

MINUTE ITEM
This Calendar Item No. CL63
was submitted for information
only, no action thereon
being necessary.

INFORMATIVE
CALENDAR ITEM

A 57, 58

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08/22/90

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G. Scott

TWELVE MONTH STATUS REPORT
1989-90 PLAN OF DEVELOPMENT AND OPERATIONS AND BUDGET
LONG BEACH UNIT, WILMINGTON OIL FIELD, LOS ANGELES COUNTY

At the end of the 1989-90 fiscal year (June 30, 1990), the Long Beach Unit Plan of Development and Operations and Budget had a budget of \$137,321,000 including administrative overhead cost and a 4.1 million carry-over from 1988-89. These amounts remained unchanged from the ten months status report submitted to the Commission in June 1990. The original Budget by the City of Long Beach with carry-in was \$141,377,000 million.

With Commission approval, the Plan and Budget was modified six times during the fiscal year. The Second Modification involved the payment of \$2,000,000 to the Department of Energy for settlement of a dispute related to the Tertiary Incentive Program. The Fourth Modification provided for a transfer of \$200,000 for the removal of asbestos materials from field locations for environmental and safety concerns. The Fifth Modification provided for a transfer of \$500,000 from the Oil and Gas Production Program to the Water Injection Program for anticipated additional injection well work. The First, Third and Six Modifications revised Plan and Budget Exhibits "C-3" and "C-4" to reflect updated economic and production projections for the year as of the end of the first, second and third quarters, respectively.

Twenty-five requests by the Unit operator (City of Long Beach) to transfer funds totalling \$3,509,000 between line item accounts within the existing budget were approved by the Commission.

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Four plan supplements were approved. One was for leasing an electrostatic plotter for use in equity mapping. One was for the purchase of new radar units for marine vessels. The Third was to replace the Pier J filter plant of effluent lines, and the other was to inspect the oil shipping line flange between J-6 and the Broadway and Mitchell shipping station.

Unit expenditures during the budget year amounted to \$132,330,000 or 93.6 percent of the original budget, plus carry-over. A plot of these expenditures is shown on attached Exhibit 1. The expenditure level was \$7.3 million higher than 1988-89 F.Y. The 1990-91 Plan and Budget estimates expenditure of \$141,535,000, \$160 thousand (0.1%) higher than 1989-90.

Oil production for year amounted to 17.1 million barrels and gas production was 3.24 billion cubic feet. A plot of Unit oil rates is shown on Exhibit 2 with City of Long Beach projected rates through 1989-90. At average values of \$14.55 per barrel of oil and \$2.29 per thousand cubic feet of gas, the total value of Unit production for the year was \$256.5 million. This was \$51.6 million more than the \$204.9 million total income projected at the beginning of the budget year. The original projection was based on \$11.65 per barrel oil and \$2.34 per MCF gas prices. A plot of Unit oil prices is shown on Exhibit 3. Net income from Unit operations during the year amounted to \$124.1 million. This is approximately \$56.5 million more than projected at the beginning of the budget year and is due to higher average oil prices than budgeted and the fact that expenditures for the period were \$5 million less than originally projected. The relationship between oil prices and revenues to costs is shown on Exhibits 3 and 4. Oil prices took a drastic drop in March 1990, from a high of \$17.85/bbl., to a low of \$10.40/bbl. by the end of June.

Wilmington crude oil price has rebounded and is now above \$19/bbl. This trend may continue, however, projections are tempered because of expected continued price instability resulting from Middle East market influence.

Significant activities and accomplishments in each Plan and Budget Program during the fiscal year were:

A. DRILLING AND DEVELOPMENT PROGRAM

Two drilling rigs were operated throughout the budget year. Activity was on Islands Grissom, White, Chaffee and Pier J. Seven new producing wells and two new injection well were drilled, five producers and ten injectors were redrilled, seven producers were converted to injection, and

one injector and two producers were abandoned. Drilling and redrilling activity was in the Ranger, Terminal East, Upper Terminal and Lower Terminal Zones. Oil production of approximately 2120 B/D was obtained from this work which reduced the rate of the production decline in the Unit. The State Lands Staff is providing the City input to the drilling program for FY 1990-1991. This program is designed to optimize the current waterflood recovery by testing some pattern waterflood injection wells. The SLC Reservoir Engineering staff is proposing to develop an aggressive engineering program to increase the ultimate oil recovery of the Long Beach Unit. If this method proves successful, an expanded pattern development will be proposed. The SLC staff is proposing several other projects to enhance the Long Beach revenue to the State and accelerate production from low oil recovery areas of the field.

The adjusted budget for the Drilling and Development Program on June 30, 1990 was \$20.50 million. Funds expended were \$18.39 million (89.7%). Budget for 1990-1991 is \$25.50 million, an increase of \$5.0 million, a 24 percent increase. This increase is a result of activating a third drilling rig recommended by State Lands Staff in FY 1990-1991 to accelerate field development and increase ultimate oil recovery.

B. OIL AND GAS PRODUCTION PROGRAM

The Unit produced 17.12 million barrels of oil and 3.24 billion cubic feet of gas during the budget year. Average production rates were 46,907 barrels of oil per day and 8.874 MCF/D of gas versus projected rates of 46,565 B/D oil and 8.409 MCF/D gas. Expenditures for the twelve-month period plotted as dollars per barrel of oil produced are shown on Exhibit 6.

The principal function of this program is to fund the production of fluids. Gross production for the period averaged 473,638 B/D. The City projected rate was 474,160 B/D. The actual and proposed gross rates and program expenditures plotted as dollars per barrel of gross fluids are shown on Exhibit 7. The trend of that curve is slightly upward following a period of stable costs. The number of active producing wells, 610 during June 1990, is shown on Exhibit 8 and is increasing slightly after a downward trend experienced during the 1986 thru 1988 period. An upward trend in 1990-91 is expected as a result of the activation of a third rig.

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Major non-routine projects recently completed include the installation of piping for two recently installed 30,000 barrel oil storage tanks at the Pier J-6 site. These tanks are expected to be placed in service soon. Inspection of oil shipping line flanges between the Pier J-6 site and the Broadway and Mitchell shipping station, and upgrading the Broadway and Mitchell/Pier J electrical wiring is nearly completed. Scheduled island shut downs for complete electrical maintenance has been done on islands White and Grissom. Maintenance work for Islands Freeman and Chaffee and Pier J was also completed.

The adjusted budget for the Oil and Gas Production Program was \$59,705,000 of which \$56.94 million (95.4%) were expended at the end of the budget year. A plot of monthly expenditures is shown on attached Exhibit 9. The budget for 1990-91 is \$60.3 million dollars, a six percent increase over 1989-90 expenditures.

C. ENHANCED RECOVERY AND STIMULATION PROGRAM

No funds were budgeted for 1989-90 and no activity took place in this program. It is anticipated that steam "huff and puff" projects could be revived if oil prices remain above \$15 per barrel.

D. WATER INJECTION PROGRAM

A total of 187.56 million barrels of water were injected during the year. The average rate was 517,871 barrels per day, lower than the 518,776 B/D project. Gross produced fluids amounted to 172.88 million barrels so the Injection/Production fluids volume ratio averaged 108.5 percent for the year. A plot of water injection rates and program expenditures as dollars per barrel of water injected are shown on Exhibit 10. This cost trend remains slightly downward sustaining a long period of slight decline.

We are concerned about the possible lack of make-up water for future Long Beach Unit operations. A variety of alternatives are being studied by City and State Staff. One alternative is to produce water from a shallow aquifer. Initial test results are encouraging and a high rate flow test is planned. If the flow tests are successful, expansion of the shallow aquifer as a make-up water source on other island locations is anticipated.

Major non-routine projects in progress included the replacement of twelve deteriorated injection pump motor

controllers with state of the art programmable units and the purchase of new induced gas flotation cells at Pier J-2.

The adjusted budget for the Water Injection Program amounted \$24,712,000 of which \$22.64 million (91.6%) were expended at the end of year. A plot of monthly expenditures is shown on attached Exhibit 11.

E. MANAGEMENT PROGRAM

The major portion of this program consists of expenditures for salaries, benefits and expenses of the Field Contractor, management and administrative personnel, engineering consultant services, data processing equipment purchases and operating costs, office expenses including rental, supplies and services, and the Unit Operator's billable costs. The computer reservoir modeling program initiated in 1985 is continuing and has resulted in the identification of many opportunities for field development and contributed significantly to a successful drilling and development program over the last two years. Costs for the modeling have been cut from monthly expenditures of over \$100,000/mo. to current expenditures of \$27,000/mo. through the purchase of computer equipment and acquiring in-house engineering expertise.

