OFFICIAL USE ONLY

1999

ANNUAL SURVEY OF DOMESTIC OIL AND GAS RESERVES
U.S. DEPARTMENT OF ENERGY
CALENDAR YEAR 1999

Form Approved
OMB No. 1905-0057
Expires 12/31/2000

COVER PAGE

IDENTIFICATION

1. Were you an operator *(see definition of an operator, p.1)* **of one or more oil or gas wells on December 31, 1999?**

(1) ☐ No... *Complete only items 3 through 22 below and return this page with a letter stating when operations ceased and what became of the wells you operated to* **U. S. Department of Energy Washington, DC 20585**

(2) ☐ Yes... *Complete the attached forms and return them to* **U. S. Department of Energy Washington, DC 20585**

2. I.D. Code FOR DOE USE ONLY

						0	0	0	0

If information to the left is incorrect or is missing, enter correct information below.

3. Name

4. Address

5. City | 6. State | 7. Zip Code

8. EIN | Check if Attestor's Social Security Number ☐

9. Name of Contact Person

10. Telephone Number of Contact Person Area Code ( ) _____- _____

PARENT COMPANY IDENTIFICATION

11. Is there a parent company which exercises ultimate control over your company?

(1) ☐ No... Answer 18 thru 22

(2) ☐ Yes... Answer 12 thru 22

12. Name

13. Address

14. City | 15. State | 16. Zip Code

17. Parent Company EIN

18. What is the total number of pages (including this page) submitted in this filing?

ATTESTATION

(This report must be attested to by a responsible official of the company.)
I hereby swear or affirm that I have read the report and am familiar with its contents, and that to the best of my knowledge, information, and belief, the information provided and appended is true and complete.

19. Name of Attestor *(Please print)*

20. Title

21. Signature

22. Date

Title 18 USC 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction

FOR ASSISTANCE CALL 1-800-879-1470

OFFICIAL USE ONLY

1999

ANNUAL SURVEY OF DOMESTIC OIL AND GAS RESERVES

SUMMARY REPORT

Form Approved
OMB No. 1905-0057
Expires 12/2000

(Report All Volumes of Crude Oil and Lease Condensate in Thousands of Barrels [Mbbl];
Report All Volumes of Natural Gas in Millions of Cubic Feet [MMcf] at 14.73 psia and 60°F)

1.0 OPERATOR AND REPORT IDENTIFICATION DATA

1.1 OPERATOR I.D. CODE	1.2 OPERATOR NAME	REPORT DATE	1.3 ORIGINAL	1.4 AMENDED
		12 31 99		

2.0 PRODUCTION AND RESERVES DATA

STATE OR GEOGRAPHIC SUBDIVISION		CRUDE OIL			NATURAL GAS			LEASE CONDENSATE		
		RESERVES	1999 PRODUCTION		RESERVES	1999 PRODUCTION		RESERVES	1999 PRODUCTION	
		Proved Reserves Dec. 31, 1999 (Mbbl) (A)	(From properties for which reserves were Estimated) (Mbbl) (B)	(From properties for which reserves were Not Estimated) (Mbbl) (C)	Proved Reserves Dec. 31, 1999 (MMcf) (D)	(From properties for which reserves were Estimated) (MMcf) (E)	(From properties for which reserves were Not Estimated (MMcf) (F)	Proved Reserves Dec. 31, 1999 (Mbbl) (G)	(From properties for which reserves were Estimated) (Mbbl) (H)	(From properties for which reserves were Not Estimated) (Mbbl) (I)
ALABAMA-ONSHORE	AL									
ALABAMA-STATE OFFSHORE	AL05									
ALASKA-NORTH ONSHORE AND OFFSHORE	AK50									
ALASKA-SOUTH ONSHORE	AK10									
ALASKA-SOUTH STATE OFFSHORE	AK05									
ARIZONA	AZ									
ARKANSAS	AR									
CALIFORNIA-COASTAL REGION ONSHORE	CA50									
CALIFORNIA-LOS ANGELES BASIN ONSHORE	CA90									
CALIFORNIA-SAN JOAQUIN BASIN ONSHORE	CA10									
CALIFORNIA-STATE OFFSHORE	CA05									
COLORADO	CO									
FLORIDA-ONSHORE	FL									
FLORIDA-STATE OFFSHORE	FL05									
ILLINOIS	IL									
INDIANA	IN									
KANSAS	KS									
KENTUCKY	KY									
LOUISIANA-NORTH	LA50									
LOUISIANA-SOUTH ONSHORE	LA10									
LOUISIANA-SOUTH STATE ONSHORE	LA05									
MARYLAND	MD									
MICHIGAN	MI									
MISSISSIPPI-ONSHORE	MS									
MISSISSIPPI-STATE OFFSHORE	MS05									
MISSOURI	MO									
MONTANA	MT									
NEBRASKA	NE									
NEVADA	NV									
NEW MEXICO-EAST	NM10									
NEW MEXICO-WEST	NM50									
NEW YORK	NY									
NORTH DAKOTA	ND									
OHIO	OH									

