UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Production capability forecasts of crude oil and natural gas liquids to 2010 for non-OPEC countries

by

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Open-File Report 90-280

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1. Purpose and Summary of Findings

1.1 Purpose

The purpose of this open-file report is to make available conventional crude oil and natural gas liquids production capability forecasts that were originally prepared for presentation at the Energy Modeling Forum 11 work sessions. The forecasts of liquids production capability are based on estimates of reserves, projected future additions to reserves and estimated undiscovered resources which are producible with current technology within the probable price range of $15 up to $50 per barrel.

1.2 Summary of Findings

The findings are presented as production capability forecasts and represent the maximum output that can be expected given the level of current reserves, discovery history, production history, and estimated undiscovered resources. Non-OPEC crude oil production capability outside the Communist countries is expected to decline from the 1988 level of 23.2 million barrels per day (MMBBLD) to between 18.6 and 22.0 MMBBLD in 2010. When Communist countries are included with these other non-OPEC countries, aggregate production capability is expected to decline from the 1988 level of 37.7 MMBBLD to between 29.1 to 34.2 MMBBLD in the year 2010.

Natural gas liquids (NGL) production capability projections were based on the natural gas production forecasts developed for the 17 non-OPEC countries having significant gas production or reserves. The non-OPEC natural gas production (including Communist countries) is capable of growing from the 1988 level of about 60 trillion cubic feet (TCF) per year to 99.5 TCF per year by 2010. For this group outside the USSR gas production could grow from 30.4 TCF per year to 40.6 TCF per year in 2010. The corresponding NGL production capability forecast for the 17 non-OPEC gas producers grows from 3.3 MMBBLD

in 1987 to 7.6 MMBBLD in 2010. Outside the USSR, NGL production capability grows from 2.7 MMBBLD in 1987 to 3.5 MMBBLD in 2010. The analysis shows that most of the increase in gas and NGL production capability to 2010 for the 18 non-OPEC gas producers comes from the USSR.

2. Methodology

2.1 Crude Oil Production Capability Forecasts

The three sets of crude-oil production capabilities were generated by assuming that suppliers would produce a fraction of their booked reserves each year. Each forecast represents a different upper limit constraint on the fraction of reserves that may be produced in a given year. The three upper limits were 1/20, 1/16, and 1/12. For countries already producing above the upper limit, the production reserve ratio was assumed constant. Current reserves were taken from World Oil (1989). For other countries, the production reserve ratios were assumed to increase at least linearly to the upper limit constraint or faster in order to maintain a constant production level.

As the projection evolved, reserves were reduced by the quantity of oil produced and increased by new discoveries and the growth in old fields. Undiscovered U.S. crude-oil estimates were from Mast et al. (1989). The estimate of the quantity of oil remaining to be discovered in countries outside the United States was taken from Masters et al. (1987). Annual projected discoveries were calculated with an exponential decline function. The decline rate was based on historical discoveries after 1960 under the constraint that at least half of the estimated undiscovered oil would be found by 2010.

Changes in estimated ultimate recovery from fields in the United States have been well documented. These changes can result from finding extensions to old reservoirs or discovery of new reservoirs in old fields, from the

application of improved recovery methods or nearby additional production experience, or the correction of clerical errors in the production records.

The changes can be negative but are typically positive. The data series published by the American Petroleum Institute from 1966 to 1979 shows growth for fields grouped by year of discovery. From this series a set of growth factors was calculated (Root, 1981). It was assumed that outside the U.S. and Canada the growth would be less than in the U.S. The projections shown here were calculated on the basis of assuming field growth for areas outside the U.S. and Canada was 1/3, 1/2, and 2/3 that of the U.S.

2.2 Natural Gas and Gas Liquids Production Capability

The projection of natural gas liquids production capability was derived from a projection of natural gas production capability in the 18 countries with the greatest potential outside of OPEC. The projection of natural gas production capability is more problematic even then that of oil because of poorer data and greater technical difficulties especially with regard to transportation. These countries are Colombia, Peru, Brazil, Argentina, Norway, USSR, United Kingdom, Oman, Tunisia, Egypt, Angola, India, Canada, United States, People's Republic of China, Malaysia, Brunei, Australia, and New Zealand. The natural gas projection was prepared by country and then aggregated. The projections were based upon five assumptions. The assumptions were: 1) If gas production exceeded 1/20 of reserves the production reserve ratio (P/R) was held constant, 2) For countries with P/R less than 1/20, the P/R was increased linearly to 1/20 by 2010, with the restriction that production could not increase more than 5 percent per year, 3) Known gas fields would grow at one-half the rate of gas-field growth in the U.S., 4) One-half of the undiscovered gas would be discovered by 2010, and 5) Undiscovered gas estimates were taken from Masters et al. (1987) and Mast et al. (1989).

The natural gas liquids production was computed from the natural gas projection under the assumption that the average ratio of NGL/GAS would remain constant at 31.84 bbl/MMCF outside of OPEC and the USSR. In the USSR, it was assumed that the ratio would increase linearly from 12.2 bbl/MMCF to 25 bbl/MMCF by 2010.

2.3 References and Data Sources

DeGolyer and MacNaughton, Twentieth Century Petroleum Statistics.

Field discoveries and wildcat drilling: Petroconsultants

Root, D. H., 1981, Estimation of inferred plus indicated reserves for the United States, in Dolton and others, Estimates of undiscovered recoverable conventional resources of oil and gas in the United States, USGS Circular 860, 87 p.

Mast, R. F., Dolton, G. L., Crovelli, R. A., Root, D. H., Attanasi, E. D., Martin, P. E., Cooke, L. W., Carpenter, G. B., Pecora, W. C., and Rose, M. B., 1989, Estimates of undiscovered conventional oil and gas resources in the United States - a summary: USGS/MMS Special Publication, 56 p.

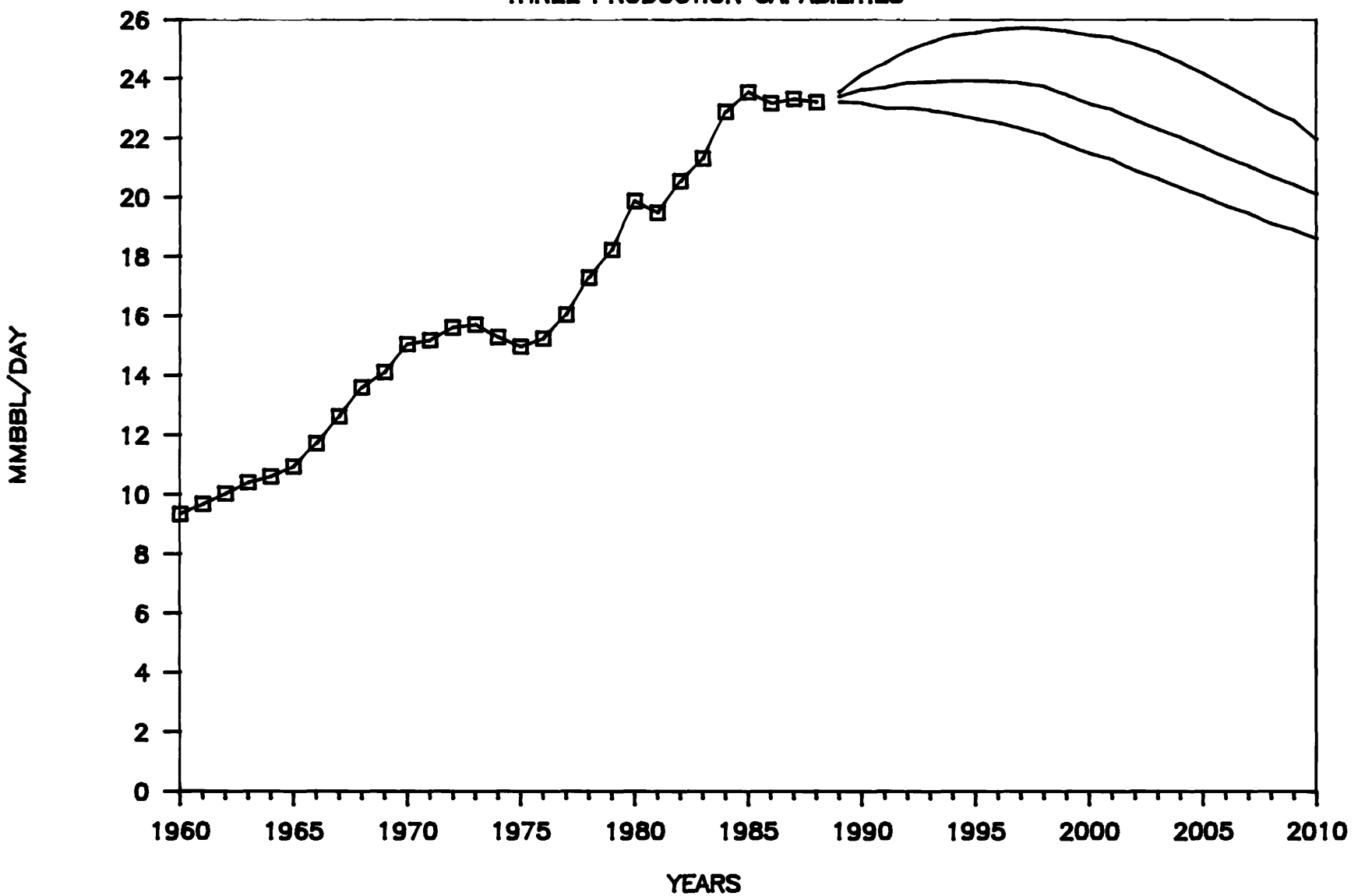
Masters, C. D., Attanasi, E. D., Dietzman, W. D., Meyer, R. F., Mitchell, R. W., and Root, D. H., 1987, World resources of crude oil, natural gas, natural bitumen, and shale oil: Proceedings of Twelfth World Petroleum Congress, Houston, March 1987, Session 25, p. 3-27.

World Oil, 1989, Prices retain their grip on upstream: Gulf Publishing, Houston, v. 209, no. 2, p. 25-30.

3. Results: Groups and Selected Countries; Graphs and Tables

   3.1 Crude Oil Production Capability Forecasts for Non-OPEC Country Groups and Select Countries

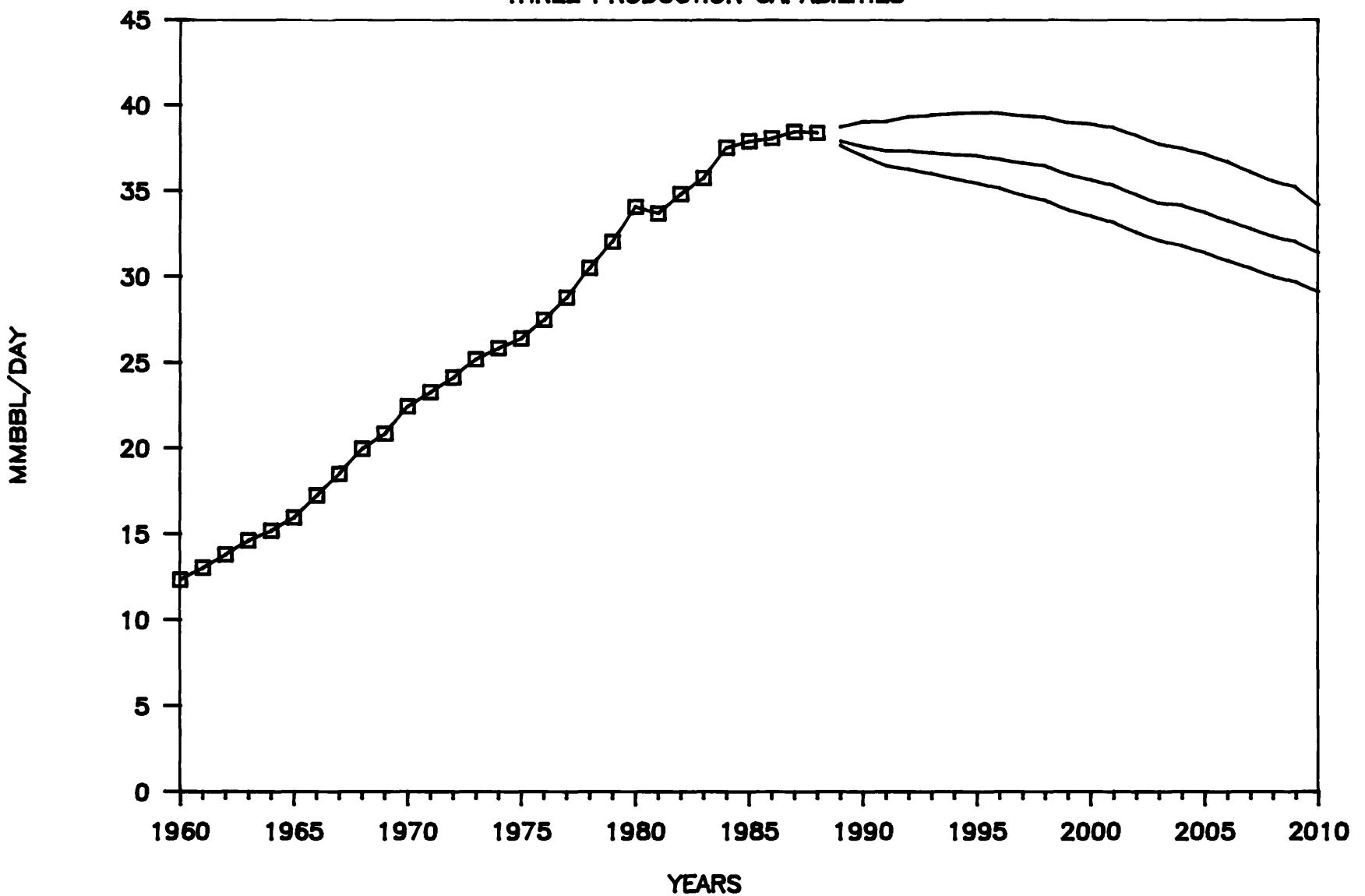
CRUDE–OIL PROD. NON–OPEC NON–COMMUNIST



DATE: 3/22/90 NON-OPEC, NON-COMMUNIST
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 218120.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
	1970	15.08	68226.	15.08	68226.	15.08	68226.
	1971	15.21	81815.	15.21	81815.	15.21	81815.
	1972	15.63	81418.	15.63	81418.	15.63	81418.
	1973	15.73	84295.	15.73	84295.	15.73	84295.
	1974	15.31	90105.	15.31	90105.	15.31	90105.
	1975	14.99	97840.	14.99	97840.	14.99	97840.
	1976	15.27	91414.	15.27	91414.	15.27	91414.
	1977	16.07	96482.	16.07	96482.	16.07	96482.
	1978	17.31	95324.	17.31	95324.	17.31	95324.
	1979	18.24	110324.	18.24	110324.	18.24	110324.
	1980	19.90	112289.	19.90	112289.	19.90	112289.
	1981	19.50	128193.	19.50	128193.	19.50	128193.
	1982	20.56	137821.	20.56	137821.	20.56	137821.
	1983	21.33	138473.	21.33	138473.	21.33	138473.
	1984	22.91	141318.	22.91	141318.	22.91	141318.
	1985	23.56	137030.	23.56	137030.	23.56	137030.
	1986	23.19	153450.	23.19	153450.	23.19	153450.
	1987	23.34	150576.	23.34	150576.	23.34	150576.
	1988	23.23	126569.	23.23	126569.	23.23	126569.
	1989	23.23	127011.	23.42	128066.	23.57	128845.
	1990	23.20	127353.	23.66	129420.	24.17	131049.
	1991	23.02	126931.	23.73	129569.	24.55	131692.
	1992	23.03	126867.	23.90	129795.	24.98	132162.
	1993	22.95	126433.	23.92	129517.	25.26	131960.
	1994	22.82	125646.	23.96	128653.	25.49	130916.
	1995	22.67	124697.	23.95	127505.	25.58	129449.
	1996	22.54	123784.	23.93	126446.	25.69	128126.
	1997	22.34	122564.	23.87	124942.	25.74	126215.
	1998	22.13	121072.	23.77	123141.	25.69	123979.
	1999	21.79	119279.	23.47	120999.	25.60	121361.
	2000	21.50	117495.	23.16	118856.	25.48	118683.
	2001	21.29	115951.	22.98	116982.	25.40	116236.
	2002	20.92	113870.	22.62	114553.	25.17	113169.
	2003	20.65	112026.	22.32	112412.	24.90	110400.
	2004	20.35	110068.	22.04	110147.	24.57	107488.
	2005	20.06	108043.	21.70	107728.	24.19	104351.
	2006	19.74	105976.	21.37	105364.	23.79	101379.
	2007	19.49	104105.	21.08	103151.	23.39	98536.
	2008	19.13	101907.	20.72	100570.	22.95	95305.
	2009	18.91	99930.	20.45	98234.	22.61	92381.
	2010	18.62	97914.	20.13	95933.	21.99	89580.