During the last month of the 1989-90 FY, the SLC Reservoir Engineering staff conducted a production improvement study to identify opportunities for increased oil production and recovery from the Long Beach Unit. As was mentioned in the Drilling Program previously, a pattern waterflood concept was proposed, and will be recommended to the City for implementation in the 1990-1991 FY. In addition, increased oil production from an "optimized waterflood" project could result in an oil production increase of nearly 2000 barrels of oil per day.

Other significant items include Unit equity expense, special management projects, townlot participation administration and special studies related to Unit waste management and disposal. A plot of the Management Program expenditure expressed as dollars per barrel of oil is shown on Exhibit 12. The trend of dollars per barrel of oil for this program is upward.

One major project now nearly complete is the replacement of the transite fire line system on Island Chaffee.

CALENDAR ITEM NO. C 6 8 CONT'D

The adjusted budget at the end of the year was \$23,348,000 for the Management Program of which \$21.39 million (91.6%) were expended. A plot of monthly expenditures is shown on Exhibit 13. An decrease in expenditures for 1990-91 of 0.42 million, 2 percent, is proposed by the City. A plot of the Management Program expenditures expressed as dollar per barrel of oil is shown on Exhibit 12.

F. TAXES, PERMITS AND LAND RENTAL PROGRAM

Adjusted budget funds for the Taxes, Permits and Land Rental Program on June 30, 1990 amounted to \$13,108,000 of which \$12.99 million (99.1%) were expended. The major cash outflow in this program occurs with mining rights tax payments in December and April of the budget year. A plot of program expenditures is shown on Exhibit 14.

A summary of Long Beach Unit 1989-90 Plan and Budget activity during the fiscal year ending June 30, 1990 (in thousands of dollars) is:

<u>Program</u>	<u>Original Budget**</u>	<u>Adjusted Budget**</u>	<u>Expenditures* to 6/30/90</u>	
A. Drilling and Development	\$ 20,504	\$ 20,504	\$18,386	(89.7)
B. Oil & Gas Production	60,205	59,705	56,923	(95.4)
C. Enhanced Recovery & Stimulation	-0-	-0-	-0-	
D. Water Injection	24,212	24,712	22,638	(91.6)
E. Management	21,348	23,348	21,391	(91.6)
F. Taxes, Permits & Land Rental	<u>15,108</u>	<u>13,108</u>	<u>12,991</u>	(99.1)
Total	\$141,377	\$141,377	\$132,330	(93.6)

**Including Administrative Overhead Costs.

**Includes Administrative Overhead Costs and \$4,056,000 Carry-over from 1988-89.

CALENDAR ITEM NO. C 63 CONT'D

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N/A.

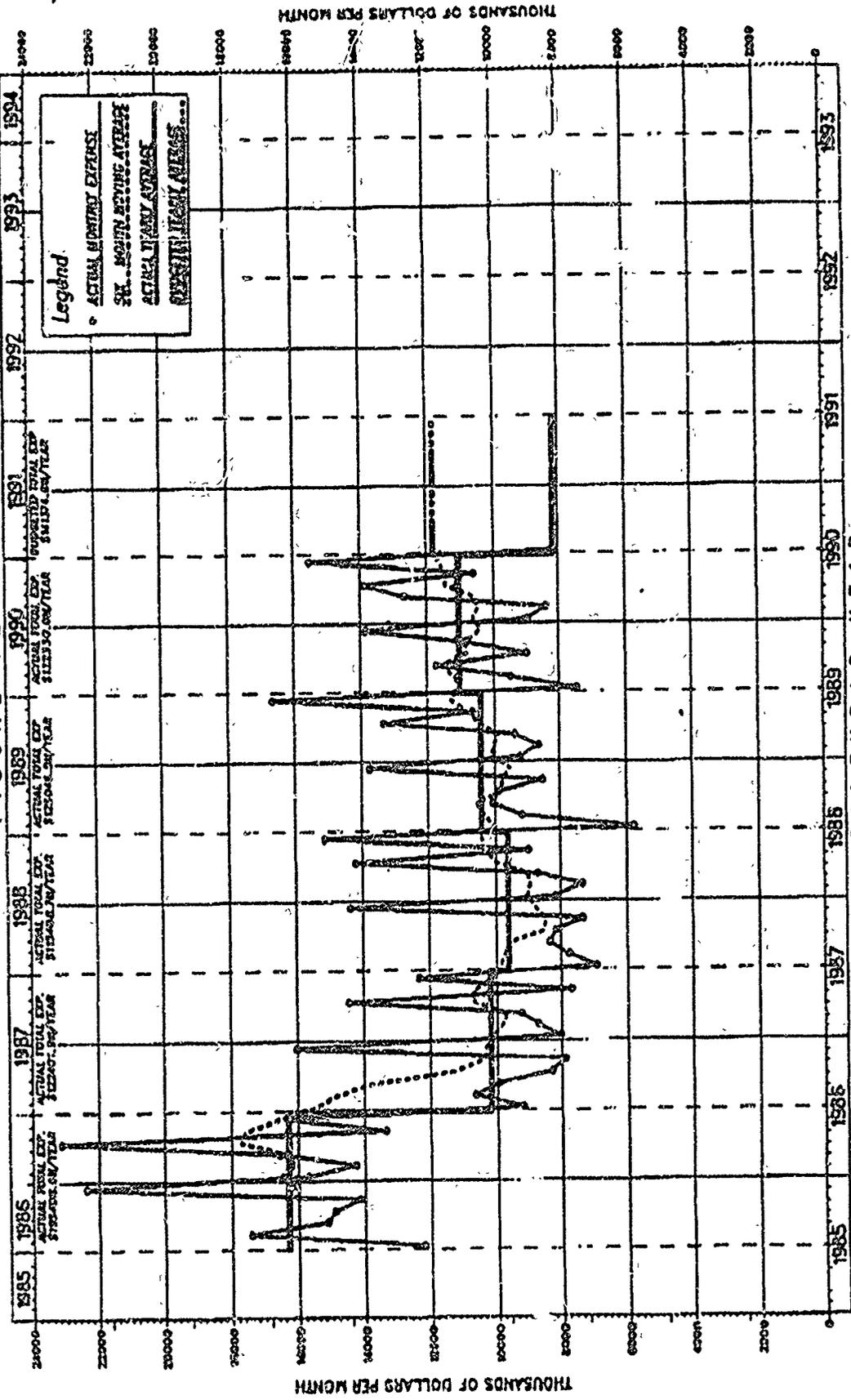
EXHIBITS:

1. Total Budget Expenditures.
2. Oil Production Rate.
3. Oil Price and Costs.
4. Oil Revenue and Costs.
5. Drilling and Development Program Expenditures (Program A).
6. Program B Costs Dollar Per Barrel Oil.
7. Program B Costs Dollar Per Barrel Gross Fluid
8. Producing Well Count.
9. Oil and Gas Production Program Expenditures (Program B).
10. Program D Costs Dollar Per Barrel Injected Water.
11. Water Injection Program Expenditures (Program D).
12. Program E Costs Dollar Per Barrel Oil.
13. Management Program Expenditures (Program E).
14. Taxes, Permits and Land Rental Program Expenditures (Program E).

