

MINUTE ITEM

This Calendar Item No. 30  
was approved as Minute Item  
No. 30 by the State Lands  
Commission by a vote of 3  
to 0 at its 08/30/89  
meeting.

INFORMATIVE  
CALENDAR ITEM

A 57, 58

30

08/30/89

W 17094

S 29

Naughton

YEAR END STATUS REPORT  
1988-89 PLAN OF DEVELOPMENT AND OPERATIONS AND BUDGET  
LONG BEACH UNIT, WILMINGTON OIL FIELD  
LOS ANGELES COUNTY

At the end of the 1988-89 fiscal year (June 30, 1989), the Long Beach Unit Plan of Development and Operations and Budget had an adjusted budget of \$132,354,000 including administrative overhead costs and a \$3.4 million carry-over from 1987-88. These amounts remained unchanged from the ten months status report submitted to the Commission in May 1989. The original Budget by the City of Long Beach with carry-in was \$136.4 million and, if the additional drilling rig activity added to the Plan in the Third Modification had been in the City's original Budget it would have totaled over \$142 million including carry-in.

During the fiscal year, the Commission received or approved five modifications to the Plan and Budget. The First Modification approved the expenditure of \$286,000 (including overhead) to allow the Unit to settle with the EPA the Unit's share of the first phase of clean-up costs at a waste disposal site previously used by the Field Contractor for disposal of Unit waste material. Funds were transferred within the existing budget so no augmentation was required. The Second Modification 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 quarter. The Third Modification approved the addition of six months drilling rig activity to the plan and transferred funds in the amount of \$6,251,000 from several accounts to the Drilling and Development Program to fund continued operation of a second

CALENDAR ITEM NO. 30 (CONT'D)

MINUTE ITEM  
30  
The Calendar Item No. 30  
will be added to the agenda  
of the State Board of  
Education by the State Board  
of Education to be held  
at the following time and  
place:

drilling rig for the remainder of the budget year. In addition, the Third Modification reflected a budget reduction of \$10,261,000 from funding made surplus primarily by lower electrical energy costs and reduced mining rights taxes as a consequence of lower oil prices. The Third Modification resulted in a net budget reduction of \$4,010,000. The Fourth and Fifth 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 second quarter (December 31, 1988) and third quarter (March 31, 1989) respectively. Seventeen requests by the Unit Operator (City of Long Beach) to transfer funds totalling \$3,616,000 between line item accounts within the existing budget were approved.

Four plan supplements were approved. One was for emergency repairs to a floating dock on Pier J. The second approved the purchase and implementation of a computer software system (Unidata) for general petroleum management applications in the Unit. The third was for emergency repairs to the barge landing facilities on Island Freeman. The fourth approved the emergency repair of one of the diesel engines in crewboat "Ranger."

Unit expenditures during the budget year amounted to \$125,046,526 or 94.5 percent of the adjusted budget and 91.7 per cent of the original budget plus carry-over. A plot of these expenditures is shown on attached Exhibit 1. The expenditure level was \$9.6 million higher than 1987-88 F.Y. The 1989-1990 Plan and Budget estimates expenditure of \$14,377,000. \$16.3 million (13%) higher than 1988-1989.

Oil production for the year amounted to 18.6 million barrels and gas production was 3.40 billion cubic feet. A plot of Unit oil rates is shown on Exhibit 2 with City of Long Beach projected rates through 1989-90. The production rate is an average of 213 barrels/day above that projected by the City. At average values of \$12.07 per barrel of oil and \$2.18 per thousand cubic feet of gas, the total value of Unit production for the year was \$231.8 million. This was \$19.6 million more than the \$212.2 million total income projected at the beginning of the budget year. The original projection was based on \$11.00 per barrel oil and \$2.25 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 \$106.7 million. This is approximately \$27.5 million more than projected at the beginning of the budget year and is due to increased oil prices and to the fact that expenditures for the period were \$11.3 million less than originally projected. The relationship between oil prices and revenues to costs is shown on Exhibits 3

CALENDAR ITEM NO. 30 (CONT'D)

and 4. Oil prices at the end of June had increased over 62 per cent from the low in November 1988 but have declined and are now at \$13.40 per barrel.

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. Eleven new producing wells and one new injection well were drilled, seven producers and nine injectors were redrilled, eleven producers were converted to injection, one injector was converted to production and four injectors were permanently abandoned. Drilling and redrilling activity was in the Ranger, Terminal East, Upper Terminal and Lower Terminal Zones. Day to day operating problems in the drilling and redrilling of wells have been partially resolved. Oil production of approximately 1930 B/D was obtained from this work which reduced the rate of the production decline in the Unit. Curtailment of production may have a negative impact, offsetting the drilling and redrilling programs increase and causing greater declines in oil production.

The adjusted budget for the Drilling and Development Program on June 30, 1989 was \$18.59 million. Funds expended were \$16.38 million (88.1%). Budget for 1989-1990 is \$20.50 million, an increase of \$4.12 million, a 25 percent increase. A plot of monthly expenditures is shown on Exhibit 5.

B. OIL AND GAS PRODUCTION PROGRAM

The Unit produced 18.64 million barrels of oil and 3.40 billion cubic feet of gas during the budget year. Average production rates were 51,079 barrels of oil per day and 9.315 MCF/D of gas versus projected rates of 50,856 B/D oil and 9,666 MCF/D gas. Expenditures for the twelve-month period plotted as dollars per barrel of oil produced are shown on Exhibit 6 with proposed cost increases from the City's proposed expenditures for 1989-90.

CALENDAR ITEM NO. 30 (CONT'D)

The principal function of this program is the production of fluids. Gross production for the period averaged 469,522 B/D. The City projected rate was 472,263 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 upward following a period of reduced costs with further increases projected by the City's proposed expenditures. The continuing decline in active producing wells, 623 during June 1988 and 604 in June 1989 is shown on Exhibit 8 and is following a trend established over the last 24 months. The future trend will depend on oil prices, well failure rate and water cut increase. However, the City of Long Beach is projecting a change in the trend during the 1989-90 period, anticipating an average of 610 active wells during the year. The total number of producing wells should continue to decline due to conversion to water injection and abandonment.

Major non-routine projects completed or in progress include the replacement of oil gathering lines on Island Grissom and at the Pier J-2 site, replacement of gas gathering lines on Pier J, purchase of an emergency portable generator for each island and Pier J, replacement of deteriorated electrical solenoid cables to well cellars on Islands Grissom and Freeman, rebuilding of high voltage switchgear circuit breakers on all islands, repair of rock dike perimeters on the islands, replacement of the auxiliary motor control center which operates the decorative waterfall on Island Grissom, and repair of cracked well cellar walls on Pier J.

The adjusted budget for the Oil and Gas Production Program was reduced \$4,338,000 by the Third Modification to \$57,794,000 of which \$53.78 million (93.1%) were expended at the end of the budget year. A plot of monthly expenditures is shown on attached Exhibit 9. The budget for 1989-90 is 60.2 dollars, a 12 percent increase over 1988-89 expenditures.

C. ENHANCED RECOVERY AND STIMULATION PROGRAM

No funds were budgeted for 1988-89 and no activity took place in this program.

D. WATER INJECTION PROGRAM

A total of 183.12 million barrels of water were injected during the year. The average rate was 501,707 barrels per day which was lower than the 512,504 B/D projected. Gross produced fluids amounted to 171.38 million barrels so the injection/production fluids volume ratio averaged 107 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 is upward following a long period of decline. The projected trend for 1989-90 is flat, but that may be due to the City's projection of increased water injection rates.

Major non-routine projects in progress included the replacement of twelve deteriorated injection pump motor controllers with state of the art programmable units; the purchase of new induced gas flotation cells at Pier J-2; the installation of covers on all skim basins for compliance with regional air quality regulations and the purchase of three new high efficiency water injection pump electric motors were completed.

The adjusted budget for the Water Injection Program amounted \$23,907,000 of which \$23.17 million (96.9%) were expended at the end of the 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 and consultant services, data processing equipment purchases and operating costs, office expenses including rental, supplies and services, and the Unit Operator's billable costs. Other significant items include Unit equity expense, special management projects, townlot participation administration and special studies related to Unit waste management and disposal.

Projects completed during the year included the purchase of computer equipment and software for reservoir modeling studies, the purchase and installation of a computerized maintenance system for the field contractor and chemical studies performed on produced and injected fluids to

improve water quality and reduce corrosion. Also, the Unit made a payment of \$289 thousand towards its share of first phase settlement costs for site clean up at a waste disposal site previously used by the Field Contractor for Unit waste disposal. This was provided for in the First Modification.

The adjusted budget at the end of the year was \$18,281,000 for the Management Program of which \$18.06 million (98.8%) were expended. A plot of monthly expenditures is shown on Exhibit 13. An increase in expenditures for 1989-90 of \$3.3 million, 18 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. The cost trend is upward with large increases in 1989-90, based on the City's proposed expenditures.

**F. TAXES, PERMITS AND LAND RENTAL PROGRAM**

Adjusted budget funds for the Taxes, Permits and Land Rental Program on June 30, 1989 amounted to \$13,782,000 of which \$13.66 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 1988-89 Plan and Budget activity during the fiscal year ending June 30, 1989 (in thousands of dollars) is:

<u>Program</u>	<u>Original Budget**</u>	<u>Adjusted Budget**</u>	<u>Expenditures*</u> <u>To 6/30/89</u>	
A. Drilling and Development	\$ 12,339	\$ 18,590	\$16,377	(88.1%)
B. Oil and Gas Production	62,132	57,794	53,799	(93.1%)
C. Enhanced Recovery and Stimulation	-0-	-0-	-0-	
D. Water Injection	26,582	23,907	23,169	(96.9%)
E. Management	18,843	18,281	18,059	(98.8%)
F. Taxes, Permits and Land Rentals	<u>16,468</u>	<u>13,782</u>	<u>13,663</u>	(99.1%)
Totals	\$136,364	\$132,354	\$125,047	(94.5%)

\*Includes Administrative Overhead Costs

\*\*Includes Administrative Overhead Costs and \$3,394,000 carry-over from 1987-88.

CALENDAR ITEM NO. 30 (CONT'D)

The 1988-89 Plan and Budget provides for electrical energy billings of \$25,318,000 for the plan year. This amount was based on predicted use of 410,610,000 kilowatt hours (kwh) at an average cost of 6.120 cents/kwh. Actual billings for the year amounted to \$18,683,025 (73.8%) for 389,775,400 kwh usage (94.9%), for an average cost of 4.79 cents per kwh. The lower than predicted rate resulted from PUC restructured rates which dropped winter rates to as low as 4.062 cents per kwh. The energy consumed was less than proposed because produced and injected volumes of fluid were lower than originally projected. Four budget line item activities are major users of electrical energy. They are Hydraulic Lift Surface, Submersible Lift Surface, Water Injection System and Produced Water Handling. Together, these four items account for about 80 percent of the Unit's total electrical energy costs. Plots of monthly expenditures on these activities are shown on attached Exhibits 15, 16, 17 and 18. Exhibit 19 shows a comparison between total Unit fluids (gross production plus water injection) and total electrical energy consumed and City's proposed for 1989-90 in the Unit (Islands and Pier J). Increases proposed by the City in total fluids to be handled and energy consumption are shown for 1989-90. Exhibit 20 compares total fluids produced and injected fluids with electrical energy consumed on the Islands per barrel of total fluids produced or injected. Exhibit 21 also shows the same islands energy consumption compared with the Islands gross produced fluids or water injected on a daily basis. Exhibit 22 shows a plot of actual electrical energy monthly average costs for the Unit in cents per kwh to April 1989 and including a projection of such average costs by the City for the 1989-90 budget year. Exhibit 23 is a plot of the total expenditures of the Oil and Gas Production, Water Injection, and Management programs as a dollar per barrel cost of oil. This trend is increasing at a rate of approximately 12 percent per year.

AB 884:

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.