CRUDE—OIL PROD. NON—OPEC

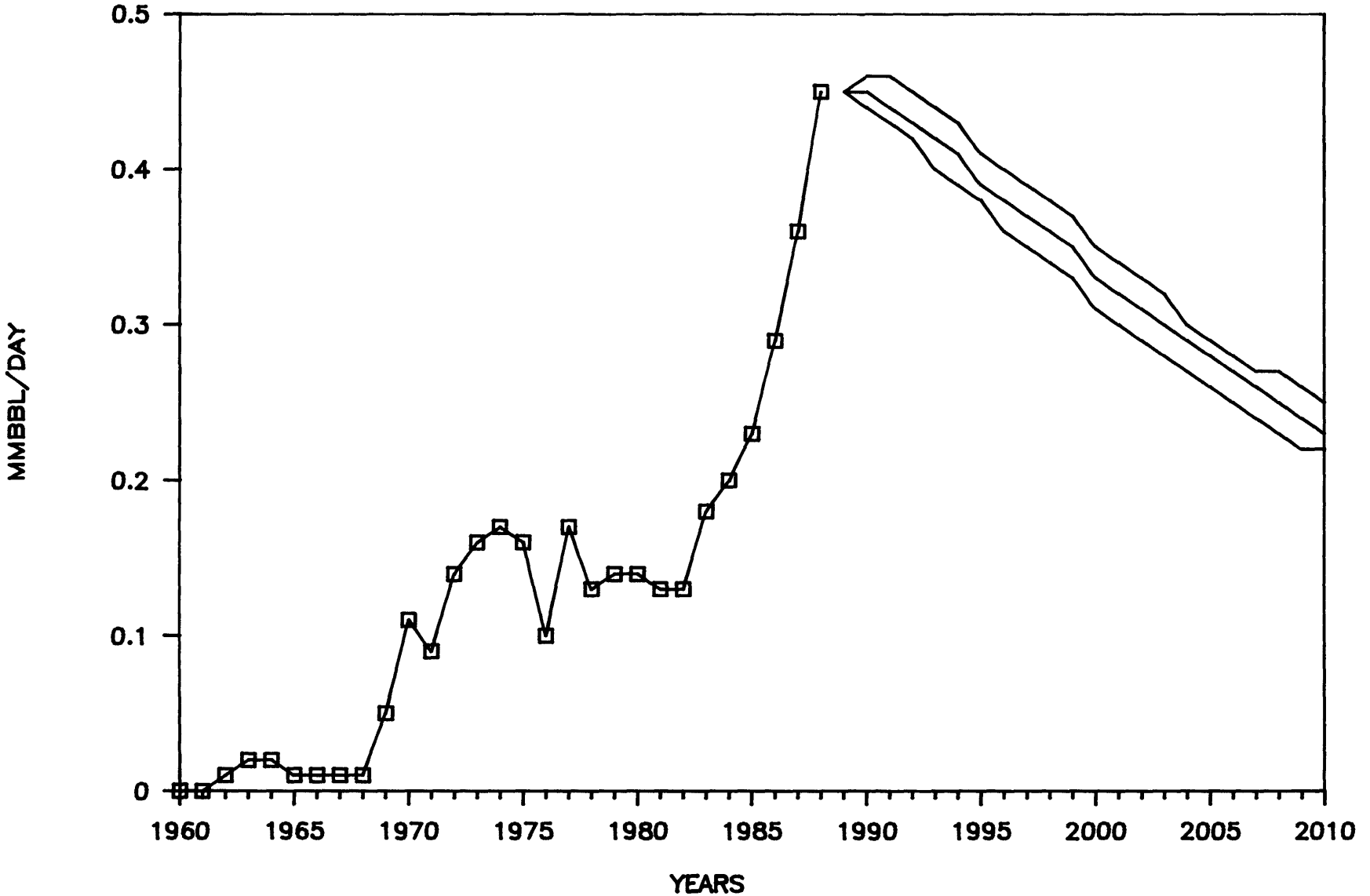


DATE: 3/22/90 NON-OPEC INCLUDING COMMUNISTS

PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL

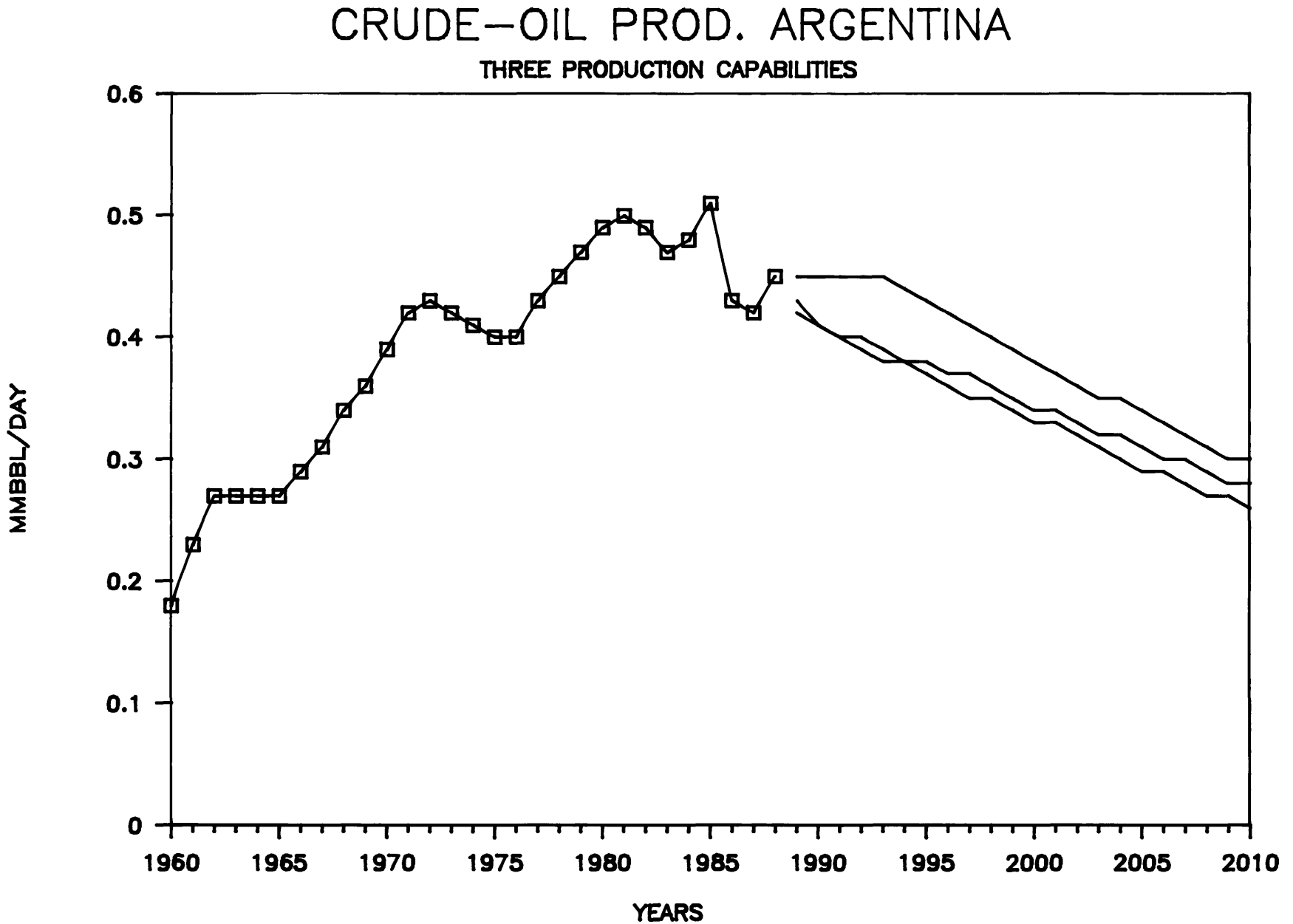
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 367780.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
	1970	22.46	131895.	22.46	131895.	22.46	131895.
	1971	23.28	145484.	23.28	145484.	23.28	145484.
	1972	24.15	153918.	24.15	153918.	24.15	153918.
	1973	25.06	141795.	25.06	141795.	25.06	141795.
	1974	25.47	152405.	25.47	152405.	25.47	152405.
	1975	26.02	161190.	26.02	161190.	26.02	161190.
	1976	27.02	168534.	27.02	168534.	27.02	168534.
	1977	28.35	174382.	28.35	174382.	28.35	174382.
	1978	30.26	172350.	30.26	172350.	30.26	172350.
	1979	31.55	188787.	31.55	188787.	31.55	188787.
	1980	33.48	191326.	33.48	191326.	33.48	191326.
	1981	33.07	212413.	33.07	212413.	33.07	212413.
	1982	34.22	241321.	34.22	241321.	34.22	241321.
	1983	35.13	242727.	35.13	242727.	35.13	242727.
	1984	36.78	244364.	36.78	244364.	36.78	244364.
	1985	37.31	237530.	37.31	237530.	37.31	237530.
	1986	37.35	251655.	37.35	251655.	37.35	251655.
	1987	37.71	229801.	37.71	229801.	37.71	229801.
	1988	37.65	207569.	37.65	207569.	37.65	207569.
	1989	37.01	204364.	37.27	205940.	37.99	207162.
	1990	36.48	202074.	37.01	204658.	38.67	206640.
	1991	35.97	200145.	6.81	203196.	39.17	205287.
	1992	35.81	199454.	36.87	202816.	39.50	204724.
	1993	35.59	198343.	36.78	201771.	39.59	203227.
	1994	35.34	197066.	36.73	200369.	39.67	201175.
	1995	35.12	195816.	36.70	198950.	39.71	199056.
	1996	34.85	194191.	36.56	197041.	39.63	196375.
	1997	34.49	192144.	36.35	194537.	39.45	192949.
	1998	34.20	190291.	36.24	192441.	39.38	190156.
	1999	33.68	187582.	35.76	189196.	39.05	185949.
	2000	33.34	185464.	35.46	186831.	38.97	182882.
	2001	32.99	183163.	35.17	184124.	8.74	179269.
	2002	32.44	180079.	34.64	180503.	38.28	174581.
	2003	31.98	177229.	34.15	177186.	37.76	170260.
	2004	31.70	175300.	34.02	175313.	37.46	167906.
	2005	31.30	172635.	33.62	172292.	37.13	164097.
	2006	30.84	169699.	33.16	168982.	36.73	159971.
	2007	30.43	166841.	32.72	165660.	36.14	155730.
	2008	29.95	163888.	32.27	162332.	35.59	151605.
	2009	29.63	161209.	31.96	159346.	35.24	147952.
	2010	29.08	157828.	31.35	155384.	34.19	143069.


CRUDE—OIL PROD. ANGOLA
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 1930.

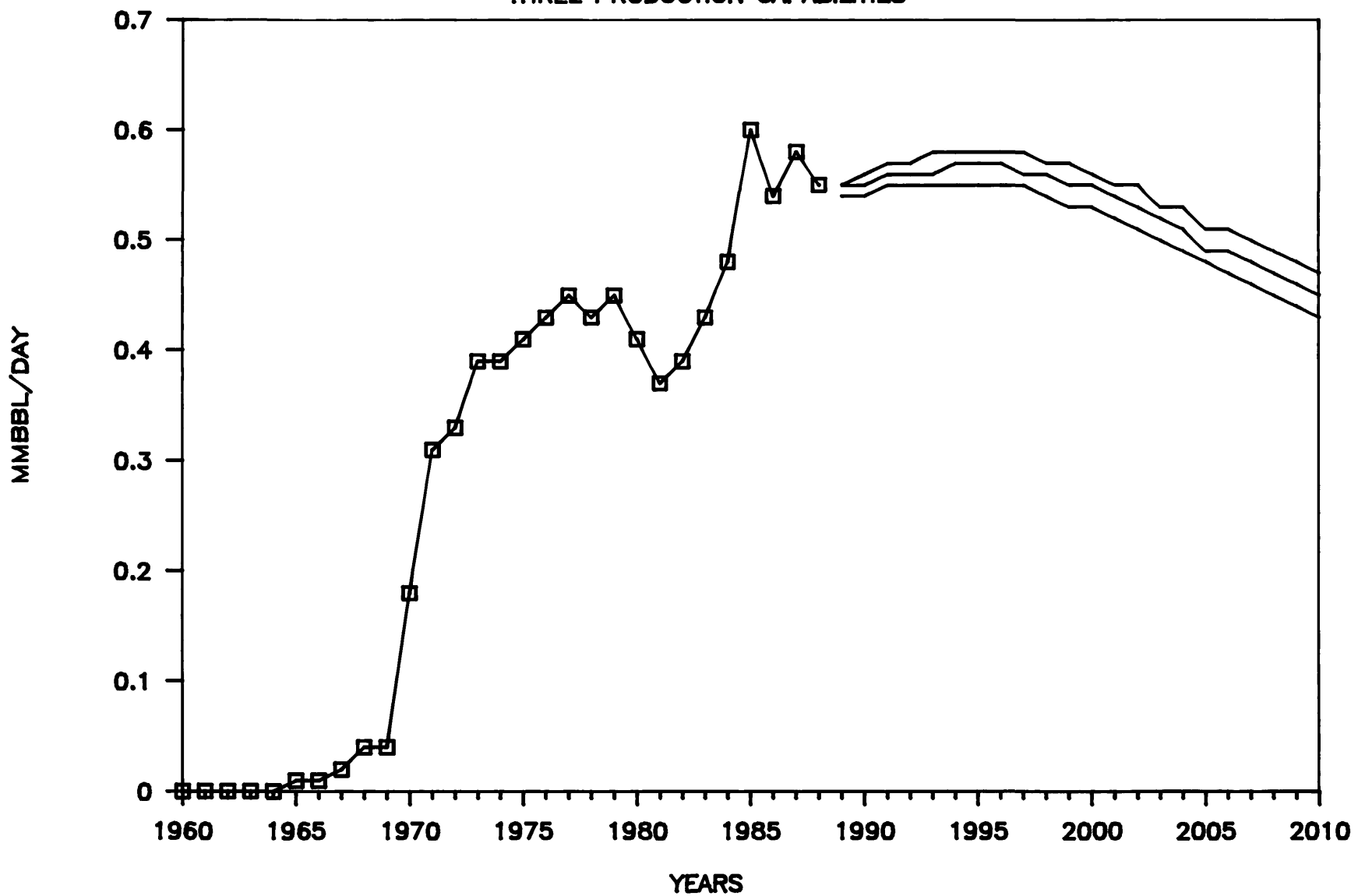
COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
ANGOLA	1970	0.11	645.	0.11	645.	0.11	645.
ANGOLA	1971	0.09	750.	0.09	750.	0.09	750.
ANGOLA	1972	0.14	1000.	0.14	1000.	0.14	1000.
ANGOLA	1973	0.16	1233.	0.16	1233.	0.16	1233.
ANGOLA	1974	0.17	1310.	0.17	1310.	0.17	1310.
ANGOLA	1975	0.16	1409.	0.16	1409.	0.16	1409.
ANGOLA	1976	0.10	1359.	0.10	1359.	0.10	1359.
ANGOLA	1977	0.17	1322.	0.17	1322.	0.17	1322.
ANGOLA	1978	0.13	1414.	0.13	1414.	0.13	1414.
ANGOLA	1979	0.14	1365.	0.14	1365.	0.14	1365.
ANGOLA	1980	0.14	1325.	0.14	1325.	0.14	1325.
ANGOLA	1981	0.13	1375.	0.13	1375.	0.13	1375.
ANGOLA	1982	0.13	1428.	0.13	1428.	0.13	1428.
ANGOLA	1983	0.18	1457.	0.18	1457.	0.18	1457.
ANGOLA	1984	0.20	1715.	0.20	1715.	0.20	1715.
ANGOLA	1985	0.23	2147.	0.23	2147.	0.23	2147.
ANGOLA	1986	0.29	2018.	0.29	2018.	0.29	2018.
ANGOLA	1987	0.36	1950.	0.36	1950.	0.36	1950.
ANGOLA	1988	0.45	2000.	0.45	2000.	0.45	2000.
ANGOLA	1989	0.45	1982.	0.45	2002.	0.45	2017.
ANGOLA	1990	0.44	1955.	0.45	1999.	0.46	2033.
ANGOLA	1991	0.43	1903.	0.44	1962.	0.46	2009.
ANGOLA	1992	0.42	1846.	0.43	1916.	0.45	1971.
ANGOLA	1993	0.40	1789.	0.42	1868.	0.44	1931.
ANGOLA	1994	0.39	1727.	0.41	1810.	0.43	1875.
ANGOLA	1995	0.38	1666.	0.39	1750.	0.41	1815.
ANGOLA	1996	0.36	1604.	0.38	1689.	0.40	1754.
ANGOLA	1997	0.35	1547.	0.37	1633.	0.39	1698.
ANGOLA	1998	0.34	1493.	0.36	1580.	0.38	1646.
ANGOLA	1999	0.33	1445.	0.35	1535.	0.37	1603.
ANGOLA	2000	0.31	1393.	0.33	1482.	0.35	1550.
ANGOLA	2001	0.30	1348.	0.32	1439.	0.34	1508.
ANGOLA	2002	0.29	1292.	0.31	1379.	0.33	1445.
ANGOLA	2003	0.28	1241.	0.30	1325.	0.32	1388.
ANGOLA	2004	0.27	1190.	0.29	1272.	0.30	1331.
ANGOLA	2005	0.26	1147.	0.28	1228.	0.29	1287.
ANGOLA	2006	0.25	1106.	0.27	1186.	0.28	1245.
ANGOLA	2007	0.24	1066.	0.26	1145.	0.27	1204.
ANGOLA	2008	0.23	1029.	0.25	1109.	0.27	1167.
ANGOLA	2009	0.22	989.	0.24	1065.	0.26	1121.
ANGOLA	2010	0.22	961.	0.23	1041.	0.25	1101.


CRUDE—OIL PROD. ARGENTINA
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
0.6
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 2480.

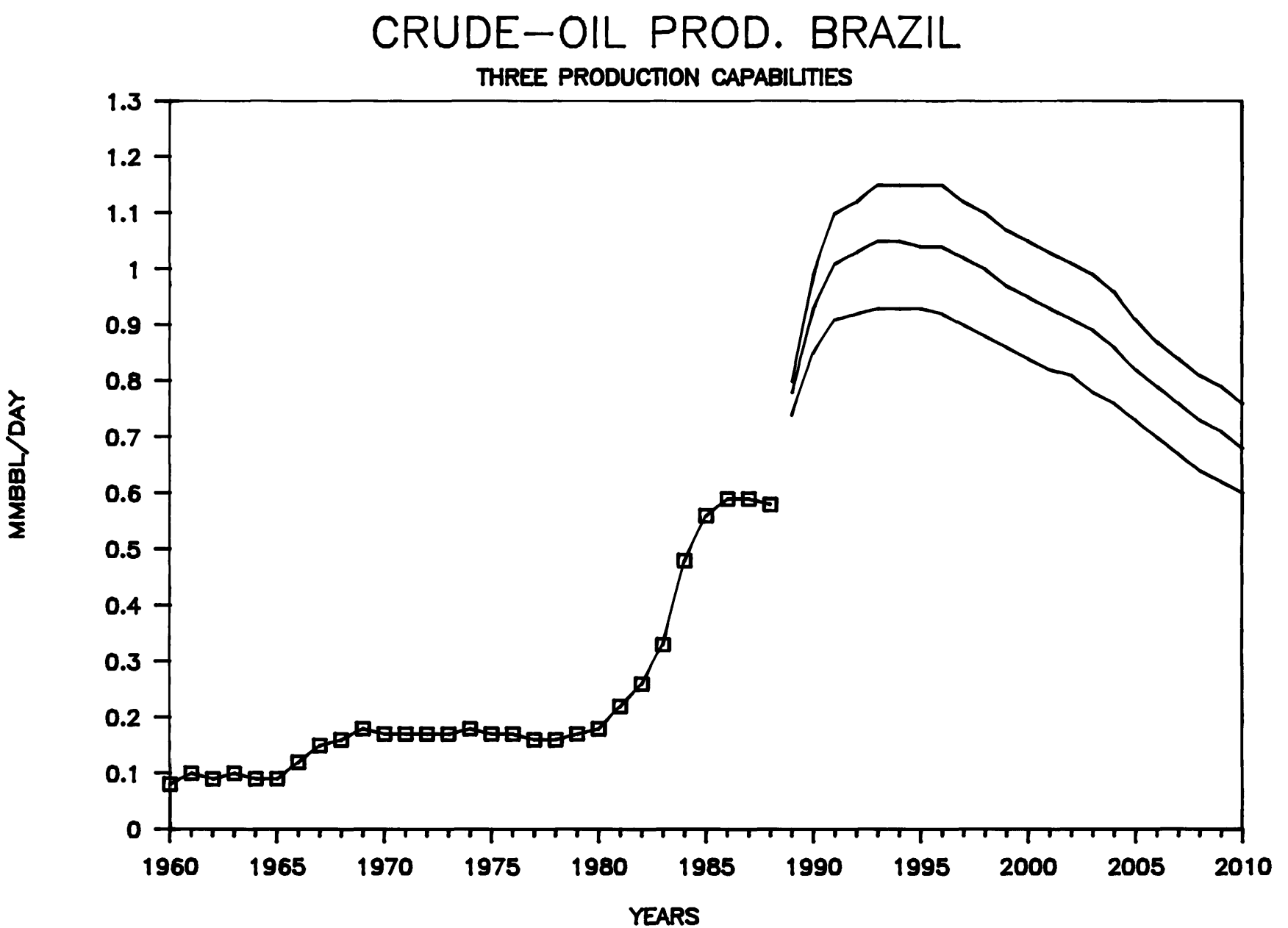
COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
ARGENTINA	1970	0.39	1573.	0.39	1573.	0.39	1573.
ARGENTINA	1971	0.42	1573.	0.42	1573.	0.42	1573.
ARGENTINA	1972	0.43	2000.	0.43	2000.	0.43	2000.
ARGENTINA	1973	0.42	2466.	0.42	2466.	0.42	2466.
ARGENTINA	1974	0.41	2312.	0.41	2312.	0.41	2312.
ARGENTINA	1975	0.40	2459.	0.40	2459.	0.40	2459.
ARGENTINA	1976	0.40	2500.	0.40	2500.	0.40	2500.
ARGENTINA	1977	0.43	2516.	0.43	2516.	0.43	2516.
ARGENTINA	1978	0.45	2327.	0.45	2327.	0.45	2327.
ARGENTINA	1979	0.47	2425.	0.47	2425.	0.47	2425.
ARGENTINA	1980	0.49	2900.	0.49	2900.	0.49	2900.
ARGENTINA	1981	0.50	2457.	0.50	2457.	0.50	2457.
ARGENTINA	1982	0.49	2400.	0.49	2400.	0.49	2400.
ARGENTINA	1983	0.47	1950.	0.47	1950.	0.47	1950.
ARGENTINA	1984	0.48	2450.	0.48	2450.	0.48	2450.
ARGENTINA	1985	0.51	2348.	0.51	2348.	0.51	2348.
ARGENTINA	1986	0.43	2240.	0.43	2240.	0.43	2240.
ARGENTINA	1987	0.42	2180.	0.42	2180.	0.42	2180.
ARGENTINA	1988	0.45	2265.	0.45	2265.	0.45	2265.
ARGENTINA	1989	0.42	2156.	0.43	2170.	0.45	2182.
ARGENTINA	1990	0.41	2081.	0.41	2104.	0.45	2120.
ARGENTINA	1991	0.40	2029.	0.40	2057.	0.45	2069.
ARGENTINA	1992	0.39	1986.	0.40	2018.	0.45	2023.
ARGENTINA	1993	0.38	1945.	0.39	1981.	0.45	1974.
ARGENTINA	1994	0.38	1906.	0.38	1946.	0.44	1924.
ARGENTINA	1995	0.37	1869.	0.38	1912.	0.43	1876.
ARGENTINA	1996	0.36	1837.	0.37	1886.	0.42	1839.
ARGENTINA	1997	0.35	1803.	0.37	1857.	0.41	1801.
ARGENTINA	1998	0.35	1764.	0.36	1821.	0.40	1756.
ARGENTINA	1999	0.34	1723.	0.35	1781.	0.39	1705.
ARGENTINA	2000	0.33	1684.	0.34	1746.	0.38	1663.
ARGENTINA	2001	0.33	1652.	0.34	1720.	0.37	1634.
ARGENTINA	2002	0.32	1615.	0.33	1685.	0.36	1595.
ARGENTINA	2003	0.31	1575.	0.32	1648.	0.35	1553.
ARGENTINA	2004	0.30	1537.	0.32	1612.	0.35	1513.
ARGENTINA	2005	0.29	1496.	0.31	1573.	0.34	1470.
ARGENTINA	2006	0.29	1459.	0.30	1538.	0.33	1433.
ARGENTINA	2007	0.28	1427.	0.30	1511.	0.32	1408.
ARGENTINA	2008	0.27	1385.	0.29	1467.	0.31	1359.
ARGENTINA	2009	0.27	1349.	0.28	1434.	0.30	1327.
ARGENTINA	2010	0.26	1317.	0.28	1406.	0.30	1301.

