

**THE ECONOMIC SIGNIFICANCE OF THE  
HAMILTON DOME OILFIELD**

**APPENDIX B**

**The Economic Significance  
of the  
Hamilton Dome Oilfield**

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Prepared for  
**Merit Energy Company**

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in association with  
**States West Water Resources Corporation**

## EXECUTIVE SUMMARY

Ongoing production of petroleum crude from Merit Energy Company's Hamilton Dome field is a significant source of economic stimulus for Hot Springs County and the State of Wyoming. This report provides an assessment of the contributions of Merit's Hamilton Dome oilfield to the economy of Hot Springs County and the State of Wyoming. In fact, these contributions are proxy measures of the adverse impacts that would result from the premature closure of the Hamilton Dome field. The report focuses on the following aspects of the economy:

- the economic stimulus associated with Hamilton Dome employment, purchases of goods and services, payment of taxes and the associated multiplier effect,
- the effect of Hamilton Dome tax payments on the Hot Springs County tax base and the taxing entities who rely on these payments to help fund services provided to residents, including students enrolled in local public schools,
- hay and livestock production along Cottonwood Creek supported by the discharge of produced water from the Hamilton Dome; and,
- the significance of Hamilton Dome crude oil to the Wyoming refining industry and the production of asphalt and road oil.

The substantial negative economic impacts in Hot Springs County that would accrue to residents, businesses and local governmental entities with premature closure should be taken into account in the overall assessment of the benefits and costs associated with compliance with Class 2C water quality standards.

### **Economic Contributions of Hamilton Dome**

Annual crude production from the Hamilton Dome field averaged 1.67 million barrels over the past five years.

- Employment and Labor Income: Based on annual operating expenses averaged over the past five years, Hamilton Dome supports an estimated 186 jobs in the State of Wyoming including 136 jobs in Hot Springs County (about 4 percent of total employment in the county in 2000) and 50 jobs elsewhere in Wyoming. The associated Hamilton Dome labor income impact in Hot Springs County totals \$4.07 million (about 7 percent of total labor income in the county in 2000) and \$2.54 million elsewhere in Wyoming.
- Overall Economic Output: The economic contribution of the Hamilton Dome oilfield is conservatively estimated at nearly \$28.7 million annually, most of which occurs in Hot Springs County.

### **Fiscal Contributions of Hamilton Dome**

Merit Energy Company is the largest taxpayer in Hot Springs County and the Hamilton Dome field is the county's largest source of property tax.

### **Property Tax**

Over the past 5 years, Hamilton Dome property tax revenue has averaged 29 percent of total property tax revenue for all countywide taxing entities (\$1.9 million out of a total \$6.6 million). Property taxes are the largest source of locally-derived funding for local governmental entities and represent a major source of non-earmarked revenue subject to discretionary spending control. Counties are statutorily limited to a 12-mill cap for basic county operating purposes (general fund, hospital, library and fair board), limiting their capacity to increase property taxes to offset reductions in revenues. Hot Springs County's property tax rates are at the 12-mill limit. Consequently, a major reduction in revenues associated with the premature shutdown of the Hamilton Dome field would likely trigger reductions in basic service levels.

Over the past five years, property taxes from Hamilton Dome have accounted for the following revenue contributions to major funds and entities:

- County General Fund: 9 percent of total general fund revenues.
- Library, Fair Board, Hospital: 27 percent of the library system's total revenues, 15 percent of the Fair Board's total revenues and 2 percent of Hot Springs County Memorial Hospital's total revenues.
- Hot Springs County Weed and Pest District: Two separate levies fund operations of the Weed and Pest District. Hamilton Dome property tax revenues provide 9 percent of the district's pest eradication budget and 29 percent of its mosquito control budget.
- Hot Springs County Rural Fire Protection District: Hamilton Dome property tax revenues fund 29 percent of the district's budget. Because the district is staffed by volunteers, a loss of that revenue would not reduce services, but would delay the purchase of needed equipment, supplies and training.
- Hot Springs County School District # 1: Over the past five years, Hamilton Dome property taxes for school-related funds averaged \$1.4 million annually. Of that amount, \$910,000 was for operational purposes and \$188,000 for debt service. The Wyoming School Foundation Fund received an average of \$325,000. The entitlement provisions of the state foundation program would offset any loss in Hamilton Dome property tax revenue on the operating budget. Based on the five-year average, the Wyoming School Foundation Fund would experience a net cost of \$1.235 million from lost revenues and additional entitlement costs, assuming no change in enrollment levels. Reductions in the number of Hamilton Dome-related students would reduce School District #1's entitlement and revenue with little reduction in educational costs. Loss of the Hamilton Dome property tax revenues would increase the school debt service mill levy for other county taxpayers by 2.8 mills, based on the five-year average.

## *The Economic Significance of the Hamilton Dome Oilfield*

### **Severance Tax**

Over the last two years, severance taxes on Hamilton Dome production have averaged \$1.8 million annually.

### **Federal Mineral Royalties**

Over the past two years, federal mineral royalty payments for Hamilton Dome production averaged \$4.4 million. Wyoming's share of these royalties averaged an estimated \$2.2 million annually.

### **Sales and Use Tax**

In 2001, MEC estimates that it paid over \$400,000 in sales and use taxes on purchase of goods and services for the Hamilton Dome field.

### **The Role of Hamilton Dome Produced Water in the Cottonwood Creek Ranching Economy**

Approximately 35 Cottonwood Creek-area landowners benefit directly or indirectly from water discharged from the Hamilton Dome field into the creek. These landowners use the water for irrigation and stock watering purposes. Based on a survey of several of these landowners, the loss of Hamilton Dome discharges into Cottonwood Creek would result in a corresponding loss of:

- 1,600 acres of irrigated cropland,
- 4,000 tons of annual hay production,
- 15 to 20% reduction in herd size (about 3,200 cows) and a \$2 million reduction in related sales receipts (based on \$650 head) and,
- 20 full time and seasonal jobs in the ranching industry.

Additional losses would be likely for ranches not included in the survey. Several ranchers contacted for the survey expressed concern for the economic viability of their operations without the Hamilton Dome water.

The IMPLAN model was used to estimate the total economic losses in Hot Springs County, including the indirect and induced impacts on other sectors, associated with the direct reduction in annual livestock receipts. Those losses, which include a net reduction of \$3.3 million (1.7%) in the county's total annual economic output, a loss of \$645,000 in annual labor income, and a net loss of 32 full and part-time jobs, would be in addition to those impacts directly attributable to the cessation of Merit's Hamilton Dome production operations.

### **The Role of Hamilton Dome in the Wyoming Refining Industry**

Hamilton Dome crude production represents about 3.3 percent of the of the daily feedstock supply needed to sustain Wyoming's five refineries at full production. However, Hamilton Dome supplies more than 20 percent of the crude necessary to sustain asphalt and road

*The Economic Significance of the Hamilton Dome Oilfield*

oil production. The loss of this production coupled with the absence of an alternate supply could threaten the economic viability of one or more Wyoming refineries.

