WYOMING STATE GEOLOGICAL SURVEY
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Laramie, Wyoming

Geology — representing the past to provide for the future

MAP SERIES 55
Wyoming
oil and gas map

OIL AND GAS MAP OF WYOMING

by
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2007

EXPLANATION

PREDOMINANT AGE OF RESERVOIR ROCKS

- TERTIARY
- UPPER CRETACEOUS
- LOWER CRETACEOUS
- JURASSIC-TRIASSIC
- PERMIAN-PENNSYLVANIAN
- MISSISSIPPIAN-DEVONIAN-ORDOVICIAN-CAMBRIAN-PRECAMBRIAN

FIELDS

New fields are spotted through December, 2006. Field boundaries are approximate; dashed boundaries through some fields in the Powder River Basin indicate projected extent of overlying coalbed methane development in Tertiary rocks.

Names in green denote fields that primarily produce oil. These fields may produce significant associated natural gas along with the oil in the primary reservoir or noncassociated natural gas from secondary reservoirs.

Names in red denote fields that primarily produce natural gas. These fields may produce significant condensate along with the natural gas in the primary reservoir or oil from secondary reservoirs.

FIELD DESIGNATIONS

(A) Abandoned field
(AR) Air injection project
(CM) Coalbed natural gas
(D) Disposal well or disposal project
(G) Gas injection project
(GD) Gas disposal
(HC) Hydrocarbon (steam) injection project
(HO) Horizontal drilling project
(LP) Low-pressure (low bottom hole gravity fluid in the tubing) project
(HS) Hydrogen sulfide
(S) Gas or LPG storage
(SI) Shut-in field
(W) Waterflood recovery project
(WI) Waterflood project
Note: Three designations appear after the oil or gas field name.

LIST OF OIL AND GAS PRODUCING GROUPS, FORMATIONS, AND MEMBERS

Both abandoned and currently producing formations are shown for each field. On the map, formations from which heavy oil is produced are enclosed in parentheses, e.g., (KI). formations from which significant hydrogen sulfide is produced are enclosed in brackets, e.g., [Mm].

Tertiary
- Twk Knight Formation*
- Twa Almy Formation*
- Tww White River Formation
- Twwc Wind River Formation
- Twwr Wind River Formation
- Tgr Green River Formation
- Tfg Fort Union Formation
- Th Hanna Formation

Upper Cretaceous
- Kl Lance Formation
- Kfm Fox Hills Sandstone
- Kle Lewis Shale
- Kme Medicine Formation
- Kmv Mesaverde Formation
- Kmc Mancos Shale
- Ka Adaville Formation
- Kmt Teapot Sandstone
- Kmp Parkman Sandstone
- Kbl Almond Formation
- Kpa Pine Ridge Sandstone
- Kh Hilight Sandstone
- Kbl Blair Formation
- Kfo Frontier Formation
- Kba Baxter Shale
- Kcm Cody Sandstone
- Kah Sharon Sandstone
- Kc Cody Shale
- Kms Steele Shale
- Kn Niobrara Formation
- Kca Carlile Shale
- Kg Greenhorn Formation
- Kbf Belle Fourche Shale
- Kcd Codell Sandstone
- Kf Frontier Formation
- Kmr Mowry Shale
- Kaa Aspen Shale

Permian
- Pm Minnekahta Limestone
- Pp Phosphoria Formation

Lower Cretaceous
- Knc Newcastle Sandstone
- Kmd Muddy Sandstone
- Kbr Bear River Formation
- Kth Thermopolis Shale
- Kpc Skull Creek Shale
- Kd Dakota Sandstone*
- Kfr Fall River Formation
- Kla Lakota Formation

Cretaceous-Jurassic
- Kjg Stormett Group

Jurassic
- Jm Morrison Formation
- Jtc Twin Creek Limestone
- Js Sundance Formation

Jurassic-Triassic
- JTr Nugget Sandstone

Triassic
- Ta Ankareh Formation
- Tc Thaynes Limestone
- Tkm Chinle Formation
- Tw Woodside Member
- Tc Gartra Member
- Tss Shinarump Member

Permian-Pennsylvanian
- PPp Park City Formation
- PPmt Minnelusa Formation

Pennsylvanian
- P= Morgan Formation
- P= Weber Sandstone
- P= Tensleep Sandstone

Pennsylvanian-Mississippian
- PMa Amsden Formation

Mississippian
- Md Darwin Sandstone
- Mm Madison Limestone

Devonian
- Dj Jefferson Formation
- Dd Darby Formation

Ordovician
- Obh Bighorn Dolomite

Cambrian
- €gv Gros Ventre Formation
- €f Flathead Sandstone

Precambrian
- pC Archean and Proterozoic rocks undivided

*Formation name extended from neighboring states, not formally recognized in Wyoming, or not commonly used in Wyoming.

