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Analyses of Natural Gases, 1992

By J. E. Hamak and Stella Sigler



UNITED STATES DEPARTMENT OF THE INTERIOR

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**UNITED STATES DEPARTMENT OF THE INTERIOR
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ANALYSES OF NATURAL GASES, 1992

By J. E. Hamak¹ and Stella Sigler²

ABSTRACT

This publication contains analyses and related source data for 162 natural gas samples from 15 states and 4 foreign countries. Of the total samples, 154 were collected during calendar year 1992. The remainder were collected earlier, but releases granting permission to publish were not received until 1992. None of the analyses have been previously published in annual reports. All samples were obtained and analyzed as part of U.S. Department of the Interior, U.S. Bureau of Mines investigations of the occurrences of helium in natural gases of countries with free-market economies. This survey has been conducted since 1917. The analyses published herein were made by mass spectrometer and chromatograph.

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INTRODUCTION

This U.S. Bureau of Mines publication contains analyses and related source data for 162 natural gas samples from 15 states and 4 foreign countries. None of the analyses have been previously published in annual reports. All samples were obtained and analyzed as part of the U.S. Bureau of Mines investigations of the occurrences of helium in natural gases of countries with free-market economies. This survey has been conducted since 1917. The analyses published herein were made by mass spectrometer and chromatograph.

The results of these investigations are published annually to make the information available to the petroleum industry and the general public. Thirty-eight publications have presented the results of 15,416 gas analyses made through 1991. The first three bulletins (1-3)³ contain analyses and related source data on 5,218 gas samples collected from 1917 through 1960; these bulletins have been supplemented annually by information circulars (4-17, 19-24, 26-30, 32-36, 38) containing 10,198 analyses of samples collected since 1960.

In 1976, a compilation of the analyses made prior to 1975 was prepared by the U.S. Bureau of Mines and published by the National Technical Information Service of the U.S. Department of Commerce (18). The 1976 compilation contains 10,562 analyses of gas samples from gas and oil wells and natural gas pipelines in 37 states and 23 foreign countries.

Three other compilations of analyses have been published (25, 31, 37) by the U.S. Bureau of Mines. The first of these was published in 1982 and contained analyses made prior to 1981. The 1982 publication contains

12,554 analyses of gas samples from gas and oil wells and natural gas pipelines in 39 states and 24 foreign countries and includes the analyses from the 1976 publication (25). The second of these compilations was published in 1987 and contains 14,242 analyses made prior to 1986. The samples were taken from wells or pipelines in 40 states and 24 foreign countries (31). In 1991 a compilation was completed as a supplement to the 1987 publication and contains all analyses published from 1986 through 1990. The 1991 publication contains 920 samples from gas and oil wells and pipelines in 26 states and 2 foreign countries (37).

In addition to being in the publications, all analyses and related information published through 1992 are available on a magnetic tape file and 3.5-inch diskettes. The tape and diskettes are available from the National Technical Information Service, Springfield, VA 22161, phone 1-800-553-NTIS; orders should refer to U.S. Bureau of Mines tape PB 92-501337. There are 10 diskettes available; diskette PB 503317 contains all available analyses, 7 other diskettes contain analyses from various regions of the United States, one diskette contains foreign analyses, and one diskette contains historical analyses of samples collected prior to 1951.

The helium survey program is conducted by soliciting natural gas samples throughout the United States and other countries with free-market economies. Without the assistance of the petroleum industry, State and Federal agencies, and many individuals engaged in oil and gas exploration and production, the helium survey in its present scope would not be possible.

GEOLOGIC PROVINCES OF THE UNITED STATES

The tables include geologic province codes so each sample source can be located within a specific geologic province as defined by the Committee on Statistics of Drilling of the American Association of Petroleum Geologists.⁴ These provinces, which are given in the following list and shown in figure 1, are delineated by political

boundaries for convenience and for accommodation of data processing equipment. Not all of the provinces shown are gas-producing areas, so many of the codes are not used in this publication. Since State or Federal ownership is not always known in offshore areas, only one code is used for each State. Owing to the lack of information on the location of wells in Alaska, only one code, 972, is used for all wells.

The following list and figure 1 are taken from the article cited in footnote 4:

³Italic numbers in parentheses refer to items in the list of previous publications at the end of this report.

⁴Meyer, R. F. Geologic Provinces Code Map for Computer Use. AAPG Bull., v. 54, No. 7, July 1970, pp. 1301-1305.

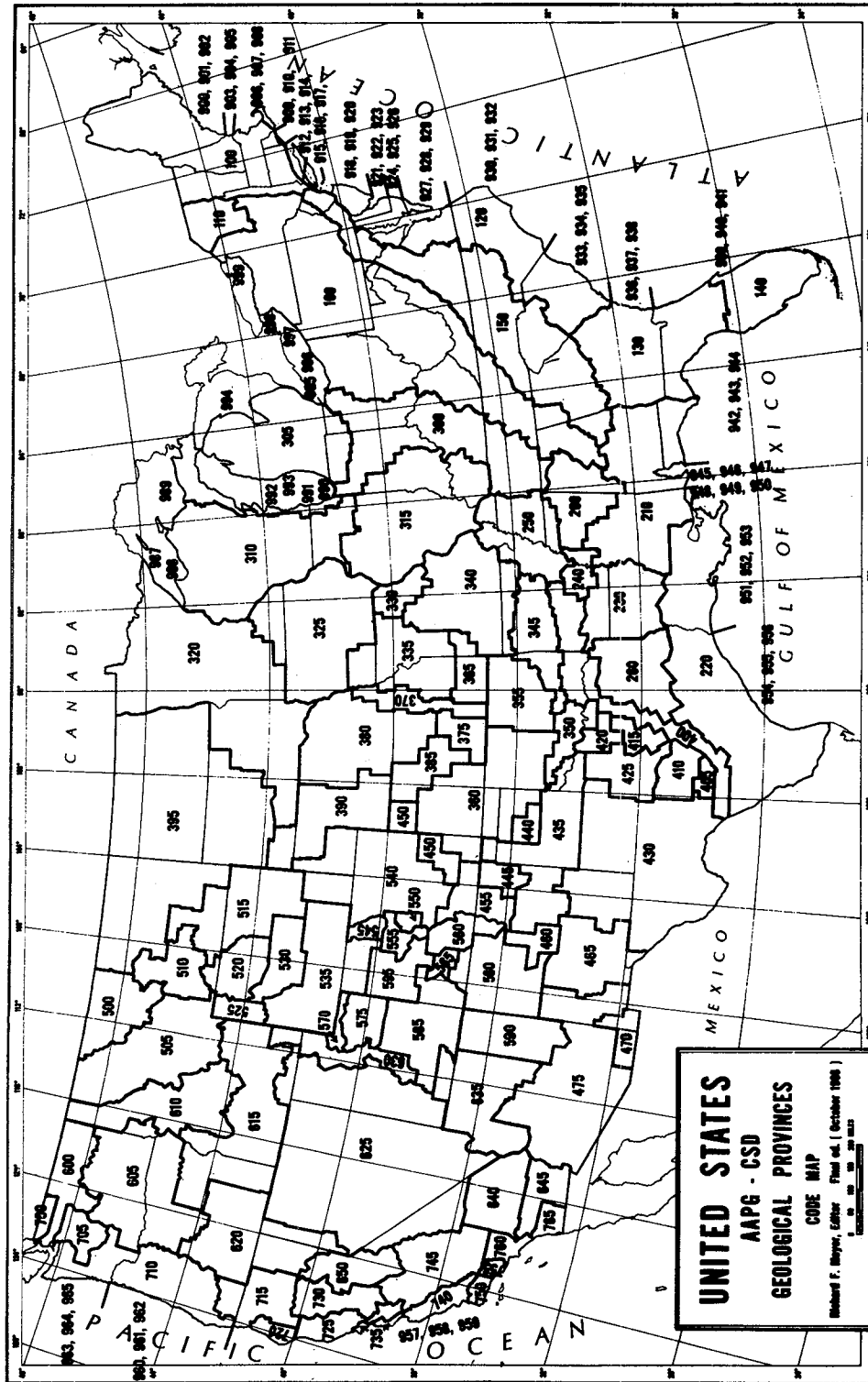


Figure 1.—Geologic provinces of the United States.

Code	Province	Code	Province
100	New England Province	455	Las Vegas-Raton Basin
110	Adirondack Uplift	460	Estancia Basin
120	Atlantic Coast Basin	465	Orogrande Basin
130	South Georgia-North Florida Sedimentary Province	470	Pedregosa Basin
140	South Florida Province	475	Basin-and-Range Province
150	Piedmont-Blue Ridge Province		
160	Appalachian Basin	500	Sweetgrass Arch
200	Black Warrior Basin	505	Montana Folded Belt Province
210	Mid-Gulf Coast Basin	510	Central Montana Uplift
220	Gulf Coast Basin	515	Powder River Basin
230	Arkla Basin	520	Big Horn Basin
240	Desha Basin	525	Yellowstone Province
250	Upper Mississippi Embayment	530	Wind River Basin
260	East Texas Basin	535	Green River Basin
		540	Denver Basin
300	Cincinnati Arch	545	North Park Basin
305	Michigan Basin	550	South Park Basin
310	Wisconsin Arch	555	Eagle Basin
315	Illinois Basin	560	San Luis Basin
320	Sioux Uplift	565	San Juan Mountain Province
325	Iowa Shelf	570	Uinta Uplift
330	Lincoln Anticline	575	Uinta Basin
335	Forest City Basin	580	San Juan Basin
340	Ozark Uplift	585	Paradox Basin
345	Arkoma Basin	590	Black Mesa Basin
350	South Oklahoma Folded Belt Province	595	Piceance Basin
355	Chautauqua Platform		
360	Anadarko Basin	600	Northern Cascade Range-Okanagan Province
365	Cherokee Basin	605	Eastern Columbia Basin
370	Nemaha Anticline	610	Idaho Mountains Province
375	Sedgwick Basin	615	Snake River Basin
380	Salina Basin	620	Southern Oregon Basin
385	Central Kansas Uplift	625	Great Basin Province
390	Chadron Arch	630	Wasatch Uplift
395	Williston Basin	635	Plateau Sedimentary Province
		640	Mojave Basin
400	Ouachita Tectonic Belt Province	645	Salton Basin
405	Kerr Basin	650	Sierra Nevada Province
410	Llano Uplift		
415	Strawn Basin	700	Bellingham Basin
420	Fort Worth Syncline	705	Puget Sound Province
425	Bend Arch	710	Western Columbia Basin
430	Permian Basin	715	Klamath Mountains Province
435	Palo Duro Basin	720	Eel River Basin
440	Amarillo Arch	725	Northern Coast Range Province
445	Sierra Grande Uplift	730	Sacramento Basin
450	Las Animas Arch	735	Santa Cruz Basin

Code	Province	Code	Province
740	Coastal Basins	917	New York Atlantic offshore—Federal
745	San Joaquin Basin	918	New Jersey Atlantic offshore—general
750	Santa Maria Basin	919	New Jersey Atlantic offshore—State
755	Ventura Basin	920	New Jersey Atlantic offshore—Federal
760	Los Angeles Basin	921	Delaware Atlantic offshore—general
765	Capistrano Basin	922	Delaware Atlantic offshore—State
		923	Delaware Atlantic offshore—Federal
800	Heceta Island Area	924	Maryland Atlantic offshore—general
805	Keku Islands Area	925	Maryland Atlantic offshore—State
810	Gulf of Alaska Basin	926	Maryland Atlantic offshore—Federal
815	Copper River Basin	927	Virginia Atlantic offshore—general
820	Cook Inlet Basin	928	Virginia Atlantic offshore—State
830	Kandik Province	929	Virginia Atlantic offshore—Federal
835	Kobuk Province	930	North Carolina Atlantic offshore—general
840	Koyukuk Province	931	North Carolina Atlantic offshore—State
845	Bristol Bay Basin	932	North Carolina Atlantic offshore—Federal
850	Bethel Basin	933	South Carolina Atlantic offshore—general
855	Norton Basin	934	South Carolina Atlantic offshore—State
860	Selawik Basin	935	South Carolina Atlantic offshore—Federal
863	Yukon Flats Basin	936	Georgia Atlantic offshore—general
865	Lower Tanana Basin	937	Georgia Atlantic offshore—State
867	Middle Tanana Basin	938	Georgia Atlantic offshore—Federal
870	Upper Tanana Basin	939	Florida Atlantic offshore—general
873	Galena Basin	940	Florida Atlantic offshore—State
875	Innoko Basin	941	Florida Atlantic offshore—Federal
877	Minchumina Basin	942	Florida Gulf of Mexico offshore—general
880	Holitna Basin	943	Florida Gulf of Mexico offshore—State
885	Arctic Foothills Province	944	Florida Gulf of Mexico offshore—Federal
890	Arctic Slope Basin	945	Alabama Gulf of Mexico offshore—general
		946	Alabama Gulf of Mexico offshore—State
900	Maine Atlantic offshore—general	947	Alabama Gulf of Mexico offshore—Federal
901	Maine Atlantic offshore—State	948	Mississippi Gulf of Mexico offshore—general
902	Maine Atlantic offshore—Federal	949	Mississippi Gulf of Mexico offshore—State
903	New Hampshire Atlantic offshore—general	950	Mississippi Gulf of Mexico offshore—Federal
904	New Hampshire Atlantic offshore—State	951	Louisiana Gulf of Mexico offshore—general
905	New Hampshire Atlantic offshore—Federal	952	Louisiana Gulf of Mexico offshore—State
906	Massachusetts Atlantic offshore—general	953	Louisiana Gulf of Mexico offshore—Federal
907	Massachusetts Atlantic offshore—State	954	Texas Gulf of Mexico offshore—general
908	Massachusetts Atlantic offshore—Federal	955	Texas Gulf of Mexico offshore—State
909	Rhode Island Atlantic offshore—general	956	Texas Gulf of Mexico offshore—Federal
910	Rhode Island Atlantic offshore—State	957	California Pacific offshore—general
911	Rhode Island Atlantic offshore—Federal	958	California Pacific offshore—State
912	Connecticut Atlantic offshore—general	959	California Pacific offshore—Federal
913	Connecticut Atlantic offshore—State	960	Oregon Pacific offshore—general
914	Connecticut Atlantic offshore—Federal	961	Oregon Pacific offshore—State
915	New York Atlantic offshore—general	962	Oregon Pacific offshore—Federal
916	New York Atlantic offshore—State	963	Washington Pacific offshore—general

Code	Province	Code	Province
964	Washington Pacific offshore—State	988	Wisconsin Lake Superior offshore
965	Washington Pacific offshore—Federal	989	Michigan Lake Superior offshore
972	Alaska Arctic offshore—general	990	Indiana Lake Michigan offshore
973	Alaska Arctic offshore—State	991	Illinois Lake Michigan offshore
974	Alaska Arctic offshore—Federal	992	Wisconsin Lake Michigan offshore
975	Alaska Bering Sea offshore—general	993	Michigan Lake Michigan offshore
976	Alaska Bering Sea offshore—State	994	Michigan Lake Huron offshore
977	Alaska Bering Sea offshore—Federal	995	Michigan Lake Erie offshore
978	Alaska Pacific offshore—general	996	Ohio Lake Erie offshore
979	Alaska Pacific offshore—State	997	Pennsylvania Lake Erie offshore
980	Alaska Pacific offshore—Federal	998	New York Lake Erie offshore
987	Minnesota Lake Superior offshore	999	New York Lake Ontario offshore

TABLES

The following tables include the results of analyses and related source data from the gas samples, which are divided into two groups as follows:

Table 1.—Samples from gas and oil wells in the United States.