EXHIBIT 1

LONG BEACH UNIT

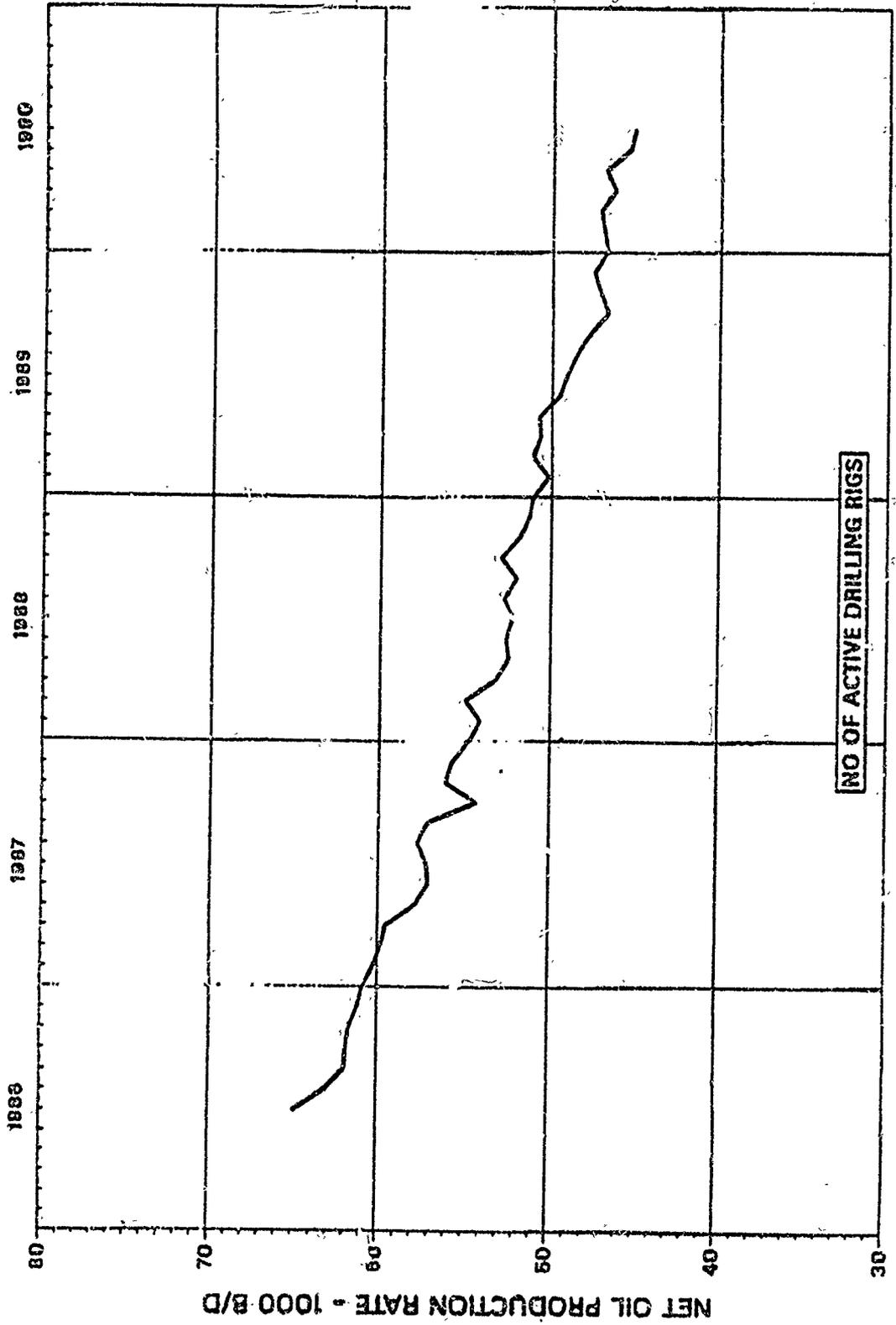
TOTAL BUDGET -- INCLUDING ADMIN. OVERHEAD -- FISCAL YEAR