PIPELINES

Notation includes operator (see abbreviations below) and pipe diameter in inches; proposed pipelines are dashed. Pipeline routes are generalized as much as possible and are only accurate within the scale of this map or maps of smaller scale. Most infield gathering systems are not shown.

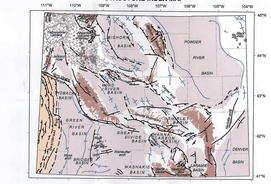
- Crude oil
- Natural gas
- Carbon dioxide
- Refinery or natural gas processing plant products

LIST OF ABBREVIATIONS FOR PIPELINE OPERATORS

- BB — Bighorn Basin
- ADK — Anadarko
- BC — Bitter Creek
- BF — Belle Fourche Pipeline
- BHG — Bison Hub
- BHGG — Big Horn Gas Gathering
- BHP — Black Hills Power Inc.
- BPAW — Bear Paw
- CDT — Colorado Gas Transmission
- CIG — Colorado Interstate Gas
- CIG — Colorado Interstate Gas
- CLFP — Cheyenne Light Fuel & Power
- CMSGG — CMS Gas Gathering
- CONPH — ConocoPhillips
- DCP — DCP Midstream Products Operating LP
- ENW — Energy West Wyoming
- ES — Express Services
- FB — Fronterra
- FMC — FMC Wyoming
- FGG — Fort Union Gas Gathering
- HCG — Horse Creek System
- IR — Interline Resources
- JGG — Jonah Gas Gathering
- KMEP — Kinder Morgan energy Partners
- KMIGT — Kinder Morgan Interstate
- KMLP — Kinder Morgan Operating LP
- KNGS — Kansas-Nebraska Gas Gathering
- KNI — Kansas-Nebraska Interstate
- KPC — Kanah Pipeline Co.
- KR — Kern River
- MAN — Manitou
- MFS — Mountain Fuel Supply
- MS — Mineral Gas
- MGR — Mountain Gas Resources
- MGTC — McGuire Gas Transmission Company
- MSGC — McGuire Interstate Gas Company
- MWTN — Momentum Energy Group LLC.
- NFG — Natural Fuel Gas Company
- NGP — Natural Gas Processors
- NGT — NG Transmissions
- NP — Northwest Pipeline
- NPGG — Northwest Pipeline Gas Gathering
- PDC — Petro Dome
- PGM — Pioneer
- PION — Pioneer
- PNG — Powder Natural Gas
- PR — Powder River (TEXACO)
- QEP — Questar Energy Management
- QPC — Questar Pipeline
- RBP — Red Butte Pipeline
- RGS — Rocky Morgan Energy Partners
- RMPS — Rocky Mountain Pipeline System, LLC.
- TCGG — Thunder Creek Gas Services, LLC.
- WB — Williston Basin
- WGG — Wamsutter Pipeline
- WBI — Williston Basin Interstate
- WFS — Williams Field Services
- WGI — Wind River
- WGG — Wamsutter Gas Gathering
- WGS — Western Gas Resources
- WIC — Wyoming Interstate Company
- WNG — Williams Natural Gas
- WP — Wyoming Pipeline
- WPC — Wyoming Pipeline Co.
- WTC — Western Transmission Corporation

* These pipelines were purchased by Western Gas Resources but the abbreviations, MGTC and MGIC, are retained as the designations for these two subsidiaries of Western Gas Resources.