**TABLE OF CONTENTS**

EXECUTIVE SUMMARY .....i

TABLE OF CONTENTS .....v

INTRODUCTION .....1

ECONOMIC CONTRIBUTIONS OF MERIT ENERGY COMPANY'S HAMILTON DOME OPERATIONS .....3

FISCAL CONTRIBUTIONS OF THE HAMILTON DOME OILFIELD .....10

ECONOMIC LINKAGES BETWEEN THE HAMILTON DOME OILFIELD AND HOT SPRINGS COUNTY  
AGRICULTURE .....16

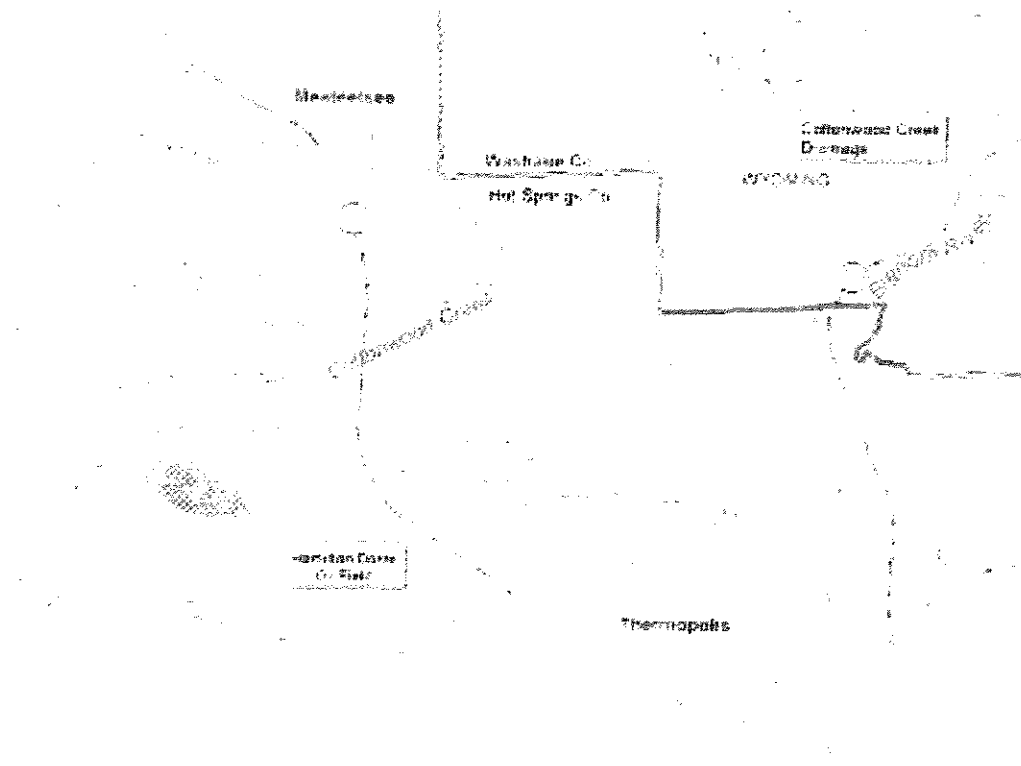
THE SIGNIFICANCE OF HAMILTON DOME PRODUCTION TO WYOMING'S REFINING INDUSTRY .....19

REFERENCES CITED .....21

## INTRODUCTION

The Hamilton Dome oil field, discovered in 1918, is located 25 miles northwest of the Town of Thermopolis in Hot Springs County, Wyoming. Through 2001, Hamilton Dome had produced 256 million barrels of oil and 1.59 billion cubic feet of natural gas (WOGCC 2001). Merit Energy Company (MEC), the operator of the field, anticipates 2002 production to total 4,250 barrels of oil per day (BOPD), primarily from the Tensleep and Phosphoria reservoirs; the field no longer produces marketable quantities of natural gas. Over the last five years, the Hamilton Dome Field has been on average the eighth most productive oil field in the State of Wyoming, averaging 42 percent of total Hot Springs County oil production and 2.7 percent of total statewide oil production. Oil produced from the field is sold and transported by pipeline to refineries in Wyoming and adjacent states.

### Vicinity Map: Hamilton Dome Oilfield and Cottonwood Creek



Source: States West Water Resources Corporation

Also during 2002, Hamilton Dome is anticipated to produce 285,000 barrels of water per day (BWPD). An average of 85,000 BWPD is re-injected to enhance oil recovery. The remaining 200,000 BWPD is discharged from two separate points into unnamed tributaries that eventually flow into Cottonwood Creek (MEC 2002). Discharges of water produced from



## *The Economic Significance of the Hamilton Dome Oilfield*

Hamilton Dome into the Cottonwood Creek drainage have occurred since the early 1970's. Two NPDES permits, WY0000175 and WY0000680, authorize these discharges.

Cottonwood Creek flows generally eastward from its source in the Owl Creek Mountains at Cottonwood Peak in Township 45 North, Range 102 West. It flows eastward 47 river miles into the Bighorn Basin to its confluence with the Bighorn River in Township 45 North, Range 94 West. Hamilton Dome discharges enter Cottonwood Creek at approximately river miles 12 and 19, measured from the upstream end (Jessen 2002).

Until recently, Cottonwood Creek and the tributaries receiving the Hamilton Dome discharge were classified by the Wyoming Department of Environmental Quality, Water Quality Division (WQD) as Class 4 streams. The water discharged from Hamilton Dome meets standards for Class 4 waters. The WQD recently updated Chapter 1 of the *Wyoming Water Quality Rules and Regulations* to comply with the federal Clean Water Act. As a result of this reclassification, Cottonwood Creek is now classified as 2C and the tributaries that receive Hamilton Dome discharges are classified as 3B. The Hamilton Dome discharges exceed Class 2C standards for several constituents including chloride and selenium.

In order to renew its discharge permits, MEC could be required to treat the Hamilton Dome discharge water to meet Class 2C standards. The company believes the financial impact of treating the discharge to meet Class 2C standards would result in closure of the field (Diem 2002). MEC is working with the Wyoming DEQ/WQD to either reclassify the stream or establish site-specific criteria allowing discharge of the produced water to continue without additional treatment. The company also believes that closure of the field prior to the full recovery of the available crude oil resources would trigger significant economic distress on the local economy. The following regional economic analysis has been prepared to examine those economic implications.

The objectives of this economic analysis are to describe the contributions of the Hamilton Dome oil field to the economies of Hot Springs County and the State of Wyoming, to the tax base of Hot Springs County and its relevant taxing entities, to the ranching economy along Cottonwood Creek, and to the Wyoming petroleum refining industry. The contributions described below are proxy measures of the adverse economic impacts that would result from the premature closure of the Hamilton Dome field. In other words, although the narrative typically discusses the economic contributions in positive or beneficial terms, these contributions are measures of what is "at-risk" from requiring compliance with the more stringent water quality standards, the anticipated result of which would be to halt production.

## **ECONOMIC CONTRIBUTIONS OF MERIT ENERGY COMPANY'S HAMILTON DOME OPERATIONS**

On-going production of petroleum crude from the Hamilton Dome field is a source of significant economic stimulus for the Thermopolis and Hot Springs County economies. Moreover, the economic repercussions of that production extend to the broader statewide economy.

With respect to the local economy, the primary economic stimulus encompasses the company's direct payroll and its purchases of goods and services from oil field service companies, utilities and other suppliers and the consumer purchases of its employees. These direct economic infusions indirectly support yet other local businesses and jobs through what is known as the "economic multiplier effect." Finally, production and ad valorem taxes paid by the company, as well as taxes paid by its employees and the businesses and employees whose jobs are supported indirectly by the company's operation help support public education and governmental functions.

A second dimension of the field's economic stimulus derives from its linkages to local farming and ranching located along Cottonwood Creek. Oil production from the Hamilton Dome field yields a substantial quantity of water as a byproduct. Further production is supported by reinjecting a portion of that water into the oil-bearing formations. However, much of that water, about 6,700 acre-feet of water in 2001, discharges into the Cottonwood Creek drainage from where local ranchers subsequently use it for irrigation, stock watering and other agricultural purposes. That water is vital to helping sustain the local agricultural industry because of the region's semi-arid climate. The water also supports wildlife and wildlife habitat in the area.