Table 2.—Samples from pipelines in the United States.

Table 3.—Samples from gas and oil wells in foreign countries.

Table 4.—Samples from pipelines in foreign countries.

The following list indicates the sources of the samples listed in the tables:

Source	Number of samples	Tables	Source	Number of samples	Tables
Arkansas	5	1	Ohio	2	1
California	5	1	Oklahoma	19	1,2
Colorado	11	1	Texas	34	1,2
Kansas	36	1,2	West Virginia	3	1
Kentucky	1	1	Wyoming	11	1
Louisiana	4	1	Australia	1	3
Michigan	1	1	Canada	1	3
Montana	4	1	Poland	5	3
Nebraska	4	1	Thailand	3	4
New Mexico	12	1			

All components of the analyses in the tables are reported to the nearest 0.1 pct, except helium, which is reported to the nearest 0.01 pct. The word "trace" is used to

denote quantities of helium of less than 0.005 pct and quantities of other components of less than 0.05 pct.

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19396	INDEX SAMPLE 19397	INDEX SAMPLE 19377
STATE.....	ARKANSAS	ARKANSAS	ARKANSAS
COUNTY.....	FRANKLIN	FRANKLIN	FRANKLIN
FIELD.....	ALTUS	ALTUS	LONE ELM
WELL NAME.....	GLORYHILL NO. 1-T 1	BANK OF OZARK NO. 1	WILSON NO. 4-21
API.....			03-047-10692
LOCATION.....	SEC. 10, T9N, R26W	SEC. 14, T9N, R26W	SEC. 21, T10N, R28W
OWNER.....	SEECO, INC.	SEECO, INC.	SEECO, INC.
COMPLETED.....	92/04/10	92/03/14	92/01/10
SAMPLED.....	92/06/15	92/06/15	92/04/24
FORMATION.....	PENN-HURST	PENN-ALMA L	MISS-WEDINGTON
GEOLOGIC PROVINCE CODE...	345	345	345
DEPTH, FEET.....	3405	1392	3921
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	NOT GIVEN	1045
OPEN FLOW, MCFD.....	2259	1952	10868
COMPONENT, MOLE PCT			
METHANE.....	98.1	98.3	97.7
ETHANE.....	0.8	0.5	0.8
PROPANE.....	0.1	0.0	0.1
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	0.0	0.0
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	0.5	0.8	0.7
OXYGEN.....	0.0	0.1	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	0.1	0.1	0.5
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.1	0.1
HELIUM.....	0.13	0.14	0.10
HEATING VALUE*.....	1011	1006	1007
SPECIFIC GRAVITY.....	0.562	0.561	0.560

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19410	INDEX SAMPLE 19445	INDEX SAMPLE 19458
STATE.....	ARKANSAS	ARKANSAS	CALIFORNIA
COUNTY.....	FRANKLIN	FRANKLIN	COLUSA
FIELD.....	OZARK	WHITE OAK	WILLIAMS
WELL NAME.....	HUDSPETH NO. 1-32	NICHOLS NO. 6-18	MORROW NO. 1-7
API.....	03-047-10146		
LOCATION.....	SEC. 32, T10N, R26W		
OWNER.....	HAWKINS OIL & GAS, INC.		
COMPLETED.....	92/01/15		
SAMPLED.....	92/07/00		
FORMATION.....	PENN-CASEY & HAMM		
GEOLOGIC PROVINCE CODE...	345		
DEPTH, FEET.....	3280		
WELLHEAD PRESSURE, PSIG...	320		
OPEN FLOW, MCFD.....	1250		
COMPONENT, MOLE PCT			
METHANE.....	97.4	96.8	93.3
ETHANE.....	0.9	0.9	0.6
PROPANE.....	0.1	0.1	0.1
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	TRACE	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.1	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.3	1.3	5.5
OXYGEN.....	0.2	0.2	0.3
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	0.0	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.6	0.1
HELIUM.....	0.09	0.09	0.01
HEATING VALUE*.....	1006	1000	962
SPECIFIC GRAVITY.....	0.567	0.573	0.585

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 7	INDEX 8	INDEX 9
	SAMPLE 19486	SAMPLE 19400	SAMPLE 19390
STATE.....	CALIFORNIA	CALIFORNIA	CALIFORNIA
COUNTY.....	FRESNO	SACRAMENTO	SOLANO
FIELD.....	MERRILL AVENUE	WALNUT GROVE N	TREMONT SW
WELL NAME.....	LECOMPT NO. 1	MCCORMACK NO. 1-24	SOUTH DAVIS NO. 2-5
API.....	0019-231-840		
LOCATION.....	SEC. 24, T11S, R13E		
OWNER.....	UNOCAL CORP.		
COMPLETED.....	89/12/01	SEC. 24, T5N, R4E	SEC. 5, T7N, R2E
SAMPLED.....	92/12/08	NAHAMA & WEAGANT ENERGY CO.	NAHAMA & WEAGANT ENERGY CO.
FORMATION.....	CRET-BLEWETT SAND	92/02/12	91/--/00
GEOLOGIC PROVINCE CODE...	745	92/06/00	92/06/00
DEPTH, FEET.....	6564	NOT GIVEN	NOT GIVEN
WELLHEAD PRESSURE, PSIG...	1985	730	730
OPEN FLOW, MCFD.....	3000	8566	7071
COMPONENT, MOLE PCT		2360	NOT GIVEN
		2200	2500
METHANE.....	74.3	79.4	82.3
ETHANE.....	0.3	0.6	0.6
PROPANE.....	0.1	0.1	0.1
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	0.0	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	24.9	17.6	16.7
OXYGEN.....	0.1	2.1	0.2
ARGON.....	0.0	0.1	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	0.2	0.1
HELIUM.....	0.01	0.00	0.00
HEATING VALUE*.....	761	819	847
SPECIFIC GRAVITY.....	0.664	0.645	0.630

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 10 19389	INDEX SAMPLE 11 19356	INDEX SAMPLE 12 19357
STATE.....	CALIFORNIA	COLORADO	COLORADO
COUNTY.....	YOLO	BACA	BACA
FIELD.....	PUTAH SINK	CAMPO	CAMPO
WELL NAME.....	KEARNEY NO. 1-4	COMANCHE FEDERAL NO. A-3	COMANCHE FEDERAL NO. C-2
API.....		05-009-06496	
LOCATION.....	SEC. 4, T7N, R3E	SEC. 1, T35S, R46W	SEC. 1, T35S, R46W
OWNER.....	NAHAMA & WEAGANT ENERGY CO.	OXY U.S.A., INC.	OXY U.S.A., INC.
COMPLETED.....	91/--/00	91/12/21	92/01/30
SAMPLED.....	92/06/00	92/03/19	92/03/19
FORMATION.....	CRET-WINTERS SAND	PENN-LANSING D	PENN-LANSING D
GEOLOGIC PROVINCE CODE...	730	360	360
DEPTH, FEET.....	7127	3932	3972
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	212	440
OPEN FLOW, MCFD.....	1090	240	40
COMPONENT, MOLE PCT			
METHANE.....	87.4	58.5	44.2
ETHANE.....	0.4	17.3	19.6
PROPANE.....	0.1	10.5	14.4
N-BUTANE.....	0.0	3.1	4.1
ISOBUTANE.....	0.0	2.4	3.3
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.4	0.0
CYCLOPENTANE.....	0.0	0.1	0.1
HEXANES PLUS.....	0.0	0.5	0.6
NITROGEN.....	11.7	6.8	12.8
OXYGEN.....	0.3	0.0	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	0.0	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.3	0.7
HELIUM.....	TRACE	0.08	0.15
HEATING VALUE*.....	894	1408	1458
SPECIFIC GRAVITY.....	0.609	0.881	0.984

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19428	INDEX SAMPLE 19322	INDEX SAMPLE 19292
STATE.....	COLORADO	COLORADO	COLORADO
COUNTY.....	BENT	CHEYENNE	CHEYENNE
FIELD.....	HARNESS	ARAPAHOE	HARKER RANCH
WELL NAME.....	BOURNE NO. 1	ARAPAHOE UNIT NO. 136	HARKER 34-35 NO. 1X
API.....	06032		
LOCATION.....	SEC. 30, T22S, R48W	SEC. 26, T14S, R42W	SEC. 35, T12S, R43W
OWNER.....	GREAT WESTERN DRILLING CO.	UNION PACIFIC RESOURCES CO.	UNION PACIFIC RESOURCES CO.
COMPLETED.....	74/05/30	87/09/22	89/12/01
SAMPLED.....	92/07/23	92/03/02	91/12/09
FORMATION.....	PENN-MORROW	PENN-MORROW	PENN-MORROW
GEOLOGIC PROVINCE CODE...	450	450	450
DEPTH, FEET.....	4602	5119	5240
WELLHEAD PRESSURE, PSIG...	999	178	650
OPEN FLOW, MCFD.....	1400	175	106
COMPONENT, MOLE PCT			
METHANE.....	62.8	25.7	28.0
ETHANE.....	7.1	2.3	2.3
PROPANE.....	2.3	1.7	1.7
N-BUTANE.....	0.0	0.7	1.2
ISOBUTANE.....	0.3	0.3	0.1
N-PENTANE.....	0.0	0.1	0.7
ISOPENTANE.....	0.7	0.3	0.0
CYCLOPENTANE.....	0.0	0.0	0.2
HEXANES PLUS.....	0.0	0.1	0.6
NITROGEN.....	24.0	63.6	61.8
OXYGEN.....	2.0	0.7	0.0
ARGON.....	0.1	0.3	0.2
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.4	2.0	0.8
HELIUM.....	0.33	2.24	2.50
HEATING VALUE*.....	862	402	481
SPECIFIC GRAVITY.....	0.744	0.887	0.888

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19324	INDEX SAMPLE 19425	INDEX SAMPLE 19305
STATE.....	COLORADO	COLORADO	COLORADO
COUNTY.....	CHEYENNE	CHEYENNE	GARFIELD
FIELD.....	MT. PEARL	SORRENTO	HANCOCK
WELL NAME.....	MT. PEARL UNIT NO. 11-35	TANK BATTERY NO. 1	MCLISH FEDERAL NO. 8-1
API.....			05-045-06609
LOCATION.....	SEC. 35, T13S, R48W	SEC. 32, T13S, R49W	SEC. 8, T8S, R98W
OWNER.....	UNION PACIFIC RESOURCES CO.	MULL DRILLING CO., INC.	CELSIUS ENERGY CO.
COMPLETED.....	85/04/00	91/--/00	90/02/12
SAMPLED.....	92/03/02	92/07/17	92/02/04
FORMATION.....	PENN-MORROW	PENN-MORROW	CRET-DAKOTA & CEDAR MOUNTAIN
GEOLOGIC PROVINCE CODE...	450	450	595
DEPTH, FEET.....	5372	5500	8136
WELLHEAD PRESSURE, PSIG...	100	40	2175
OPEN FLOW, MCFD.....	172	NOT GIVEN	500
COMPONENT, MOLE PCT			
METHANE.....	44.5	43.4	95.0
ETHANE.....	9.1	10.7	0.2
PROPANE.....	6.0	6.8	0.0
N-BUTANE.....	1.7	2.4	0.0
ISOBUTANE.....	0.7	0.4	0.0
N-PENTANE.....	0.3	0.1	0.0
ISOPENTANE.....	0.3	1.0	0.0
CYCLOPENTANE.....	TRACE	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	34.5	33.5	0.4
OXYGEN.....	0.4	0.0	TRACE
ARGON.....	0.2	0.2	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.0	0.0	4.4
HELIUM.....	1.31	1.40	0.02
HEATING VALUE.....	881	953	966
SPECIFIC GRAVITY.....	0.860	0.875	0.600

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19323	INDEX SAMPLE 19415	INDEX SAMPLE 19380
STATE.....	COLORADO	COLORADO	COLORADO
COUNTY.....	LA PLATA	MESA	MESA
FIELD.....	SOUTHERN UTE	BAR-X	SHIRE GULCH
WELL NAME.....	SOUTHERN UTE 33-8 NO. 32-3	BAR-X UNITED FEDERAL NO. 18	HORSESHOE CANYON NO. 3-20
API.....	05-067-07021	05-077-08600	
LOCATION.....	T33N, R8W	SEC. 31, T8S, R104W	
OWNER.....	ARCO OIL & GAS CO.	LONE MOUNTAIN PRODUCTION CO.	NOT GIVEN
COMPLETED.....	89/01/04	91/09/26	KOCH EXPLORATION CO.
SAMPLED.....	92/02/25	92/06/01	82/01/13
FORMATION.....	CRET-DAKOTA	CRET-DAKOTA	92/05/07
GEOLOGIC PROVINCE CODE...	580	595	CRET-CORCORAN
DEPTH, FEET.....	8426	2860	595
WELLHEAD PRESSURE, PSIG...	485	NOT GIVEN	3237
OPEN FLOW, MCFD.....	2100	1404	600
COMPONENT, MOLE PCT			700
METHANE.....	91.9	80.3	90.7
ETHANE.....	0.1	3.1	5.0
PROPANE.....	0.0	0.8	1.6
N-BUTANE.....	0.0	0.0	0.2
ISOBUTANE.....	0.0	0.2	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.3	0.5
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.5	11.8	1.0
OXYGEN.....	0.9	2.3	0.1
ARGON.....	0.1	0.2	0.0
HYDROGEN.....	TRACE	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	5.6	0.8	0.8
HELIUM.....	0.01	0.30	0.01
HEATING VALUE*.....	933	908	1080
SPECIFIC GRAVITY.....	0.620	0.656	0.621