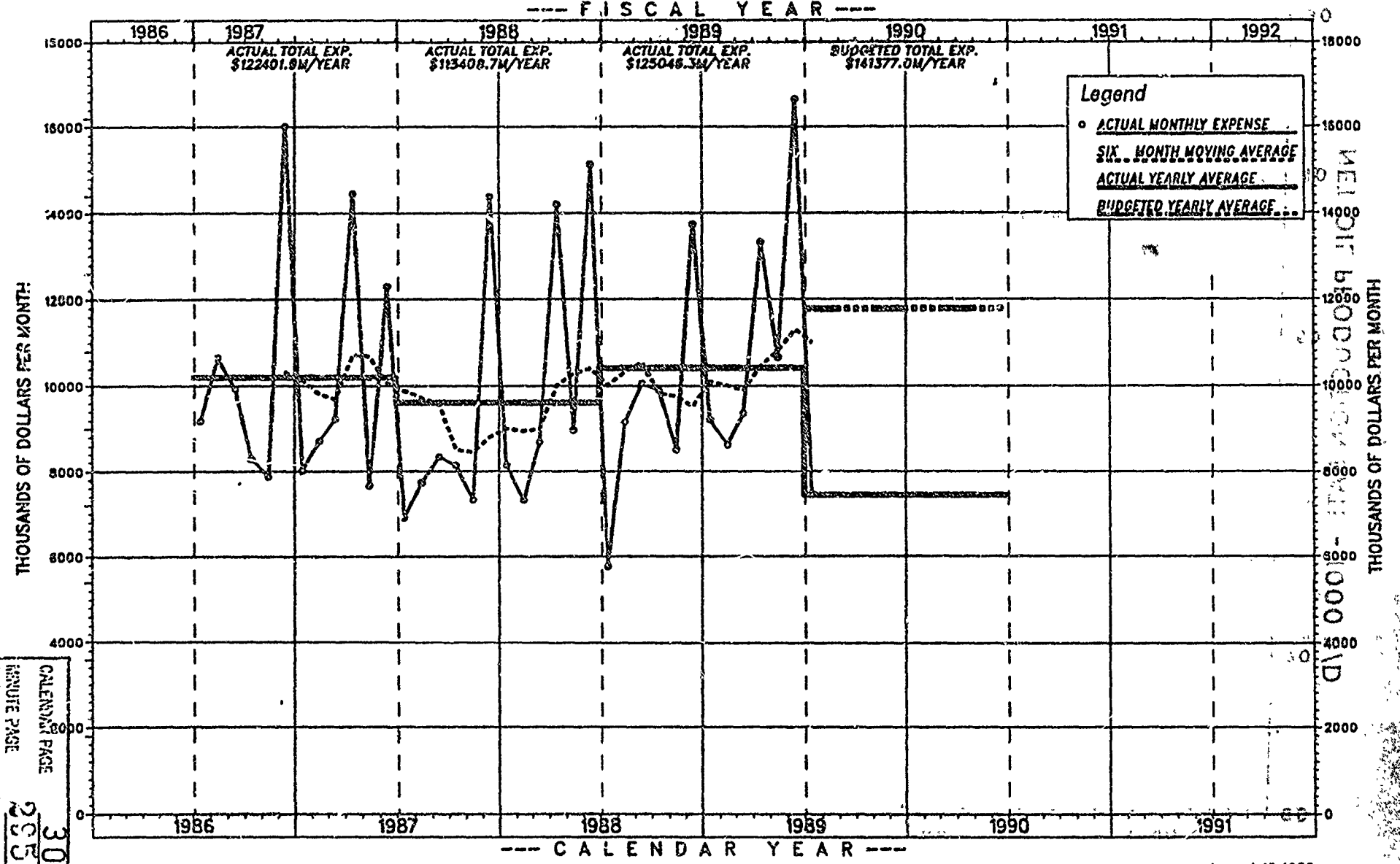
EXHIBITS (cont'd)

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 F).
15. Hydraulic Lift - Surface Expenditures.
16. Submersible Lift - Surface Expenditures.
17. Produced Water Handling Expenditures.
18. Water Injection System Expenditures.
19. Comparison of Total Fluids and Energy Consumed (L.B. Unit Total).
20. Comparison of Total Fluids and Energy Consumed (L.B. Unit Islands).
21. Comparison of Gross Production, Water Injection and Energy Consumed (L.B. Unit Islands).
22. Electrical Energy Costs.
23. Programs B, D & E Costs Per Barrel Oil.