Yet a third dimension of the field's economic significance is its role in supplying crucial feedstock for the Wyoming refining industry. More specifically, crude from the Hamilton Dome field is transported via pipelines to refineries in Casper and Sinclair, supplying a portion of the total feedstock for those facilities. That supply not only helps sustain the operating viability of those refineries and the economies of the respective communities, but the refined products supply fuel and asphalt to help support the state's economy and highway infrastructure.

Finally, the economic benefits associated with the Hamilton Dome field extend beyond the local communities. Economic linkages between local service firms and suppliers and wholesale and service firms located elsewhere in the state and the flows of consumer purchases to larger regional economies, result in a portion of the indirect and induced "multiplier" effects being captured elsewhere, such as in Cody, Riverton or Casper.

This section of the report examines each of those key economic linkages, quantifying their significance in terms of the numbers of jobs, labor income and annual economic output supported.

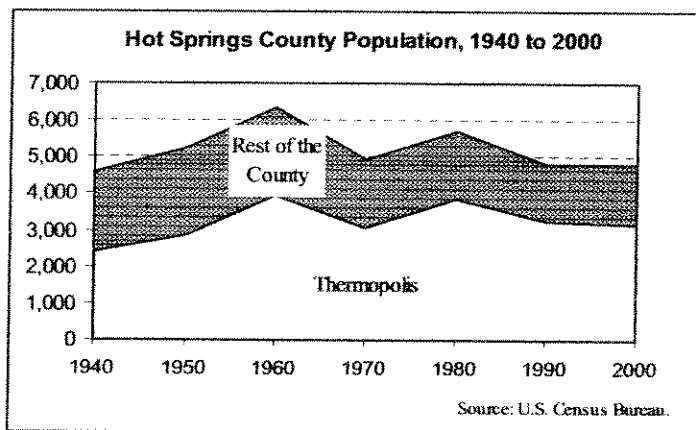
## The Economic Significance of the Hamilton Dome Oilfield

### Local Setting

The Hamilton Dome field is located in Hot Springs County, Wyoming and is part of a broader region known as the Big Horn Basin. The field is 25 miles northwest of Thermopolis, the county seat and its largest community.

Hot Springs County covers an area of more than 2,000 square miles (1,294,080 acres). Approximately 30 percent of the land in the county is in private ownership. Various federal or state agencies manage the remaining lands or hold them in trust for the Eastern Shoshone and Northern Arapaho tribes as part of the Wind River Indian Reservation.

Hot Springs County is rural. Its population has fluctuated over time, primarily in response to energy and mineral exploration and development. Population peaked at 6,365 residents in 1960. By 1990, the county's population had declined to 4,809 with little population growth in the ensuing decade as the county registered a population of 4,882 residents in the 2000 census. Consequently, Hot Springs County ranked 22<sup>nd</sup> among Wyoming's 23 counties in terms of population in 2000.



Throughout its contemporary history, most of the county's residents have lived in Thermopolis. In 2000, Thermopolis had 3,172 residents compared to 1,710 residents in the outlying areas of the county.

The economic mainstays of the county's economy include agriculture, energy and mineral production, and tourism/outdoor recreation. These "basic" industries generate much of the inflow of wealth into the economy through their sales of goods and services. In turn, the respending of business and employee incomes and local taxes support local retail trade, services and the local public sector. There is little manufacturing or regional wholesale trade activity based in Hot Springs County. Unlike the stagnation characterizing the county's recent population growth, total employment in Hot Springs County increased 334 jobs, nearly 12 percent, between 1990 and 2000 – see Table 1 below. Most of the increase was in the retail trade and services sectors.

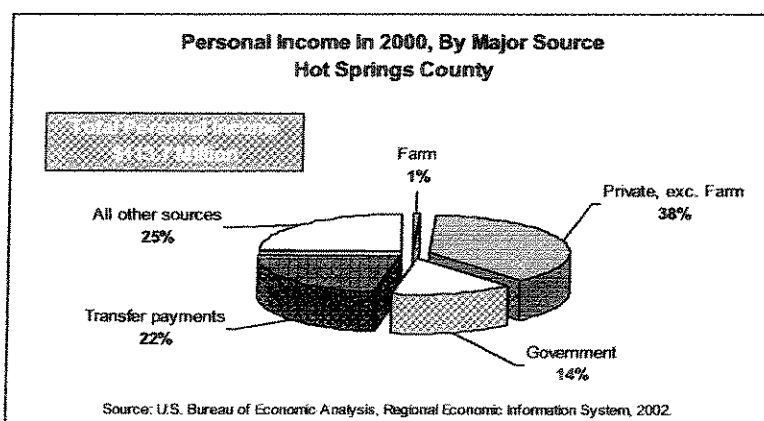
## The Economic Significance of the Hamilton Dome Oilfield

**TABLE 1**  
**HOT SPRINGS COUNTY EMPLOYMENT, BY MAJOR CATEGORY**

Category	1990	1995	2000
Farm	206	198	205
Oil, Gas & Mining	230	150	200
Other Private Sector	1,763	2,075	2,155
Government	614	557	587
<b>Total</b>	<b>2,813</b>	<b>2,980</b>	<b>3,147</b>

Source: U.S. Bureau of Economic Analysis, 2002.

Local retail trade and service businesses, as well as local government, gain additional support from consumer expenditures by the relatively large number of retirees living in the county. According to the 2000 census, more than one of every four local households depend on retirement, social security or some other form of government payments for their income. Income



from such transfer payments accounted for 22 percent of the total personal income of \$113.7 million in 2000. While such income serves an important function in supporting the local economy, it tends to be relatively fixed over time. When combined with the limited number of higher-paying jobs in the basic industries, this fact translates into comparatively low per capita income in Hot Springs County. In 2000, Hot Springs

County ranked 15<sup>th</sup> among Wyoming counties with a per capita personal income of \$23,393, nearly 15 percent below the statewide average of \$27,372 per person.

Other major sources of income in Hot Springs County include labor earnings, income derived from dividends, interest and rent, and miscellaneous other income. Private sector earnings, excluding local farming and ranching operations but, including education, is the largest contributor to total income, paying more than \$43.4 million to employees and owners in 2000 (38% of the total). That amount was nearly triple the aggregate government payroll of \$15.7 million. Local farmers and ranchers had a combined income of \$874,000 in 2000, less than 0.8 percent of the total. Dividends, rent and other non-earnings sources of revenue accounted for the remaining \$28.2 million in personal income of local residents.

### Merit Energy's Hamilton Dome Operations

As described above, Merit Energy's primary economic stimulus arises from its production-related expenditures, including the consumer-related purchases of its employees, and its support of public education and government through the taxes it pays. Merit Energy's Hamilton Dome office is the operational base for eight oil fields in Wyoming's Big Horn Basin.

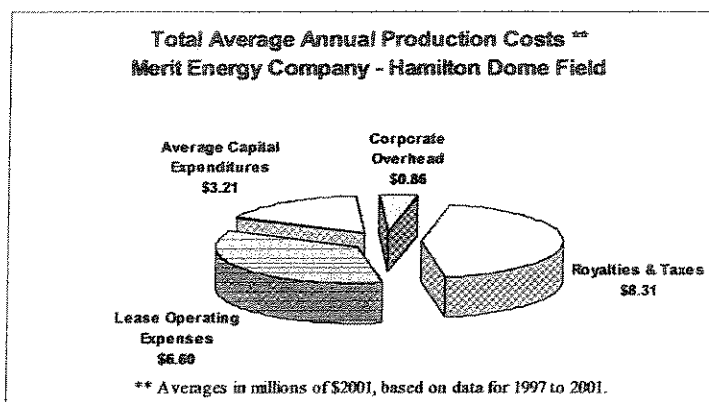
## The Economic Significance of the Hamilton Dome Oilfield

Presently, fifteen (15) of the employees in that office are directly associated with the Hamilton Dome field. Suspending production from the field prior to full recovery of the crude reserves would result in a premature loss of these jobs, their associated incomes and the business volume, jobs, incomes and state and local taxes supported indirectly by the company's operations. Those impacts would be significant.