CRUDE–OIL PROD. AUSTRALIA & NEW ZEALAND



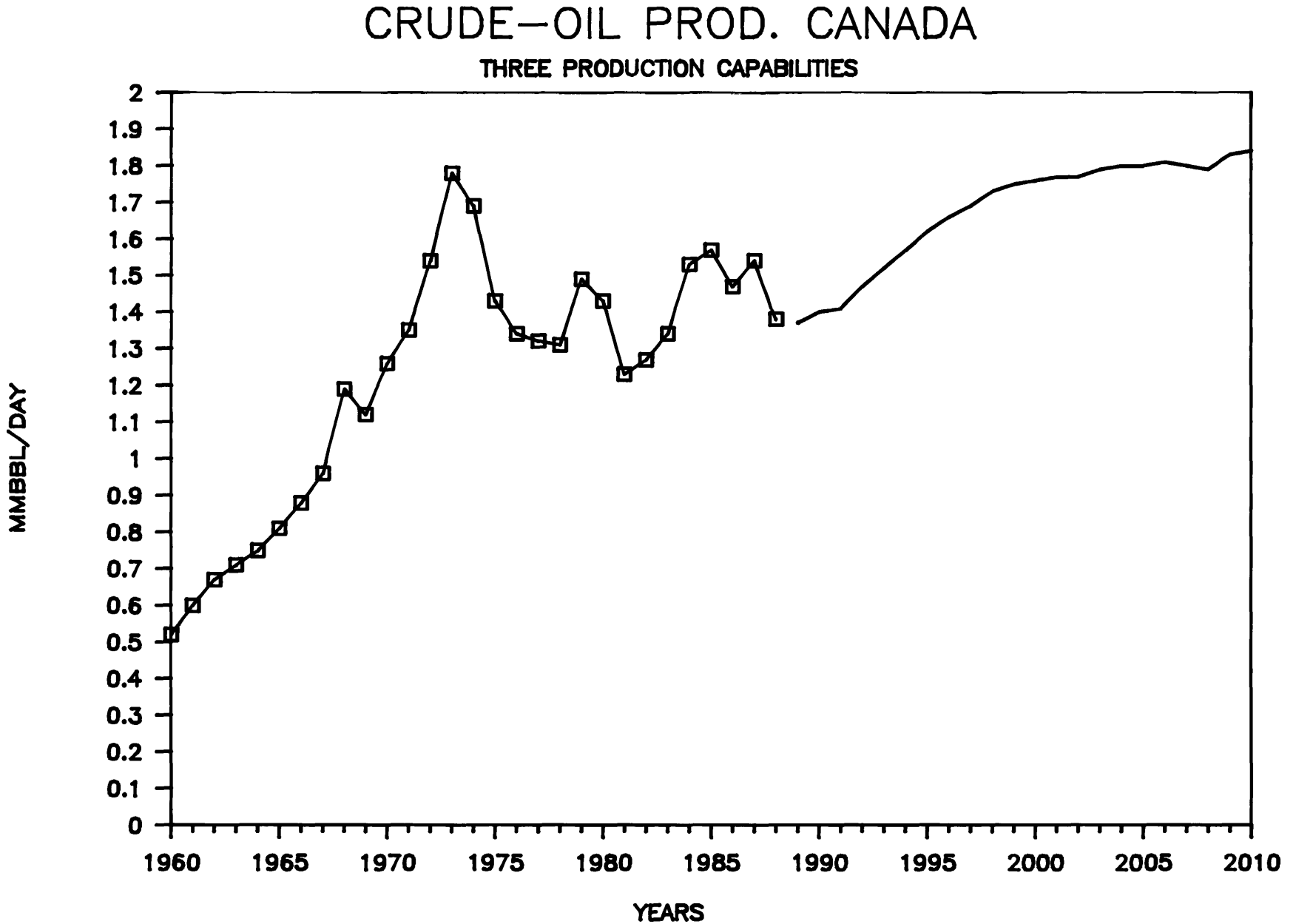
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 5480.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
AUST/NZ	1970	0.18	1827.	0.18	1827.	0.18	1827.
AUST/NZ	1971	0.31	1687.	0.31	1687.	0.31	1687.
AUST/NZ	1972	0.33	1875.	0.33	1875.	0.33	1875.
AUST/NZ	1973	0.39	1681.	0.39	1681.	0.39	1681.
AUST/NZ	1974	0.39	1724.	0.39	1724.	0.39	1724.
AUST/NZ	1975	0.41	2710.	0.41	2710.	0.41	2710.
AUST/NZ	1976	0.43	2475.	0.43	2475.	0.43	2475.
AUST/NZ	1977	0.45	2880.	0.45	2880.	0.45	2880.
AUST/NZ	1978	0.43	2774.	0.43	2774.	0.43	2774.
AUST/NZ	1979	0.45	3099.	0.45	3099.	0.45	3099.
AUST/NZ	1980	0.41	2099.	0.41	2099.	0.41	2099.
AUST/NZ	1981	0.37	2583.	0.37	2583.	0.37	2583.
AUST/NZ	1982	0.39	1920.	0.39	1920.	0.39	1920.
AUST/NZ	1983	0.43	1727.	0.43	1727.	0.43	1727.
AUST/NZ	1984	0.48	2044.	0.48	2044.	0.48	2044.
AUST/NZ	1985	0.60	1633.	0.60	1633.	0.60	1633.
AUST/NZ	1986	0.54	1990.	0.54	1990.	0.54	1990.
AUST/NZ	1987	0.58	1874.	0.58	1874.	0.58	1874.
AUST/NZ	1988	0.55	2352.	0.55	2352.	0.55	2352.
AUST/NZ	1989	0.54	2312.	0.55	2334.	0.55	2351.
AUST/NZ	1990	0.54	2309.	0.55	2346.	0.56	2377.
AUST/NZ	1991	0.55	2326.	0.56	2378.	0.57	2424.
AUST/NZ	1992	0.55	2327.	0.56	2383.	0.57	2434.
AUST/NZ	1993	0.55	2339.	0.56	2402.	0.58	2462.
AUST/NZ	1994	0.55	2350.	0.57	2422.	0.58	2489.
AUST/NZ	1995	0.55	2343.	0.57	2415.	0.58	2483.
AUST/NZ	1996	0.55	2335.	0.57	2411.	0.58	2481.
AUST/NZ	1997	0.55	2324.	0.56	2404.	0.58	2478.
AUST/NZ	1998	0.54	2294.	0.56	2372.	0.57	2444.
AUST/NZ	1999	0.53	2262.	0.55	2337.	0.57	2408.
AUST/NZ	2000	0.53	2240.	0.55	2320.	0.56	2395.
AUST/NZ	2001	0.52	2202.	0.54	2280.	0.55	2352.
AUST/NZ	2002	0.51	2170.	0.53	2250.	0.55	2325.
AUST/NZ	2003	0.50	2125.	0.52	2203.	0.53	2276.
AUST/NZ	2004	0.49	2087.	0.51	2167.	0.53	2241.
AUST/NZ	2005	0.48	2026.	0.49	2098.	0.51	2165.
AUST/NZ	2006	0.47	2000.	0.49	2081.	0.51	2156.
AUST/NZ	2007	0.46	1958.	0.48	2040.	0.50	2116.
AUST/NZ	2008	0.45	1920.	0.47	2004.	0.49	2083.
AUST/NZ	2009	0.44	1874.	0.46	1958.	0.48	2037.
AUST/NZ	2010	0.43	1828.	0.45	1913.	0.47	1991.


CRUDE–OIL PROD. BRAZIL
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

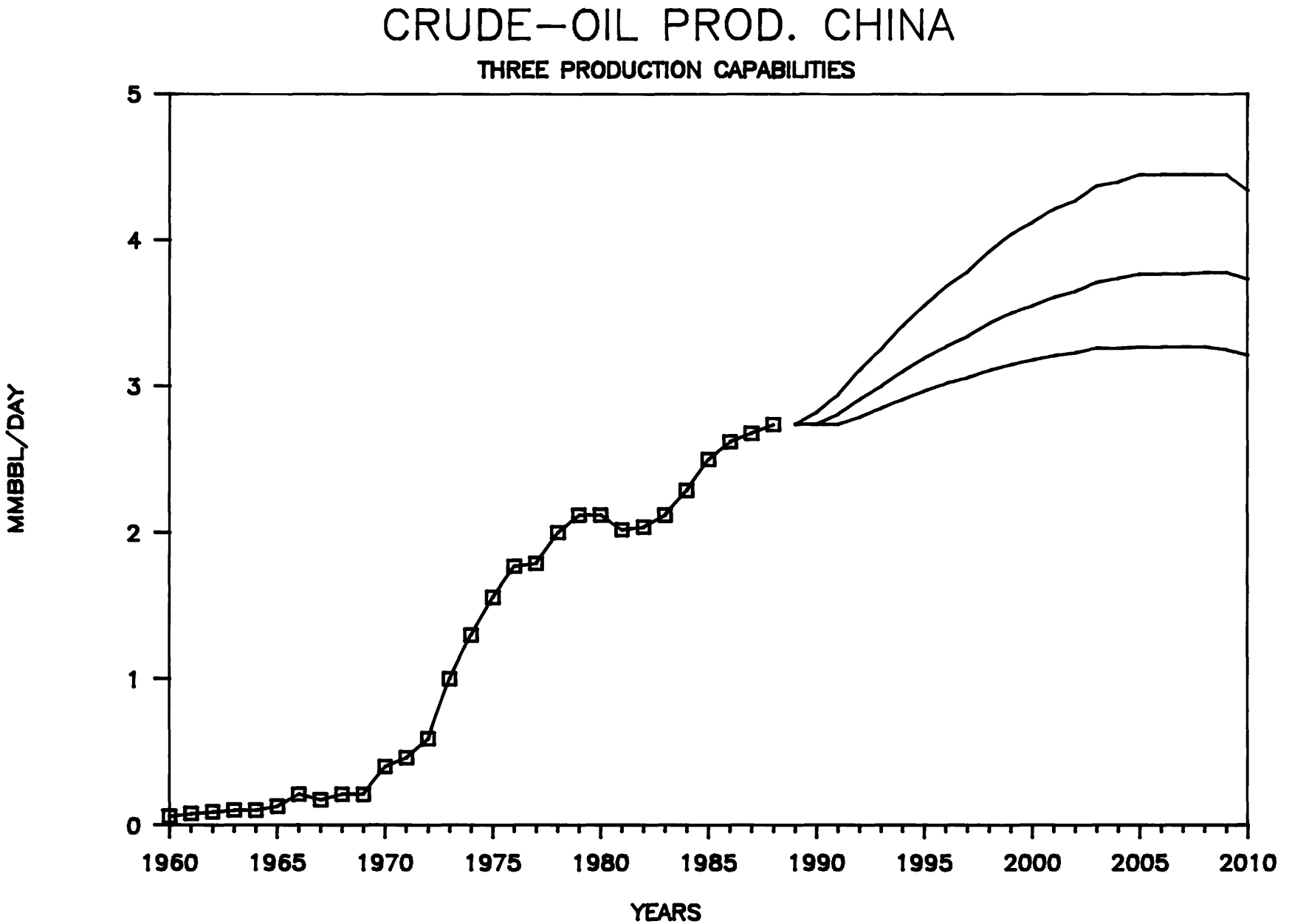
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 4710.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
BRAZIL	1970	0.17	852.	0.17	852.	0.17	852.
BRAZIL	1971	0.17	857.	0.17	857.	0.17	857.
BRAZIL	1972	0.17	855.	0.17	855.	0.17	855.
BRAZIL	1973	0.17	798.	0.17	798.	0.17	798.
BRAZIL	1974	0.18	774.	0.18	774.	0.18	774.
BRAZIL	1975	0.17	779.	0.17	779.	0.17	779.
BRAZIL	1976	0.17	783.	0.17	783.	0.17	783.
BRAZIL	1977	0.16	813.	0.16	813.	0.16	813.
BRAZIL	1978	0.16	1094.	0.16	1094.	0.16	1094.
BRAZIL	1979	0.17	1126.	0.17	1126.	0.17	1126.
BRAZIL	1980	0.18	1248.	0.18	1248.	0.18	1248.
BRAZIL	1981	0.22	1318.	0.22	1318.	0.22	1318.
BRAZIL	1982	0.26	1476.	0.26	1476.	0.26	1476.
BRAZIL	1983	0.33	1736.	0.33	1736.	0.33	1736.
BRAZIL	1984	0.48	1850.	0.48	1850.	0.48	1850.
BRAZIL	1985	0.56	2030.	0.56	2030.	0.56	2030.
BRAZIL	1986	0.59	2194.	0.59	2194.	0.59	2194.
BRAZIL	1987	0.59	2358.	0.59	2358.	0.59	2358.
BRAZIL	1988	0.58	2551.	0.58	2551.	0.58	2551.
BRAZIL	1989	0.74	3257.	0.78	3434.	0.80	3561.
BRAZIL	1990	0.85	3768.	0.93	4117.	0.99	4382.
BRAZIL	1991	0.91	4036.	1.01	4493.	1.10	4852.
BRAZIL	1992	0.92	4086.	1.03	4566.	1.12	4950.
BRAZIL	1993	0.93	4138.	1.05	4648.	1.15	5063.
BRAZIL	1994	0.93	4138.	1.05	4657.	1.15	5083.
BRAZIL	1995	0.93	4109.	1.04	4626.	1.15	5053.
BRAZIL	1996	0.92	4083.	1.04	4609.	1.15	5043.
BRAZIL	1997	0.90	3993.	1.02	4500.	1.12	4917.
BRAZIL	1998	0.88	3918.	1.00	4419.	1.10	4831.
BRAZIL	1999	0.86	3821.	0.97	4308.	1.07	4707.
BRAZIL	2000	0.84	3738.	0.95	4219.	1.05	4614.
BRAZIL	2001	0.82	3652.	0.93	4129.	1.03	4521.
BRAZIL	2002	0.81	3568.	0.91	4045.	1.01	4438.
BRAZIL	2003	0.78	3465.	0.89	3933.	0.99	4320.
BRAZIL	2004	0.76	3363.	0.86	3825.	0.96	4208.
BRAZIL	2005	0.73	3215.	0.82	3645.	0.91	3999.
BRAZIL	2006	0.70	3085.	0.79	3493.	0.87	3827.
BRAZIL	2007	0.67	2966.	0.76	3357.	0.84	3677.
BRAZIL	2008	0.64	2852.	0.73	3228.	0.81	3534.
BRAZIL	2009	0.62	2762.	0.71	3136.	0.79	3442.
BRAZIL	2010	0.60	2657.	0.68	3020.	0.76	3318.


CRUDE—OIL PROD. CANADA
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

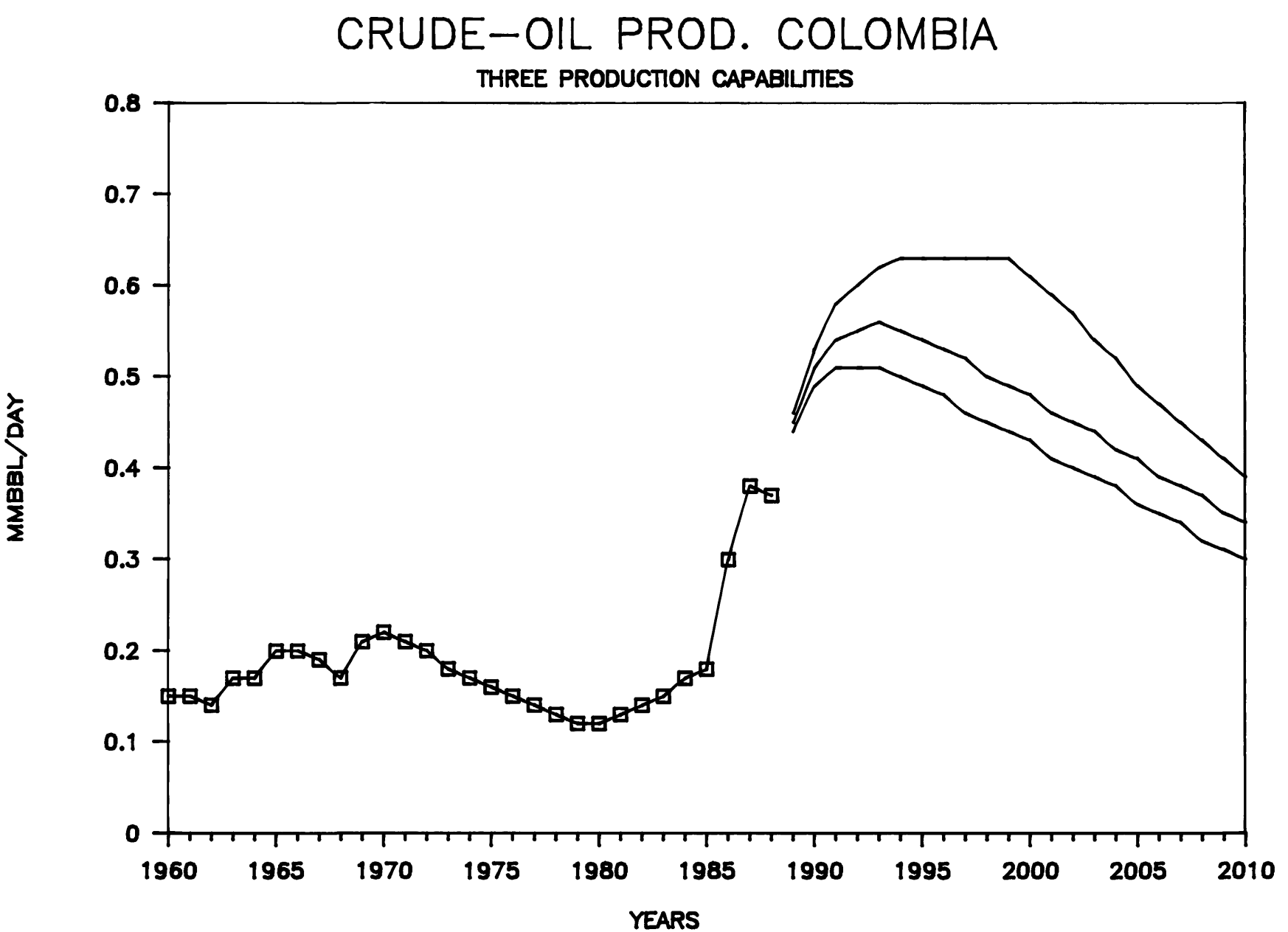
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 33270.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
CANADA	1970	1.26	8620.	1.26	8620.	1.26	8620.
CANADA	1971	1.35	8559.	1.35	8559.	1.35	8559.
CANADA	1972	1.54	8333.	1.54	8333.	1.54	8333.
CANADA	1973	1.78	8020.	1.78	8020.	1.78	8020.
CANADA	1974	1.69	7674.	1.69	7674.	1.69	7674.
CANADA	1975	1.43	7171.	1.43	7171.	1.43	7171.
CANADA	1976	1.34	6653.	1.34	6653.	1.34	6653.
CANADA	1977	1.32	6257.	1.32	6257.	1.32	6257.
CANADA	1978	1.31	5971.	1.31	5971.	1.31	5971.
CANADA	1979	1.49	5784.	1.49	5784.	1.49	5784.
CANADA	1980	1.43	6806.	1.43	6806.	1.43	6806.
CANADA	1981	1.23	5986.	1.23	5986.	1.23	5986.
CANADA	1982	1.27	5460.	1.27	5460.	1.27	5460.
CANADA	1983	1.34	6400.	1.34	6400.	1.34	6400.
CANADA	1984	1.53	6436.	1.53	6436.	1.53	6436.
CANADA	1985	1.57	6538.	1.57	6538.	1.57	6538.
CANADA	1986	1.47	6407.	1.47	6407.	1.47	6407.
CANADA	1987	1.54	4806.	1.54	4806.	1.54	4806.
CANADA	1988	1.38	4820.	1.38	4820.	1.38	4820.
CANADA	1989	1.37	4809.	1.37	4809.	1.37	4809.
CANADA	1990	1.40	4911.	1.40	4911.	1.40	4911.
CANADA	1991	1.41	4944.	1.41	4944.	1.41	4944.
CANADA	1992	1.47	5148.	1.47	5148.	1.47	5148.
CANADA	1993	1.52	5320.	1.52	5320.	1.52	5320.
CANADA	1994	1.57	5494.	1.57	5494.	1.57	5494.
CANADA	1995	1.62	5657.	1.62	5657.	1.62	5657.
CANADA	1996	1.66	5800.	1.66	5800.	1.66	5800.
CANADA	1997	1.69	5925.	1.69	5925.	1.69	5925.
CANADA	1998	1.73	6057.	1.73	6057.	1.73	6057.
CANADA	1999	1.75	6121.	1.75	6121.	1.75	6121.
CANADA	2000	1.76	6169.	1.76	6169.	1.76	6169.
CANADA	2001	1.77	6203.	1.77	6203.	1.77	6203.
CANADA	2002	1.77	6213.	1.77	6213.	1.77	6213.
CANADA	2003	1.79	6283.	1.79	6283.	1.79	6283.
CANADA	2004	1.80	6290.	1.80	6290.	1.80	6290.
CANADA	2005	1.80	6293.	1.80	6293.	1.80	6293.
CANADA	2006	1.81	6323.	1.81	6323.	1.81	6323.
CANADA	2007	1.80	6297.	1.80	6297.	1.80	6297.
CANADA	2008	1.79	6277.	1.79	6277.	1.79	6277.
CANADA	2009	1.83	6404.	1.83	6404.	1.83	6404.
CANADA	2010	1.84	6433.	1.84	6433.	1.84	6433.