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 22 SAMPLE 19438	INDEX 23 SAMPLE 19403	INDEX 24 SAMPLE 19422
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	BARBER	FINNEY	GRANT
FIELD.....	AETNA	HUGOTON	HUGOTON
WELL NAME.....	HENDRIX NO. C-2	CALIHAN GU NO. 2 HI	MCLAUGHLIN G U NO. 3 HI
API.....	15-007-22265	15-055-20989	15-067-21044
LOCATION.....	SEC. 5, T34S, R13W	SEC. 6, T25S, R32W	SEC. 15, T28S, R38W
OWNER.....	MARATHON OIL CO.	AMOCO PRODUCTION CO.	AMOCO PRODUCTION CO.
COMPLETED.....	89/10/25	91/11/05	90/09/05
SAMPLED.....	92/08/26	92/07/09	92/07/08
FORMATION.....	PENN-LANSING A & MISS	PERM-CHASE GROUP	PERM-CHASE GROUP
GEOLOGIC PROVINCE CODE...	375	360	360
DEPTH, FEET.....	4882	2523	2565
WELLHEAD PRESSURE, PSIG...	553	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD.....	225	1500	1500
COMPONENT, MOLE PCT			
METHANE.....	85.5	62.1	72.7
ETHANE.....	4.5	2.9	6.3
PROPANE.....	2.0	1.4	3.8
N-BUTANE.....	0.6	0.1	0.7
ISOBUTANE.....	0.1	0.0	0.3
N-PENTANE.....	0.2	0.0	0.0
ISOPENTANE.....	0.3	0.7	1.4
CYCLOPENTANE.....	0.1	0.0	0.0
HEXANES PLUS.....	0.2	0.0	0.0
NITROGEN.....	6.1	31.7	14.3
OXYGEN.....	0.0	0.4	0.0
ARGON.....	0.0	0.1	0.1
HYDROGEN.....	TRACE	0.0	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.1	0.0
HELIUM.....	0.23	0.66	0.38
HEATING VALUE*.....	1057	746	1040
SPECIFIC GRAVITY.....	0.648	0.728	0.723

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19424	INDEX SAMPLE 19293	INDEX SAMPLE 19294
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	GRANT	HASKELL	HASKELL
FIELD.....	HUGOTON	HUGOTON	HUGOTON
WELL NAME.....	HOHNER B NO. 3 HI	EUBANK NO. A-1	F. ATKINS NO. 2
API.....	15-067-21073	15-081-20678	15-081-20669
LOCATION.....	SEC. 23, T27S, R38W	SEC. 28, T28S, R34W	SEC. 4, T27S, R33W
OWNER.....	AMOCO PRODUCTION CO.	OXY U.S.A., INC.	OXY U.S.A., INC.
COMPLETED.....	91/01/15	91/04/25	91/04/09
SAMPLED.....	92/07/08	91/12/18	91/12/18
FORMATION.....	PERM-CHASE GROUP	PERM-CHASE GROUP	PERM-CHASE GROUP
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	2314	2574	2590
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	183	191
OPEN FLOW, MCFD.....	1500	2036	1760
COMPONENT, MOLE PCT			
METHANE.....	72.5	72.0	71.9
ETHANE.....	6.1	5.7	4.3
PROPANE.....	3.6	3.4	2.4
N-BUTANE.....	0.7	0.8	0.4
ISOBUTANE.....	0.1	0.4	0.4
N-PENTANE.....	0.0	0.1	0.0
ISOPENTANE.....	1.4	0.3	0.1
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.1	0.0
NITROGEN.....	15.0	16.7	19.6
OXYGEN.....	0.2	0.0	0.3
ARGON.....	0.1	0.1	0.1
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	TRACE	TRACE	0.1
HELIUM.....	0.37	0.45	0.51
HEATING VALUE*.....	1022	980	897
SPECIFIC GRAVITY.....	0.721	0.712	0.695

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19302	INDEX SAMPLE 19291	INDEX SAMPLE 19360
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	KEARNY	KIOWA	PAWNEE
FIELD.....	HUGOTON	WESTLAND	WILDCAT
WELL NAME.....	MILLER 1-1A-X	NEIER "A" NO. 1	PFFENNINGER NO. 8-10
API.....	15-093-20976		15-145-21379
LOCATION.....	SEC. 9, T25S, R36W	SEC. 8, R29S, T20W	SEC. 8, T20S, R19W
OWNER.....	PLAINS PETROLEUM OPERATING CO.	J. MARK RICHARDSON	KODIAK PETROLEUM, INC.
COMPLETED.....	89/08/03	90/01/01	91/12/02
SAMPLED.....	92/01/30	91/12/03	92/03/23
FORMATION.....	PERM-CHASE GROUP	MISS---	PERM-CHASE GROUP
GEOLOGIC PROVINCE CODE.....	360	360	385
DEPTH, FEET.....	2355	5088	2302
WELLHEAD PRESSURE, PSIG....	130	600	620
OPEN FLOW, MCFD.....	4805	3000	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	72.2	70.4	56.6
ETHANE.....	6.0	3.4	0.3
PROPANE.....	4.3	1.4	TRACE
N-BUTANE.....	0.0	0.4	0.0
ISOBUTANE.....	1.6	0.1	0.0
N-PENTANE.....	0.0	0.2	0.0
ISOPENTANE.....	0.0	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.2	0.0
NITROGEN.....	15.3	21.9	41.4
OXYGEN.....	0.2	0.8	0.3
ARGON.....	0.0	0.1	0.1
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.0	0.5	0.1
HELIUM.....	0.41	0.77	1.23
HEATING VALUE.....	1008	844	580
SPECIFIC GRAVITY.....	0.716	0.698	0.725

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19361	INDEX SAMPLE 19362	INDEX SAMPLE 19296
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	PAWNEE	PAWNEE	RENO
FIELD.....	WILDCAT	WILDCAT	BREIDENSTEIN
WELL NAME.....	WEIDE NO. 25-1	BARTONEK NO. 20-13	BREIDENSTEIN NO. 1
API.....	15-145-21386		15-155-21167
LOCATION.....	SEC. 25, T20S, R20W	SEC. 20, T20S, R19W	SEC. 36, T24S, R9W
OWNER.....	KODIAK PETROLEUM, INC.	KODIAK PETROLEUM, INC.	CENTRAL ENERGY CORP.
COMPLETED.....	91/12/13	91/09/11	91/09/03
SAMPLED.....	92/03/23	92/03/23	91/12/06
FORMATION.....	PERM-CHASE GROUP	PERM-CHASE GROUP	MISS----
GEOLOGIC PROVINCE CODE...	385	385	375
DEPTH, FEET.....	2394	2327	3820
WELLHEAD PRESSURE, PSIG...	650	620	1073
OPEN FLOW, MCFD.....	NOT GIVEN	NOT GIVEN	1000
COMPONENT, MOLE PCT			
METHANE.....	62.1	61.2	79.1
ETHANE.....	0.4	0.4	6.4
PROPANE.....	0.1	0.1	3.3
N-BUTANE.....	0.0	0.0	0.8
ISOBUTANE.....	TRACE	TRACE	0.4
N-PENTANE.....	0.0	0.0	0.2
ISOPENTANE.....	0.0	0.0	0.2
CYCLOPENTANE.....	0.0	0.0	TRACE
HEXANES PLUS.....	0.0	0.0	0.1
NITROGEN.....	35.8	36.6	8.7
OXYGEN.....	0.3	0.5	TRACE
ARGON.....	0.1	0.1	TRACE
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.1	0.0
HELIUM.....	1.08	1.16	0.85
HEATING VALUE*.....	640	629	1063
SPECIFIC GRAVITY.....	0.704	0.708	0.680

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19382	INDEX SAMPLE 19383	INDEX SAMPLE 19372
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	SEWARD	STAFFORD	STAFFORD
FIELD.....	CUTTER E	RICHARDSON	ZENITH-PEACE CREEK
WELL NAME.....	BERLIER NO. A-1	MURPHY NO. 2-32	HAYES NO. 1
API.....	15-175-21013	15-185-20924	15-185-22734
LOCATION.....	SEC. 4, T31S, R34W	SEC. 32, T22S, R11W	SEC. 24, T24S, R11W
OWNER.....	ANADARKO PETROLEUM CORP.	PARRISH CORP.	HONEY OIL CO., INC.
COMPLETED.....	88/04/07	90/11/15	90/11/27
SAMPLED.....	92/05/13	92/05/12	92/04/18
FORMATION.....	PENN-MORROW	PENN-LANSING&KC, ORDO-SIMPSON	MISS---
GEOLOGIC PROVINCE CODE.....	360	385	385
DEPTH, FEET.....	5231	3311	3740
WELLHEAD PRESSURE, PSIG....	NOT GIVEN	200	12
OPEN FLOW, MCFD.....	2000	7500	8000
COMPONENT, MOLE PCT			
METHANE.....	68.4	58.6	66.4
ETHANE.....	8.9	11.8	3.1
PROPANE.....	6.7	8.8	1.4
N-BUTANE.....	1.5	2.6	0.3
ISOBUTANE.....	0.6	1.0	0.2
N-PENTANE.....	0.0	0.3	0.0
ISOPENTANE.....	1.2	1.2	0.6
CYCLOPENTANE.....	0.1	0.1	0.0
HEXANES PLUS.....	0.1	0.3	0.0
NITROGEN.....	12.2	14.8	24.1
OXYGEN.....	0.1	0.1	2.4
ARGON.....	0.0	0.0	0.2
HYDROGEN.....	TRACE	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.1	0.0
HELIUM.....	0.11	0.43	1.26
HEATING VALUE*.....	1154	1237	807
SPECIFIC GRAVITY.....	0.776	0.854	0.712

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 37	INDEX 38	INDEX 39
	SAMPLE 19441	SAMPLE 19402	SAMPLE 19404
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	STANTON	STANTON	STANTON
FIELD.....	BEAUCHAMP	HUGOTON	HUGOTON
WELL NAME.....	NELLIE NO. 1	JONES GU NO. A-3	JULIAN G U "D" NO. 3 HI
API.....	15-187-20456	15-187-20611	15-187-20617
LOCATION.....	SEC. 16, T30S, R41W	SEC. 15, T29S, R39W	SEC. 2, T30S, R39W
OWNER.....	BEREXCO, INC.	AMOCO PRODUCTION CO.	AMOCO PRODUCTION CO.
COMPLETED.....	89/09/14	91/12/13	92/01/07
SAMPLED.....	92/08/25	92/07/08	92/07/08
FORMATION.....	PENN-MORROW	PERM-CHASE GROUP	PERM-CHASE GROUP
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	5093	2278	2297
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD.....	1600	1500	1500
COMPONENT, MOLE PCT			
METHANE.....	65.2	68.9	71.0
ETHANE.....	5.4	5.9	5.6
PROPANE.....	6.4	3.6	3.1
N-BUTANE.....	1.4	0.6	0.3
ISOBUTANE.....	1.0	0.3	TRACE
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	1.0	1.3	1.4
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	18.9	18.7	17.5
OXYGEN.....	0.1	0.2	0.6
ARGON.....	0.0	0.1	0.1
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.1	0.1
HELIUM.....	0.25	0.42	0.40
HEATING VALUE*.....	1053	983	968
SPECIFIC GRAVITY.....	0.784	0.736	0.720

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19421	INDEX SAMPLE 19423	INDEX SAMPLE 19314
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	STANTON	STANTON	STEVENS
FIELD.....	HUGOTON	HUGOTON	BUCKSNORT
WELL NAME.....	JOHNSON G U "A" NO. 3 HI	JULIAN G U "B" NO. 3 HI	METTS NO. A-2
API.....	15-187-20620	15-187-20609	15-189-21336
LOCATION.....	SEC. 12, T30S, R39W	SEC. 1, T29S, R40W	SEC. 12, T32S, R38W
OWNER.....	AMOCO PRODUCTION CO.	AMOCO PRODUCTION CO.	ANADARKO PETROLEUM CORP.
COMPLETED.....	91/12/16	91/12/10	89/07/28
SAMPLED.....	92/07/08	92/01/06	92/02/25
FORMATION.....	PERM-CHASE GROUP	PERM-CHASE GROUP	PENN-MORROW L
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	2330	2258	5932
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	NOT GIVEN	1037
OPEN FLOW, MCFD.....	1500	1500	311
COMPONENT, MOLE PCT			
METHANE.....	71.0	69.6	86.6
ETHANE.....	6.3	7.0	4.5
PROPANE.....	2.8	3.8	2.6
N-BUTANE.....	0.6	1.2	0.7
ISOBUTANE.....	0.2	0.3	0.4
N-PENTANE.....	0.0	TRACE	0.3
ISOPENTANE.....	0.5	0.7	0.1
CYCLOPENTANE.....	0.0	TRACE	0.1
HEXANES PLUS.....	0.0	0.1	0.2
NITROGEN.....	17.1	16.7	4.1
OXYGEN.....	1.2	0.1	0.0
ARGON.....	0.0	TRACE	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.0	0.1	0.2
HELIUM.....	0.40	0.44	0.33
HEATING VALUE*.....	949	1012	1088
SPECIFIC GRAVITY.....	0.709	0.734	0.650

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 43	INDEX 44	INDEX 45
	SAMPLE 19395	SAMPLE 19472	SAMPLE 19331
STATE.....	KANSAS	KENTUCKY	LOUISIANA
COUNTY.....	STEVENS	PIKE	DE SOTO
FIELD.....	HUGOTON	BIG SANDY	LOGANSPOUT
WELL NAME.....	GREGORY NO. A-2H	TIERNEY LAND CO. NO. 52	WILLIAMS NO. 1
API.....	15-189-21521	16-195-83171	17-031-22795
LOCATION.....	SEC. 17, T33S, R38W	CARTER COORDINATE 2-M-87	SEC. 26, T12N, R16W
OWNER.....	ANADARKO PETROLEUM CORP.	ASHLAND EXPLORATION, INC.	TEX/CON OIL & GAS CO.
COMPLETED.....	92/02/22	92/05/07	90/12/14
SAMPLED.....	92/06/11	92/11/00	92/03/16
FORMATION.....	PERM-CHASE GROUP	MISS-MAXTON	CRET-HOSSTON
GEOLOGIC PROVINCE CODE...	360	160	230
DEPTH, FEET.....	2496	1750	8465
WELLHEAD PRESSURE, PSIG...	110	610	2500
OPEN FLOW, MCFD.....	1250	1400	1000
COMPONENT, MOLE PCT			
METHANE.....	66.4	90.6	94.6
ETHANE.....	5.1	3.4	1.8
PROPANE.....	2.7	1.4	0.2
N-BUTANE.....	0.3	0.2	0.0
ISOBUTANE.....	0.1	0.1	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	1.2	0.4	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	21.3	3.4	2.2
OXYGEN.....	2.5	0.2	0.0
ARGON.....	0.2	0.0	0.0
HYDROGEN.....	TRACE	0.1	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.0	1.1
HELIUM.....	0.30	0.19	0.02
HEATING VALUE*	895	1042	998
SPECIFIC GRAVITY.....	0.737	0.612	0.586