An analysis of the company's operations, completed using a regional economic model, demonstrates the economic significance of Merit Energy's Hamilton Dome operation. The model uses actual production and operating data for the company for the five-year period, 1997 through 2001. The use of a multi-year data set to summarize the company's economic contributions compensates for much of the market induced year-to-year variability in operating and capital expenditures frequently associated with oil and gas production.

The economic analysis completed for this study, used cost of production data supplied by Merit Energy and the IMPLAN economic modeling software. IMPLAN (IMpact Analysis for PLANning) is an input-output based model originally developed to assist the U.S. Forest Service in land resource management planning. Subsequently, the model and related software were transferred into the private sector, where it is the subject of ongoing refinement and enhancements to provide the analytical capacity to address a broader range of economic and impact planning issues. IMPLAN is widely recognized and accepted in regional economic and economic impact assessment circles. Results of the analysis include direct and total jobs, income and output associated with the operation.

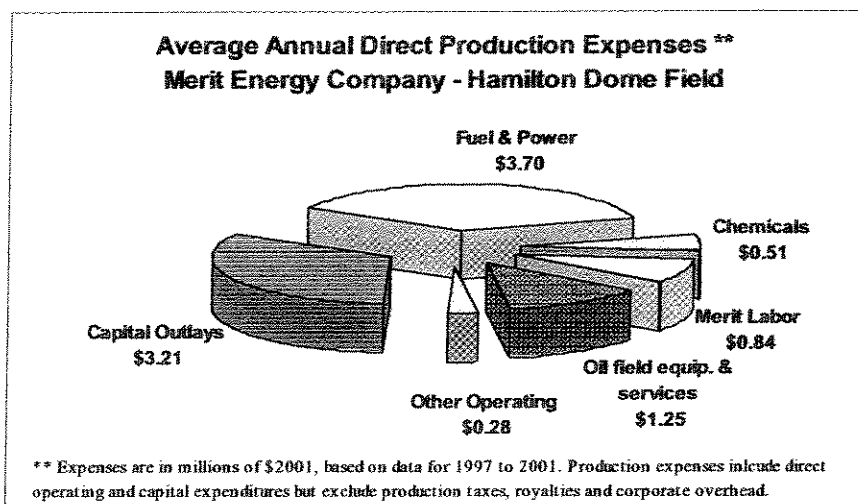
Merit's annual crude production from the Hamilton Dome field averaged 1.67 million barrels of over the past five years. Average annual total costs of production over that same period were \$18.98 million (\$2001). Royalties and taxes account for the single largest category of production costs, \$8.31 million or 44 percent of the total. By comparison, the actual lease operating expenses, which include labor, chemical, equipment, etc., averaged \$6.60 million annually – the distribution of costs, by major category, are shown in the accompanying figure.



Of primary relevance to this analysis are the \$9.81 million in lease operating and capital expenses made by Merit Energy in a typical year. These expenditures represent the day-to-day purchases of goods and services and payroll outlays to staff that cycle into and through the local and statewide economies, supporting other businesses, jobs for Wyoming residents, and taxes to support government. Fuel and power are the company's single largest production expense category, about \$3.70 million annually. Other major categories include labor, replacement

*The Economic Significance of the Hamilton Dome Oilfield*

equipment, chemicals, and capital outlays – see the figure below for the direct production expenses by major category.



In addition to the annual volume of purchases, another key determinant of Merit’s economic contribution is the extent to which local suppliers provide goods and services. In that regard, Merit Energy actively strives to support local business. It estimates that almost 99 percent of all its annual purchases are from Wyoming businesses and the bulk of those, totaling more than \$5.54 million annually, are from contractors and suppliers with an operational presence in Hot Springs County. Table 2 below presents the estimated distribution of Merit’s annual operating and capital outlay expenses, by major industrial sector.

**TABLE 2  
AVERAGE ANNUAL DIRECT PRODUCTION EXPENSES  
MERIT ENERGY COMPANY’S HAMILTON DOME FIELD (\$2001)**

Major Industrial Sector	Hot Springs County	Elsewhere In Wyoming	Total in Wyoming
Oil-field Services, incl. capital outlays	\$ 3,365,100	\$ 558,300	\$ 3,923,400
Electrical Power	\$ 167,100	\$ 3,342,600	\$ 3,509,700
Wholesale Trade	\$ 1,125,700	\$ 47,300	\$ 1,173,000
Retail Trade	\$ 6,900	\$ 59,200	\$ 66,100
Other Services	\$ 117,200	\$ 55,000	\$ 172,200
Merit Energy Payroll	\$ 760,100	\$ 84,500	\$ 844,600
<b>TOTAL</b>	<b>\$ 5,542,100</b>	<b>\$ 4,146,900</b>	<b>\$ 9,689,000</b>

Source: Merit Energy Company, 2002.

Oil field services is the largest category of expenditures, and most of the company’s annual outlays for such services are to local contractors. With no major electrical generating facilities in Hot Springs County, electrical power is the single largest production expense from outside the local economy.

## *The Economic Significance of the Hamilton Dome Oilfield*

Merit Energy currently has 15 employees assigned to the Hamilton Dome operations. However, the significant volume of oil field services and repairs the company contracts to others and its other purchases combine with the jobs supported by employee spending to generate a much higher overall employment impact. Based on the average annual operating expenses, the IMPLAN model estimates a total employment impact from Merit's Hamilton Dome field of 186 jobs statewide; 136 jobs in Hot Springs County and an additional 50 jobs elsewhere in Wyoming – see Table 3. The statewide estimate is exclusive of jobs supported by the expenditures of royalty payments and severance and sales taxes budgeted through the state. The total local jobs supported represents about 4% of total employment in Hot Springs County in 2000.

**TABLE 3**  
**PRIVATE SECTOR JOBS SUPPORTED IN WYOMING BY MERIT ENERGY**  
**COMPANY'S HAMILTON DOME FIELD**

	In Hot Springs County	Elsewhere In Wyoming	Total Wyoming Jobs
Merit Energy	15	0	15
Oil-field services & suppliers	36	25	61
Other private sector	24	23	47
Government and Education	61	2	63
<b>TOTAL</b>	<b>136</b>	<b>50</b>	<b>186</b>

Note: The numbers of jobs supported were derived using IMPLAN, based on Merit Energy Company's average annual expenditures for 1997 through 2001.

The largest number of jobs supported is in local government and education (63 jobs). The strong support for these jobs stems from the company's substantial annual tax payments (these payments are discussed further in a later section.)<sup>1</sup> Another 61 jobs in the oil field service and supply industries followed by 47 jobs in wholesale and retail trade, services, construction and other private sector industries.

A corollary dimension of Merit's positive employment impacts is the beneficial impact on personal income. Over the past five years, Merit Energy Company's direct payroll has averaged about \$844,000 annually, though it presently is at about \$740,000 on an annual basis. The incomes supported by Merit's operations in government, education, oil field services and other industries magnify that direct impact. When summed across all industries, the estimated labor income impact in Hot Springs County totals \$4.07 million annually, with another \$2.54 million elsewhere in the state – see Table 4 on the following page. The total local labor income represents nearly 7% of the corresponding total labor income in Hot Springs County in 2000.

<sup>1</sup> The IMPLAN estimates of the number of jobs in education reflect the proportion of the district's total locally derived property taxes paid by Merit. In reality, increases in state school foundation funds would offset much of the loss of Merit's taxes, resulting in a more limited reduction in staffing. Consequently, though the IMPLAN estimates likely overstate Merit's actual employment impacts, they are representative of the company's fiscal support for education.