CRUDE—OIL PROD. CHINA
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
0
1
2
3
4
5
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

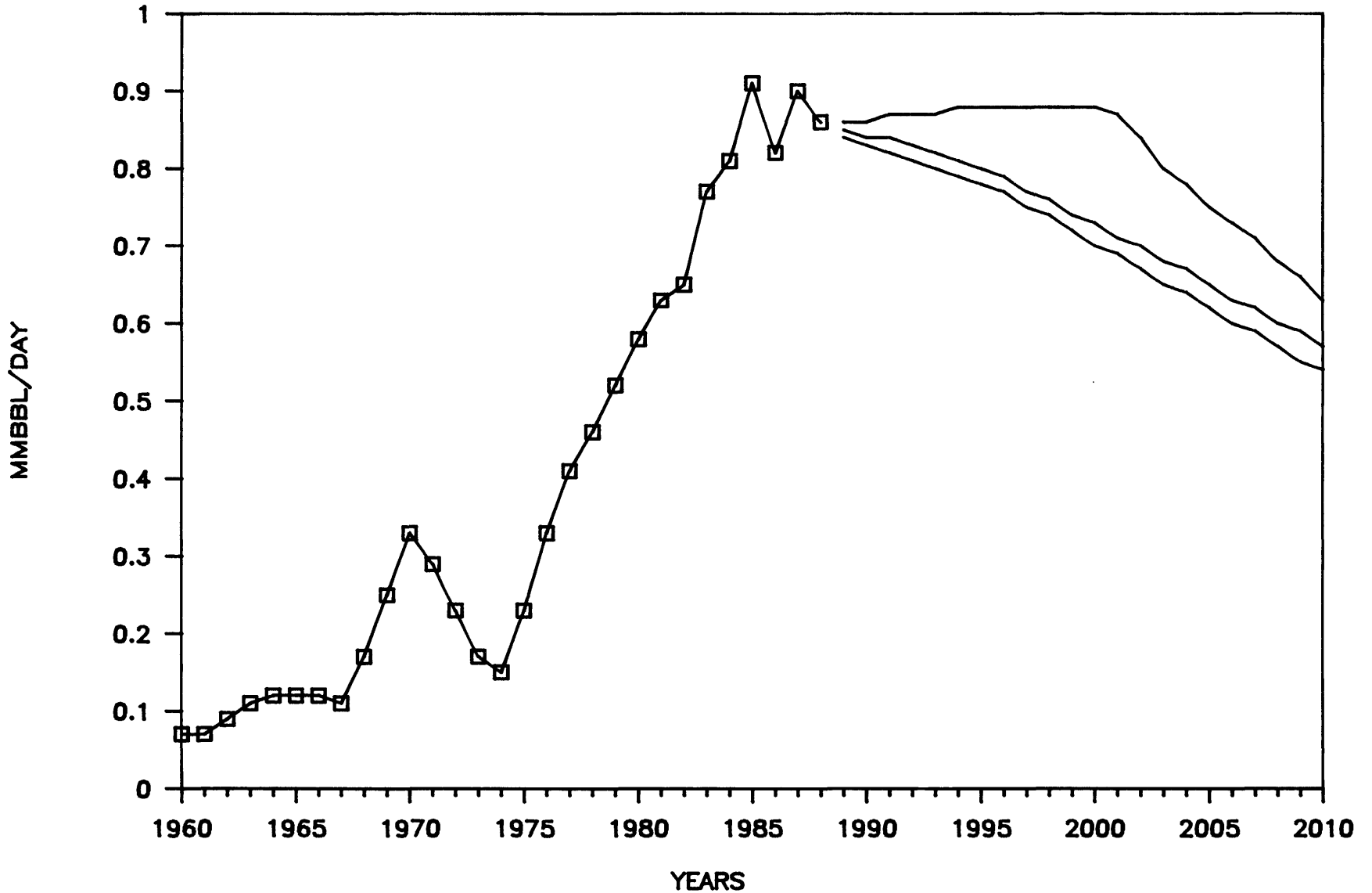
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 48310.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
CHINA	1970	0.40	5669.	0.40	5669.	0.40	5669.
CHINA	1971	0.46	5669.	0.46	5669.	0.46	5669.
CHINA	1972	0.59	12500.	0.59	12500.	0.59	12500.
CHINA	1973	1.00	12500.	1.00	12500.	1.00	12500.
CHINA	1974	1.30	14800.	1.30	14800.	1.30	14800.
CHINA	1975	1.56	14800.	1.56	14800.	1.56	14800.
CHINA	1976	1.77	17242.	1.77	17242.	1.77	17242.
CHINA	1977	1.79	18000.	1.79	18000.	1.79	18000.
CHINA	1978	2.00	18026.	2.00	18026.	2.00	18026.
CHINA	1979	2.12	20025.	2.12	20025.	2.12	20025.
CHINA	1980	2.12	19250.	2.12	19250.	2.12	19250.
CHINA	1981	2.02	19000.	2.02	19000.	2.02	19000.
CHINA	1982	2.04	18500.	2.04	18500.	2.04	18500.
CHINA	1983	2.12	18200.	2.12	18200.	2.12	18200.
CHINA	1984	2.29	18200.	2.29	18200.	2.29	18200.
CHINA	1985	2.50	19500.	2.50	19500.	2.50	19500.
CHINA	1986	2.62	19480.	2.62	19480.	2.62	19480.
CHINA	1987	2.68	18525.	2.68	18525.	2.68	18525.
CHINA	1988	2.74	22300.	2.74	22300.	2.74	22300.
CHINA	1989	2.74	21875.	2.74	22023.	2.74	22141.
CHINA	1990	2.74	21744.	2.74	21892.	2.82	22037.
CHINA	1991	2.74	21914.	2.81	22025.	2.94	22135.
CHINA	1992	2.79	22355.	2.91	22463.	3.11	22561.
CHINA	1993	2.85	22680.	3.00	22712.	3.25	22720.
CHINA	1994	2.91	23104.	3.10	23104.	3.41	23049.
CHINA	1995	2.97	23447.	3.19	23390.	3.55	23235.
CHINA	1996	3.02	23703.	3.27	23566.	3.68	23282.
CHINA	1997	3.06	23887.	3.34	23652.	3.78	23215.
CHINA	1998	3.11	24162.	3.43	23888.	3.92	23347.
CHINA	1999	3.15	24354.	3.50	24017.	4.04	23343.
CHINA	2000	3.18	24432.	3.55	23989.	4.12	23137.
CHINA	2001	3.21	24537.	3.61	24016.	4.21	23011.
CHINA	2002	3.23	24528.	3.65	23887.	4.27	22686.
CHINA	2003	3.26	24641.	3.71	23954.	4.37	22631.
CHINA	2004	3.26	24572.	3.74	23760.	4.40	22234.
CHINA	2005	3.27	24523.	3.77	23610.	4.45	21908.
CHINA	2006	3.27	24373.	3.77	23314.	4.45	21395.
CHINA	2007	3.27	24173.	3.77	22959.	4.45	20816.
CHINA	2008	3.27	24033.	3.78	22711.	4.45	20389.
CHINA	2009	3.25	23756.	3.78	22268.	4.45	19718.
CHINA	2010	3.21	23459.	3.73	21799.	4.34	19022.


CRUDE—OIL PROD. COLOMBIA
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 1910.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
COLOMBIA	1970	0.22	1600.	0.22	1600.	0.22	1600.
COLOMBIA	1971	0.21	1580.	0.21	1580.	0.21	1580.
COLOMBIA	1972	0.20	1626.	0.20	1626.	0.20	1626.
COLOMBIA	1973	0.18	1598.	0.18	1598.	0.18	1598.
COLOMBIA	1974	0.17	1566.	0.17	1566.	0.17	1566.
COLOMBIA	1975	0.16	627.	0.16	627.	0.16	627.
COLOMBIA	1976	0.15	630.	0.15	630.	0.15	630.
COLOMBIA	1977	0.14	913.	0.14	913.	0.14	913.
COLOMBIA	1978	0.13	881.	0.13	881.	0.13	881.
COLOMBIA	1979	0.12	850.	0.12	850.	0.12	850.
COLOMBIA	1980	0.12	959.	0.12	959.	0.12	959.
COLOMBIA	1981	0.13	516.	0.13	516.	0.13	516.
COLOMBIA	1982	0.14	512.	0.14	512.	0.14	512.
COLOMBIA	1983	0.15	550.	0.15	550.	0.15	550.
COLOMBIA	1984	0.17	670.	0.17	670.	0.17	670.
COLOMBIA	1985	0.18	1200.	0.18	1200.	0.18	1200.
COLOMBIA	1986	0.30	1543.	0.30	1543.	0.30	1543.
COLOMBIA	1987	0.38	1600.	0.38	1600.	0.38	1600.
COLOMBIA	1988	0.37	2028.	0.37	2028.	0.37	2028.
COLOMBIA	1989	0.44	2404.	0.45	2446.	0.46	2476.
COLOMBIA	1990	0.49	2637.	0.51	2754.	0.53	2839.
COLOMBIA	1991	0.51	2744.	0.54	2930.	0.58	3070.
COLOMBIA	1992	0.51	2760.	0.55	2987.	0.60	3158.
COLOMBIA	1993	0.51	2758.	0.56	3021.	0.62	3221.
COLOMBIA	1994	0.50	2723.	0.55	3003.	0.63	3214.
COLOMBIA	1995	0.49	2646.	0.54	2920.	0.63	3115.
COLOMBIA	1996	0.48	2590.	0.53	2869.	0.63	3054.
COLOMBIA	1997	0.46	2523.	0.52	2801.	0.63	2968.
COLOMBIA	1998	0.45	2459.	0.50	2737.	0.63	2883.
COLOMBIA	1999	0.44	2397.	0.49	2678.	0.63	2800.
COLOMBIA	2000	0.43	2325.	0.48	2601.	0.61	2688.
COLOMBIA	2001	0.41	2250.	0.46	2521.	0.59	2572.
COLOMBIA	2002	0.40	2186.	0.45	2456.	0.57	2479.
COLOMBIA	2003	0.39	2108.	0.44	2369.	0.54	2361.
COLOMBIA	2004	0.38	2037.	0.42	2294.	0.52	2262.
COLOMBIA	2005	0.36	1965.	0.41	2216.	0.49	2162.
COLOMBIA	2006	0.35	1894.	0.39	2138.	0.47	2063.
COLOMBIA	2007	0.34	1830.	0.38	2070.	0.45	1980.
COLOMBIA	2008	0.32	1755.	0.37	1983.	0.43	1870.
COLOMBIA	2009	0.31	1690.	0.35	1910.	0.41	1782.
COLOMBIA	2010	0.30	1626.	0.34	1840.	0.39	1701.