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19300	INDEX SAMPLE 19489	INDEX SAMPLE 19453
STATE.....	LOUISIANA	LOUISIANA	LOUISIANA
PARISH.....	LAFOURCHE	TERREBONNE	VERMILION
FIELD.....	MELODIA	OUISKI BAYOU	COSSINADE
WELL NAME.....	LEDET NO. 4	T. GOLDSBY NO. 1	BEULAH S. SONNIER NO. 1
API.....		17-109-23290	
LOCATION.....	SEC. 98, T15S, R17E	SEC. 70, T17S, R16E	SEC. 27, T11S, R2E
OWNER.....	BELLWETHER EXPLORATION CO.	KELLEY OIL CORP.	LOUISIANA LAND & EXPLORATION C
COMPLETED.....	91/--/00	92/06/01	92/06/01
SAMPLED.....	92/01/00	92/11/00	92/10/05
FORMATION.....	MIOC-PLATER B	MIOC-KK SAND	OLIG-CAMERINA
GEOLOGIC PROVINCE CODE...	220	220	220
DEPTH, FEET.....	13606	14967	14342
WELLHEAD PRESSURE, PSIG...	6700	9120	10200
OPEN FLOW, MCFD.....	1500	NOT GIVEN	2500
COMPONENT, MOLE PCT			
METHANE.....	90.8	89.9	95.7
ETHANE.....	3.9	4.0	1.7
PROPANE.....	2.1	1.0	0.4
N-BUTANE.....	0.3	1.0	0.1
ISOBUTANE.....	1.0	0.0	0.1
N-PENTANE.....	0.1	1.2	0.0
ISOPENTANE.....	0.1	0.6	0.1
CYCLOPENTANE.....	0.1	0.3	0.1
HEXANES PLUS.....	0.2	0.0	0.0
NITROGEN.....	0.7	0.6	0.2
OXYGEN.....	0.0	0.1	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.6	1.3	1.6
HELIUM.....	TRACE	TRACE	TRACE
HEATING VALUE*.....	1110	1132	1025
SPECIFIC GRAVITY.....	0.634	0.656	0.590

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 49 SAMPLE 19477	INDEX 50 SAMPLE 19463	INDEX 51 SAMPLE 19464
STATE.....	MICHIGAN	MONTANA	MONTANA
COUNTY.....	OSCODA	BLAINE	HILL
FIELD.....	CHURCH LAKE/WAGNER LAKE	TIGER RIDGE	SHERARD
WELL NAME.....	BIG CREEK NO. 2-15	S-B RANCH NO. 26-9	BOGESS NO. 2-2
API.....		25-005-22561	25-005-22575
LOCATION.....	SEC. 15, T5N, R2E	SEC. 26, T31N, R18E	SEC. 2, T25N, R17E
OWNER.....	ORYX ENERGY CO.	NORFOLK ENERGY, INC.	NORFOLK ENERGY, INC.
COMPLETED.....	92/--/00	91/06/26	91/09/25
SAMPLED.....	92/11/11	92/10/15	92/10/20
FORMATION.....	ORDO-PRAIRIE DU CHIEN	CRET-EAGLE	CRET-EAGLE
GEOLOGIC PROVINCE CODE...	305	395	500
DEPTH, FEET.....	10160	1397	1799
WELLHEAD PRESSURE, PSIG...	4358	435	456
OPEN FLOW, MCFD.....	5489	600	1300
COMPONENT, MOLE PCT			
METHANE.....	84.4	91.4	93.0
ETHANE.....	6.6	0.5	0.3
PROPANE.....	2.0	0.1	0.1
N-BUTANE.....	0.9	0.0	0.0
ISOBUTANE.....	0.4	0.1	0.0
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.6	0.1	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.2	0.0	0.0
NITROGEN.....	4.4	6.7	6.4
OXYGEN.....	0.2	0.8	0.0
ARGON.....	0.1	0.1	0.0
HYDROGEN.....	TRACE	0.0	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	0.2	0.1
HELIUM.....	0.04	0.12	0.11
HEATING VALUE*.....	1101	941	951
SPECIFIC GRAVITY.....	0.664	0.594	0.584

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 52 19462	INDEX SAMPLE 53 19330	INDEX SAMPLE 54 19407
STATE.....	MONTANA	MONTANA	NEBRASKA
COUNTY.....	HILL	PHILLIPS	CHEYENNE
FIELD.....	TIGER RIDGE	BOWDOIN	NOT GIVEN
WELL NAME.....	HILLBRANT NO. 3-12	LORING NO. 0461-4	JESSON NO. 20-4A
API.....	25-041-22487	25-071-22147	
LOCATION.....	SEC. 3, T30N, R15E	SEC. 4, T36N, R31E	SEC. 20, T16N, R47W
OWNER.....	NORFOLK ENERGY, INC.	FREEMONT-MCMORAN OIL & GAS CO.	SNYDER OIL CO.
COMPLETED.....	92/06/18	91/09/08	92/--/00
SAMPLED.....	92/10/15	92/03/05	92/06/11
FORMATION.....	CRET-EAGLE	CRET-BOWDOIN	CRET-NIOBRARA
GEOLOGIC PROVINCE CODE...	500	395	540
DEPTH, FEET.....	1332	1474	3241
WELLHEAD PRESSURE, PSIG...	345	388	NOT GIVEN
OPEN FLOW, MCFD.....	1100	1251	160
COMPONENT, MOLE PCT			
METHANE.....	94.9	92.2	87.0
ETHANE.....	0.4	0.3	1.0
PROPANE.....	0.1	0.0	0.5
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	0.0	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.0	0.1
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	4.5	7.0	9.3
OXYGEN.....	0.0	0.1	1.2
ARGON.....	0.0	0.0	0.1
HYDROGEN.....	TRACE	0.0	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.3	0.5
HELIUM.....	0.08	0.07	0.16
HEATING VALUE*.....	971	940	922
SPECIFIC GRAVITY.....	0.577	0.588	0.618

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 55 19405	INDEX SAMPLE 56 19406	INDEX SAMPLE 57 19408
STATE.....	NEBRASKA	NEBRASKA	NEBRASKA
COUNTY.....	CHEYENNE	CHEYENNE	CHEYENNE
FIELD.....	WEYERTS	WEYERTS	WEYERTS
WELL NAME.....	WEYERTS NO. 19-2A	JESSON NO. 20-8A	MILLER NO. 17-14A
API.....			
LOCATION.....	SEC. 19, T16N, R47W	SEC. 20, T16N, R47W	SEC. 17, T16N, R47W
OWNER.....	SNYDER OIL CO.	SNYDER OIL CO.	SNYDER OIL CO.
COMPLETED.....	92/--/00	92/--/00	91/12/00
SAMPLED.....	92/06/11	92/06/11	92/06/11
FORMATION.....	CRET-NIOBRARA	CRET-NIOBRARA	CRET-NIOBRARA
GEOLOGIC PROVINCE CODE.....	540	540	540
DEPTH, FEET.....	3418	3405	3399
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	NOT GIVEN	300
OPEN FLOW, MCFD.....	135	120	100
COMPONENT, MOLE PCT			
METHANE.....	86.2	88.3	95.2
ETHANE.....	1.1	1.1	1.0
PROPANE.....	0.5	0.6	0.4
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.2	0.1	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.1	0.3	0.1
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	9.8	8.2	2.6
OXYGEN.....	1.5	0.7	0.0
ARGON.....	0.1	0.1	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.5	0.5	0.5
HELIUM.....	0.15	0.15	0.17
HEATING VALUE*.....	914	945	999
SPECIFIC GRAVITY.....	0.622	0.615	0.582

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19469	INDEX SAMPLE 19447	INDEX SAMPLE 19327
STATE.....	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY.....	CHAVES	EDDY	EDDY
FIELD.....	WILDCAT	BANDANA POINT	CATCLAW DRAW
WELL NAME.....	PUFFER STATE NO. 1	AZOTEA "AZT" FEDERAL NO. 1	LAKE SHORE XH NO. 1
API.....	E0-005-62813		
LOCATION.....	SEC. 24, T8S, R27E	SEC. 9, T23S, R24E	SEC. 11, T21S, R26E
OWNER.....	BHP PETROLEUM (AMERICAS), INC.	YATES PETROLEUM CORP.	YATES PETROLEUM CORP.
COMPLETED.....	91/02/19	92/--/00	91/02/00
SAMPLED.....	92/11/03	92/09/17	92/03/05
FORMATION.....	ORDO-ELLENBURGER	PENN-MORROW	PENN-MORROW
GEOLOGIC PROVINCE CODE...	430	430	430
DEPTH, FEET.....	6634	10800	10967
WELLHEAD PRESSURE, PSIG...	1700	200	NOT GIVEN
OPEN FLOW, MCFD.....	7900	1650	1416
COMPONENT, MOLE PCT			
METHANE.....	85.4	93.3	83.9
ETHANE.....	4.1	2.7	3.7
PROPANE.....	1.5	0.4	1.3
N-BUTANE.....	0.3	0.1	0.2
ISOBUTANE.....	0.1	0.1	0.3
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.3	0.3	0.2
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	6.5	1.7	7.5
OXYGEN.....	0.3	0.4	2.2
ARGON.....	0.1	0.0	0.1
HYDROGEN.....	TRACE	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.2	0.8	0.6
HELIUM.....	0.23	0.03	0.04
HEATING VALUE*.....	1004	1026	974
SPECIFIC GRAVITY.....	0.642	0.599	0.646

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 61 SAMPLE 19326	INDEX 62 SAMPLE 19364	INDEX 63 SAMPLE 19321
STATE.....	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY.....	EDDY	EDDY	LEA
FIELD.....	DAGGER DRAW	HOAG TANK	TEAGUE N
WELL NAME.....	ALGERITA AHR STATE NO. 1	OAKASON "NV" FEDERAL NO. 2	B. F. HARRISON "B" NO. 5
API.....	30-015-26383		30-025-31201
LOCATION.....	SEC. 16, T10S, R24E	SEC. 27, T19S, R34E	SEC. 9, T23S, R37E
OWNER.....	YATES PETROLEUM CORP.	YATES PETROLEUM CORP.	TEXACO U.S.A.
COMPLETED.....	90/11/26	81/02/25	91/10/18
SAMPLED.....	92/03/05	92/03/31	92/03/00
FORMATION.....	PENN-CANYON	PENN-ATOKA	PERM-BLINEBRY
GEOLOGIC PROVINCE CODE...	430	430	430
DEPTH, FEET.....	7438	8854	5605
WELLHEAD PRESSURE, PSIG...	1690	675	2011
OPEN FLOW, MCFD.....	3034	1460	14110
COMPONENT, MOLE PCT			
METHANE.....	88.3	84.0	82.6
ETHANE.....	5.5	3.7	8.3
PROPANE.....	2.0	1.1	3.2
N-BUTANE.....	0.4	0.1	0.8
ISOBUTANE.....	0.4	0.1	0.4
N-PENTANE.....	0.0	0.0	0.1
ISOPENTANE.....	0.2	0.4	0.5
CYCLOPENTANE.....	0.0	0.0	0.1
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.8	8.1	1.9
OXYGEN.....	0.6	2.1	0.0
ARGON.....	0.0	0.1	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.7	0.4	2.1
HELIUM.....	0.02	0.04	0.03
HEATING VALUE*.....	1081	968	1134
SPECIFIC GRAVITY.....	0.636	0.644	0.686

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19368	INDEX SAMPLE 19391	INDEX SAMPLE 19313
STATE.....	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY.....	LEA	RIO ARRIBA	RIO ARRIBA
FIELD.....	WILDCAT	BASIN	BLANCO E
WELL NAME.....	TOP HAT "26" FEDERAL NO. 1	SAN JUAN 29-6 UNIT NO. 262	JICARILLA NO. 458-2
API.....		30-039-25090	30-039-24086
LOCATION.....	SEC. 26, T20S, R33E	SEC. 21, T29N, R6W	SEC. 7, T30N, R3W
OWNER.....	MITCHELL ENERGY CORP.	PHILLIPS PETROLEUM CO.	ROBERT L. BAYLESS PRODUCTION
COMPLETED.....	91/11/18	92/01/21	86/12/24
SAMPLED.....	92/04/06	92/06/03	92/02/14
FORMATION.....	PENN-MORROW	CRET-FRUITLAND COAL	CRET-PICTURED CLIFFS
GEOLOGIC PROVINCE CODE...	430	580	580
DEPTH, FEET.....	13750	3218	3635
WELLHEAD PRESSURE, PSIG...	4250	960	440
OPEN FLOW, MCFD.....	650	1000	7511
COMPONENT, MOLE PCT			
METHANE.....	85.8	96.8	86.9
ETHANE.....	7.9	0.2	6.1
PROPANE.....	3.4	0.0	2.0
N-BUTANE.....	0.7	0.0	0.1
ISOBUTANE.....	0.4	0.0	0.3
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.5	0.0	0.2
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	0.0	2.4	3.4
OXYGEN.....	0.0	0.5	0.8
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.0	0.1	0.2
HELIUM.....	0.02	TRACE	0.01
HEATING VALUE*.....	1164	984	1062
SPECIFIC GRAVITY.....	0.667	0.569	0.634