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EXHIBIT 2

LONG BEACH UNIT OIL PRODUCTION RATE



August 1 1990

NET OIL PRODUCTION RATE - 1000 B/D

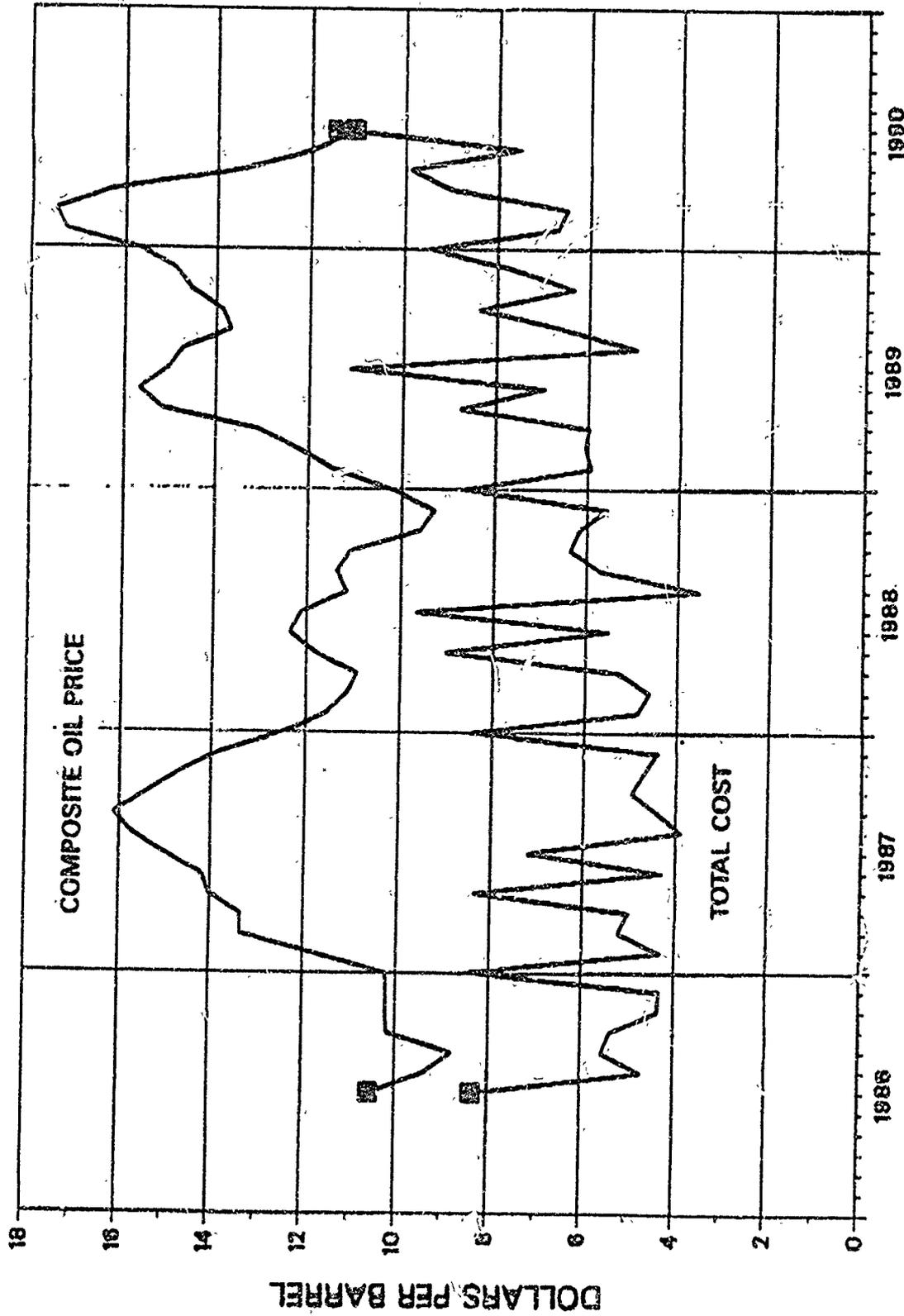
NO OF ACTIVE DRILLING RIGS

2- 1- 0- 1- 2

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EXHIBIT 3

LONG BEACH UNIT

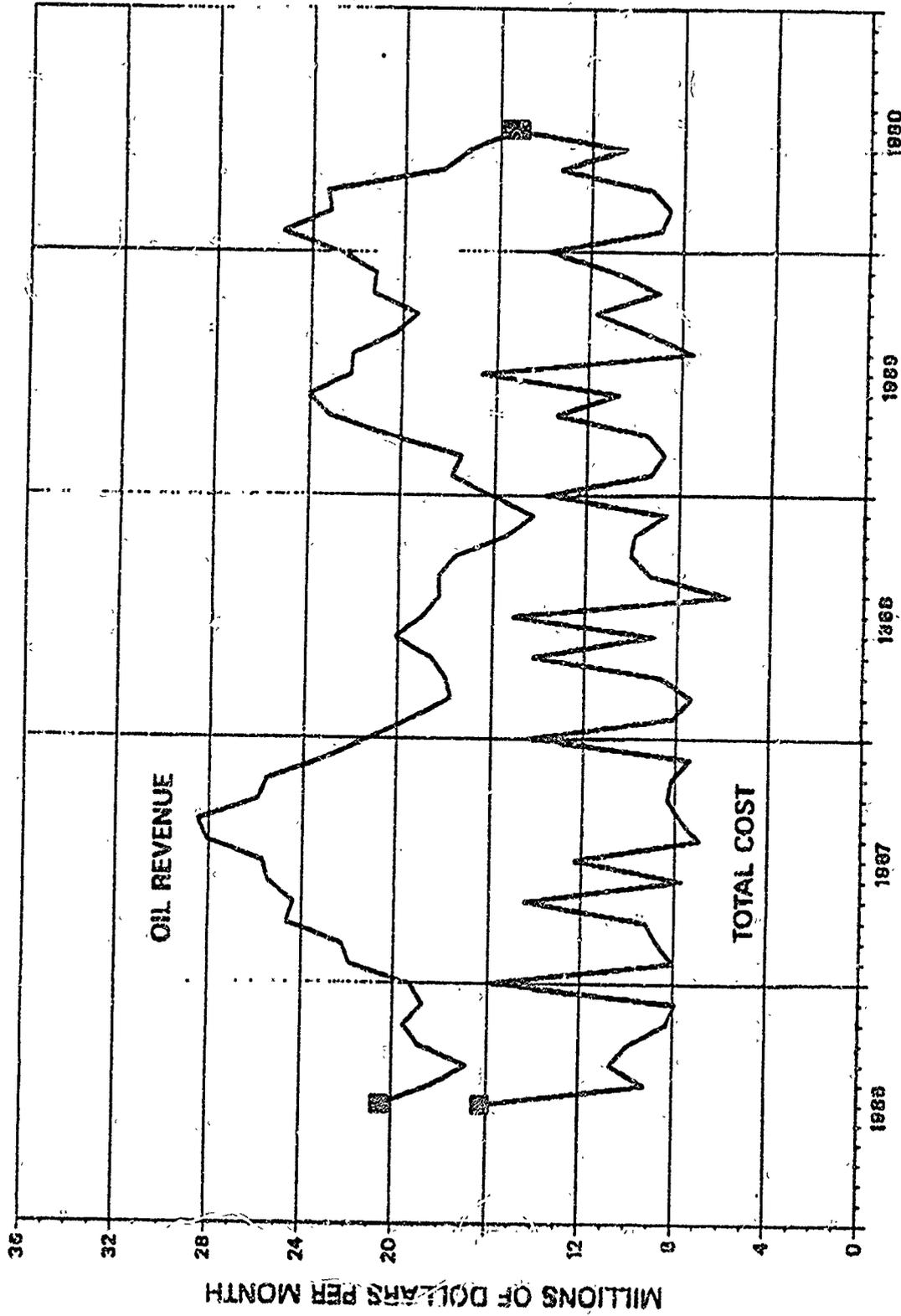


August 1990

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EXHIBIT 4

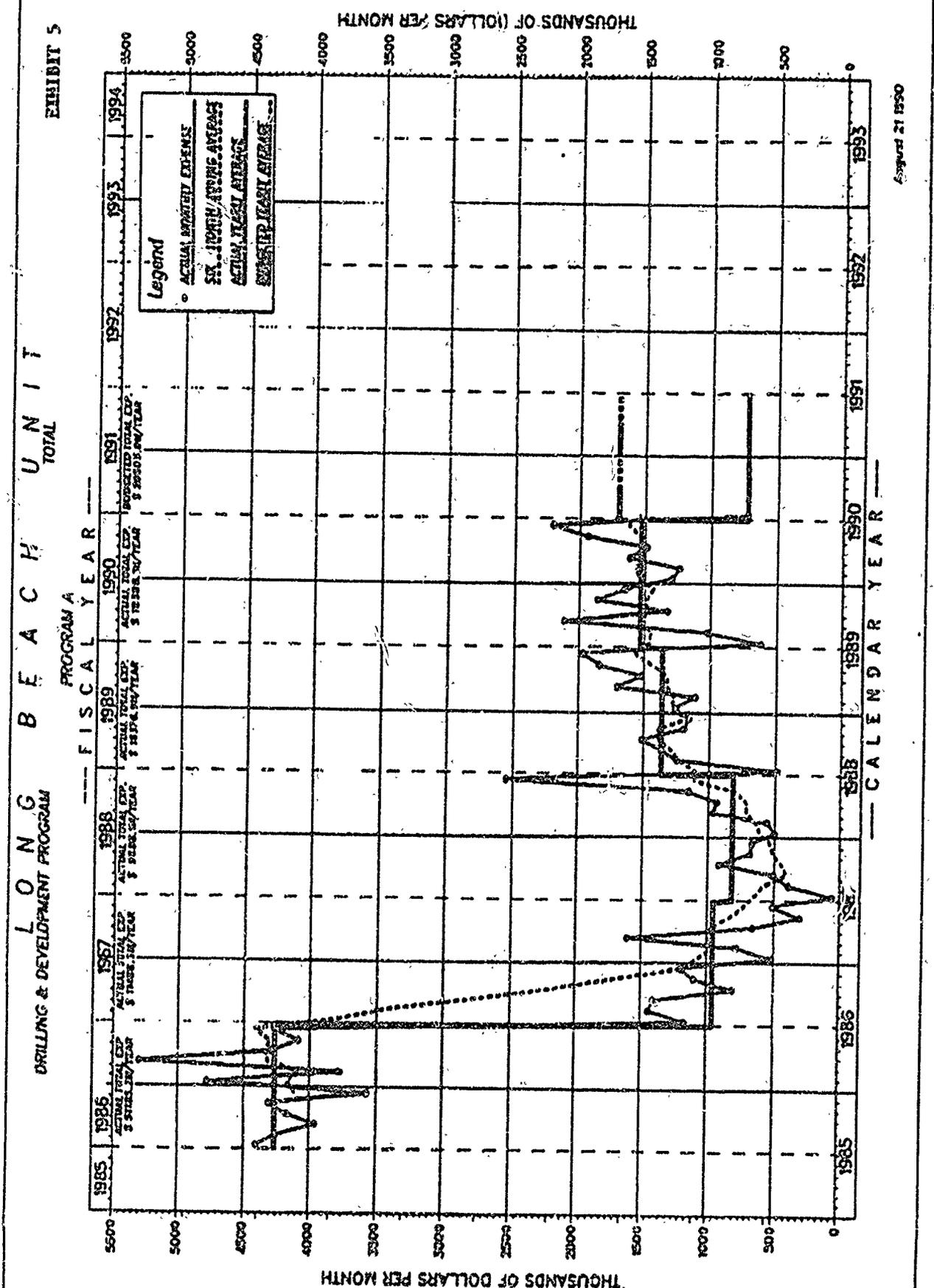
LONG BEACH UNIT



August 21 1990

MILLIONS OF DOLLARS PER MONTH

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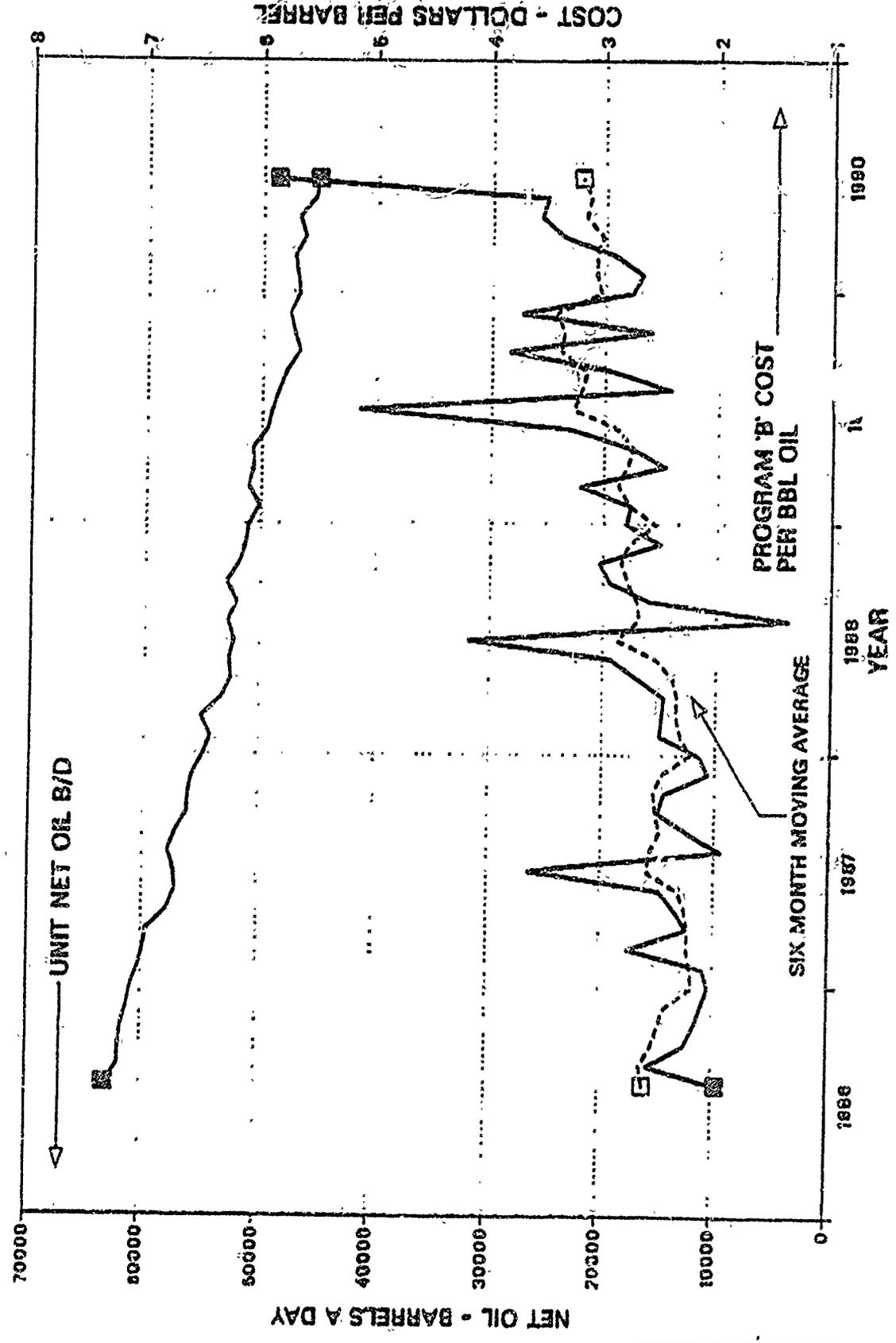
CALENDAR PAGE 384
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August 21 1990