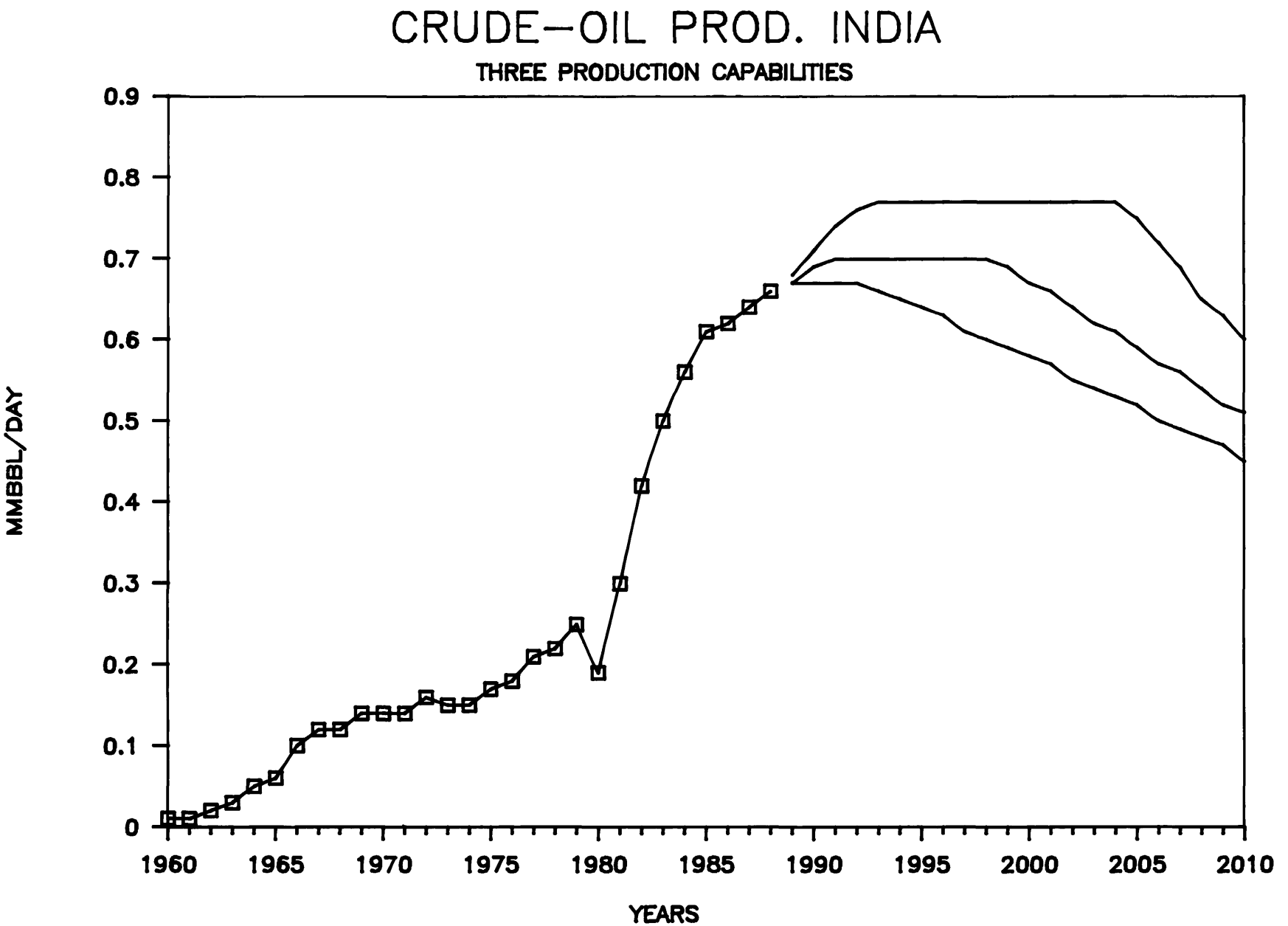

CRUDE—OIL PROD. EGYPT
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

DATE: 3/22/90

PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL

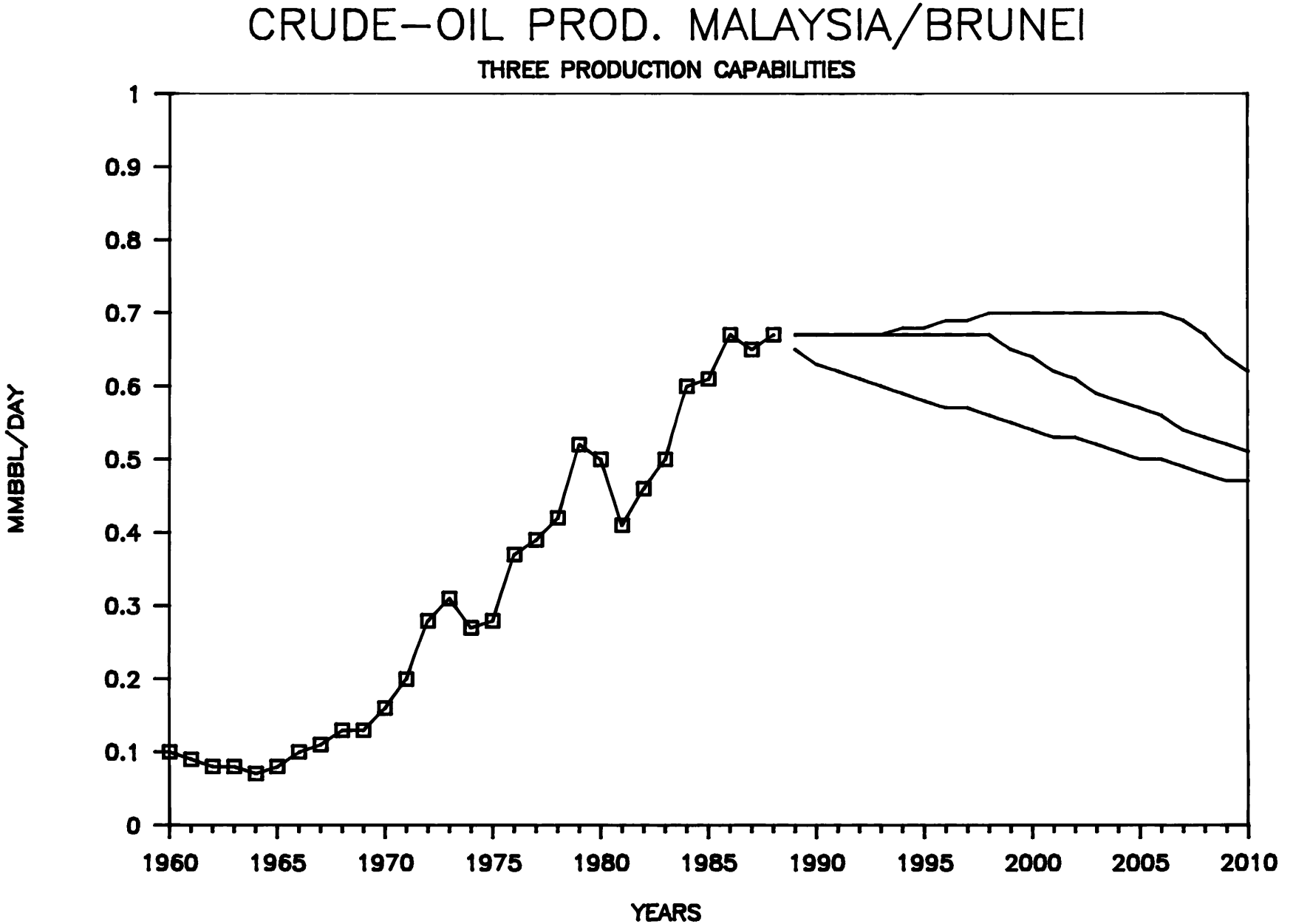
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 4640.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
EGYPT	1970	0.33	3000.	0.33	3000.	0.33	3000.
EGYPT	1971	0.29	990.	0.29	990.	0.29	990.
EGYPT	1972	0.23	1000.	0.23	1000.	0.23	1000.
EGYPT	1973	0.17	2122.	0.17	2122.	0.17	2122.
EGYPT	1974	0.15	2061.	0.15	2061.	0.15	2061.
EGYPT	1975	0.23	2761.	0.23	2761.	0.23	2761.
EGYPT	1976	0.33	1504.	0.33	1504.	0.33	1504.
EGYPT	1977	0.41	1559.	0.41	1559.	0.41	1559.
EGYPT	1978	0.46	2081.	0.46	2081.	0.46	2081.
EGYPT	1979	0.52	2133.	0.52	2133.	0.52	2133.
EGYPT	1980	0.58	2091.	0.58	2091.	0.58	2091.
EGYPT	1981	0.63	3200.	0.63	3200.	0.63	3200.
EGYPT	1982	0.65	3530.	0.65	3530.	0.65	3530.
EGYPT	1983	0.77	3700.	0.77	3700.	0.77	3700.
EGYPT	1984	0.81	3959.	0.81	3959.	0.81	3959.
EGYPT	1985	0.91	4026.	0.91	4026.	0.91	4026.
EGYPT	1986	0.82	3800.	0.82	3800.	0.82	3800.
EGYPT	1987	0.90	4500.	0.90	4500.	0.90	4500.
EGYPT	1988	0.86	4685.	0.86	4685.	0.86	4685.
EGYPT	1989	0.84	4590.	0.85	4628.	0.86	4656.
EGYPT	1990	0.83	4531.	0.84	4599.	0.86	4653.
EGYPT	1991	0.82	4487.	0.84	4578.	0.87	4651.
EGYPT	1992	0.81	4433.	0.83	4535.	0.87	4613.
EGYPT	1993	0.80	4373.	0.82	4483.	0.87	4560.
EGYPT	1994	0.79	4331.	0.81	4457.	0.88	4537.
EGYPT	1995	0.78	4263.	0.80	4393.	0.88	4462.
EGYPT	1996	0.77	4189.	0.79	4324.	0.88	4377.
EGYPT	1997	0.75	4101.	0.77	4235.	0.88	4264.
EGYPT	1998	0.74	4025.	0.76	4165.	0.88	4171.
EGYPT	1999	0.72	3925.	0.74	4063.	0.88	4031.
EGYPT	2000	0.70	3853.	0.73	4001.	0.88	3938.
EGYPT	2001	0.69	3759.	0.71	3908.	0.87	3801.
EGYPT	2002	0.67	3670.	0.70	3821.	0.84	3671.
EGYPT	2003	0.65	3562.	0.68	3710.	0.80	3514.
EGYPT	2004	0.64	3485.	0.67	3643.	0.78	3421.
EGYPT	2005	0.62	3396.	0.65	3559.	0.75	3309.
EGYPT	2006	0.60	3305.	0.63	3470.	0.73	3195.
EGYPT	2007	0.59	3226.	0.62	3399.	0.71	3108.
EGYPT	2008	0.57	3130.	0.60	3302.	0.68	2989.
EGYPT	2009	0.55	3038.	0.59	3211.	0.66	2881.
EGYPT	2010	0.54	2948.	0.57	3123.	0.63	2780.


CRUDE—OIL PROD. INDIA
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

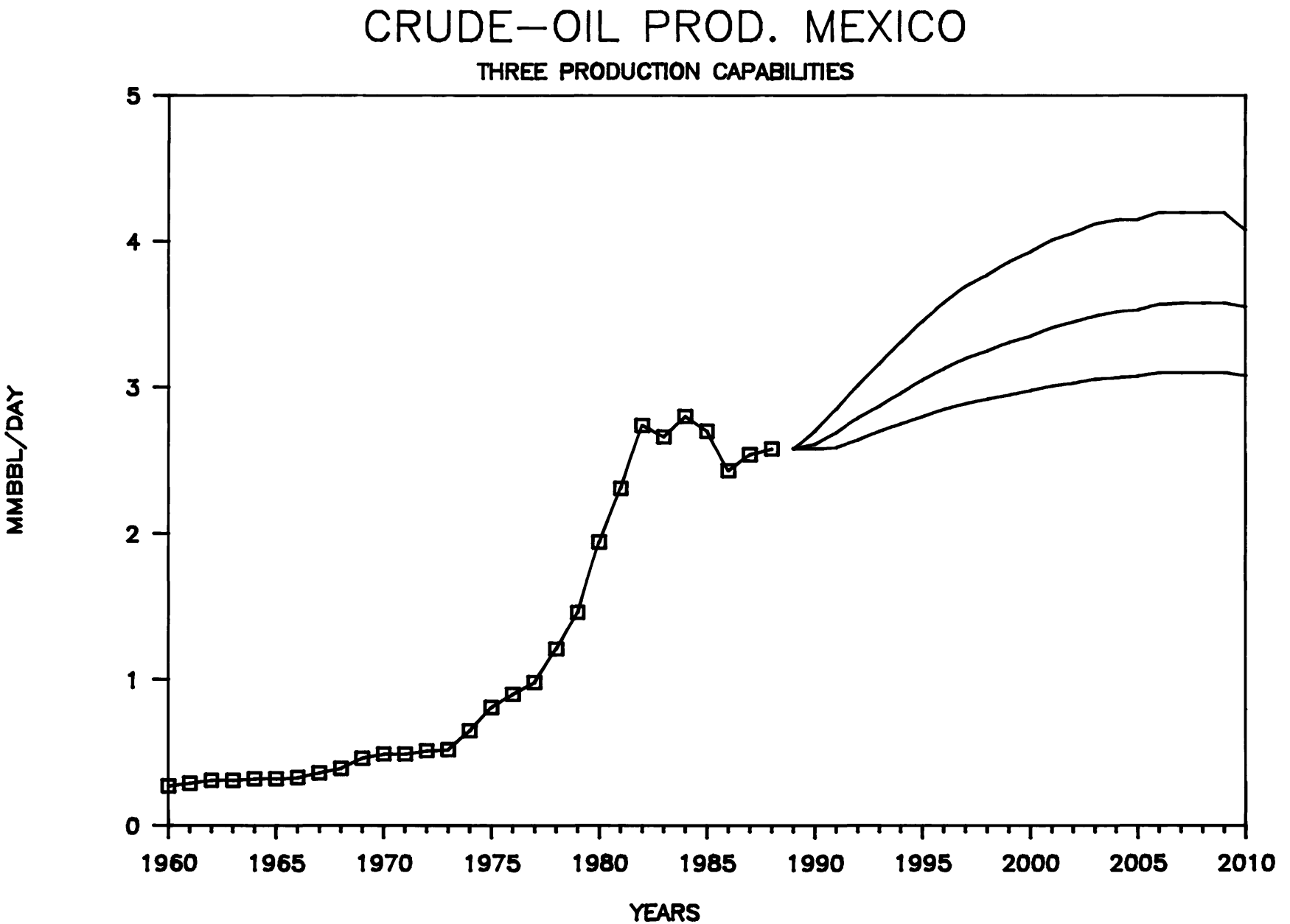
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 3490.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
INDIA	1970	0.14	261.	0.14	261.	0.14	261.
INDIA	1971	0.14	743.	0.14	743.	0.14	743.
INDIA	1972	0.16	740.	0.16	740.	0.16	740.
INDIA	1973	0.15	787.	0.15	787.	0.15	787.
INDIA	1974	0.15	891.	0.15	891.	0.15	891.
INDIA	1975	0.17	926.	0.17	926.	0.17	926.
INDIA	1976	0.18	1071.	0.18	1071.	0.18	1071.
INDIA	1977	0.21	3000.	0.21	3000.	0.21	3000.
INDIA	1978	0.22	2060.	0.22	2060.	0.22	2060.
INDIA	1979	0.25	2310.	0.25	2310.	0.25	2310.
INDIA	1980	0.19	2337.	0.19	2337.	0.19	2337.
INDIA	1981	0.30	2409.	0.30	2409.	0.30	2409.
INDIA	1982	0.42	2700.	0.42	2700.	0.42	2700.
INDIA	1983	0.50	3505.	0.50	3505.	0.50	3505.
INDIA	1984	0.56	3620.	0.56	3620.	0.56	3620.
INDIA	1985	0.61	3760.	0.61	3760.	0.61	3760.
INDIA	1986	0.62	3801.	0.62	3801.	0.62	3801.
INDIA	1987	0.64	4375.	0.64	4375.	0.64	4375.
INDIA	1988	0.66	4400.	0.66	4400.	0.66	4400.
INDIA	1989	0.67	4483.	0.67	4525.	0.68	4554.
INDIA	1990	0.67	4515.	0.69	4606.	0.71	4675.
INDIA	1991	0.67	4498.	0.70	4619.	0.74	4713.
INDIA	1992	0.67	4471.	0.70	4615.	0.76	4724.
INDIA	1993	0.66	4433.	0.70	4595.	0.77	4713.
INDIA	1994	0.65	4353.	0.70	4509.	0.77	4612.
INDIA	1995	0.64	4276.	0.70	4423.	0.77	4511.
INDIA	1996	0.63	4198.	0.70	4333.	0.77	4407.
INDIA	1997	0.61	4118.	0.70	4236.	0.77	4296.
INDIA	1998	0.60	4041.	0.70	4142.	0.77	4189.
INDIA	1999	0.59	3955.	0.69	4028.	0.77	4060.
INDIA	2000	0.58	3877.	0.67	3929.	0.77	3944.
INDIA	2001	0.57	3797.	0.66	3828.	0.77	3818.
INDIA	2002	0.55	3714.	0.64	3726.	0.77	3685.
INDIA	2003	0.54	3637.	0.62	3634.	0.77	3559.
INDIA	2004	0.53	3562.	0.61	3548.	0.77	3435.
INDIA	2005	0.52	3477.	0.59	3449.	0.75	3288.
INDIA	2006	0.50	3388.	0.57	3344.	0.72	3135.
INDIA	2007	0.49	3309.	0.56	3254.	0.69	3007.
INDIA	2008	0.48	3215.	0.54	3144.	0.65	2855.
INDIA	2009	0.47	3142.	0.52	3066.	0.63	2753.
INDIA	2010	0.45	3053.	0.51	2965.	0.60	2623.


CRUDE–OIL PROD. MALAYSIA/BRUNEI
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

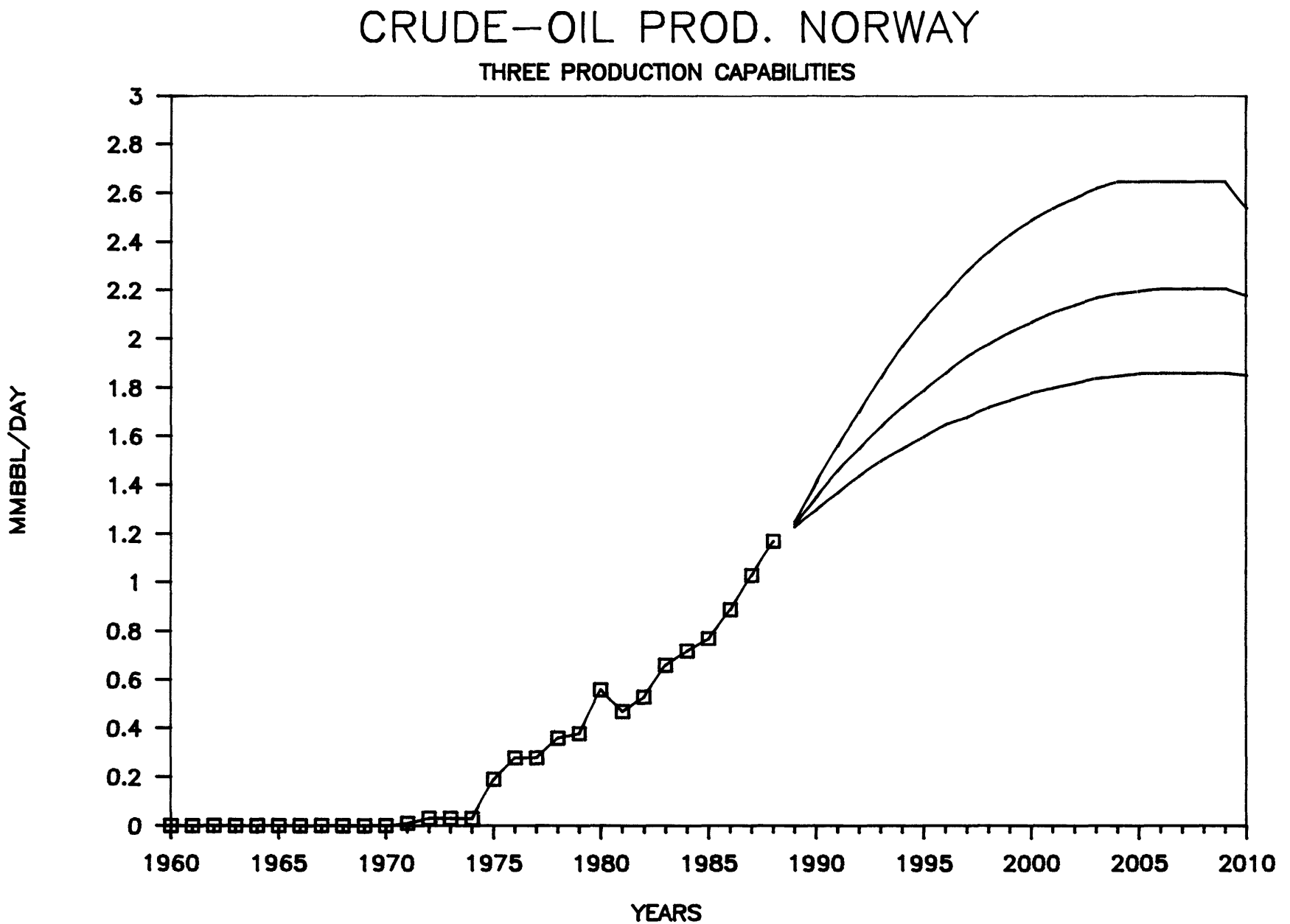
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 5670.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
MALAY/BRU	1970	0.16	650.	0.16	650.	0.16	650.
MALAY/BRU	1971	0.20	700.	0.20	700.	0.20	700.
MALAY/BRU	1972	0.28	820.	0.28	820.	0.28	820.
MALAY/BRU	1973	0.31	1500.	0.31	1500.	0.31	1500.
MALAY/BRU	1974	0.27	1600.	0.27	1600.	0.27	1600.
MALAY/BRU	1975	0.28	4700.	0.28	4700.	0.28	4700.
MALAY/BRU	1976	0.37	3400.	0.37	3400.	0.37	3400.
MALAY/BRU	1977	0.39	3400.	0.39	3400.	0.39	3400.
MALAY/BRU	1978	0.42	2431.	0.42	2431.	0.42	2431.
MALAY/BRU	1979	0.52	2426.	0.52	2426.	0.52	2426.
MALAY/BRU	1980	0.50	2695.	0.50	2695.	0.50	2695.
MALAY/BRU	1981	0.41	3094.	0.41	3094.	0.41	3094.
MALAY/BRU	1982	0.46	4000.	0.46	4000.	0.46	4000.
MALAY/BRU	1983	0.50	4015.	0.50	4015.	0.50	4015.
MALAY/BRU	1984	0.60	4097.	0.60	4097.	0.60	4097.
MALAY/BRU	1985	0.61	4370.	0.61	4370.	0.61	4370.
MALAY/BRU	1986	0.67	4443.	0.67	4443.	0.67	4443.
MALAY/BRU	1987	0.65	4675.	0.65	4675.	0.65	4675.
MALAY/BRU	1988	0.67	4900.	0.67	4900.	0.67	4900.
MALAY/BRU	1989	0.65	4716.	0.67	4740.	0.67	4761.
MALAY/BRU	1990	0.63	4577.	0.67	4598.	0.67	4628.
MALAY/BRU	1991	0.62	4471.	0.67	4475.	0.67	4506.
MALAY/BRU	1992	0.61	4396.	0.67	4381.	0.67	4416.
MALAY/BRU	1993	0.60	4328.	0.67	4289.	0.67	4328.
MALAY/BRU	1994	0.59	4269.	0.67	4206.	0.68	4250.
MALAY/BRU	1995	0.58	4215.	0.67	4127.	0.68	4176.
MALAY/BRU	1996	0.57	4165.	0.67	4052.	0.69	4107.
MALAY/BRU	1997	0.57	4117.	0.67	3978.	0.69	4037.
MALAY/BRU	1998	0.56	4061.	0.67	3891.	0.70	3950.
MALAY/BRU	1999	0.55	4005.	0.65	3803.	0.70	3858.
MALAY/BRU	2000	0.54	3949.	0.64	3720.	0.70	3767.
MALAY/BRU	2001	0.53	3879.	0.62	3619.	0.70	3646.
MALAY/BRU	2002	0.53	3825.	0.61	3544.	0.70	3552.
MALAY/BRU	2003	0.52	3770.	0.59	3469.	0.70	3452.
MALAY/BRU	2004	0.51	3710.	0.58	3391.	0.70	3344.
MALAY/BRU	2005	0.50	3650.	0.57	3313.	0.70	3231.
MALAY/BRU	2006	0.50	3598.	0.56	3249.	0.70	3131.
MALAY/BRU	2007	0.49	3542.	0.54	3182.	0.69	3022.
MALAY/BRU	2008	0.48	3490.	0.53	3121.	0.67	2920.
MALAY/BRU	2009	0.47	3433.	0.52	3056.	0.64	2818.
MALAY/BRU	2010	0.47	3381.	0.51	2998.	0.62	2728.