STRUCTURE INDEX MAP

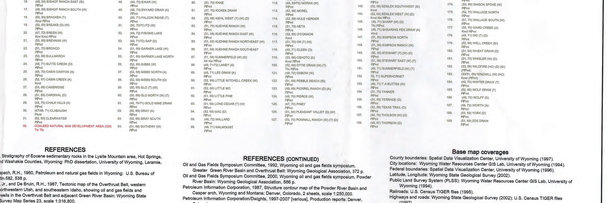


OTHER SYMBOLS AND DESIGNATIONS

- Approximate location of major basin axis.
- Approximate location of anticlinal axis of the Moxa arch.
- Thrust fault(s) defining the eastern boundary of the Overthrust Belt and major thrust faults on northeastern edge of Green River Basin. Dashed where approximately located.
- Quaternary volcanic rocks in the Yellowstone National Park area. Includes Pleistocene-age basalt flows and basaltic-intrusive igneous rocks; rhyolite flows, tuffs, and rhyolitic-intrusive igneous rocks; and alkalic extrusive and intrusive igneous rocks. Modified and adapted from Love and Christiansen (1985).
- Tertiary volcanic rocks of the Absaroka Range. Includes Eocene-age rocks of the Absaroka Volcanic Supergroup and related intrusive igneous rocks. Modified and adapted from Love and Christiansen (1985).
- Oil shale-bearing strata. The shaded area depicts the oil shale occurrence. Oil shale is present in the Eocene Wasatch Formation along the southwestern margin of the Green River Basin (Culbertson, Sheridan, Sweetwater, and Lincoln Counties; Stanley, 1984; Love and Christiansen, 1985); in the Eocene Tatman Formation along the southwestern margin of the Bighorn Basin (J.D. Love, personal communication, 1984); and in the Eocene Wagon Bed Formation in the Lysite Mountain area, Tps. 41-42 N., Rs. 89-92 W. (Bay, 1966).
- Major Wyoming sedimentary basins and Overthrust Belt. Map shows approximate extent of latest Cretaceous and early Tertiary rocks.
- Undifferentiated Precambrian rocks exposed at the surface. Modified and adapted from Love and Christiansen (1985).
- Oil refinery. Notation includes operator and capacity in barrels of oil per day (BOD). Locations are approximate.
- Natural gas processing plant. Notation includes operator and capacity in millions of cubic feet (MMCF) per day. Locations are approximate.

- Volcanic rocks
- Approximate extent of basins (Paleozoone and younger rocks)
- Overthrust Belt
- Precambrian rocks
- Yellowstone calderas
- Tertiary and Quaternary igneous intrusive rocks
- Normal fault, ball and bar on downthrown block
- Fault, displacement unspecified
- Anticline, arrow shows plunge
- Syncline, end arrow shows plunge
- Monocline, end arrow shows plunge
- Thrust fault

KEY TO NUMBERED OIL AND GAS FIELDS IN THE POWDER RIVER BASIN*



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Oil and gas coverages

Field locations and boundaries: De Bruin (1996); Wyoming State Geological Survey (2002); Wyoming (unpublished), using production data from the Wyoming Oil and Gas Conservation Commission (2007).

Coalbed methane fields: Wyoming State Geological Survey (2002) (unpublished); De Bruin, Lyman, and Hallberg (2001); De Bruin, Lyman, Hallberg, and Harrison (2001) and Wyoming Oil and Gas Conservation Commission (2001).

Oil, natural gas, carbon dioxide and product pipelines; natural gas processing plants; and refineries: Wyoming State Geological Survey (2002) (unpublished).

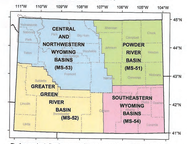
Geology coverages

Basin boundaries, Tertiary and Quaternary volcanic rocks, and Precambrian rocks: modified and adapted from Love and Christiansen (1985).

Oil shale-bearing strata: Culbertson (1964) and Donnell and Christiansen (1985) for Greater Green River Basin; for Tatman Formation in the Bighorn Basin, J.D. Love (personal communication) and for Wagon Bed Formation in Lysite Mountain area, Bay (1966).

Basin axes and boundary thrust faults: De Bruin (1996).

INDEX MAP TO OIL AND GAS FIELD MAPS OF WYOMING



The four quadrant oil and gas maps of Wyoming, compiled at a scale of 1:500,000, form the basis for the statewide map to the left. Map Series (MS) 51, 52, 53 and 54 are available from the Wyoming State Geological Survey as color maps and in digital form.

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SCALE 1:500,000

1inch equals approximately 8 miles (13 kilometers)
1centimeter equals approximately 5 kilometers (3 miles)

10 0 10 20 30 40 50 Miles
10 0 10 20 30 40 50 Kilometers

Map projection: Lambert Conformal Conic
Central Meridian: -107.5
Standard Parallel 1: 33.0
Standard Parallel 2: 45.0
Latitude Of Origin: 41.0
Horizontal Datum: North American Datum of 1983
Ellipsoid: Geodetic Reference System 80
Digital Cartography by Rodney H. De Bruin, Phyllis A. Rantz, Abigail L. Pyhakre, and Phyllis A. Rantz

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Version: 81/05

Base map coverages

County boundaries: Spatial Data Visualization Center, University of Wyoming (1997).
City locations: Wyoming Water Resources Center GIS Lab, University of Wyoming (1994).
Hydrography: Wyoming Water Resources Center, University of Wyoming (1998).
Latitude, Longitude: Wyoming State Geological Survey (2002).
Public Land Survey System (PLSS): Wyoming Water Resources Center GIS Lab, University of Wyoming (1994).
Railroads: U.S. Census TIGER files (1995).
Highways: Wyoming State Geological Survey (2002); U.S. Census TIGER files (1997).
State boundaries: Wyoming State Geological Survey (2002); Spatial Data Visualization Center, University of Wyoming (1995).

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