LONG BEACH UNIT

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

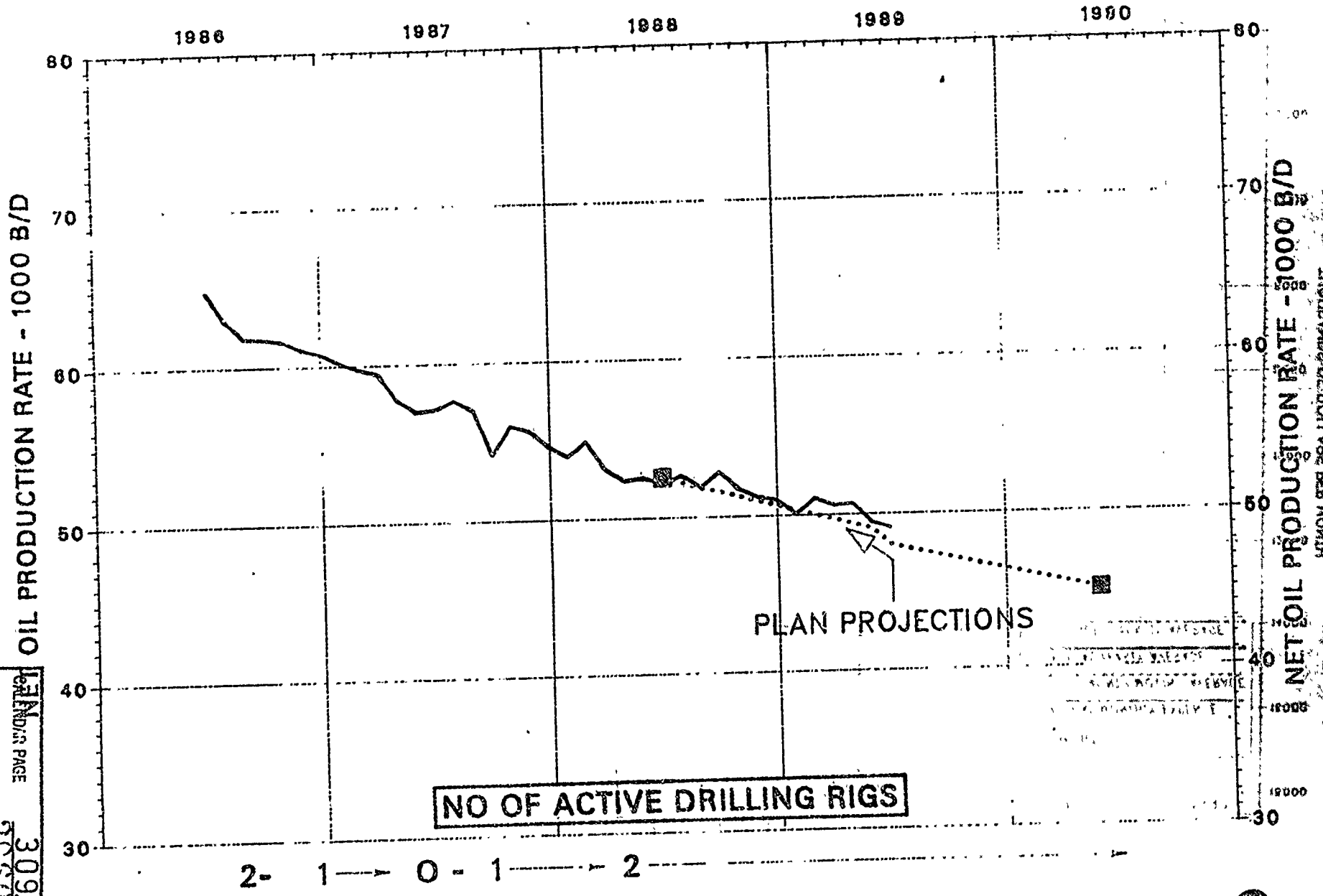


CALENDAR PAGE 309.8  
 RESUME PAGE 2050

August 10 1989

# LONG BEACH UNIT OIL PRODUCTION RATE

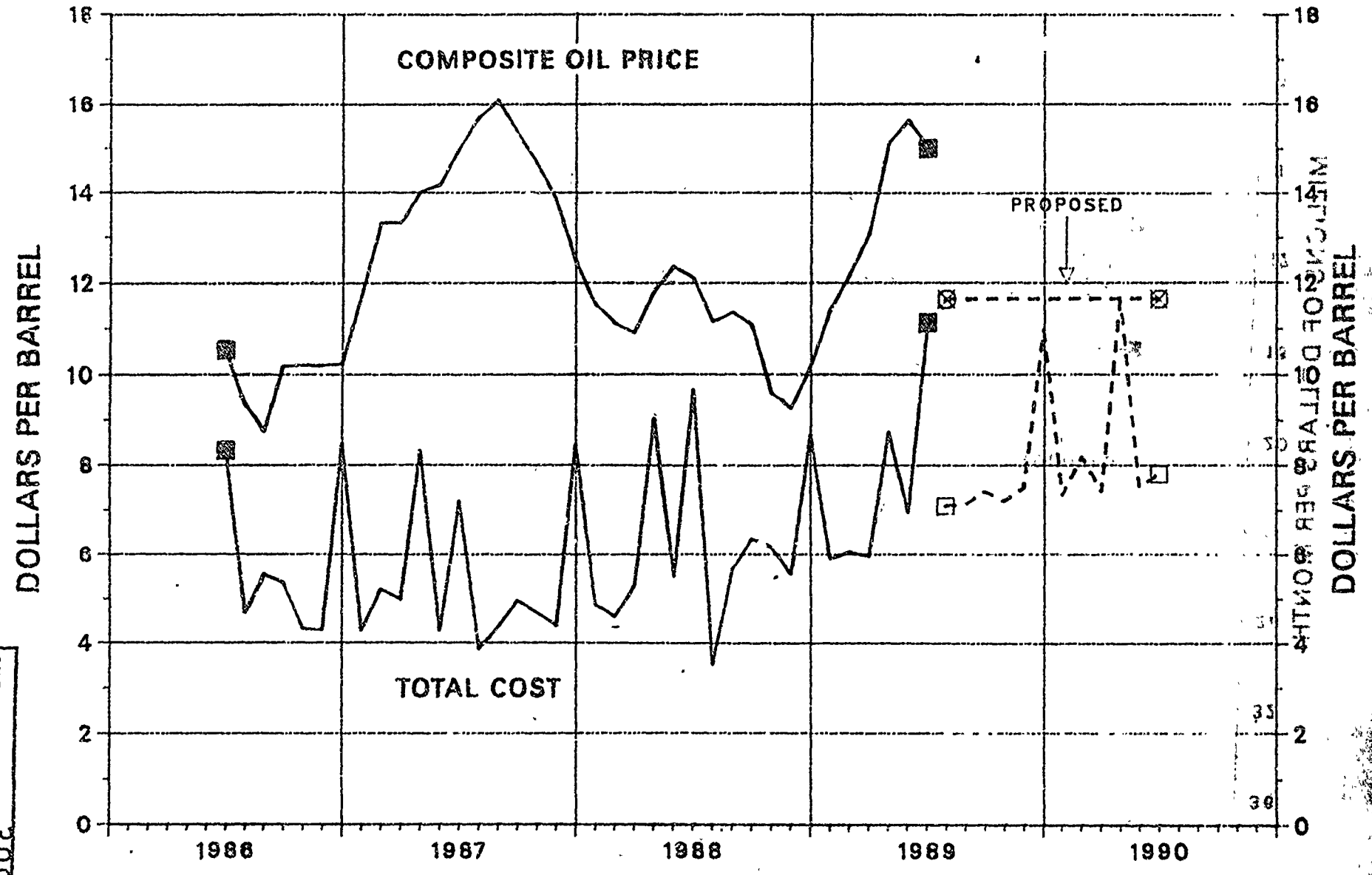
EXHIBIT 2



MINUTE PAGE  
CALENDAR PAGE  
309.9  
5550

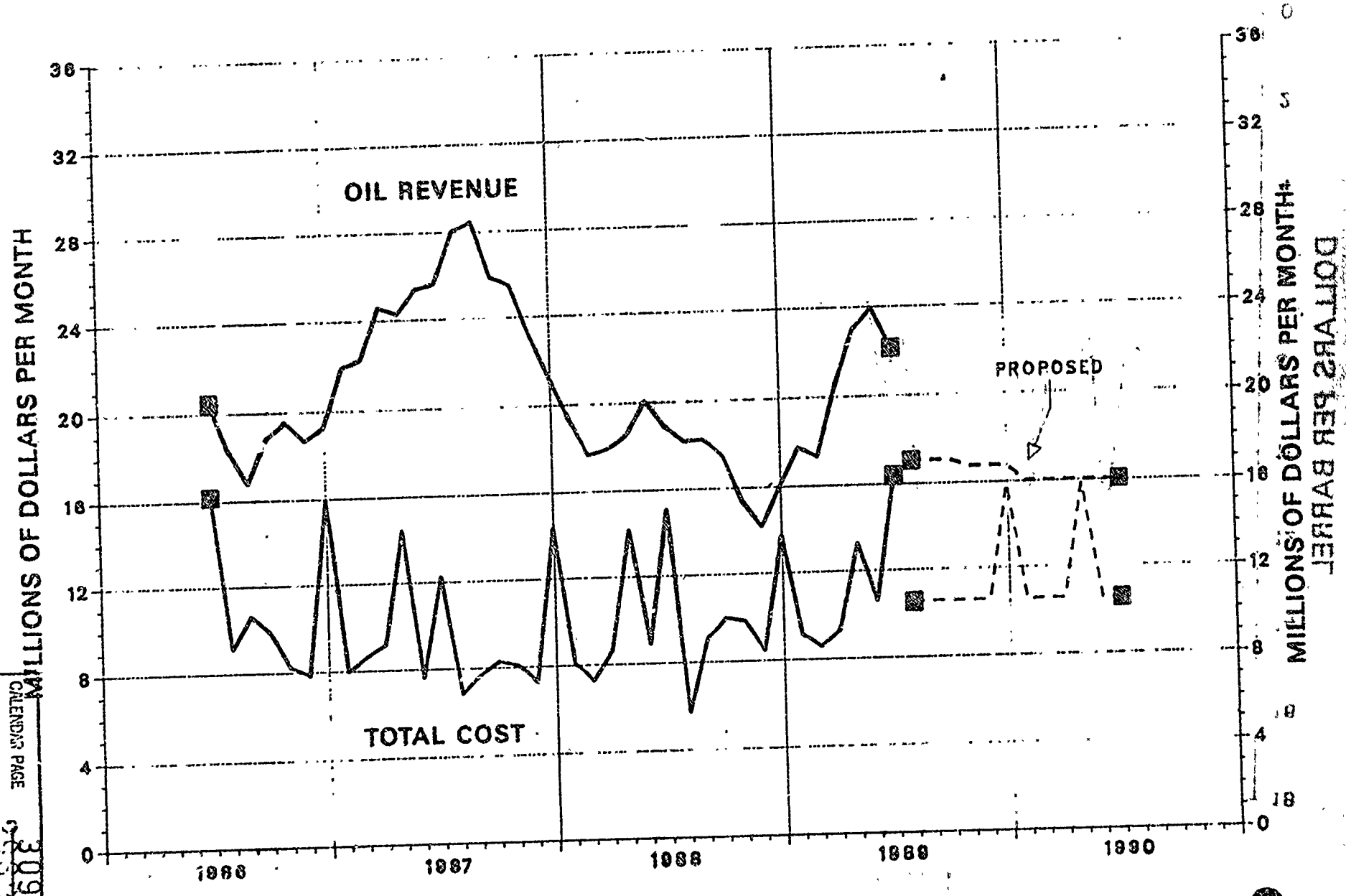
July 27 1988  
EXHIBIT 1

# LONG BEACH UNIT



CALENDAR PAGE 309.10  
 MINUTE PAGE 6951

# LONG BEACH UNIT



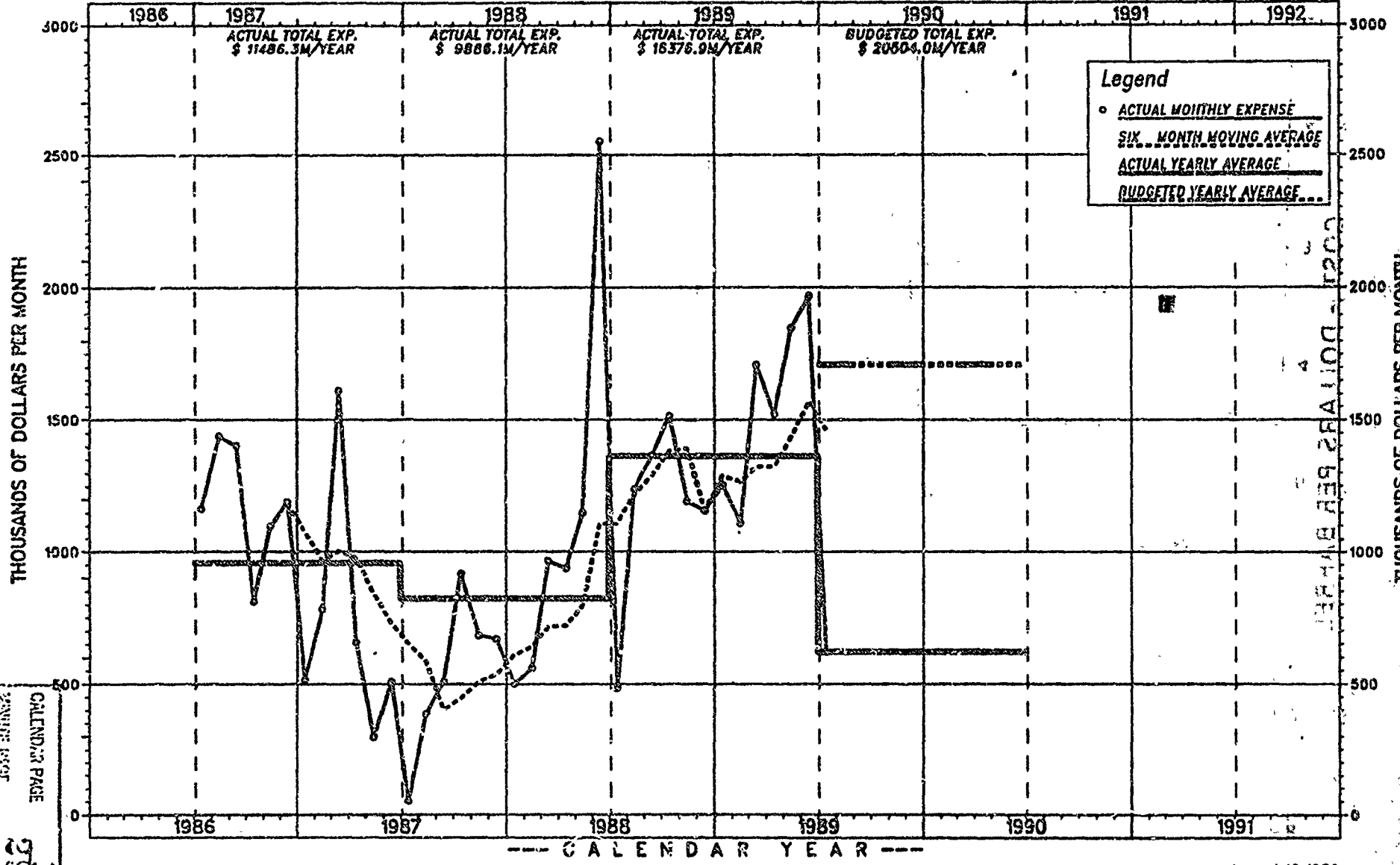
MINUTE PAGE  
 CALENDAR PAGE  
 309.11  
 2000

# LONG BEACH UNIT

DRILLING & DEVELOPMENT PROGRAM

PROGRAM A

--- FISCAL YEAR ---



**Legend**

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

CALENDAR PAGE 309.12  
 MONTH PAGE 2583

August 10 1989

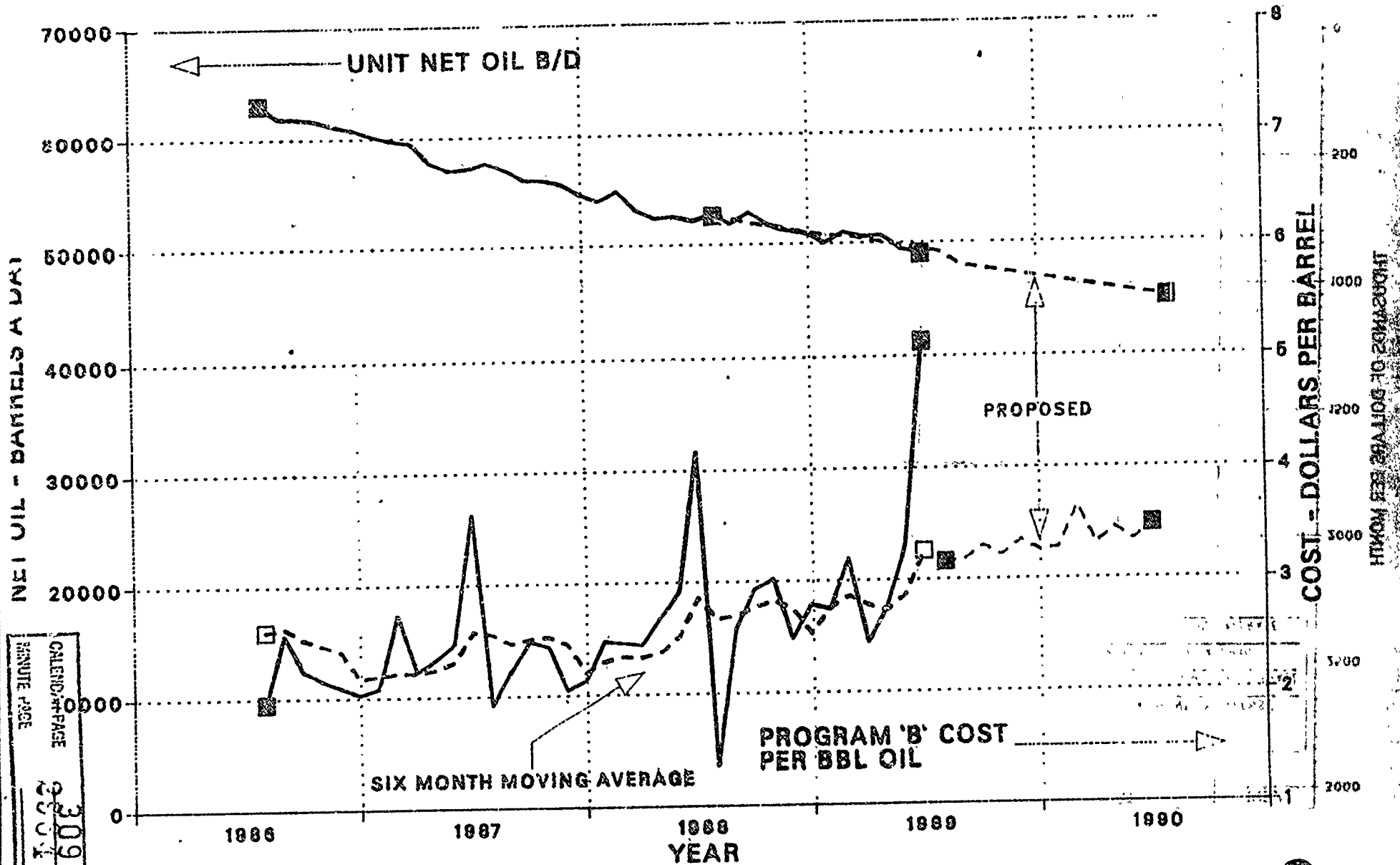
LONG BEACH UNIT

2120212

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

EXHIBIT 6

LONG BEACH UNIT



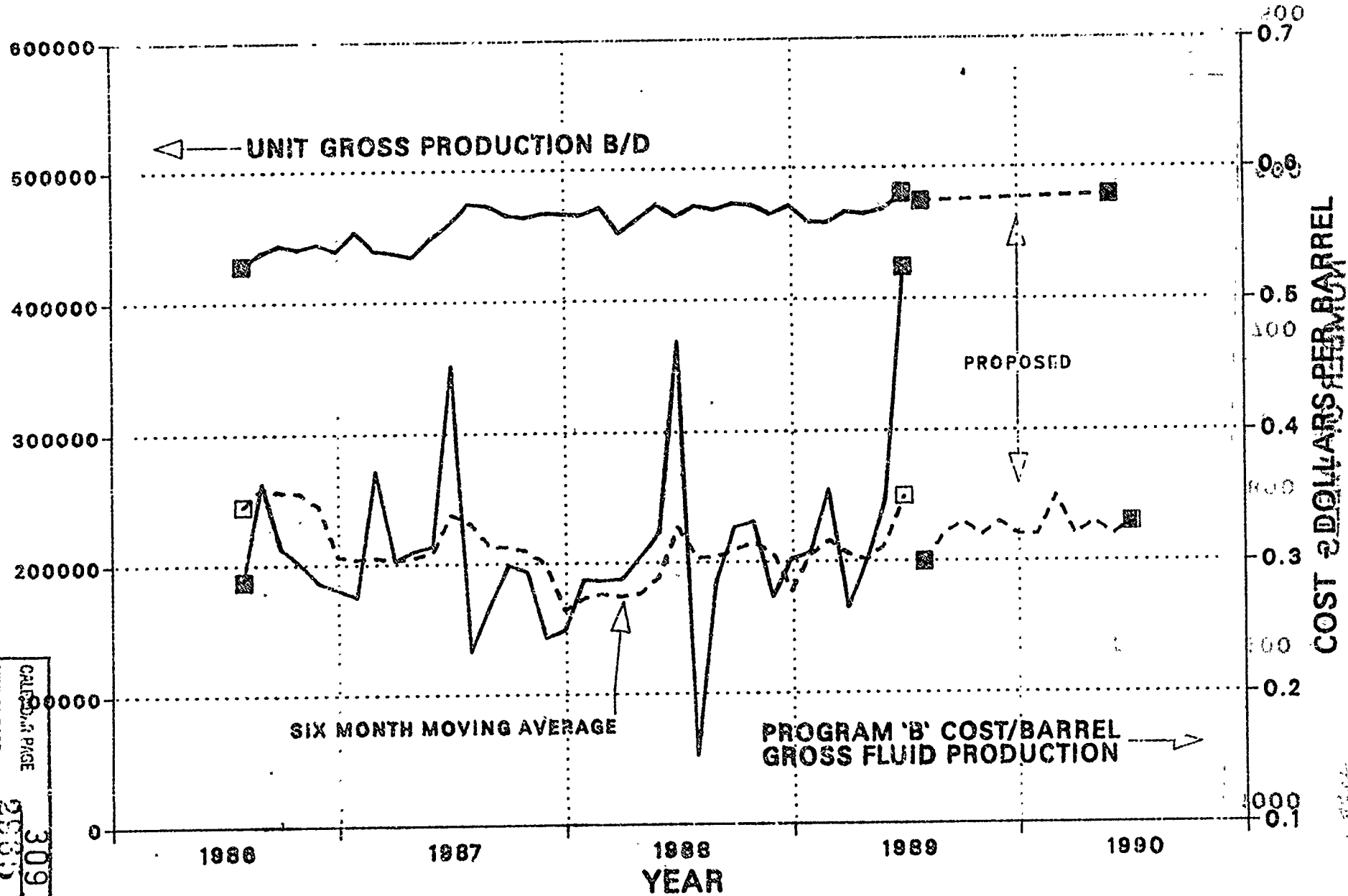
MINUTE PAGE  
CALENDAR PAGE  
309.13  
201