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1999

ANNUAL SURVEY OF DOMESTIC OIL AND GAS RESERVES

Form Approved
OMB No. 1905-0057
Expires 12/2000

SUMMARY REPORT

(Report All Volumes of Crude Oil and Lease Condensate in Thousands of Barrels [Mbbl];
Report All Volumes of Natural Gas in Millions of Cubic Feet [MMcf] at 14.73 psia and 60°F)

1.0 OPERATOR AND REPORT IDENTIFICATION DATA

1.1 OPERATOR I.D. CODE	1.2 OPERATOR NAME	REPORT DATE	1.3 ORIGINAL	1.4 AMENDED
		12 31 99		

2.0 PRODUCTION AND RESERVES DATA

STATE OR GEOGRAPHIC SUBDIVISION		CRUDE OIL			NATURAL GAS			LEASE CONDENSATE		
		RESERVES	1999 PRODUCTION		RESERVES	1999 PRODUCTION		RESERVES	1999 PRODUCTION	
		Proved Reserves Dec. 31, 1999 (Mbbl) (A)	(From properties for which reserves were Estimated) (Mbbl) (B)	(From properties for which reserves were Not Estimated) (Mbbl) (C)	Proved Reserves Dec. 31, 1999 (MMcf) (D)	(From properties for which reserves were Estimated) (MMcf) (E)	(From properties for which reserves were Not Estimated (MMcf) (F)	Proved Reserves Dec. 31, 1999 (Mbbl) (G)	(From properties for which reserves were Estimated) (Mbbl) (H)	(From properties for which reserves were Not Estimated) (Mbbl) (I)
OKLAHOMA	OK									
PENNSYLVANIA	PA									
SOUTH DAKOTA	SD									
TENNESSEE	TN									
TEXAS-RRC DISTRICT 1	TX10									
TEXAS-RRC DISTRICT 2 ONSHORE	TX20									
TEXAS-RRC DISTRICT 3 ONSHORE	TX30									
TEXAS-RRC DISTRICT 4 ONSHORE	TX40									
TEXAS-RRC DISTRICT 5	TX50									
TEXAS-RRC DISTRICT 6	TX60									
TEXAS-RRC DISTRICT 7B	TX70									
TEXAS-RRC DISTRICT 7C	TX75									
TEXAS-RRC DISTRICT 8	TX80									
TEXAS-RRC DISTRICT 8A	TX85									
TEXAS-RRC DISTRICT 9	TX90									
TEXAS-RRC DISTRICT 10	TX95									
TEXAS-STATE OFFSHORE	TX05									
UTAH	UT									
VIRGINIA	VA									
WEST VIRGINIA	WV									
WYOMING	WY									
FEDERAL OFFSHORE-GULF OF MEXICO (ALABAMA)	AL00									
FEDERAL OFFSHORE-GULF OF MEXICO (FLORIDA)	FL00									
FEDERAL OFFSHORE-GULF OF MEXICO (LOUISIANA)	LA00									
FEDERAL OFFSHORE-GULF OF MEXICO (MISSISSIPPI)	MS00									
FEDERAL OFFSHORE-GULF OF MEXICO (TEXAS)	TX00									
FEDERAL OFFSHORE-PACIFIC (ALASKA)	AK00									
FEDERAL OFFSHORE-PACIFIC (CALIFORNIA)	CA00									
FEDERAL OFFSHORE-PACIFIC (OREGON)	OR00									
OTHER STATE (SPECIFY)										
TOTAL (SUM EACH COLUMN)	US									

ANNUAL SURVEY
OF
DOMESTIC OIL AND GAS RESERVES
FORM EIA-23

Summary Survey Instructions
1999

U.S. Department of Energy

Energy Information Administration

Office of Oil and Gas

U.S. Department of Energy
Energy Information Administration
Office of Oil and Gas

