to be available to answer your questions.

THE COMING METHANE ECONOMY

Energy economists predict that United States consumption of natural gas will increase 20% by 2005 and 50% by 2015. Methane is becoming the fuel of choice for several reasons:

1) It produces very few emissions when burned.
2) Unlike oil, US and Canadian production is equal to 99% of our consumption.
3) USGS has identified tremendous potential reserves in Alaska, along the Rocky Mountains, and in hydrates.

North Dakota can and should be a part of this new economy, but we are perceived by industry as an oil basin. This bill is just part of an effort to attract investment to our state. Other parts should include pilot or demonstration projects, geological studies and publications, transportation and gathering studies, and perhaps an oil and gas research council.

SHALLOW GAS POTENTIAL IN NORTH DAKOTA

The main Canadian shallow gas reservoirs are in the Milk River, Medicine Hat, and Second White Specks which correlate with the Eagle, Niobrara, and Greenhorn, Cretaceous rocks in the North Dakota portion of the Williston Basin.

The Niobrara Formation is a potential source rock and reservoir for shallow biogenic gas in the Williston Basin. In contrast with production from clastic units of the western Williston basin (**Divide**), the best Niobrara potentials are thought to be low permeability chalks in the central and eastern parts of the basin (**Barnes, Benson, Cavalier, Dickey, Eddy, Emmons, Foster, Kidder, Griggs, Lamoure, Pierce, Ramsey, Rolette, Stutsman, Towner, Wells**).

Past production areas (**Bottineau, Lamoure, and Renville**) share common attributes that are hallmarks of a new play concept:

1. Shallow depths generally (2000'-3000') on the basin margin.
2. Historic production at the turn of the century.
3. Structural traps that include local folds and regional fracture systems.
4. Association with ground water flow systems.

Canadian reserves are approximately 3.5 BCF/sq mile of gas in place.

Montana reserves on the northwestern margin (Bowdoin Dome) where extensive development has resulted are in the range of trillions of cubic feet. On the southwestern margin (**Bowman**), more limited development of local sweet spots has confirmed the resource (Cedar Creek and Little Missouri Fields), but reserves appear to be not as large.

North Dakota reserves on the eastern margin are undeveloped and only recently has there been any interest using modern technology. **For basin margin gas production around the Williston Basin, gas in place estimates are around 1-2 BCF/sq mile.**

It is important to note that producing shallow gas reservoirs in the Williston Basin are generally associated with structure that may have been affected by regional fracturing. This is particularly true of the shallow gas reservoirs in the northwest and the southwest portions of the Williston Basin. **The eastern part of the basin does not exhibit these same structural features** and therefore the reservoirs may be a combination of stratigraphic and subtle post-depositional structure, enhanced by regional fracturing. In addition, thermogenic gas from deeper formations could have migrated into shallow stratigraphic traps (<5,000 feet) in the areas of eastern North Dakota where these formations sub crop. **Stratigraphic traps are significantly more difficult to find than structural traps.**

N. D. I. C.
Oil & Gas Div.

SHALLOW GAS REFERENCES

Basin Margin Is Worthy Target In Williston Basin, 2000, G.W. Shurr, Oil & Gas Journal, v.98, no.9, p 71-74. Discusses the production and potential of shallow gas along the northwestern (Bowdoin Dome), southwestern (Cedar Creek and Little Missouri fields), and eastern (Souris River area) margins of the Williston Basin. Other analog basin margin plays are the Denver Basin, low relief closures in northeastern Colorado, southwestern Nebraska, and northwestern Kansas. The Williston basin is under-explored for natural gas, and some of the best potential is along the shallow margins of the basin.

Shallow Gas Play Around The Margins Of The Williston Basin, 1998, Shurr, G.W., Christopher, C.F. Gilboy, D.F. Paterson, and S.L. Bend, eds, Eighth International Williston Basin Symposium, Saskatchewan Geological Society Special publication 13, p. 129-139. Discusses the economic accumulations of shallow biogenic gas found in Cretaceous rocks around the margins of the Williston Basin. On the western margin, large gas fields were discovered near the turn of the century and exploitation continues today. Around the eastern margin (LaMoure County and Souris River area), historic production used for local consumption has ended. On the southwestern margin, a cluster of small fields has been developed in the 1970's.

Geologic Setting And Potential For Natural Gas In The Niobrara Formation (Upper Cretaceous) of the Williston Basin, 1987, D.D. Rice, and G.W. Shurr, Williston Basin, Exploration Model for a Cratonic Petroleum Province: Rocky Mountain Association of Geologists Symposium, p. 245-257. The Niobrara Formation has the potential for generation and accumulation of shallow biogenic gas in the central and western Williston Basin. Chalks within the Niobrara in eastern North Dakota were deposited on carbonate ramps sloping westward off the eastern platform of the Western Interior Seaway.

Natural Gas In North Dakota, 1968, in Natural Gases of North America Pt. 3, Natural Gases in Rocks of Paleozoic Age, American Association of Petroleum Geologists, Memoir 9, v.2, p.1304-1326. Two gas fields in the southwestern corner of the state produce dry gas from Cretaceous sandstones. The LaMoure County and Souris River areas produce noncommercial quantities of gas from Cretaceous and Tertiary strata.

North Dakota Geological Survey

John P. Bluemle, State Geologist

INDUSTRIAL COMMISSION
John Hoeven - Governor, Chairman
Wayne Stenehjem - Attorney General
Roger Johnson - Commissioner of Agriculture

TESTIMONY BEFORE THE HOUSE NATURAL RESOURCES COMMITTEE
House Bill No. 1145
January 16, 2003

Chairman Nelson and members of the Natural Resources Committee, my name is Ed Murphy with the North Dakota Geological Survey and I am here to provide background information on the coalbed methane potential of the Williston Basin for House Bill 1145.

- The President's National Energy Policy Plan estimates that over the next 20 years natural gas consumption in the U.S. will increase 50%, from 20 to 31 trillion cubic feet.
- In 2000, coalbed methane (1.4 Tcf) accounted for 7.5 % of domestic natural gas production.
- The North Dakota portion of the Williston Basin contains approximately 351 billion tons of lignite.
- North Dakota contains 25.1 billion tons of economically recoverable lignite, enough to last 834 years at the current rate of mining (30 million tons per year).
- Coal is found at depths down to 2,000 feet in western North Dakota.
- To be potentially mineable, lignite must occur within 150 (or 170) feet of the surface.
- Lignites that are potential sources of coalbed methane are thought to occur more than 200 feet below the surface.
- Five companies have drilled 11 coalbed methane test wells in North Dakota (Williams, McKenzie, Billings, Slope, and Mercer counties).
- No attempt has yet been made to produce coalbed methane in North Dakota. Canister tests have been run on cores and cuttings but the results of only one test have been made public and those results were disappointingly low (1.38 cubic feet of methane per ton of lignite). Canister tests are consistently lower than the actual volume of gas in the reservoir and are often multiplied by factors such as 20, 30, or 40 to obtain a more realistic number. Actual methane contents in other basins range from 20 to more than 600 cubic feet of gas per ton of coal.
- Most places in western North Dakota are underlain by about two dozen beds of coal.
- Most coals in North Dakota are less than three feet thick. Coals more than 20 feet thick are uncommon – only 12 counties contain beds of coal that thick.
- The thickest coal in North Dakota is the Harmon bed which is 53 feet thick in southern McKenzie County.
- Groundwater chemistry in the Fort Union Group in North Dakota is variable and likely is of less quality than the water discharged at the surface in the Powder River Basin of Wyoming.

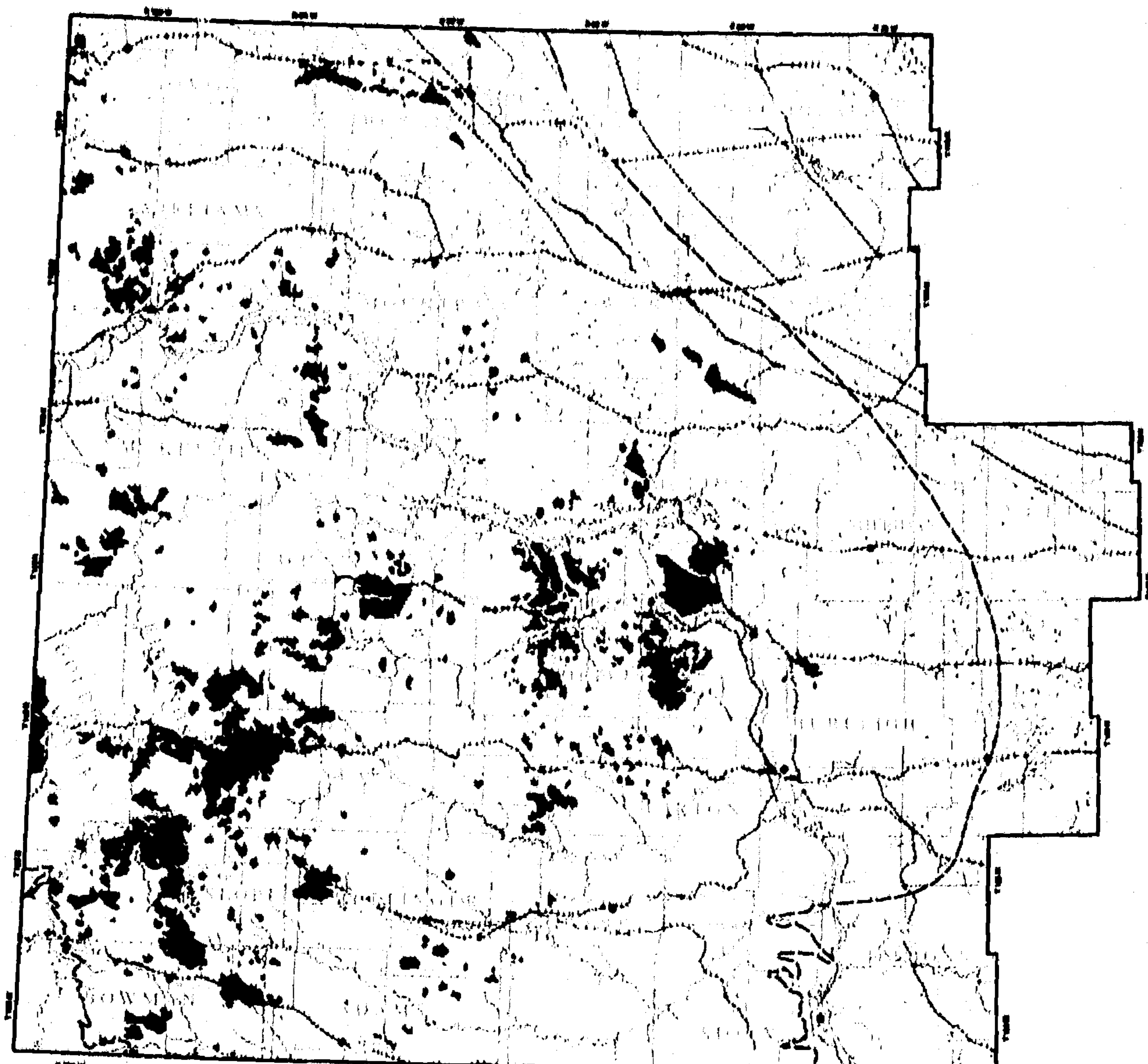
600 East Boulevard Avenue ♦ Bismarck, North Dakota 58505-0840 ♦ Phone (701) 328-8000 ♦ Fax (701) 328-8010

AGE (MILLIONS OF YEARS)	ERA	SYSTEM	FORMATION OR GROUP	THICKNESS (feet)	DOMINANT LITHOLOGY
	CENOZOIC	QUATERNARY	alluvium, colluvium, and lacustrine	0- 40	Sand, Silt, Clay and Gravel
			COLEHARBOR	0- 250	Sand, Silt, Clay, Till and Gravel
		TERTIARY	ARIKAREE	0- 330	Tuffaceous Siltstone and Carbonate
			WHITE RIVER	0- 90	Conglomerate, Sand, Silt and Clay
			GOLDEN VALLEY	0- 300	Silt, Clay, Sand and Lignite
			SENTINEL BUTTE	0- 550	Silt, Clay, Sand and Lignite
			BULLION CREEK	0- 520	Silt, Clay, Sand and Lignite
			SLOPE	100	Silt Clay, Sand and Lignite
			CANNONBALL	100- 200	Mudstone and Sandstone
65			LUDLOW	100	Silt, Clay, Sand and Lignite
	MESOZOIC	CRETACEOUS	HELL CREEK	300	Clay, Sandstone and Shale
			FOX HILLS	200	Sandstone and Shale
			PIERRE	2,000-2,200	Shale
			NIOBRARA	170- 200	Shale, Calcareous
			CARLILE	350- 500	Shale
			GREENHORN	200- 250	Shale, Calcareous
			BELLE FOURCHE	240- 320	Shale
			MOWRY	115- 200	Shale
			NEWCASTLE	0- 110	Sandstone
			SKULL CREEK	190- 325	Shale
			INYAN KARA	350- 420	Sandstone and Shale
		JURASSIC	SWIFT	400- 500	Mudstone
			RIERDON	50- 120	Shale and Sandstone
			PIPER	280- 370	Limestone, Shale and Anhydrite
		TRIASSIC	SPEARFISH	400- 550	Siltstone and Salt
250			MINNEKAHTA	35- 50	Limestone
	PALEOZOIC	PERMIAN	OPECHE	95- 350	Shale and Siltstone
			BROOM CREEK	110- 180	Sandstone and Dolomite
		PENNSYLVANIAN	AMSDEN	210- 400	Dolomite, Sandstone and Shale
			TYLER		Mudstone and Sandstone
		MISSISSIPPIAN	BIG SNOWY	200- 500	Shale, Sandstone and Limestone
			MADISON	1 350-2 000	Limestone and Anhydrite
			BAKKEN	0- 65	Shale and Siltstone
		DEVONIAN	THREE FORKS	0- 245	Shale , Siltstone and Dolomite
			BIRDBEAR	0- 90	Dolomite
			DUPEROW	190- 340	Interbedded Dolomite and Limestone
			SOURIS RIVER	50- 270	Interbedded Dolomite and Limestone
			DAWSON BAY	0- 80	Dolomite and Limestone
			PRAIRIE	0- 80	Limestone and Anhydrite
			WINNIPEGOSIS	0- 230	Limestone and Dolomite
		SILURIAN	INTERLAKE	250- 920	Dolomite
			STONEWALL	75- 115	Dolomite
		ORDOVICIAN	STONY MOUNTAIN	110- 155	Argillaceous Limestone
			RED RIVER	510- 660	Limestone and Dolomite
			ROUGHLOCK	35- 50	Calcareous Shale and Siltstone
			ICEBOX	65- 95	Shale
			BLACK ISLAND	25- 115	Sandstone
570		CAMBRIAN	DEADWOOD	420- 950	Limestone, Shale and Sandstone
4500		PRECAMBRIAN ROCKS			

The shallow gas zone is that part of the geologic column in gray or green, or that part in blue that is at a depth of less that 5000 feet, from which gas may be produced. The Fort Union Group (in dark green) contains coal.

THE STRIPPABLE LIGNITE DEPOSITS OF NORTH DAKOTA

North Dakota Geological Survey
Miscellaneous Map 34
2001



Strippable coal deposits are brown

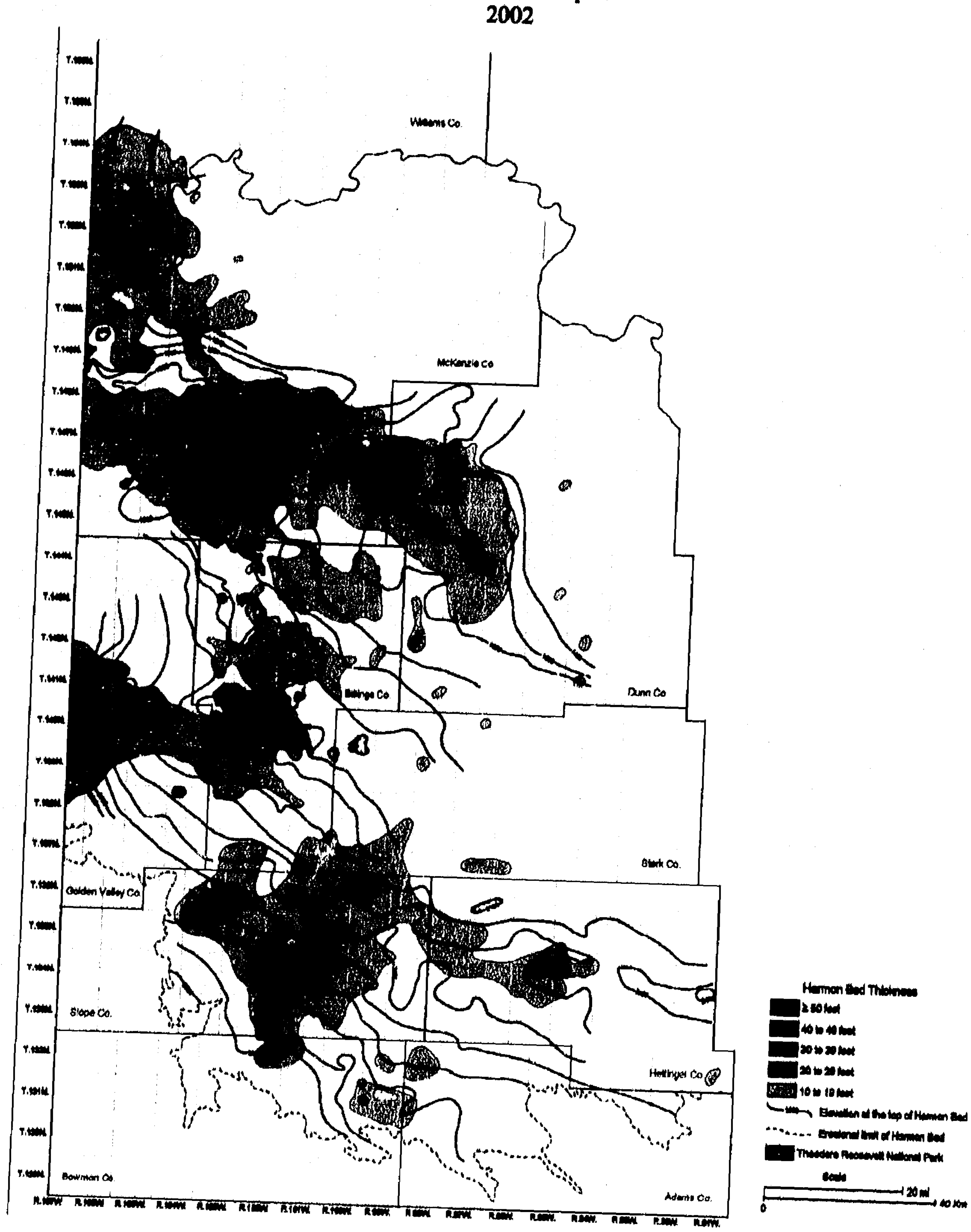
Major mined areas are green

Economic Criteria for Strippable Lignite:

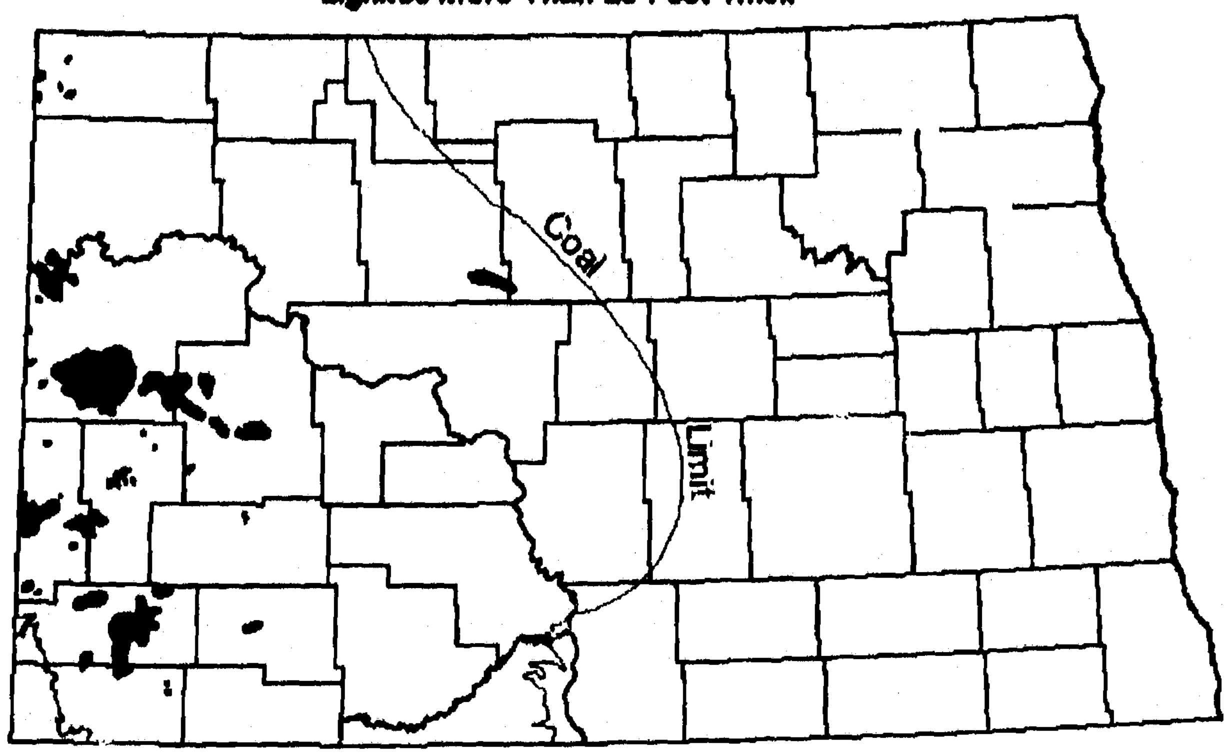
1) Coals are more than 20 feet, but less than 150 feet, below the surface (companies have mined to 170 feet).
2) A 10 foot minimum coal thickness occurring in no more than two beds.
3) A 2.5 foot minimum coal thickness in an individual bed.
4) A stripping ratio of no more than 10:1.

THE HARMON COAL IN WESTERN NORTH DAKOTA

North Dakota Geological Survey
Miscellaneous Map 35
2002



THICK COALS IN NORTH DAKOTA
Lignites More Than 20 Feet Thick



North Dakota Coalbed Methane Potential
in Beds Greater Than 20 Feet Thick

Harmon Bed

The Harmon Bed is 20 feet thick or more over an area of about 18 townships or 414,720 acres.
The average thickness throughout this area is about 25 feet = 414,720 x 25 feet = 10,368,000 acre/feet.
10,368,000 acre/feet x 1,750 tons per acre foot = 18,144,000,000 tons of coal
18,144,000,000 x **20 cubic feet of methane per ton* = **360,144,000,000 cubic feet of methane**

Other Coals

All of the other coals (T Cross, HT Butte, Lehigh, Alkabo, Coteau) occupy an area of about 3 townships or 69,120 acres.
The average thickness throughout this area is about 21 feet = 1,451,520 acre/feet
1,451,520 acre/feet x 1,750 tons per acre foot = 2,540,160,000 tons of coal
2,540,160,000 tons of coal x **20 cubic feet of methane per ton* = **50,803,200,000 cubic feet of methane**

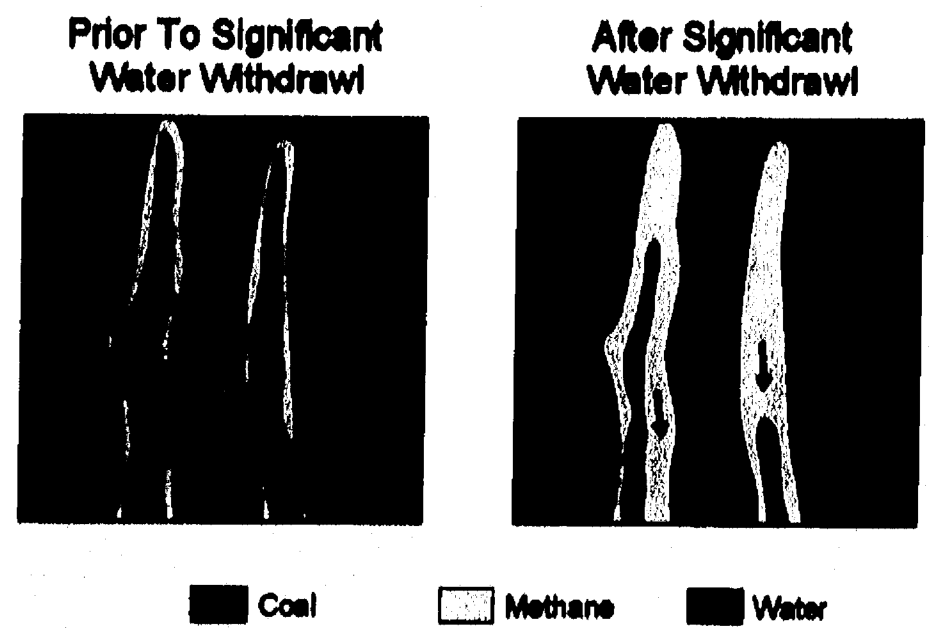
Total of All Beds Over 20 Feet Thick

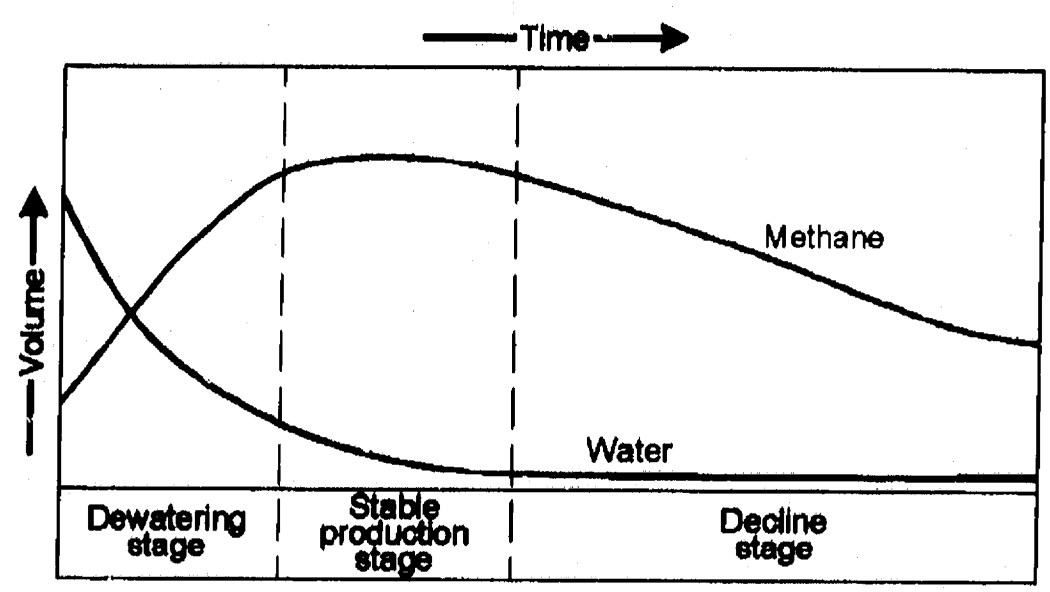
Total cbm potential of North Dakota lignites greater than 20 feet thick =
410,947,200,000 cubic feet of methane
411 billion cubic feet of methane

North Dakota presently markets 4.8 bcf/month = 57.6 bcf/year
Estimated cbm in 20-foot thick lignites would equal 7 years of current marketed production in ND.

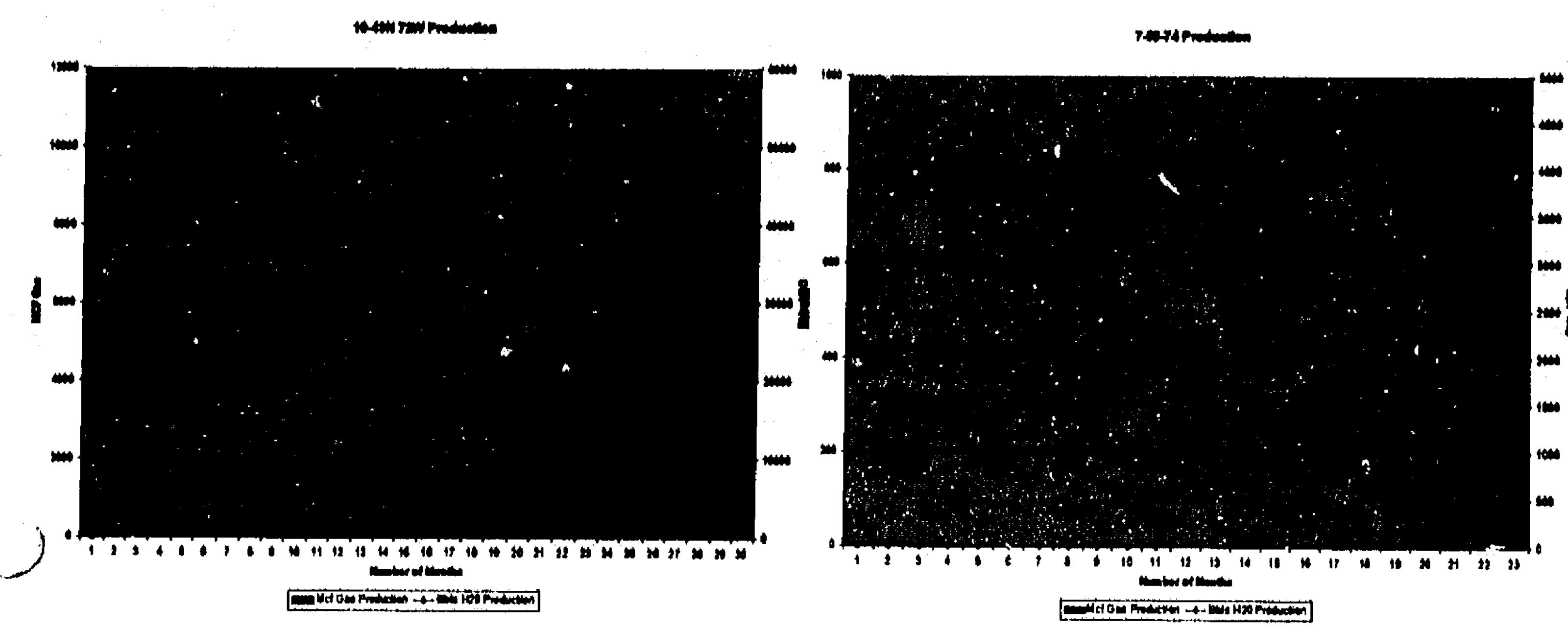
* We do not have a basis for this volume at this time, it was chosen because it may be the economic threshold.