Jul 27 1986

EXHIBIT 6

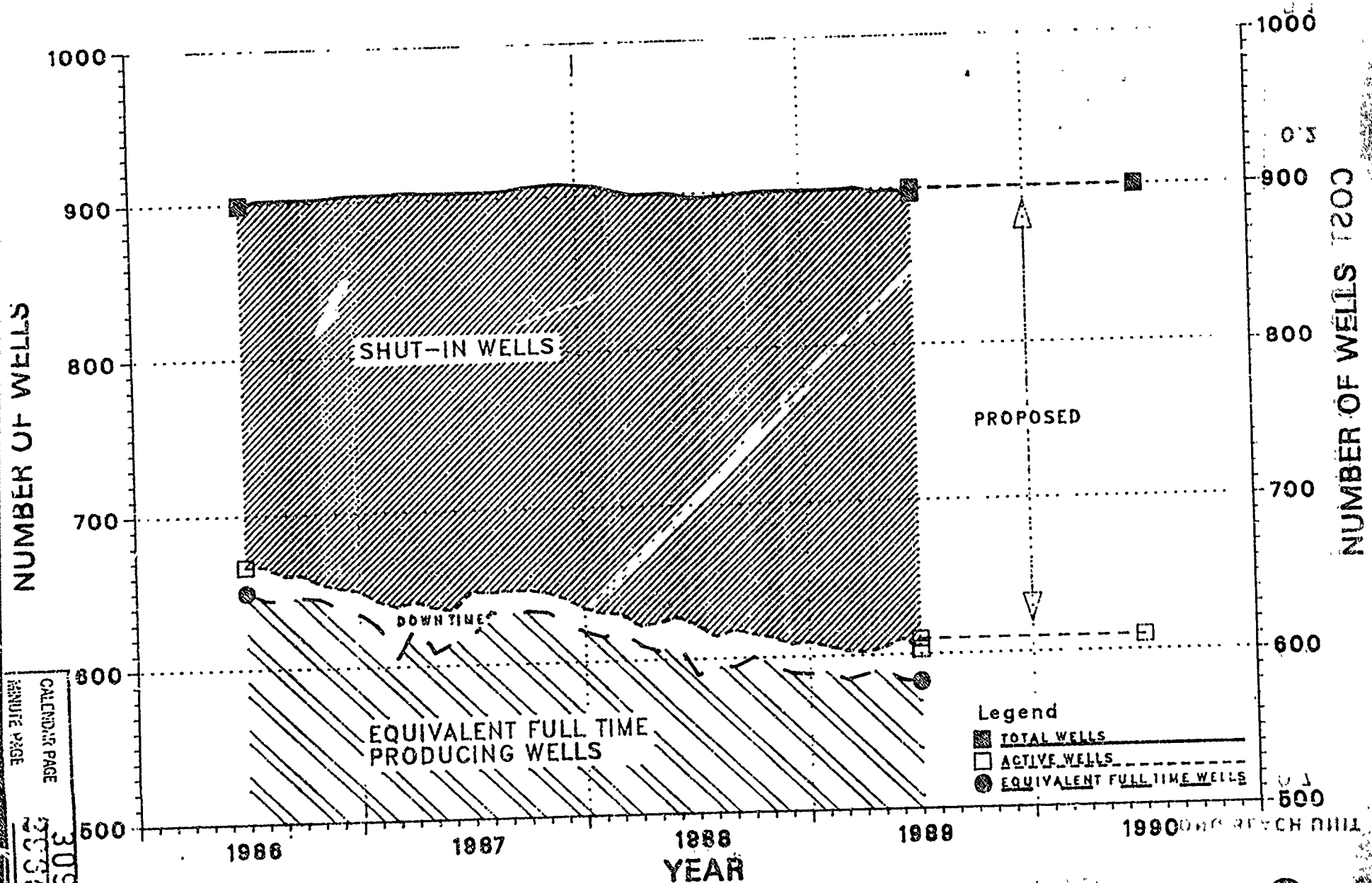
# OIL & GAS PRODUCTION PROGRAM COSTS EXPRESSED AS \$/BBL GROSS FLUID

LONG BEACH UNIT



ANNULITE PAGE  
CALCULATED PAGE  
309 14  
2000

# LONG BEACH UNIT PRODUCING WELLS



NUMBER OF WELLS

NUMBER OF WELLS (200)