OIL & GAS PRODUCTION PROGRAM COSTS EXPRESSED AS \$/BBL OIL

EXHIBIT 6

LONG BEACH UNIT



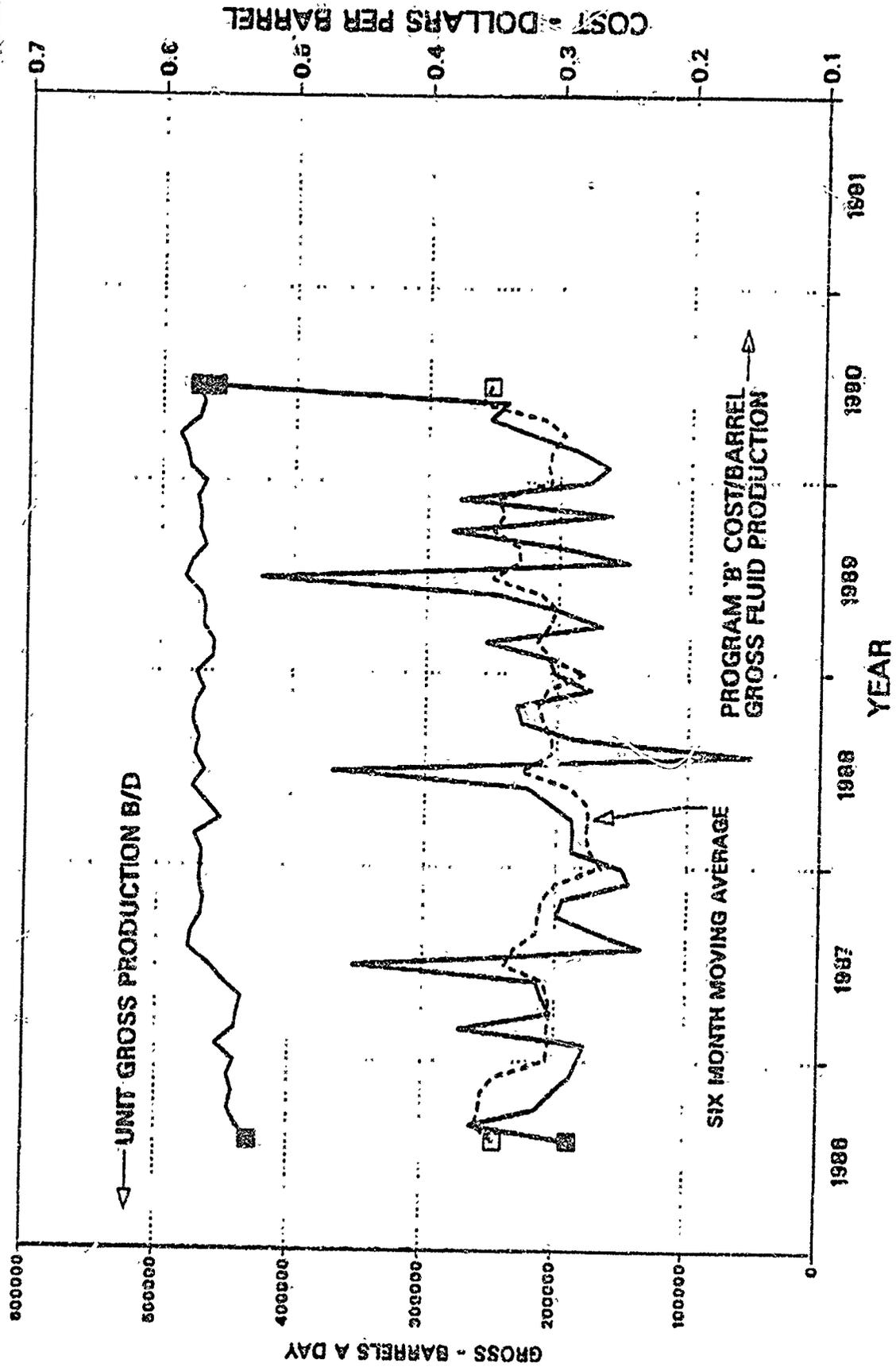
Aug 1 1990

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PLATE PAGE	2319

OIL & GAS PRODUCTION PROGRAM COSTS EXPRESSED AS \$/BBL GROSS FLUID

EXHIBIT 7

LONG BEACH UNIT

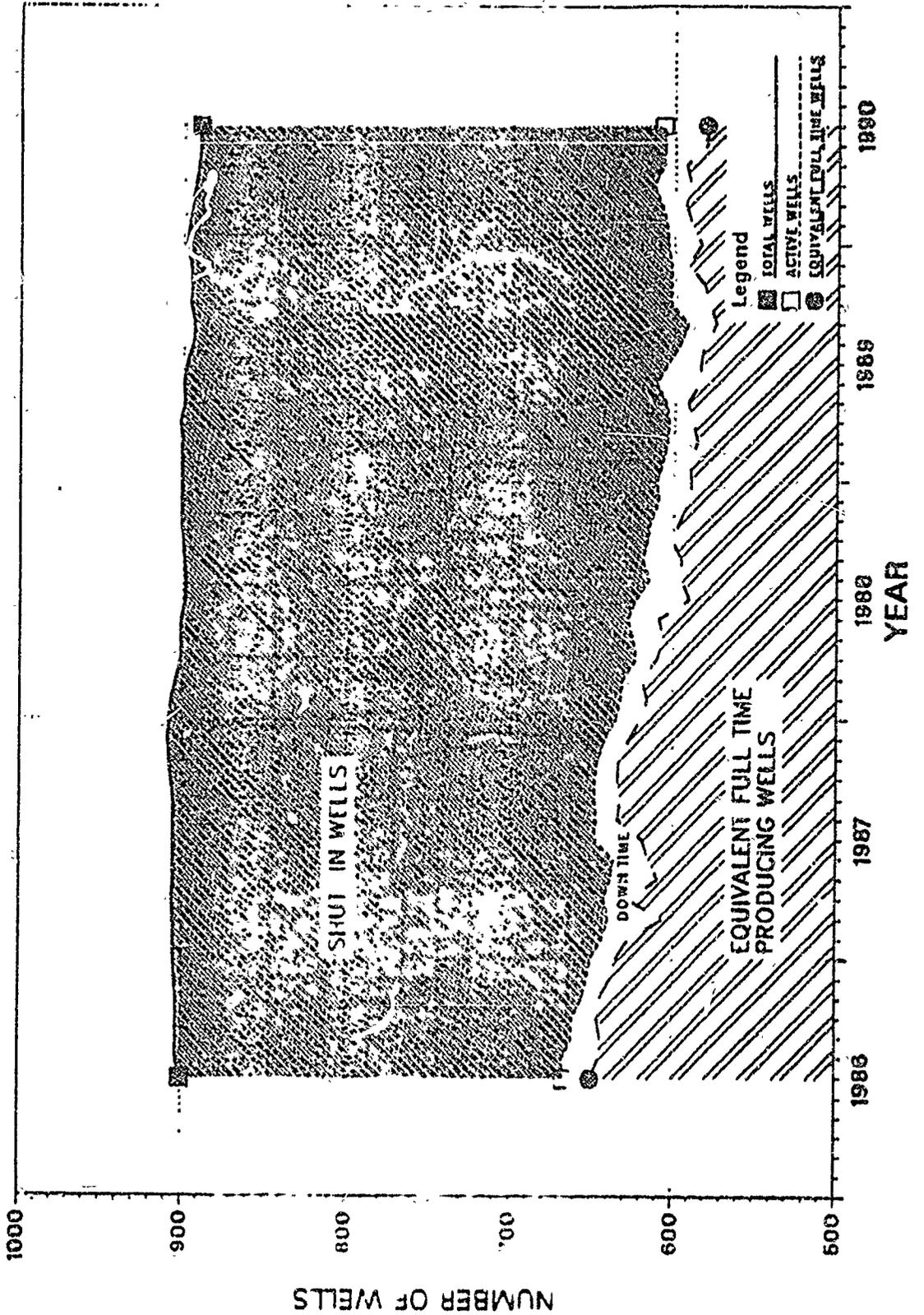


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EXHIBIT 8

LONG BEACH UNIT PRODUCING WELLS



August 1 1990

NUMBER OF WELLS

EQUIVALENT FULL TIME