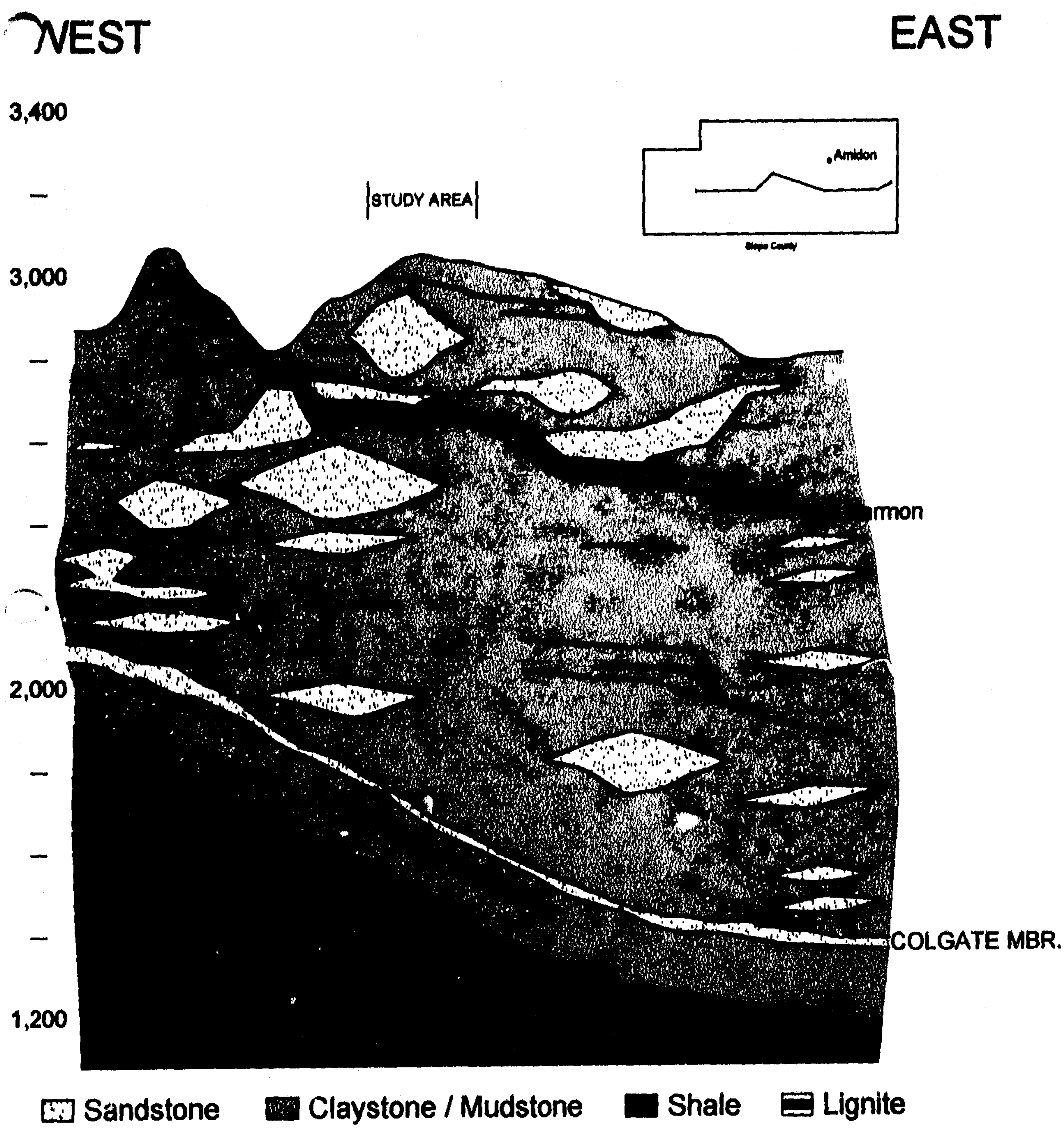
North Dakota Geological Survey





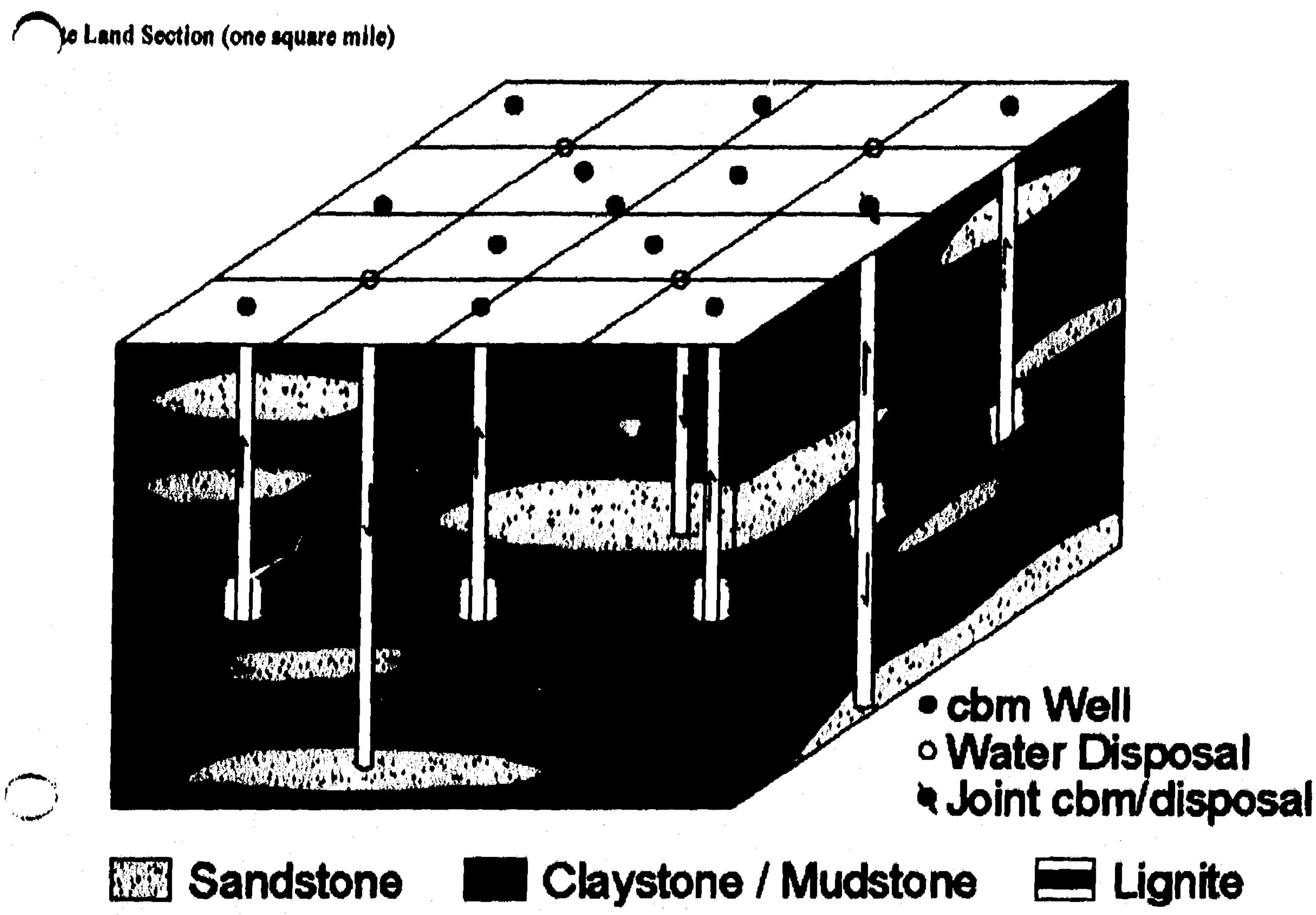
Gas and Produced Water From Two Coalbed Methane Wells in the Powder River Basin, Wyoming




WEST
EAST
3,400
3,000
2,000
1,200
STUDY AREA
Amidon
rmon
COLGATE MBR.
Sandstone
Claystone / Mudstone
Shale
Lignite

Coalbed Methane and Water Disposal Well Placement

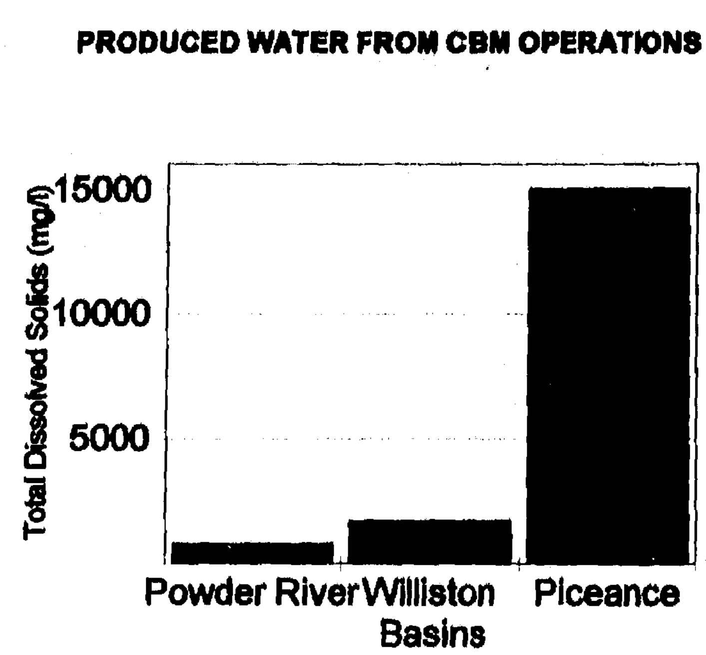
Proposed North Dakota Project in Slope County



Proposed North Dakota Project

Each well will probably produce about 10,000 gallons of water per day
The average Powder River Basin cbm well produces 12 gallons per minute or 17,000 gallons per day.

10,000 gallons/day	=	3,650,000 gallons per well per year
13 wells would produce	=	130,000 gallons/day for field
	=	47,450,000 gallons per year for the field
	=	146 acre-feet of water per year for the field



COUNTY
COMMISSIONERS:

EUGENE MILLER
RR 2 Box 29
Rhame, ND 58651
701-279-6837

KENNETH STEINER
8700 127th Ave SW
Reeder, ND 58649
701-275-8790

ELDON (BUS) PATTERSON
PO Box 63
Bowman, ND 58623
701-523-3487

OFFICE OF THE AUDITOR

COUNTY OF BOWMAN

STATE OF NORTH DAKOTA

PO BOX 430, BOWMAN, ND 58623
PHONE: 701-523-3130
FAX: 701-523-5443

COUNTY AUDITOR:
JAN STEBBINS

PO BOX 430
BOWMAN ND 58623

DEPUTY:
LINDA MARTIN

House Natural Resource Committee
Rep. Jon O. Nelson, Chairman

The Bowman County Commissioners would like to thank you for this opportunity to comment on House Bill 1145 concerning the temporary exemption of gross production for gas for shallow wells. Bowman County has always tried to work with the oil and gas companies that have explored in our County. We have been fair when it comes to things such as load limits, road maintenance, permits and fees. In return for this cooperation, we expect to receive the proper share of gross production tax.

Our experience has also been that the greatest time of need for these tax monies is during the exploration phase of a well or field. With that being said, the County is several months away from when the well is drilled and the Treasurer receives any money. Also production decreases in the first two years, which means a two-year exemption proportionally affects the tax receipts.

We welcome energy exploration and production in Bowman County, but we feel it is a partnership. We work with companies, be it roads or permits. In return, we expect the energy industry to do their fair share and pay their taxes that we need to help maintain roads, etc.

Because of these reasons, we urge you to give this bill a "Do Not Pass". Thank you for your time.

Bowman County Commission

CBMC COALITION

Website: http://www.cbmcc.vcn.com/

County Commissioners
Conservation District Supervisors
and
State and Industry Advisors

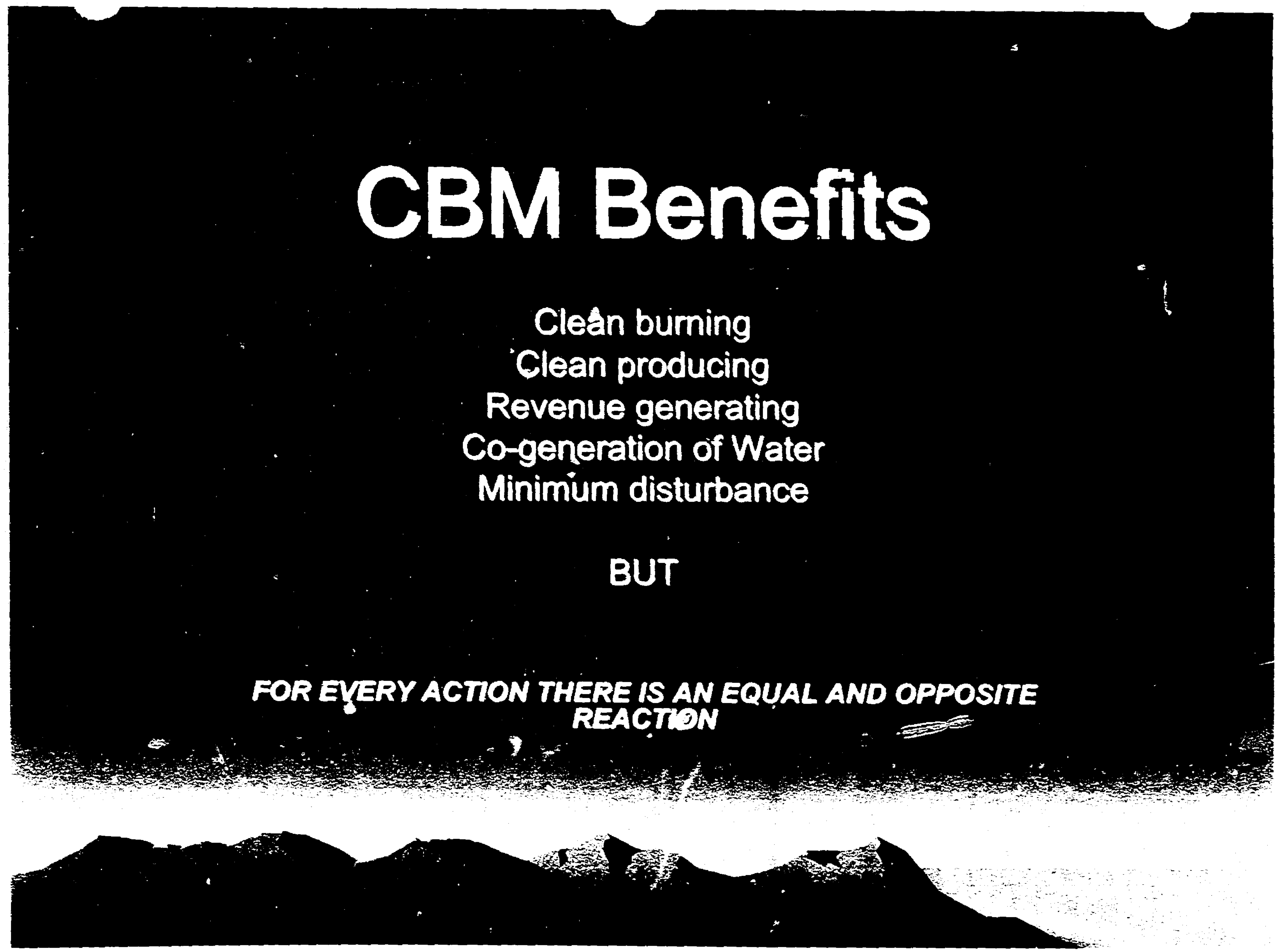
CBMCC – JOINT POWERS BOARD AGREEMENT

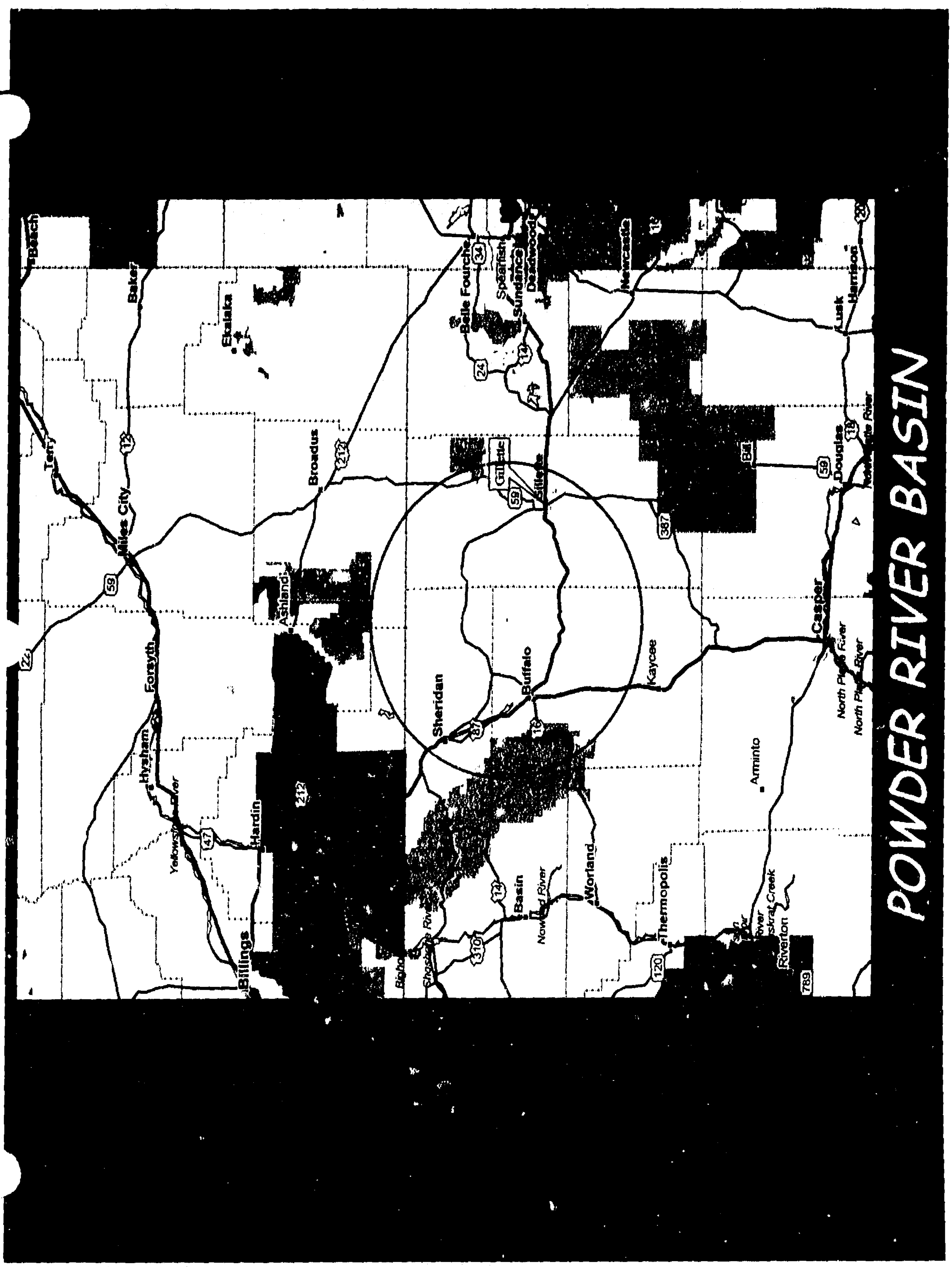
For acquisition, collation and dissemination of academically meaningful data on the rapidly expanding methane gas development

To identify available options, methods and techniques for the capture of methane gas

To identify the potential consequences of each method or technique

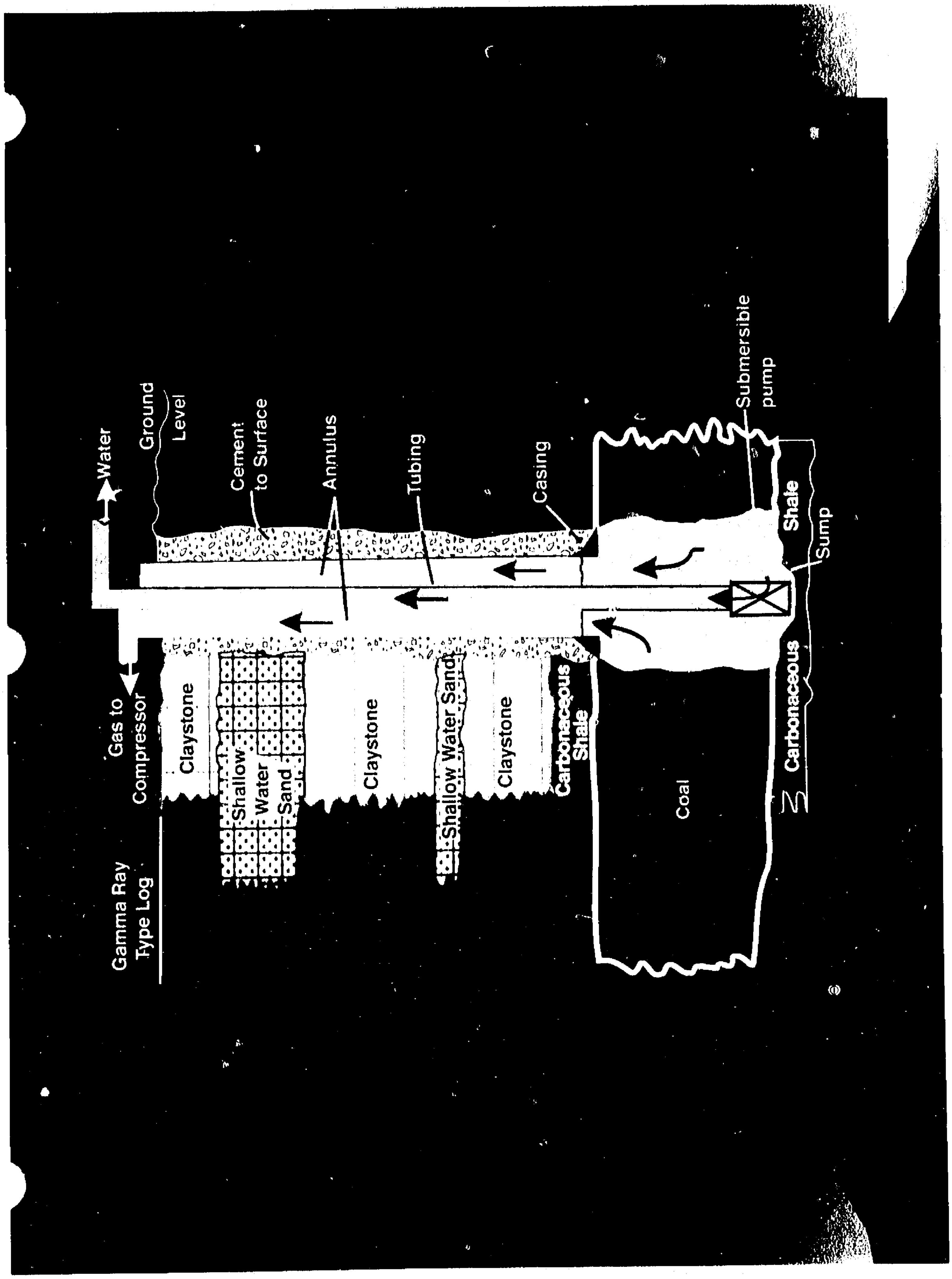
To protect and preserve water supplies within the areas in which development is ongoing

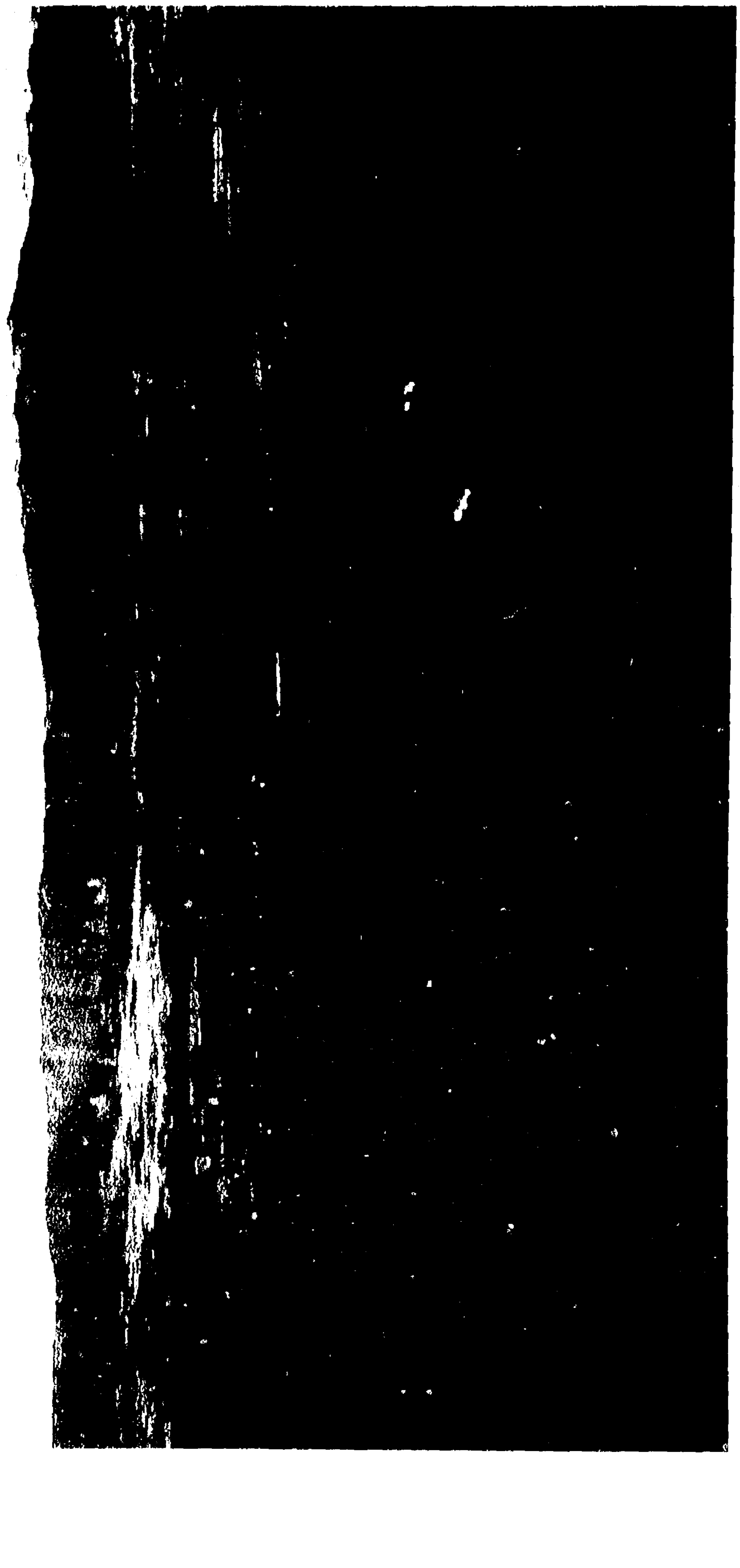

CBM Benefits
Clean burning
Clean producing
Revenue generating
Co-generation of Water
Minimum disturbance
BUT
FOR EVERY ACTION THERE IS AN EQUAL AND OPPOSITE REACTION

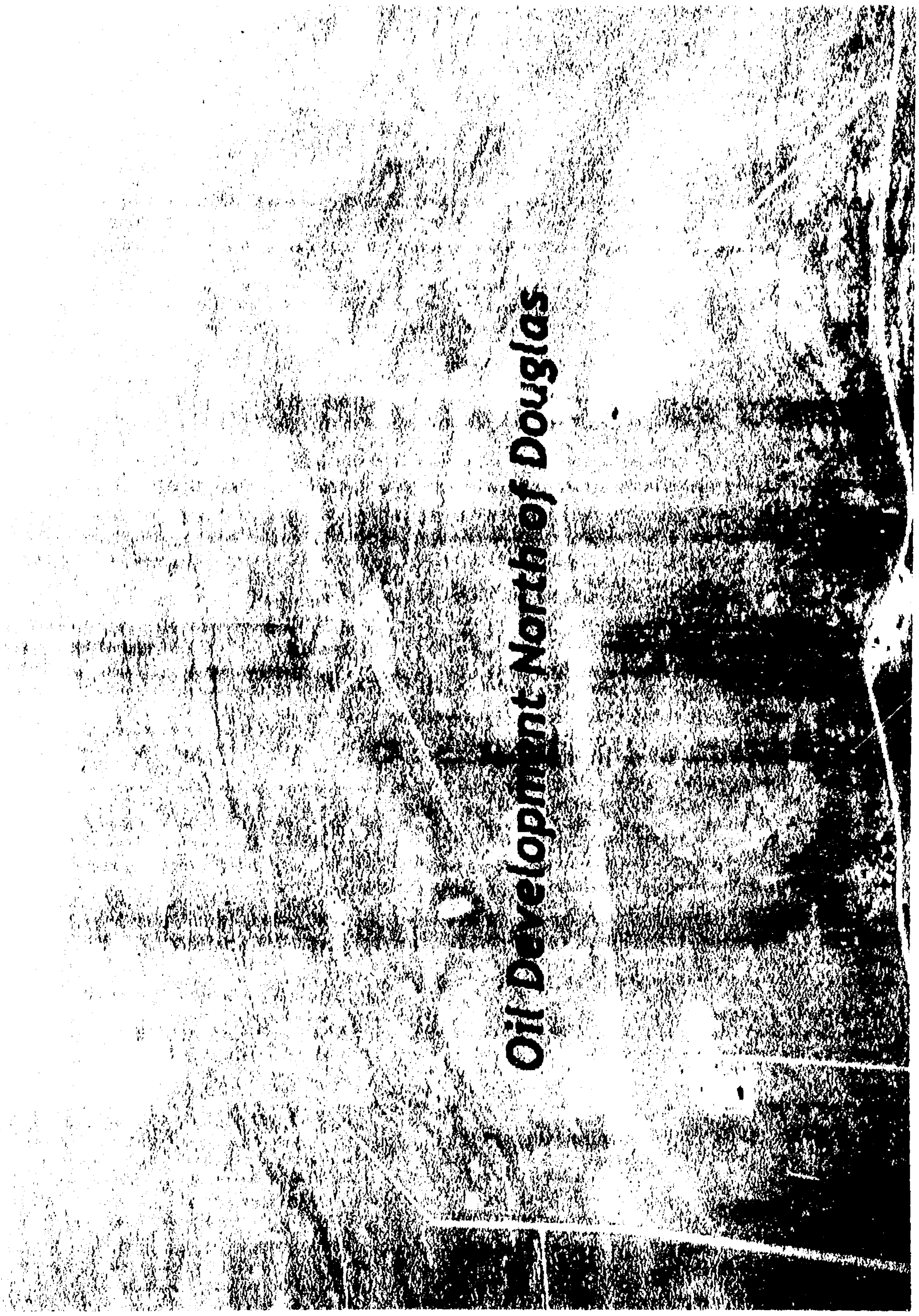


POWDER RIVER BASIN
Billings
Hardin
Hysham
Forsyth
Miles City
Terry
Baker
Ekalaka
Broadus
Ashland
Sheridan
Buffalo
Gillette
Belle Fourche
Spearfish
Sundance
Deadwood
Newcastle
Kaycee
Casper
Douglas
Lusk
Harrison
Arminto
Worland
Basin
Thermopolis
Riverton
North Platte River
Yellowstone River