ANNUAL SURVEY OF DOMESTIC OIL AND GAS RESERVES
FORM EIA-23
CALENDAR YEAR 1999

Summary Survey Package

Table of Contents

For information, Assistance, or Additional Forms, Contact the

EIA-23 Coordinator at

1-800-879-1470

8:30 a.m. - 5:00 p.m. CST

FAX (202) 586-1076

www.eia.doe.gov
Energy Information Administration

U.S. DEPARTMENT OF ENERGY
Energy Information Administration
Washington, DC 20585

Form Approved
OMB Number: 1905-0057
Expiration Date: 12/31/00

ANNUAL SURVEY OF DOMESTIC OIL AND GAS RESERVES
FORM EIA-23
CALENDAR YEAR 1999

GENERAL INSTRUCTIONS

A. PURPOSE

The Energy Information Administration (EIA) of the Department of Energy (DOE) seeks, with Form EIA-23, to gather and summarize credible and timely data regarding proved reserves and production of crude oil, natural gas, lease condensate and other related matters. The Government will use the resulting information to develop national and regional estimates of proved reserves of domestic crude oil and natural gas liquids and to facilitate national energy policy decisions.

B. WHO MUST SUBMIT FORM EIA-23

Each operator of domestic oil and/or gas wells as of December 31, 1999 that has been selected **must file** Form EIA-23. The definition of an operator as used in these instructions and forms is as follows:

> **Operator**: The person responsible for the management and day-to-day operation of one or more crude oil and/or natural gas wells on December 31, 1999. The operator is generally a working interest owner or a company under contract to the working interest owner(s). Wells included are those which have proved reserves of crude oil, natural gas and/or lease condensate in the reservoirs associated with them, whether or not they are producing. Wells abandoned during the year are also to be considered "operated" on December 31.

Note that as defined, day-to-day physical operation of a well or wells does not alone qualify a person as the operator. Physical operation may occasionally be divorced from operatorship, such as in the instance of manipulation of swing wells by a gas pipeline company representative or the manipulation and maintenance of wells located on an offshore platform by the platform manager. While the operator's own personnel usually perform such duties, the key factor is that the operator is the person who makes management decisions regarding the well(s) in question on behalf of the owner(s). Such decisions might include, for example, deciding what flow rates can be sustained without reservoir damage; deciding whether well(s) should be shut-in, worked over or abandoned; whether additional or replacement wells should be drilled into a reservoir; whether a waterflood program should be initiated; or whether additional or different production equipment should be installed.

If in a particular instance you are not certain whether you are the operator, contact the EIA-23 Coordinator for assistance in making this determination. If you are **not** the operator (perhaps a former operator or solely a working or royalty interest owner), you should complete and sign the Cover Page and return it to DOE along with a letter stating when operations ceased and what became of the wells you previously operated.

Each operating affiliate of a parent company must file its own Form EIA-23. The parent company must file only if it is an operator itself. If no parent company exercises ultimate control over your company, complete and sign the Cover Page and go to **"C. What Must Be Submitted"**.

C. WHAT MUST BE SUBMITTED

Production data and estimates of proved reserves of crude oil, natural gas and lease condensate are required of each operator selected. This survey segregates selected operators into three categories, according to the annual production of hydrocarbons from wells which they operated on December 31, 1999. The three size categories are as follows:

Category I - Large Operators: Operators who produced 1.5 million barrels or more of crude oil or 15 billion cubic feet or more of natural gas. Production and proved reserves estimates are required from all Category I operators. These operators must file:

- Cover Page/Attestation
- Schedule A - Operated proved reserves, production and related data by fields
- Schedule B - Footnotes

Category II - Intermediate Operators: Operators who produced at least 400,000 barrels of crude oil or 2 billion cubic feet of natural gas but less than Category I operators. Production data are required from all Category II operators. Proved reserves estimates are required only if such data exists in company records. To the extent that these operators do not have proved reserves estimates associated with one or more specific properties, they must report their production data separately according to "production from properties for which reserves were estimated" and "production from properties for which reserves were **not** estimated." These operators must file:

- Cover Page/Attestation
- Schedule A
- Schedule B - Footnotes

Category III - Small Operators: Operators who produced less than the Category II operators. Category III operators are required to file:

- Cover Page/Attestation
- Summary Report

If you have received the Summary Form, but your total operated production is or exceeds 400 thousand barrels (400 Mbbl) of crude oil or 2 billion cubic feet (2,000 MMcf or 2 Bcf) of natural gas, contact the EIA-23 Coordinator to obtain the appropriate form.

If you were **not** an operator of oil and gas wells as of December 31, 1999, you are required to submit:

- Cover Page/Attestation.
- Letter stating when operations ceased and what became of the wells operated.

Filing requirements are based on operator category. Production refers to the total calendar year production from all domestic oil and/or gas wells you operated on December 31, 1999, including wells abandoned during the year.