PRODUCING WELLS

SHUT IN WELLS

DOWN TIME

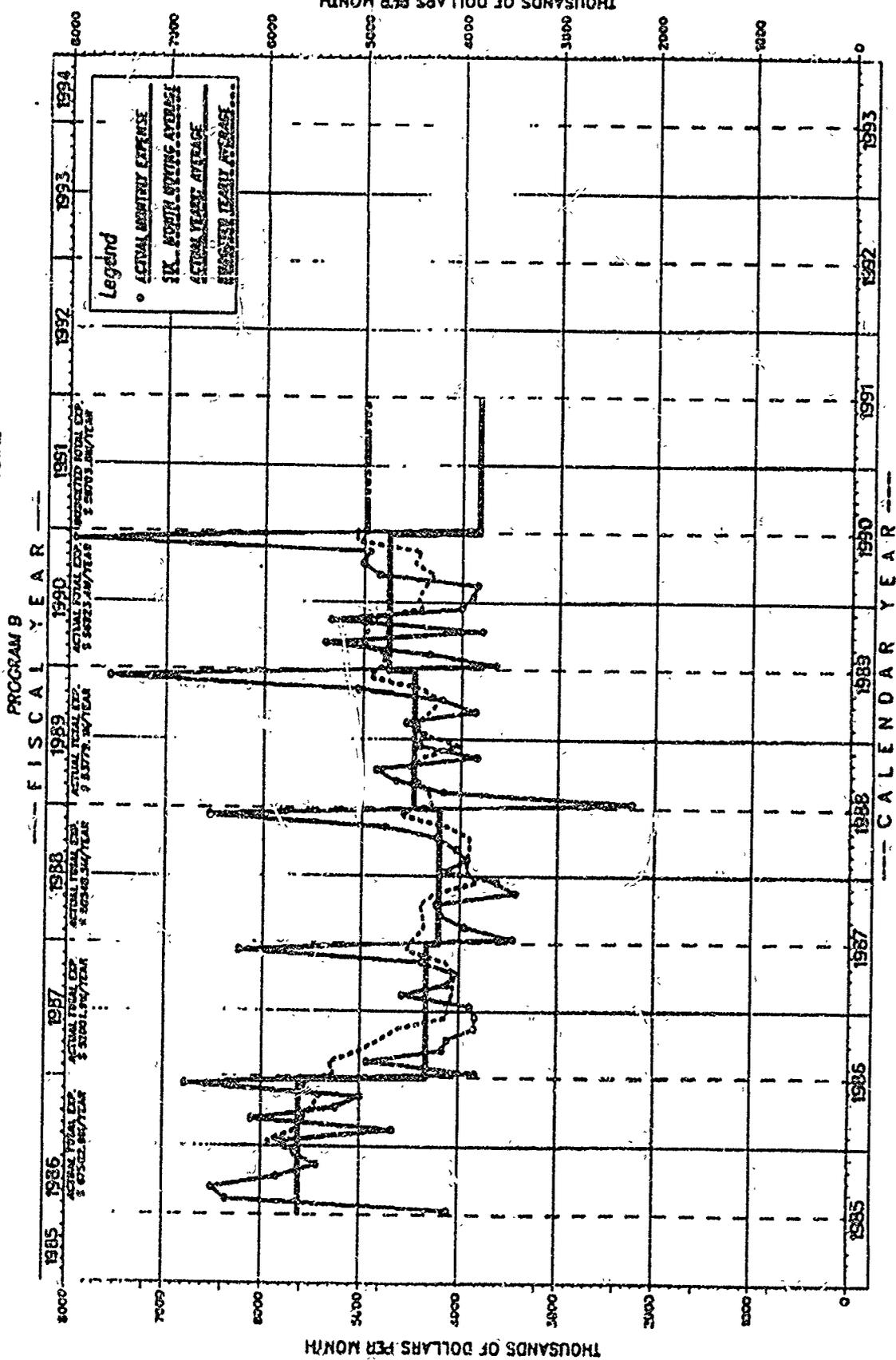
Legend

- TOTAL WELLS
- ACTIVE WELLS
- EQUIVALENT FULL TIME WELLS

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L O N G B E A C H U N I T
OIL & GAS PRODUCTION PROGRAM
PROGRAM B
TOTAL

EXHIBIT 9



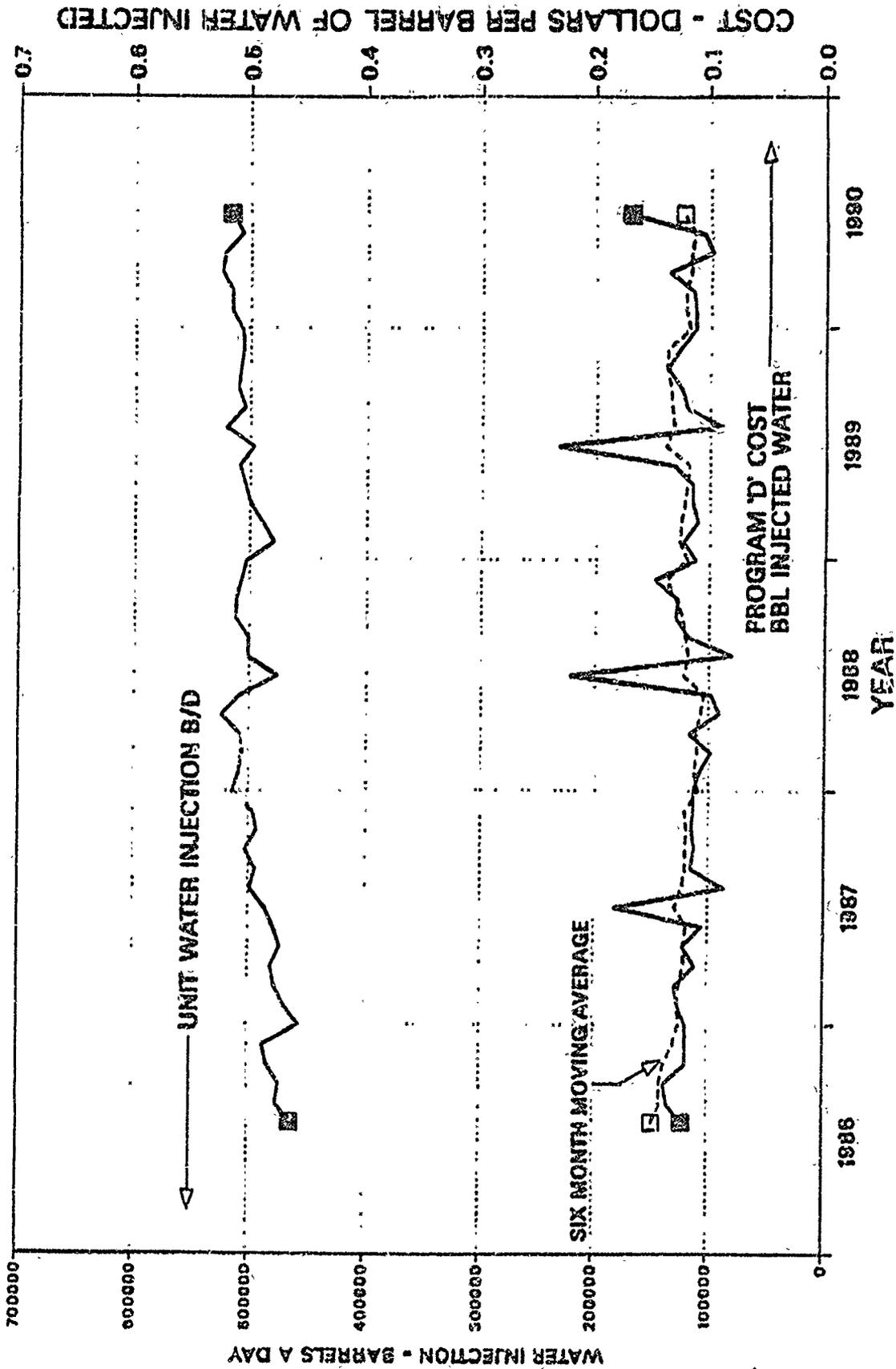
August 21 1990

CALENDAR PAGE 384.15
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WATER INJECTION PROGRAM COSTS EXPRESSED AS \$/BBL OF INJECTED WATER INJECTION