Clear Creek

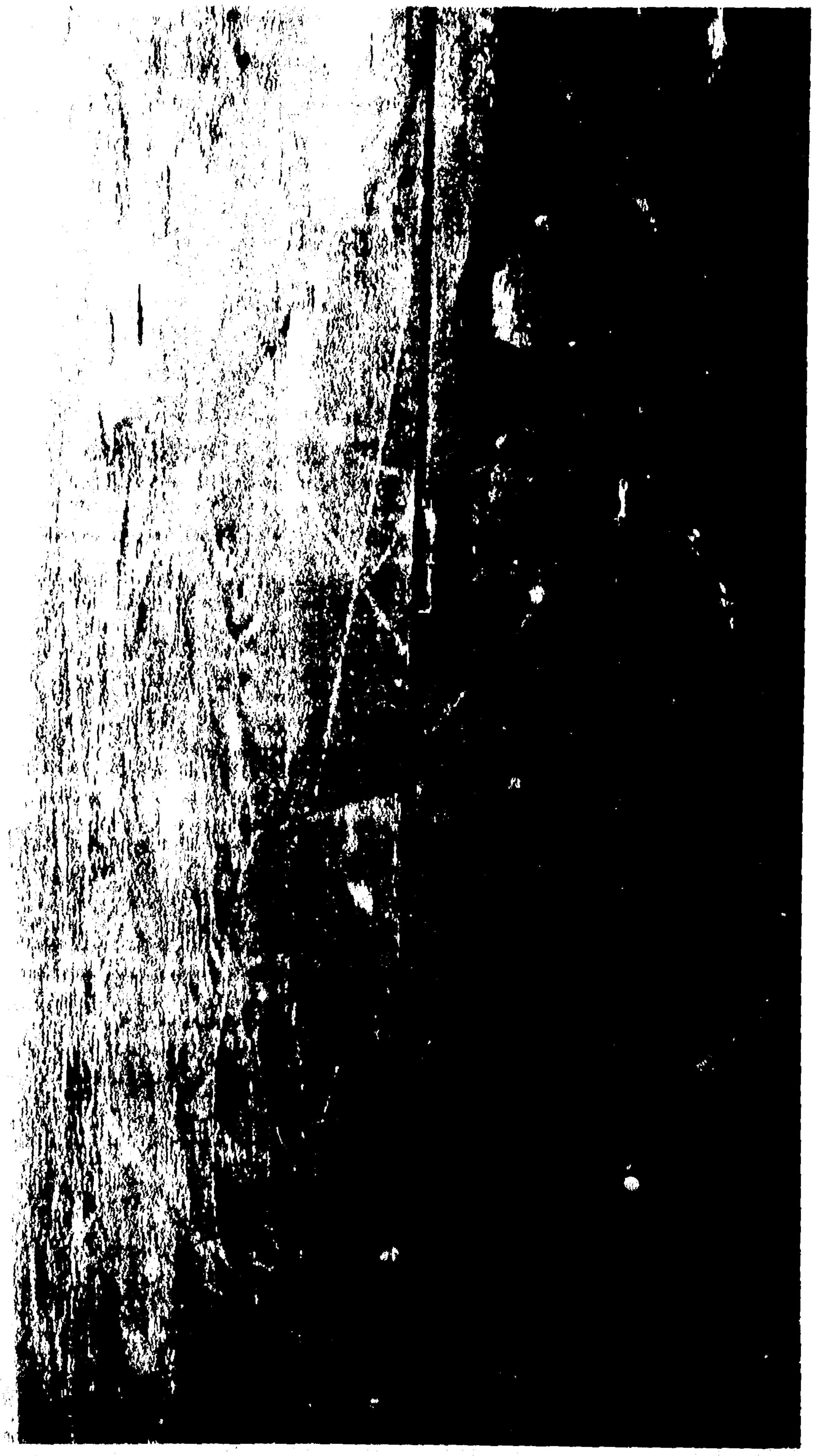

Water
Ground Level
Cement to Surface
Annulus
Tubing
Casing
Submersible pump
Shale
Sump
Carbonaceous
Gas to Compressor
Claystone
Shallow Water Sand
Claystone
Shallow Water Sand
Claystone
Carbonaceous Shale
Coal
Gamma Ray Type Log