*The Economic Significance of the Hamilton Dome Oilfield*

**TABLE 4**  
**ANNUAL LABOR INCOME SUPPORTED BY MERIT ENERGY COMPANY'S**  
**HAMILTON DOME FIELD (MILLIONS OF \$2002)**

	In Hot Springs County	Elsewhere In Wyoming	Total
Merit Energy Direct	\$ 0.84	\$ 0.00	\$ 0.84
Oil-field services & suppliers	\$ 1.13	\$ 1.02	\$ 2.15
Other private sector	\$ 0.56	\$ 1.46	\$ 2.02
Government and education	\$ 1.54	\$ 0.06	\$ 1.60
<b>TOTAL</b>	<b>\$ 4.07</b>	<b>\$ 2.54</b>	<b>\$ 6.61</b>

Note: Estimated annual labor incomes were derived using the IMPLAN model and Merit Energy average annual expenditures for 1997 through 2001.

Another measure of the economic contributions of Merit Energy's Hamilton Dome operation is its impact on overall economic output. A conservative estimate of the total statewide impact is nearly \$28.7 million annually, most of which occurs in Hot Springs County. The largest portion of the total is represented by Merit's operations, including contracted services – see Table 5 below. By way of comparison, the total estimated 1999 economic output of Hot Springs County was about \$195 million. The estimate is conservative as it does not account for the output associated with subsequent rounds of government spending and investments supported by the royalty and production tax payments or that associated with the subsequent refining and consumption of refined petroleum products across Wyoming supported by Merit's Hamilton Dome production.

**TABLE 5**  
**ANNUAL STATEWIDE OUTPUT SUPPORTED BY MERIT ENERGY'S**  
**HAMILTON DOME FIELD (MILLIONS OF \$2002)**

Category	Annual Amount
Direct Production Expenses	\$ 9.81
Corporate Overhead	\$ 0.86
Royalties, Taxes and Gross Net Revenue	\$ 13.59
Indirect and Induced Private Sector Output	\$ 4.40
<b>Total Annual Statewide Output</b>	<b>\$ 28.66</b>

Note: The output estimates were derived using IMPLAN and Merit Energy expenditure data for 1997 through 2001



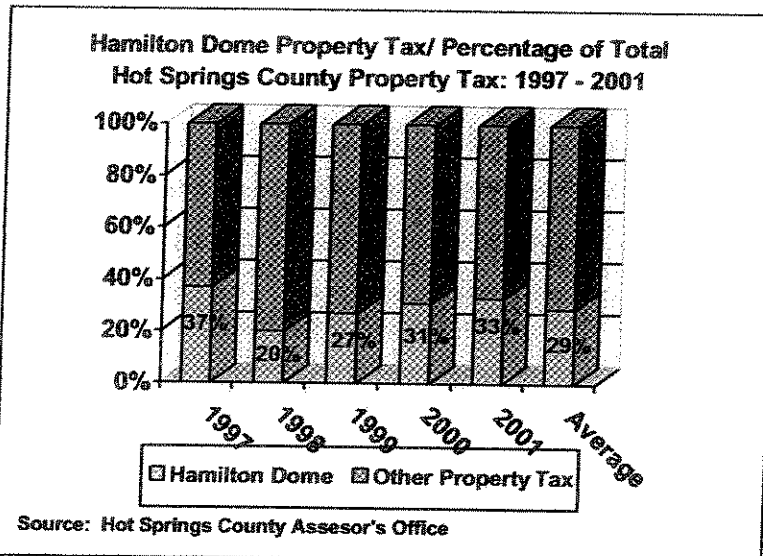
## FISCAL CONTRIBUTIONS OF THE HAMILTON DOME OILFIELD

Wyoming oil producers pay ad valorem property taxes on production and on oilfield facilities, severance taxes on production, and sales and use taxes on some purchases of goods and services. Revenues from these taxes accrue to counties, school districts, and certain special districts, to the state general fund, and to a variety of other state funds and accounts. Additionally, the State of Wyoming receives half of the mineral royalties oil producers pay to the federal government and a portion of these revenues is distributed to local governments.

### Ad Valorem Property Taxes

Oil producers pay property taxes on the assessed (taxable) value of production and oilfield facilities. Oil production is assessed at 100 percent of the fair market value (wellhead sales price) and facilities are assessed at 11.5 percent of fair market value (depreciated replacement value).

Property tax revenue from production and oil field facilities has accounted for two-thirds to three-quarters of the total property tax revenues received by county-wide taxing entities in Hot Springs County in recent years, (WTA 1997 - 2001). Crude oil production alone accounted for 73 percent of Hot Springs County assessed valuation in 2001 and has averaged 65 percent of total valuation between 1997 and 2001.



MEC is the largest taxpayer in Hot Springs County, and Merit's Hamilton Dome oil field is the county's largest single source of property tax. In 2001, Hamilton Dome accounted for 33 percent of total countywide property taxes paid in Hot Springs County (\$2.7 million out of a total \$8.3 million). Property tax revenue from Hamilton Dome production averaged 29 percent of total property tax revenue over the last five years (\$1.9 million out of an average \$6.6 million) (Deromedi 2002).

### Property Tax Distribution

Schools receive the lion's share of property tax revenue in Wyoming. In Hot Springs County, an average of 75 percent of total countywide property tax revenue (including the state school

*The Economic Significance of the Hamilton Dome Oilfield*

foundation program and the local school bond issue) has been distributed to schools over the last five years.

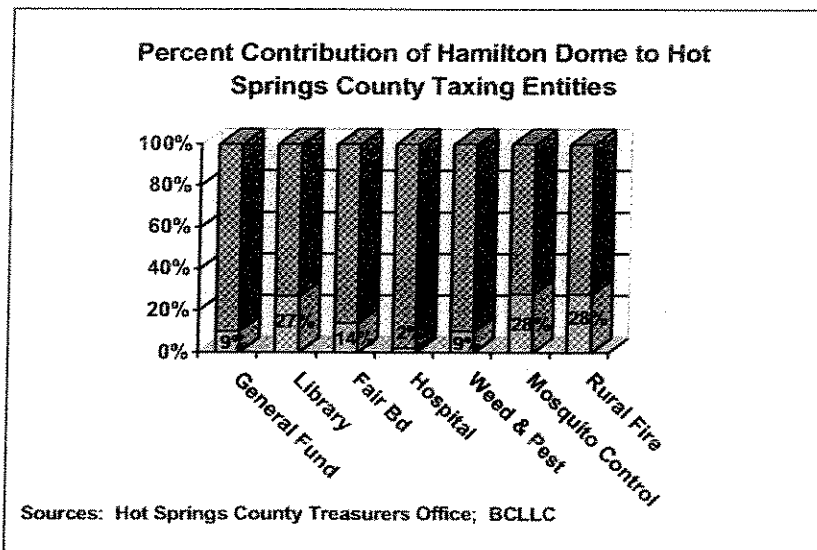
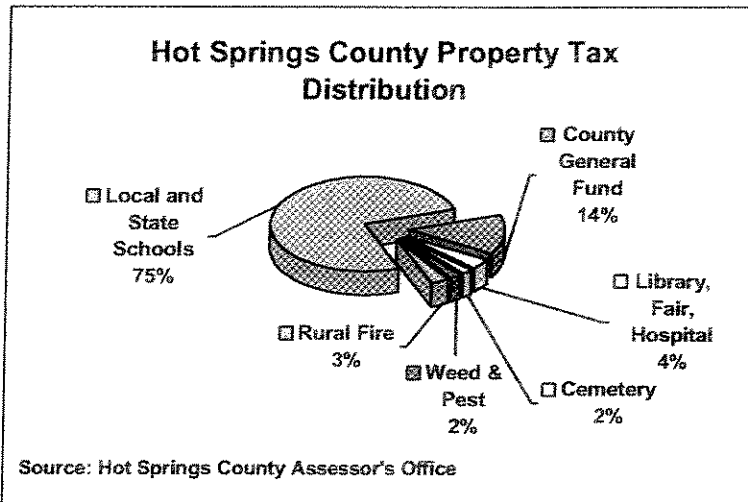
**Hot Springs County General Fund**

On a countywide basis, property tax revenues accrue to the Hot Springs County General Fund, and to the Library, County Fair and County Hospital funds. These entities are limited to a combined total levy of 12 mills, by state statute.