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19474	INDEX SAMPLE 19461	INDEX SAMPLE 19430
STATE.....	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY.....	RIO ARriba	SAN JUAN	SAN JUAN
FIELD.....	LARGO	BARKER DOME	GALLEGOS EXTENSION
WELL NAME.....	RINCON UNIT NO. 57E	UTE NO. 4	HUERFANO UNIT NO. 219
API.....	30-039-25185		30-045-20814
LOCATION.....	SEC. 1, T26N, R7W	SEC. 10, T32N, R14W	SEC. 29, T26N, R10W
OWNER.....	UNOCAL CORP.	MERIDIAN OIL, INC.	MERIDIAN OIL, INC.
COMPLETED.....	92/08/07	92/07/00	91/10/01
SAMPLED.....	92/11/03	92/10/19	92/07/28
FORMATION.....	CRET-GALLUP	CRET-BARKER CRK, PENN-PARADOX	CRET-GALLUP
GEOLOGIC PROVINCE CODE...	580	580	580
DEPTH, FEET.....	6536	8654	5470
WELLHEAD PRESSURE, PSIG...	645	2825	NOT GIVEN
OPEN FLOW, MCFD.....	993	18580	1731
COMPONENT, MOLE PCT			
METHANE.....	78.9	91.1	72.6
ETHANE.....	10.9	4.2	13.0
PROPANE.....	5.3	1.7	8.0
N-BUTANE.....	0.9	0.4	0.0
ISOBUTANE.....	0.7	0.4	2.9
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	1.0	0.5	0.0
CYCLOPENTANE.....	0.1	0.1	0.0
HEXANES PLUS.....	0.1	0.1	0.1
NITROGEN.....	1.9	1.2	2.1
OXYGEN.....	0.1	0.0	0.4
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	0.0	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.4	0.7
HELIUM.....	0.02	0.03	0.09
HEATING VALUE.....	1233	1096	1280
SPECIFIC GRAVITY.....	0.717	0.625	0.763

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 70 SAMPLE 19386	INDEX 71 SAMPLE 19442	INDEX 72 SAMPLE 19437
STATE.....	OHIO	OHIO	OKLAHOMA
COUNTY.....	HOLMES	KNOX	BEAVER
FIELD.....	SOUTH CHARM N	HILLIAR TOWNSHIP	BALCO S
WELL NAME.....	STRAITS-AMY UNIT NO. 1	DONALD WHITE NO. 1	WOOD "M" NO. 1
API.....	34-075-24991	34-083-23944	35-007-23681
LOCATION.....	SEC. 19, KILLBUCK TOWNSHIP	HILLIAR DISTRICT, CENTERBURG Q	SEC. 9, TIN, R22ECM
OWNER.....	MASON DRILLING, INC.	COBRA OIL & GAS CORP.	MARATHON OIL CO.
COMPLETED.....	91/06/27	91/06/30	91/03/23
SAMPLED.....	92/05/00	92/08/27	92/08/20
FORMATION.....	ORDO-ROSE RUN	CAMB-TREMPEALEAU	MISS-ST. GENEVIEVE
GEOLOGIC PROVINCE CODE...	160	160	360
DEPTH, FEET.....	5777	5024	8160
WELLHEAD PRESSURE, PSIG...	2150	1350	1865
OPEN FLOW, MCFD.....	2000	500	3172
COMPONENT, MOLE PCT			
METHANE.....	92.1	84.0	92.1
ETHANE.....	4.2	5.5	2.2
PROPANE.....	1.4	2.2	0.8
N-BUTANE.....	0.0	0.5	0.3
ISOBUTANE.....	0.4	0.3	0.4
N-PENTANE.....	0.0	TRACE	0.0
ISOPENTANE.....	0.4	0.3	0.2
CYCLOPENTANE.....	0.0	0.0	0.1
HEXANES PLUS.....	0.0	TRACE	0.2
NITROGEN.....	1.4	6.6	3.1
OXYGEN.....	0.0	0.2	0.0
ARGON.....	TRACE	TRACE	0.1
HYDROGEN.....	0.0	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.0	0.1	0.3
HELIUM.....	0.04	0.21	0.27
HEATING VALUE*.....	1077	1045	1034
SPECIFIC GRAVITY.....	0.609	0.651	0.607

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 73 SAMPLE 19376	INDEX 74 SAMPLE 19467	INDEX 75 SAMPLE 19459
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	CARTER	CUSTER	CUSTER
FIELD.....	SPRINGER	ARAPAHO	HAMMON E
WELL NAME.....	JUD LITTLE NO. 1-6	HORTON NO. 6-2	GWARTNEY NO. 2
API.....	35-091-21664	35-039-21464	35-039-21385
LOCATION.....	SEC. 6, T3S, R2E	SEC. 6, T14N, R17W	SEC. 23, T14N, R20W
OWNER.....	PSEC, INC.	SONAT EXPLORATION CO.	SONAT EXPLORATION CO.
COMPLETED.....	91/08/00	92/08/00	92/05/01
SAMPLED.....	92/04/23	92/10/16	92/10/16
FORMATION.....	MISS-SYCAMORE	PENN-RED FORK	PENN-CHEROKEE
GEOLOGIC PROVINCE CODE...	350	360	360
DEPTH, FEET.....	5340	10956	11612
WELLHEAD PRESSURE, PSIG...	1375	3800	7600
OPEN FLOW, MCFD.....	3000	2600	2650
COMPONENT, MOLE PCT			
METHANE.....	86.9	82.1	85.1
ETHANE.....	7.2	8.4	7.7
PROPANE.....	2.8	3.5	3.3
N-BUTANE.....	0.5	0.4	0.5
ISOBUTANE.....	0.3	0.2	0.4
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.5	0.7	0.5
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.6	3.7	1.4
OXYGEN.....	0.0	0.7	0.3
ARGON.....	0.0	0.1	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.3	0.7
HELIUM.....	0.05	0.03	0.03
HEATING VALUE*.....	1129	1119	1138
SPECIFIC GRAVITY.....	0.648	0.675	0.663

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19359	INDEX SAMPLE 19295	INDEX SAMPLE 19384
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	GRADY	LATIMER	LATIMER
FIELD.....	CHICKASHA	DAMON E	RED-OAK NORRIS
WELL NAME.....	WOOTEN NO. 1-10	SMALLWOOD NO. 1-3	HULSEY UNIT NO. 3
API.....	35-051-2254	35-077-20608	35-077-20701
LOCATION.....	SEC. 10, T6N, R7W	SEC. 3, T4N, R20E	SEC. 18, T6N, R22E
OWNER.....	EARLSBORO OIL & GAS CORP.	ANSON CORP.	ORYX ENERGY CO.
COMPLETED.....	92/01/15	91/10/11	92/03/10
SAMPLED.....	92/03/23	91/12/29	92/05/19
FORMATION.....	PENN-HOXBAR	PENN-SPIRO	PENN-RED OAK
GEOLOGIC PROVINCE CODE...	360	345	345
DEPTH, FEET.....	8454	16313	6420
WELLHEAD PRESSURE, PSIG...	1300	6000	1055
OPEN FLOW, MCFD.....	800	1000	27178
COMPONENT, MOLE PCT			
METHANE.....	91.0	96.1	96.2
ETHANE.....	3.6	0.5	1.5
PROPANE.....	1.8	0.1	0.2
N-BUTANE.....	0.4	0.0	0.0
ISOBUTANE.....	0.2	0.0	0.0
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.3	0.0	0.0
CYCLOPENTANE.....	0.1	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	2.2	0.4	0.8
OXYGEN.....	0.0	0.0	0.2
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	TRACE	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.4	2.9	1.1
HELIUM.....	0.08	0.04	0.02
HEATING VALUE*.....	1072	984	1008
SPECIFIC GRAVITY.....	0.620	0.587	0.578

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 79 SAMPLE 19387	INDEX 80 SAMPLE 19371	INDEX 81 SAMPLE 19332
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	MAJOR	NOBLE	OKLAHOMA
FIELD.....	AMES	PERRY S	OKLAHOMA
WELL NAME.....	TERRY NO. 1-34	HAYNES NO. 1	BRITTON S
API.....	00-093-23679	35-103-21061	JOHNSON D-2 NO. 28
LOCATION.....	SEC. 34, T21N, R10W	SEC. 17, T20N, R1W	35-109-21785
OWNER.....	CONTINENTAL RESOURCES, INC.	THREE SANDS OIL, INC.	SEC. 28, T13N, R3W
COMPLETED.....	92/03/17	90/02/10	OEXCO, INC.
SAMPLED.....	92/06/02	92/04/13	91/10/27
FORMATION.....	CAMO-ARBUCKLE	PENN-TONKAWA	92/03/12
GEOLOGIC PROVINCE CODE...	360	355	PENN-PRUE
DEPTH, FEET.....	9020	2942	355
WELLHEAD PRESSURE, PSIG...	750	910	6266
OPEN FLOW, MCFD.....	1100	300	1912
COMPONENT, MOLE PCT			1000
METHANE.....	87.7	55.2	85.2
ETHANE.....	3.6	1.8	7.3
PROPANE.....	1.7	0.9	3.0
N-BUTANE.....	0.3	0.4	0.7
ISOBUTANE.....	0.3	0.3	0.4
N-PENTANE.....	0.0	0.2	0.1
ISOPENTANE.....	0.8	0.1	0.1
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.0	0.2	0.0
NITROGEN.....	5.3	40.2	2.3
OXYGEN.....	0.1	0.3	0.5
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.1	0.3
HELIUM.....	0.11	0.38	0.05
HEATING VALUE*.....	1047	658	1120
SPECIFIC GRAVITY.....	0.636	0.759	0.657

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19392	INDEX SAMPLE 19426	INDEX SAMPLE 19427
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	ROGER MILLS	STEPHENS	STEPHENS
FIELD.....	CARPENTER	CRUCE W	DOYLE
WELL NAME.....	WESNER NO. 2-1	MAGNESON NO. 1	DOYLE UNIT NO. 11-22
API.....		35-137-25042	35-137-08753
LOCATION.....	SEC. 1, T12N, R22W	SEC. 20, T1N, R6W	SEC. 11, T1N, R5W
OWNER.....	APACHE CORP.	WILLIFORD ENERGY CO.	PHILLIPS PETROLEUM CO.
COMPLETED.....	92/01/10	92/02/27	91/10/07
SAMPLED.....	92/06/04	92/07/22	92/07/27
FORMATION.....	PENN-DES MOINES	PENN-CISCO	PENN-HOXBAR
GEOLOGIC PROVINCE CODE...	360	350	350
DEPTH, FEET.....	14200	4993	5242
WELLHEAD PRESSURE, PSIG...	6699	1880	450
OPEN FLOW, MCFD.....	3652	2000	6716
COMPONENT, MOLE PCT			
METHANE.....	93.6	84.6	81.0
ETHANE.....	2.3	5.8	11.1
PROPANE.....	0.4	2.6	4.6
N-BUTANE.....	0.0	0.7	0.0
ISOBUTANE.....	0.1	0.3	1.4
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.1	0.5	0.1
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	TRACE	0.0
NITROGEN.....	2.0	5.0	1.7
OXYGEN.....	0.5	0.4	0.0
ARGON.....	0.0	0.0	TRACE
HYDROGEN.....	TRACE	TRACE	0.0
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.2	0.0	0.1
HELIUM.....	0.02	0.09	0.03
HEATING VALUE*.....	1003	1085	1191
SPECIFIC GRAVITY.....	0.594	0.657	0.687

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19454	INDEX SAMPLE 19304	INDEX SAMPLE 19440
STATE.....	OKLAHOMA	TEXAS	TEXAS
COUNTY.....	WOODS	CHAMBERS	DUVAL
FIELD.....	SOUTHFORK	FIG RIDGE N	LOMA NOVIA W
WELL NAME.....	WINONA NO. 25-1	FED. LAND BANK OF TEXAS NO.1	BISHOP CATTLE CO. NO. 1
API.....	35-151-21904	42-071-31856	
LOCATION.....	SEC. 25, T29N, R16W	SEC. 81, TENO SUR., A-251	J. J. WHITE 74 SUR., A-1800
OWNER.....	ENRON OIL & GAS CO.	SWIFT ENERGY CO.	BHP PETROLEUM (AMERICAS), INC.
COMPLETED.....	92/01/25	88/--/00	91/06/27
SAMPLED.....	92/10/01	92/01/03	92/08/25
FORMATION.....	MISS---	MISS---	EOCE-HINNANT SAND 2ND
GEOLOGIC PROVINCE CODE...	360	220	220
DEPTH, FEET.....	5060	10435	8852
WELLHEAD PRESSURE, PSIG...	1262	3800	3700
OPEN FLOW, MCFD.....	5999	13171	1400
COMPONENT, MOLE PCT			
METHANE.....	93.5	84.9	88.7
ETHANE.....	3.3	5.9	4.6
PROPANE.....	1.1	2.7	1.7
N-BUTANE.....	0.4	0.2	0.5
ISOBUTANE.....	0.1	0.5	0.2
N-PENTANE.....	0.2	0.0	0.0
ISOPENTANE.....	0.1	0.2	0.5
CYCLOPENTANE.....	0.1	0.0	0.1
HEXANES PLUS.....	0.1	0.0	0.2
NITROGEN.....	0.9	3.8	0.7
OXYGEN.....	0.0	1.3	0.0
ARGON.....	0.0	0.1	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.5	2.7
HELIUM.....	0.06	TRACE	TRACE
HEATING VALUE*.....	1072	1068	1085
SPECIFIC GRAVITY.....	0.604	0.653	0.651

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19374	INDEX SAMPLE 19450	INDEX SAMPLE 19455
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	EDWARDS	HANSFORD	HANSFORD
FIELD.....	SAWYER	DILLEY	FREEMAN RANCH
WELL NAME.....	CANYON RANCH NO. 1122-E	JAMES NO. B-1	LEMMA NO. 2
API.....	42-137-31042	42-195-31055	42-195-31140
LOCATION.....	SEC. 112, CCSD&RGNG SUR., A-25	SEC. 230, BLK 2, GH&H SUR.	SEC. 95, BLK. 2, GH&H SUR.
OWNER.....	MERIDIAN OIL, INC.	STRAT LAND EXPLORATION CO.	PHILLIPS PETROLEUM CO.
COMPLETED.....	90/12/29	91/05/21	92/02/19
SAMPLED.....	92/04/21	92/09/30	92/10/12
FORMATION.....	PENN-FRANCES HILL	PENN-TONKAWA	PENN-OSWEGO
GEOLOGIC PROVINCE CODE...	430	360	360
DEPTH, FEET.....	6150	5331	5732
WELLHEAD PRESSURE, PSIG...	1264	1290	1493
OPEN FLOW, MCFD.....	1282	1300	3296
COMPONENT, MOLE PCT			
METHANE.....	82.9	77.6	82.1
ETHANE.....	6.8	5.0	7.7
PROPANE.....	4.4	4.1	4.0
N-BUTANE.....	0.8	1.2	0.8
ISOBUTANE.....	0.3	0.3	0.3
N-PENTANE.....	0.0	0.1	0.0
ISOPENTANE.....	0.8	0.6	0.4
CYCLOPENTANE.....	0.0	0.2	0.0
HEXANES PLUS.....	0.0	0.2	0.1
NITROGEN.....	3.4	10.0	4.3
OXYGEN.....	0.0	0.1	0.2
ARGON.....	0.0	0.1	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.4	0.4	0.1
HELIUM.....	0.21	0.34	0.13
HEATING VALUE*.....	1146	1075	1128
SPECIFIC GRAVITY.....	0.681	0.707	0.676