CRUDE—OIL PROD. MEXICO
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
5
4
3
2
1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 36920.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
MEXICO	1970	0.49	5570.	0.49	5570.	0.49	5570.
MEXICO	1971	0.49	5568.	0.49	5568.	0.49	5568.
MEXICO	1972	0.51	2837.	0.51	2837.	0.51	2837.
MEXICO	1973	0.52	2833.	0.52	2833.	0.52	2833.
MEXICO	1974	0.65	2847.	0.65	2847.	0.65	2847.
MEXICO	1975	0.81	3087.	0.81	3087.	0.81	3087.
MEXICO	1976	0.90	3431.	0.90	3431.	0.90	3431.
MEXICO	1977	0.98	8000.	0.98	8000.	0.98	8000.
MEXICO	1978	1.21	10428.	1.21	10428.	1.21	10428.
MEXICO	1979	1.46	28407.	1.46	28407.	1.46	28407.
MEXICO	1980	1.94	33560.	1.94	33560.	1.94	33560.
MEXICO	1981	2.31	44161.	2.31	44161.	2.31	44161.
MEXICO	1982	2.74	48084.	2.74	48084.	2.74	48084.
MEXICO	1983	2.66	48084.	2.66	48084.	2.66	48084.
MEXICO	1984	2.80	49911.	2.80	49911.	2.80	49911.
MEXICO	1985	2.70	40260.	2.70	40260.	2.70	40260.
MEXICO	1986	2.43	55593.	2.43	55593.	2.43	55593.
MEXICO	1987	2.54	54880.	2.54	54880.	2.54	54880.
MEXICO	1988	2.58	27400.	2.58	27400.	2.58	27400.
MEXICO	1989	2.58	26752.	2.58	26863.	2.58	26959.
MEXICO	1990	2.58	26497.	2.61	26671.	2.70	26845.
MEXICO	1991	2.59	26345.	2.69	26489.	2.85	26639.
MEXICO	1992	2.64	26367.	2.79	26480.	3.01	26594.
MEXICO	1993	2.70	26337.	2.87	26381.	3.16	26407.
MEXICO	1994	2.75	26349.	2.96	26335.	3.31	26269.
MEXICO	1995	2.80	26313.	3.05	26222.	3.45	26032.
MEXICO	1996	2.85	26286.	3.13	26128.	3.58	25819.
MEXICO	1997	2.89	26140.	3.20	25870.	3.69	25391.
MEXICO	1998	2.92	25949.	3.25	25554.	3.77	24885.
MEXICO	1999	2.95	25769.	3.31	25263.	3.86	24414.
MEXICO	2000	2.98	25563.	3.35	24939.	3.93	23903.
MEXICO	2001	3.01	25383.	3.41	24663.	4.01	23457.
MEXICO	2002	3.03	25140.	3.45	24305.	4.06	22908.
MEXICO	2003	3.06	24931.	3.49	24005.	4.12	22444.
MEXICO	2004	3.07	24650.	3.52	23607.	4.15	21858.
MEXICO	2005	3.08	24294.	3.53	23106.	4.15	21145.
MEXICO	2006	3.10	24071.	3.57	22812.	4.20	20717.
MEXICO	2007	3.10	23724.	3.58	22344.	4.20	20065.
MEXICO	2008	3.10	23335.	3.58	21819.	4.20	19351.
MEXICO	2009	3.10	22857.	3.58	21173.	4.20	18484.
MEXICO	2010	3.08	22511.	3.55	20736.	4.08	17900.

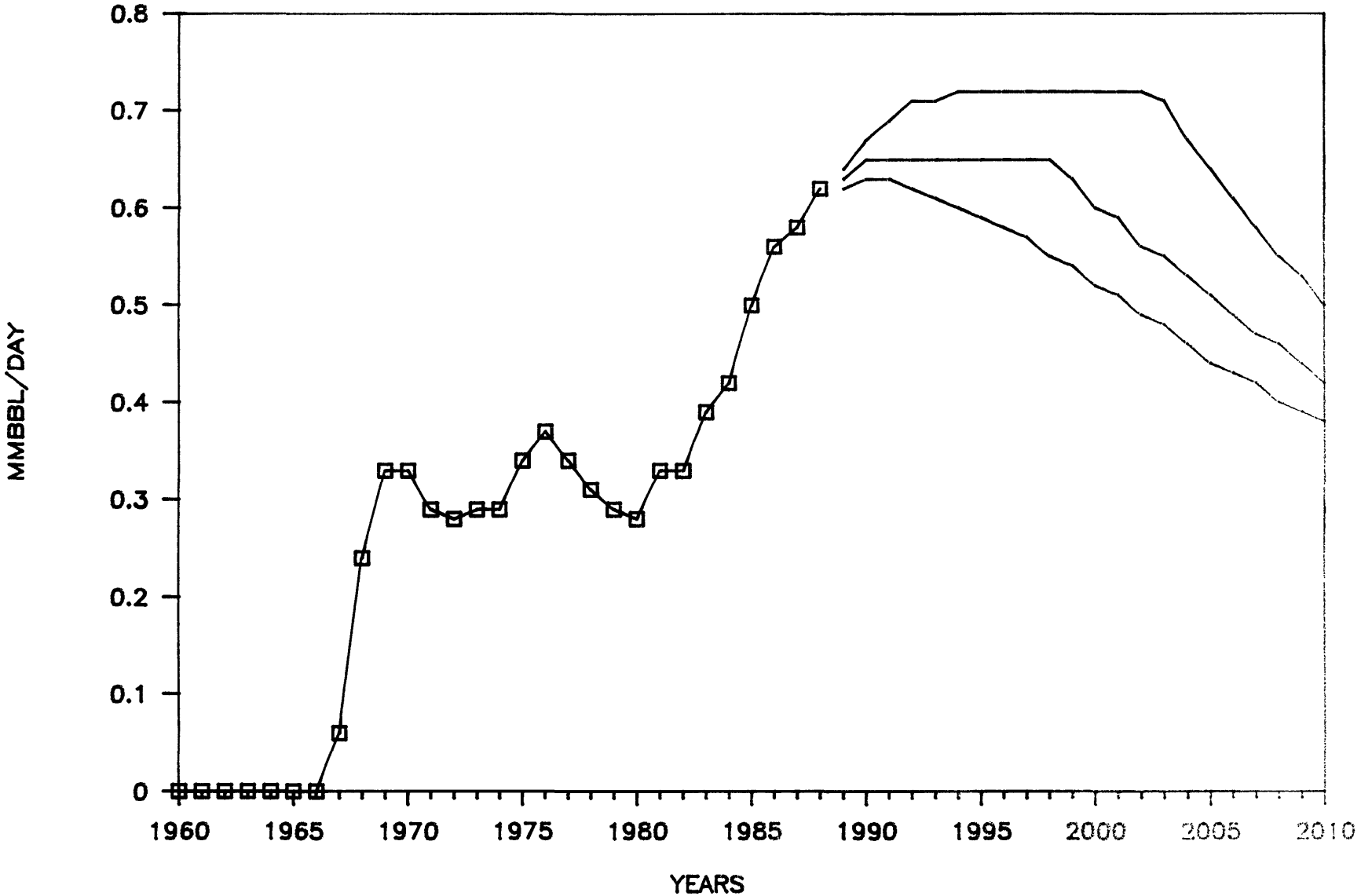

CRUDE–OIL PROD. NORWAY
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 19340.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
NORWAY	1970	0.00	0.	0.00	0.	0.00	0.
NORWAY	1971	0.01	3500.	0.01	3500.	0.01	3500.
NORWAY	1972	0.03	2000.	0.03	2000.	0.03	2000.
NORWAY	1973	0.03	2300.	0.03	2300.	0.03	2300.
NORWAY	1974	0.03	4500.	0.03	4500.	0.03	4500.
NORWAY	1975	0.19	5500.	0.19	5500.	0.19	5500.
NORWAY	1976	0.28	6003.	0.28	6003.	0.28	6003.
NORWAY	1977	0.28	5844.	0.28	5844.	0.28	5844.
NORWAY	1978	0.36	5509.	0.36	5509.	0.36	5509.
NORWAY	1979	0.38	4094.	0.38	4094.	0.38	4094.
NORWAY	1980	0.56	3347.	0.56	3347.	0.56	3347.
NORWAY	1981	0.47	6620.	0.47	6620.	0.47	6620.
NORWAY	1982	0.53	8978.	0.53	8978.	0.53	8978.
NORWAY	1983	0.66	7661.	0.66	7661.	0.66	7661.
NORWAY	1984	0.72	7881.	0.72	7881.	0.72	7881.
NORWAY	1985	0.77	10843.	0.77	10843.	0.77	10843.
NORWAY	1986	0.89	10500.	0.89	10500.	0.89	10500.
NORWAY	1987	1.03	11133.	1.03	11133.	1.03	11133.
NORWAY	1988	1.17	12500.	1.17	12500.	1.17	12500.
NORWAY	1989	1.23	13067.	1.24	13188.	1.25	13276.
NORWAY	1990	1.30	13606.	1.35	13859.	1.41	14054.
NORWAY	1991	1.37	14043.	1.46	14390.	1.56	14663.
NORWAY	1992	1.44	14380.	1.55	14772.	1.70	15076.
NORWAY	1993	1.50	14680.	1.64	15106.	1.84	15423.
NORWAY	1994	1.55	14905.	1.72	15331.	1.97	15624.
NORWAY	1995	1.60	15077.	1.79	15480.	2.08	15716.
NORWAY	1996	1.65	15211.	1.86	15585.	2.18	15756.
NORWAY	1997	1.68	15288.	1.93	15619.	2.28	15705.
NORWAY	1998	1.72	15334.	1.98	15615.	2.36	15607.
NORWAY	1999	1.75	15322.	2.03	15537.	2.43	15417.
NORWAY	2000	1.78	15276.	2.07	15415.	2.49	15169.
NORWAY	2001	1.80	15200.	2.11	15262.	2.54	14888.
NORWAY	2002	1.82	15113.	2.14	15099.	2.58	14599.
NORWAY	2003	1.84	15003.	2.17	14912.	2.62	14287.
NORWAY	2004	1.85	14865.	2.19	14694.	2.65	13941.
NORWAY	2005	1.86	14687.	2.20	14423.	2.65	13532.
NORWAY	2006	1.86	14478.	2.21	14114.	2.65	13081.
NORWAY	2007	1.86	14261.	2.21	13802.	2.65	12632.
NORWAY	2008	1.86	14029.	2.21	13470.	2.65	12161.
NORWAY	2009	1.86	13787.	2.21	13136.	2.65	11695.
NORWAY	2010	1.85	13494.	2.18	12732.	2.54	11142.

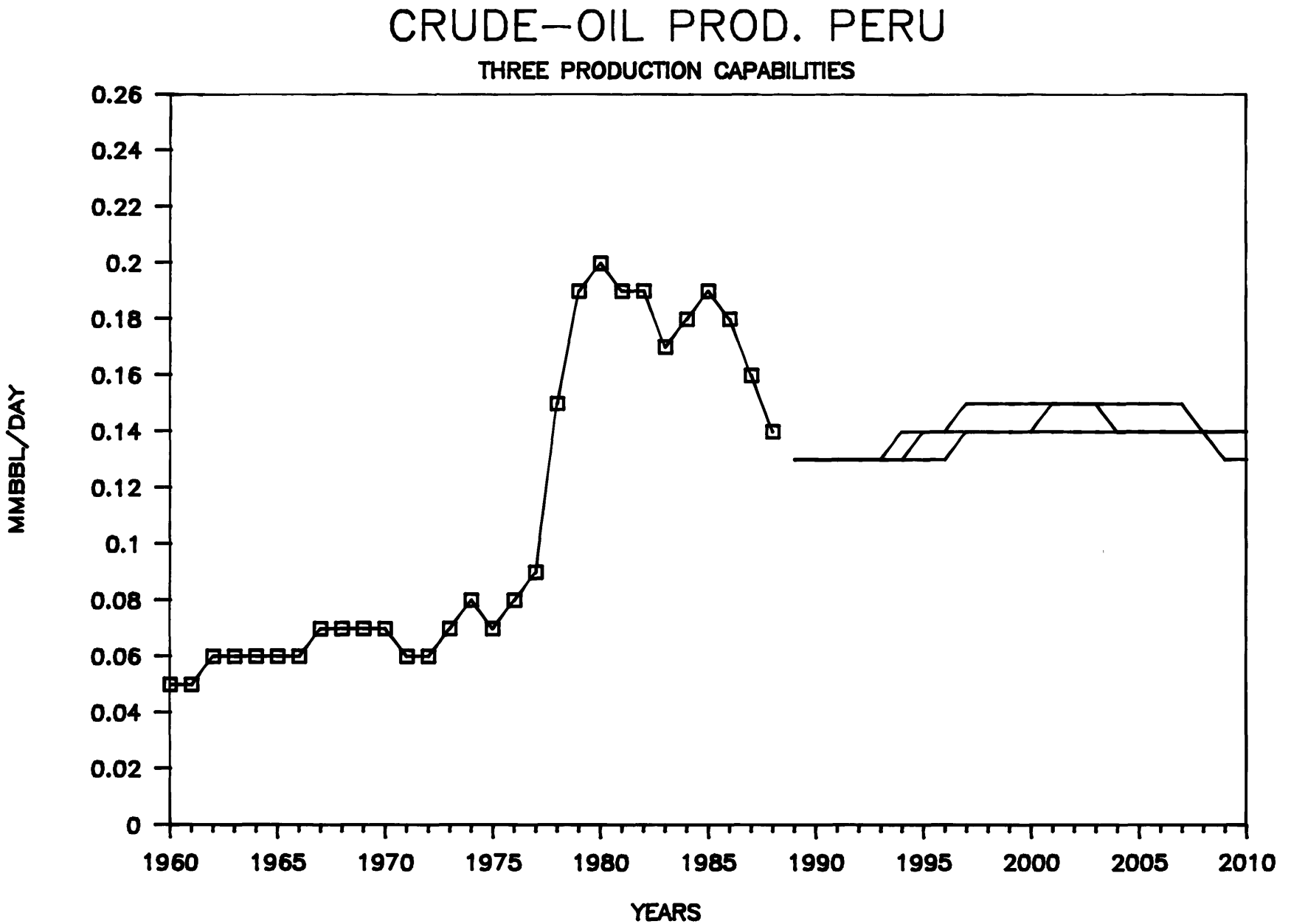
CRUDE—OIL PROD. OMAN

THREE PRODUCTION CAPABILITIES



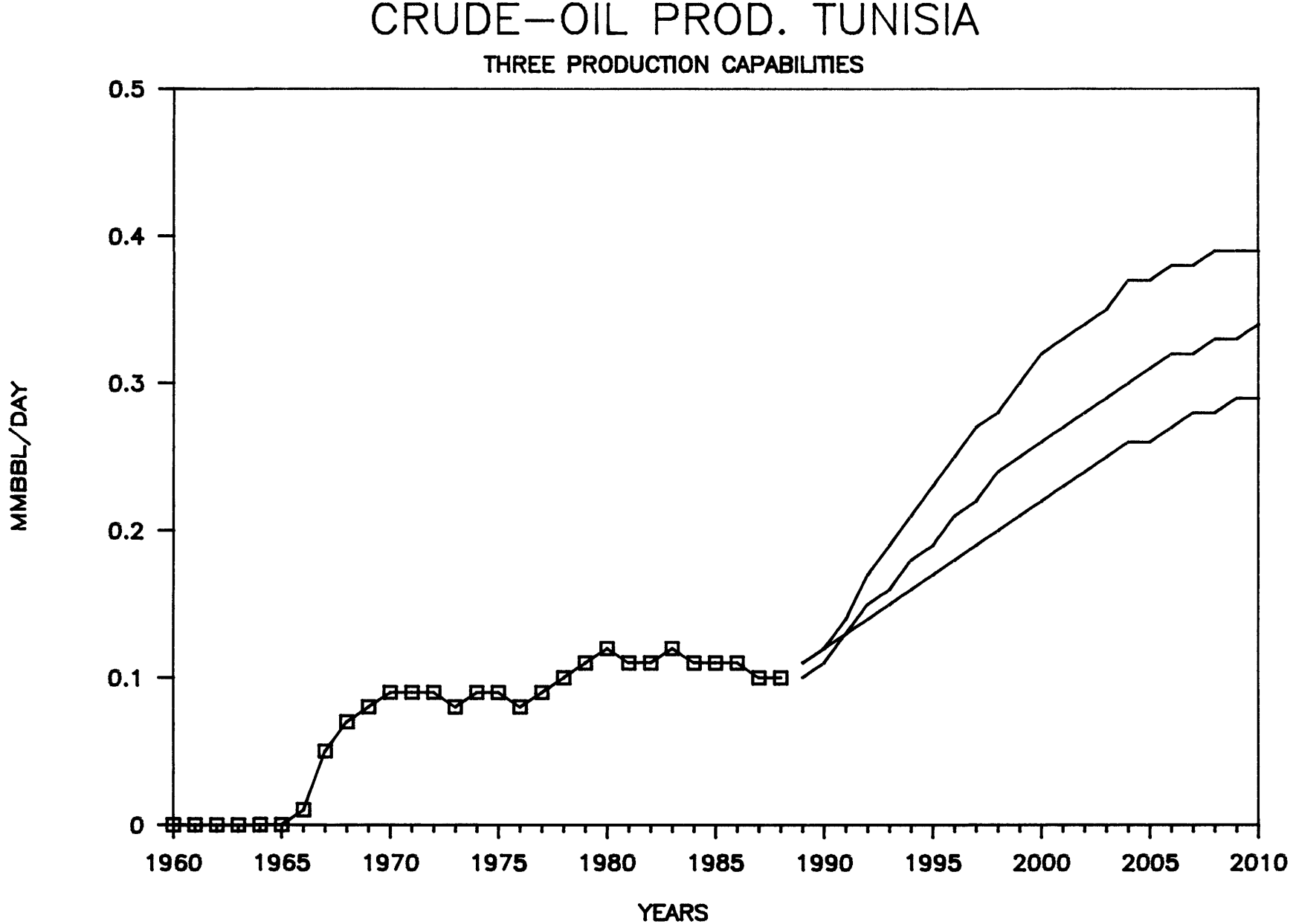
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 1760.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
OMAN	1970	0.33	3000.	0.33	3000.	0.33	3000.
OMAN	1971	0.29	4000.	0.29	4000.	0.29	4000.
OMAN	1972	0.28	4750.	0.28	4750.	0.28	4750.
OMAN	1973	0.29	3027.	0.29	3027.	0.29	3027.
OMAN	1974	0.29	3321.	0.29	3321.	0.29	3321.
OMAN	1975	0.34	3294.	0.34	3294.	0.34	3294.
OMAN	1976	0.37	3169.	0.37	3169.	0.37	3169.
OMAN	1977	0.34	3160.	0.34	3160.	0.34	3160.
OMAN	1978	0.31	3986.	0.31	3986.	0.31	3986.
OMAN	1979	0.29	3271.	0.29	3271.	0.29	3271.
OMAN	1980	0.28	2240.	0.28	2240.	0.28	2240.
OMAN	1981	0.33	2640.	0.33	2640.	0.33	2640.
OMAN	1982	0.33	2414.	0.33	2414.	0.33	2414.
OMAN	1983	0.39	4699.	0.39	4699.	0.39	4699.
OMAN	1984	0.42	3500.	0.42	3500.	0.42	3500.
OMAN	1985	0.50	4500.	0.50	4500.	0.50	4500.
OMAN	1986	0.56	4067.	0.56	4067.	0.56	4067.
OMAN	1987	0.58	4037.	0.58	4037.	0.58	4037.
OMAN	1988	0.62	4105.	0.62	4105.	0.62	4105.
OMAN	1989	0.62	4154.	0.63	4202.	0.64	4238.
OMAN	1990	0.63	4176.	0.65	4267.	0.67	4339.
OMAN	1991	0.63	4166.	0.65	4283.	0.69	4376.
OMAN	1992	0.62	4136.	0.65	4269.	0.71	4373.
OMAN	1993	0.61	4082.	0.65	4223.	0.71	4326.
OMAN	1994	0.60	4013.	0.65	4154.	0.72	4249.
OMAN	1995	0.59	3939.	0.65	4076.	0.72	4162.
OMAN	1996	0.58	3858.	0.65	3988.	0.72	4065.
OMAN	1997	0.57	3779.	0.65	3901.	0.72	3973.
OMAN	1998	0.55	3679.	0.65	3783.	0.72	3843.
OMAN	1999	0.54	3584.	0.63	3670.	0.72	3719.
OMAN	2000	0.52	3466.	0.60	3524.	0.72	3545.
OMAN	2001	0.51	3375.	0.59	3423.	0.72	3420.
OMAN	2002	0.49	3267.	0.56	3297.	0.72	3258.
OMAN	2003	0.48	3173.	0.55	3196.	0.71	3119.
OMAN	2004	0.46	3066.	0.53	3075.	0.67	2950.
OMAN	2005	0.44	2960.	0.51	2958.	0.64	2790.
OMAN	2006	0.43	2869.	0.49	2863.	0.61	2666.
OMAN	2007	0.42	2769.	0.47	2755.	0.58	2527.
OMAN	2008	0.40	2687.	0.46	2673.	0.55	2426.
OMAN	2009	0.39	2594.	0.44	2576.	0.53	2310.
OMAN	2010	0.38	2502.	0.42	2479.	0.50	2195.