The county general fund provides revenues for all major county functions. Property tax revenues accounted for 40 percent of Hot Springs County general fund revenues during 2001<sup>2</sup>, and averaged 37 percent of general fund revenues over the past four years<sup>3</sup> (Hot Springs County Treasurer's Office).

The relative importance of property tax revenue to the county general fund is greater than its percentage of total revenue however. Much of the county's non-property tax revenue is received from federal or state sources and is earmarked for specific programs or items. In Hot Springs County, property tax is the major source of revenue over which the commissioners exercise discretionary control. Consequently, any substantial reduction in property tax revenue will trigger reductions in basic county services because the commissioners cannot raise the mill levy above the 12-mill limit (Ford 2002).

Hamilton Dome property tax revenue accounted for 12 percent



<sup>2</sup> Total general fund revenues for 2001 were adjusted to account for an early federal PLT payment.

<sup>3</sup> County revenue data for 1997 were not readily available.

## *The Economic Significance of the Hamilton Dome Oilfield*

of total Hot Springs County General Fund revenue in 2001<sup>4</sup> (\$356,000 out of a total \$2.986 million), and averaged 9 percent of total revenues over the past four years (\$241,000 out of average total \$2.576 million).

### **Hot Springs County Library**

The Hot Springs County Library receives property tax revenues from an average one-mill levy. Property tax revenues make up an estimated 95 percent of the library's budget (Bendlin 2002). Based on that estimate, Hamilton Dome property taxes have accounted for an average of 27 percent of the library's budget over the past five years (\$27,000 out of an average total of \$100,000). Because the library is included within the county 12-mill limit, a 27 percent reduction in revenues would result in a corresponding reduction in library services.

### **Hot Springs County Fair Board**

The Hot Springs County Fair Board receives property tax revenues from a mill levy that has averaged six-tenths of one mill over the last five years. In 2002, property taxes received from a 0.79 mill levy will account for an estimated 52 percent of the fair board's total revenues (Smith 2002). Based on the 1997 through 2001 average property tax contributions, Hamilton Dome Property taxes would account for about 15 percent of the fair board's revenues (\$16,000 out of an average total of \$108,000).

### **Hot Springs County Memorial Hospital**

The Hot Springs County memorial Hospital receives property tax revenues from a mill levy that has averaged nine-tenths of one mill over the last five years. Property tax accounts for an average of about 6 percent of the hospital's total revenues (Nading 2002) and Hamilton Dome property tax revenue accounts for an average of about 2 percent of the hospital's total revenues.

In addition to the entities identified above, whose property tax levies must fit under the 12-mill cap, other local government entities (districts) also collect property tax revenues. These entities include the Hot Springs County Weed and Pest District, the Hot Springs County Rural Fire Protection District, and Hot Springs County School District # 1.

### **Hot Springs County Weed and Pest District**

The Hot Springs County Weed and Pest District receives property tax revenues from two separate one-mill levies. A statutory one-mill levy funds 30 percent of the district's weed and pest eradication program, the remainder is funded through payment for services. A one-mill special levy funds 100 percent of the district's mosquito control program (Smith 2002). Over the past five years, Hamilton Dome property tax revenues account for about 9 percent of the district's weed and pest eradication budget (\$27,000 out of an average total of \$312,000) and about 29 percent of the district's mosquito control budget<sup>5</sup> (\$27,000 out of an average total of \$94,000).

<sup>4</sup> Adjusted revenues as discussed in footnote #3.

<sup>5</sup> Based on 2002 budget

### **Hot Springs County Rural Fire Protection District**

The Hot Springs County Rural Fire District receives property taxes from a mill levy that has averaged 2.2 mills over the past five years. The rural portion of the district relies totally on property taxes for funding its operations<sup>6</sup>. The department is staffed by volunteers. Property tax revenues are used to purchase equipment and supplies and to defray training costs. Hamilton Dome property taxes have funded an average of 29 percent of the rural fire district's budget over the past five years (\$60,000 out of an average total \$207,000). A reduction of 29 percent in total revenues would not result in a reduction of services, but it would mean that some needed equipment would not be purchased or replaced in a timely manner (Taylor, 2002).

### **Hot Springs County School District # 1**

Hot Springs County School District # 1 receives property tax revenues from three different mill levies: a 26.5 mill special school levy, a 6 mill mandatory school levy, and a school levy to fund debt service on a bond issue. The latter has averaged 7.4 mills over the past five years. Property tax revenues from the special school and mandatory levies fund school district operations, and have comprised between 44 to 55 percent of the district's total operating budget in recent years (Cady 2002). The district also receives entitlement payments from the Wyoming school foundation fund. Revenues from the debt service levy go toward retiring a school bond issued for facilities construction. The bonds are scheduled to be retired in 2010.

Revenues from a 12-mill levy are distributed to the Wyoming School Foundation Fund. The foundation program guarantees a minimum level of funding, known as entitlement, for all public school students in Wyoming. School districts that cannot raise the specified amount from local resources receive payments from the school foundation fund to make up the difference. School districts whose local property tax base yields revenues substantially above the specified amount are subject to recapture, and the excess funds are paid to the state foundation account by the district. In general, reductions in Hot Springs County School District #1 property tax revenues from the special district and mandatory school levies would be made up by payments to the district from the school foundation fund.

If the Hamilton Dome field were to cease production, the Wyoming School Foundation fund would lose the revenue associated with the Hamilton Dome field, which have averaged \$325,000 annually over the past five years. Additionally, the state foundation fund would have to increase entitlement payments to makeup for the loss of Hamilton Dome-related revenues from the 26.5 mill special school levy and the 6-mill mandatory school levy. Combined revenue from these levies has averaged \$910,000 over the past five years. Therefore, the annual net cost to the Wyoming School foundation fund would total \$1.235 million, based on the five-year average.

Because the school district's entitlement is based in large part on attendance, the district would lose revenue if Hamilton Dome employees moved out of Hot Springs County. The reduction in enrollment would likely be spread across a number of grades and schools; therefore,

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<sup>6</sup> The district also provides coverage within the municipal areas, which is funded by contract, and on occasion receives grants to purchase equipment.

## *The Economic Significance of the Hamilton Dome Oilfield*

the loss in revenues would not be accompanied by a corresponding reduction in costs. If District # 1 were to lose enrollment, the net cost to the state foundation program would decrease.

The Hot Springs School Bond levy is funded 100 percent by property tax. Over the past five years, the school bond levy would have been an average of 2.8 mills higher without Hamilton Dome property tax revenues.

### **Wyoming Severance Tax**

Wyoming oil producers pay a 6 percent severance tax<sup>7</sup> on oil produced in the state. In 2000, the Hamilton Dome field generated about \$2.1 million in severance tax revenues. In 2001, severance tax revenues from the field totaled about \$1.6 million<sup>8</sup>. These payments represent about 4 and 2 percent of total oil severance taxes for those years, respectively, and 0.08 and 0.04 percent of total severance tax payments.