EXHIBIT TO

LONG BEACH UNIT

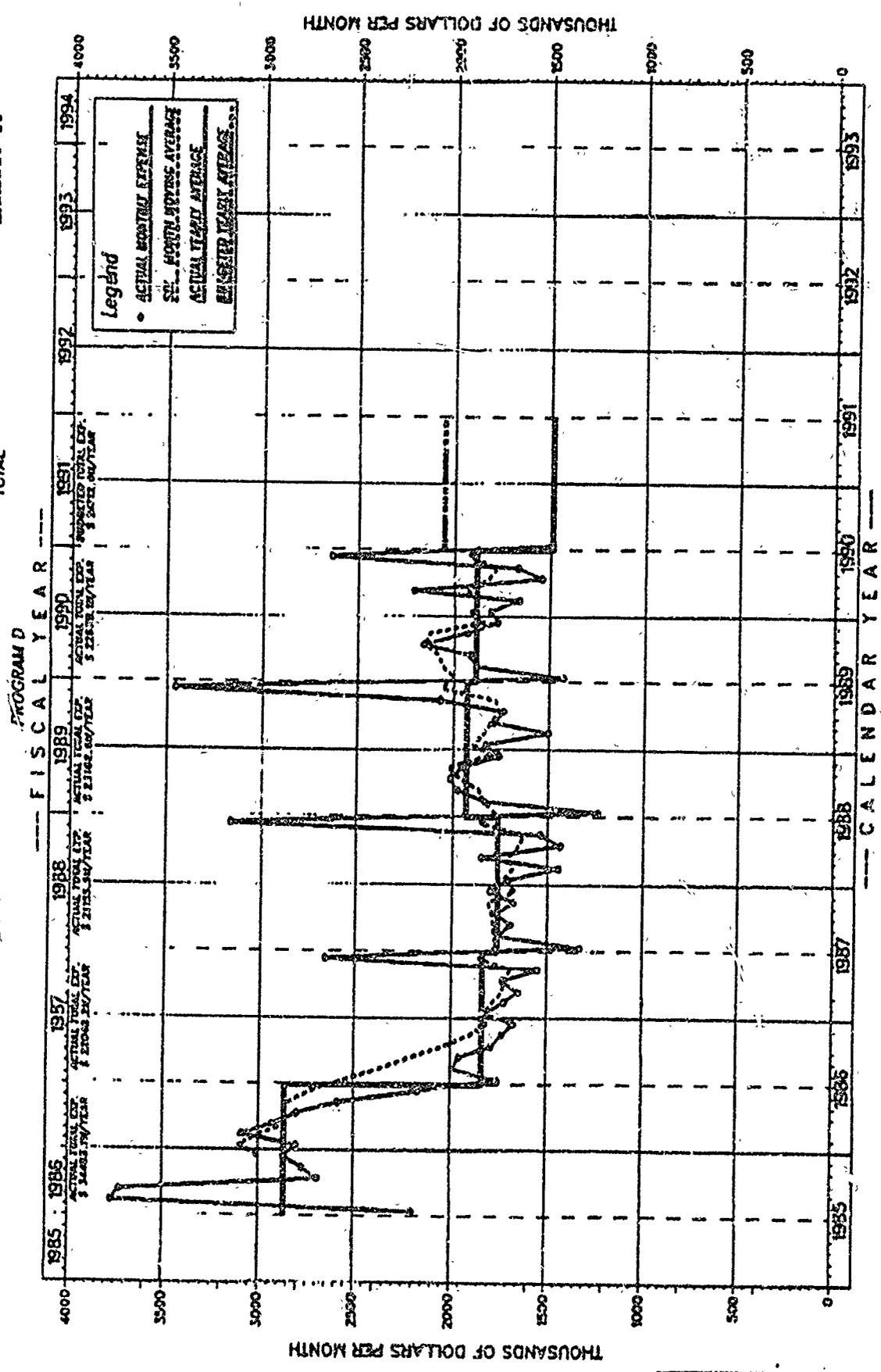


Aug 1 1990

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L O N G B E A C H U N I T
WATER INJECTION PROGRAM