CRUDE-OIL PROD. PERU
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

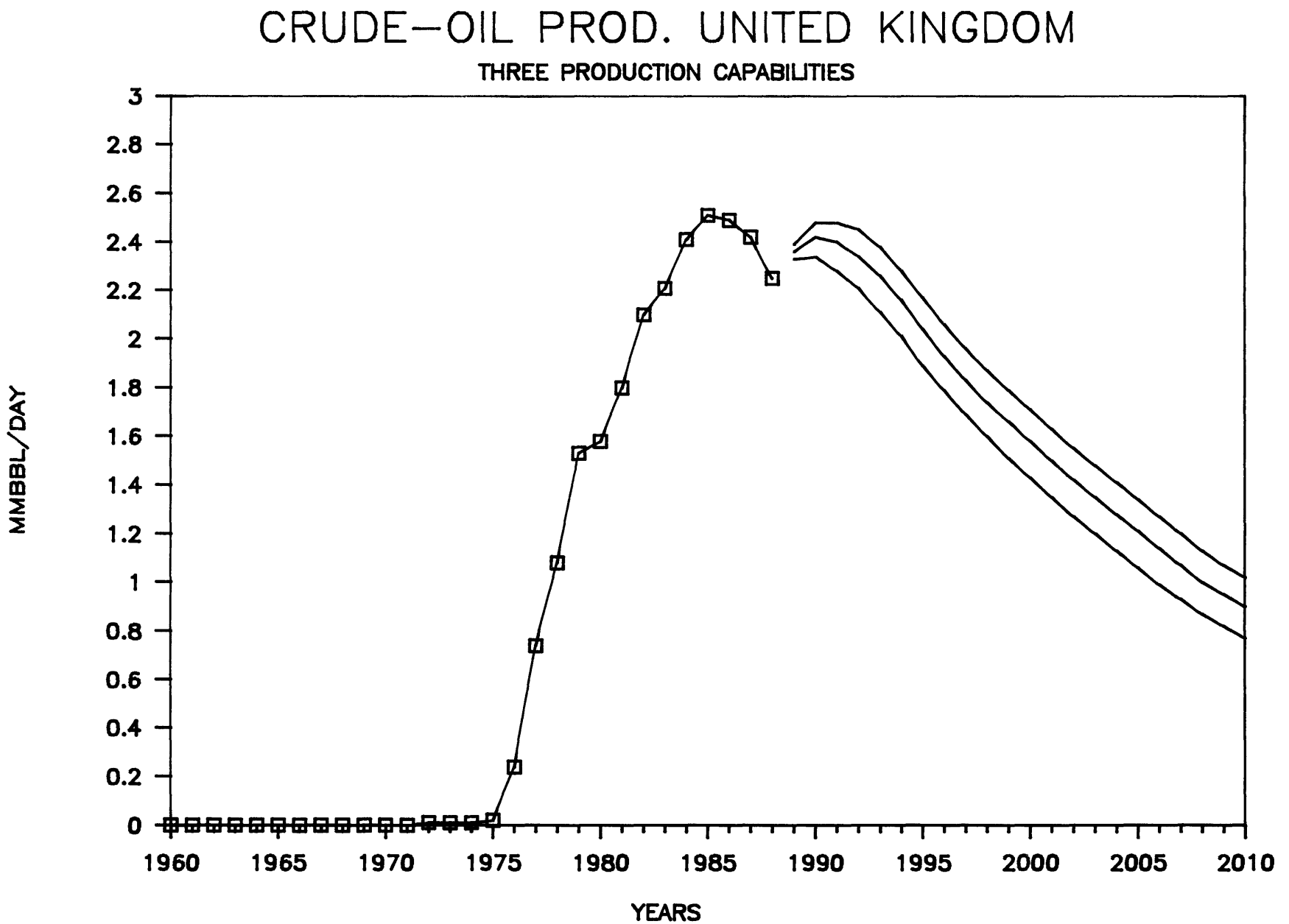
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 2670.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
PERU	1970	0.07	510.	0.07	510.	0.07	510.
PERU	1971	0.06	500.	0.06	500.	0.06	500.
PERU	1972	0.06	510.	0.06	510.	0.06	510.
PERU	1973	0.07	520.	0.07	520.	0.07	520.
PERU	1974	0.08	544.	0.08	544.	0.08	544.
PERU	1975	0.07	830.	0.07	830.	0.07	830.
PERU	1976	0.08	743.	0.08	743.	0.08	743.
PERU	1977	0.09	728.	0.09	728.	0.09	728.
PERU	1978	0.15	750.	0.15	750.	0.15	750.
PERU	1979	0.19	774.	0.19	774.	0.19	774.
PERU	1980	0.20	700.	0.20	700.	0.20	700.
PERU	1981	0.19	628.	0.19	628.	0.19	628.
PERU	1982	0.19	801.	0.19	801.	0.19	801.
PERU	1983	0.17	775.	0.17	775.	0.17	775.
PERU	1984	0.18	696.	0.18	696.	0.18	696.
PERU	1985	0.19	670.	0.19	670.	0.19	670.
PERU	1986	0.18	589.	0.18	589.	0.18	589.
PERU	1987	0.16	535.	0.16	535.	0.16	535.
PERU	1988	0.14	480.	0.14	480.	0.14	480.
PERU	1989	0.13	442.	0.13	445.	0.13	447.
PERU	1990	0.13	429.	0.13	430.	0.13	432.
PERU	1991	0.13	431.	0.13	426.	0.13	425.
PERU	1992	0.13	440.	0.13	431.	0.13	427.
PERU	1993	0.13	448.	0.13	434.	0.13	425.
PERU	1994	0.14	462.	0.13	445.	0.13	435.
PERU	1995	0.14	474.	0.14	455.	0.13	444.
PERU	1996	0.14	483.	0.14	463.	0.13	450.
PERU	1997	0.15	492.	0.14	472.	0.14	458.
PERU	1998	0.15	497.	0.14	476.	0.14	462.
PERU	1999	0.15	503.	0.14	483.	0.14	470.
PERU	2000	0.15	506.	0.14	488.	0.14	474.
PERU	2001	0.15	508.	0.15	491.	0.14	478.
PERU	2002	0.15	508.	0.15	491.	0.14	479.
PERU	2003	0.15	506.	0.15	489.	0.14	477.
PERU	2004	0.15	503.	0.14	488.	0.14	476.
PERU	2005	0.15	499.	0.14	483.	0.14	472.
PERU	2006	0.15	495.	0.14	481.	0.14	470.
PERU	2007	0.15	491.	0.14	478.	0.14	469.
PERU	2008	0.14	486.	0.14	475.	0.14	467.
PERU	2009	0.14	475.	0.14	462.	0.13	452.
PERU	2010	0.14	469.	0.14	458.	0.13	449.


CRUDE—OIL PROD. TUNISIA
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
0.5
0.4
0.3
0.2
0.1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

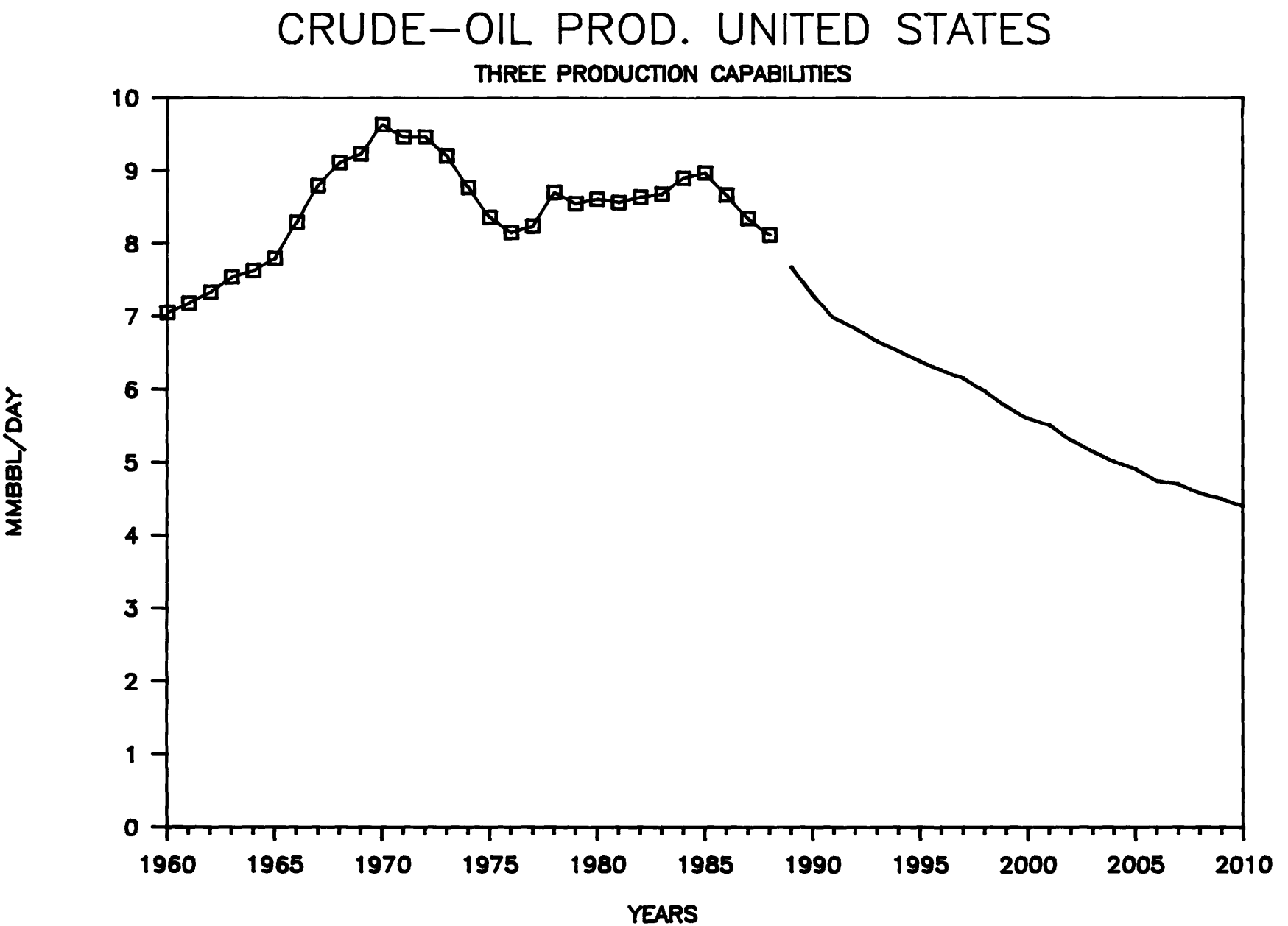
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 3800.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
TUNISIA	1970	0.09	410.	0.09	410.	0.09	410.
TUNISIA	1971	0.09	380.	0.09	380.	0.09	380.
TUNISIA	1972	0.09	410.	0.09	410.	0.09	410.
TUNISIA	1973	0.08	446.	0.08	446.	0.08	446.
TUNISIA	1974	0.09	416.	0.09	416.	0.09	416.
TUNISIA	1975	0.09	533.	0.09	533.	0.09	533.
TUNISIA	1976	0.08	1065.	0.08	1065.	0.08	1065.
TUNISIA	1977	0.09	2295.	0.09	2295.	0.09	2295.
TUNISIA	1978	0.10	2263.	0.10	2263.	0.10	2263.
TUNISIA	1979	0.11	2225.	0.11	2225.	0.11	2225.
TUNISIA	1980	0.12	2173.	0.12	2173.	0.12	2173.
TUNISIA	1981	0.11	2181.	0.11	2181.	0.11	2181.
TUNISIA	1982	0.11	2228.	0.11	2228.	0.11	2228.
TUNISIA	1983	0.12	2452.	0.12	2452.	0.12	2452.
TUNISIA	1984	0.11	2515.	0.11	2515.	0.11	2515.
TUNISIA	1985	0.11	1815.	0.11	1815.	0.11	1815.
TUNISIA	1986	0.11	1780.	0.11	1780.	0.11	1780.
TUNISIA	1987	0.10	1740.	0.10	1740.	0.10	1740.
TUNISIA	1988	0.10	1725.	0.10	1725.	0.10	1725.
TUNISIA	1989	0.10	1747.	0.11	1755.	0.11	1761.
TUNISIA	1990	0.11	1808.	0.12	1824.	0.12	1837.
TUNISIA	1991	0.13	1871.	0.13	1891.	0.14	1908.
TUNISIA	1992	0.14	1933.	0.15	1952.	0.17	1969.
TUNISIA	1993	0.15	1994.	0.16	2014.	0.19	2029.
TUNISIA	1994	0.16	2049.	0.18	2067.	0.21	2078.
TUNISIA	1995	0.17	2094.	0.19	2106.	0.23	2106.
TUNISIA	1996	0.18	2129.	0.21	2133.	0.25	2121.
TUNISIA	1997	0.19	2170.	0.22	2171.	0.27	2150.
TUNISIA	1998	0.20	2198.	0.24	2190.	0.28	2154.
TUNISIA	1999	0.21	2222.	0.25	2208.	0.30	2158.
TUNISIA	2000	0.22	2236.	0.26	2210.	0.32	2143.
TUNISIA	2001	0.23	2248.	0.27	2212.	0.33	2128.
TUNISIA	2002	0.24	2239.	0.28	2186.	0.34	2077.
TUNISIA	2003	0.25	2246.	0.29	2185.	0.35	2061.
TUNISIA	2004	0.26	2243.	0.30	2171.	0.37	2030.
TUNISIA	2005	0.26	2230.	0.31	2144.	0.37	1983.
TUNISIA	2006	0.27	2214.	0.32	2116.	0.38	1934.
TUNISIA	2007	0.28	2193.	0.32	2082.	0.38	1881.
TUNISIA	2008	0.28	2177.	0.33	2056.	0.39	1841.
TUNISIA	2009	0.29	2144.	0.33	2007.	0.39	1770.
TUNISIA	2010	0.29	2120.	0.34	1974.	0.39	1724.


CRUDE—OIL PROD. UNITED KINGDOM
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

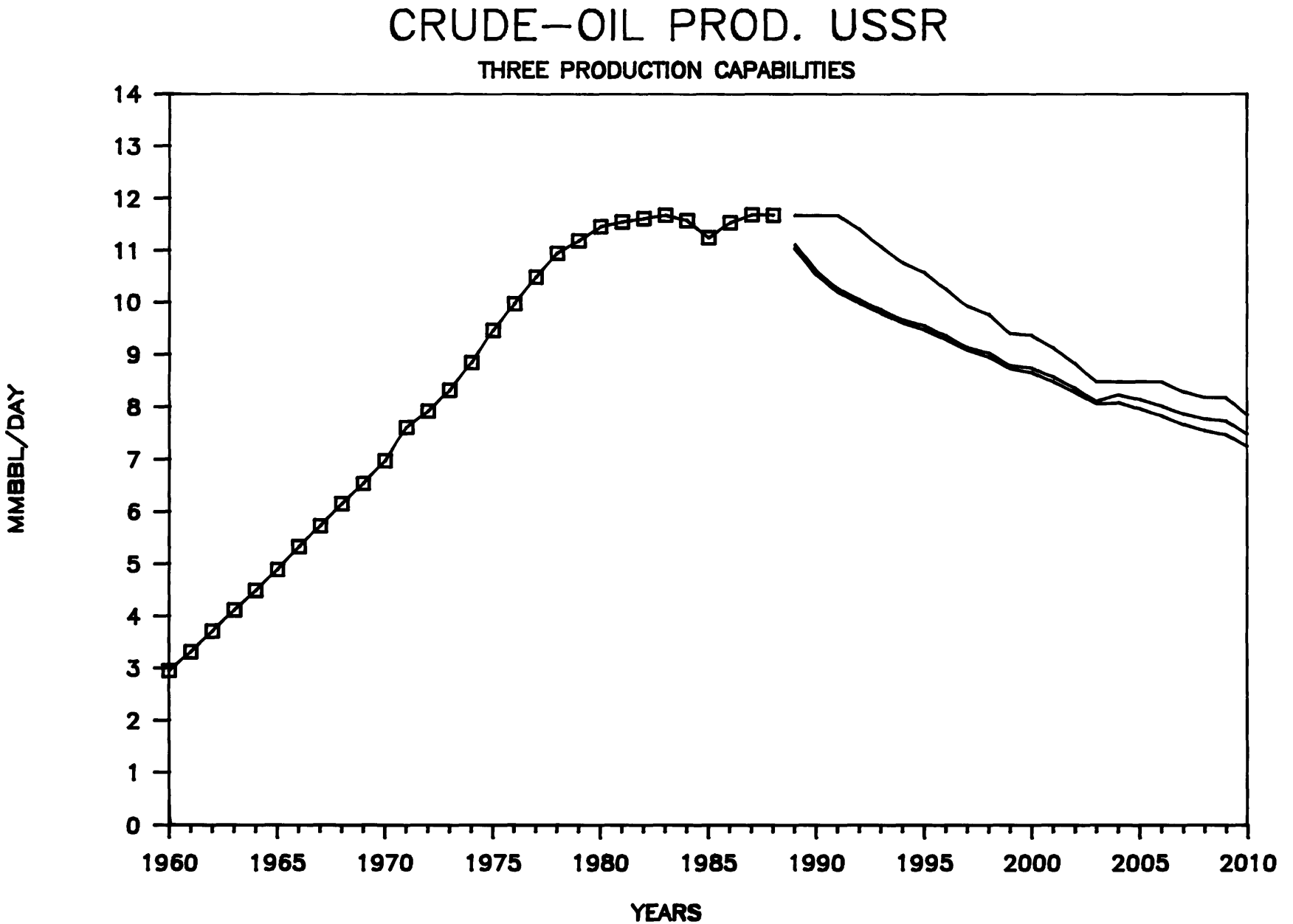
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 2870.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
UNITED KIN	1970	0.00	9.	0.00	9.	0.00	9.
UNITED KIN	1971	0.00	1000.	0.00	1000.	0.00	1000.
UNITED KIN	1972	0.01	3000.	0.01	3000.	0.01	3000.
UNITED KIN	1973	0.01	6000.	0.01	6000.	0.01	6000.
UNITED KIN	1974	0.01	10900.	0.01	10900.	0.01	10900.
UNITED KIN	1975	0.02	12000.	0.02	12000.	0.02	12000.
UNITED KIN	1976	0.24	9838.	0.24	9838.	0.24	9838.
UNITED KIN	1977	0.74	10045.	0.74	10045.	0.74	10045.
UNITED KIN	1978	1.08	10070.	1.08	10070.	1.08	10070.
UNITED KIN	1979	1.53	10191.	1.53	10191.	1.53	10191.
UNITED KIN	1980	1.58	8939.	1.58	8939.	1.58	8939.
UNITED KIN	1981	1.80	8209.	1.80	8209.	1.80	8209.
UNITED KIN	1982	2.10	7643.	2.10	7643.	2.10	7643.
UNITED KIN	1983	2.21	7300.	2.21	7300.	2.21	7300.
UNITED KIN	1984	2.41	6755.	2.41	6755.	2.41	6755.
UNITED KIN	1985	2.51	5823.	2.51	5823.	2.51	5823.
UNITED KIN	1986	2.49	5459.	2.49	5459.	2.49	5459.
UNITED KIN	1987	2.42	5301.	2.42	5301.	2.42	5301.
UNITED KIN	1988	2.25	8900.	2.25	8900.	2.25	8900.
UNITED KIN	1989	2.33	9213.	2.36	9353.	2.39	9456.
UNITED KIN	1990	2.34	9255.	2.42	9569.	2.48	9806.
UNITED KIN	1991	2.28	9051.	2.40	9493.	2.48	9839.
UNITED KIN	1992	2.21	8744.	2.34	9269.	2.45	9694.
UNITED KIN	1993	2.11	8377.	2.26	8957.	2.38	9438.
UNITED KIN	1994	2.01	7954.	2.16	8548.	2.28	9049.
UNITED KIN	1995	1.89	7506.	2.04	8087.	2.17	8580.
UNITED KIN	1996	1.79	7087.	1.93	7664.	2.06	8158.
UNITED KIN	1997	1.69	6690.	1.83	7264.	1.96	7761.
UNITED KIN	1998	1.60	6325.	1.74	6904.	1.87	7409.
UNITED KIN	1999	1.51	5976.	1.66	6561.	1.79	7074.
UNITED KIN	2000	1.43	5651.	1.58	6239.	1.71	6760.
UNITED KIN	2001	1.35	5335.	1.50	5925.	1.63	6450.
UNITED KIN	2002	1.27	5023.	1.42	5607.	1.55	6131.
UNITED KIN	2003	1.20	4746.	1.35	5336.	1.48	5869.
UNITED KIN	2004	1.13	4471.	1.28	5059.	1.41	5595.
UNITED KIN	2005	1.06	4201.	1.21	4781.	1.34	5312.
UNITED KIN	2006	0.99	3941.	1.14	4508.	1.27	5030.
UNITED KIN	2007	0.93	3702.	1.07	4258.	1.20	4773.
UNITED KIN	2008	0.87	3451.	1.00	3980.	1.13	4470.
UNITED KIN	2009	0.82	3242.	0.95	3760.	1.07	4241.
UNITED KIN	2010	0.77	3054.	0.90	3566.	1.02	4044.