Severance tax proceeds are distributed to the Mineral Trust Fund, Leaking Underground Storage Tank (LUST) account, the State General Fund, Water Development funds (I and II), Highway Fund, counties, county roads, cities and towns, capital construction, Budget Reserve Account.

### **Royalty Payments**

Oil produced from the Hamilton Dome field generated about \$5.1 million in federal mineral royalties in 2000, and about \$3.7 million in 2001. The federal government distributes 50 percent of federal mineral royalties to the state where the minerals were produced. Hamilton Dome federal mineral royalty revenues to the State of Wyoming totaled \$2.55 million in 2000 and \$1.85 million in 2001.

In Wyoming, Federal Mineral Royalties are distributed to many different entities and funds. These include the University of Wyoming, the Wyoming School Foundation Fund, the Highway Fund, the Highway Fund for County Roads, and local municipal entities. Funds are also provided to special district and school districts for capital construction, state aid to county roads, Legislative Impact Royalty Account, community colleges, transportation enterprise account, general fund administrative account and others.

In 2000, federal mineral royalties generated by Hamilton Dome accounted for an estimated 1.7 percent of all federal mineral royalties to the state<sup>9</sup>, in 2001, Hamilton Dome's contribution was about 0.8 percent of total.

<sup>7</sup> Between 1/99 and 11/99 the severance tax rate was 4 percent. Severance tax rates are less for stripper oil, oil recovered from tertiary methods, new wells, incremental oil from workovers and completions and renewed production.

<sup>8</sup> Prior to 2000, Hamilton Dome was partially owned by another company, therefore total severance tax payments are not available for prior years.

<sup>9</sup> Including coal lease bonuses.

**Sales and Use Tax**

In Wyoming, sales and use taxes are levied on gross receipts from sales of tangible personal property and selected services including receipts from public utilities. The state levies a 4 percent sales and use tax; 28 percent of the revenues from this tax (less administrative costs) is distributed to the county and incorporated municipalities in the county of origin, according to a population-based formula. Hot Springs County also levies a 1- percent general revenue sales and use tax; proceeds from this tax are distributed to the county and its incorporated municipalities in the same manner as the local portion of the state tax.

It is conservatively estimated that MEC paid \$400,000 in sales and use taxes on purchases of goods used in the Hamilton Dome field during 2001 (Kobielusz 2002). This is about 12 percent of all sales and use taxes collected in Hot Springs County during fiscal year 2001. However, because some vendors may have reported sales and use tax collections in their home counties, it is likely that not all of the local share of these revenues were distributed to Hot Springs county and its incorporated municipalities.

## **ECONOMIC LINKAGES BETWEEN THE HAMILTON DOME OILFIELD AND HOT SPRINGS COUNTY AGRICULTURE**

As across most of Wyoming, farming and ranching in Hot Springs County is a way of life and a mainstay of the local economy. Though constrained by the limited amount of land in private ownership, an arid climate, and the difficult economic market conditions affecting livestock and commodity producers, the county's agriculture sector supports the economic livelihood of many Hot Springs county households.

Every five years the U.S. Census Bureau conducts a census of the nation's agriculture industry. Conducted at the end of those years ending with the number "2" and "7", the census compiles and reports data on production, size and other operating parameters for all farms and ranchers. According to the 1997 census, results of which were published in 1999, a total of 147 farms and ranches operated in Hot Springs County.

The census provides additional insights into these operations and the individuals and families who operate them. In terms of size, 64 of the 147 local farming and ranching operations are small, less than 180 acres. Another 42 are between 180 and 999 acres in size, with 41 operating on 1,000 or more acres. Farming and ranching is the principal occupation of the operator in 85 of 147 cases, while 62 operators are part-time or hobby operators with a principal occupation other than farming.

In terms of tenure or ownership, most of the farms and ranches are family owned and operated; 99 of the farms and ranches are operated by full owners, with another 44 operated by part owners. Among the operators, 38 reported operating the present farm for less than 5 years, compared to 62 operators who had been on the present farm 10 years or longer.

Most of the local agricultural operations engage in cattle ranching, with 17 raising sheep. In 1997, Hot Springs county farmers and ranchers reported a total inventory of 33,279 head of cattle, with sales of another 15,849 head during the previous year. Nearly a third of the total operations are farms engaged primarily in growing alfalfa, barley and other crops.

Local farmers and ranchers reported an aggregate total of 944,205 acres of land in use as part of their operations. The total includes land nearly 899,000 acres of private land and state and federal lands covered by grazing allotments used as pastureland or grazing range. Only about 38,000 acres of the total is irrigated, half of which is pastureland and the other half is cropland. Hay used for winter feed is the predominant crop raised in Hot Spring County. In 1997, more than 30,000 tons of hay was grown on just over 17,300 acres. Because these irrigated lands provide vital winter and spring range and winter-feed for the cattle and sheep herds, they are vitally important to the economic viability of the local agriculture industry.

The combined marketing receipts from livestock and commodity sales totaled \$9.6 million in 1997, an average of about \$65,000 per operation. Of the total, \$8.6 million was derived from livestock sales compared to \$1.0 million from crop sales. However, operators incurred \$7.6 million in production expenses to produce those sales. The major expenses included livestock, feed, fuel, hired labor, interest on loans, rent and property taxes. When these

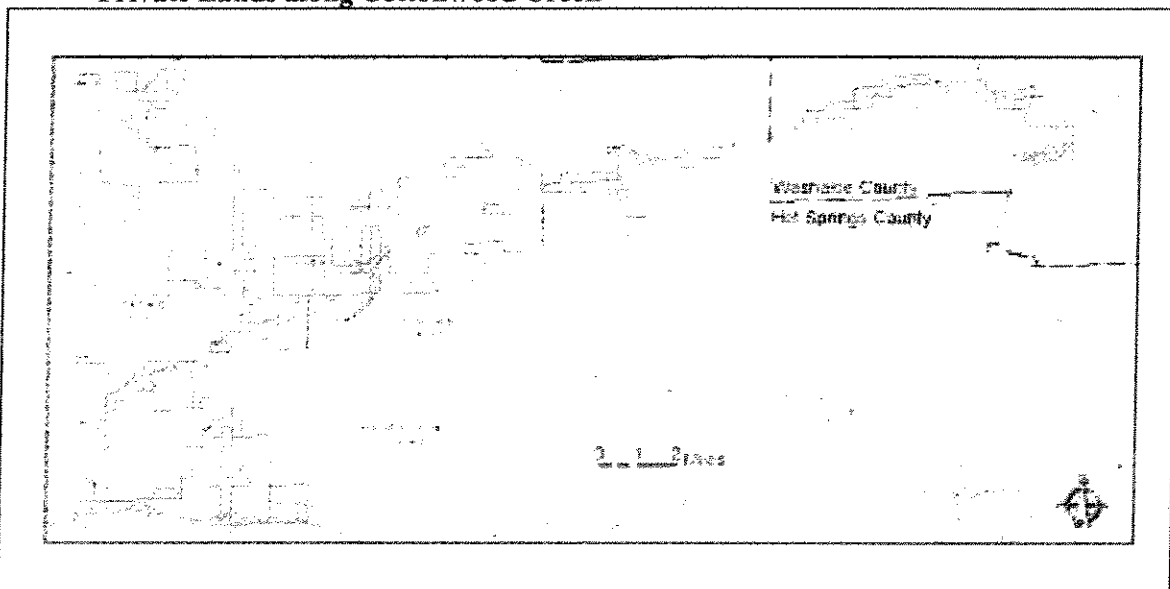
## *The Economic Significance of the Hamilton Dome Oilfield*

expenses were combined with other costs, they left a residual net cash return of about \$1.5 million, or an average of only about \$10,200 per operation.