D. WHEN AND WHERE TO SUBMIT

The completed 1999 forms must be submitted on or before **April 1, 2000**.

Mail completed forms to:

United States Department of Energy
Energy Information Administration, EI-45
Mail Station: 2G-024 Forrestal
1000 Independence Ave., SW
Washington, DC 20585

Fax completed forms to: (202) 586-6323 or 1076

For information concerning requests for extension of time to file or for exception from filing Form EIA-23, contact the EIA-23 Coordinator toll-free at 1-800-879-1470 from 8:30 a.m. to 5:00 p.m. CST.

E. RECORD KEEPING REQUIREMENTS

All records necessary to reconstruct the data reported on this form must be kept at the reporting site or on file and available for a period of three (3) years from the filing due date.

EIA will follow this survey with efforts to validate the data, assessing the accuracy of the resulting information. Respondents may encounter two principal validation activities:

1. Government personnel will make or supervise independent reserves estimates on a sample basis.

2. A sample of operators will be visited to confirm the data submitted.

EIA recognizes that the judgment of geologists and petroleum engineers is required in the reserve estimation process and that, as a result, proved reserves are estimates rather than precise quantitative measurements.

F. SANCTIONS

The timely submission of Form EIA-23 by those required to report is mandatory under Section 13 (b) of the Energy Information Administration Act of 1974 (FEAA) (Public Law 93-275), as amended. Failure to respond may result in a civil penalty of not more than $2,500 for each violation, or a fine of not more than $5,000 for each willful violation. The government may bring a civil action to prohibit reporting violations which may result in a temporary restraining order or a preliminary or permanent injunction without bond. In such civil action, the court may also issue mandatory injunctions commanding any person to comply with these reporting requirements.

G. CONFIDENTIALITY

The Office of Legal Counsel of the Department of Justice concluded on March 20, 1991, that the Federal Energy Administration Act requires the Energy Information Administration to provide company-specific data to the Department of Justice, or to any other Federal agency when requested for official use, which may include enforcement of Federal law. The information contained on this form may also be made available, upon request, to another component of the Department of Energy (DOE); to any Committee of Congress, the General Accounting Office or other Congressional agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order.

The information contained on this form will be kept confidential and not disclosed to the public to the extent that it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. §552, the DOE regulations, 10 C.F.R. §1004.11, implementing the FOIA and the Trade Secrets Act, 18 U.S.C. §1905.

Upon receipt of a request for this information under the FOIA, the DOE shall make a final determination whether the information is exempt from disclosure in accordance with the procedures and criteria provided in the regulations. To assist us in this determination, respondents should demonstrate to the DOE that, for example, their information contains trade secrets or commercial or financial information whose release would be likely to cause substantial harm to their company's competitive position. A letter accompanying the submission that explains (on an element-by-element basis) the reasons why the information would be likely to cause the respondent substantial competitive harm if released to the public would aid in this determination. A new justification does not need to be provided each time information is submitted on the form, if the company has previously submitted a justification for that information and the justification has not changed.

Information on this form is collected for statistical purposes and will not be published by the DOE in individually identifiable form. Information from this form shall be

provided to the United States Department of Interior offices: Minerals Management Service and United States Geological Survey for statistical purposes only, in conducting their resource estimation activities.

H. REPORTING STANDARDS

1. Proved Reserves

Proved reserves of oil and gas as of December 31, 1999 are the estimated quantities of oil and/or gas, which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under current economic and operating conditions.

Oil and gas reservoirs are considered "proved" if economic producibility is supported by actual production or conclusive formation test (drill stem or wire line), or if economic producibility is supported by core analyses and/or electric or other log interpretations. The area of a reservoir considered "proved" includes: (1) that portion delineated by drilling and defined by gas-oil and/or oil-water contacts, if any; and (2) the immediately adjoining portions not yet drilled, but which can be reasonably judged as economically productive on the basis of available geological and engineering data. In the absence of information on fluid contacts, the lowest known structural occurrence of hydrocarbons controls the lower proved limit of the reservoir.

Reserves which can be produced economically through application of improved recovery techniques (such as fluid injection) are included in the "proved" classification when successful testing by a pilot project, or the operation of an installed program in the reservoir, provides support for the engineering analysis on which the project or program was based. For natural gas reserves, an appropriate reduction in the reservoir gas volume shall be made to cover the removal of the liquefiable portions of the gas in lease and/or field separation facilities, and the removal of nonhydrocarbon gases where they occur in sufficient quantity to render the gas unmarketable.