- Legend
- TOTAL WELLS
  - ACTIVE WELLS
  - EQUIVALENT FULL TIME WELLS

CALENDAR PAGE  
309.15  
5555

July 27, 1988

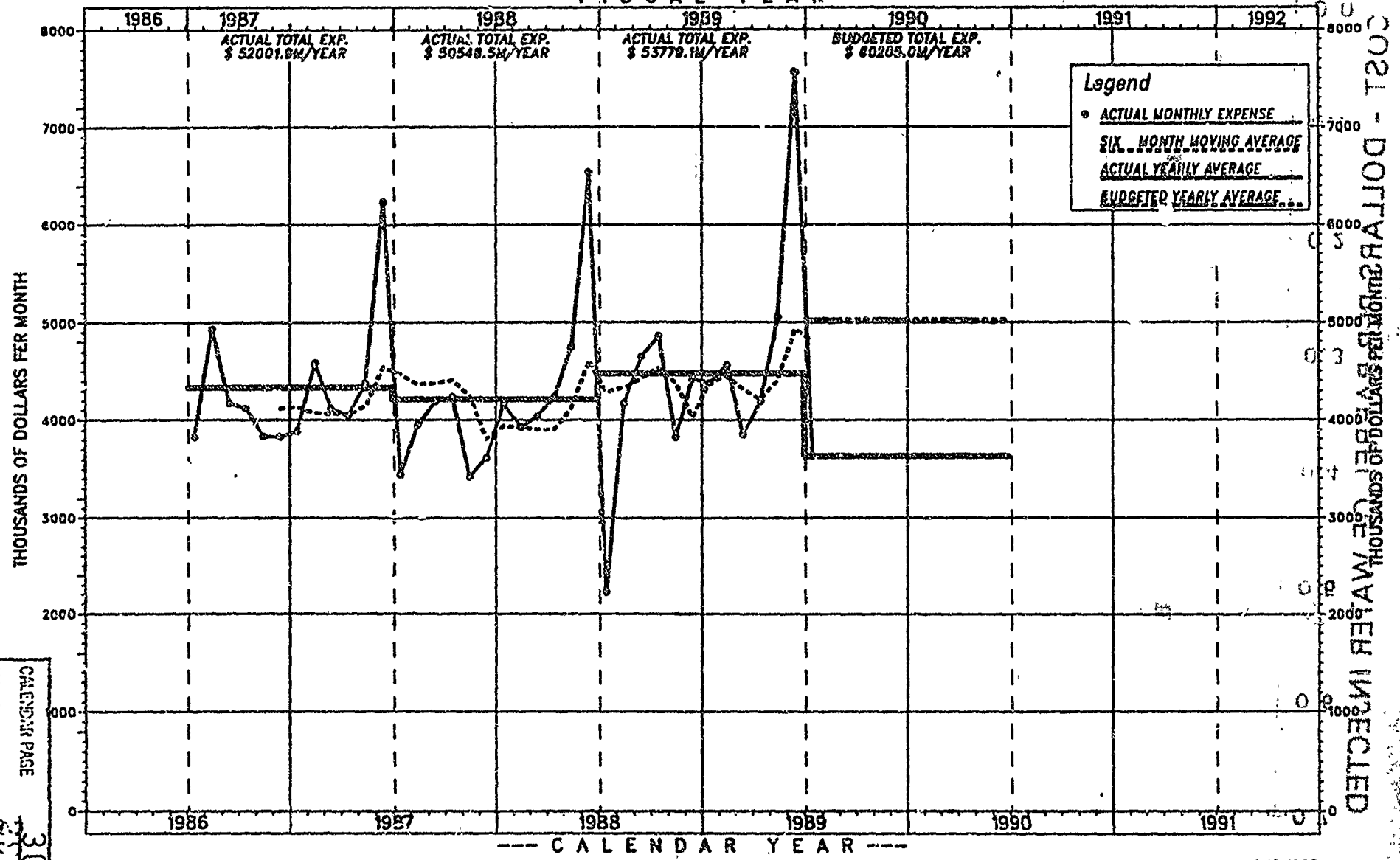


# LONG BEACH UNIT

OIL & GAS PRODUCTION PROGRAM

PROGRAM B

--- FISCAL YEAR ---

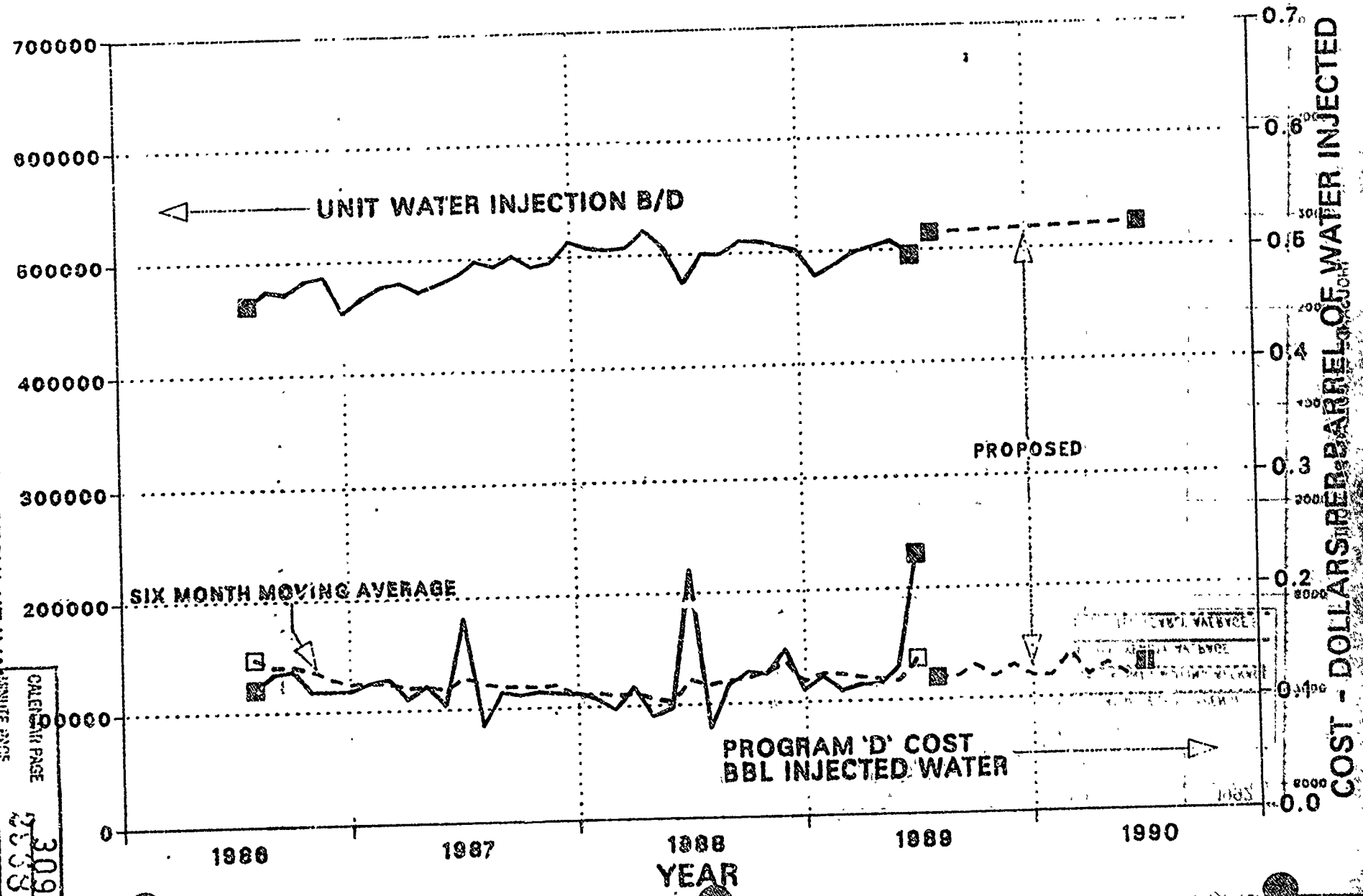


CALENDAR PAGE 309.16  
 MINUTE PAGE 253.1

August 10 1989  
LONG BEACH UNIT

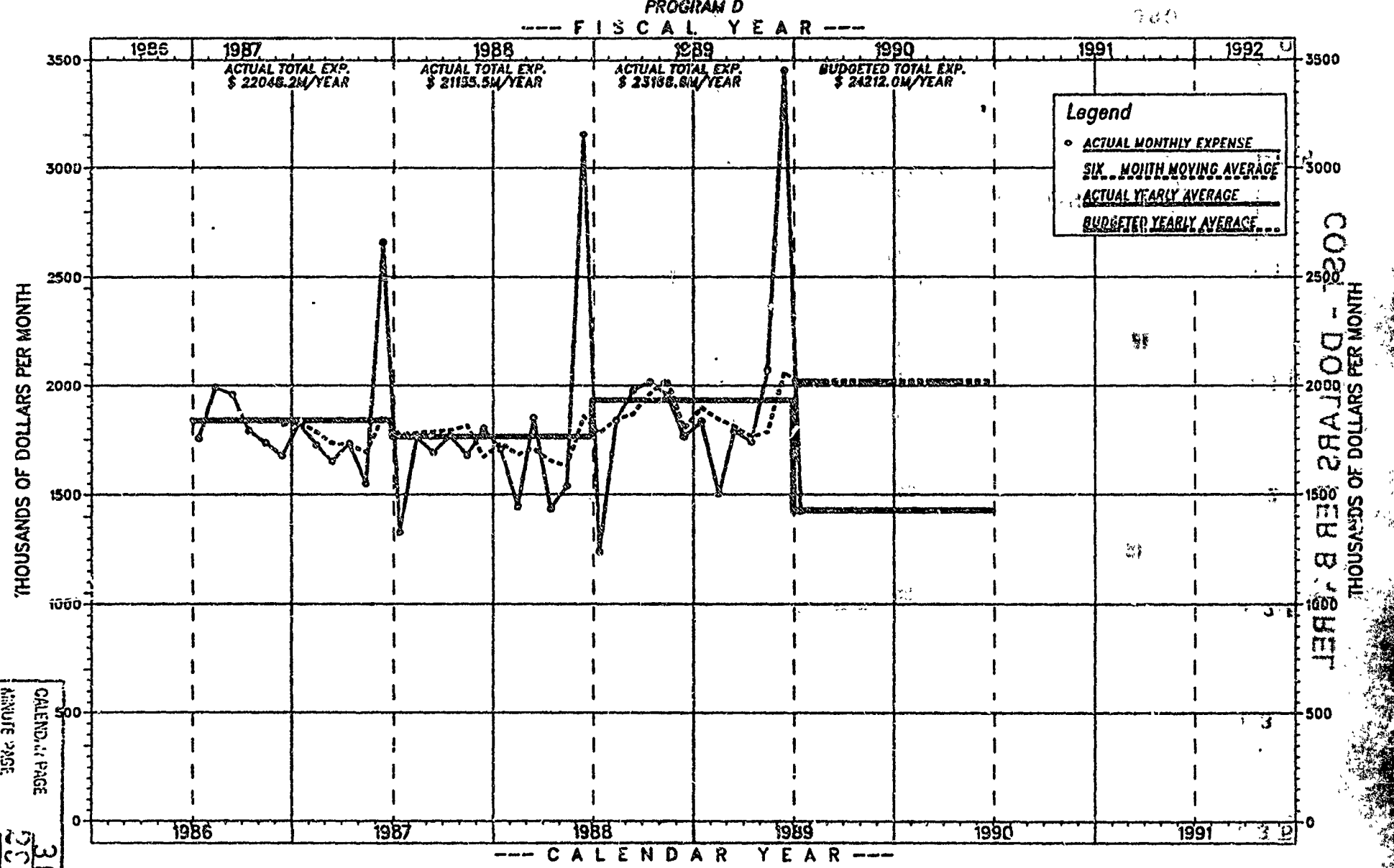
# WATER INJECTION PROGRAM COSTS EXPRESSED AS \$/BBL OF INJECTED WATER INJECTION

EXHIBIT 10  
LONG BEACH UNIT



CALENDAR PAGE 309.17  
 2538

LONG BEACH UNIT  
WATER INJECTION PROGRAM TOTAL



CALENDAR PAGE 309 18  
MINUTE PAGE 5033

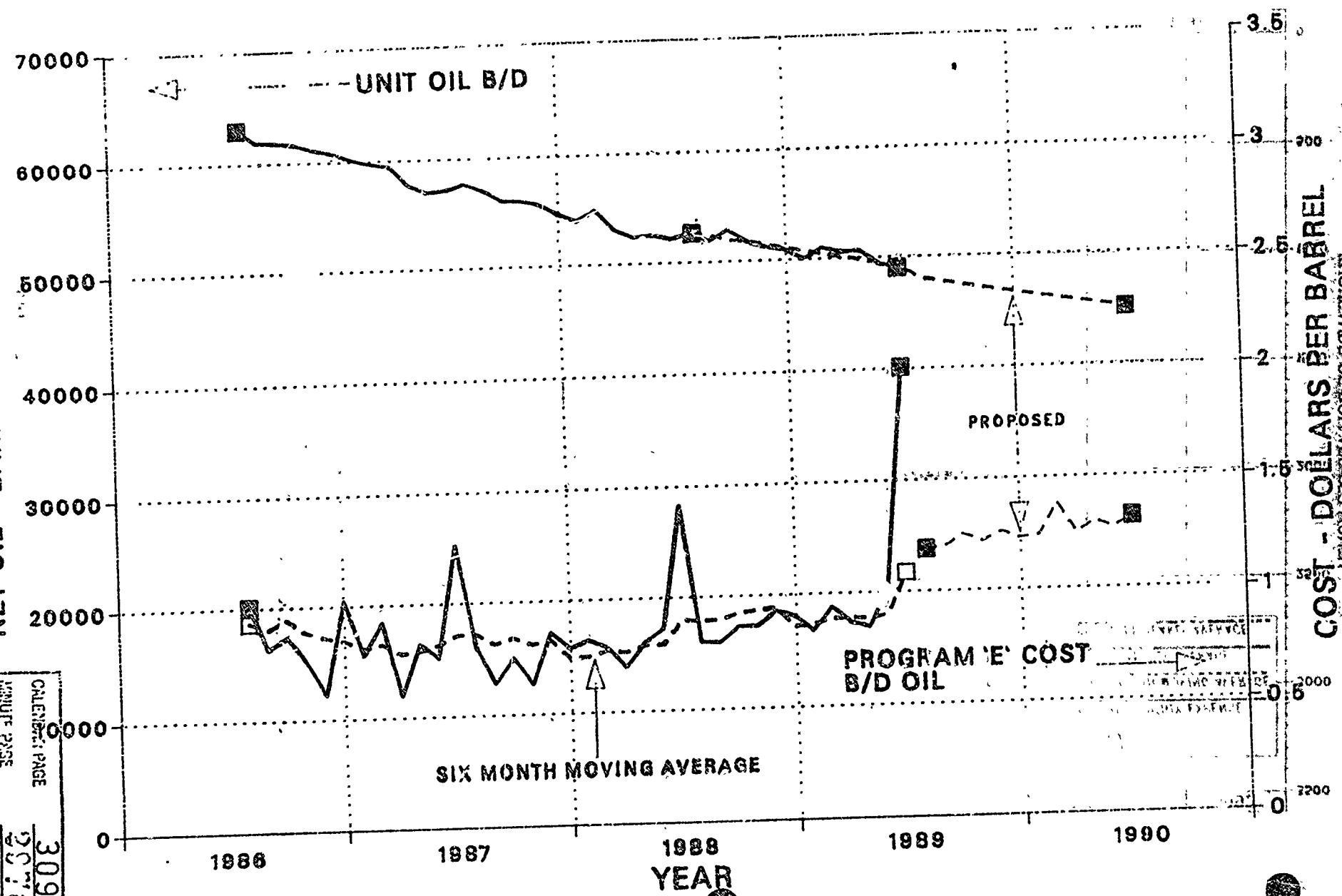
August 10 1989

LONG BEACH UNIT

# MANAGEMENT PROGRAM COSTS EXPRESSED AS \$/BBL OIL

EXHIBIT 12

LONG BEACH UNIT



CALENDAR PAGE  
309.19  
2070

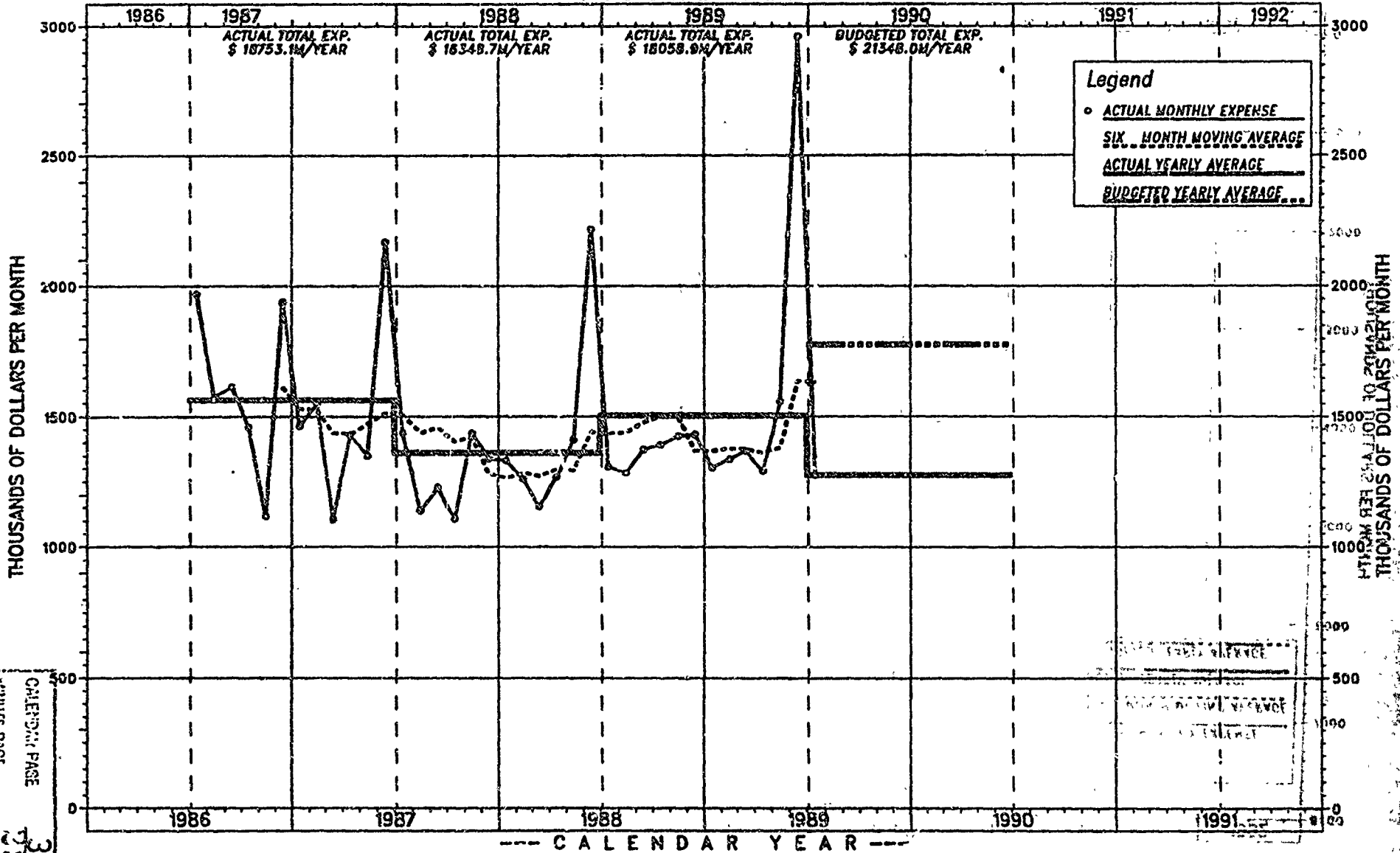