EXHIBIT 11



Legend

- ACTUAL MONTHLY EXPENSE
- SIX-MONTH MOVING AVERAGE
- ACTUAL YEARLY AVERAGE
- MONTHLY YEARLY AVERAGE

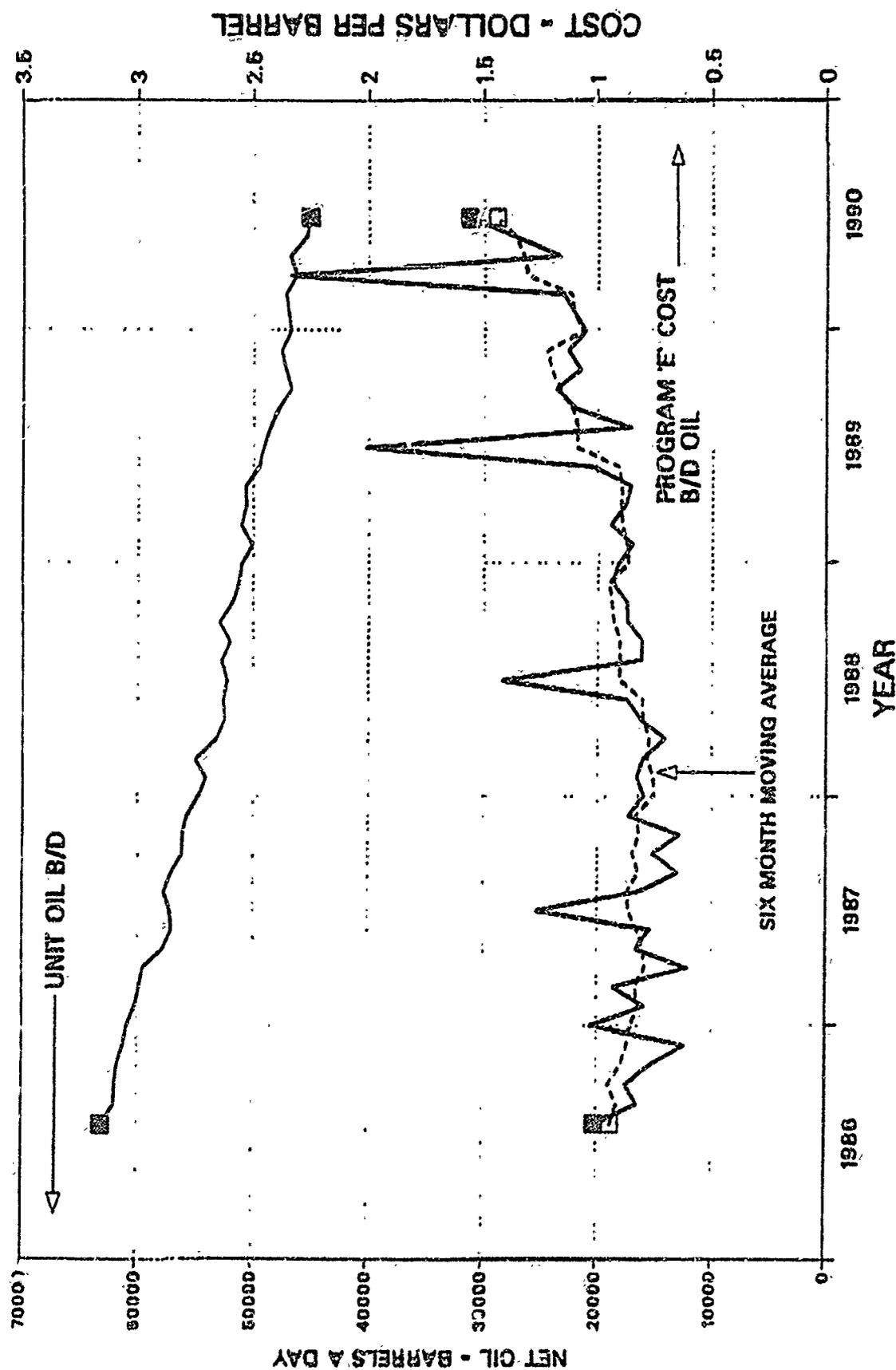
August 21 1990

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MANAGEMENT PROGRAM COSTS EXPRESSED AS \$/BBL OIL

EXHIBIT 12

LONG BEACH UNIT

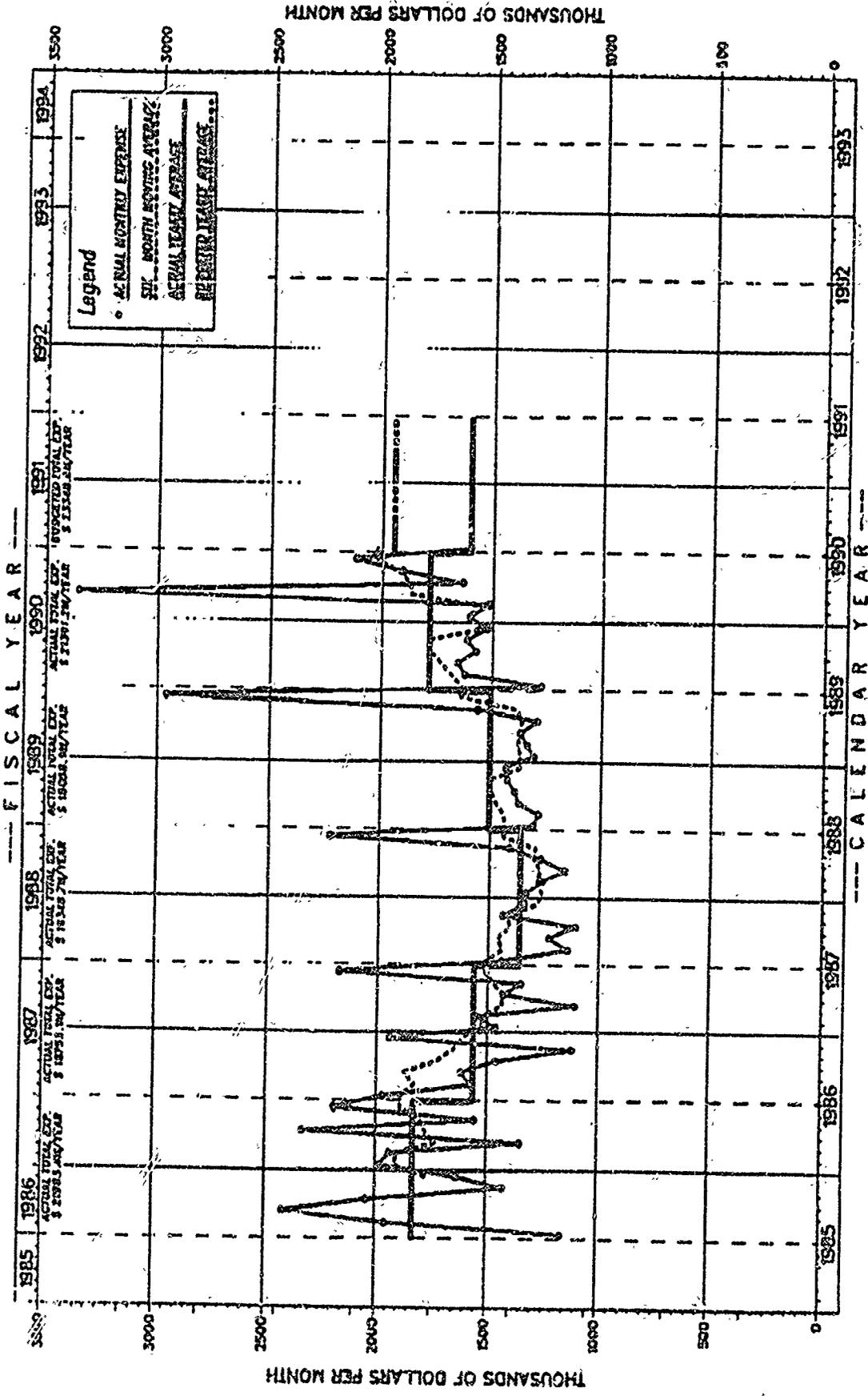


Aug 1 1990

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MANAGEMENT PROGRAM
 LONG BEACH UNIT
 TOTAL

EXHIBIT 13

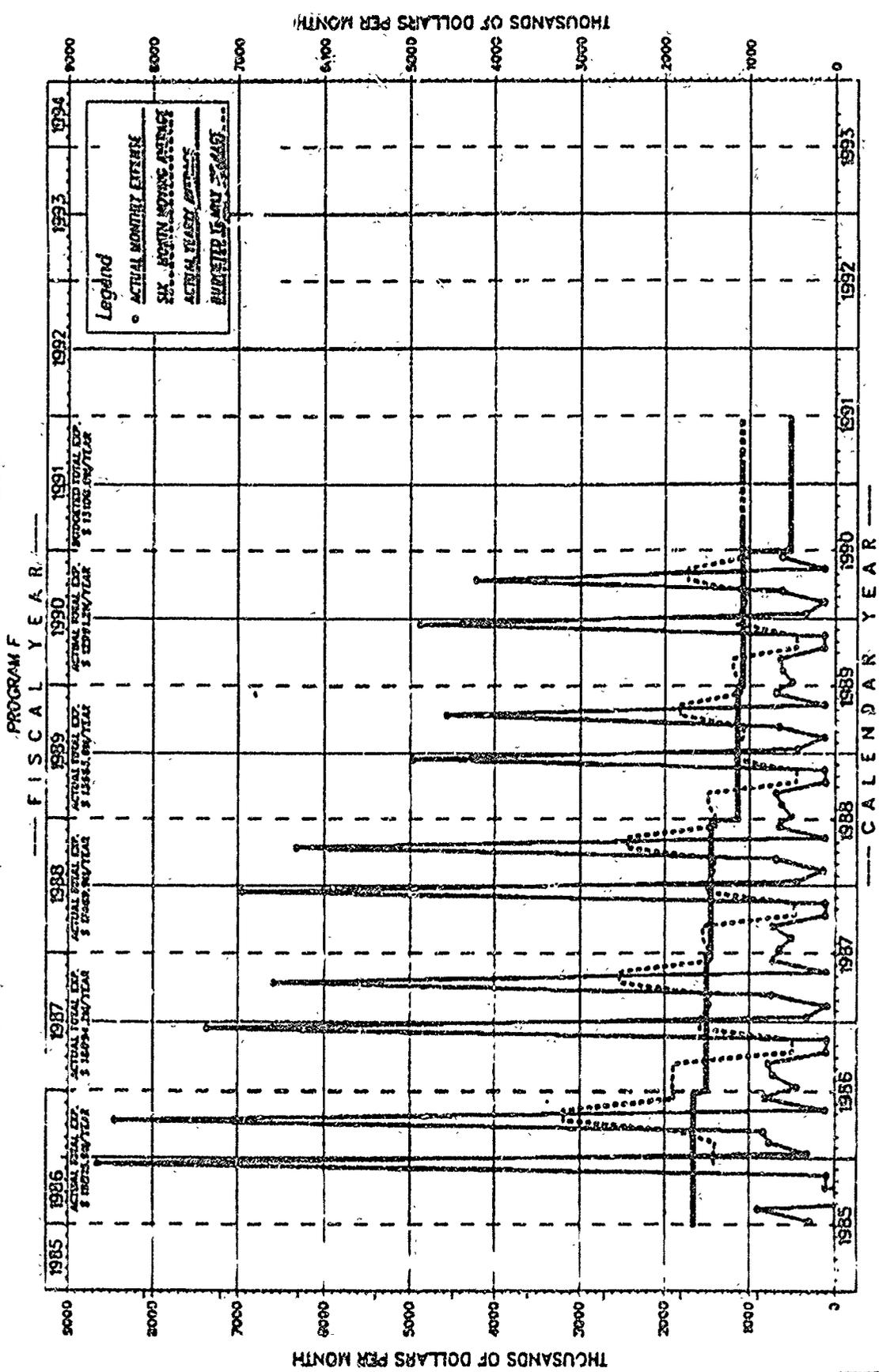


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CALENDAR PAGE 38419
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LONG BEACH UNIT
TAXES, PRITS, & RENTAL PROGRAM

EXHIBIT 14



August 21 1990

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