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19439	INDEX SAMPLE 19308	INDEX SAMPLE 19393
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	HANSFORD	HEMPHILL	HEMPHILL
FIELD.....	SHAPLEY	BIG TIMBER	WASHITA CREEK
WELL NAME.....	FOWLSTON NO. 1	LOUISE HOOVER NO. C-3	BOWERS NO. C-2
API.....	42-195-31143		42-211-31284
LOCATION.....	SEC. 186, BLK. 2, GH&H SUR.	SEC. 229, BLK. C, G&MMB&A SUR.	SEC. 4, BLK. 1, I&GN SUR.
OWNER.....	STRAT LAND EXPLORATION CO.	MAXUS EXPLORATION CO.	PHILLIPS PETROLEUM CO.
COMPLETED.....	92/04/17	77/06/13	92/01/09
SAMPLED.....	92/05/22	92/02/12	92/06/04
FORMATION.....	PENN-MORROW	PENN-CHEROKEE	PENN-CHEROKEE
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	6665	10624	13036
WELLHEAD PRESSURE, PSIG...	1555	580	1656
OPEN FLOW, MCFD.....	1150	7400	2825
COMPONENT, MOLE PCT			
METHANE.....	84.9	80.6	94.6
ETHANE.....	6.1	9.1	1.0
PROPANE.....	3.7	5.5	0.2
N-BUTANE.....	0.9	1.3	0.0
ISOBUTANE.....	0.3	0.5	0.1
N-PENTANE.....	0.1	0.1	0.0
ISOPENTANE.....	0.5	0.5	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.1	0.0
NITROGEN.....	2.8	1.6	2.1
OXYGEN.....	0.2	0.1	0.4
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	0.6	1.7
HELIUM.....	0.16	0.03	0.03
HEATING VALUE*.....	1133	1211	982
SPECIFIC GRAVITY.....	0.668	0.707	0.589

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19358	INDEX SAMPLE 19448	INDEX SAMPLE 19449
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	HUTCHINSON	LIBERTY	LIBERTY
FIELD.....	SPEARMAN S	REDMOND CREEK	REDMOND CREEK
WELL NAME.....	BUCHNER NO. 1-4	J. E. COOK	E. R. SMART NO. 1
API.....	42-233-31916		
LOCATION.....	SEC. 4, BLK. 3, DLC SUR.	JACOB E. SELF SUR., A-104	WILLIAM HARRIS SUR., A-51
OWNER.....	STRAT LAND EXPLORATION CO.	BHP PETROLEUM (AMERICAS), INC.	BHP PETROLEUM (AMERICAS), INC.
COMPLETED.....	90/06/17	91/05/10	90/10/31
SAMPLED.....	92/03/23	92/09/17	92/09/17
FORMATION.....	PENN-GRANITE WASH	EOCE-YEGUA	EOCE-YEGUA
GEOLOGIC PROVINCE CODE...	440	220	220
DEPTH, FEET.....	6560	12262	12190
WELLHEAD PRESSURE, PSIG...	1600	3800	3700
OPEN FLOW, MCFD.....	3100	10500	5228
COMPONENT, MOLE PCT			
METHANE.....	88.8	74.3	78.2
ETHANE.....	4.1	10.7	9.9
PROPANE.....	2.5	7.2	5.8
N-BUTANE.....	0.6	1.9	1.5
ISOBUTANE.....	0.2	2.1	1.4
N-PENTANE.....	0.0	0.6	0.5
ISOPENTANE.....	0.6	0.8	0.4
CYCLOPENTANE.....	0.1	0.2	0.2
HEXANES PLUS.....	0.2	0.6	0.4
NITROGEN.....	2.7	0.5	0.5
OXYGEN.....	0.0	0.0	0.0
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	1.3	1.3
HELIUM.....	0.12	TRACE	TRACE
HEATING VALUE*.....	1103	1359	1278
SPECIFIC GRAVITY.....	0.641	0.798	0.749

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19412	INDEX SAMPLE 19307	INDEX SAMPLE 19306
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	LIPSCOMB	LIPSCOMB	LIPSCOMB
FIELD.....	APACHE	BECHTOLD	KIOWA CREEK S
WELL NAME.....	DESLEY NO. 1-991	BECHTOLD NO. 1	PARKER "B" NO. 4
API.....	42-295-31930		
LOCATION.....	SEC. 991, BLK. 43, H&TC SUR.	SEC. 116, BLK. 10, H&TB SUR.	SEC. 994, BLK. 43, H&TC SUR.
OWNER.....	K. STEWART PETROLEUM CORP.	MAXUS EXPLORATION CO.	MAXUS EXPLORATION CO.
COMPLETED.....	91/05/20	64/--/00	84/--/00
SAMPLED.....	92/07/06	92/02/12	92/02/12
FORMATION.....	PENN-MORROW	PENN-TONKAWA	PENN-MORROW U
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	8674	6120	8734
WELLHEAD PRESSURE, PSIG...	2256	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD.....	1400	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	85.3	83.4	86.2
ETHANE.....	6.6	6.5	7.2
PROPANE.....	3.5	3.6	3.0
N-BUTANE.....	0.7	0.8	0.6
ISOBUTANE.....	0.4	0.4	0.4
N-PENTANE.....	0.0	0.0	0.2
ISOPENTANE.....	1.3	0.5	0.2
CYCLOPENTANE.....	0.1	0.0	0.1
HEXANES PLUS.....	0.2	0.1	0.3
NITROGEN.....	1.0	4.3	1.2
OXYGEN.....	0.0	0.0	0.0
ARGON.....	TRACE	0.0	0.0
HYDROGEN.....	TRACE	0.0	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.1	0.2	0.6
HELIUM.....	0.05	0.17	0.05
HEATING VALUE.....	1178	1122	1148
SPECIFIC GRAVITY.....	0.684	0.672	0.661

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19309	INDEX SAMPLE 19312	INDEX SAMPLE 19435
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	LIPSCOMB	OCHILTREE	OLDHAM
FIELD.....	NANCY	FARNSWORTH N	BINFORD
WELL NAME.....	DIXON "H" NO. 1	R. F. NEWMAN UNIT NO. 1	GWDC BINFORD NO. 1
API.....	NOT GIVEN	SEC. 10, BLK. 4, GH&H SUR.	42-359-30275
LOCATION.....	MARATHON OIL CO.	KAISER-FRANCIS OIL CO.	SEC. 2, BLK. H-1, T&P SUR.
OWNER.....	91/--/00	66/--/00	GREAT WESTERN DRILLING CO.
COMPLETED.....	92/02/10	92/02/19	88/11/16
FORMATION.....	PENN-TONKAWA	PENN-MORROW	92/08/10
GEOLOGIC PROVINCE CODE...	360	360	435
DEPTH, FEET.....	NOT GIVEN	7876	4686
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	NOT GIVEN	1000
OPEN FLOW, MCFD.....	NOT GIVEN	NOT GIVEN	3073
COMPONENT, MOLE PCT			
METHANE.....	85.6	95.5	72.7
ETHANE.....	5.1	1.8	4.0
PROPANE.....	2.4	0.8	1.3
N-BUTANE.....	0.3	0.0	0.3
ISOBUTANE.....	0.4	0.4	0.0
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.3	0.1	1.0
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	5.2	0.7	19.3
OXYGEN.....	0.4	0.0	TRACE
ARGON.....	0.0	0.0	0.1
HYDROGEN.....	0.0	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.2	0.6	0.2
HELIUM.....	0.17	0.06	1.03
HEATING VALUE*.....	1055	1039	895
SPECIFIC GRAVITY.....	0.644	0.588	0.690

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19285	INDEX SAMPLE 19329	INDEX SAMPLE 19369
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	REAGAN	SAN JACINTO	SHERMAN
FIELD.....	REDHOUSE	GOLIGHTLY	CRAIG RANCH
WELL NAME.....	MARY KATHERINE TRIGG "B" NO2	CHAMPION NO. 1	CRAIG "A" NO. 1102
API.....	42-383-33011	42-407-30535	42-421-30531
LOCATION.....	SEC. 23, BLK. F, SUR C&MRR	J. H. SHEPPARD SUR., A-286	SEC. 102, BLK. 1C, GH&H SUR.
OWNER.....	EXXON CO., U.S.A.	CXY ENERGY, INC.	COURSON OIL & GAS, INC.
COMPLETED.....	90/07/17	90/08/02	92/02/10
SAMPLED.....	91/11/27	92/03/00	92/04/09
FORMATION.....	PENN-STRAWN	EOCE-JACKSON	PENN-MORROW
GEOLOGIC PROVINCE CODE....	430	220	360
DEPTH, FEET.....	9408	2642	6635
WELLHEAD PRESSURE, PSIG...	2250	800	623
OPEN FLOW, MCFD.....	4080	1663	1400
COMPONENT, MOLE PCT			
METHANE.....	75.5	98.6	79.4
ETHANE.....	12.8	0.0	7.0
PROPANE.....	5.6	0.0	4.3
N-BUTANE.....	1.5	0.0	1.4
ISOBUTANE.....	0.4	0.0	0.6
N-PENTANE.....	0.5	0.0	0.5
ISOPENTANE.....	0.0	0.0	0.2
CYCLOPENTANE.....	0.1	0.0	0.2
HEXANES PLUS.....	0.2	0.0	0.3
NITROGEN.....	2.5	1.2	5.6
OXYGEN.....	0.2	0.0	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.7	0.1	0.5
HELIUM.....	0.03	0.01	0.18
HEATING VALUE*.....	1237	1000	1159
SPECIFIC GRAVITY.....	0.737	0.561	0.712

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
 ** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19311	INDEX SAMPLE 19456	INDEX SAMPLE 19473
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	SHERMAN	SHERMAN	TYLER
FIELD.....	PALO DURO CREEK	RENTIE	JACK'S CREEK
WELL NAME.....	PARK A NO. 2	RENTIE NO. 4	SANTA FE NO. 2
API.....	42-421-30472	42-421-30533	
LOCATION.....	SEC. 7, BLK. 3B, GH&H SUR.	SEC. 199, BLK. 1-C, GH&H SUR.	J. H. GANT SUR., A-1041
OWNER.....	PHILLIPS PETROLEUM CO.	PHILLIPS PETROLEUM CO.	EXXON CO., U.S.A.
COMPLETED.....	91/--/00	91/12/10	91/03/22
SAMPLED.....	92/02/25	92/10/12	92/10/26
FORMATION.....	PENN-VIRGIL	PENN-KANSAS CITY	EOCE-WILCOX F
GEOLOGIC PROVINCE CODE...	360	360	220
DEPTH, FEET.....	4244	4731	8068
WELLHEAD PRESSURE, PSIG...	358	530	1040
OPEN FLOW, MCFD.....	1093	274	420
COMPONENT, MOLE PCT			
METHANE.....	70.2	63.1	86.5
ETHANE.....	5.0	7.7	5.4
PROPANE.....	3.3	5.3	3.7
N-BUTANE.....	0.7	1.2	0.5
ISOBUTANE.....	0.4	0.7	0.6
N-PENTANE.....	0.0	0.1	0.0
ISOPENTANE.....	0.2	0.6	0.8
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.0	0.1	0.1
NITROGEN.....	18.2	20.7	1.9
OXYGEN.....	1.3	0.0	0.0
ARGON.....	0.1	0.0	0.0
HYDROGEN.....	TRACE	0.0	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.0	0.6
HELIUM.....	0.47	0.38	0.01
HEATING VALUE*.....	935	1016	1141
SPECIFIC GRAVITY.....	0.716	0.776	0.665

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 19451	INDEX SAMPLE 19479	INDEX SAMPLE 19480
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	UPTON	WEBB	WEBB
FIELD.....	BARREL ROLL	LANE DIXON	LANE DIXON
WELL NAME.....	GIDDINGS ESTATE FEE NO. 1247	K. HENDRICKSON NO. 1	LUNA ADAMI NO. 1
API.....		42-479-34665	42-479-34858
LOCATION.....	THROCKMORTON CSL SUR., A-543	J. TREVINO NO. 332 SUR., A-196	HGN SUR., 333, A-1434
OWNER.....	EXXON CO., U.S.A.	J. R. HAMILTON	J. R. HAMILTON
COMPLETED.....	91/05/13	88/06/25	89/08/25
SAMPLED.....	92/09/23	92/11/08	92/11/07
FORMATION.....	SILU-FUSSELMAN	EOCE-WILCOX	EOCE-WILCOX
GEOLOGIC PROVINCE CODE.....	430	220	220
DEPTH, FEET.....	12361	5824	5810
WELLHEAD PRESSURE, PSIG...	2300	2150	2165
OPEN FLOW, MCFD.....	413	3400	2000
COMPONENT, MOLE PCT			
METHANE.....	77.1	88.1	87.7
ETHANE.....	12.7	4.5	4.5
PROPANE.....	5.1	2.3	2.4
N-BUTANE.....	1.5	1.2	1.2
ISOBUTANE.....	0.3	0.5	0.7
N-PENTANE.....	0.2	0.1	0.1
ISOPENTANE.....	0.6	0.7	0.8
CYCLOPENTANE.....	0.0	0.1	0.2
HEXANES PLUS.....	0.1	0.2	0.3
NITROGEN.....	1.7	0.7	0.7
OXYGEN.....	0.3	0.0	0.0
ARGON.....	0.1	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.5	1.5	1.5
HELIUM.....	0.04	0.01	0.01
HEATING VALUE*.....	1235	1142	1152
SPECIFIC GRAVITY.....	0.725	0.667	0.673

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 112 19366	INDEX SAMPLE 113 19413	INDEX SAMPLE 114 19320
STATE.....	TEXAS	TEXAS	TEXAS
COUNTY.....	WHARTON	WHEELER	WHEELER
FIELD.....	JOHNSON CREEK	BRITT RANCH	KEY
WELL NAME.....	WILLIAM J. NAISER NO. 1	BRITT NO. 1	BRITT NO. 3
API.....	42-481-33437		42-483-30958
LOCATION.....	SA&MG SUR. 15, A-340	NOT GIVEN	SEC. E, BLK. 1, B&B SUR.
OWNER.....	NORTH CENTRAL OIL CORP.	HOC OPERATING CO., INC.	ENRON OIL & GAS CO.
COMPLETED.....	90/09/25	91/--/00	82/03/02
SAMPLED.....	92/04/00	92/07/05	92/02/12
FORMATION.....	MIOC---	PENN-GRANITE WASH	PENN-MORROW
GEOLOGIC PROVINCE CODE.....	220	360	360
DEPTH, FEET.....	2616	NOT GIVEN	16085
WELLHEAD PRESSURE, PSIG...	1159	2300	4500
OPEN FLOW, MCFD.....	825	890	10198
COMPONENT, MOLE PCT			
METHANE.....	97.9	82.1	85.1
ETHANE.....	0.0	10.0	6.8
PROPANE.....	TRACE	4.0	2.3
N-BUTANE.....	0.0	0.7	0.3
ISOBUTANE.....	0.0	0.5	0.4
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.0	0.9	0.2
CYCLOPENTANE.....	0.0	0.1	0.0
HEXANES PLUS.....	0.0	0.1	0.0
NITROGEN.....	1.6	1.6	3.5
OXYGEN.....	0.4	0.1	1.2
ARGON.....	0.0	TRACE	0.1
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.0	0.2
HELIUM.....	TRACE	0.04	0.04
HEATING VALUE*.....	992	1199	1074
SPECIFIC GRAVITY.....	0.564	0.690	0.648