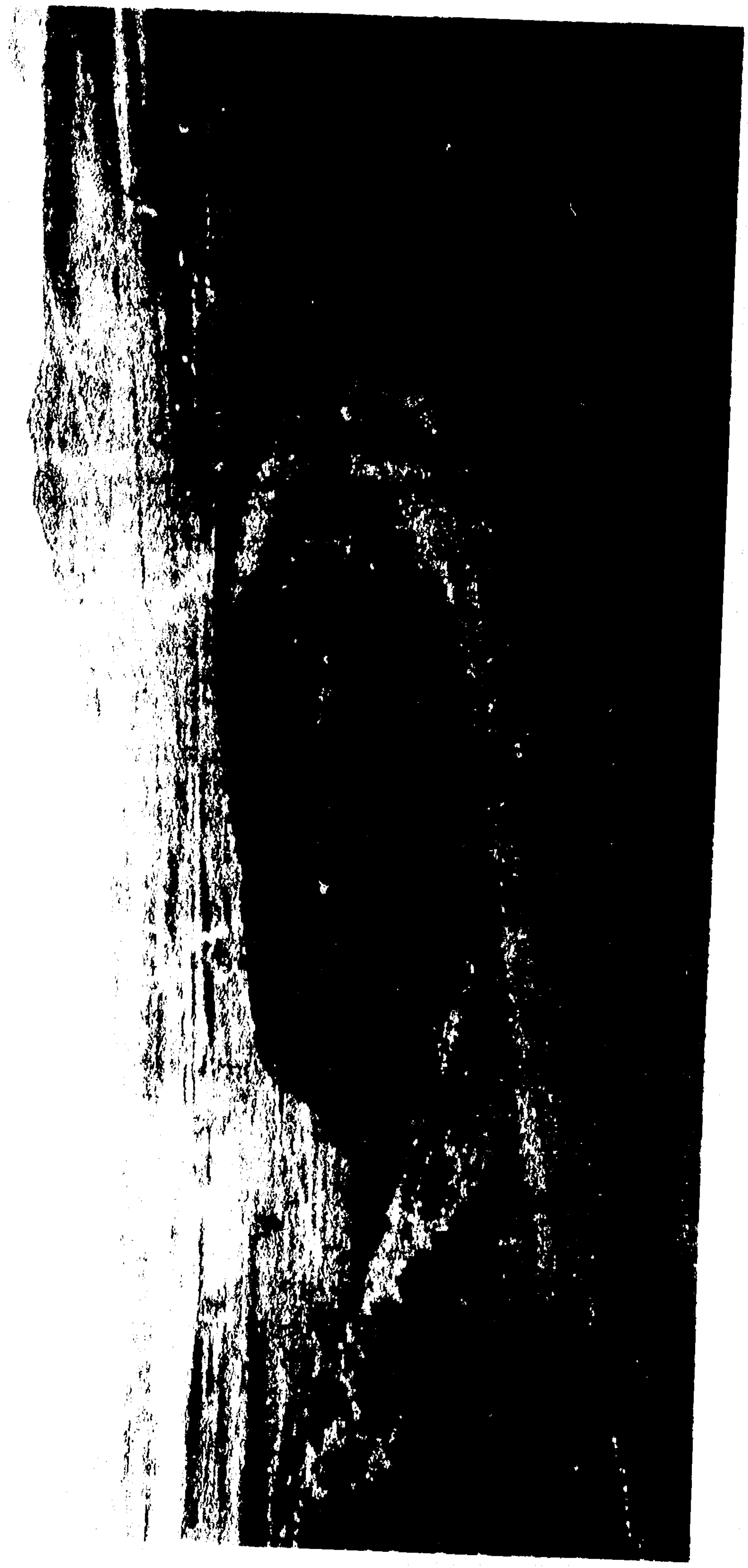

North of Sheridan

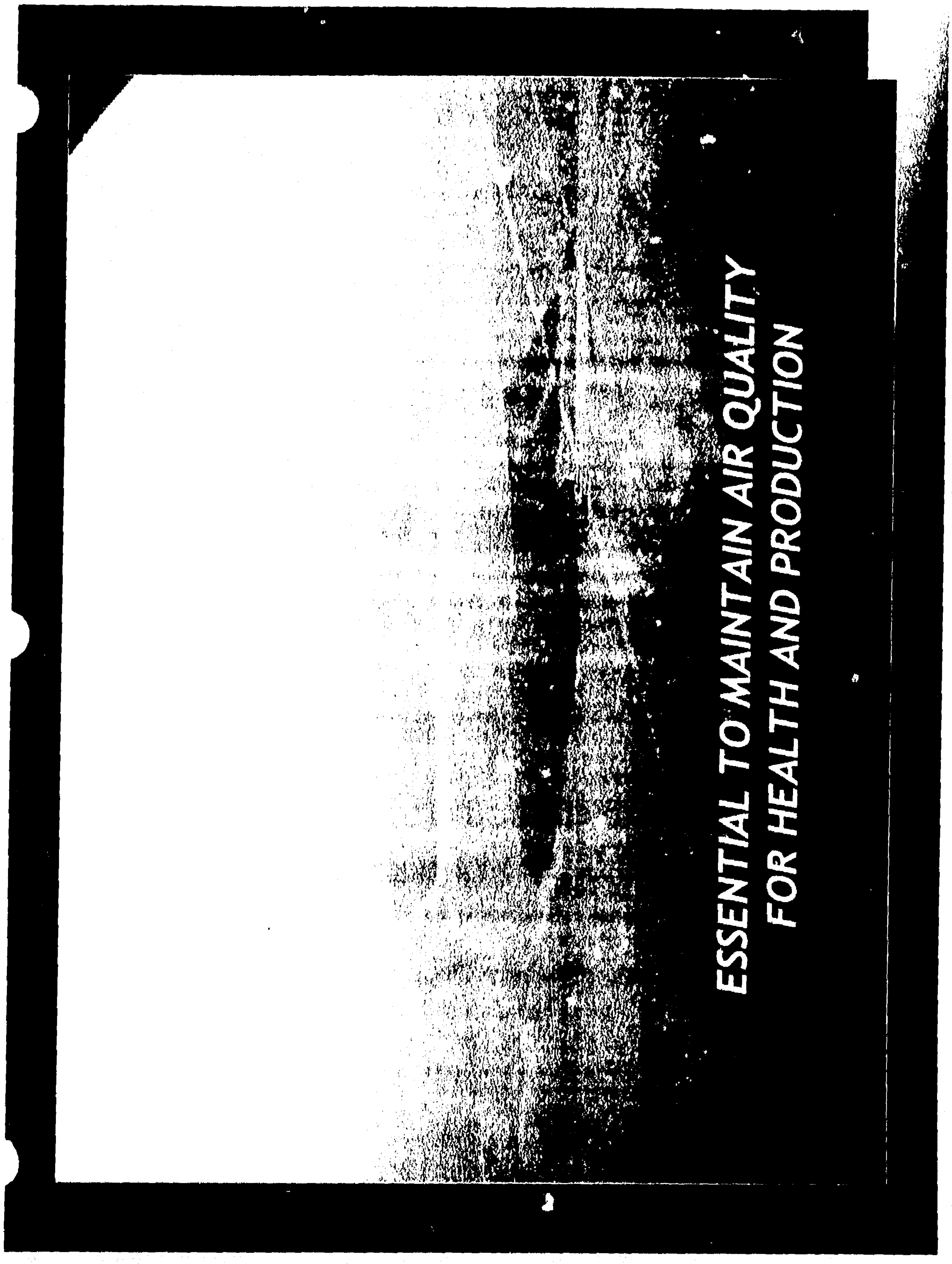

Oil Development North of Douglas


in Wyoming: 31 TCF


DeLORME

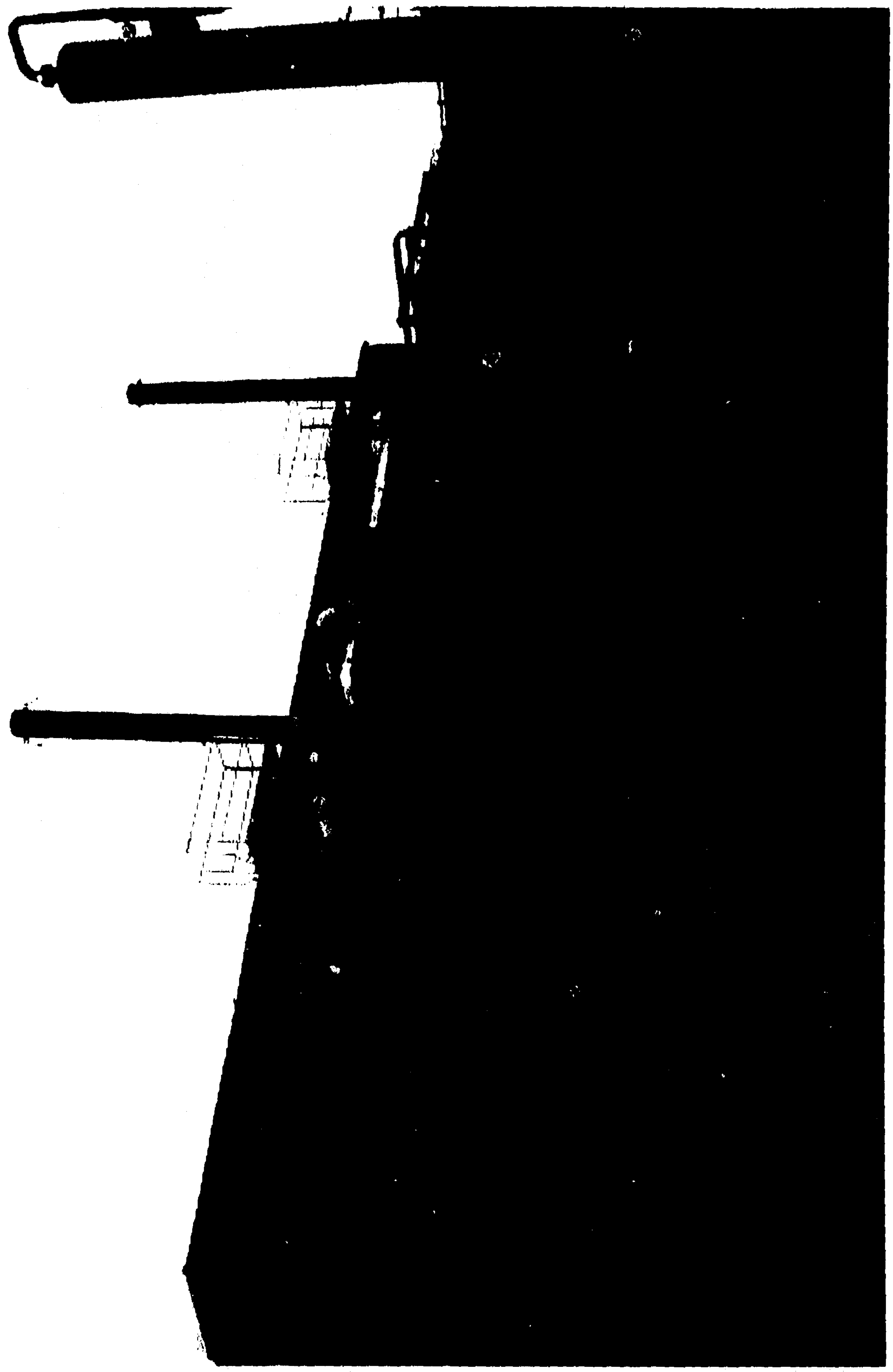


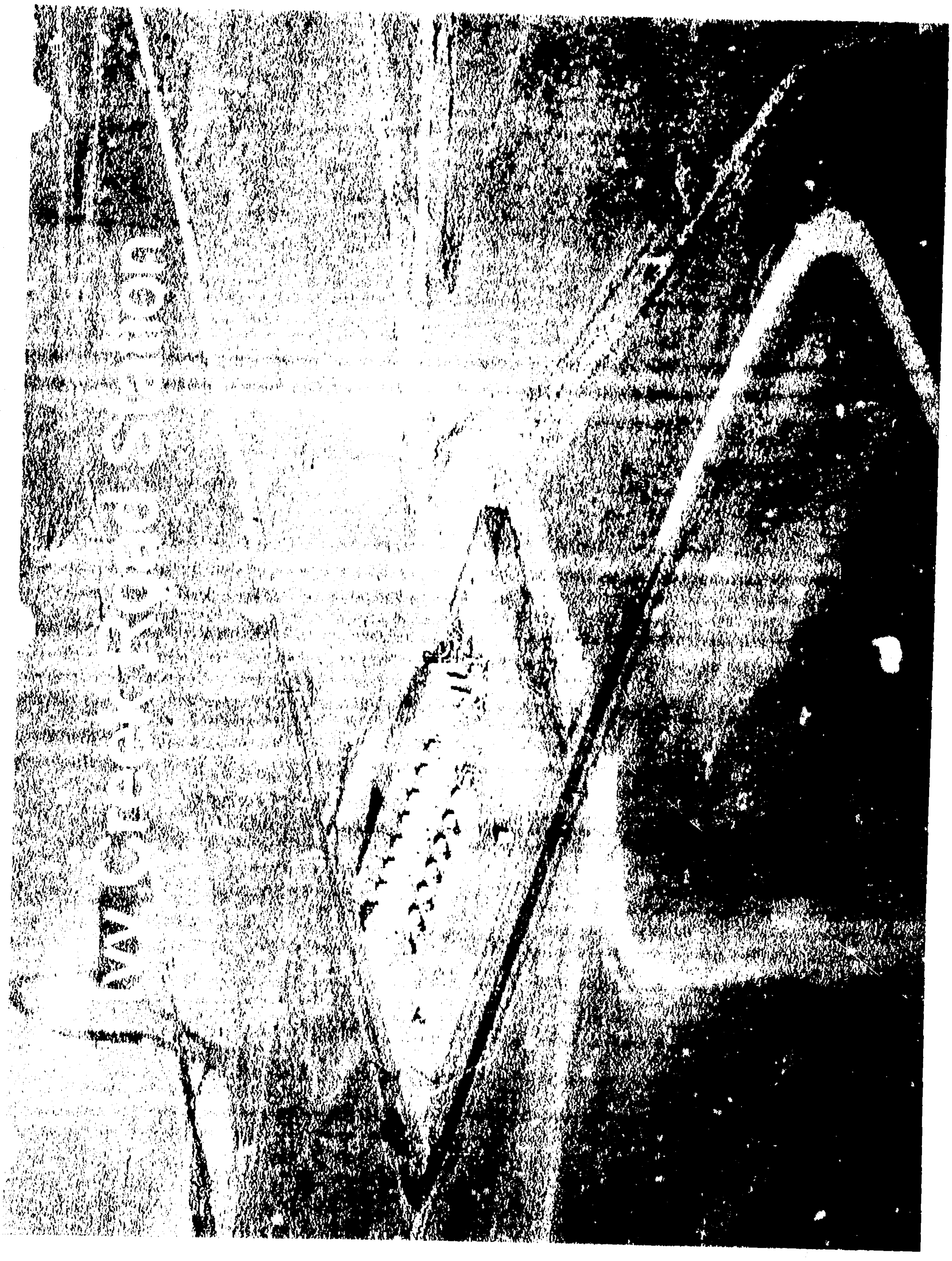



ESSENTIAL TO MAINTAIN AIR QUALITY
FOR HEALTH AND PRODUCTION


GRAVEL FOR CBM


Pipeline Installation

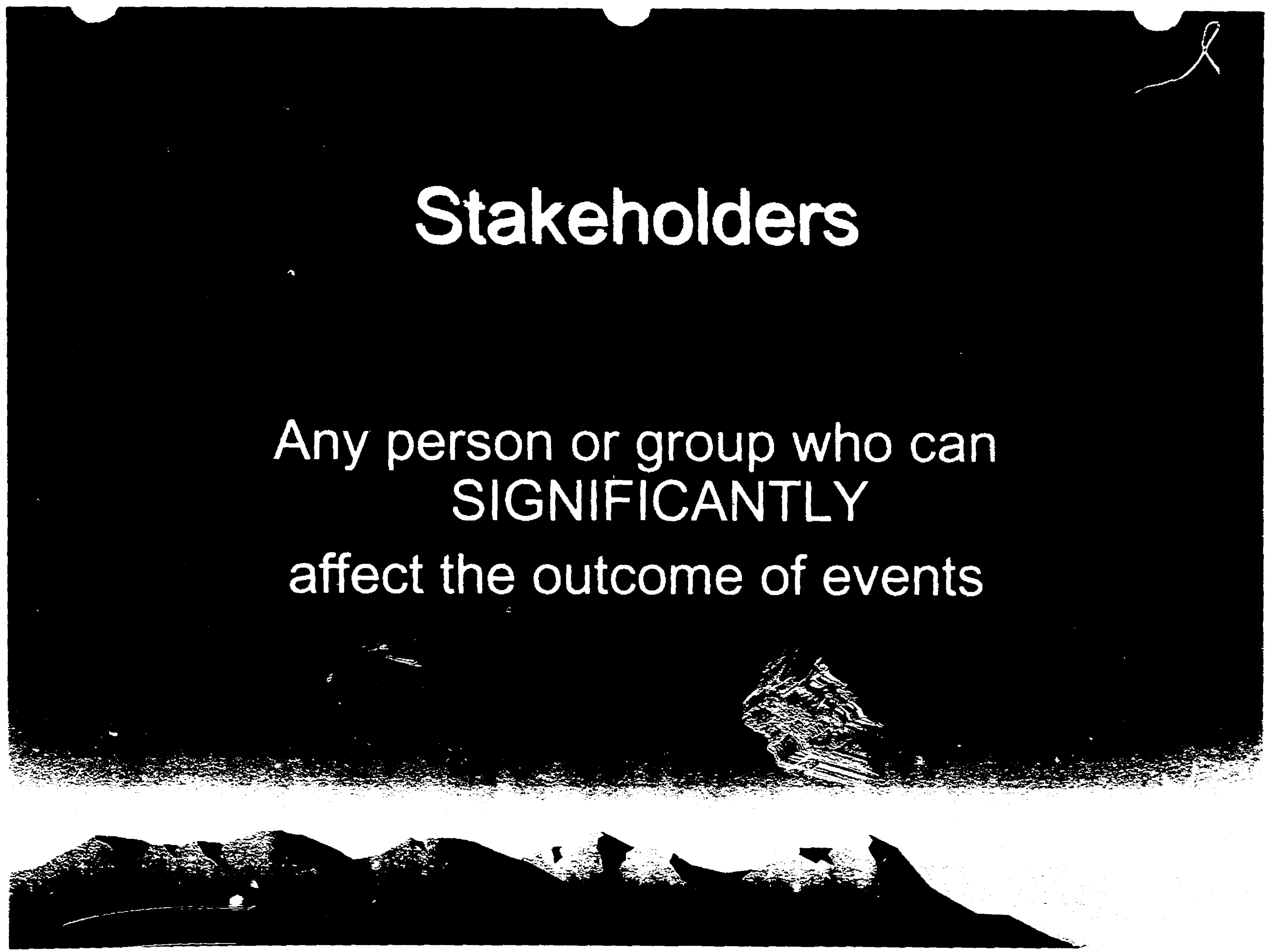


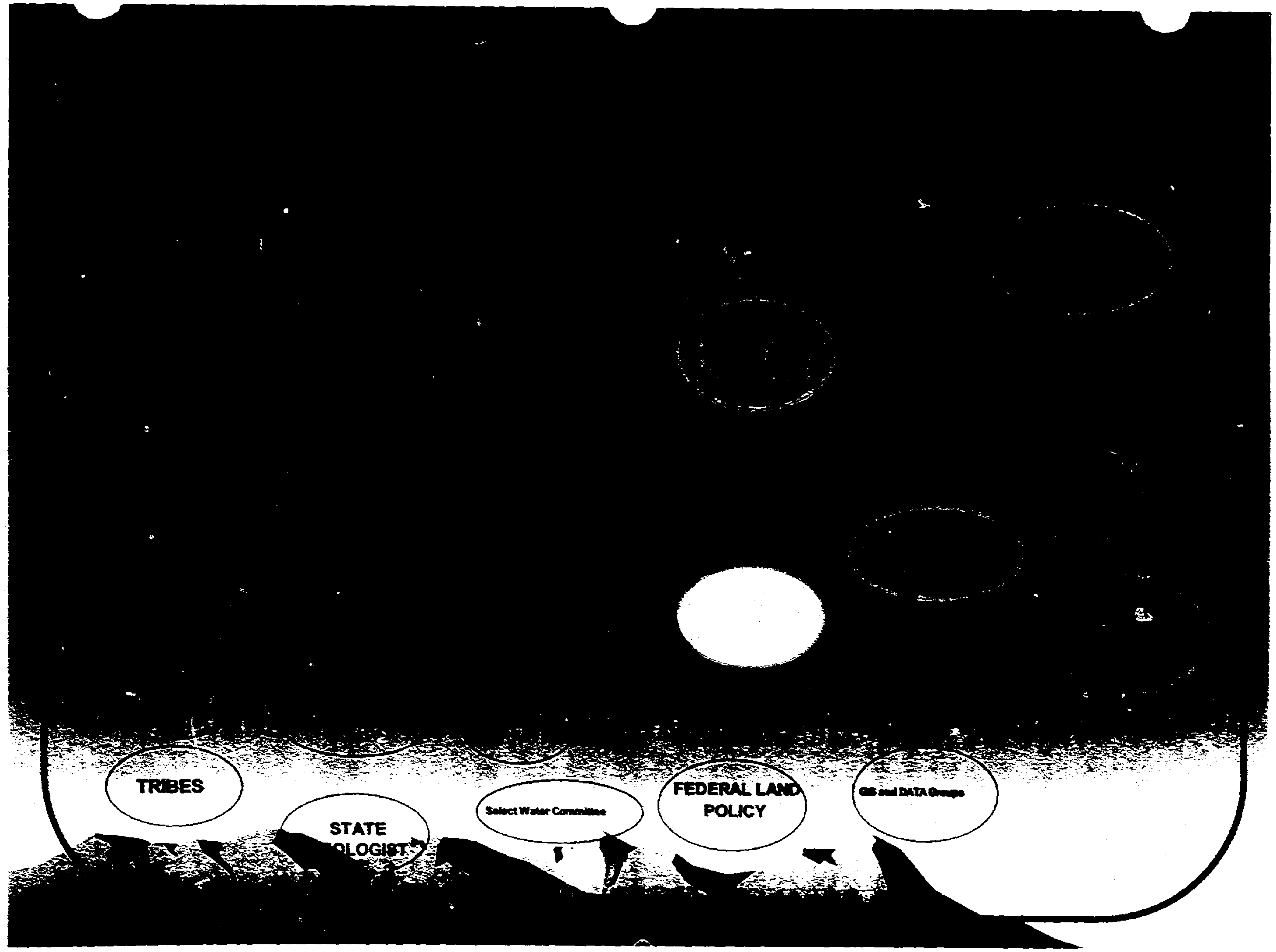


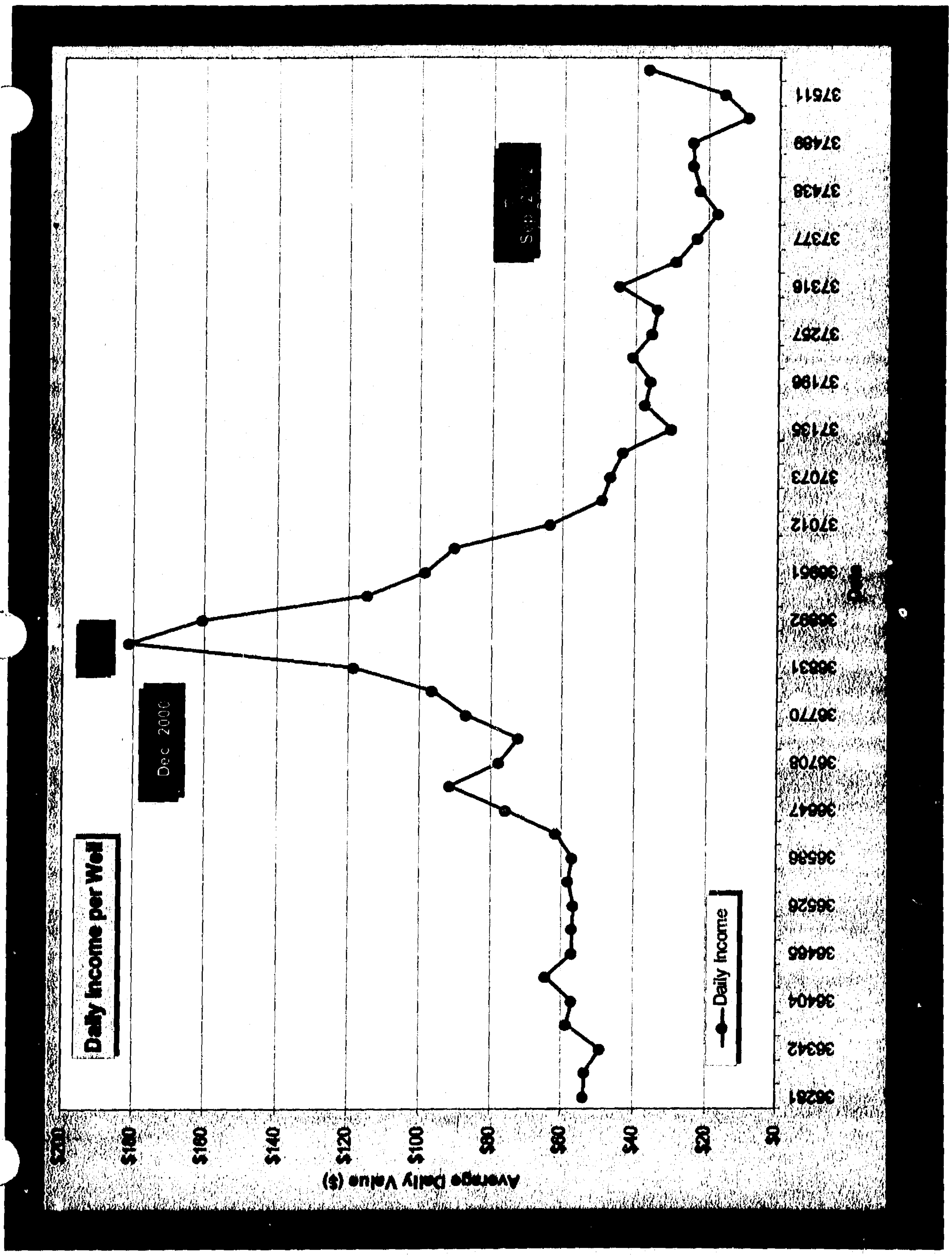

Compressor Station

Major Development Topics

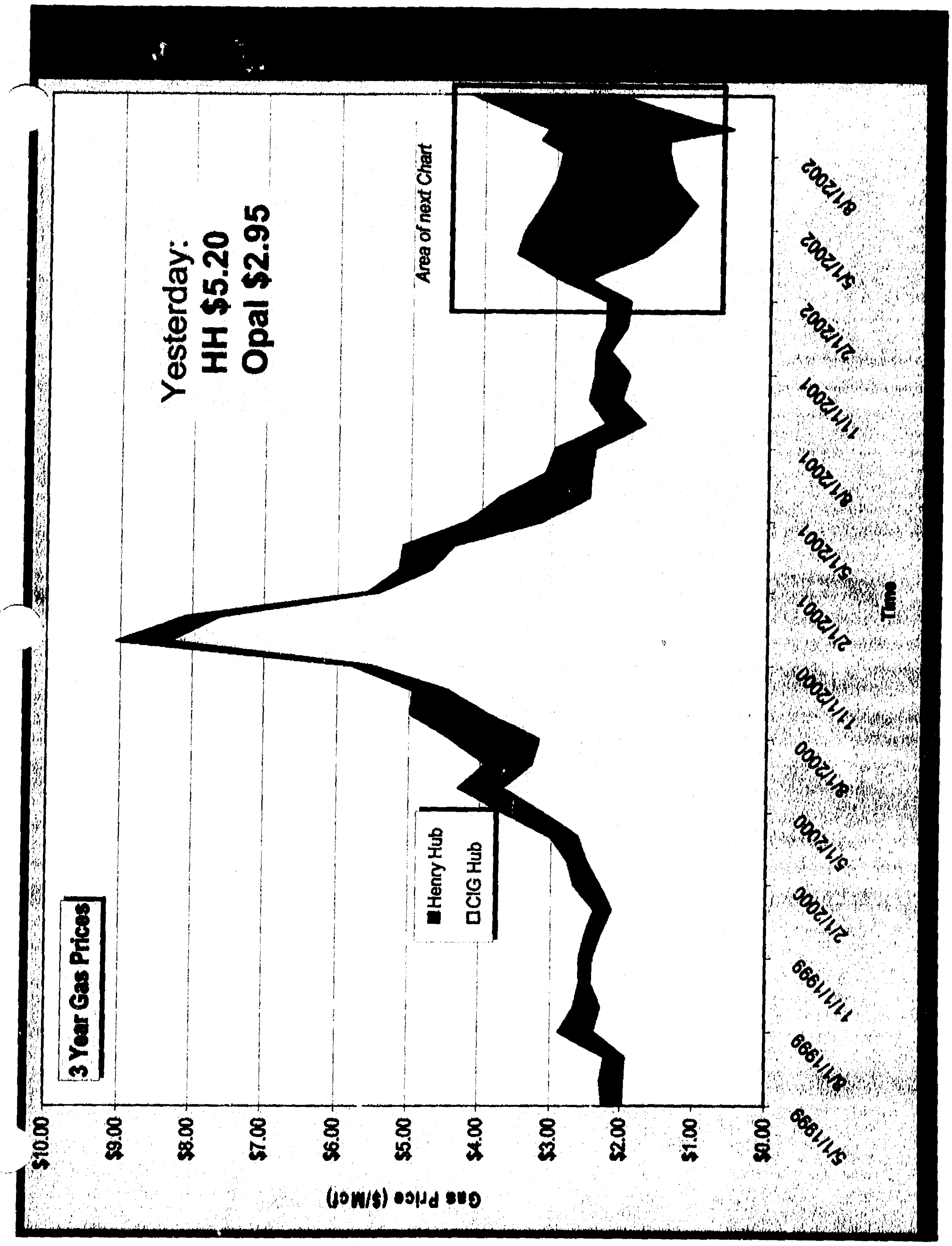
- Citizen Actions
- [illegible] ource Protection


Stakeholders
Any person or group who can
SIGNIFICANTLY
affect the outcome of events


TRIBES
STATE
OLOGIST
Select Water Committee
FEDERAL LAND
POLICY
GIS and DATA Groups



Daily Income per Well
Dec 2000
Daily Income
Average Daily Value ($)
$200
$180
$160
$140
$120
$100
$80
$60
$40
$20
$0


3 Year Gas Prices
Yesterday:
HH $5.20
Opal $2.95
Area of next Chart
Henry Hub
CIG Hub
Gas Price ($/Mcf)
$10.00
$9.00
$8.00
$7.00
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
5/1/1999
8/1/1999
11/1/1999
2/1/2000
5/1/2000
8/1/2000
11/1/2000
2/1/2001
5/1/2001
8/1/2001
11/1/2001
2/1/2002
5/1/2002
8/1/2002
Time

CURRENT REGULATORY CONTROLS in Wyoming

- Oil and Gas Commission Regulations
- State Engineer
- Clean Water Act – Point Source and Stormwater
- BLM and USFS
- Interstate Pipeline Regulations
- Clean Air Act – including fugitive dust
- Migratory Bird Treaty Act
- Endangered Species Act
- Cultural Heritage

Goals for Governance

- Provide efficient services
  - Roads – upgrade, maintenance
  - Administration – licensing, row, permitting, and information
  - Law Enforcement
  - Emergency Response (including fire)
  - Socio-economic Services – health, welfare, education, recreation
- Protect tax base and resource base
  - Mineral resources
  - Infrastructure
  - Agriculture
  - Recreation (Hunting, Fishing, and Wildlife)
  - Water
  - Human Health
  - Land Value
- Enhance quality of life
  - Education

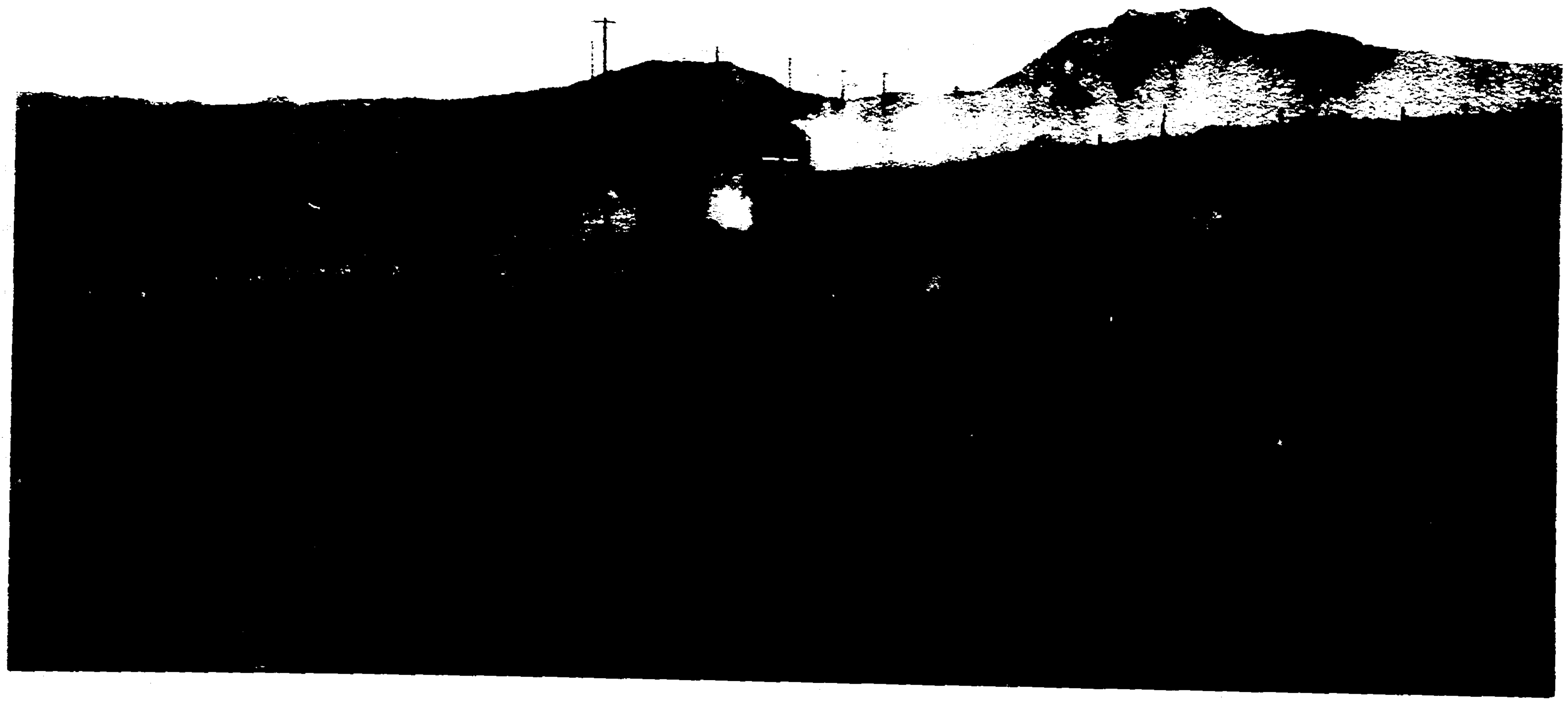
Specific County Issues

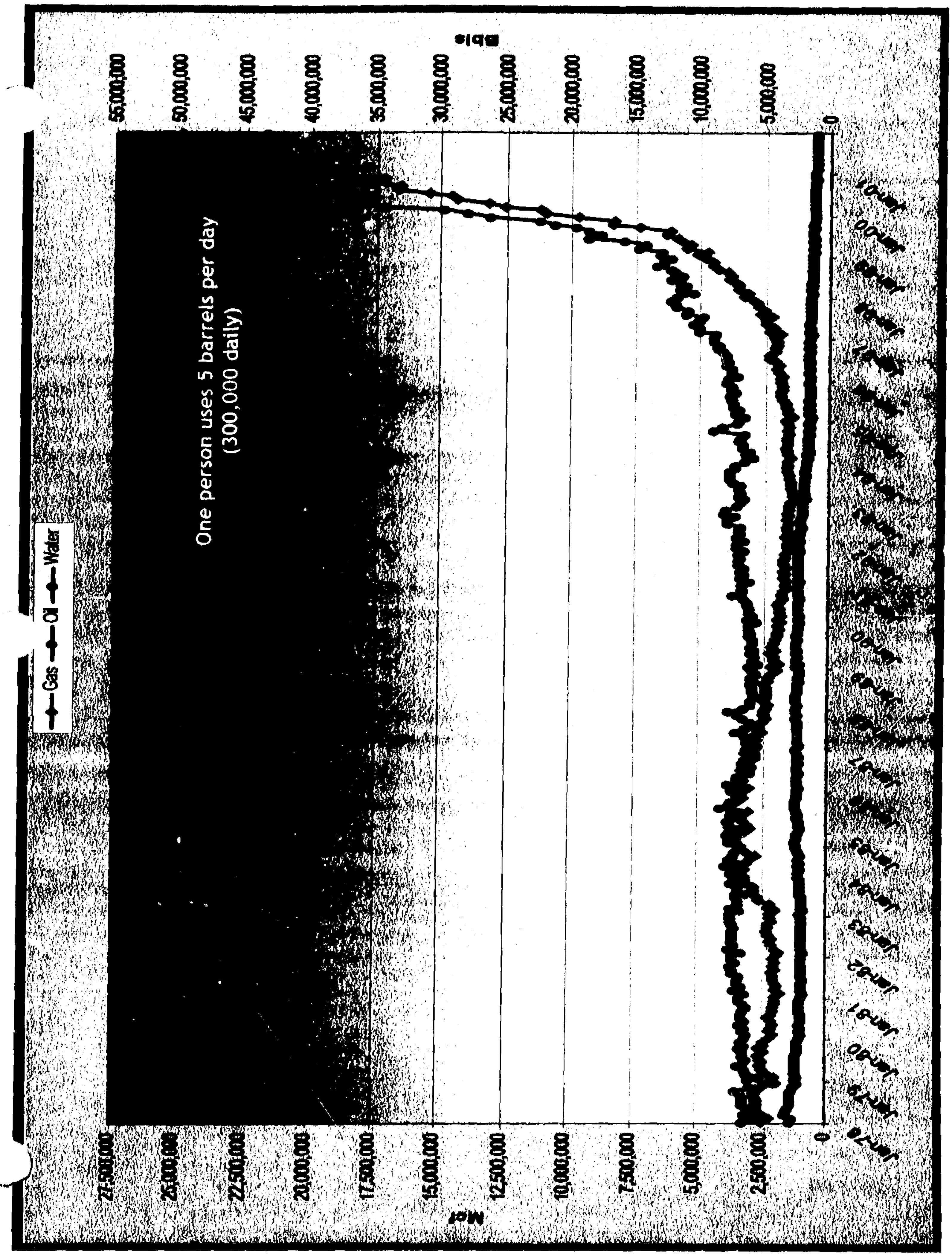
- Courthouse Records
- License Plates
- Property Taxes
- Road Maintenance
- Road Upgrade
- Traffic Control
- Law Enforcement
- Emergency Response

- Social Services
- Health Facilities
- Weed and Pest
- Conservation District
- Animal Control
- Judiciary
- County Attorney
- Recreational Facilities Upkeep

County Services:

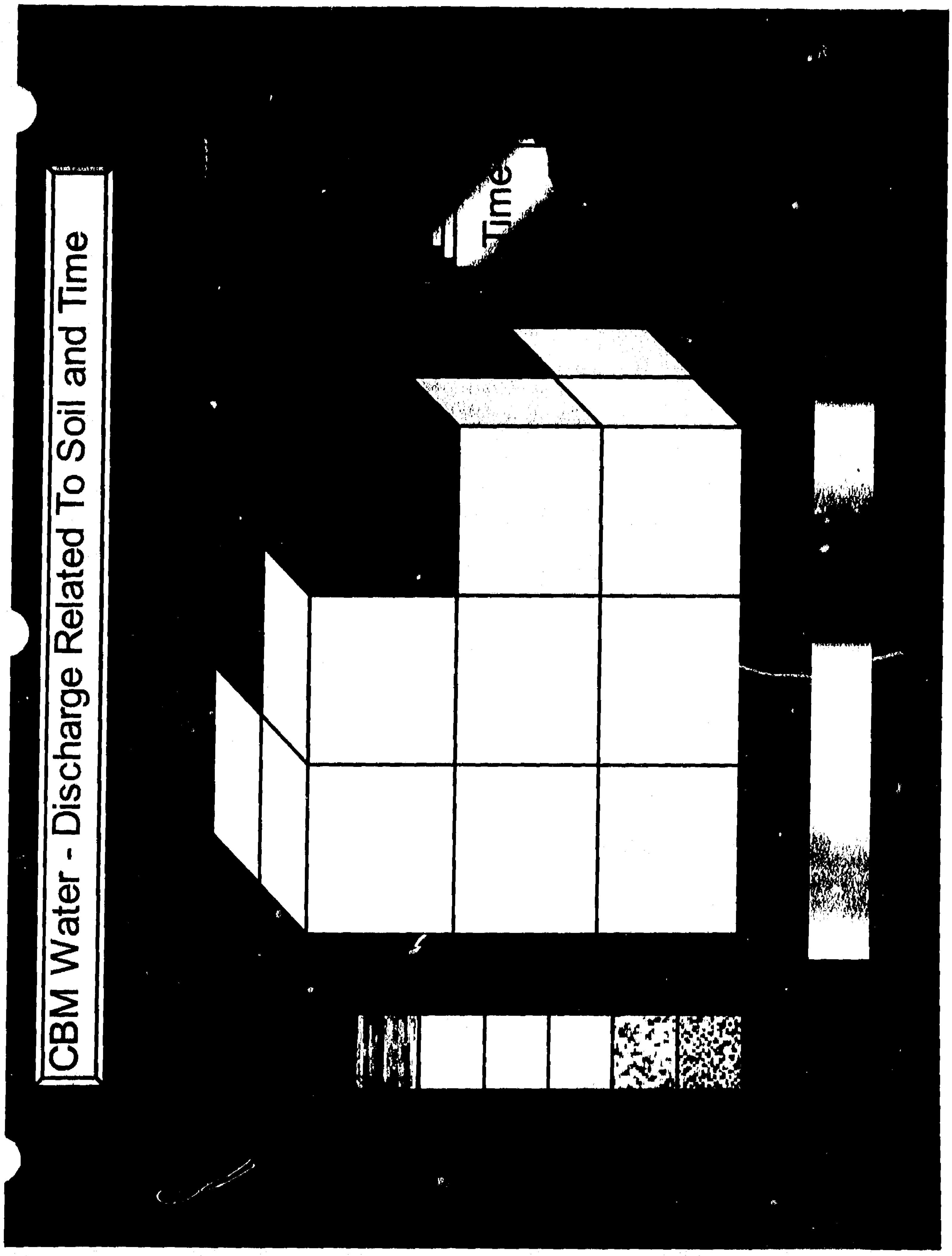
Demand Occurs Prior to Revenue




One person uses 5 barrels per day
(300,000 daily)
Gas
Oil
Water
Mcf
Bbls

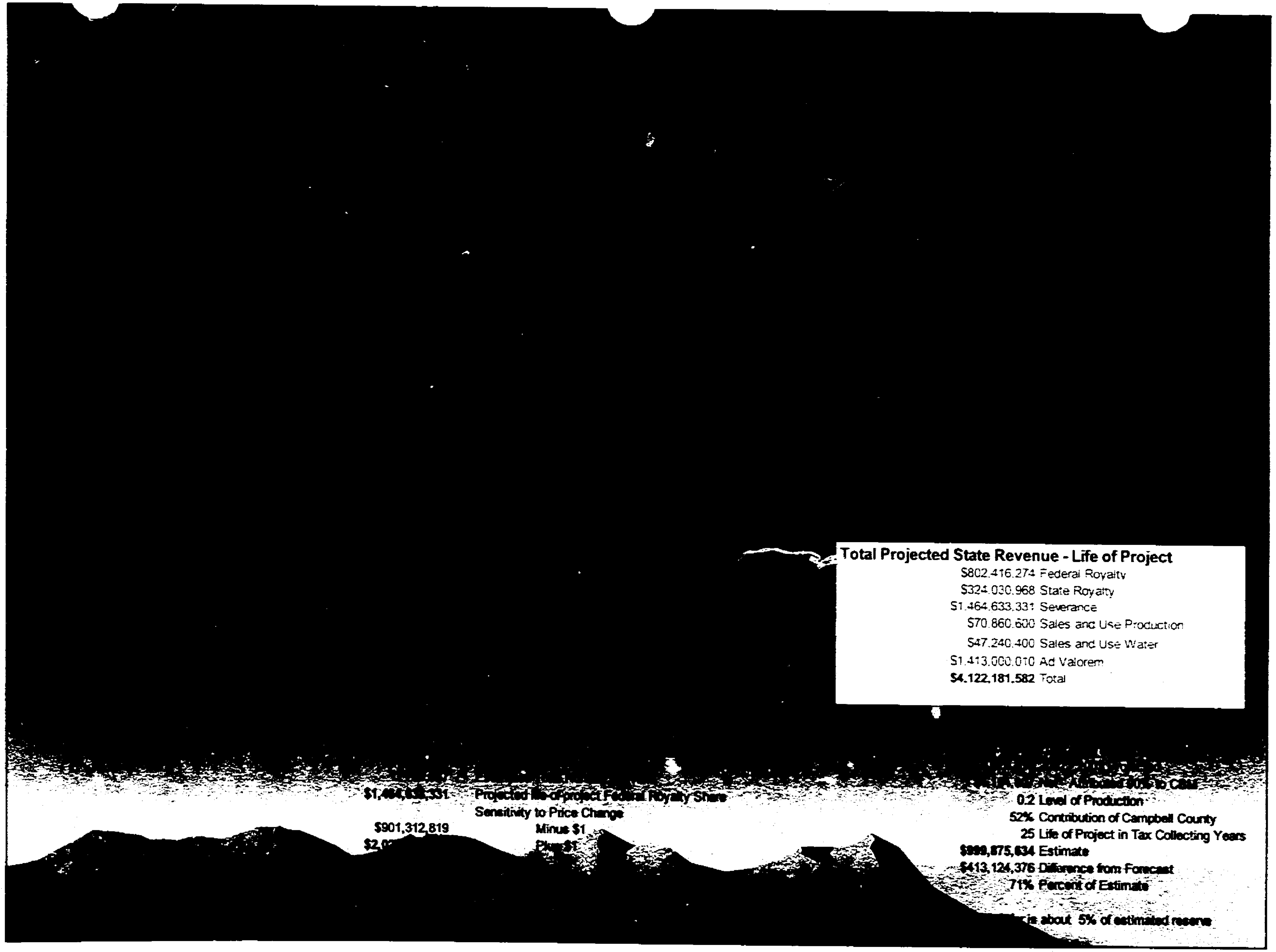
CBM DISCHARGE POINT

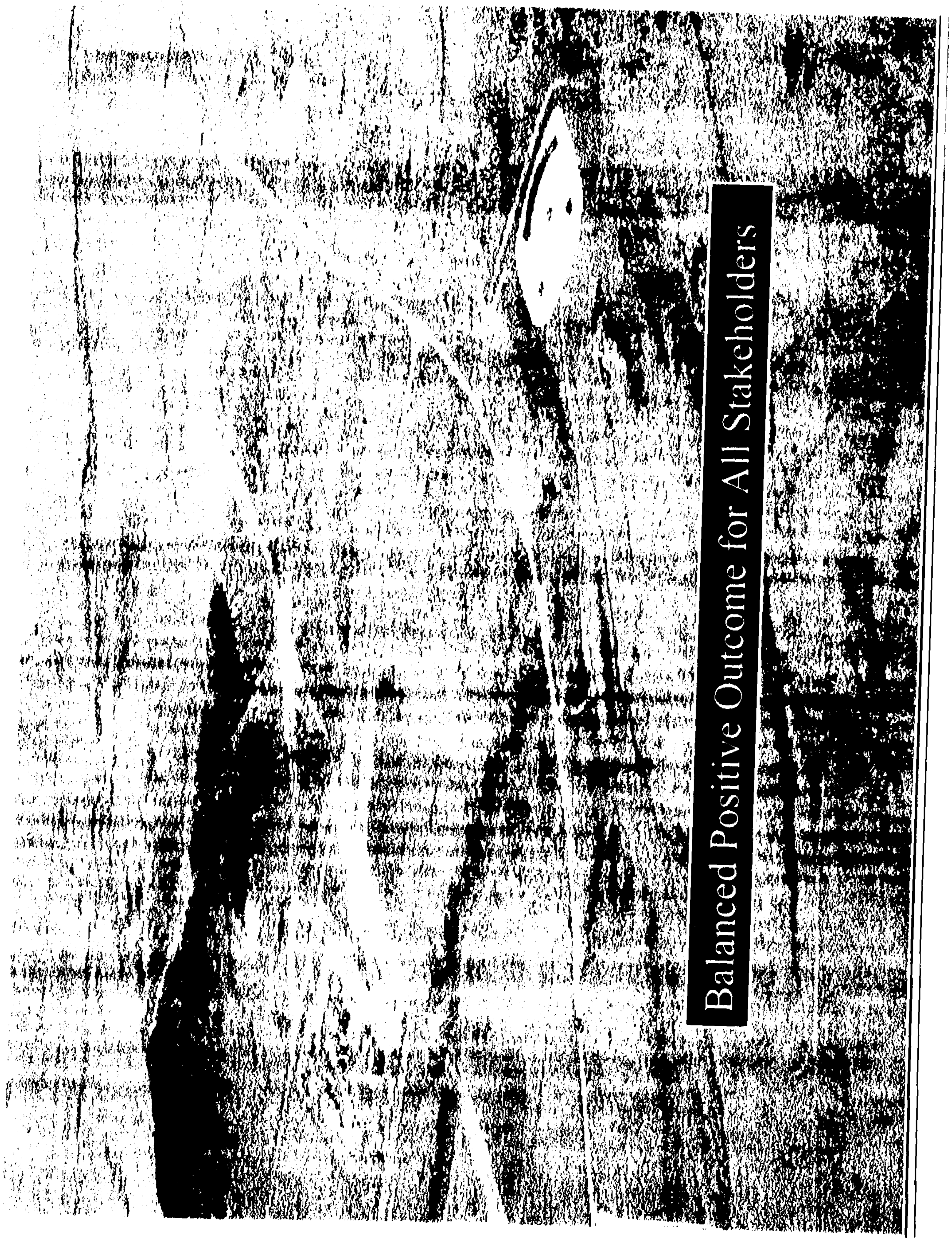

Irrigation with CBM Water near Sheridan, Wyoming


CBM Water - Discharge Related To Soil and Time
Time

Wyoming Oil and Gas Conservation Commission

	State	Federal	Fee
Production Mcf	66,739,383	160,776,366	581,812,069
Percent of Production	0.08246	0.19865	0.71888
Apds 1/2002 To 1/2003	720	1554	3207
% 1/2002 To 1/2003	0.13136	0.28352	0.58511


Total Projected State Revenue - Life of Project
$802,416,274 Federal Royalty
$324,030,968 State Royalty
$1,464,633,331 Severance
$70,860,600 Sales and Use Production
$47,240,400 Sales and Use Water
$1,413,000,010 Ad Valorem
$4,122,181,582 Total
Projected life-of-project Federal Royalty Share
Sensitivity to Price Change
$901,312,819
Minus $1
0.2 Level of Production
52% Contribution of Campbell County
25 Life of Project in Tax Collecting Years
Estimate
$413,124,376 Difference from Forecast
71% Percent of Estimate
is about 5% of estimated reserve

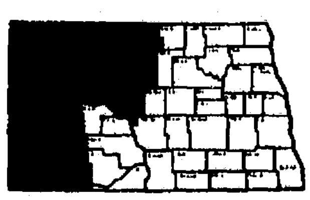

Balanced Positive Outcome for All Stakeholders

House Natural Resources Committee Hearing

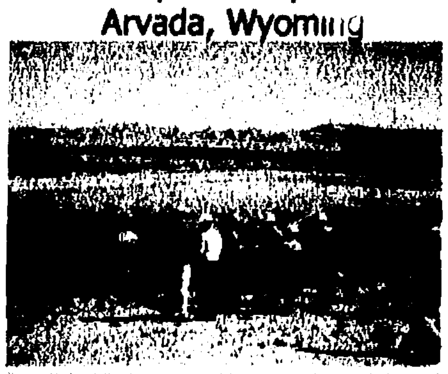
House Bill 1145
January 16, 2003

N.D. Association of Oil and Gas Producing Counties

- 17 counties in the west
- 135 members (counties, cities, school districts share in the 5% gross production tax)



CBM evaporation pond near Arvada, Wyoming



CBM Stock Tank

Top 7 reasons HB 1145 is a bad idea

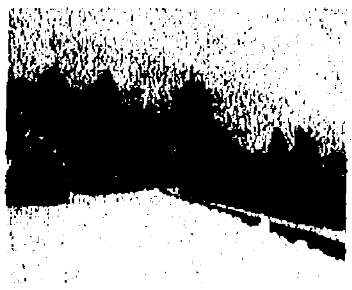
- 7. CBM Incentive? Will it work?

Top 7 reasons HB 1145 is a bad idea

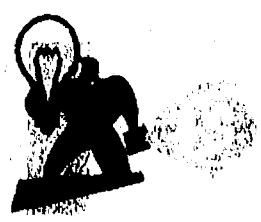
- 7. CBM Incentive: Will it work?
- 6. The oil and gas industry is not driving this bill

Top 7 reasons HB 1145 is a bad idea

5. Montana will consider ending their 12-month gas tax incentive this session.



Montana Coal Bed Natural Gas Alliance
Sales pitch to Montana legislators August 9



1. 9,550 wells over 10 years
2. Gas estimated at $4/mcf
3. Direct Revenue to Montana $1.6 billion
4. Indirect revenue to Montan $4.1 billion
5. Up to 736 jobs created

Top 7 reasons HB 1145 is a bad idea

- 7. CBM Incentive: Will it work?
- 6. The oil and gas industry is not driving this bill
- 5. Montana will consider ending their 12-month gas tax incentive this session.
- 4. Our gas tax is very low. Is it the problem?

Comparison Tax Study Sept. 2002
Larry Leistritz and Dean Bangsund, NDSU

- When gas is $3 per million cubic feet (mcf)
- 1. Wyoming .38
- 2. Alaska .37
- 3. Kansas .30
- 4. New Mexico .30
- 5. Montana .20
- 24. North Dakota .08

Top 7 reasons HB 1145 is a bad idea

- 7. CBM Incentive: Will it work?
- 6. The oil and gas industry is not driving this bill
- 5. Montana will consider ending their 12-month gas tax incentive this session.
- 4. Our gas tax is very low. Is it the problem?
- 3. "Temporary" exemption- rare

6 ½% Extraction Tax on crude oil ND State and Local Taxes 2002

- 1982 $ 88,910,893
- 1986 $ 57,148,758
- 1987- 1st tax exemption
- 1989- 2nd exemption
- 1991- 3rd exemption
- 1993- 4th exemption
- 1995- Increased 1st tax exemption 15-24 mo.
- 1997- 5th exemption
- 2001- Increased trigger from 1987
- 2002- $ 17,068,846

Extraction Tax on crude oil
ND State and Local Taxes 2002

- 1982 $ [illegible]
- 1986 $ [illegible]
- 1987- 1st tax exemption
- 1989- 2nd exemption
- 1991- 3rd exemption
- 1993- 4th exemption
- 1995- Increased 1st tax exemption 13-24 mo.
- 1997- 5th exemption
- 2001- Increased trigger from 1987

- 2002- $ 17,068,846
- 2002- no exemptions - 6 ½ % tax –
- $42 million Gift estimate $24 million 2002

Top 7 reasons HB 1145 is a bad idea

- 7. CBM Incentive: Will it work?
- 6. The oil and gas industry is not driving this bill
- 5. Montana will consider ending their 12-month gas tax incentive this session.
- 4. N.D. gas tax is among lowest in nation
- 3. Temporary exemption-rare
- 2. Gross Production Tax – in lieu of property taxes and due both county/state

5% Oil and Gas Gross Production Tax
In lieu of property tax

- 1953 – Oklahoma concept oil and gas
- 1981 – Increments adjusted

- 1% - 33 1/3 % impact fund
- -66 2/3 % state general fund

- 4% - 75% to county, 25% to state 1 million
- 50% county, 50 % state up to 2 million
- 75% to state, 25% to county after 2 million
- caps based on population

- Why 75% at first level?
- Impacts during development.
- 1145 is a change in tax policy.