Estimates of proved reserves do not include the following: (1) oil that may become available from known reservoirs but is reported separately as "indicated additional reserves"; (2) oil and/or gas, the recovery of which is subject to reasonable doubt because of uncertainty as to geology, reservoir characteristics or economic factors; (3) oil and/or gas that may occur in undrilled prospects; (4) oil that may be recovered from oil shales, coal, gilsonite and other such sources; and (5) volumes placed in underground storage.

It is not necessary that production, gathering or transportation facilities be installed or operative for a reservoir to be considered proved.

2. Calendar Year Production

Production data are required from all operators. If the actual 1999 production data are not available at the time the Form EIA-23 is prepared, estimate production.

3. Total Operated Basis

All data on the Summary Report (reserves and production) are to be reported on an 8/8ths or Total Operated Basis. When reporting on this basis, **production and reserves data are required for the full year, even though the operator of the wells on December 31, 1999 may not have operated those wells for the entire year. Conversely, wells operated by another company on December 31, 1999 are not to be included.**

EXAMPLES:

Of the total 8/8ths interest, respondent's share is 50 percent and the associated royalty share is 6.25 percent. Respondent operates property. Respondent reports 100 percent of proved reserves and production.

Of the total 8/8ths interest, respondent's share is zero but he operates the property. Respondent reports 100 percent of proved reserves and production.

4. States and Geographic Subdivisions

The determination of which state or geographic subdivision within which to report proved reserves and production data is based on the location of the field(s) containing the oil and/or gas. If a field overlaps two or more states or subdivisions, the proved reserves data must be subdivided into the appropriate geographic components. Refer to the maps in the **Glossary** for the subdivision boundaries in the States of Alaska, California, Louisiana, New Mexico and Texas.

Offshore proved reserves data are required separately for the State and Federal domains. If an offshore field lies on or between disputed boundaries, include all data in the State offshore area.

5. Reporting Units

All volumes are to be reported in the appropriate reporting units as shown below.

a. Crude Oil

All crude oil volumes are to be reported in **thousands of barrels (Mbbl)** (42 U.S. gallons per barrel at atmospheric pressure corrected to 60° Fahrenheit) and excluding basic sediment and water.

b. Natural Gas

All natural gas volumes are to be reported in **millions of cubic feet (MMcf)** at **14.73 psia** and **60° Fahrenheit**.

It is recognized that the operator in many instances has no knowledge of the ultimate reduction of the gas stream produced from his properties which may result from further downstream processing. The operator is requested to report volumes of natural gas which remain after processing through lease and field separation facilities. Volumes of gas that are flared are also considered production.

The EIA obtains data from gas processing plants separately. Gas volumes reported on Form EIA-23 are not to be corrected for liquids removed by these plants. If you do not know if a field facility through which your gas is processed is currently reporting data to the EIA or not, contact the EIA-23 Coordinator to obtain information on those plants which report.

c. Lease Condensate

All lease condensate volumes are to be reported in **thousands of barrels (Mbbl)** (42 U.S. gallons per barrel, at atmospheric pressure corrected to 60° Fahrenheit).

6. Schedule Preparation Standards

All schedules submitted should conform to the following schedule preparation standards:

a. Rounding

When rounding liquid volumes, round 500 barrels and above up to "1" Mbbl, and less than 500 barrels down to "0." For gas volumes, round 500 Mcf and above up to "1" MMcf, and less than 500 Mcf down to "0" MMcf. Blank entries should not be completed with "0".

Volumes should be reported in whole numbers. Volumes containing decimals should be rounded to the nearest whole number.

b. Reproduction

If mechanically reproduced forms are submitted in lieu of originals, they must have been clearly reproduced, must be of identical format and scale (within 3 percent overall dimension) to the provided forms and must have been accurately aligned during the reproduction process. **Computer printouts on other than an exact duplicate of the forms provided are not acceptable.**

c. Character Set

Responses must be typed or printed in black ink. If you are writing the response by hand, print and use all capital letters. Long hand is unacceptable. The form was designed to be completed using a 10-pitch (Standard Pica) typewriter (identical to a standard IBM train, if you are printing your response by computer) although a 12-pitch machine can be used.

SPECIFIC INSTRUCTIONS

I. OPERATOR IDENTIFICATION AND DETAILED REPORT

This information is to be reported on the Cover Page submitted. You are required to enter those items which are incorrect or missing from the preprinted form.

1. COVER PAGE - Operator Identification

Item 1: "Were you an operator..." - Check the appropriate box.

Item 2: This item is for DOE use only.

Items 3 through 7: Identification - Name, Address, City, State and 9-digit ZIP Code. Enter the legal name and address of the operator. If a foreign address, enter city, local equivalent of State name (e.g., province), and country on the second address line.