Jul-28-1988

EXHIBIT 12

LONG BEACH UNIT  
MANAGEMENT PROGRAM TOTAL

PROGRAM 5

--- FISCAL YEAR ---



--- CALENDAR YEAR ---

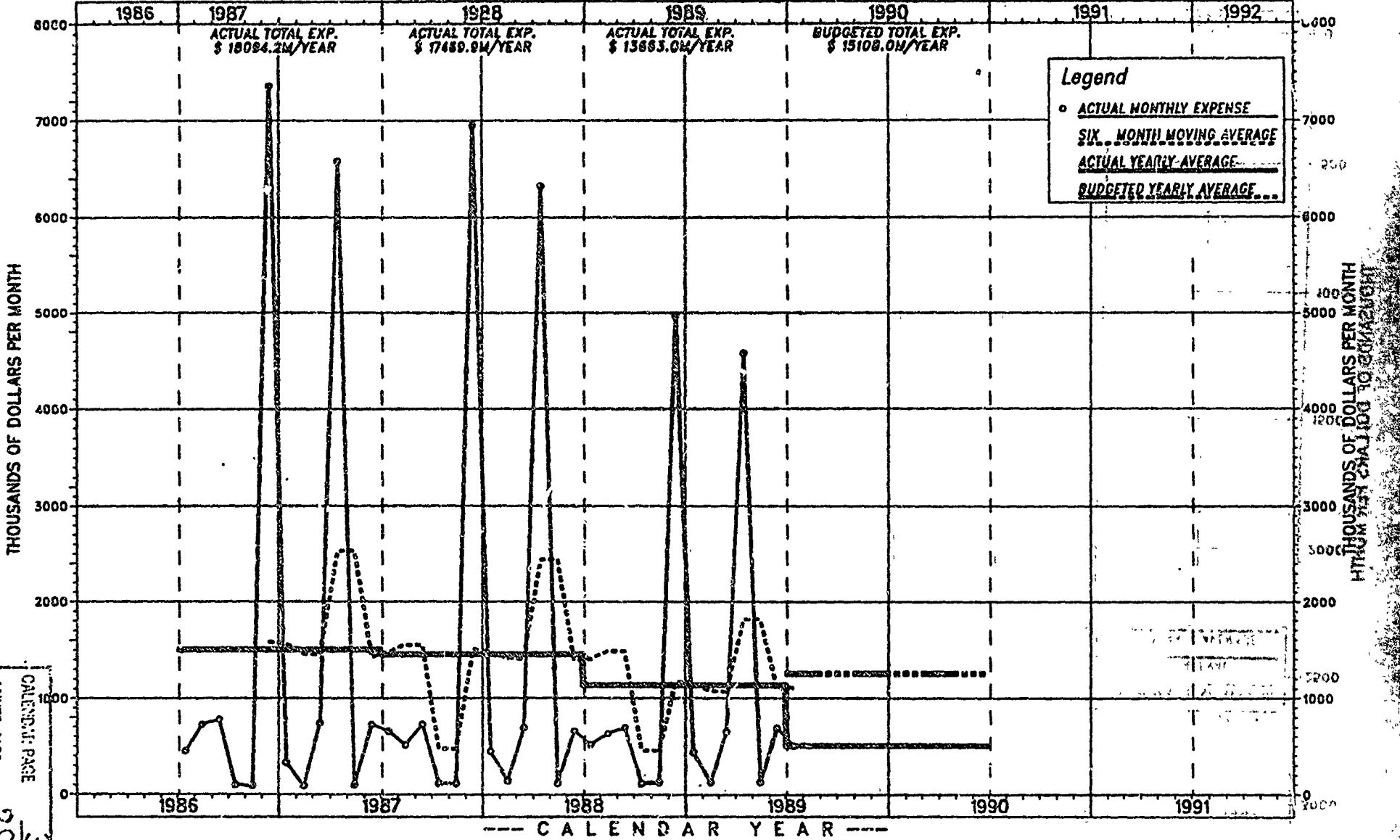
August 10 1989

CALENDAR PAGE  
309  
20

LONG BEACH UNIT  
TAXES, PRMTS, & RENTAL PROGRAM

PROGRAM F

--- FISCAL YEAR ---

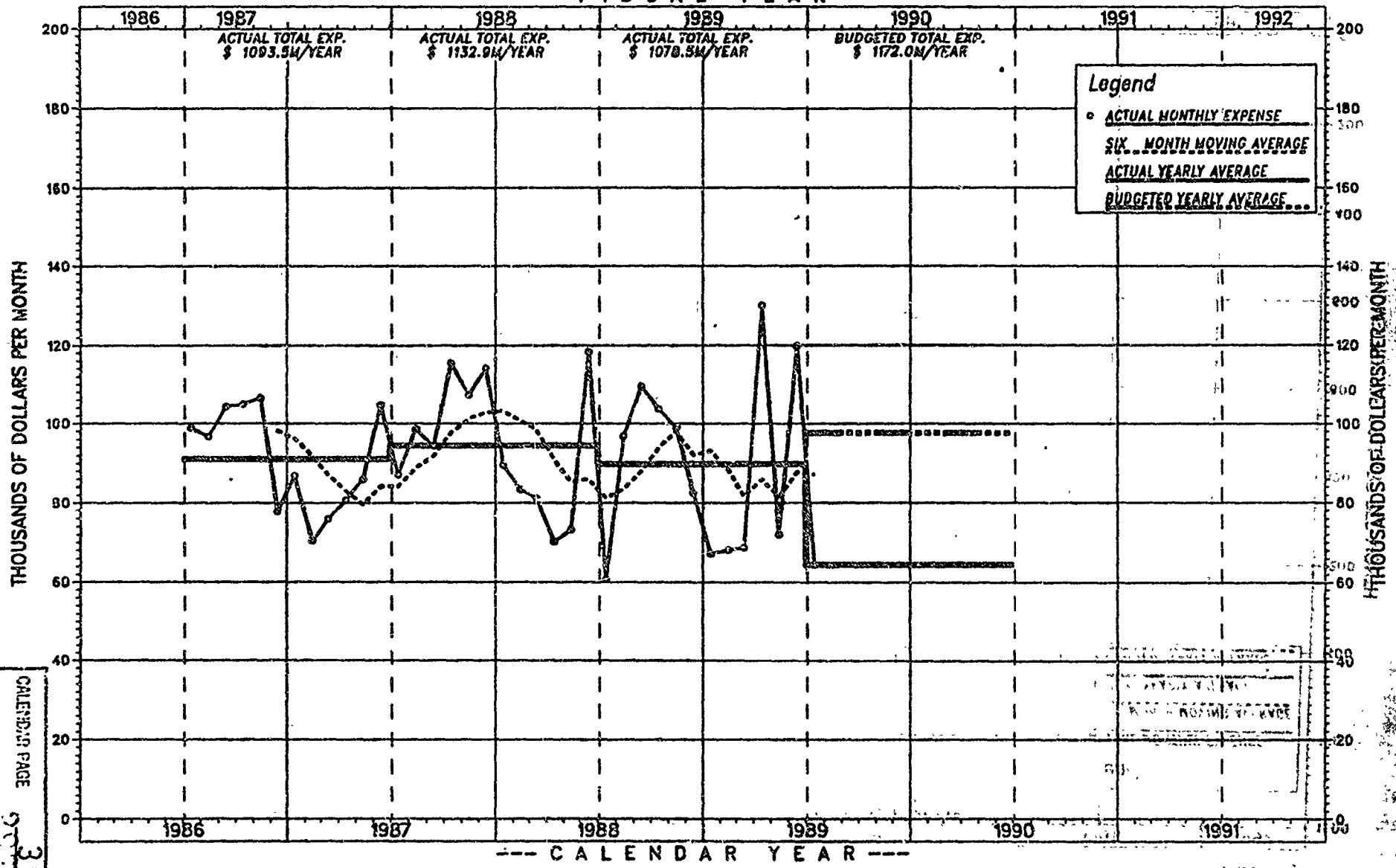


CALENDAR PAGE 309.21  
 FISCAL PAGE 2279

August 10 1989

LONG BEACH UNIT  
 OIL & GAS PRODUCTION PROGRAM  
 FLUID LIFTING  
 HYDRAULIC LIFT - SURFACE  
 BUDGET CODE 22 --- ACCOUNT CODE 911  
 --- FISCAL YEAR ---

Plotted Data  
 DOES NOT include  
 Administrative  
 Overhead

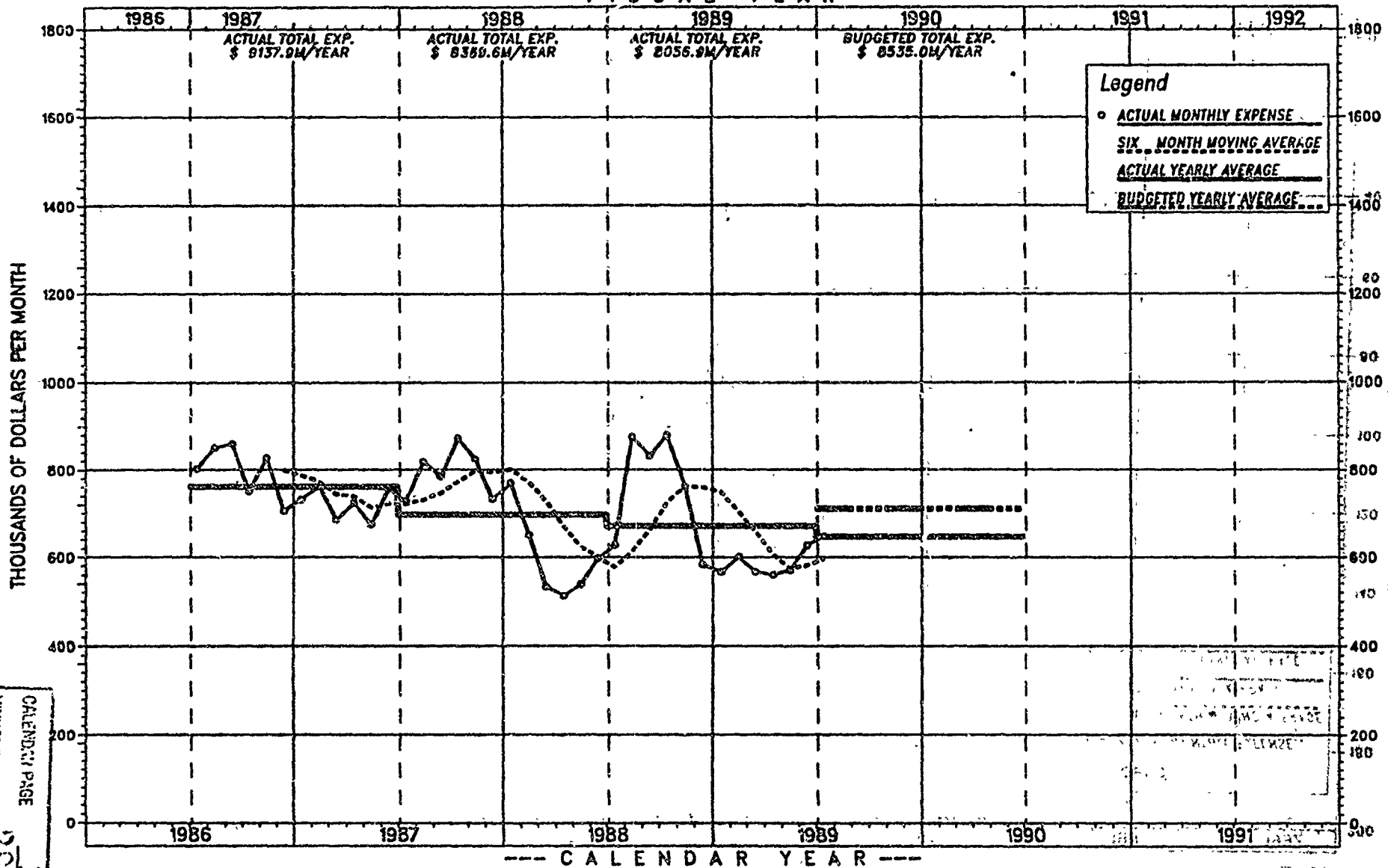


CALENDAR PAGE  
 309.22  
 25:3

August 10 1989

**LONG BEACH UNIT**  
 OIL & GAS PRODUCTION PROGRAM      FLUID LIFTING      SUBMERSIBLE LIFT - SURFACE  
 BUDGET CODE 22 -- ACCOUNT CODE 918  
 --- FISCAL YEAR ---