Gas rate changed in 1991

- Changed from 5% to an annually adjusted flat rate per mcf. No exemptions given now. Let's keep it that way.

Top 7 reasons HB 1145 is a bad idea

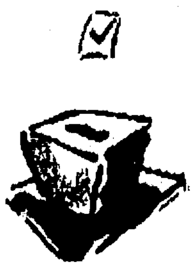
- 7. CBM Incentive: Will it work?
- 6. The oil and gas industry is not driving this bill
- 5. Montana will consider ending their 12-month gas tax incentive this session.
- 4. N.D. gas tax is among lowest in nation
- 3. Temporary exemption- rare
- 2. Gross Production Tax – in lieu of property taxes and it is due both county/state
- 1. Keep the GPT whole for the future

Future

- Let's work together to find our what factors limit ND's CBM and solve them creatively

Resist going down this road starting exemptions on the 5% Gross Production Tax.

Please give HB 1145 a Do Not Pass vote



Testimony on **HB 1145**
Robert Harms, Governor's Counsel
Natural Resource Committee
ND House of Representatives

January 17, 2003
Pioneer Room,
State Capitol
Bismarck, North Dakota

Mr. Chairman, members of the Committee, my name is Robert Harms, I am counsel to Governor Hoeven and appear in support of HB 1145, introduced at the request of the Governor.

You have been advised of how the bill works, its design and what we hope it might accomplish, so I am going to offer an overview of how this bill fits in with an energy policy that should work for all of North Dakota. I'd then like to touch on a concern raised by counties.

Six Pillars: The Governor has advanced an agenda since taking office, consisting of six broad topics (called pillars), one of which is energy. The objective of the energy policy is simply to enhance the production of North Dakota's energy resources to further diversify our economy, raise incomes and provide additional economic opportunities for our citizens. The components of the energy sector include.

- Wind
- Coal
- Ethanol
- Hydro
- And Oil and gas (which includes DOE grant request, research council legislation similar to lignite research fund and administrative efforts to encourage new investment.)

HB 1145 is designed to encourage new development of shallow gas resources that to date, have been untested and undeveloped in ND. (In contrast, our neighboring state, Wyoming has thousands of shallow gas wells, which represent the new wave of production in that state during much of the last decade, which would have otherwise been quite stagnant.) The bill simply provides a tax holiday of 24 months on shallow gas wells, which are not being developed or produced today. As such the bill costs the general fund and the counties nothing, because those investments are not being made now.

We hope it may also help to expand the potential of gas resources east of usual oil and gas development, where NDGS believes shallow gas reserves may exist.

Why hasn't development of shallow gas occurred in ND as it has in Wyoming? We don't know, but they might include:

- Capital formation
- Geological differences
- Infrastructure differences
- Environmental constraints
- Federal ownership patterns
- Tax policy

Whatever the reason, ND has only a few tools available to encourage new investment. We can do little about many of the factors listed above, but we can change our tax policy.

And it appears that incentives work. A study was conducted during the 1990s by the Interstate Oil and Gas Compact Commission (IOGCC), an organization representing all 30 oil and gas producing states, of which Governor Hoeven is chairman. The study seems to demonstrate the effectiveness of incentives, but it is impossible to determine a clear causation for new investment. The IOGCC study showed

- $2.8 billion in incentives resulted in 30 times the investment for state economies
- More specific to state revenues, the incentives yielded a 2 to 1 return. (See attached sheet from IOGCC study.)

Finally, let me offer some closing thoughts relating to the counties:

1. We don't know if the incentives will work, we hope it (coupled with other measures) will encourage new investment. We do know that ND has no serious development, or test of this resource to date.
2. We also know that the Counties are getting no revenue from this resource, since it is not being developed.
3. There exists a concern that HB 1145 maybe the first step towards unraveling the gross production tax distribution formula that is so important to western counties. No such attempt is being made. HB 1145 does not alter the distribution, but simply asks the counties to participate in deferring taxes, in the hope of generating revenue that does not exist today. The concern is understandable, but we should not let the fear of a future legislature deter us from taking positive steps today.

On behalf of Governor Hoeven we respectfully request a "DO PASS" recommendation on HB 1145.

Figure 1.8
Combined Economic Effects of All Incentives

Total Value	$74,624,007,124	
Multiplier	**Result**	**Taxes Invested**
Final Demand	$113,281,631,150	$2,823,794,485
Earnings	$14,814,128,360	
Jobs	630,133	
Severance Tax	$916,694,075	
State Income Tax	$192,702,268	
Corp. Income Tax	$1,025,908,408	
Sales	$3,159,653,157	
Property Tax	$3,020,765,762	
Other Direct Tax	$638,258,272	
Royalties	$108,820,749	
State/Local Total	$9,062,802,691	
Fed Income	$2,518,401,481	

tive economic effect of all the state incentives that could be quantified. (Note that a similar summary table is available that shows the cumulative effect of incentives for each state in Section 6). The total value shown in Figure 1.8 ($74.6 billion) is the combined value of investments required by incentives and the value of subsequent hydrocarbon production. The combined effect of these values yields a net $113.2 billion in economic effects. States invested $2.8 billion to generate these economic effects through tax reductions. This affirmatively confirms the benefits of incentives: $2.8 billion helped ensure more than 30 times that much for state economies. ✓

In turn, the states investing the $2.5 billion received more than $9 billion in state and local taxes, yielding an additional $2 for every dollar invested.

While it remains impossible to calculate how much of these economic effects are caused by the incentive programs, they appear to remain "profitable" for the legislatures investing the money. In a larger sense, the tax revenue stream pales in comparison to the beneficial effects on the economy. The $113.2 billion in economic effects creates $14.8 billion in salaries, which in turn yields 630,000 jobs (meaning years of employment). About one-third of these jobs would be direct jobs in the oil and gas industry, while two-thirds would represent years of employment in other sectors of the state economy.

A principal beneficiary of the state efforts is the federal government, realizing approximately $2.5 billion in additional tax revenue while the states shoulder the risk of these programs.

Figure 1.9 is a sub-part of Figure 1.8, showing the effects of incentives in which an investment is required in order to qualify for a tax reduction.

The industry has expended more than $18 billion responding to incentive programs, yielding $28 billion in eco-

Figure 1.10
Tax Incentives No Investment Action

Total Cumulative Price-Adjusted Production Values	$2,369,474,974	
Multiplier	**Result**	**Taxes Invested**
Final Demand	$3,546,965,980	$172,198,429
Earnings	$457,911,549	
Jobs	$19,375	
Severance Tax	$27,971,390	
State Income Tax	$7,258,219	
Corp. Income Tax	$11,306,355	
Sales	$112,838,700	
Property Tax	$47,075,146	
Other Direct Tax	$9,714,894	
Royalties	$52,416	
State/Local Total	$218,217,119	
Fed Income	$77,844,963	

North Dakota Petroleum Council

Ron Ness
Executive Director
Marsha Reimnitz
Office Manager

Email: ndpc@btigate.com
Phone: 701-223-6380
Fax: 701-222-0006
120 N. 3rd Street • Suite 225
P.O. Box 1395
Bismarck, ND 58502-1395

House Bill 1145

Senate Finance and Taxation Committee

February 5, 2003

Chairman Urlacher and members of the Committee, my name is Ron Ness, Executive Director of the North Dakota Petroleum Council. I appear before you today in support of House Bill 1145.

Natural gas is one of the reasons oil activity in North Dakota is slow. The Williston Basin is not known as a gas basin. The gas produced is associated gas that is produced with the oil. Gas wells are much cheaper to drill and operate than oil wells and the economics are better and not as volatile. The market is driven purely by domestic supply and demand and not world politics.

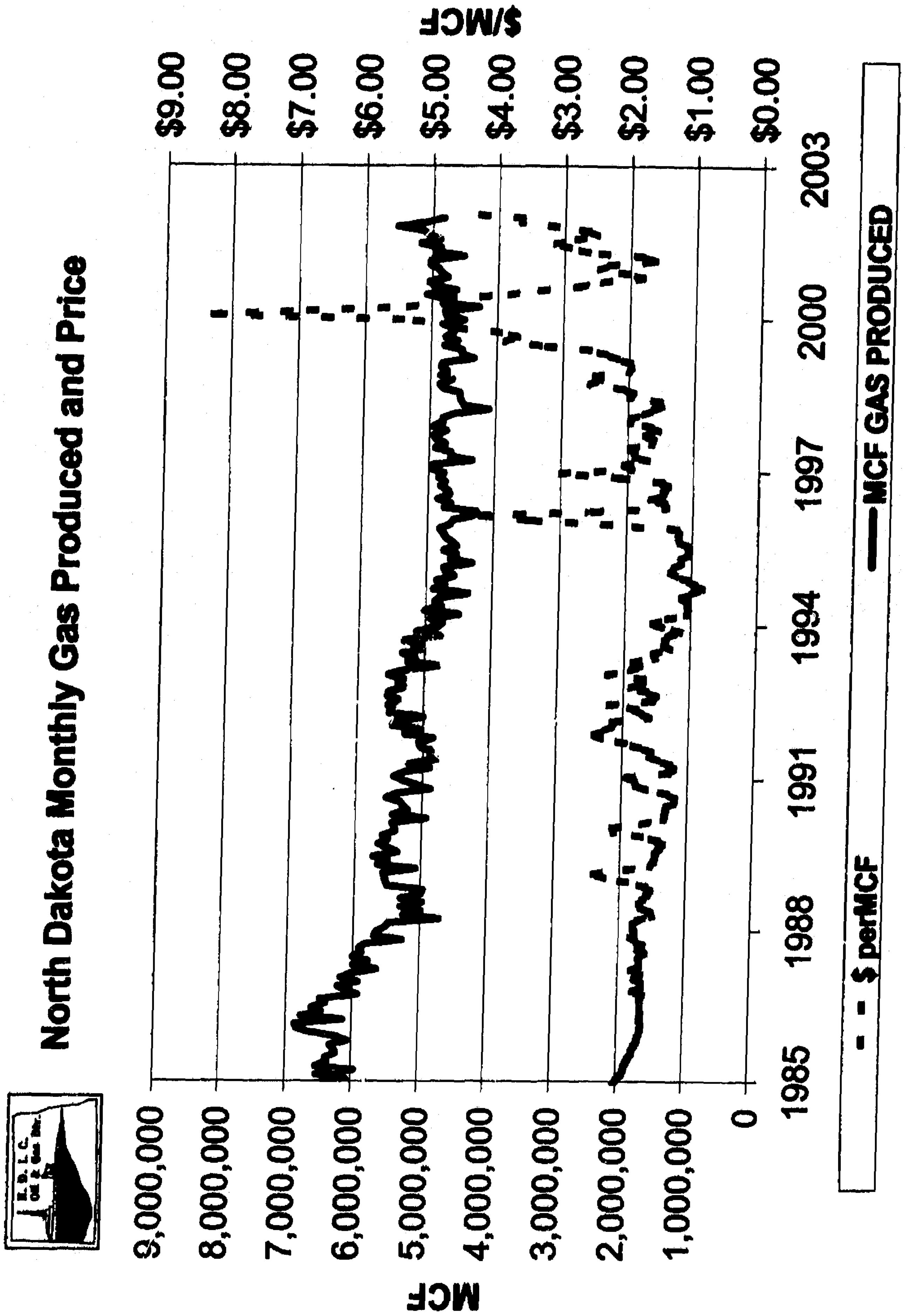
Natural gas is a clean, safe, efficient, and reliable fuel, which is why demand for the product continues to grow rapidly. Demand is expected to grow by more than 30% over the next decade. It emits carbon dioxide and water vapor when burned – the same substances emitted when you breathe. The beauty is that more than 85% of the natural gas consumed in the United States is produced in the United States and most of the balance is from Canada. North Dakota needs to get in the business of producing gas.

We know that incentives work in attracting oil and gas development. Look at the impact that the horizontal drilling incentives had on oil production and activity.

HB-1145 is not a silver bullet. However, it might do several things:

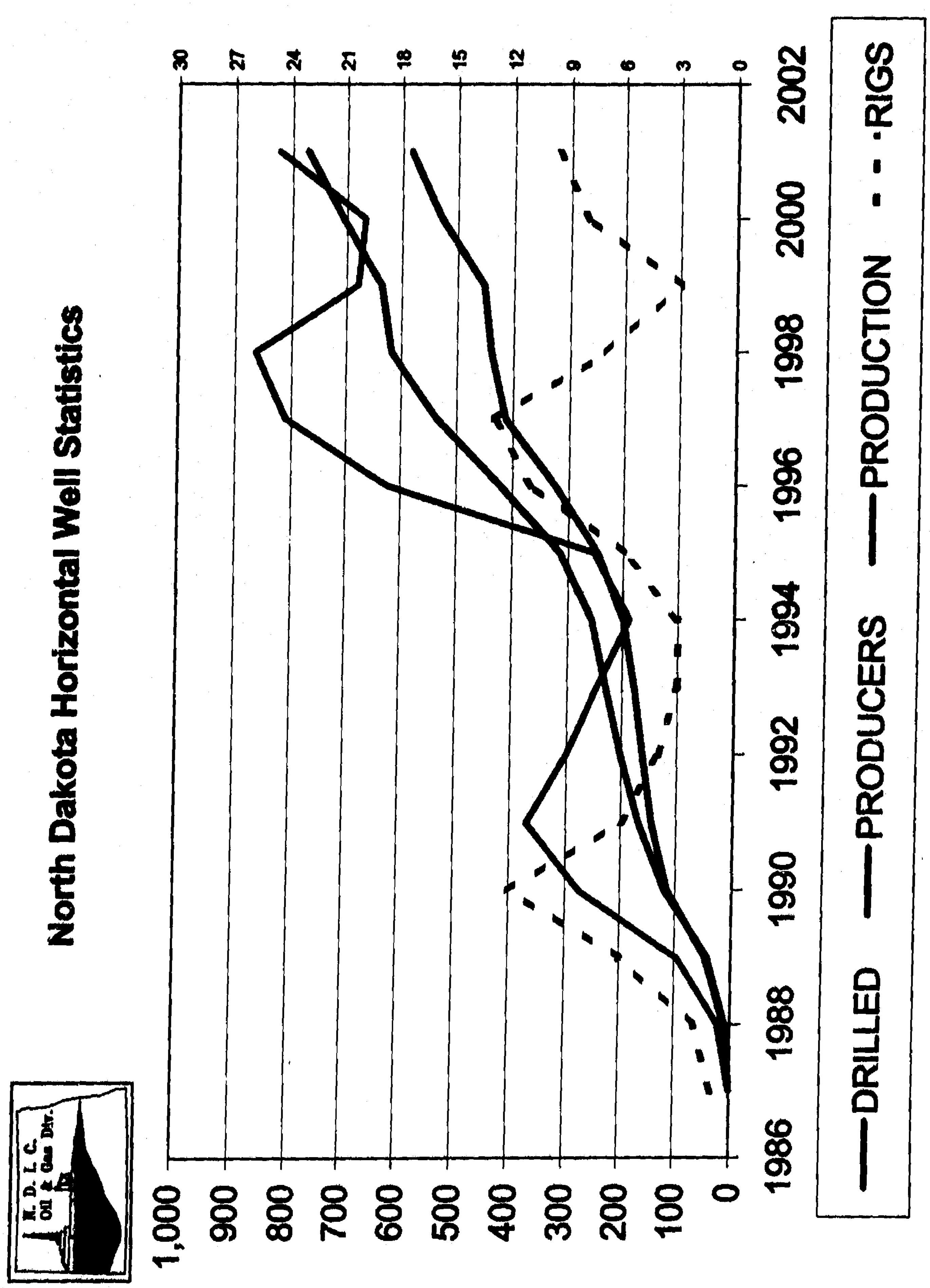
1. Create a small incentive for producers to look in North Dakota for gas.
2. Encourage oil and gas leasing, exploration, and production in new areas in the State, that would bring new wealth and economic develop to those communities.

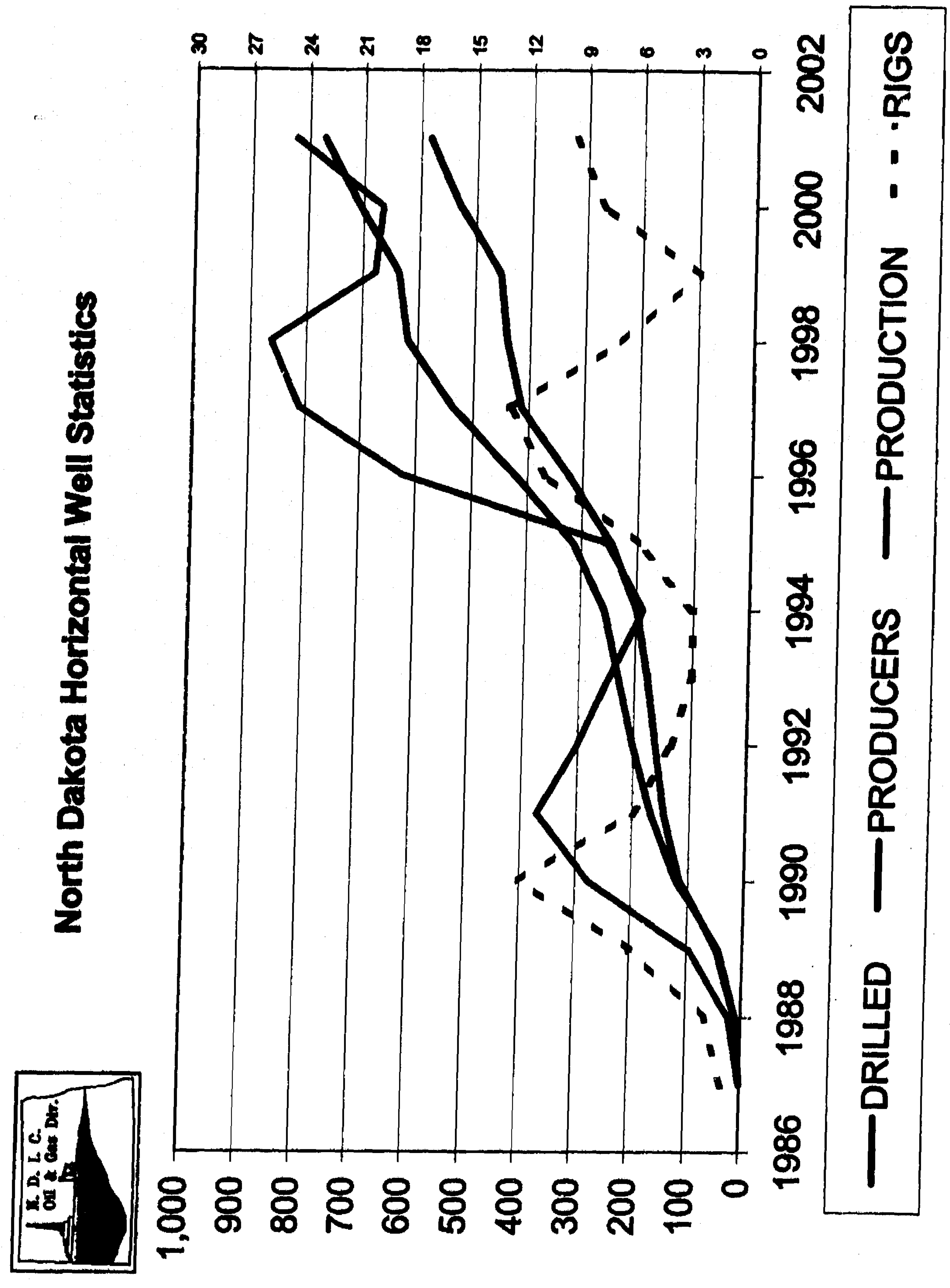
We think HB-1145 is one step the State can take to encourage gas exploration and development in North Dakota. We urge a Do Pass on HB-1145. I would be happy to answer any questions.



N. D. I. C.
Oil & Gas Div.
North Dakota Monthly Gas Produced and Price
MCF
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
$/MCF
$9.00
$8.00
$7.00
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
1985
1988
1991
1994
1997
2000
2003
$ perMCF
MCF GAS PRODUCED

16


North Dakota Horizontal Well Statistics
N. D. I. C. Oil & Gas Div.
1,000
900
800
700
600
500
400
300
200
100
0
30
27
24
21
18
15
12
9
6
3
0
1986
1988
1990
1992
1994
1996
1998
2000
2002
DRILLED
PRODUCERS
PRODUCTION
RIGS


North Dakota Horizontal Well Statistics
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1,000
900
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24
21
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12
9
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1986
1988
1990
1992
1994
1996
1998
2000
2002
DRILLED
PRODUCERS
PRODUCTION
RIGS

Comparison of Energy Taxation in Oil and Natural Gas Producing States

Prepared for
North Dakota Association of Oil and Gas Producing Counties

Prepared by
F. Larry Leistritz
Dean A. Bangsund

September, 2002

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Introduction

Energy taxation is an important issue to individuals and companies involved with energy exploration and extraction, local and state governments, and the general public. Currently, crude oil and/or natural gas is produced in 36 states in the US. Comparing energy taxation among the producing states is difficult due to the numerous tax structures/rules, taxation rates, and regional energy prices. The purpose of this report is to place current state energy taxes on a dollar per barrel basis for new oil production and on a dollar per mcf basis for new gas production in all oil and gas producing states in the United States.

Scope and Procedures

Energy tax rates and rules differ by state. Government agencies and organizations were contacted in each state to determine current tax rates, miscellaneous energy charges, and tax exemptions/exclusions for oil and gas production. The information needed to estimate effective tax rates per barrel and mcf (one thousand cubic feet) of natural gas varied by state. Some states have per unit (i.e., barrel, mcf) charges, while others collect a percentage of the value of gross production. The rates and charges varied by state, and in some cases, varied by well age (e.g., length of time in production), well type (e.g., vertical, horizontal), rate of well output (e.g., tax rate varies by well productivity), value of well output (e.g., first "X" value of sales exempt from taxation), and by price of oil and gas (e.g., rate of taxation varies based on price).

The time allocated to this study dictated that the scope of the energy tax assessment be limited to typical onshore new well production. Stripper wells and production from enhanced oil recovery projects were not included. Wells were assumed to be privately owned. State, tribal, and Federally-owned wells, and the corresponding royalty and exemption rates for governmental interests were not incorporated into the study.

The Interstate Oil and Gas Compact Commission (IOGCC) recently compiled oil and gas taxation information for all energy producing states in the U.S. (IOGCC 2001). The information gathered by the IOGCC provided initial contacts for individuals and agencies within each state. Each state was contacted to verify current energy tax rates, clarify rules on exemptions or exclusions, and provide interpretation of energy tax rules. Further contacts were made if additional information was required to estimate per unit tax rates (e.g., typical well output, production by well types, distribution of production within state, etc.).

The value of crude oil and natural gas will not be the same in all states at any point in time. Local and national supply and demand, distance from processing facilities and secondary markets, and differences in the type of crude oil produced (i.e., sulfur content, specific gravity, etc.) result in oil prices varying by time of year and location. The same principles hold for natural gas. Since tax rates and/or rules in most states are based either on per unit value (i.e., price per barrel) or based on value of well output (e.g., quantity times price), three prices for oil and natural gas were used in the analysis. In order to compare effective tax rates across all oil producing states, price of oil and natural gas must be fixed. The prices used will not necessarily represent the average price received for crude oil and natural gas in any particular state.

Tax Rules and Rates

The following section describes briefly the methods, rules, and/or additional factors used to generate per unit tax estimates for each state[1]. In some states, energy taxation was straightforward; in other states, energy taxes over the life of a new well were required to estimate an effective tax rate. Information explaining how the rate was calculated for each state is provided.

Alabama

Total tax on oil and gas is currently 8 percent (2 percent production tax and 6 percent privilege tax); however, for new wells, the first five years of production are taxed at 50 percent of the normal rate. The standard privilege tax is 8 percent; however, for wells drilled after 1998, the rate has been reduced to 6 percent. Thus, new wells are taxed at 4 percent for the first five years, and 8 percent thereafter. A typical new well (99.9 percent of new wells are vertical) will produce 750,000 barrels over a 15-year life. In seven years, well output will be one-half of initial production. A well schedule was developed reflecting the above characteristics. Total taxes collected from the well (4 percent over first five years and 8 percent over remaining period) were divided by total well output to arrive at an average effective tax rate per barrel. Tax on gas was estimated using same procedure for oil wells, except gas wells typically will produce 1 million mcf in first year, last 10 years, and production will be reduced by 75 percent from initial production after the first five years of production. Alabama has no ad valorem tax.

Alaska

Alaska's tax system for oil and gas production was designed to place greater tax burden on more productive fields and lower tax burden on less productive fields. To accomplish a mixed weighting of the energy taxes by field productivity, an economic limiting factor was developed that uses well productivity and field production to adjust the severance tax rate. The current nominal rate for the state's severance tax is 12.25 percent for fields in production less than five years and 15 percent for fields in production over five years. In addition to the severance tax, the state also has a minimum tax of $0.80 per barrel, and is also subject to the economic limiting factor. Due to the economic limiting factor, the severance rate and the minimum tax for lower producing fields is eliminated--no severance taxes and no minimum tax are collected. In more productive fields, the effective severance tax rate is 10 percent and the minimum tax is $0.27 per barrel. Over the last few years, 80 percent of new wells have been

---

[1] For a more detailed description of the nominal tax rates and specific rules for each state, see The Interstate Oil and Gas Compact Commission web site: http://www.iogcc.state.ok.us/index.htm

drilled in lower productive fields, with the remaining 20 percent drilled in more productive fields. Approximately 75 percent of oil production from new wells in the state is from lower output fields and 25 percent of new oil production occurs in higher output fields. From the above factors, a statewide average severance tax rate of 2.5 percent is currently collected (75% production x 0% tax rate plus 25% production x 10% tax rate).

Alaska has two surcharges on taxable oil production. Currently, the total surcharge is $0.05 per barrel. No surcharge on gas. Surcharge collections are not subject to the economic limiting factor.

The economic limiting factor for gas is only based on well productivity. New gas wells generally will produce 10,000 mcf per day. The nominal tax rate for gas production is 10 percent. The economic limiting factor for gas wells uses a 3,000 mcf per day exemption, thus the severance rate for gas is 7 percent [(1-(3000/10000)) x 10% nominal tax rate]. The minimum tax was estimated at $0.045 per mcf ($0.064 x 0.7).

The ad valorem tax system was too complex to estimate using standard methods. The statewide average ad valorem rate was estimated by dividing total ad valorem tax collections by total oil and gas production. The ad valorem rate in 2001 for oil was $0.6617 per barrel and $0.114 per mcf.

Arizona

Arizona has a gas and oil transaction privilege tax which varies by location of production within the state. Currently, all production comes from one county, and the rate in that county is 3.437 percent for both oil and gas.

The ad valorem rate is 25 percent of cash value of production taxed at 11.3 percent. The effective rate is 2.825 percent of gross value.

Arkansas

Arkansas has a severance tax of 5 percent for oil if well productivity is greater than 10 barrels per day. All new wells in the state qualify for the 5 percent rate. Currently, the state has a conservation assessment of 43 mills per barrel of oil. The severance tax for gas is three-tenths of one cent per mcf. Current conservation assessment is 9 mills per mcf. Ad valorem taxes were based on average assessment values based on average daily well productivity, and assessments were provided for working and royalty interest shares. Well productivity assessment values for new wells over the life of a new well were discounted by a 30 percent declining productivity factor. Assessment rates provided were based on oil values of $24.68 per barrel. Ad valorem tax collections per barrel for the $20 and $15 per barrel scenarios in this study were adjusted to reflect the percentage change in lower oil prices. Assessment values for gas were based on market price of gas multiplied by average daily well production rates. Assessment values for the working interest component of the ad valorem tax were discounted by a predetermined well operating expense (13% of average daily assessment rate). Final assessment values were multiplied by a state average mill rate. Ad valorem tax rates for oil were estimated to range from $0.36 to $0.21 per barrel and the rates for gas ranged from about $0.04 to $0.02 per mcf.

California

California charges a flat rate of $0.373354 per barrel of oil and per mcf of gas. The state has no ad valorem tax.

Colorado

Colorado has a nominal severance tax which varies from 2 to 5 percent, depending upon gross value of production. However, the severance tax rate is adjusted based on the level of ad valorem taxes levied in each county. In most counties, the ad valorem rate is sufficient to eliminate the state severance tax, regardless of the gross value of production. Severance taxes are only collected in five counties, four of which are very minor oil producing regions in the state. Based on 2001 data, the ad valorem tax rate reduced the effective severance rate to 0.95 percent statewide. The average ad valorem tax collected is 8 percent of production value.

Florida

The severance tax rate is 8 percent for oil wells producing over 100 barrels per day and 5 percent for wells producing under 100 barrels per day. About 50 percent of new oil wells are located in south Florida and the other 50 percent are located in northwest Florida. New wells in south Florida have initial production of 200 barrels per day, and will generally take 20 years for output to drop to 100 barrels per day. New wells in northwest Florida also have initial production of 200 barrels per day, but output will drop to 100 barrels per day in 10 years. Based on the above factors, two well production schedules were developed. South Florida wells were estimated to produce oil for nearly 40 years, while wells in northwest Florida were scheduled to produce oil for 20 years. Total tax collections from each type of well were estimated and divided by total well output over the life of the well. Each well schedule was weighted by 50 percent. The effective severance rate was estimated at 7.276 percent.

The gas severance tax rate is tied to a 5-year producer price index. The current rate is $0.256 per mcf. Past rates, due to the moving 5-year average, have been lower than current rates. The state has no ad valorem taxes.

Georgia

No state and local taxes are levied on oil and gas in Georgia.