### **Cottonwood Creek**

Approximately 35 landowners have property on or near Cottonwood creek. Virtually all of these landowners benefit directly or indirectly from the water discharged from the Hamilton Dome field. Three ranches immediately adjacent Hamilton Dome have rights to the discharged water, which is used for irrigation and stock watering. Water unused by these ranches flows down Cottonwood Creek and is used by landowners who have rights to Cottonwood Creek water, again for irrigation and stock watering.

### **Private Lands along Cottonwood Creek**



Source: States West Water Resources Corporation

The indirect benefits of the Hamilton Dome water are substantial. Cottonwood Creek is known to have an intermittent flow above the Hamilton Dome discharge points. Natural flow along the creek is strongest in spring and early summer, diminishing to a trickle in mid-summer and in some years, disappearing altogether during late summer and fall.

Because the Hamilton Dome discharge provides a year-round flow, the water table along Cottonwood Creek is continually saturated and the resultant riparian growth stabilizes the streambed. This means that runoff into Cottonwood Creek from snowmelt and rainfall does not have to recharge the water table; virtually the full flow from these events is available for water users along the creek. Likewise, the stabilized streambed reduces siltation of the stream, resulting in more usable water during spring snowmelt and rainstorms.



## *The Economic Significance of the Hamilton Dome Oilfield*

Another important benefit of the Hamilton Dome discharge is that the temperature and constant volume minimizes icing of Cottonwood Creek in winter, particularly in the upper reaches. This allows year-round stock watering from the creek, enhancing its value for ranchers.

Although it varies from parcel to parcel, it is likely that more than two thirds of the crop production on irrigated land along Cottonwood Creek is made possible by the availability of water discharged from Hamilton Dome. Most of the irrigated land along the creek is used to irrigate pastures and produce an alfalfa/hay/grass crop, which is used as winter feed for cattle that are grazed on BLM grazing allotments during summer. This ability to graze livestock on leased rangeland during summer, pasture livestock on deeded land along Cottonwood Creek during winter, feed them on hay grown using Hamilton Dome discharge and water them from creek water kept running and open because of Hamilton Dome is key to the continued economic viability of many of the ranches along the creek.

Owners of several of the larger ranching operators along Cottonwood Creek were contacted to discuss the potential impact of curtailed water discharges on their operations. Collectively, these ranchers produce hay on approximately 2,250 acres of irrigated cropland, which in turn supports about 4,650 cows. These estimates reflect "normal" conditions, not the drought conditions that currently exist. In addition, they also create 29 full-time and seasonal jobs for ranch hands. On average, these ranchers estimated that 70% of their annual hay production was dependent on Hamilton Dome water. Prematurely cutting off the water flows would force the ranchers to cut back their herds and reduce the amount of hired labor they use.

For the purposes of this analysis, the loss of Hamilton Dome water is assumed to have a direct, proportional impact on the annual hay and beef production and use of hired labor for these operations. The estimated direct impacts under such a scenario are as follows:

- 1,600 acres converted from irrigated cropland to pasture or non-irrigated cropland
- 4,000 tons less of hay per year (@ net reduction of 2.5 tons per acre)
- A combined herd reduction of 3,200 cows
- An annual reduction of \$2,000,000 in livestock sales receipts (@ \$650 per head)
- A loss of 20 full-time and seasonal jobs in the ranching industry

Additional losses would be likely for ranches not included in the survey

The IMPLAN model was used to estimate the total economic losses in Hot Springs County, including the indirect and induced impacts on other sectors, associated with the direct reduction in annual livestock receipts. Those losses, which include a net reduction of \$3.3 million (1.7%) in the county's total annual economic output, a loss of \$645,000 in annual labor income, and a net loss of 32 full and part-time jobs, would be in addition to those impacts directly attributable to the cessation of Merit's Hamilton Dome production operations.

A further economic effect of the loss of produced water from the Hamilton Dome field would be a reduction in value of the agricultural property along Cottonwood Creek; the value of non-irrigated land is substantially less than the value of irrigated land.

## THE SIGNIFICANCE OF HAMILTON DOME PRODUCTION TO WYOMING'S REFINING INDUSTRY

Wyoming is home to five operating petroleum refineries. With a combined daily average refining capacity of 140,386 barrels per day, Wyoming's refineries represent approximately 5% of the nation's domestic petroleum refining capacity. The refineries, their respective operators, location and daily distillation capacity are listed in the following table.

**TABLE 6**  
**WYOMING PETROLEUM REFINERIES, JANUARY 2001**

<b>Refiner</b>	<b>Location</b>	<b>Daily Capacity (barrels per day)</b>
Frontier Refining Inc.	Cheyenne	38,670
Little America Refining Co.	Evansville	24,500
Silver Eagle Refining	Evanston	3,000
Sinclair Oil Corporation	Sinclair	62,000
Wyoming Refining Co.	Newcastle	12,216
<b>STATEWIDE TOTAL</b>		<b>140,386</b>

Source: U.S. Dept. of Energy, Energy Information Administration, 2001.

In 1997, the refining industry produced more than \$1.2 billion in output, accounting for about 40 percent of the total statewide manufacturing output. Direct employment at the refineries totaled more than 700 jobs in 1997, those jobs averaging about \$50,000 in wages and salaries to yield a combined annual payroll of over \$35 million. Many more jobs and additional payrolls were indirectly supported in the pipeline, trucking and other related industries, as well as through consumer expenditures by the households directly and indirectly employed by the industry.

Crude oil from the Hamilton Dome field plays an important role in supporting the state's refining industry. Hamilton Dome crude is transported via pipeline to one of the in-state refineries via pipeline. Production presently averages about 4,600 barrels per day from the Hamilton Dome field. That production represents about 3.3% of the daily feedstock supply needed to sustain the in-state refineries at full production. In reality, Hamilton Dome's production is especially critical because the oil produced from Hamilton Dome is asphaltic crude, the primary source of asphalt and road oil.

Asphalt is a crucial component of highway construction and maintenance, airport runways and aprons and parking lots. As such, it is vital to sustaining Wyoming's economic health and that of surrounding states through its ties to the construction industry and by providing safe, efficient and reliable transportation capacity for residents, commercial traffic and tourists visiting the state. Furthermore, though accounting for only about 2% of the nation's asphalt and road oil refining capacity, asphalt and road oil production in the state has accounted for almost 10% of the nation's production in recent years.

Having a "local" supply of asphaltic crude is, therefore, important to the economic viability of the in-state refining industry. It helps minimize transportation costs and is vital to maintaining the overall operating efficiency and, hence, the cost competitiveness of the existing

*The Economic Significance of the Hamilton Dome Oilfield*

refineries. Without the supply from Hamilton Dome crude, the economic viability of one or more of the refineries could be threatened.

Such a situation arises because petroleum refineries are not standardized industrial facilities, each able to process the same types of feedstock or produce the same outputs. Rather, refineries are built to different specifications with respect to inputs and outputs. The differences are manifest in the production capacity of different production streams.

Across the nation, the asphalt and road oil production capacity accounts for approximately 5.2% of the total refining capacity. In Wyoming, such capacity represents more than 13% of the total statewide refining capacity and 15% when adjusted to reflect the capacity of the three refineries that produce asphalt. Hamilton Dome supplies more than 20% of the crude needed to sustain those operations. While the prospect of eliminating the Hamilton Dome production might appear of limited consequence, the loss of that supply, coupled with uncertainty regarding the availability and costs of alternative supplies, could adversely affect the operating economics and profitability sufficiently to curtail asphalt production or even undermine the long-term economic viability of one or more Wyoming refineries. Such an event would trigger substantial job and income losses in the affected community and significant negative fiscal impacts for the affected local governments and school districts. Increased reliance on out-of-state supplies risks higher costs and increased potential for delays or disruption of deliveries, both of which have broad economic implications for the state.

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