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 115 19394	INDEX SAMPLE 116 19254	INDEX SAMPLE 117 19255
STATE.....	TEXAS	WEST VIRGINIA	WEST VIRGINIA
COUNTY.....	WISE	GILMER	GILMER
FIELD.....	NEWARK E	DEKALB	DEKALB
WELL NAME.....	RUFUS GARRETT NO. 3	REED NO. 2-B	WEAVER NO. 1-A
API.....		47-021-4811	47-021-4841
LOCATION.....	NOT GIVEN	DEKALB DISTRICT, TANNER QUAD	DEKALB DISTRICT, BURNT HOUSE Q
OWNER.....	MITCHELL ENERGY CORP.	WACO OIL & GAS COMPANY, INC.	WACO OIL & GAS COMPANY, INC.
COMPLETED.....	91/04/12	91/01/18	90/03/26
SAMPLED.....	92/06/08	91/10/23	91/10/23
FORMATION.....	MISS-BARNETT SHALE	DEVO-SHALE	DEVO-SHALE
GEOLOGIC PROVINCE CODE...	420	160	160
DEPTH, FEET.....	7213	2763	3390
WELLHEAD PRESSURE, PSIG...	3070	600	420
OPEN FLOW, MCFD.....	36500	1800	1800
COMPONENT, MOLE PCT			
METHANE.....	87.6	79.4	77.8
ETHANE.....	3.6	11.7	12.8
PROPANE.....	0.5	3.8	4.5
N-BUTANE.....	0.0	0.9	1.7
ISOBUTANE.....	0.1	0.4	0.9
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.3	0.1	0.0
CYCLOPENTANE.....	0.0	0.0	0.1
HEXANES PLUS.....	0.0	0.1	0.4
NITROGEN.....	6.4	2.6	1.3
OXYGEN.....	0.0	0.5	0.0
ARGON.....	TRACE	0.0	TRACE
HYDROGEN.....	0.1	0.1	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.4	0.4	0.5
HELIUM.....	0.02	0.07	0.07
HEATING VALUE*.....	980	1167	1245
SPECIFIC GRAVITY.....	0.624	0.692	0.723

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 118 SAMPLE 19476	INDEX 119 SAMPLE 19367	INDEX 120 SAMPLE 19315
STATE.....	WEST VIRGINIA	WYOMING	WYOMING
COUNTY.....	TAYLOR	FREMONT	FREMONT
FIELD.....	BRIDGEPORT-PRUNTYTOWN	ALKALI BUTTE	MADDEEN UNIT
WELL NAME.....	WOODBIDGE STOUT NO. 3	ALKALI BUTTE NO. 2	QUINCY NO. 2-34
API.....	47-091-0765	49-013-05783	49-013-21161
LOCATION.....	COURT HOUSE DIST., GRAFTON QUA	SEC. 36, T34N, R95W	SEC. 34, T39N, R91W
OWNER.....	PETROLEUM DEVELOPMENT CORP.	NATURAL GAS PROCESSING CO.	LOUISIANA LAND & EXPLORATION C
COMPLETED.....	91/09/26	91/11/00	91/11/07
FORMATION.....	92/11/00	92/04/03	92/02/24
GEOLOGIC PROVINCE CODE...	DEVO-BENSON	JURA-MORRISON	CRET-SUSSEX
DEPTH, FEET.....	160	530	530
WELLHEAD PRESSURE, PSIG...	4379	4560	16811
OPEN FLOW, MCFD.....	1600	300	NOT GIVEN
COMPONENT, MOLE PCT	1237	280	12130
METHANE.....	91.8	88.9	96.7
ETHANE.....	4.2	4.3	0.0
PROPANE.....	0.6	2.2	0.0
N-BUTANE.....	0.3	0.4	0.0
ISOBUTANE.....	0.0	0.2	0.0
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.3	0.7	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	2.1	2.5	0.7
OXYGEN.....	0.3	0.5	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	0.1	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.2	2.5
HELIUM.....	0.11	0.02	0.00
HEATING VALUE.....	1042	1086	981
SPECIFIC GRAVITY.....	0.602	0.637	0.582

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 121 SAMPLE 19417	INDEX 122 SAMPLE 19418	INDEX 123 SAMPLE 19416
STATE.....	WYOMING	WYOMING	WYOMING
COUNTY.....	FREMONT	FREMONT	FREMONT
FIELD.....	MUDDY RIDGE	MUDDY RIDGE	WIND RIVER
WELL NAME.....	TRIBAL NO. 19-23	TRIBAL NO. 24-43A	TRIBAL WELL NO. 13-13
API.....			
LOCATION.....	SEC. 19, T4N, R3E	SEC. 24, T4N, R2E	SEC. 13, T3N, R2E
OWNER.....	TOM BROWN, INC.	TOM BROWN, INC.	TOM BROWN, INC.
COMPLETED.....	81/04/01	80/05/02	63/07/16
SAMPLED.....	92/07/13	92/07/13	92/07/13
FORMATION.....	CRET-MESAVERDE	PALE-FORT UNION	EOCE-WIND RIVER
GEOLOGIC PROVINCE CODE.....	530	530	530
DEPTH, FEET.....	12480	7247	3040
WELLHEAD PRESSURE, PSIG...	1250	1587	378
OPEN FLOW, MCFD.....	5000	2000	300
COMPONENT, MOLE PCT			
METHANE.....	90.5	85.2	95.5
ETHANE.....	4.5	7.7	2.5
PROPANE.....	1.2	2.3	0.2
N-BUTANE.....	TRACE	0.1	0.0
ISOBUTANE.....	0.2	0.5	0.1
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.8	1.2	0.1
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.0	0.0
NITROGEN.....	1.4	2.4	1.2
OXYGEN.....	0.1	0.3	0.1
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.3	0.4	0.4
HELIUM.....	0.00	0.01	0.01
HEATING VALUE*.....	1067	1129	1023
SPECIFIC GRAVITY.....	0.625	0.661	0.581

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX SAMPLE 124 19419	INDEX SAMPLE 125 19299	INDEX SAMPLE 126 19414
STATE.....	WYOMING	WYOMING	WYOMING
COUNTY.....	FREMONT	PARK	SWEETWATER
FIELD.....	WIND RIVER	GARLAND N	BRUFF
WELL NAME.....	WELL NO. 41-9	FEDERAL NO. 12-3	CHAMPLIN 206C NO. 2
API.....		49-029-21288	49-037-22748
LOCATION.....	SEC. 9, T3N, R2E	SEC. 3, T56N, R98W	SEC. 13, T18N, R112W
OWNER.....	TOM BROWN, INC.	CENEX	AMOCO PRODUCTION CO.
COMPLETED.....	80/01/04	90/08/22	91/03/05
SAMPLED.....	92/07/13	92/01/07	92/07/02
FORMATION.....	PALE-FORT UNION	CRET-MUDDY	CRET-FRONTIER
GEOLOGIC PROVINCE CODE...	530	520	535
DEPTH, FEET.....	4830	3332	11830
WELLHEAD PRESSURE, PSIG...	1071	1100	3975
OPEN FLOW, MCFD.....	3000	2000	2100
COMPONENT, MOLE PCT			
METHANE.....	94.4	79.2	90.1
ETHANE.....	3.1	9.4	6.4
PROPANE.....	0.3	5.4	1.2
N-BUTANE.....	0.0	1.2	0.0
ISOBUTANE.....	0.1	1.0	0.2
N-PENTANE.....	0.0	0.2	0.0
ISOPENTANE.....	0.1	0.3	0.2
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.3	0.0
NITROGEN.....	1.5	2.9	1.1
OXYGEN.....	0.3	0.1	0.0
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	0.0	0.7
HELIUM.....	0.01	0.05	0.01
HEATING VALUE*.....	1026	1221	1075
SPECIFIC GRAVITY.....	0.587	0.717	0.617

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 127 SAMPLE 19433	INDEX 128 SAMPLE 19388	INDEX 129 SAMPLE 19365
STATE.....	WYOMING	WYOMING	WYOMING
COUNTY.....	SWEETWATER	SWEETWATER	SWEETWATER
FIELD.....	MULLIGAN DRAW	TABLE ROCK	TIERNEY
WELL NAME.....	MULLIGAN DRAW UNIT NO. 4	TABLE ROCK UNIT NO. 104	TWO RIM NO. 2-1
API.....		49-037-22863	49-037-22865
LOCATION.....	SEC. 33, T16N, R95W	SEC. 19, T19N, R97W	SEC. 21, T19N, R94W
OWNER.....	CELSIUS ENERGY CO.	TEXACO U.S.A.	BARRETT RESOURCES CORP.
COMPLETED.....	92/--/00	91/11/25	91/12/30
SAMPLED.....	92/08/06	92/06/01	92/03/30
FORMATION.....	CRET-ALMOND	CRET-FRONTIER	CRET-ALMOND
GEOLOGIC PROVINCE CODE...	535	535	535
DEPTH, FEET.....	12860	14348	9978
WELLHEAD PRESSURE, PSIG...	1490	9320	1350
OPEN FLOW, MCFD.....	750	4300	1400
COMPONENT, MOLE PCT			
METHANE.....	95.7	96.7	80.2
ETHANE.....	2.6	0.6	8.8
PROPANE.....	0.4	0.1	3.7
N-BUTANE.....	0.2	0.0	0.5
ISOBUTANE.....	0.0	0.0	0.4
N-PENTANE.....	0.0	0.0	0.0
ISOPENTANE.....	0.2	0.0	1.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	0.5	1.1	1.6
OXYGEN.....	0.0	0.3	0.4
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	0.2	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	1.1	3.3
HELIUM.....	TRACE	0.00	0.01
HEATING VALUE*.....	1049	995	1142
SPECIFIC GRAVITY.....	0.584	0.576	0.711

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19342	INDEX SAMPLE 19351	INDEX SAMPLE 19352
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	FINNEY	FORD	FORD
FIELD.....	HUGOTON AREA	MULTIPLE INPUTS IN OK & N TX	TEXAS PANHANDLE
LOCATION.....	20" DISCHARGE	24" MOUNTAIN VIEW	COMMINGLED ML-SUCTION
OWNER.....	NORTHERN NATURAL GAS CO.	NATURAL GAS PIPELINE CO. OF AM	NATURAL GAS PIPELINE CO. OF AM
SAMPLED.....	92/03/17	92/03/19	92/03/19
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	790	500	517
FLOW, MCFD.....	210000	133000	66000
COMPONENT, MOLE PCT			
METHANE.....	68.4	94.8	92.5
ETHANE.....	6.0	2.4	2.3
PROPANE.....	3.3	0.6	0.5
N-BUTANE.....	0.8	0.0	0.1
ISOBUTANE.....	0.4	0.2	0.1
N-PENTANE.....	0.1	0.0	0.0
ISOPENTANE.....	0.2	0.1	0.1
CYCLOPENTANE.....	TRACE	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	20.1	0.7	3.4
OXYGEN.....	0.0	TRACE	TRACE
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	1.1	1.0
HELIUM.....	0.49	0.04	0.14
HEATING VALUE*.....	947	1031	999
SPECIFIC GRAVITY.....	0.727	0.591	0.597

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19276	INDEX SAMPLE 19347	INDEX SAMPLE 19348
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	MORTON	PAWNEE	RICE
FIELD.....	GREENWOOD	KANSAS CENTRAL	BURDETT AREA
LOCATION.....	12" INLET TOTAL GREENWOOD	8" DISCHARGE	20"- BURDETT
OWNER.....	COLORADO INTERSTATE GAS CO.	KN ENERGY, INC.	NORTHERN NATURAL GAS CO.
SAMPLED.....	91/11/21	92/03/18	92/03/18
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	360	385	385
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	100	400	542
FLOW, MCFD.....	20000	7400	210000
COMPONENT, MOLE PCT			
METHANE.....	62.7	83.3	67.6
ETHANE.....	7.4	4.0	5.9
PROPANE.....	4.5	1.5	3.2
N-BUTANE.....	1.4	0.4	0.8
ISOBUTANE.....	0.2	0.3	0.4
N-PENTANE.....	0.6	0.1	0.1
ISOPENTANE.....	0.0	0.3	0.3
CYCLOPENTANE.....	0.1	0.0	0.1
HEXANES PLUS.....	0.3	0.1	0.1
NITROGEN.....	21.9	9.4	20.9
OXYGEN.....	0.0	TRACE	0.0
ARGON.....	0.1	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.4	0.0	0.1
HELIUM.....	0.53	0.62	0.51
HEATING VALUE*.....	983	997	941
SPECIFIC GRAVITY.....	0.773	0.645	0.732

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19349	INDEX SAMPLE 19350	INDEX SAMPLE 19343
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	RICE	RICE	SCOTT
FIELD.....	MACKSVILLE AREA	OKLAHOMA, ANADARKO BASIN	BRADSHAW
LOCATION.....	24"-B MACKSVILLE	30"-E DISCHARGE	10" SYRACUSE
OWNER.....	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	KN ENERGY, INC.
SAMPLED.....	92/03/18	92/03/18	92/03/17
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	385	385	360
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	531	761	300
FLOW, MCFD.....	560000	560000	17000
COMPONENT, MOLE PCT			
METHANE.....	84.4	85.7	54.4
ETHANE.....	4.9	3.7	5.0
PROPANE.....	1.3	0.3	3.1
N-BUTANE.....	0.3	0.0	0.8
ISOBUTANE.....	0.2	0.1	0.5
N-PENTANE.....	0.0	0.0	0.2
ISOPENTANE.....	0.4	0.0	0.1
CYCLOPENTANE.....	0.0	0.0	TRACE
HEXANES PLUS.....	0.0	0.0	0.1
NITROGEN.....	7.9	9.7	35.0
OXYGEN.....	TRACE	TRACE	TRACE
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.6	0.5	TRACE
HELIUM.....	0.10	0.08	0.71
HEATING VALUE*.....	1007	945	783
SPECIFIC GRAVITY.....	0.643	0.621	0.780