Item 8: EIN - Enter the operating firm's IRS Employer Identification Number (EIN) if it has one. If the operator does not have an EIN, enter the social security number of the attestor and check the box.

Item 9: Name of Contact Person - This person should be familiar with the data provided and will be the person to whom inquiries will be directed, if necessary.

Item 10: Telephone Number of the Contact Person - Enter the telephone number of the contact person.

Items 11 through 16: Parent Company Identification - Name, Address, City, State and 9-digit ZIP Code. Enter the legal name and address of the parent company, if any, which exercises ultimate control over the respondent. Example: You are Company A, which takes direction from Company B, which in turn takes direction from Company C. Report Company C as the parent company, rather than Company B.

Item 17: Parent Company EIN - Enter the EIN of the parent company, if any.

Item 18: Enter the total number of pages (including the Cover Page but excluding any transmittal letters) of your filing.

Items 19 through 22: Attestation - Enter the name and title of the individual designated by the respondent company to sign the attestation and the date of the signing. This report must be sworn to or affirmed by a responsible officer or the office responsible for regulatory filings.

2. SUMMARY REPORT (Pages 1 of 2 and 2 of 2)

All proved reserves, production, and reserve changes data on the Summary Report are to be reported on a Total Operated Basis (See **Total Operated Basis** in Section H.3 and J), for each area in which the respondent operated oil and/or gas wells on December 31, 1999, including abandonments during the year.

SECTION 1.0: Operator and Report Identification Data

The information in this section is to be reported on both pages 1 and 2 of the Summary Report.

Item 1.1: Operator I.D. Code - If the operator ID from the preprinted form on the Cover Page is incorrect, enter the correct 10-digit number.

Item 1.2: Operator Name - If the name of the operator from the preprinted form on the Cover Page is incorrect, enter the first 35 characters of the operator name. If the name exceeds 35 characters, do not abbreviate, but simply truncate the extra characters from the right.

Item 1.3: Original - Enter an `X' if this is the first submission of this schedule for the report year. Otherwise, leave blank.

Item 1.4: Amended - Enter an `X' if this schedule amends a previously submitted schedule. Otherwise, leave blank.

SECTION 2.0: Production and Reserves Data

Production data and estimates of proved reserves of crude oil, natural gas and lease condensate are required of each operator selected. This survey segregates selected operators into three categories, according to the annual production of hydrocarbons from wells which they operated on December 31, 1999. The three size categories are as follows:

> **Category I - Large Operators:** Operators who produced 1.5 million barrels or more of crude oil or 15 billion cubic feet or more of natural gas or both.
>
> **Category II - Intermediate Operators:** Operators who produced at least 400,000 barrels of crude oil or 2 billion cubic feet of natural gas or both but less than Category I operators.
>
> **Category III - Small Operators:** Operators who produced less than the Category II operators.

Production refers to the total report year production from all domestic oil and/or gas wells you operated on December 31, 1999, including wells abandoned during the year.

Production data are required from all operators. Proved reserves estimates are required from Category III operators only if such data exist in company records. To the extent that Category III operators do not have proved reserves estimates associated with one or more specific properties, they must report separately their production

data according to production from properties for which proved reserves have been estimated (Columns B, E and H), and production from properties for which proved reserves have not been estimated (Columns C, F and I).

Provide data in Columns A through I for each State or geographic subdivision in which you were an operator of oil and/or gas wells as of December 31, 1999. Proved reserves and production for 1999 are to be reported on a **Total Operated Basis**. (See Section H, **Reporting Standards**)

You are not required to complete entries with zeros for state or geographic subdivisions in which you **do not** operate wells. Leave these entries blank.

The determination of which State or geographic subdivision within which to report proved reserves and production data is based on the location of the field(s) containing the oil and/or gas. If a field overlaps two or more States or subdivisions, the proved reserves data must be subdivided into the appropriate geographic components. Refer to the maps in the **Glossary** for the subdivision boundaries in the States of Alaska, California, Louisiana, New Mexico and Texas.

Offshore proved reserves data are required separately for the State and Federal domains. If an offshore field lies on or between disputed boundaries, include all data in the State offshore area.

Specify the two-letter postal codes in the line, labeled "Other States" for all States in which you operate but which were not listed in the preceding lines. Enter the combined production and reserves for all specified "Other States" in Columns A through I.