Idaho

Idaho has a 2 percent severance tax rate for oil and gas production in the state. The state has no ad valorem taxes. Currently, the state has no oil or gas producing wells; however, estimates of the tax collected if there were producing wells was estimated for this study.

Illinois

No state taxes are levied on oil and gas production in Illinois. Ad valorem taxes were based on an assessment schedule developed for production year 2002. Tax assessments varied by well productivity, age of well, and working and royalty interest shares per well. Assessment values provided were derived and/or based on yearly average prices within the state from 1999 to 2000. Based on a new well producing for 10 years (analysis fixed oil prices based on the 1999 and 2000 average in Illinois since information to adjust the assessment schedules by alternative oil prices could not be obtained), the average ad valorem tax over the life of a new well was estimated by applying assessed values to typical mill rates. The ad valorem rate was estimated at $0.17 per barrel. No information on the ad valorem tax assessments for gas could be obtained. As a result, the ad valorem tax on gas was estimated by converting oil to mcf equivalents based on an energy conversion factor of 5.8 mcf per barrel, and using the ad valorem rate per barrel of oil as a proxy for the rate for gas. The ad valorem rate for gas was estimated at $0.03 per mcf.

Indiana

The oil severance tax is 1 percent of value or $0.24 per barrel, whichever is greater. The gas severance tax is 1 percent of value or $0.03 per mcf, whichever is greater. The state has no ad valorem taxes.

Kansas

The nominal oil severance tax rate is 8 percent. Oil severance taxes are reduced by the amount of ad valorem taxes paid. Numerous individuals were contacted to develop production schedule(s) for new wells. The state currently has over 300,000 active wells, many of which qualify for one or more of several exemptions. Due to time limitations and a lack of useful data, typical well production schedules were not estimated. In order to effectively capture the effects of all of the exemptions that new wells would be subject to, and due to the great variation that exists with oil production among various regions of the state, data on state severance tax collections, value of production, and quantity of oil produced was collected over the last 17 years. State severance tax collections were divided by the value of oil production. The effective oil severance tax rate was estimated at 3.1005 percent, which accounts for the numerous exemptions and/or exceptions to the severance tax and for the offset to severance taxes for ad valorem taxes paid.

The nominal gas severance tax rate is 8 percent. The same rules, described above, apply to gas severance taxes. As a result, the same procedure was used to estimate the effective severance tax on gas. The effective gas severance tax rate was estimated at 5.9688 percent, which accounts for the numerous exemptions and/or exceptions to the severance tax and for the offset to severance taxes for ad valorem taxes paid.

A Kansas Corporation Commission Conservation Division fee of 5.83 mills per mcf of gas and 27.27 mills per barrel of oil is currently levied on all production. The ad valorem tax rate was estimated at 4 percent of production value.

Kentucky

The severance tax rate is 4.5 percent for oil and gas. The statewide ad valorem rate was approximately 1 percent.

Louisiana

The severance tax rate is 12.5 percent for oil and $0.199 per mcf for gas. The state has no ad valorem tax.

Maryland

No state taxes are levied on oil and gas production in Maryland.

Michigan

The severance tax rate is 6.6 percent for oil and 5 percent for gas. The state has no ad valorem taxes.

Mississippi

The nominal severance tax rate for oil and gas is 6 percent. Three classes of new wells, applicable to this study, have reduced severance tax rates. A discovery well and/or a well that used 3-D seismic data in connection with drilling is taxed at 3 percent for the first 5 years. A development well is taxed at 3 percent for the first 3 years. Nearly 89 percent of those three well types were estimated to be development wells. After 1999, tax rules state that if the price of crude oil is over $20 per barrel and if the price of gas is over $2.50 per mcf, reductions in the severance tax rate do not apply. Since data on well production schedules could not be found for Mississippi, production schedules for wells in neighboring states were used. The state has no ad valorem tax.

Missouri

No state taxes are levied on oil and gas production in Missouri.

Montana

Montana has segmented the severance tax into different rates for working interest and nonworking interest groups. The severance tax is also adjusted by well type and period of well output for each interest group. The severance tax for primary production wells is 0.76 percent for the working interest group and 15.06 percent for nonworking interest group for the first 12 months of production. For production after the first 12 months for post-1999 primary production wells, the severance tax rate changes to 9.26 percent for working interest groups and remains at 15.06 percent for the nonworking interest group. The severance tax for new horizontal production wells is the same for the primary production wells, except 18 months of production is taxed at the lower rate. The above severance rates for new oil wells also apply to gas wells. To estimate an effective tax rate based on the various severance rates, well production schedules similar to those in North Dakota were used. The share of gross value for each well type and interest group were obtained. About 95.5 percent of new oil wells were vertical. For new gas wells, the working interest groups' share of gross production was 87.8 percent. For the first 12 months of production for new oil wells, the working interest groups' share of gross production was 90.1 percent. The working interest groups' share changes to 89 percent for production from new oil wells after the initial 12 month period. Total tax collections from each type of well for each interest group, weighted by well type drilled, were estimated and divided by total well output over the life of the well. Montana has no ad valorem tax.

Nebraska

The severance tax rate is 3 percent for oil and gas. The state has no ad valorem tax.

Nevada

Nevada has an administrative tax of 100 mills per 50,000 cubic feet of gas and 100 mills per barrel of oil. The state has no ad valorem tax.

New Mexico

The oil severance tax is 3.75 percent for oil and gas. The state has a school tax of 3.15 percent for oil and 4 percent for gas. The state also has a conservation tax of 0.19 percent for oil and gas. Ad valorem tax rates were calculated to average 2.0257 percent of gross value.

New York

New York has no state energy taxes. The state has an administration charge for assessing production levels, and the counties use the production information to assist them in determining the assessment rates for ad valorem taxes. The best estimates from New York indicated that both state fees levied on well operators and county ad valorem taxes have averaged 3 percent of production value.

North Carolina

North Carolina has no state taxes.

North Dakota

The state has a gross production tax of 5 percent for oil and $0.0834 per mcf. The state also has an extraction tax of 4 percent for oil. Production in the first 15 months for new vertical wells is exempt from the extraction tax, and production for the first 24 months of new horizontal wells is exempt. Of the new wells drilled in the state, about 40 percent are vertical and 60 percent are horizontal. Typical production schedules were used to determine the effective tax per barrel on new wells in the state. Total tax collections from each type of well, weighted by well type drilled, were estimated and divided by total well output over the life of the well. The state has no ad valorem tax.

Ohio

The severance tax is $0.10 per barrel and $0.025 per mcf. The state also has a voluntary Ohio Energy Education Tax of $0.01 per barrel and one-tenth of one mill per mcf. Although the tax is voluntary, voluntary compliance with the tax is nearly 100 percent. The ad valorem tax rate was estimated by state officials to be $0.20 per barrel and $0.05 per mcf of gas.

Oklahoma

The state has a gross production tax of 7 percent for oil and gas and an excise tax of 0.095 percent for oil and gas. The state also has two voluntary contributions. One is administered by the Oklahoma Energy Resources Board and is 0.1 percent for oil and gas. The other is administered by the Oklahoma Commission on Marginally Producing Oil and Gas Wells and is $0.02 per barrel and $0.001 per 10,000 cubic feet of gas.. The two voluntary taxes are collected on all production, and operators must request a refund of tax. About 5 percent of the tax collected is refunded. About 95 percent of new wells in the state are vertical, and receive no exemptions from tax. The remaining 5 percent of wells (horizontal) receive a 6/7ths reduction in gross production tax annually until the well has undergone a "costing out" process. The exemption for costing out a horizontal well usually takes seven years to complete. Typical production schedules were used to determine the effective tax per barrel on new wells in the state. Total tax collections from each type of well, weighted by well type drilled, were estimated and divided by total well output over the life of the well. The state has no ad valorem tax.

Oregon

Oregon has a 6 percent severance tax rate for oil and gas production in the state. The state currently has no active oil production; however, tax was computed for oil production. The first $3000 in gross value of production from each well is exempt from severance tax for each calendar quarter. Typical production schedules for gas wells were used to determine the effective tax per barrel on new wells in the state. Total tax collections from the well were estimated and divided by total well output over the life of the well. The state has no ad valorem taxes.

Pennsylvania

Pennsylvania has no state tax on oil and gas production.

South Carolina

South Carolina has no state tax, and currently has no oil or gas production.

South Dakota

The severance tax rate is 4.5 percent for oil and gas production. The ad valorem tax was estimated by dividing county tax collections by county oil and gas production.

Tennessee

The severance tax rate is 3 percent for oil and gas production. The state has no ad valorem tax.

Texas

The severance tax rate for oil is 4.6 percent and 7.5 percent for gas. The state collects a cleanup regulatory fee of $0.000333 per mcf and $0.003125 per barrel. The state also two other regulatory fees, one of $0.001875 per barrel and the other $0.02 per barrel. One exemption applies to gas wells based on cost of well. Wells that are two times higher than the median cost are exempt from severance taxes. Wells that are equal to median cost receive a 50 percent reduction in severance taxes. About 14 percent of new gas wells qualify for the complete exemption, and another 14 percent qualify for the 50 percent reduction. The ad valorem rate was estimated by dividing county ad valorem tax collections by county oil and gas production.

Utah

The severance tax rate for oil and gas is two tiered. The rate for oil is 3 percent up to the first $13 per barrel and 5 percent on the value from $13.01 and above per barrel. The rate for gas is 3 percent up to the first $1.5 per mcf and 5 percent on the value from $1.51 and above per mcf. The state has a conservation tax of 2 mills on the value of oil and gas production. The first $50,000 annually in gross value per one well per operator per field is exempt from severance tax. The first 12 months of production from wildcat wells is exempt from severance tax. The first six months of production from development wells is exempt from severance tax. About 97 percent of new wells drilled are development and 3 percent are wildcat. A typical production schedule was used to determine the effective tax per barrel on new wells in the state. Total tax collections from the development and discovery wells were estimated and divided by total well output over the life of the wells. The ad valorem rate was based on dividing county tax collections by county oil and gas production.

Virginia

The severance tax rate for oil is 0.5 percent and 2 percent for gas. The state has a road improvement tax rate of 1 percent on oil and gas production. The state has no ad valorem tax.

Washington

Washington has no state tax on oil and gas production.

West Virginia

The severance tax rate for oil and gas is 5 percent. Wells that have an average daily production less than 5,000 cubic feet of gas are exempt from severance tax. Wells that have an average daily production less than one-half barrel are exempt from severance tax. A typical production schedule was used to determine the effective tax per barrel on new wells in the state. Total tax collections per well were estimated and divided by total well output over the life of the wells. The state has no ad valorem tax.

Wyoming

The severance tax is 6 percent for oil and gas. The state has a conservation tax of $0.0008 per barrel and mcf. The first 60 barrels per day and 360 mcf per day on new wells is exempt from severance tax. Typical well output schedules were used to determine the effective tax per barrel on new wells in the state. Total tax collections per well were estimated and divided by total well output over the life of the wells. The ad valorem tax rate was estimated at 6.5 percent of gross production value.

Results

The following sections rank the oil and gas producing states by the amount of state and local energy taxation, expressed on a per barrel and per mcf basis. The listing of energy taxation for each state was provided for three price scenarios. Due to the complex nature of some state taxing schemes, the amount of tax was estimated for new oil production over the life of a new well. In some states, energy tax structures or rules did not require estimating tax collections over the life of a well. However, regardless of the tax rate or structure, production exclusions and exemptions, and other rules affecting the amount of tax collected, the tax estimates for each state provide an easy and quick comparison of effective energy taxation in the United States.

Oil

Since many states have tax provisions that are partially based on the price of oil (i.e., rates either directly tied to price or rates applied to gross production value), three price scenarios were used: $25, $20, and $15 per barrel. Under the $25 per barrel scenario, Louisiana had the highest effective tax rate of $3.13 per barrel (Table 1). The next highest state, Wyoming, had an effective tax rate that was $0.35 per barrel less than Louisiana. New Mexico was third, with a rate of $2.28 per barrel, followed closely by Colorado with a rate of $2.24 per barrel. The next five states were separated by only $0.08 per barrel. Florida was fifth with a rate of $1.82 per barrel, followed closely by Oklahoma ($1.81 per barrel), Kansas ($1.78 per barrel), and North Dakota and Michigan, each at $1.74 per barrel. The tenth highest state was Montana with a rate of $1.69 per barrel. The eleventh through the twentieth rankings were separated by $0.36 per barrel (Table 1).

Under the $20 per barrel scenario, little change occurred in the ranking of the top 10 states (Table 2). Louisiana, Wyoming, New Mexico, Colorado, and Florida, the top five states, respectively, retained their relative ranking from the previous price scenario. Oklahoma and Kansas switched rankings, but were only separated by a few hundredths of a dollar per barrel. The only major change in the top ten states was Alaska, ranked 13th under the $25 per barrel scenario, which moved up to the eighth position under the $20 per barrel scenario. North Dakota moved from eighth to ninth position. Michigan and Montana each moved down one position, due to Alaska entering into the top 10. The fifth through the tenth positions were only separated by $0.07 per barrel. Very little change occurred in the remaining rankings (Table 2).

Under the $15 per barrel scenario, the only major change was Alaska, which moved into the fifth position (Table 3). Louisiana, Wyoming, New Mexico, and Colorado, the top four states, respectively, retained their relative ranking from the two previous price scenarios. Florida, Oklahoma, Kansas, North Dakota, and Michigan held the fifth through the tenth positions, respectively. Again, the fifth through the tenth positions were only separated by $0.05 per barrel. Very little change occurred in the remaining rankings (Table 3).

Table 1. Effective Energy Tax Rates for New Well Production, by Oil Producing State, $25 per Barrel, 2001

Rank	State	Tax	Rank	State	Tax
		- $/barrel -			- $/barrel -
1	Louisiana	3.13	17	Alabama	1.41
2	Wyoming	2.78	18	Kentucky	1.38
3	New Mexico	2.28	19	South Dakota	1.28
4	Colorado	2.24	20	West Virginia	1.25
5	Florida	1.82	21	Utah	1.12
6	Oklahoma	1.81	22	Nebraska	0.75
7	Kansas	1.78	23	New York	0.75
8	North Dakota	1.74	24	Tennessee	0.75
9	Michigan	1.74	25	Idaho	0.50
10	Montana	1.69	26	Virginia	0.38
11	Arkansas	1.61	27	Ohio	0.31
12	Arizona	1.57	28	Indiana	0.25
13	Alaska	1.54	29	Illinois	0.17
14	Mississippi	1.50	30	Nevada	0.10
15	Oregon	1.45	31	California	0.04
16	Texas	1.41	32	See notes	

Notes: Georgia, Maryland, Missouri, North Carolina, Pennsylvania, South Carolina, and Washington have no state or local energy taxes.

Table 2. Effective Energy Tax Rates for New Well Production, by Oil Producing State, $20 per Barrel, 2001

Rank	State	Tax	Rank	State	Tax
		- $/barrel -			- $/barrel -
1	Louisiana	2.50	17	Kentucky	1.10
2	Wyoming	2.23	18	South Dakota	1.06
3	New Mexico	1.82	19	West Virginia	1.00
4	Colorado	1.79	20	Mississippi	0.95
5	Florida	1.46	21	Utah	0.91
6	Kansas	1.42	22	Nebraska	0.60
7	Oklahoma	1.42	23	New York	0.60
8	Alaska	1.41	24	Tennessee	0.60
9	North Dakota	1.40	25	Idaho	0.40
10	Michigan	1.39	26	Ohio	0.31
11	Montana	1.35	27	Virginia	0.30
12	Arkansas	1.29	28	Indiana	0.24
13	Arizona	1.25	29	Illinois	0.17
14	Texas	1.18	30	Nevada	0.10
15	Oregon	1.16	31	California	0.04
16	Alabama	1.13	32	See notes	

Notes: Georgia, Maryland, Missouri, North Carolina, Pennsylvania, South Carolina, and Washington have no state or local energy taxes.

Table 3. Effective Energy Tax Rates for New Well Production, by Oil Producing State, $15 per Barrel, 2001

Rank	State	Tax	Rank	State	Tax
		- $/barrel -			- $/barrel -
1	Louisiana	1.88	17	South Dakota	0.83
2	Wyoming	1.67	18	Kentucky	0.83
3	New Mexico	1.37	19	West Virginia	0.75
4	Colorado	1.34	20	Mississippi	0.71
5	Alaska	1.29	21	Utah	0.71
6	Florida	1.09	22	Nebraska	0.45
7	Oklahoma	1.07	23	New York	0.45
8	Kansas	1.07	24	Tennessee	0.45
9	North Dakota	1.05	25	Ohio	0.31
10	Michigan	1.04	26	Idaho	0.30
11	Montana	1.01	27	Indiana	0.24
12	Arkansas	0.97	28	Illinois	0.17
13	Texas	0.95	29	Virginia	0.23
14	Arizona	0.94	30	Nevada	0.10
15	Oregon	0.87	31	California	0.04
16	Alabama	0.84	32	See notes	

Notes: Georgia, Maryland, Missouri, North Carolina, Pennsylvania, South Carolina, and Washington have no state or local energy taxes.

Gas

As was the case with oil, many states have tax provisions that are partially based on the price of gas. Three price scenarios were used: $4, $3, and $2 per mcf. Under the $4 per mcf scenario, Wyoming had the highest effective tax rate of $0.50 per mcf (Table 4). The next highest state, Alaska, had an effective tax rate of $0.44 per mcf. Kansas and New Mexico were third and fourth, respectively, each with a rate of $0.40 per mcf. Colorado was fifth with a rate of $0.39 per mcf. The next five states were separated by only $0.10 per mcf. The remaining states in the top ten were Oklahoma, with a rate of $0.35 per mcf, followed by Texas ($0.28 per mcf), Montana ($0.27 per mcf), Florida ($0.26 per mcf), and Arizona ($0.25 per mcf). The eleventh through the twentieth rankings were separated by $0.12 per mcf (Table 4). North Dakota, with an effective rate of $0.08 per mcf, ranked 24th out of the 31 states collecting energy taxes on gas production.

Table 4. Effective Energy Tax Rates for New Well Production, by Gas Producing State, $4 per MCF, 2001

Rank	State	Tax	Rank	State	Tax
		- $/mcf -			- $/mcf -
1	Wyoming	0.50	17	Utah	0.19
2	Alaska	0.44	18	South Dakota	0.19
3	Kansas	0.40	19	Alabama	0.18
4	New Mexico	0.40	20	Virginia	0.12
5	Colorado	0.39	21	New York	0.12
6	Oklahoma	0.35	22	Nebraska	0.12
7	Texas	0.28	23	Tennessee	0.12
8	Montana	0.27	24	North Dakota	0.08
9	Florida	0.26	25	Idaho	0.08
10	Arizona	0.25	26	Ohio	0.08
11	Mississippi	0.24	27	Arkansas	0.04
12	Oregon	0.23	28	Indiana	0.04
13	Kentucky	0.22	29	Illinois	0.03
14	Michigan	0.21	30	California	0.004
15	Louisiana	0.20	31	Nevada	0.002
16	West Virginia	0.20	32	See notes	

Notes: Georgia, Maryland, Missouri, North Carolina, Pennsylvania, South Carolina, and Washington have no state or local energy taxes.

Under the $3 per mcf scenario, little change occurred in the ranking of the top six states (Table 5). Wyoming, Alaska, Kansas, New Mexico, Colorado, and Oklahoma, the top six states, respectively, retained their relative ranking from the $4 per mcf scenario. Florida moved from ninth to seventh in the rankings. Texas dropped one position to eighth. Montana remained in the ninth position. Louisiana moved from 15th to tenth. Again, the fifth through the tenth positions were only separated by $0.09 per mcf. Very little change occurred in the remaining rankings (Table 5). North Dakota remained in the 24th position.

Under the $2 per mcf scenario, considerable shifting occurred in the top ten positions (Table 6). When compared to the $3 per mcf scenario, Alaska moved from second to first. Florida moved from seventh to second. Wyoming dropped from first to third. Kansas and New Mexico each dropped one position. Louisiana moved up from the tenth position to the sixth position. Colorado, Oklahoma, Texas, and Montana all dropped in position. Again, the fifth through the tenth positions were only separated by $0.07 per mcf. Although some shifting of the states occurred in the remaining rankings, the only notable mention was that North Dakota moved from 24th to 20th (Table 6).

Table 5. Effective Energy Tax Rates for New Well Production, by Gas Producing State, $3 per MCF, 2001

Rank	State	Tax	Rank	State	Tax
		- $/mcf -			- $/mcf -
1	Wyoming	0.38	17	West Virginia	0.15
2	Alaska	0.37	18	South Dakota	0.14
3	Kansas	0.30	19	Alabama	0.14
4	New Mexico	0.30	20	Virginia	0.09
5	Colorado	0.29	21	New York	0.09
6	Oklahoma	0.27	22	Nebraska	0.09
7	Florida	0.26	23	Tennessee	0.09
8	Texas	0.22	24	North Dakota	0.08
9	Montana	0.20	25	Ohio	0.08
10	Louisiana	0.20	26	Idaho	0.06
11	Arizona	0.19	27	Arkansas	0.03
12	Mississippi	0.18	28	Illinois	0.03
13	Oregon	0.17	29	Indiana	0.03
14	Kentucky	0.17	30	California	0.004
15	Michigan	0.16	31	Nevada	0.002
16	Utah	0.15	32	See notes	

Notes: Georgia, Maryland, Missouri, North Carolina, Pennsylvania, South Carolina, and Washington have no state or local energy taxes.

Table 6. Effective Energy Tax Rates for New Well Production, by Gas Producing State, $2 per MCF, 2001

Rank	State	Tax	Rank	State	Tax
		- $/mcf -			- $/mcf -
1	Alaska	0.30	17	Mississippi	0.10
2	Florida	0.26	18	South Dakota	0.10
3	Wyoming	0.25	19	Alabama	0.09
4	Kansas	0.21	20	North Dakota	0.08
5	New Mexico	0.20	21	Ohio	0.08
6	Louisiana	0.20	22	Virginia	0.06
7	Colorado	0.20	23	New York	0.06
8	Oklahoma	0.19	24	Nebraska	0.06
9	Texas	0.16	25	Tennessee	0.06
10	Montana	0.13	26	Idaho	0.04
11	Arizona	0.13	27	Illinois	0.03
12	Oregon	0.11	28	Indiana	0.03
13	Kentucky	0.11	29	Arkansas	0.02
14	Utah	0.11	30	California	0.004
15	Michigan	0.11	31	Nevada	0.002
16	West Virginia	0.10	32	See notes	

Notes: Georgia, Maryland, Missouri, North Carolina, Pennsylvania, South Carolina, and Washington have no state or local energy taxes.

Conclusions

The tax schemes, rules, and rates differed greatly among the oil and gas producing states. Some states have no state or local energy taxes. Several states have relatively straight forward and simple state tax rates and rules, which were usually a fixed tax rate (%) of gross value of production. Other states had more complicated mechanisms for determining state tax collections, such as exclusions or adjustments to the nominal tax rates based on one or more combinations of well type, well age, well depth, well output, field productivity, gross value of energy output, working and nonworking (royalty) interest shares, local ad valorem taxes paid, and oil and gas prices. The latter states represented the greatest need to estimate average tax collections over the life of a new well to determine an effective tax rate.

Ad valorem tax collections were usually tied to a variety of tax assessment procedures, some which included the value of extraction equipment, discounted future values of energy output, estimated values of remaining field reserves, energy prices, working and royalty shares, and miscellaneous factors. In nearly all cases, ad valorem taxes varied by local taxing jurisdiction (i.e., county, school district) within each state and among states, and involved applying local mill rates to assessed values. Ad valorem taxes ranged from 12 percent to nearly 90 percent of the effective tax rate among the states.

States were ranked from highest to lowest effective tax collections per barrel. Outside of Alaska, very little change occurred in the ranking of the top 10 states when oil taxation was compared between \$25, \$20, and \$15 per barrel. The top four states remained unchanged in each situation. In all three price scenarios, the fifth through the tenth positions were separated by only a few cents per barrel. Changes in the price of oil, for the most part, only affected the relative ranking of a few states.

North Dakota ranked eighth or ninth in effective tax rate per barrel depending upon the price situation. When North Dakota was compared to its neighboring states in all three price scenarios, it had a considerably lower effective tax rate per barrel than Wyoming, had a slightly higher rate than Montana (i.e., about five cents per barrel or less), and was noticeably higher than South Dakota.

States were ranked from highest to lowest effective tax collections per mcf of gas. In the first two price scenarios for gas (\$4 and \$3 per mcf), very little change occurred in the relative rankings of the top 10 states, with Louisiana being the only exception. However, in the final price scenario (\$2 per mcf), a number of states switched rankings, due largely to the degree to which each state's taxing system was affected by gas prices. Most of the states which either entered the top 10 or increased their relative ranking in the final price scenario had taxing systems that were less sensitive to changes in gas prices, and the states which fell in rank were those which had tax systems that were tied very closely to gas prices. Overall, effective energy taxation for gas was more variable, in terms of state rankings, than oil taxation. When compared to oil taxation, more states have tax rules for gas that are not directly tied to energy prices.

North Dakota ranked between 20th and 24th out of 31 states collecting energy taxes from gas production. When North Dakota was compared to its neighboring states in all three price scenarios, it had a considerably lower effective tax rate per mcf. Wyoming, Montana, and South Dakota each had a higher effective tax rate per mcf in each price scenario.

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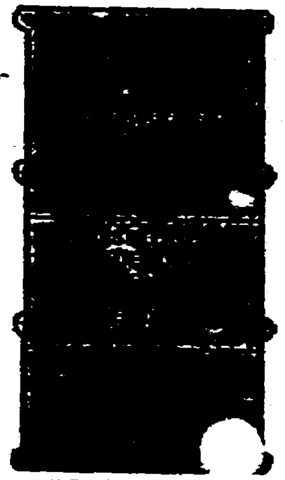
RESPONSIBLE DEVELOPMENT ON PUBLIC LANDS

- The c.' and gas industry in North Dakota has explored and drilled the grasslands for the past 50 years and has a proven track record of being able to produce oil without disrupting the environment or wildlife.
- The industry, in cooperation with the Forest Service, has restored over 500 wells and 500 miles of roads in the national grasslands. This represents more than 5,500 acres returned to vegetation after the oil and ga- reserves were depleted.
- Twenty-seven percent of the state's oil production and 30% of the state's producing wells are on the grasslands.

REFINING AND TRANSPORTATION

- The state's only operating crude oil refinery is at Mandan. It has a daily capacity of about 60,000 barrels.
- There are nine natural gas processing plants operating in western North Dakota. They are located near Tioga, Ambrose, Killdeer, Lignite, Rhame, Gorham, Arnegard, Trotters and Marmarth.
- The nine natural gas processing plants processed enough natural gas in 2001 to heat 466,000 North Dakota households for one year.



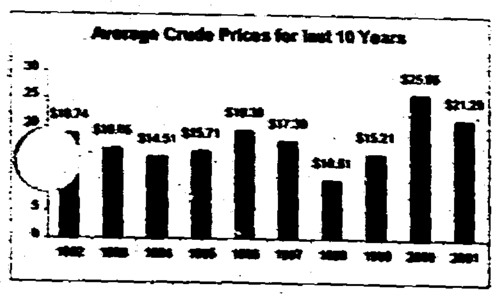
AVERAGE GALLONS OF PRODUCT DERIVED FROM EACH BARREL OF CRUDE OIL (42 Gallons in a Barrel)

GASOLINE – CONSUMPTION & TAXES

- North Dakotans pay 21 cents state tax and 18.4 cents federal tax on each gallon of gasoline and diesel fuel they buy.
- North Dakotans used over 364 million gallons of gasoline in 2001, and 496 million gallons of diesel fuel.
- Gasoline and special fuels taxes raised $115 million in tax revenue during 2001 – up slightly from $112 million the previous year. ·e funds are used primarily for road ·ruction.

HISTORY

- April 4, 2001 marked the 50th Anniversary of the discovery of oil in North Dakota. It was on April 4, 1951, that the Clarence Iverson #1 well came in near Tioga in Williams County. That well produced more than 585 thousand barrels of oil over 28 years.
- Prior to the discovery of oil in 1951, 64 wells had been drilled in the state dating back to 1910. Since 1951, another 14,000 wells have been drilled in North Dakota.
- The average crude oil posted price for North Dakota in 2001 was $21.29 per barrel. That represented a 22% decrease from the 2000 average of $29.95 and a 29% increase from the $15.21 average in 1999.



- The future is bright for the oil and gas industry in North Dakota. There is a huge amount of oil and gas still in the ground in areas that have not been explored. New technologies, new discoveries, and new work in older fields have vastly increased both the odds of finding oil and the efficiency of producing it.

AND NATIONALLY

- The biggest source of energy in the United States is petroleum – oil and natural gas. Together, they supply 65% of the energy we use. Oil furnishes 40% of our energy, natural gas 25%, coal 22%, nuclear 8%, and renewables 4%.
- The average drilling rig count in the U.S. for 2001 was 1,156, up from 918 in 2000. The all-time high was 4,530 in 1981.
- U.S. crude oil production in December of 2001 was 5.9 million barrels per day.
- Total imports averaged 11 million barrels per day for 2001, up 2.2% from 2000.
- The United States imported 57% of its crude oil in 2001. The largest importers to the U.S. are Canada with 10%, Saudi Arabia with 8%, Mexico with 7.2%, Nigeria with 4%, and Iraq with 4.8%. OPEC countries supplied about 28% of our nation's daily oil needs. Russia is the largest producer of oil in the world.

All data from latest year available.
For sources or additional information, contact:

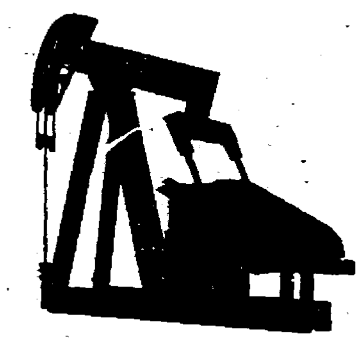
North Dakota Petroleum Council
Box 1395, Bismarck ND 58502

Offices at:
120 North 3rd Street, Suite 225
Bismarck, ND — (701) 223-6380
www.ndoil.org • www.api.org

Ron Ness
Executive Director

Marsha Reimnitz
Office Manager

FACTS & FIGURES



2002 EDITION

NORTH DAKOTA PETROLEUM COUNCIL

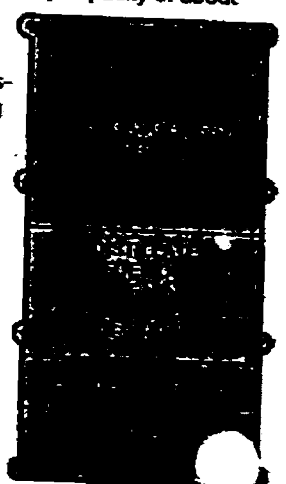
DISREGARD PREVIOUS IMAGE OR SPACE

RESPONSIBLE DEVELOPMENT ON PUBLIC LANDS

- The oil and gas industry in North Dakota has explored and drilled the grasslands for the past 50 years and has a proven track record of being able to produce oil without disrupting the environment or wildlife.
- The industry, in cooperation with the Forest Service, has restored over 500 wells and 500 miles of roads in the national grasslands. This represents more than 5,500 acres returned to vegetation after the oil and ga- reserves were depleted.
- Twenty-seven percent of the state's oil production and 30% of the state's producing wells are on the grasslands.