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19344	INDEX SAMPLE 19345	INDEX SAMPLE 19346
STATE.....	KANSAS	KANSAS	KANSAS
COUNTY.....	SCOTT	SCOTT	SCOTT
FIELD.....	HUGOTON	HUGOTON	HUGOTON-BRADSHAW
LOCATION.....	12" HOLCOMB	18" DEERFIELD	20" DISCHARGE
OWNER.....	KN ENERGY, INC.	KN ENERGY, INC.	KN ENERGY, INC.
SAMPLED.....	92/03/17	92/03/17	92/03/17
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	380	325	305
FLOW, MCFD.....	30000	60000	90000
COMPONENT, MOLE PCT			
METHANE.....	65.6	42.2	77.9
ETHANE.....	5.5	24.0	6.7
PROPANE.....	2.9	17.6	0.7
N-BUTANE.....	0.7	4.8	0.0
ISOBUTANE.....	0.4	2.2	0.0
N-PENTANE.....	0.1	1.4	0.0
ISOPENTANE.....	0.2	0.0	0.0
CYCLOPENTANE.....	0.0	0.2	0.0
HEXANES PLUS.....	0.1	0.8	0.0
NITROGEN.....	24.0	6.1	14.3
OXYGEN.....	0.0	0.0	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.4	0.0
HELIUM.....	0.53	0.17	0.24
HEATING VALUE*.....	891	1660	930
SPECIFIC GRAVITY.....	0.732	1.036	0.654

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 13 19340	INDEX SAMPLE 14 19341	INDEX SAMPLE 15 19337
STATE.....	KANSAS	KANSAS	OKLAHOMA
COUNTY.....	SEWARD	SEWARD	BEAVER
FIELD.....	HUGOTON AREA-SATANTA	HUGOTON-STEVENS, MAPCO-SOUTH	ANADARKO BASIN
LOCATION.....	A-20" HUGOTON DISCHARGE	B-20" STEVENS CO. DISCHARGE	B-26" INLET
OWNER.....	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED.....	92/03/17	92/03/17	92/03/16
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	470	365	460
FLOW, MCFD.....	76000	260000	75000
COMPONENT, MOLE PCT			
METHANE.....	74.9	75.1	85.6
ETHANE.....	5.4	6.4	5.5
PROPANE.....	2.9	3.3	2.5
N-BUTANE.....	0.7	0.8	0.6
ISOBUTANE.....	0.5	0.5	0.4
N-PENTANE.....	0.2	0.2	0.2
ISOPENTANE.....	0.1	0.1	0.1
CYCLOPENTANE.....	TRACE	TRACE	0.1
HEXANES PLUS.....	0.2	0.2	0.3
NITROGEN.....	14.7	13.0	4.1
OXYGEN.....	0.0	TRACE	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.1	0.1	0.4
HELIUM.....	0.45	0.39	0.21
HEATING VALUE*.....	988	1025	1099
SPECIFIC GRAVITY.....	0.696	0.702	0.658

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19339	INDEX SAMPLE 19338	INDEX SAMPLE 19336
STATE.....	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY.....	BEAVER	BEAVER	BEAVER
FIELD.....	OK PANHANDLE-WEST	OK PANHANDLE-WOODWARD AREA	PERMIAN BASIN
LOCATION.....	12" HIGH/LOW PRESSURE	24" SE GATHERING	A-24" INLET
OWNER.....	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED.....	92/03/16	92/03/16	92/03/16
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	360	360	360
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	180	400	350
FLOW, MCFD.....	15000	140000	30000
COMPONENT, MOLE PCT			
METHANE.....	86.1	88.1	89.2
ETHANE.....	5.5	6.0	4.4
PROPANE.....	3.6	2.8	2.5
N-BUTANE.....	1.0	0.6	0.6
ISOBUTANE.....	0.5	0.4	0.3
N-PENTANE.....	0.3	0.1	TRACE
ISOPENTANE.....	0.3	0.3	0.4
CYCLOPENTANE.....	0.1	TRACE	TRACE
HEXANES PLUS.....	0.3	0.2	0.1
NITROGEN.....	1.7	0.5	1.8
OXYGEN.....	0.0	0.0	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.5	1.0	0.6
HELIUM.....	0.13	0.07	0.15
HEATING VALUE*.....	1158	1131	1099
SPECIFIC GRAVITY.....	0.672	0.650	0.637

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 19 SAMPLE 19274	INDEX 20 SAMPLE 19333	INDEX 21 SAMPLE 19335
STATE.....	OKLAHOMA	TEXAS	TEXAS
COUNTY.....	CIMARRON	HUTCHINSON	MOORE
FIELD.....	KEYES GAS AREA	OK & TX (BRIDGEPORT AREA)	MOORE CO. GATHERING SYSTEM
LOCATION.....	16" INLET	24" & 30" DISCHARGE-COMMINGLED	170 INLET
OWNER.....	COLORADO INTERSTATE GAS CO.	NATURAL GAS PIPELINE CO. OF AM	NATURAL GAS PIPELINE CO. OF AM
SAMPLED.....	91/11/21	92/03/16	92/03/16
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	435	440	440
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	43	607	600
FLOW, MCFD.....	16100	109000	75000
COMPONENT, MOLE PCT			
METHANE.....	62.1	94.3	80.1
ETHANE.....	4.1	2.3	5.4
PROPANE.....	3.1	0.7	3.6
N-BUTANE.....	1.3	0.0	1.2
ISOBUTANE.....	0.3	0.1	0.4
N-PENTANE.....	0.9	0.0	0.1
ISOPENTANE.....	0.0	0.2	1.0
CYCLOPENTANE.....	0.1	0.0	0.1
HEXANES PLUS.....	0.6	0.0	0.1
NITROGEN.....	24.7	1.2	7.4
OXYGEN.....	0.0	0.0	0.0
ARGON.....	0.1	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	1.2	1.0	0.2
HELIUM.....	1.59	0.04	0.33
HEATING VALUE*.....	909	1030	1113
SPECIFIC GRAVITY.....	0.771	0.595	0.699

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX SAMPLE 19334	INDEX SAMPLE 19355
STATE.....	TEXAS	TEXAS
COUNTY.....	MOORE	POTTER
FIELD.....	PERMIAN BASIN AREA	POTTER/MOORE COUNTY AREA
LOCATION.....	24" & 30" COMBINED	20" SUCTION
OWNER.....	NATURAL GAS PIPELINE CO. OF AM	MESA LIMITED PARTNERSHIP
SAMPLED.....	92/03/16	92/03/20
FORMATION.....	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	440	440
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	600	100
FLOW, MCFD.....	200000	75000
COMPONENT, MOLE PCT		
METHANE.....	95.8	67.2
ETHANE.....	2.0	8.7
PROPANE.....	0.2	6.5
N-BUTANE.....	0.0	2.7
ISOBUTANE.....	TRACE	1.4
N-PENTANE.....	0.0	0.9
ISOPENTANE.....	TRACE	0.1
CYCLOPENTANE.....	0.0	0.3
HEXANES PLUS.....	0.0	0.7
NITROGEN.....	1.8	10.3
OXYGEN.....	0.0	0.0
ARGON.....	0.0	0.0
HYDROGEN.....	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0
CARBON DIOXIDE.....	0.1	0.7
HELIUM.....	0.04	0.52
HEATING VALUE*.....	1015	1230
SPECIFIC GRAVITY.....	0.575	0.813

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

TABLE 3. -- SAMPLES FROM GAS AND OIL WELLS IN FOREIGN COUNTRIES

	INDEX SAMPLE 19452	INDEX SAMPLE 19301	INDEX SAMPLE 19481
COUNTRY.....	AUSTRALIA	CANADA	POLAND
STATE OR PROVINCE.....	NOT GIVEN	SASKATCHEWAN	NOT GIVEN
FIELD.....	BEHARRA SPRINGS	MARENGO	NOT GIVEN
WELL NAME.....	BEHARRA SPRINGS NO. 1	G & W ETAL MARENGO	BOGDJ-UCIECHOW NO. 61
LOCATION.....	PERTH BASIN	11-25-28-28W3	NOT GIVEN
OWNER.....	SAGASCO RESOURCES	GRAD & WALKER RESOURCES, LTD.	AIRCO HELEX AG
COMPLETED.....	92/--/00	91/--/00	92/--/00
SAMPLED.....	92/09/22	91/12/13	92/11/00
FORMATION.....	NOT GIVEN	CRET-VIKING	NOT GIVEN
GEOLOGIC PROVINCE CODE...	000	000	000
DEPTH, FEET.....	NOT GIVEN	941	NOT GIVEN
WELLHEAD PRESSURE, PSIG...	7600	850	NOT GIVEN
OPEN FLOW, MCFD.....	3900	300	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	94.0	95.0	50.5
ETHANE.....	1.8	0.6	0.3
PROPANE.....	0.3	0.2	0.0
N-BUTANE.....	0.2	0.0	0.0
ISOBUTANE.....	0.0	0.1	0.0
N-PENTANE.....	0.1	0.0	0.0
ISOPENTANE.....	0.1	0.0	0.0
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.0
NITROGEN.....	0.7	3.7	48.5
OXYGEN.....	0.0	0.0	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	0.1
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	2.8	0.1	0.0
HELIUM.....	0.01	0.07	0.39
HEATING VALUE.....	1007	985	521
SPECIFIC GRAVITY.....	0.603	0.579	0.756

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 3. - SAMPLES FROM GAS AND OIL WELLS IN FOREIGN COUNTRIES

	INDEX SAMPLE 19482	INDEX SAMPLE 19483	INDEX SAMPLE 19484
COUNTRY.....	POLAND	POLAND	POLAND
STATE OR PROVINCE.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
FIELD.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
WELL NAME.....	ZALECZE NO. 49	WILKOW NO. 23	WIERZCHOWICE NO. 37
LOCATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
OWNER.....	AIRCO HELEX AG	AIRCO HELEX AG	AIRCO HELEX AG
COMPLETED.....	92/11/00	92/11/00	92/11/00
SAMPLED.....	92/11/00	92/11/00	92/11/00
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	000	000	000
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
WELLHEAD PRESSURE, PSIG...	NOT GIVEN	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	69.4	32.4	65.1
ETHANE.....	0.8	0.6	0.4
PROPANE.....	0.0	0.0	0.0
N-BUTANE.....	0.0	0.0	0.0
ISOBUTANE.....	0.0	0.1	0.0
N-PENTANE.....	0.1	0.0	0.0
ISOPENTANE.....	0.1	0.0	0.1
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.0	0.1	0.0
NITROGEN.....	29.2	66.5	33.7
OXYGEN.....	0.0	0.0	0.0
ARGON.....	0.0	0.0	0.0
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**.....	0.0	0.0	0.0
CARBON DIOXIDE.....	0.3	0.1	0.4
HELIUM.....	0.16	0.23	0.25
HEATING VALUE*.....	724	346	670
SPECIFIC GRAVITY.....	0.684	0.835	0.700

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 3. - SAMPLES FROM GAS AND OIL WELLS IN FOREIGN COUNTRIES

INDEX 7
SAMPLE 19485

COUNTRY.....	POLAND	
STATE OR PROVINCE.....	NOT GIVEN	
FIELD.....	NOT GIVEN	
WELL NAME.....	ZUCHLOW NO. 47	
LOCATION.....	NOT GIVEN	
OWNER.....	AIRCO HELEX AG	
COMPLETED.....	92/11/00	
SAMPLED.....	92/11/00	
FORMATION.....	NOT GIVEN	
GEOLOGIC PROVINCE CODE....	000	
DEPTH, FEET.....	NOT GIVEN	
WELLHEAD PRESSURE, PSIG....	NOT GIVEN	
OPEN FLOW, MCFD.....	NOT GIVEN	
COMPONENT, MOLE PCT		
METHANE.....	52.0	-----
ETHANE.....	1.4	-----
PROPANE.....	0.1	-----
N-BUTANE.....	0.1	-----
ISOBUTANE.....	TRACE	-----
N-PENTANE.....	0.0	-----
ISOPENTANE.....	0.1	-----
CYCLOPENTANE.....	0.0	-----
HEXANES PLUS.....	0.1	-----
NITROGEN.....	45.7	-----
OXYGEN.....	0.0	-----
ARGON.....	0.0	-----
HYDROGEN.....	TRACE	-----
HYDROGEN SULFIDE**.....	0.0	-----
CARBON DIOXIDE.....	0.3	-----
HELIUM.....	0.17	-----
HEATING VALUE*.....	568	-----
SPECIFIC GRAVITY.....	0.760	-----

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H₂S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 4. - SAMPLES FROM PIPELINES IN FOREIGN COUNTRIES

	INDEX SAMPLE 19316	INDEX SAMPLE 19318	INDEX SAMPLE 19317
COUNTRY.....	THAILAND	THAILAND	THAILAND
STATE OR PROVINCE.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
FIELD.....	ERAWAN	PLATONG	SATUN
LOCATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
OWNER.....	UNOCAL THAILAND, LTD.	UNOCAL THAILAND, LTD.	UNOCAL THAILAND, LTD.
SAMPLED.....	91/07/08	91/07/28	91/07/08
FORMATION.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE...	000	000	000
DEPTH, FEET.....	NOT GIVEN	NOT GIVEN	NOT GIVEN
PRESSURE, PSIG.....	1080	1254	1060
FLOW, MCFD.....	NOT GIVEN	101800	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE.....	65.4	70.4	73.3
ETHANE.....	8.1	6.3	8.8
PROPANE.....	4.9	3.7	4.0
N-BUTANE.....	0.9	0.6	0.6
ISOBUTANE.....	1.1	0.8	0.8
N-PENTANE.....	0.0	0.0	TRACE
ISOPENTANE.....	0.6	0.4	0.4
CYCLOPENTANE.....	0.0	0.0	0.0
HEXANES PLUS.....	0.1	0.0	0.1
NITROGEN.....	3.7	2.3	1.2
OXYGEN.....	0.0	0.0	0.0
ARGON.....	0.0	TRACE	TRACE
HYDROGEN.....	TRACE	TRACE	TRACE
HYDROGEN SULFIDE.....	0.0	0.0	0.0
CARBON DIOXIDE.....	15.2	15.5	10.8
HELIUM.....	TRACE	0.01	TRACE
HEATING VALUE*.....	1034	987	1072
SPECIFIC GRAVITY.....	0.852	0.812	0.779

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

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