REPORTING INSTRUCTIONS

December 31, 1999 Proved Reserves Information

Enter estimates of total proved reserves for operated properties if estimates are available. The estimates should be based on your most recent evaluations, adjusted for production through December 31, 1999, and for any other relevant factors. If reserves were depleted during 1999, enter zero. The resulting estimates for reserves should be consistent with the definitions of proved reserves. (See Section J, **Definitions**, page 8)

Column A: Crude Oil Reserves

Column D: Natural Gas Reserves

Column G: Lease Condensate Reserves

Note: If no proved reserves estimates are available, enter "NA" in Column(s) A, D and/or G. Then enter, in appropriate production columns C, F and/or I, the production for 1999 from operated properties for which proved reserves estimates are NOT available in existing company records and were therefore NOT reported in Columns A, D or G.

Annual 1999 Production Information

Production data are required from all operators. If the actual calendar year production data are not available at the time the Form EIA-23 is prepared, estimate production. **Flared and vented gas is also considered production and should be included in the volumes reported**.

Production from Properties for Which Reserves Were Estimated:

Enter the production for 1999 for those operated properties for which proved reserves data were reported in Columns A, D or G.

Column B: Crude Oil Production

Column E: Natural Gas Production

Column H: Lease Condensate Production

Production from Properties for Which Reserves Were NOT Estimated:

Enter the production for 1999 from operated properties for which proved reserves estimates are NOT available in existing company records and were therefore NOT reported in Columns A, D or G.

Column C: Crude Oil Production

Column F: Natural Gas Production

Column I: Lease Condensate Production

U.S. TOTALS

Sum the entries in each column and enter the total on the last line of page 2 - "TOTALS".

GLOSSARY

J. DEFINITIONS

The definitions contained herein have been formulated with reference to the particular purposes to be served by Form EIA-23. They are not necessarily synonymous with the same or similar terms as used in DOE regulations, and are not to be constructed as definitions applicable for any purposes other than the collection and reporting of data on Form EIA-23.

Crude Oil (Excluding Lease Condensate): A mixture of hydrocarbons that exists primarily in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Data on lease condensate are excluded.

When a State regulatory agency specifies a definition of crude oil which differs from that set forth above, the State definition is followed.

Field: An area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, the same individual geological structural feature and/or stratigraphic condition. There may be two or more reservoirs in a field which are separated vertically by intervening impervious strata, or laterally by local geologic barriers, or by both.

Field Separation Facility: A surface installation designed to recover lease condensate from a produced natural gas stream usually originating from more than one lease, and managed by the operator of one or more of these leases. (See **Lease Condensate**)

Gas Processing Plant: A facility designed to recover natural gas liquids from a stream of natural gas which may or may not have passed through lease separators and/or field separation facilities. Another function of natural gas processing plants is to control the quality of the processed natural gas stream. Cycling plants are considered natural gas processing plants.

Lease Condensate: A mixture consisting primarily of pentanes and heavier hydrocarbons which is recovered as a liquid from natural gas in lease or field separation facilities, exclusive of products recovered at natural gas processing plants or facilities, the output of which is reported on Form EIA-64A, "*Annual Report of the Origin of Natural Gas Liquids Production*," and Form EIA-816, "*Monthly Natural Gas Liquids Report*." **See Natural Gas Liquids**.

Lease Separator: A facility installed at the surface for the purpose of (a) separating gases from produced crude oil and water at the temperature and pressure conditions of the separator, and/or (b) separating gases from that portion of the produced natural gas stream which liquefies at the temperature and pressure conditions of the separator.

Natural Gas: A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions. The principal hydrocarbons usually contained in the mixture are methane, ethane, propane, butane, and pentanes. Typical nonhydrocarbon gases which may be present in reservoir natural gas are carbon dioxide, helium, hydrogen sulfide, and nitrogen. Under reservoir conditions, natural gas and the liquefiable portions occur either in a single gaseous phase in the reservoir or in solution with crude oil, and are not distinguishable at the time as separate substances.

Operator: The person responsible for the management and day-to-day operation of one or more crude oil and/or natural gas wells as of December 31, 1999. The operator is generally a working interest owner or a company under contract to the working interest owner(s). Wells included are those which have proved reserves of crude oil, natural gas, and/or lease condensate in the reservoirs associated with them, whether or not they are producing. Wells abandoned during 1999 are also to be considered "operated" as of December 31, 1999. (See **Person, Proved Reserves of Crude Oil, Proved Reserves of Natural Gas, Proved Reserves of Lease Condensate, Report Year**, and **Reservoir**)

Person: An individual, a corporation, a partnership, an association, a joint-stock company, a business trust, or an unincorporated organization.

Production, Crude Oil: The volumes of crude oil which are extracted from oil reservoirs during 1999. These volumes are determined through measurement of the volumes delivered from lease storage tanks, or at the point of custody transfer, with adjustment for (1) net differences between opening and closing lease inventories, and for (2) basic sediment and water. Crude oil used on the lease is considered production.