Plotted Data  
 DOES NOT Include  
 Administrative  
 Overhead



**Legend**  
 ○ ACTUAL MONTHLY EXPENSE  
 ..... SIX MONTH MOVING AVERAGE  
 - - - - ACTUAL YEARLY AVERAGE  
 - . - . - BUDGETED YEARLY AVERAGE

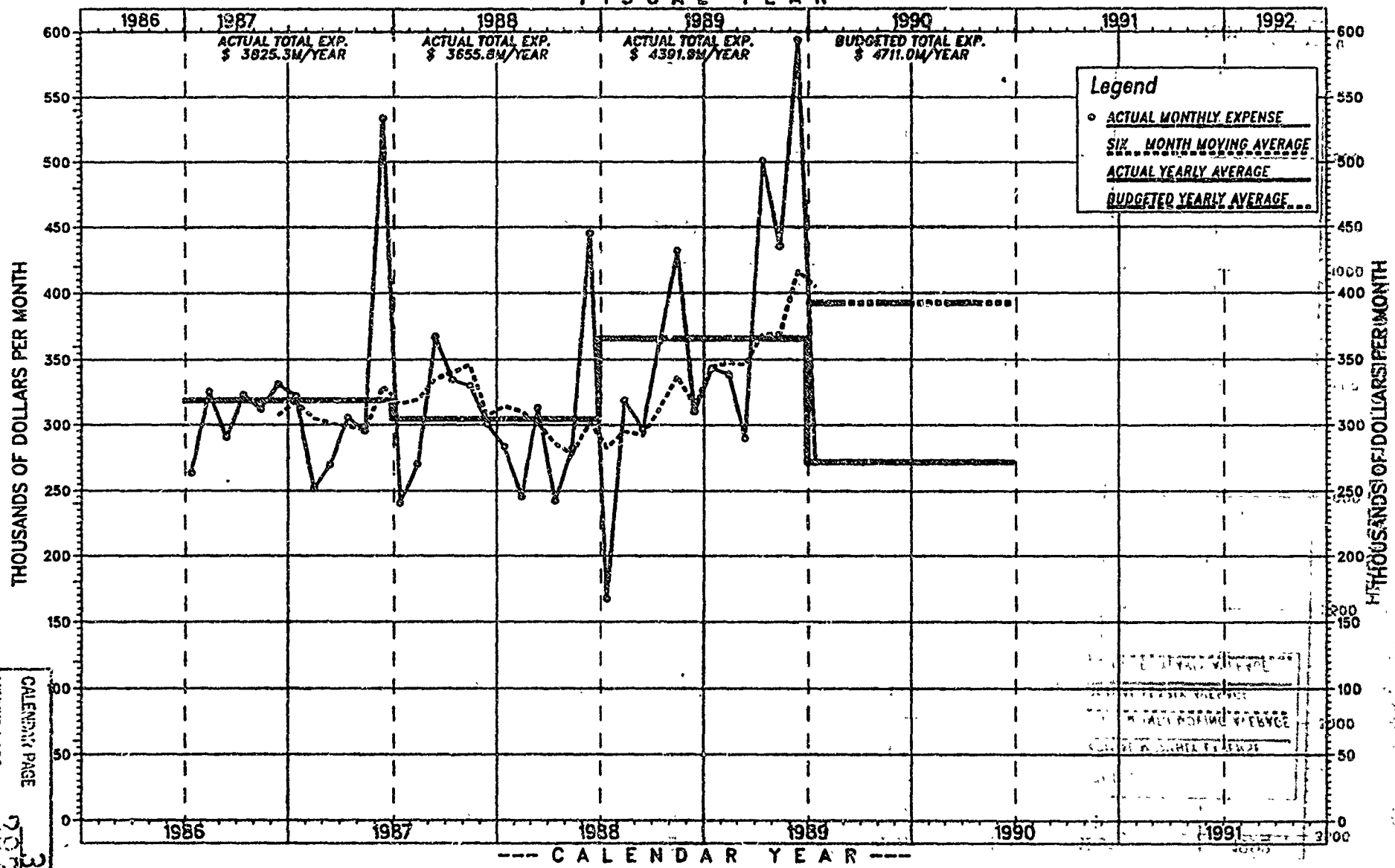
CALENDAR PAGE 309.23  
 MONTH PAGE 2074

August 30, 1989



**L O N G B E A C H U N I T**  
 WATER INJECTION PROGRAM      WATER INJECTION SYSTEMS      PRODUCED WATER HANDLING  
 BUDGET CODE 42 -- ACCOUNT CODE 914  
 --- FISCAL YEAR ---

Plotted Data  
 DOES NOT include  
 Administrative  
 Overhead

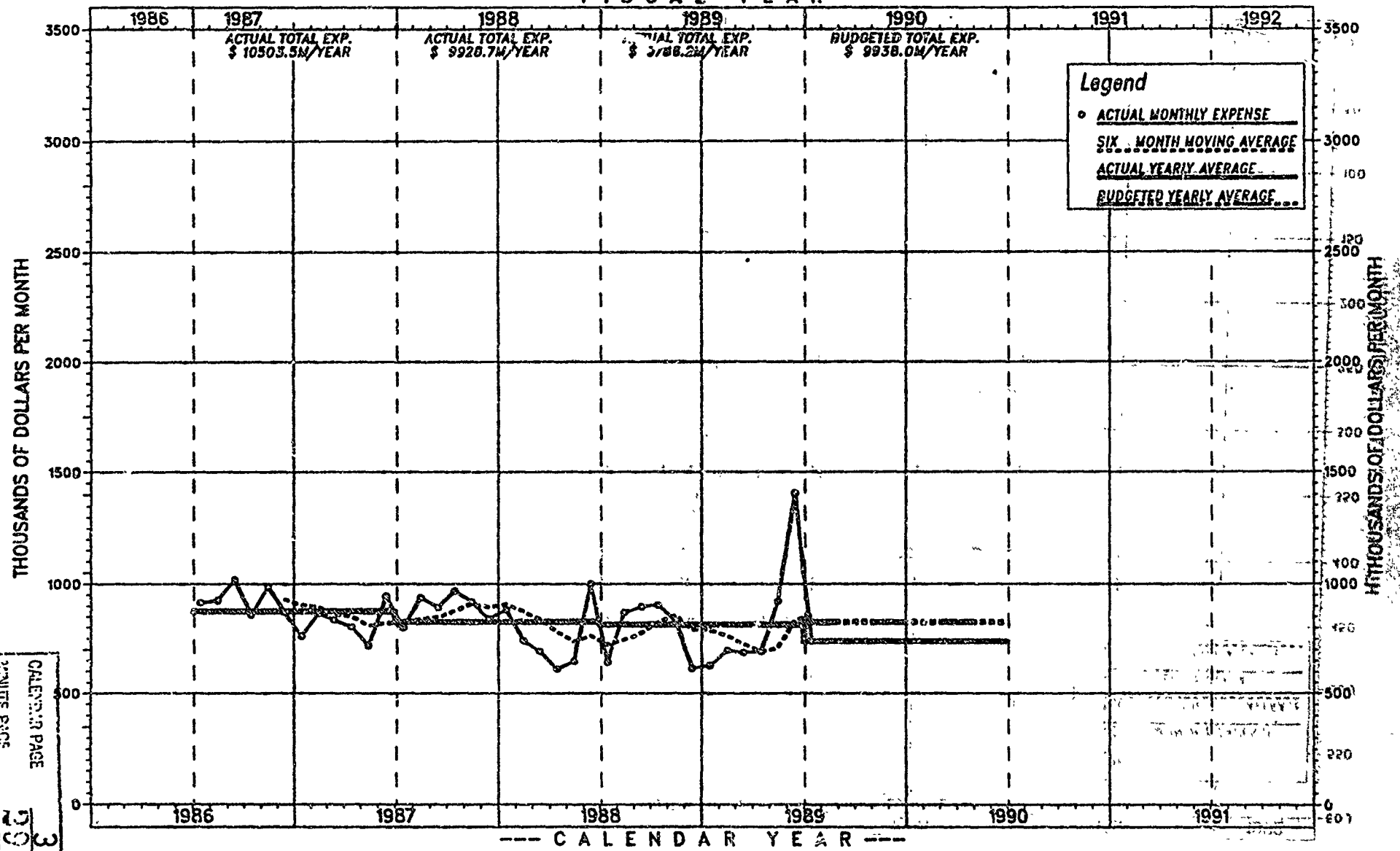


CALENDAR PAGE 309.24  
 MONTH PAGE 2075

August 10 1989

**L O N G B E A C H U N I T**  
 WATER INJECTION PROGRAM      WATER INJECTION SYSTEMS      WATER INJECTION SYSTEM  
 BUDGET CODE 42 -- ACCOUNT CODE 925  
 --- FISCAL YEAR ---

Plotted Data  
 DOES NOT include  
 Administrative  
 Overhead



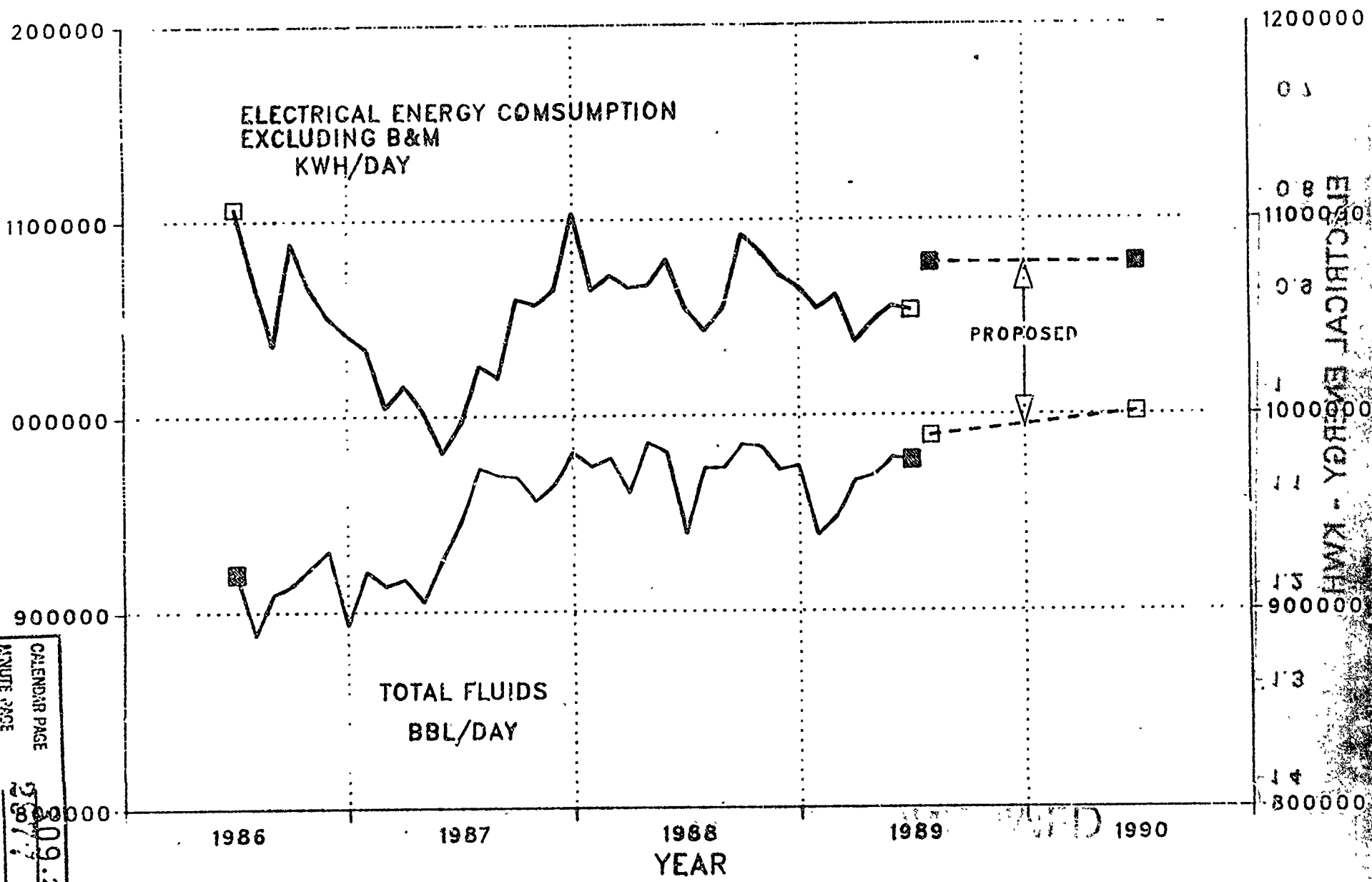
**Legend**  
 ○ ACTUAL MONTHLY EXPENSE  
 ..... SIX MONTH MOVING AVERAGE  
 - - - - - ACTUAL YEARLY AVERAGE  
 - . - . - BUDGETED YEARLY AVERAGE