CRUDE–OIL PROD. UNITED STATES
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
10
9
8
7
6
5
4
3
2
1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 49400.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
UNITED STA	1970	9.63	29632.	9.63	29632.	9.63	29632.
UNITED STA	1971	9.46	39001.	9.46	39001.	9.46	39001.
UNITED STA	1972	9.46	38063.	9.46	38063.	9.46	38063.
UNITED STA	1973	9.20	36339.	9.20	36339.	9.20	36339.
UNITED STA	1974	8.77	35300.	8.77	35300.	8.77	35300.
UNITED STA	1975	8.36	34250.	8.36	34250.	8.36	34250.
UNITED STA	1976	8.15	32682.	8.15	32682.	8.15	32682.
UNITED STA	1977	8.24	30942.	8.24	30942.	8.24	30942.
UNITED STA	1978	8.70	29486.	8.70	29486.	8.70	29486.
UNITED STA	1979	8.55	27804.	8.55	27804.	8.55	27804.
UNITED STA	1980	8.61	27051.	8.61	27051.	8.61	27051.
UNITED STA	1981	8.57	26445.	8.57	26445.	8.57	26445.
UNITED STA	1982	8.64	29830.	8.64	29830.	8.64	29830.
UNITED STA	1983	8.68	27858.	8.68	27858.	8.68	27858.
UNITED STA	1984	8.90	27858.	8.90	27858.	8.90	27858.
UNITED STA	1985	8.97	28446.	8.97	28446.	8.97	28446.
UNITED STA	1986	8.67	28416.	8.67	28416.	8.67	28416.
UNITED STA	1987	8.34	26889.	8.34	26889.	8.34	26889.
UNITED STA	1988	8.12	27256.	8.12	27256.	8.12	27256.
UNITED STA	1989	7.68	25759.	7.68	25759.	7.68	25759.
UNITED STA	1990	7.30	24489.	7.30	24489.	7.30	24489.
UNITED STA	1991	6.98	23421.	6.98	23421.	6.98	23421.
UNITED STA	1992	6.83	22902.	6.83	22902.	6.83	22902.
UNITED STA	1993	6.66	22352.	6.66	22352.	6.66	22352.
UNITED STA	1994	6.52	21860.	6.52	21860.	6.52	21860.
UNITED STA	1995	6.38	21410.	6.38	21410.	6.38	21410.
UNITED STA	1996	6.26	20987.	6.26	20987.	6.26	20987.
UNITED STA	1997	6.15	20618.	6.15	20618.	6.15	20618.
UNITED STA	1998	5.98	20055.	5.98	20055.	5.98	20055.
UNITED STA	1999	5.77	19374.	5.77	19374.	5.77	19374.
UNITED STA	2000	5.60	18785.	5.60	18785.	5.60	18785.
UNITED STA	2001	5.51	18497.	5.51	18497.	5.51	18497.
UNITED STA	2002	5.31	17810.	5.31	17810.	5.31	17810.
UNITED STA	2003	5.15	17294.	5.15	17294.	5.15	17294.
UNITED STA	2004	5.01	16808.	5.01	16808.	5.01	16808.
UNITED STA	2005	4.91	16488.	4.91	16488.	4.91	16488.
UNITED STA	2006	4.75	15936.	4.75	15936.	4.75	15936.
UNITED STA	2007	4.70	15777.	4.70	15777.	4.70	15777.
UNITED STA	2008	4.58	15376.	4.58	15376.	4.58	15376.
UNITED STA	2009	4.50	15082.	4.50	15082.	4.50	15082.
UNITED STA	2010	4.40	14752.	4.40	14752.	4.40	14752.


CRUDE–OIL PROD. USSR
THREE PRODUCTION CAPABILITIES
MMBBL/DAY
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
YEARS

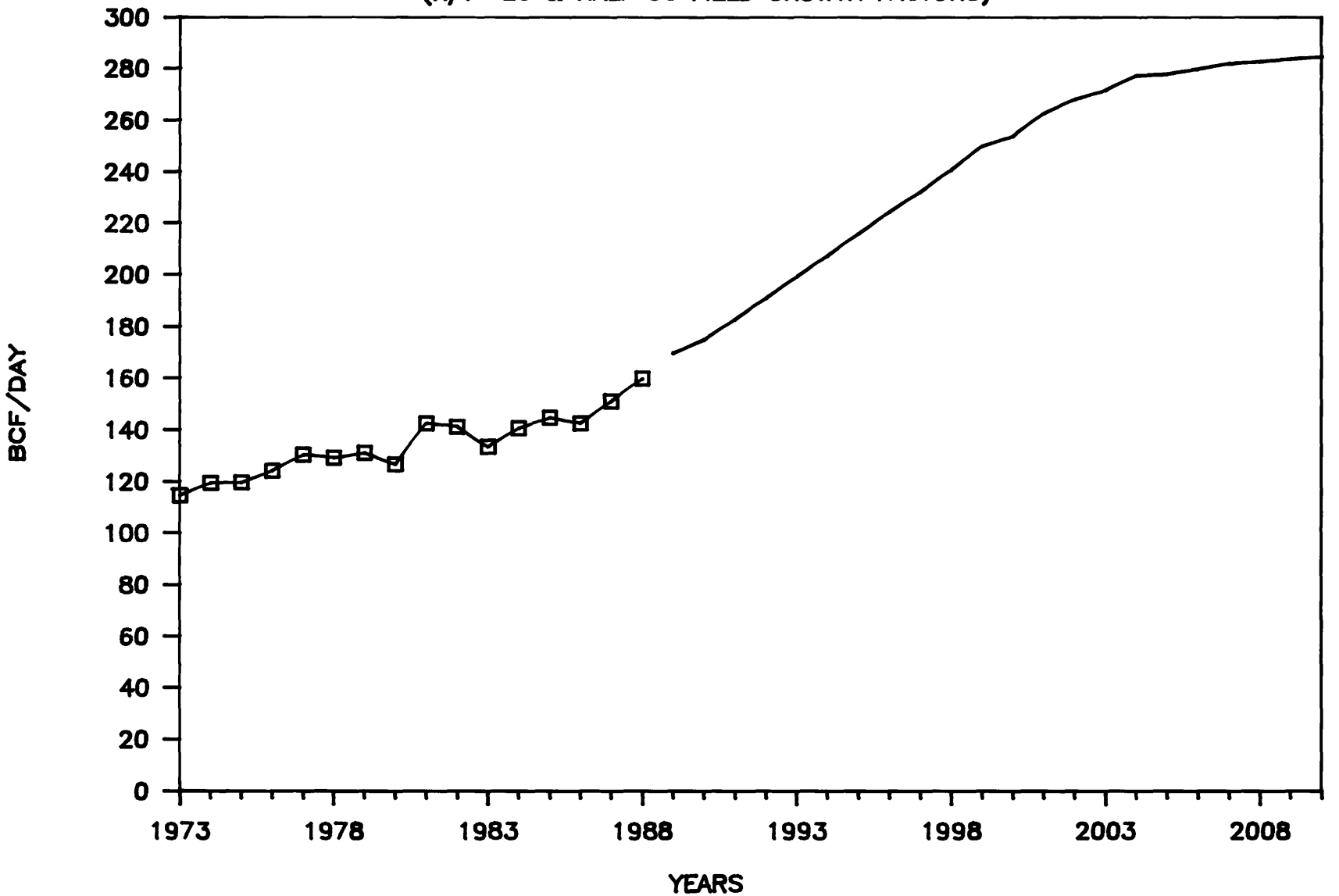
DATE: 3/22/90
PRODUCTION IN MMBBL/DAY, RESERVES IN MMBBL
ASSUMED UNDISCOVERED IN MMBBL AS OF 1/1/85 101350.

COUNTRY	YEAR	PROD1	RES1	PROD2	RES2	PROD3	RES3
USSR	1970	6.98	58000.	6.98	58000.	6.98	58000.
USSR	1971	7.61	58000.	7.61	58000.	7.61	58000.
USSR	1972	7.93	60000.	7.93	60000.	7.93	60000.
USSR	1973	8.33	45000.	8.33	45000.	8.33	45000.
USSR	1974	8.86	47500.	8.86	47500.	8.86	47500.
USSR	1975	9.47	48550.	9.47	48550.	9.47	48550.
USSR	1976	9.98	59878.	9.98	59878.	9.98	59878.
USSR	1977	10.49	59900.	10.49	59900.	10.49	59900.
USSR	1978	10.95	59000.	10.95	59000.	10.95	59000.
USSR	1979	11.19	58438.	11.19	58438.	11.19	58438.
USSR	1980	11.46	59787.	11.46	59787.	11.46	59787.
USSR	1981	11.55	65220.	11.55	65220.	11.55	65220.
USSR	1982	11.62	85000.	11.62	85000.	11.62	85000.
USSR	1983	11.68	86054.	11.68	86054.	11.68	86054.
USSR	1984	11.58	84846.	11.58	84846.	11.58	84846.
USSR	1985	11.25	81000.	11.25	81000.	11.25	81000.
USSR	1986	11.54	78725.	11.54	78725.	11.54	78725.
USSR	1987	11.69	60700.	11.69	60700.	11.69	60700.
USSR	1988	11.68	58700.	11.68	58700.	11.68	58700.
USSR	1989	11.04	55478.	11.11	55851.	11.68	56176.
USSR	1990	10.54	52977.	10.61	53346.	11.68	53554.
USSR	1991	10.21	51300.	10.27	51602.	11.68	51460.
USSR	1992	9.99	50232.	10.06	50558.	11.41	50001.
USSR	1993	9.79	49230.	9.86	49542.	11.08	48547.
USSR	1994	9.61	48316.	9.67	48612.	10.77	47210.
USSR	1995	9.48	47672.	9.56	48055.	10.58	46372.
USSR	1996	9.29	46704.	9.36	47029.	10.26	44967.
USSR	1997	9.09	45693.	9.14	45943.	9.93	43519.
USSR	1998	8.96	45057.	9.04	45412.	9.77	42830.
USSR	1999	8.74	43949.	8.79	44180.	9.41	41245.
USSR	2000	8.66	43537.	8.75	43986.	9.37	41062.
USSR	2001	8.49	42675.	8.58	43126.	9.13	40022.
USSR	2002	8.29	41681.	8.37	42063.	8.84	38726.
USSR	2003	8.07	40562.	8.12	40820.	8.49	37229.
USSR	2004	8.09	40660.	8.24	41406.	8.49	38184.
USSR	2005	7.97	40069.	8.15	40954.	8.49	37838.
USSR	2006	7.83	39350.	8.02	40304.	8.49	37197.
USSR	2007	7.67	38563.	7.87	39550.	8.30	36378.
USSR	2008	7.55	37948.	7.77	39051.	8.19	35911.
USSR	2009	7.47	37523.	7.73	38844.	8.18	35853.
USSR	2010	7.25	36455.	7.49	37652.	7.86	34467.

3.2 Natural Gas and Natural Gas Liquids Capability Forecasts for Non-OPEC Countries

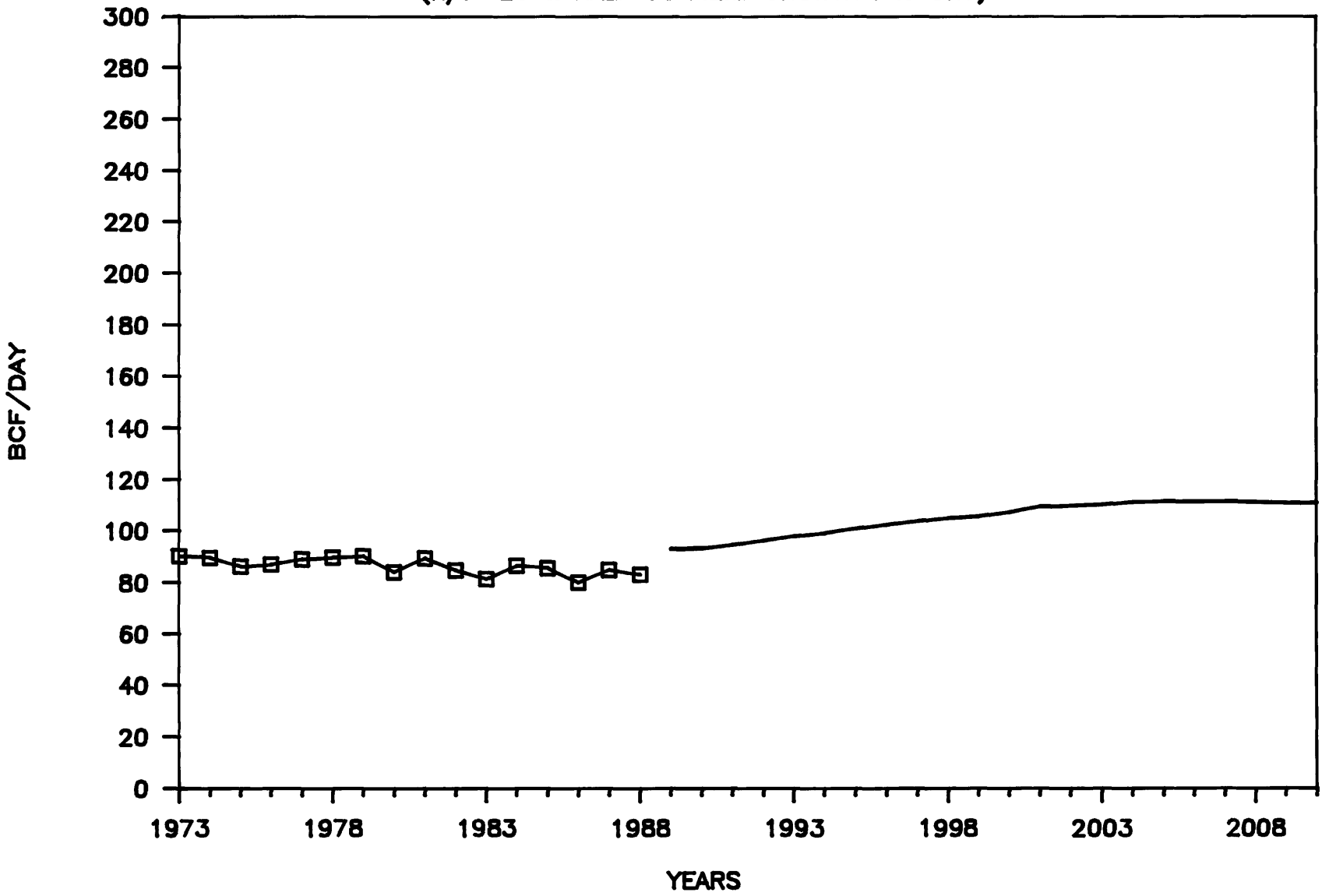
NATURAL GAS PRODUCTION — 19 COUNTRIES

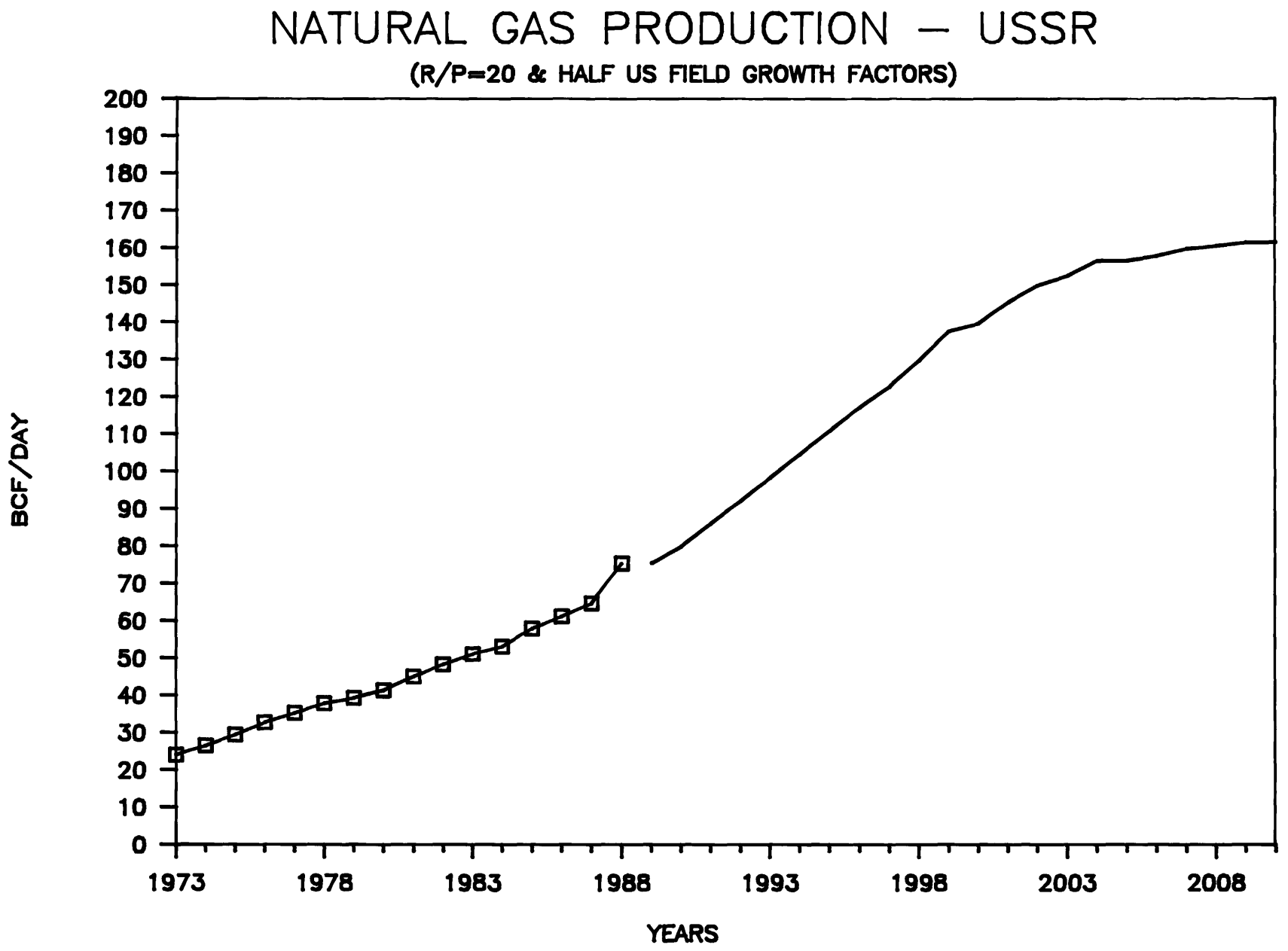
(R/P=20 & HALF US FIELD GROWTH FACTORS)



NATURAL GAS PROD. NON–OPEC, NON–COM.

(R/P=20 & HALF US FIELD GROWTH FACTORS)




NATURAL GAS PRODUCTION – USSR
(R/P=20 & HALF US FIELD GROWTH FACTORS)
BCF/DAY
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
1973
1978
1983
1988
1993
1998
2003
2008
YEARS

NGL PROD. CAPABILITIES OF 19 COUNTRIES