REFINING AND TRANSPORTATION

- The state's only operating crude oil refinery is at Mandan. It has a daily capacity of about 60,000 barrels.
- There are nine natural gas processing plants operating in western North Dakota. They are located near Tioga, Ambrose, Killdeer, Lignite, Rhame, Gorham, Arnegard, Trotters and Marmarth.
- The nine natural gas processing plants processed enough natural gas in 2001 to heat 466,000 North Dakota households for one year.



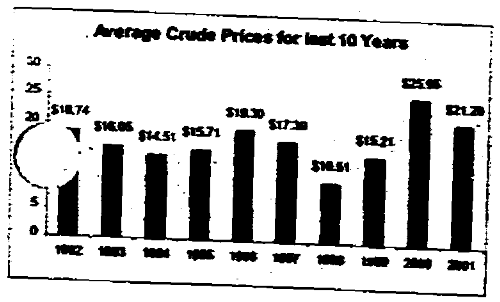
AVERAGE GALLONS OF PRODUCT DERIVED FROM EACH BARREL OF CRUDE OIL (42 Gallons in a Barrel)

GASOLINE — CONSUMPTION & TAXES

- North Dakotans pay 21 cents state tax and 18.4 cents federal tax on each gallon of gasoline and diesel fuel they buy.
- North Dakotans used over 364 million gallons of gasoline in 2001, and 496 million gallons of diesel fuel.
- Gasoline and special fuels taxes raised $115 million in tax revenue during 2001 – up slightly from $112 million the previous year. ·e funds are used primarily for road ·ruction.

HISTORY

- April 4, 2001 marked the 50th Anniversary of the discovery of oil in North Dakota. It was on April 4, 1951, that the Clarence Iverson #1 well came in near Tioga in Williams County. That well produced more than 585 thousand barrels of oil over 28 years.
- Prior to the discovery of oil in 1951, 64 wells had been drilled in the state dating back to 1910. Since 1951, another 14,000 wells have been drilled in North Dakota.
- The average crude oil posted price for North Dakota in 2001 was $21.29 per barrel. That represented a 22% decrease from the 2000 average of $29.95 and a 29% increase from the $15.21 average in 1999.



- The future is bright for the oil and gas industry in North Dakota. There is a huge amount of oil and gas still in the ground in areas that have not been explored. New technologies, new discoveries, and new work in older fields have vastly increased both the odds of finding oil and the efficiency of producing it.

AND NATIONALLY

- The biggest source of energy in the United States is petroleum – oil and natural gas. Together, they supply 65% of the energy we use. Oil furnishes 40% of our energy, natural gas 25%, coal 22%, nuclear 8%, and renewables 4%.
- The average drilling rig count in the U.S. for 2001 was 1,156, up from 918 in 2000. The all-time high was 4,530 in 1981.
- U.S. crude oil production in December of 2001 was 5.9 million barrels per day.
- Total imports averaged 11 million barrels per day for 2001, up 2.2% from 2000.
- The United States imported 57% of its crude oil in 2001. The largest importers to the U.S. are Canada with 10%, Saudi Arabia with 8%, Mexico with 7.2%, Nigeria with 4%, and Iraq with 4.8%. OPEC countries supplied about 28% of our nation's daily oil needs. Russia is the largest producer of oil in the world.

▪▪▪▪▪▪▪▪▪▪▪▪▪

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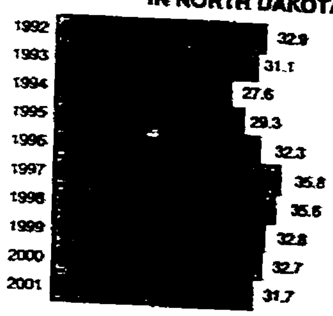
2002 EDITION

NORTH DAKOTA PETROLEUM COUNCIL

North Dakota's Oil Patch Stats for 2001

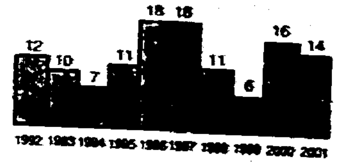
- North Dakota is the ninth largest oil producing state. The state produced nearly 87,000 barrels of oil per day in 2001, totaling more than 31 million barrels for the year.
- All-time production of crude oil in North Dakota amounts to more than 1.4 billion barrels.
- At the end of 2001, there were 3,287 wells capable of producing oil and gas in North Dakota. The average North Dakota well produced approximately 26 barrels pe[illegible]
- An estimated 58 billion cubic feet of natural gas was produced and 51.2 billion cubic feet of natural gas was processed in North Dakota during 2001.
- The state's oil production dipped slightly in 2001 for the fourth consecutive year. Total oil production for the year was 31,691,091 barrels, down 1,023,431 from the previous year.

ANNUAL CRUDE OIL PRODUCTION (BARRELS) IN NORTH DAKOTA



- The drilling rig count, which is a prime barometer for measuring oil and gas a[illegible] averaged 14 rigs a day in 2001. The p[illegible] year for drilling rigs was 1981, with an average monthly rig count of 119. The all-time high was in October of 1981 with 146 rigs operating.

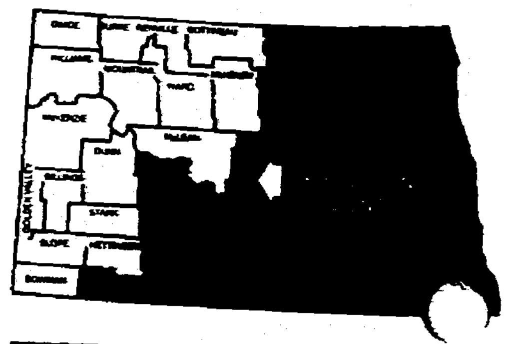
Drilling Rigs



- There were 178 drilling permits issued during 2001, compared to 132 the previous year. Approximately 137 wells were completed during the year – up 90% from the previous year.
- [illegible]zontal or directional drilling accounted for [illegible]2% of the new wells drilled in 2001 and accounted for 25.9% of the state's total oil production.
- The success ratio for wells in existing fields in 2001 was 92% and for wildcat wells it was 41%. Horizontal wells were successful 99% of the time. The overall industry success rate in North Dakota for 2001 was 85%. A wildcat well is a new well drilled at least one mile from existing production.
- The deepest vertical well drilled last year in North Dakota was 13,970 feet. The average depth for a North Dakota well in 2001 was 12,001 feet compared to 5,334 feet nationwide.
- The average cost of completing an oil well in North Dakota was approximately $1.3 million during 2001. The average cost of completing a well in the U.S. was just under $800,000.

Where the Oil Comes From

- There are 17 counties in the state with com[illegible]cial oil production. Oil and gas explora[illegible] has occurred at some point in every county in the state except Traill County.
- Stark County was the top producing county in 2001 accounting for 17.2% of the state's oil production. The other top producing counties were McKenzie, Billings, Bowman, and Williams.



[illegible]

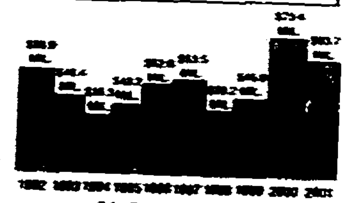
- There were more than 2,200 North Dakotans at work in the oil patch in 2001. Peak oil field employment occurred in late 1981, when more than 10,000 people were working in the oil patch.
- Each drilling rig results in approximately 120 direct and indirect jobs.
- Other sectors of the petroleum industry include refineries, gas plants, pipelines, retail gasoline stations, wholesalers, and transporters. The industry altogether employed more than 9,000 people in North Dakota in 2001.
- Job Service North Dakota reports that in 2000 the average yearly wage in the mining industry, which includes oil and gas extraction and coal mining, was $44,305. That wage is 80% above the statewide average wage of $24,683.

Oil Tax Reve[illegible]

- Higher crude oil prices in 2001 led to huge tax collections for the State of North Dakota. Counties and schools benefited from increased oil and gas tax collections as well.

State tax revenues f[illegible] 2001 were $63.7 million, representing a 15% decrease from 2000.

*OIL AND GAS PRODUCTION AND EXTRACTION TAX COLLECTIONS

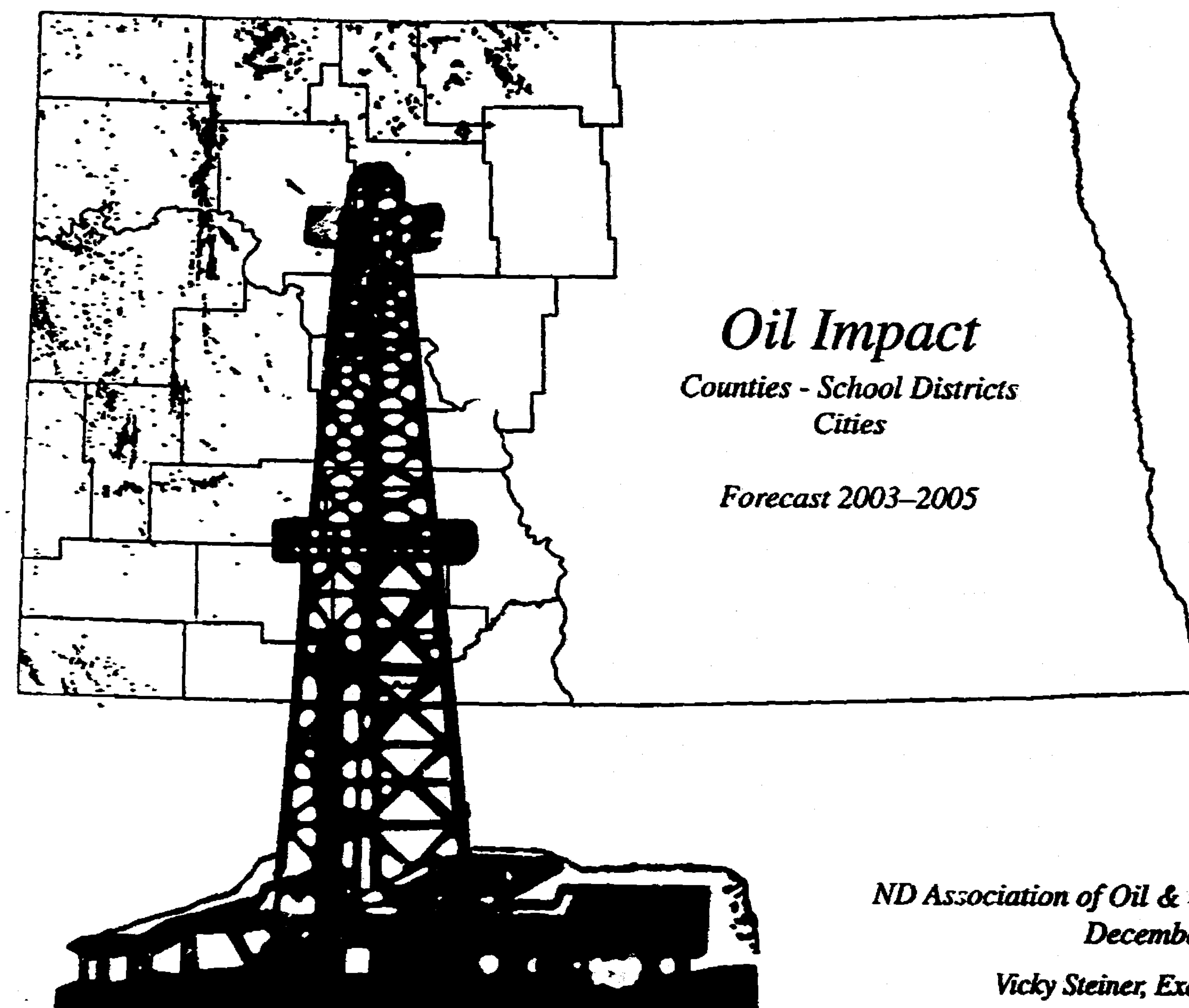


*[illegible]llections reflect all revenue paid by the industry, including [illegible] share of the 5% production tax and the trust fund of the 6.5% extraction tax.

- All-time oil tax revenues to the State have exceeded $1.9 billion.
- The average production and extraction tax paid on crude oil in 2001 was 7.4%. The tax rate on crude oil varies between 5% and 11.5% depending upon the type of well.
- The tax on natural gas is a flat four cents per thousand cubic feet (mcf). In 2001, the State collected $3.1 million in natural gas taxes.
- Over the past 51 years, the State of North Dakota has received more than $510 million from oil and gas leases, bonuses, royalties and rentals on state land. During 2001, nearly $1.48 million went to the Lands and Minerals Trust and over $8.10 million to the Board of University and School Lands Trust.
- U.S. Forest Service administered lands in the Little Missouri National Grasslands provided oil and gas revenues of $15.1 million during fiscal year 2001. Of that amount, one-fourth, or $3.8 million, was returned to McKenzie, Billings, Golden Valley and Slope Counties [illegible] schools and roads. In addition, Bureau of [illegible]d Management administered land pro[illegible]ced more than $13.1 million during fiscal year 2001. Half of that amount, $6.6 million, was returned to the state's general fund and is the first money expended for education statewide.

HB1145

Needs Assessment Survey



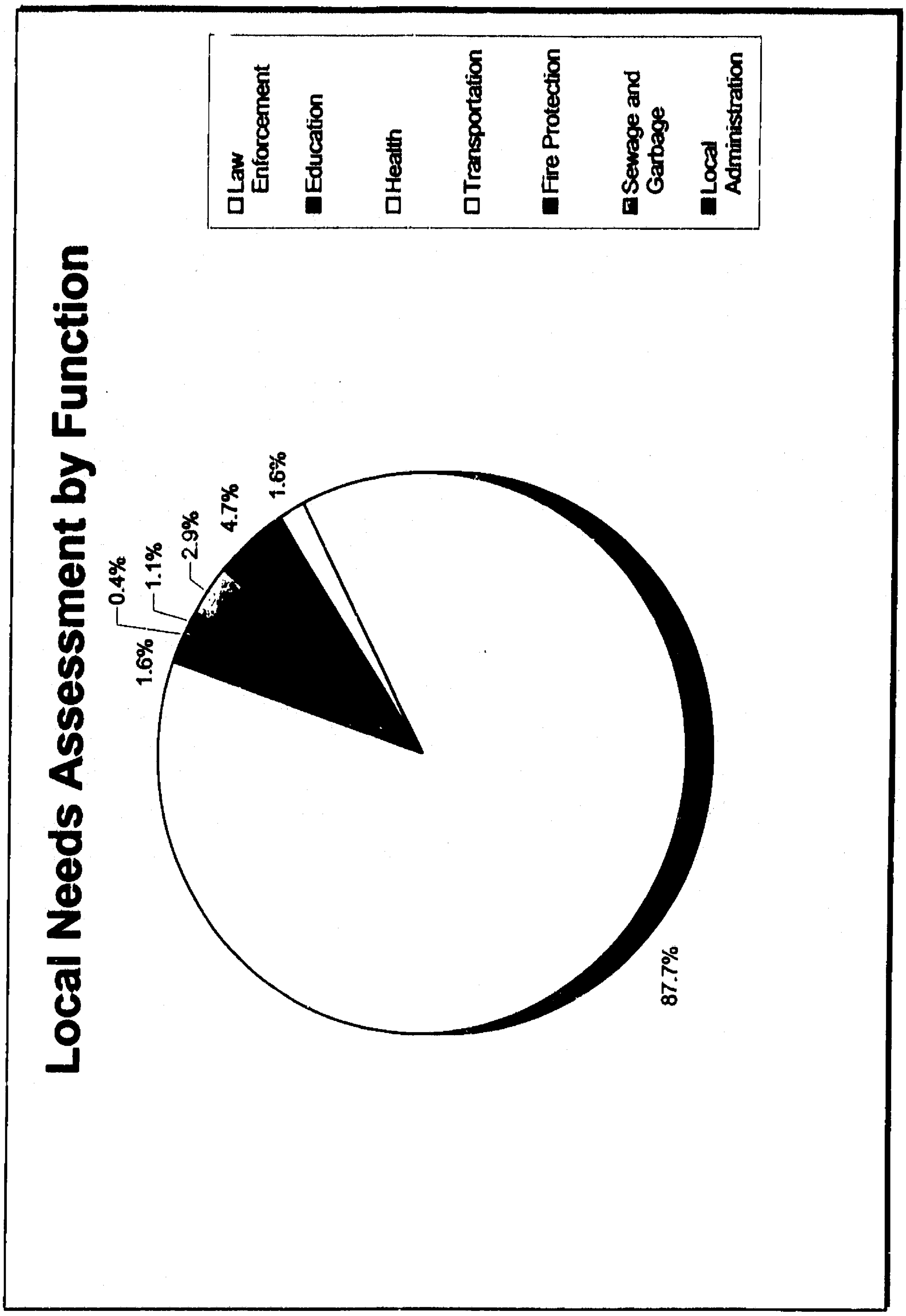
Oil Impact

Counties - School Districts
Cities

Forecast 2003–2005

ND Association of Oil & Gas Producing Counties
December 2002

Vicky Steiner, Executive Director
(701) 483-8326



Local Needs Assessment by Function
Law Enforcement
Education
Health
Transportation
Fire Protection
Sewage and Garbage
Local Administration
0.4%
1.1%
2.9%
4.7%
1.6%
1.6%
87.7%

LOCAL NEEDS ASSESSMENT - COUNTY AND BY CLASS OF SUBDIVISION
Data Collected by the ND Association of Oil and Gas Producing Counties

	Counties	Schools	Cities	Townships	Fire/ Ambulance	TOTAL	Percent of Total
Bottineau			$224,500			$ 224,500	2.3%
Bowman	$3,105,000	$297,652		$273,900	$108,000	$ 3,784,552	39.6%
Burke	$130,000		$30,000		$6,500	$ 166,500	1.7%
Divide	$65,000					$ 65,000	0.7%
Dunn	$656,500		$40,500			$ 697,000	7.3%
Golden Valley	$190,000					$ 190,000	2.0%
McHenry			$46,000			$ 46,000	0.5%
McKenzie		$150,000	$304,375	$25,500		$ 479,875	5.0%
Mountrail	$243,000		$22,953			$ 265,953	2.8%
Renville	$2,018,500					$ 2,018,500	21.1%
Slope	$669,000					$ 669,000	7.0%
Ward	$60,000					$ 60,000	0.6%
Williams			$900,900			$ 900,900	9.4%
TOTAL	$7,137,000	$447,652	$1,569,228			$ 9,567,780	100.0%

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
BOTTINEAU COUNTY		
CITY OF ANTLER		
CITY MAINTENANCE	$4,500	$4,500
TOTAL FOR CITY OF ANTLER	$4,500	$4,500
CITY OF BOTTINEAU		
STREET PAVING	$2,000,000	$200,000
WATER TREATMENT PLANT	$8,000,000	$0
TOTAL FOR CITY OF BOTTINEAU	$10,000,000	$200,000
CITY OF KRAMER		
SEWER AND GARBAGE ASSISTANCE	$10,000	$10,000
TOTAL FOR CITY OF KRAMER	$10,000	$10,000
CITY OF LANSFORD		
STREET REPAIR	$10,000	$10,000
TOTAL FOR CITY OF LANSFORD	$10,000	$10,000
TOTAL FOR BOTTINEAU COUNTY	*$10,024,500*	*$224,500*
BOWMAN COUNTY		
BOWMAN COUNTY		
DUFFIELD ROAD	$250,000	$250,000
COMMUNICATIONS FOR SHERIFF'S DEPT	$10,000	$10,000
BOWMAN HALEY ROAD	$250,000	$250,000
WALLMAN ROAD	$215,000	$215,000
SUNSET BUTTE-MARMARTH ROAD NORTH	$1,100,000	$1,100,000
MARMARTH ROAD SOUTH	$480,000	$480,000
EGELAND ROAD	$375,000	$375,000
TOTAL FOR BOWMAN COUNTY	$2,680,000	$2,680,000

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
BOWMAN COUNTY		
DIALHOUSE ROAD	$425,000	$425,000
TOTAL FOR BOWMAN COUNTY	$425,000	$425,000
BOWMAN PSD		
BUS STORAGE FACILITY	$29,425	$29,425
CONCRETE REPLACEMENT	$32,163	$32,163
ROOSEVELT SCHOOL SIDEWALK AND PARKING LOT REPAIR	$19,200	$19,200
UPGRADE PHONE SYSTEM	$10,250	$10,250
REPLACE GYM FLOOR	$33,696	$33,696
HIGH SCHOOL WINDOW REPLACEMENT	$79,386	$79,386
MIDDLE SCHOOL BATHROOM RENOVATION	$51,532	$51,532
LOADER/UTILITY TRACTOR REPLACEMENT	$42,000	$42,000
TOTAL FOR BOWMAN PSD	$297,652	$297,652
ADELAIDE TOWNSHIP		
BRAATEN MILLER ROAD	$14,500	$14,500
TOTAL FOR ADELAIDE TOWNSHIP	$14,500	$14,500
BUENA VISTA TOWNSHIP		
GRAVEL ROAD	$16,000	$0
TOTAL FOR BUENA VISTA TOWNSHI	$16,000	$0
GOLDFIELD TOWNSHIP		
GRAVEL ROADS	$9,400	$9,400
TOTAL FOR GOLDFIELD TOWNSHIP	$9,400	$9,400
HALEY TOWNSHIP		
GRAVEL ROADS	$7,500	$0
TOTAL FOR HALEY TOWNSHIP	$7,500	$0

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
LANGBERG TOWNSHIP		
ROAD REPAIR AND MAINTAINANCE	$180,000	$180,000
TOTAL FOR LANGBERG TOWNSHIP	**$180,000**	**$180,000**
NEBO TOWNSHIP		
ROAD GRAVELING AND MAINTAINANCE	$40,000	$40,000
TOTAL FOR NEBO TOWNSHIP	**$40,000**	**$40,000**
STAR TOWNSHIP		
ROAD CONSTRUCTION AND SURFACING	$30,000	$30,000
TOTAL FOR STAR TOWNSHIP	**$30,000**	**$30,000**
STILLWATER TOWNSHIP		
GRAVEL ROADS AND REPLACE CULVERTS	$15,000	$0
TOTAL FOR STILLWATER TOWNSHI	**$15,000**	**$0**
WHITING TOWNSHIP		
CULVERTS AND GRAVEL ROADS	$19,274	$0
TOTAL FOR WHITING TOWNSHIP	**$19,274**	**$0**
RHAME RURAL FIRE DIS		
STORAGE BUILDING	$38,000	$38,000
TRUCK AND EQUIPMENT	$40,000	$40,000
TOTAL FOR RHAME RURAL FIRE DIS	**$78,000**	**$78,000**
SCRANTON FIRE DISTRI		
WATER TANKER	$30,000	$30,000
TOTAL FOR SCRANTON FIRE DISTRI	**$30,000**	**$30,000**
TOTAL FOR BOWMAN COUNTY	**$3,842,326**	**$3,784,552**

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
BURKE COUNTY		
BURKE COUNTY		
PATROL VEHICLE	$10,000	$10,000
GRAVEL	$100,000	$100,000
RIGHT OF WAY ACQUISITION	$20,000	$20,000
TOTAL FOR BURKE COUNTY	$130,000	$130,000
CITY OF BOWBELLS		
STREET REPAIR	$30,000	$30,000
TOTAL FOR CITY OF BOWBELLS	$30,000	$30,000
BOWBELLS FIRE DISTRI		
TANKER TRUCK	$6,500	$6,500
TOTAL FOR BOWBELLS FIRE DISTRI	$6,500	$6,500
TOTAL FOR BURKE COUNTY	*$166,500*	*$166,500*
DIVIDE COUNTY		
DIVIDE COUNTY		
LAW ENFORCEMENT PERSONNEL AND VEHICLE	$65,000	$65,000
TOTAL FOR DIVIDE COUNTY	$65,000	$65,000
TOTAL FOR DIVIDE COUNTY	*$65,000*	*$65,000*
DUNN COUNTY		
DUNN COUNTY		
ROAD CONSTRUCTION, BRIDGE REPAIR, GRAVEL	$656,500	$656,500
TOTAL FOR DUNN COUNTY	$656,500	$656,500

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
CITY OF HALLIDAY		
STREET REPAIR	$35,000	$35,000
TOTAL FOR CITY OF HALLIDAY	**$35,000**	**$35,000**
CITY OF KILLDEER		
PARAMEDIC TRAINING	$5,500	$5,500
TOTAL FOR CITY OF KILLDEER	**$5,500**	**$5,500**
TOTAL FOR DUNN COUNTY	***$697,000***	***$697,000***
GOLDEN VALLEY COUNTY		
GOLDEN VALLEY COUNT		
ROAD EQUIPMENT	$190,000	$190,000
TOTAL FOR GOLDEN VALLEY COUN	**$190,000**	**$190,000**
TOTAL FOR GOLDEN VALLEY COUNTY	***$190,000***	***$190,000***
MCHENRY COUNTY		
CITY OF VELVA		
CITY HALL ROOF REPAIR	$46,000	$46,000
TOTAL FOR CITY OF VELVA	**$46,000**	**$46,000**
TOTAL FOR MCHENRY COUNTY	***$46,000***	***$46,000***
MCKENZIE COUNTY		
ALEXANDER PSD #2		
PARKING LOT REPAIR	$150,000	$150,000
TOTAL FOR ALEXANDER PSD #2	**$150,000**	**$150,000**
CITY OF WATFORD CITY		
MAIN STREET REPLACEMENT	$2,000,000	$200,000

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
FIRE DEPARTMENT RADIOS, PAGERS, FLASHLIGHTS		
PURCHASE NEW AMBULANCE	$14,375	$14,375
TOTAL FOR CITY OF WATFORD CITY	$90,000	$90,000
HAWKEYE VALLEY TOW	$2,104,375	$304,375
TREE REMOVAL, CULVERT REPLACEMENT AND GRAVEL		
TOTAL FOR HAWKEYE VALLEY TO	$25,500	$25,500
TOTAL FOR MCKENZIE COUNTY	$25,500	$25,500
	$2,279,875	*$479,875*
MCLEAN COUNTY		
GARRISON PUBLIC SCH		
ROOF REPLACEMENT		
TOTAL FOR GARRISON PUBLIC SCH	$122,000	$0
CITY OF COLEHARBOR	$122,000	$0
SNOW REMOVAL EQUIPMENT		
TOTAL FOR CITY OF COLEHARBOR	$20,000	$0
CITY OF GARRISON	$20,000	$0
WATER TOWER REPAIR		
WATER MAIN REPLACEMENT AND STREET PAVEMENT	$60,000	$0
TOTAL FOR CITY OF GARRISON	$28,550	$0
CITY OF WILTON	$88,550	$0
MEMORIAL HALL EXPANSION		
TOTAL FOR CITY OF WILTON	$65,000	$0
WILTON FIRE PROTECTI	$65,000	$0
AMBULANCE		
TOTAL FOR WILTON FIRE PROTECTI	$100,000	$0
	$100,000	$0

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
TOTAL FOR MCLEAN COUNTY	*$395,550*	*$0*
MOUNTRAIL COUNTY		
MOUNTRAIL COUNTY		
SHERIFF PATROL 4X4 VEHICLE	$25,000	$25,000
MOTOR FOR TAR WAGON	$3,000	$3,000
TRACTOR	$25,000	$25,000
ROAD CONSTRUCTION	$190,000	$190,000
TOTAL FOR MOUNTRAIL COUNTY	$243,000	$243,000
CITY OF NEW TOWN		
HIRE POLICE OFFICER	$22,953	$22,953
TOTAL FOR CITY OF NEW TOWN	$22,953	$22,953
TOTAL FOR MOUNTRAIL COUNTY	*$265,953*	*$265,953*
RENVILLE COUNTY		
RENVILLE COUNTY		
GIS/GPS EQUIPMENT	$90,000	$90,000
ENI-PAVEMENT-LIKE ROAD SURFACE N OF TOLLEY	$150,000	$150,000
SEAL COAT 21.5 MILES	$258,000	$258,000
MOTOR GRADER	$305,000	$305,000
ROAD DEPT PICKUP TRUCK	$28,000	$28,000
FIRST RESPONDER EQUIPMENT	$2,500	$2,500
GRAVEL FOR OIL TRANSPORT ROUTES	$10,000	$10,000
GIS DATA COLLECTION	$55,000	$55,000
16 MILES OF OVERLAY	$1,120,000	$1,120,000
TOTAL FOR RENVILLE COUNTY	$2,018,500	$2,018,500
TOTAL FOR RENVILLE COUNTY	*$2,018,500*	*$2,018,500*

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
SLOPE COUNTY		
SLOPE COUNTY		
MOTOR GRADER		
COUNTY SHOP	$190,000	$190,000
HIRE DEPUTY	$80,000	$80,000
PATROL VEHICLE	$40,000	$40,000
RADIO TOWER	$38,000	$38,000
GPS MAPPING EQUIPMENT	$25,000	$25,000
LAW ENFORCEMENT RADIO EQUIPMENT	$50,000	$50,000
EMERGENCY EQUIPMENT	$20,000	$20,000
MAINTAIN AND RESURFACE ROAD	$50,000	$50,000
ROAD MULCHER	$150,000	$150,000
TOTAL FOR SLOPE COUNTY	$26,000	$26,000
TOTAL FOR SLOPE COUNTY	$669,000	$669,000
	$669,000	*$669,000*
WARD COUNTY		
WARD COUNTY		
ROAD GRAVELING		
TOTAL FOR WARD COUNTY	$60,000	$60,000
TOTAL FOR WARD COUNTY	$60,000	$60,000
	$60,000	*$60,000*
WILLIAMS COUNTY		
CITY OF WILLISTON		
STREET LIGHTING		
CEMETARIES	$400,000	$0
LANDFILL	$130,000	$0
ROAD AND STREETS	$300,000	$30,000
	$8,709,000	$870,900

ND Association of Oil Gas Producing Counties
Needs Assessment List

PROJECT	COST	IMPACT
STORM SEWER	$25,000	$0
SANITARY SEWER	$790,000	$0
WATER TREATMENT PLANT	$29,800,000	$0
WATER DISTRIBUTION	$12,895,000	$0
TOTAL FOR CITY OF WILLISTON	$53,049,000	$900,900
TOTAL FOR WILLIAMS COUNTY	$53,049,000	$900,900
GRAND TOTAL	$73,769,204	$9,567,780

U.S. Independents Answer The Big Question

Major Increase Planned For 2003

By Bill Campbell

It may be that the "more drilling" time has arrived.