Production, Lease Condensate: The volume of lease condensate produced during 1999. Lease condensate volumes include only those volumes recovered from lease or field separation facilities. (See **Lease Condensate**)

Production, Natural Gas: The volume of natural gas withdrawn from reservoirs during 1999 less (1) the volume returned to such reservoirs in cycling, repressuring of oil reservoirs and conservation operations; less (2) shrinkage resulting from the removal of lease condensate; and less (3) nonhydrocarbon gases where they occur in sufficient quantity to render the gas unmarketable. Volumes of gas withdrawn from gas storage reservoirs and native gas, which has been transferred to the storage category, are not considered production. Flared and vented gas is also considered production. (This definition differs from that of "Marketed Production" which excludes flared and vented gas.)

Proved Reserves of Crude Oil: Proved reserves of crude oil as of December 31, 1999 are the estimated quantities of all liquids defined as crude oil, which geological and engineering data demonstrate with reasonable certainty to

be recoverable in future years from known reservoirs under existing economic and operating conditions.

Reservoirs are considered proved if economic producibility is supported by actual production or conclusive formation test (drill stem or wire line), or if economic producibility is supported by core analyses and/or electric or other log interpretations. The area of an oil reservoir considered proved includes (1) that portion delineated by drilling and defined by gas-oil and/or oil-water contacts, if any; and (2) the immediately adjoining portions not yet drilled, but which can be reasonably judged as economically productive on the basis of available geological and engineering data. In the absence of information on fluid contacts, the lowest known structural occurrence of hydrocarbons is considered to be the lower proved limit of the reservoir.

Volumes of crude oil placed in underground storage are not considered proved reserves.

Reserves of crude oil which can be produced economically through application of improved recovery techniques (such as fluid injection) are included in the "proved" classification when successful testing by a pilot project, or the operation of an installed program in the reservoir, provides support for the engineering analysis on which the project or program was based.

Estimates of proved crude oil reserves do not include the following: (1) oil that may become available from known reservoirs but is reported separately as "indicated additional reserves"; (2) natural gas liquids (including lease condensate); (3) oil, the recovery of which is subject to reasonable doubt because of uncertainty as to geology, reservoir characteristics, or economic factors; (4) oil that may occur in undrilled prospects; and (5) oil that may be recovered from oil shales, coal, gilsonite, and other such sources. It is not necessary that production, gathering, or transportation facilities be installed or operative for a reservoir to be considered proved.

Proved Reserves of Lease Condensate: Proved reserves of lease condensate as of December 31, 1999 are the volumes of lease condensate expected to be recovered in future years in conjunction with the production of proved reserves of natural gas as of December 31 of the calendar year, based on the recovery efficiency of lease and/or field separation facilities installed as of December 31 of the calendar year. (See **Lease Condensate** and **Proved Reserves of Natural Gas**).

Proved Reserves of Natural Gas: Proved reserves of natural gas as of December 31, 1999 are the estimated quantities which analysis of geologic and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

Reservoirs are considered proved if economic producibility is supported by actual production or conclusive formation test (drill stem or wire line), or if economic producibility is supported by core analyses and/or electric or other log interpretations. The area of a gas reservoir considered proved includes: (1) that portion delineated by drilling and defined by gas-oil and/or gas-water contacts, if any; and (2) the immediately adjoining portions not yet drilled, but which can be reasonably judged as economically productive on the basis of available geological and engineering data. In the absence of information on fluid contacts, the lowest known structural occurrence of hydrocarbons is considered to be the lower proved limit of the reservoir.

Volumes of natural gas placed in underground storage are not considered proved reserves.

For natural gas reserves, wet after lease separation, an appropriate reduction in the reservoir gas volume must be made to cover the removal of the liquefiable portions of the gas in lease and/or field separation facilities and the exclusion of nonhydrocarbon gases where they occur in sufficient quantity to render the gas unmarketable.

It is not necessary that production, gathering, or transportation facilities be installed or operative for a reservoir to be considered proved. It is to be assumed that compression will be initiated if and when economically justified.

Reserves: (See **Proved Reserves**)

Reservoir: A porous and permeable underground formation containing an individual and separate natural accumulation of producible hydrocarbons (oil and/or gas) which is confined by impermeable rock or water barriers and is characterized by a single natural pressure system.

Subdivision: A prescribed portion of a given State or other geographical region defined in this publication for statistical reporting purposes.

Total Operated Basis: The total reserves or production associated with the wells operated by an individual operator. This is also commonly known as the "gross operated" or "8/8ths" basis.