One of the frequent topics within conference rooms and hallways at oil and gas industry gatherings has been: "With oil and gas prices above historical norms, why aren't more wells being drilled?"

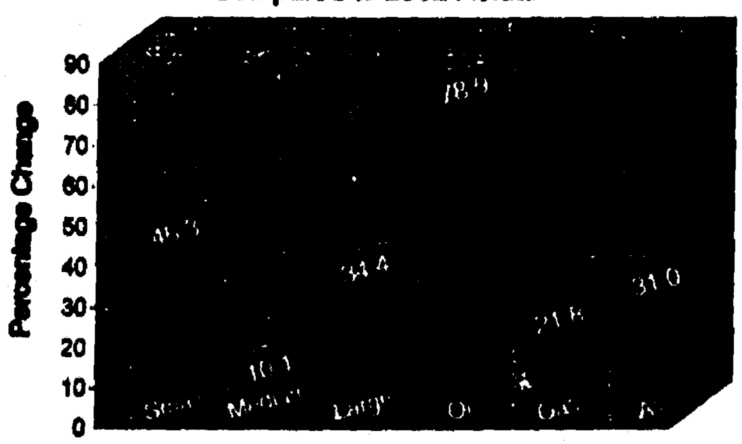
Based on *The American Oil & Gas Reporter's* annual Survey of Independent Operators, it's time to give that question a rest. America's independents say they plan to ramp up rig activity numbers in 2003, to the tune of 30 percent-plus more wells than they drilled in 2002.

The Reporter mails the Survey of Independent Operators annually in November to oil and gas producers nationwide, selected randomly from the magazine's circulation list. No attempt is made to identify survey respondents, and *The Reporter's* staff compiles and analyzes the survey data.

This year's survey results paint a picture of an industry that is coming out of the doldrums not so much by changing the type of wells it drills, just the frequency with which it drills them. As a whole, survey respondents don't indicate much change in the ratio of natural gas to oil wells they anticipate drilling in 2003, nor in the ratio of exploratory to development wells. They are just going to drill a lot more of both.

2003 OUTLOOK

FIGURE 1
Change In Operators' Planned 2003 Drilling Compared to 2002 Actual



Operators designated as small are those who plan to drill 0-5 wells in 2003. Operators designated as medium plan to drill 6-15 wells this year, while those designated as large plan to drill more than 15 wells. Operators designated as oil targeted crude oil on more than half their 2002 wells, while those designated as gas targeted natural gas on more than half of their 2002 wells.

Figure 1 shows that all survey respondents say they anticipate drilling 31 percent more wells this year than last. In addition, 64 percent of respondents say they plan to drill more wells (Figure 2), and close to 66 percent say they will spend more money doing it (Figure 3).

Respondents classified as "oil well drillers"–those who targeted oil on more than half their wells in 2002–report the largest anticipated increase: nearly 79 percent. "Gas well drillers"–those who targeted natural gas on more than half their wells in 2002–expect to be up 22 percent.

The Survey of Independent Operators does not account for dry holes, and merely asks operators what the intended target is when a well is spudded.

Projecting the smallest percentage increase in the number of wells they plan to drill is the "middle" category of drillers–those respondents who say they will drill 6-15 wells in 2003–who report a 10 percent increase in the number of wells they plan to drill this year (Figure 1). But when it comes to the percentage of companies within that category who anticipate an increase in drilling, these "middle drillers" jump to the head of the pack, with almost 73 percent indicating they will drill more wells this year than last, compared to 70 percent of "large" drillers and 56 percent of "small" drillers (Figure 2).

Companies that say they plan to drill 0-5 wells this year are categorized as "small," while those who say they plan to drill 16 wells or more are categorized as "large" drillers.

Again, oil well drillers are more optimistic than gas well drillers, with 71 percent of the oil category planning to drill more wells this year than last, compared to a little more than 60 percent of the gas category.

Perhaps reflecting more confidence in their ability to attract investment capital, companies in the large driller category most often expect to increase their drilling budgets this year, with 78 percent reporting a planned increase in spending (Figure 3). That compares to 59 percent of the medium driller category that say they will spend more money drilling wells this year, and a little less than 62 percent of the small driller category.

Again, oil well drillers are more optimistic than gas well drillers, with more than 77 percent of the oil driller category indicating they will increase spending in the new year, compared to 58 percent of the gas driller category. For all survey respondents, close to 66 percent say they anticipate spending more money drilling wells this year than in the previous 12 months.

Operator Profile

Respondents to the Survey of Independent Operators drilled an average of 12.4 wells apiece in 2002, of which a little more than three-fourths (76.7 percent) targeted natural gas and about a fifth (20.2 percent) were exploratory in nature. Although the number of wells respondents expect to drill in 2003 jumps to an average of 16.2, there is very little change in the drilling mix: 76.5 percent will still target gas and 23.4 percent will be wildcats.

About the only category that is projecting a large change is the oil drillers, who said 28 percent of their wells last year

FIGURE 2
Operators' 2003 Drilling Plans Compared to 2002

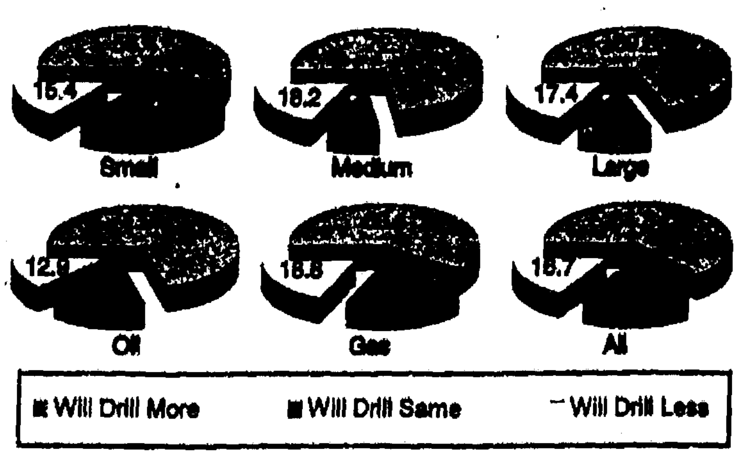
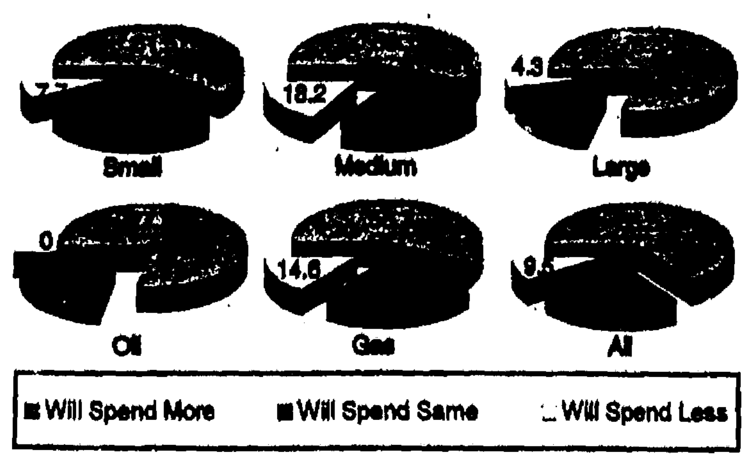


FIGURE 3
Operators' 2003 Spending Plans Compared to 2002



..re looking for natural gas. That number will jump 18 percentage points, to 46 percent, in the coming year. Oil drillers also anticipate more exploratory drilling, with the percentage of their wildcat wells going from a little under 23 percent in 2002 to more than 39 percent in 2003. Conversely, gas well drillers project less than a 1 percentage point change in their ratio of gas to oil wells, and only a 0.1 percentage point change in their ratio of exploratory to developmental wells.

The next largest shift in drilling profiles among survey respondents comes in the category of medium drillers, who say the proportion of their wells that target natural gas will decline from 82 percent in 2002 to 71 percent in 2003. Medium drillers also project an increase in exploratory drilling from 27 percent last year to 34 percent this year.

Survey respondents don't anticipate looking quite so deep for hydrocarbons in the coming year, however. The average depth of wells survey respondents reported for 2002 was 7,969 feet. That number drops to 7,352 feet this year.

Companies in the gas driller category, who were targeting natural gas with 88 percent of their 2002 wells, reported the deepest average well depth for 2002 at 8,223 feet. That is projected to decline to 7,766 feet in 2003.

Companies in the oil driller category, who were targeting crude oil with 72 percent of their 2002 wells, reported ... average well depth of 6,381 feet last year, which goes to ...9 feet this year.

Price Response

Some of the most encouraging data in the Survey of Independent Operators is the section on prices. Asked what crude oil price (West Texas Intermediate spot at Cushing, Ok.), and what wellhead price for natural gas their 2003 drilling plans were based on, survey respondents answered $23.07 a barrel and $3.33 an Mcf, respectively.

Interestingly, the price expectations of the more bullish operators don't vary that much from their less optimistic brethren. Survey respondents who say they plan to drill more wells this year than last indicate those plans are based on an average anticipated oil price of $23.17 a barrel, while those who say they will drill the same number or fewer wells are projecting a $22.76 crude oil price.

For natural gas, the "same-fewer" crowd is actually anticipating the higher price. Survey respondents who say they will drill the same number or fewer wells this year indicate those plans are based on an average anticipated wellhead gas price of $3.40 an Mcf, while respondents who say they will drill more wells this year than last are predicating those plans on an average wellhead price of only $3.24 an Mcf.

Add a few clicks to those oil and gas prices, and look for some more rigs to start running. Asked what oil price would prompt them to increase their 2003 drilling plans, a little more than a fourth (27.9 percent) indicate $26 a barrel would do the trick (Figure 4A). Moving up the price curve, at $27 a barrel, 40 percent of survey respondents say they will increase drilling; 72 percent will drill more wells at $28; and 93 percent of survey respondents say they will increase their drilling programs if oil reaches $30 a barrel.

Going the other way, 22 percent of survey respondents indicate they would reduce the number of wells they drill this year should oil prices fall to $22. The percentage of those cutting back increases to 28 percent at a $21 oil price, goes to 62 percent at $20, 76 percent at $19, and 86 percent at $18 a barrel.

On the natural gas side, prices between $4.00 and $5.00 an Mcf get operators' blood pumping. Although only a fairly modest 20 percent of survey respondents say they will increase their 2003 drilling programs at a natural gas price of $4.00 an Mcf, the number grows to 26 percent at $4.25 an Mcf, rockets to 54 percent at $4.50, and flies to 82 percent at $5.00 an Mcf (Figure 4B). If wellhead gas prices reach $6.00 an Mcf, 98 percent of survey respondents say they will drill more wells this year.

On the down side for natural gas, survey respondents are fairly resistant to change until natural gas prices fall to $2.50

FIGURE 4A
Oil Prices at Which Operators Would Alter 2003 Drilling Plans

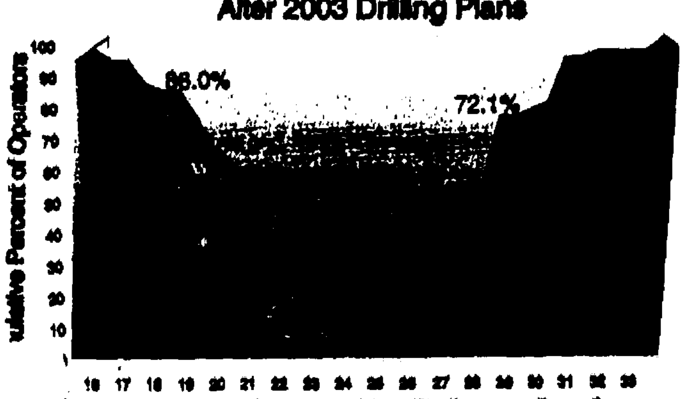
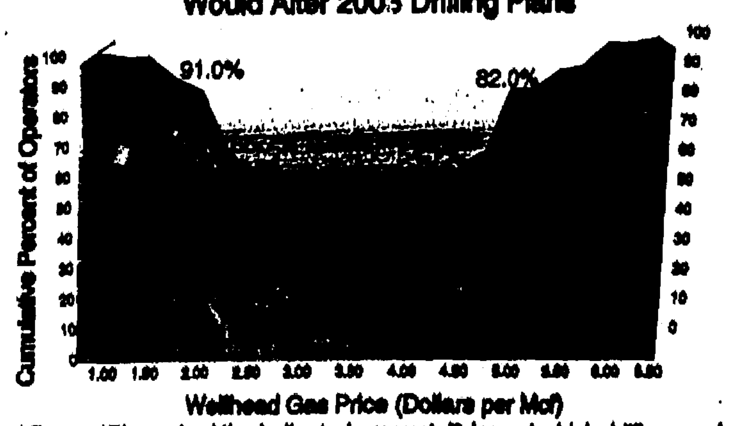


FIGURE 4B
Natural Gas Prices at Which Operators Would Alter 2003 Drilling Plans



Percentages in Figures 4A and 4B represent the cumulative total of survey respondents who indicate they would have altered their 2003 drilling plans by the time the spot price for West Texas Intermediate delivered at Cushing, Ok. (Figure 4A), or the wellhead natural gas price (Figure 4B) reached the indicated amount. Prices at which drilling would decrease are plotted to the left of the graphs in downward curves; prices at which drilling would increase are plotted to the right of the graphs in upward curves.

...below. Only 16 percent indicate any reduction in drilling plans at a $3.00 gas price, and 28 percent would cut back at $2.75. But that percentage grows to 57 when wellhead gas prices reach $2.50 an Mcf, and hits 87 percent at $2.00. At $1.75 an Mcf, 91 percent of survey respondents say they would drill fewer wells.

Manage Price Risk

While the relatively high oil and gas prices of 2002 may not have produced the drilling response one would have expected, oil and gas producers did recognize their value. In a new question on the Survey of Independent Operators, a significant number say they have underpinned future cash flow by hedging some proportion of their oil and gas production.

Twenty-eight percent of all survey respondents say they are hedging a portion of their production to manage price risk (Figure 5). Those drilling the most wells are the most active hedgers. While only 8 percent of the "small" category of survey respondents say they are hedging a portion of their production, 23 percent of the medium category say they are hedging, and nearly 70 percent of the large category have locked in higher prices through hedging.

Gas well drillers are also more likely to hedge than oil well drillers. While only 10 percent of survey respondents who drilled more oil than gas wells in 2002 say they are hedging a portion of their production, 42 percent of the gas driller category say they are active hedgers.

Drilling is the primary mechanism by which survey respondents expect to replace reserves during 2003. Asked whether they anticipate replacing reserves primarily by drilling, acquisitions or both, 55 percent of all survey respondents say they expect to replace reserves primarily through the drill bit. Another 37 percent indicate they expect to replace reserves through both drilling and acquisitions, while only 8 percent say they will primarily be looking to purchase new reserves.

Decision Factors

In the end, oil and gas is a price-driven business. In the final part of the Survey of Independent Operators, respondents signaled what factors they expected to have the greatest influence on their decisions to drill new wells this year.

Not surprisingly, oil and gas prices were marked by an overwhelming majority of survey respondents. Eighty-eight percent of survey respondents say oil and gas prices significantly influence in the decision to drill (Figure 6). That is double the second most-frequently marked factor: access to capital, which was pegged by 42 percent of survey respondents.

The third most important factor in survey respondents' ability to drill new wells is equipment and service costs, which was flagged by 29 percent. That is followed by environmental regulations at 25 percent and government tax incentives at 18 percent.

The percentage of survey respondents who say oil and gas prices are a major factor range from a high of 96 percent among large drillers–those who say they will drill 16 or more wells this year–to a low of 76 percent among medium drillers, who expect to drill 6-15 wells this year.

Percentages of survey respondents flagging access to capital as a major determinant in their ability to drill wells range from 52 percent of the medium category of drillers to 33 percent of oil well drillers. Access to capital was flagged as a significant factor by 47 percent of the gas driller category.

Access to capital was marked second by every category except the large drillers, who ranked equipment and service costs second with a 48 percent response rate, compared to 39 percent who marked access to capital. Percentages of respondents indicating equipment and service costs as a major factor ran from 48 percent of large drillers to 20 percent of oil drillers. Costs were the third-highest ranked factor for all other driller categories except small and oil drillers, who both indicated environmental regulations were a more significant factor for them. □

FIGURE 5
Operators Who Hedge to Manage Price Risk

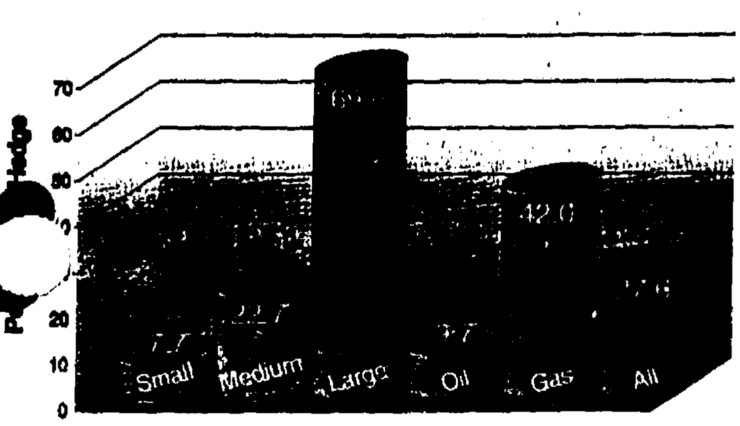
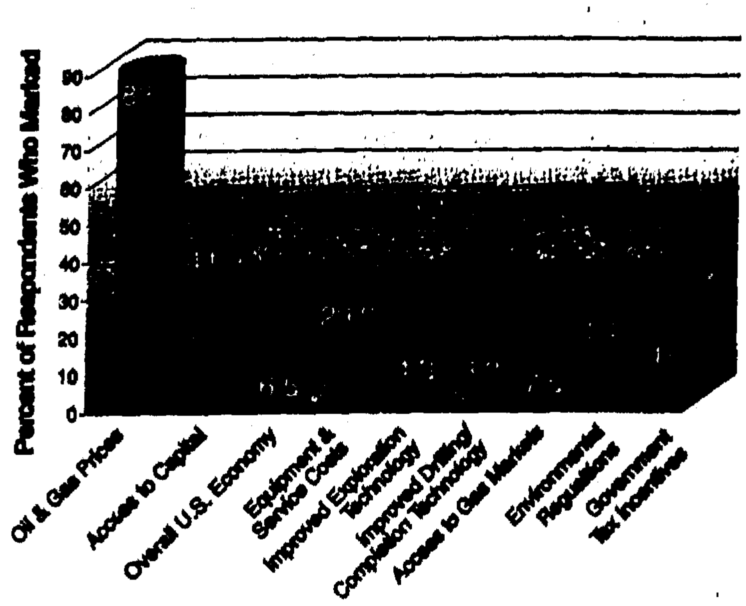


FIGURE 6
Factors Affecting Operators' Decisions to Drill



Percentages shown in Figure 6 represent the proportion of survey respondents who indicate the factor has a significant influence on their decisions to drill new wells. Respondents were free to mark more than one factor, so the percentages will total more than 100.

North Dakota Geological Survey

John P. Bluemle, State Geologist

INDUSTRIAL COMMISSION
John Hoeven - Governor, Chairman
Wayne Stenehjem - Attorney General
Roger Johnson - Commissioner of Agriculture

TESTIMONY BEFORE THE SENATE FINANCE AND TAXATION COMMITTEE
House Bill No. 1145
Ed Murphy
March 4, 2003

Chairman Urlacher and members of the Senate Finance and Taxation Committee, my name is Ed Murphy with the North Dakota Geological Survey and I am here to provide background information on the coalbed methane potential of the Williston Basin for House Bill 1145.

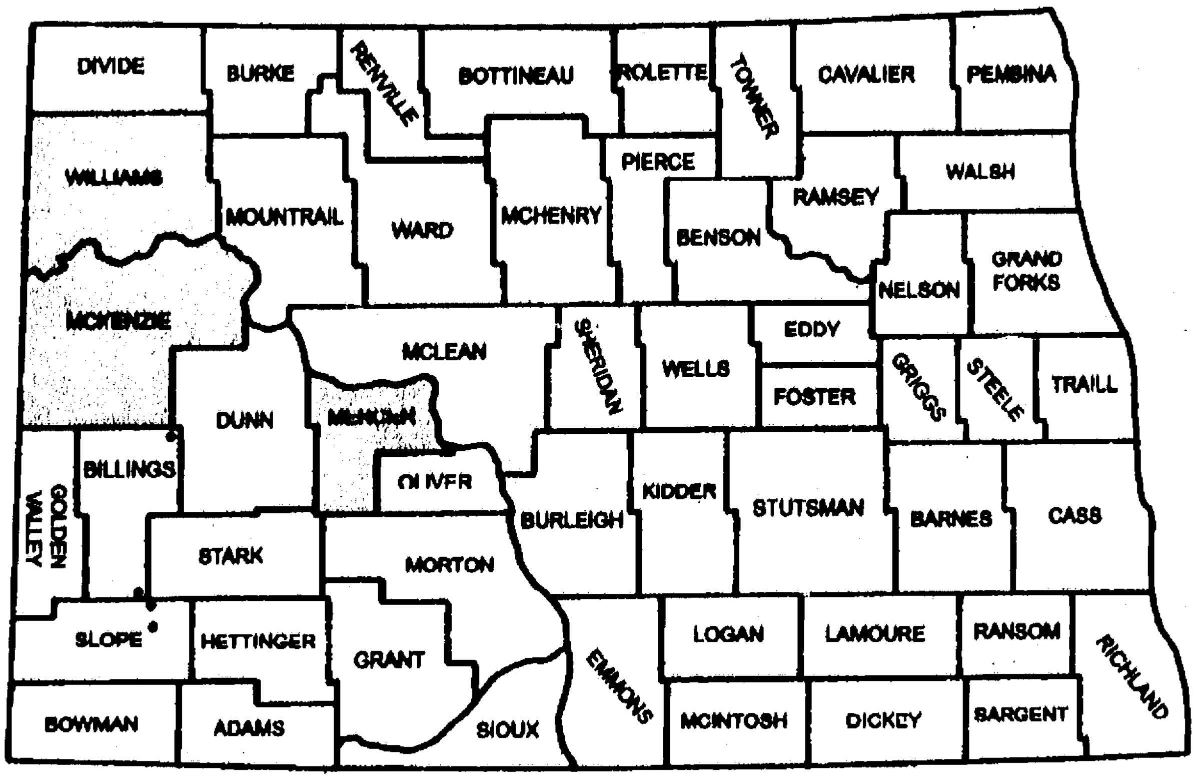
- The President's National Energy Policy Plan estimates that over the next 20 years natural gas consumption in the U.S. will increase 50%, from 20 to 31 trillion cubic feet.
- In 2000, coalbed methane (1.4 Tcf) accounted for 7.5 % of domestic natural gas production.
- The North Dakota portion of the Williston Basin contains approximately <u>one trillion tons</u> of lignite.
- North Dakota contains <u>25.1 billion tons</u> of economically recoverable lignite, enough to last 834 years at the current rate of mining (30 million tons per year).
- Coal is found at depths down to 2,000 feet in western North Dakota.
- Lignites that are potential sources of coalbed methane are thought to occur more than 200 feet below the surface.
- Five companies have drilled 11 coalbed methane test wells in North Dakota (Williams, McKenzie, Billings, Slope, and Mercer counties).
- <u>No attempt has yet been made to produce coalbed methane in North Dakota</u>. Canister tests have been run on cores and cuttings but the results of only one test have been made public and those results were disappointingly low (1.38 cubic feet of methane per ton of lignite). Canister tests are consistently lower than the actual volume of gas in the reservoir and are often multiplied by factors such as 20, 30, or 40 to obtain a more realistic number. Actual methane contents in other basins range from 20 to more than 600 cubic feet of gas per ton of coal.
- Most places in western North Dakota are underlain by about two dozen beds of coal.
- Most coals in North Dakota are less than three feet thick. Coals more than 20 feet thick are uncommon – only 12 counties contain beds of coal that thick.
- The thickest coal in North Dakota is the Harmon bed which is <u>53 feet thick</u> in southern McKenzie County.
- Groundwater chemistry in the Fort Union Group in North Dakota is variable but is likely to contain less than 3000 mg/l of total dissolved solids.

600 East Boulevard Avenue ◆ Bismarck, North Dakota 58505-0840 ◆ Phone (701) 328-8000 ◆ Fax (701) 328-8010

AGE	ERA	SYSTEM	FORMATION OR GROUP		THICKNESS (feet)	DOMINANT LITHOLOGY
MILLIONS OF YEARS	CENOZOIC	QUATERNARY		alluvium, colluvium, and lacustrine	0- 40	Sand, Silt, Clay and Gravel
				COLEHARBOR	0- 250	Sand, Silt, Clay, Till and Gravel
		TERTIARY		ARIKAREE	0- 330	Tuffaceous Siltstone and Carbonate
				WHITE RIVER	0- 90	Conglomerate, Sand, Silt and Clay
				GOLDEN VALLEY	0- 300	Silt, Clay, Sand and Lignite
				SENTINEL BUTTE	0- 550	Silt, Clay, Sand and Lignite
				BULLION CREEK	0- 520	Silt, Clay, Sand and Lignite
				SLOPE	100	Silt Clay, Sand and Lignite
				CANNONBALL	100- 200	Mudstone and Sandstone
65				LUDLOW	100	Silt, Clay, Sand and Lignite
	MESOZOIC	CRETACEOUS	MONTANA GROUP	HELL CREEK	300	Clay, Sandstone and Shale
				FOX HILLS	200	Sandstone and Shale
				PIERRE	2,000-2,200	Shale
			COLORADO GROUP	NIOBRARA	170- 200	Shale, Calcareous
				CARLILE	350- 500	Shale
				GREENHORN	200- 250	Shale, Calcareous
				BELLE FOURCHE	240- 320	Shale
			DAKOTA GROUP	MOWRY	115- 200	Shale
				NEWCASTLE	0- 110	Sandstone
				SKULL CREEK	190- 325	Shale
				INYAN KARA	350- 420	Sandstone and Shale
		JURASSIC		SWIFT	400- 500	Mudstone
				RIERDON	50- 120	Shale and Sandstone
				PIPER	280- 370	Limestone, Shale and Anhydrite
		TRIASSIC		SPEARFISH	400- 550	Siltstone and Salt
250	PALEOZOIC	PERMIAN		MINNEKAHTA	35- 50	Limestone
				OPECHE	95- 350	Shale and Siltstone
		PENNSYLVANIAN		BROOM CREEK	110- 180	Sandstone and Dolomite
				AMSDEN	210- 400	Dolomite, S[illegible]stone and Shale
				TYLER		Mudstone and Sandstone
		MISSISSIPPIAN		BIG SNOWY	200- 500	Shale, Sandstone and Limestone
				MADISON	1 350-2 000	Limestone and Anhydrite
		DEVONIAN		BAKKEN	0- 65	Shale and Siltstone
				THREE FORKS	0- 245	Shale , Siltstone and Dolomite
				BIRDBEAR	0- 90	Dolomite
				DUPEROW	190- 340	Interbedded Dolomite and Limestone
				SOURIS RIVER	50- 270	Interbedded Dolomite and Limestone
				DAWSON BAY	0- 80	Dolomite and Limestone
				PRAIRIE	0- 80	Limestone and Anhydrite
				WINNIPEGOSIS	0- 230	Limestone and Dolomite
		SILURIAN		INTERLAKE	250- 920	Dolomite
		ORDOVICIAN		STONEWALL	75- 115	Dolomite
				STONY MOUNTAIN	110- 155	Argillaceous Limestone
				RED RIVER	510- 660	Limestone and Dolomite
				ROUGHLOCK	35- 50	Calcareous Shale and Siltstone
				ICEBOX	65- 95	Shale
				BLACK ISLAND	25- 115	Sandstone
570		CAMBRIAN		DEADWOOD	420- 950	Limestone, Shale and Sandstone
4500		PRECAMBRIAN ROCKS				

The shallow gas zone is that part of the geologic column in gray or green, or that part in blue that is at a depth of less that 5000 feet, from which gas may be produced. The Fort Union Group (in dark green) contains coal.

COALBED METHANE ACTIVITY IN NORTH DAKOTA



A total of 11 Coalbed methane wells have been drilled in North Dakota.

1) Two wells in Billings County.
2) Two wells in Slope County.
3) Two wells in Mercer County – information confidential until 7/14/03.
4) Three wells in McKenzie County – information confidential until 8/16/04.
5) Two wells in Williams County – information confidential until 9/28/04.

Companies use canister tests (typically on coal cores) to determine the gas content of the coal. The canister tests from only one well (northeast Billings County) are available to the public. The highest of those readings was 1.38 cubic feet of methane per ton of coal. At face value, this is a disappointingly low number. However, in all likelihood, this number should be multiplied by 10, 20, 30, etc to get a more realistic volume of the reservoir potential as is done in the Powder River Basin.

None of the wells attempted to produce methane which would have required the removal of large quantities of groundwater from the coal.

N. D. I. C. Oil & Gas Div.

Engrossed House Bill No. 1145

**Testimony of Lynn Helms, Director, N.D. I. C. Oil & Gas Division,
Before the Senate Finance and Taxation Committee**

March 4, 2003

Mr. Ed Murphy of the North Dakota Geological Survey and I have been asked to share information with you about potential for shallow natural gas development in North Dakota and to be available to answer your questions.

THE COMING METHANE ECONOMY

Energy economists predict that United States consumption of natural gas will increase 20% by 2005 and 50% by 2015. Methane is becoming the fuel of choice for several reasons:

1) It produces very few emissions when burned.
2) Unlike oil, US and Canadian production is equal to 99% of our consumption.
3) USGS has identified tremendous potential reserves in Alaska, along the Rocky Mountains, and in hydrates.
4) Attached is an article from The American Oil & Gas Reporter that shows planned drilling to increase 31%, but 77% will target gas and only 23% oil.

North Dakota can and should be a part of this new economy, but we are perceived by industry as an oil basin. This bill is just one part of an broad effort to attract oil and gas investment to our state.

Other parts should include pilot or demonstration projects, geological studies and publications, transportation and gathering studies, and an oil and gas research council.

North Dakota Geological Survey

John P. Bluemle, State Geologist

INDUSTRIAL COMMISSION
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