CALENDAR PAGE 309  
 2978  
 25

August 10, 1989

# LONG BEACH UNIT COMPARISON OF TOTAL FLUIDS & ENERGY CONSUMED

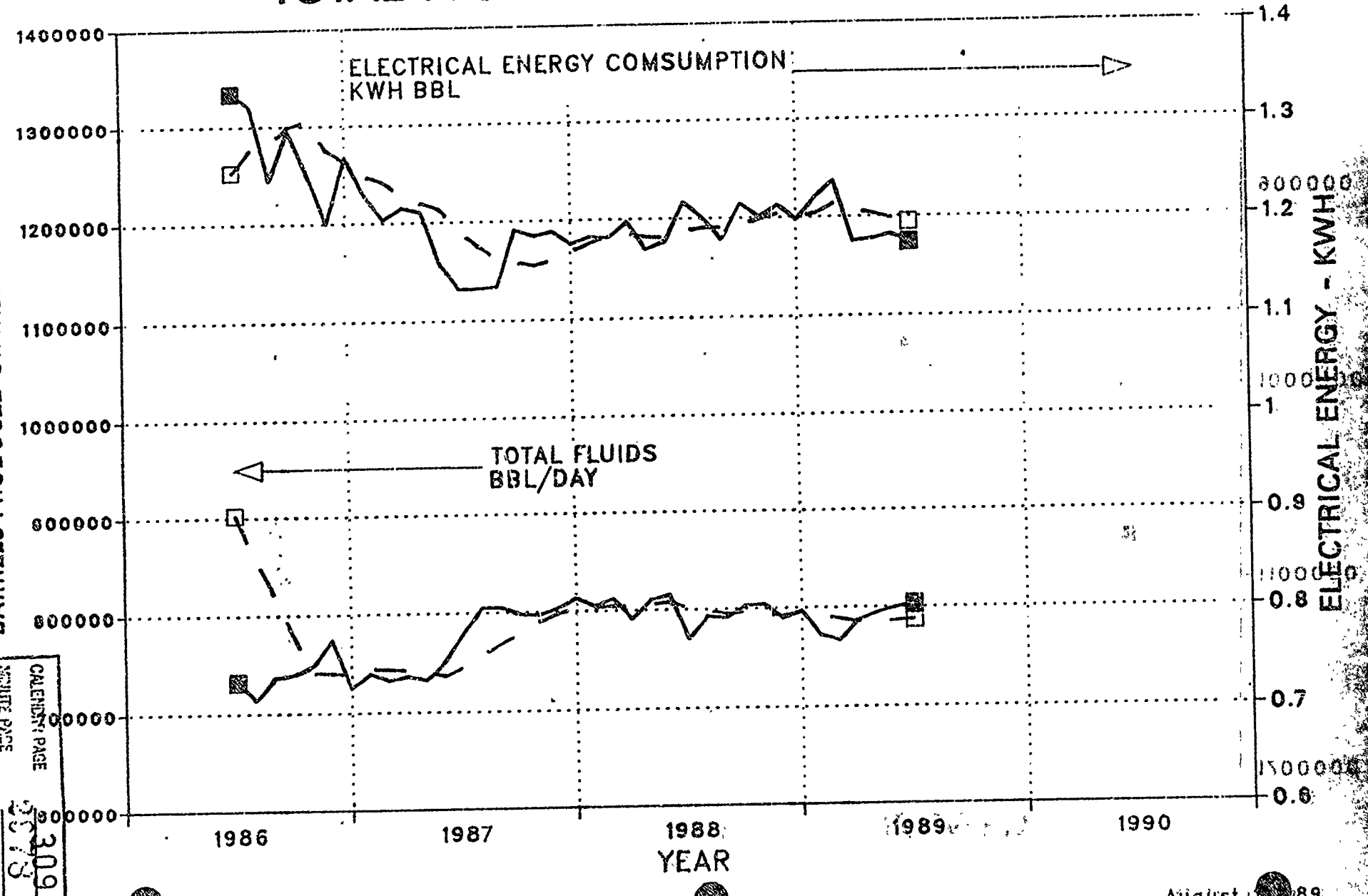
EXHIBIT 9



CALENDAR PAGE  
 MINUTE PAGE  
 509.26  
 5/8/89

# LBU ISLANDS COMPARISON OF TOTAL FLUIDS & ENERGY CONSUMED

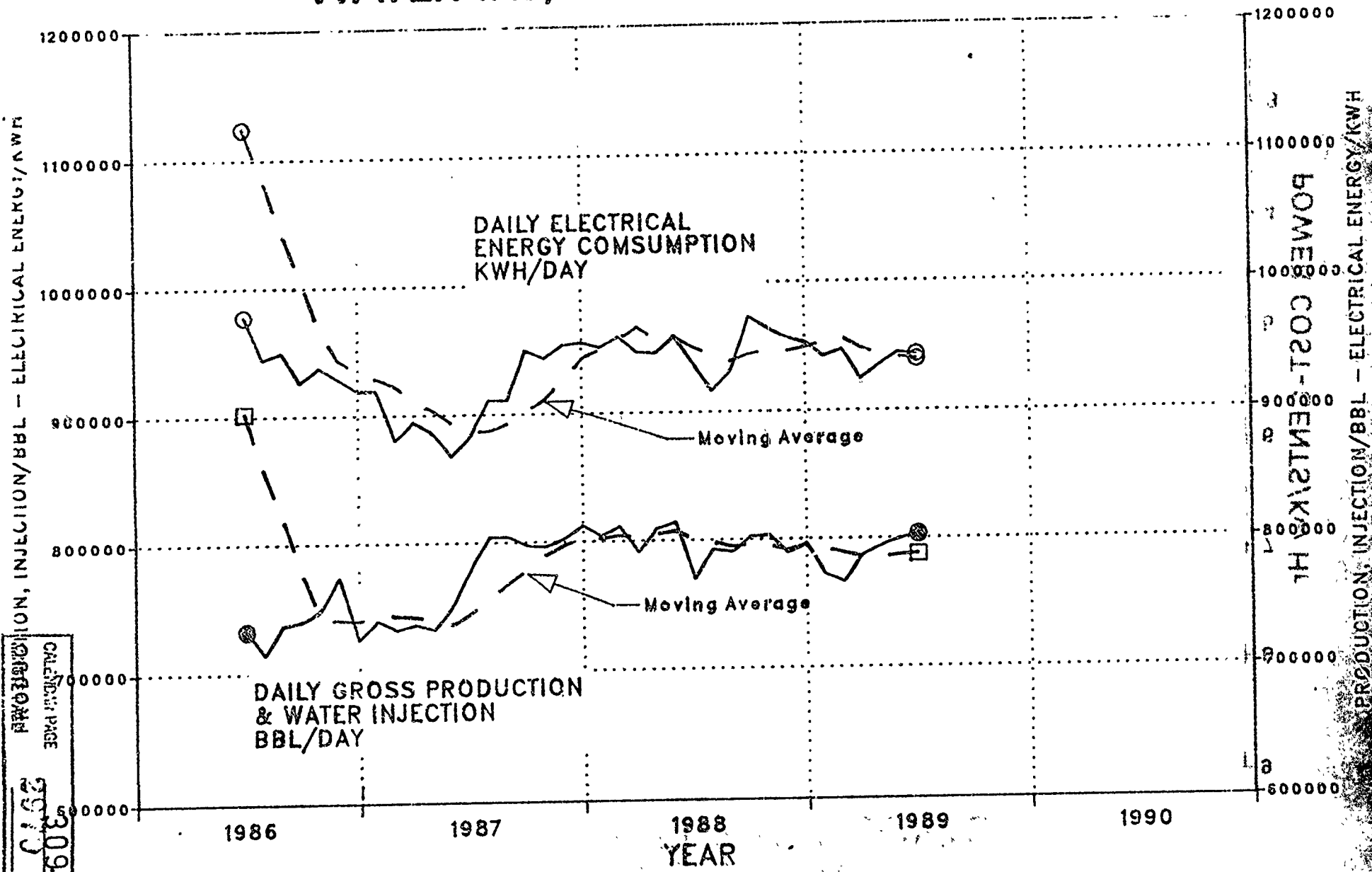
EXHIBIT 20



CALENDAR PAGE  
 309.27  
 MINUTE PAGE  
 309.27

# LBU ISLANDS COMPARISON OF GROSS PROD, WATER INJ, & ENERGY CONSUMED

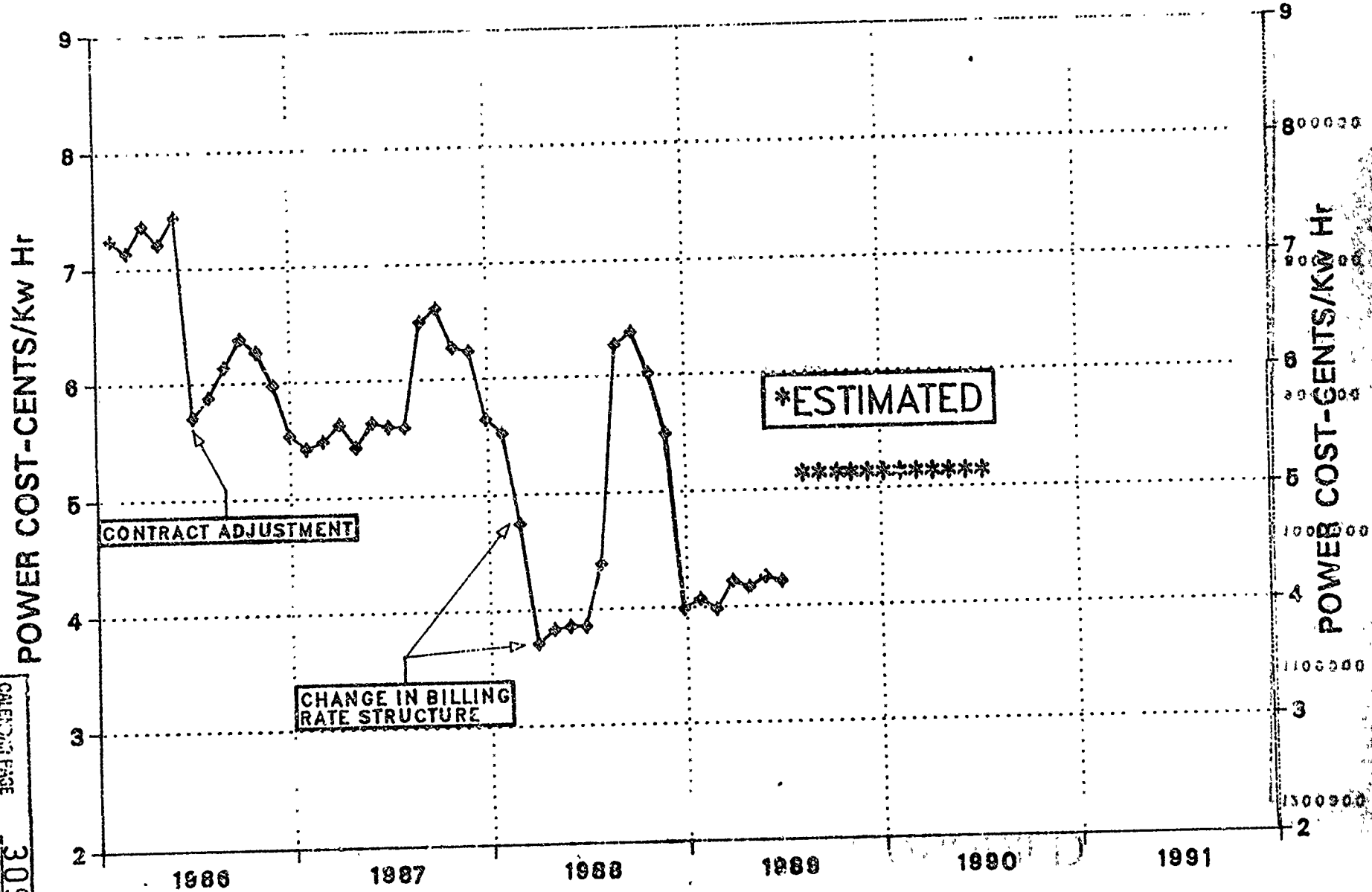
EXHIBIT 21a



CALCULATED PAGE  
 309.28  
 2970

August 2 1989

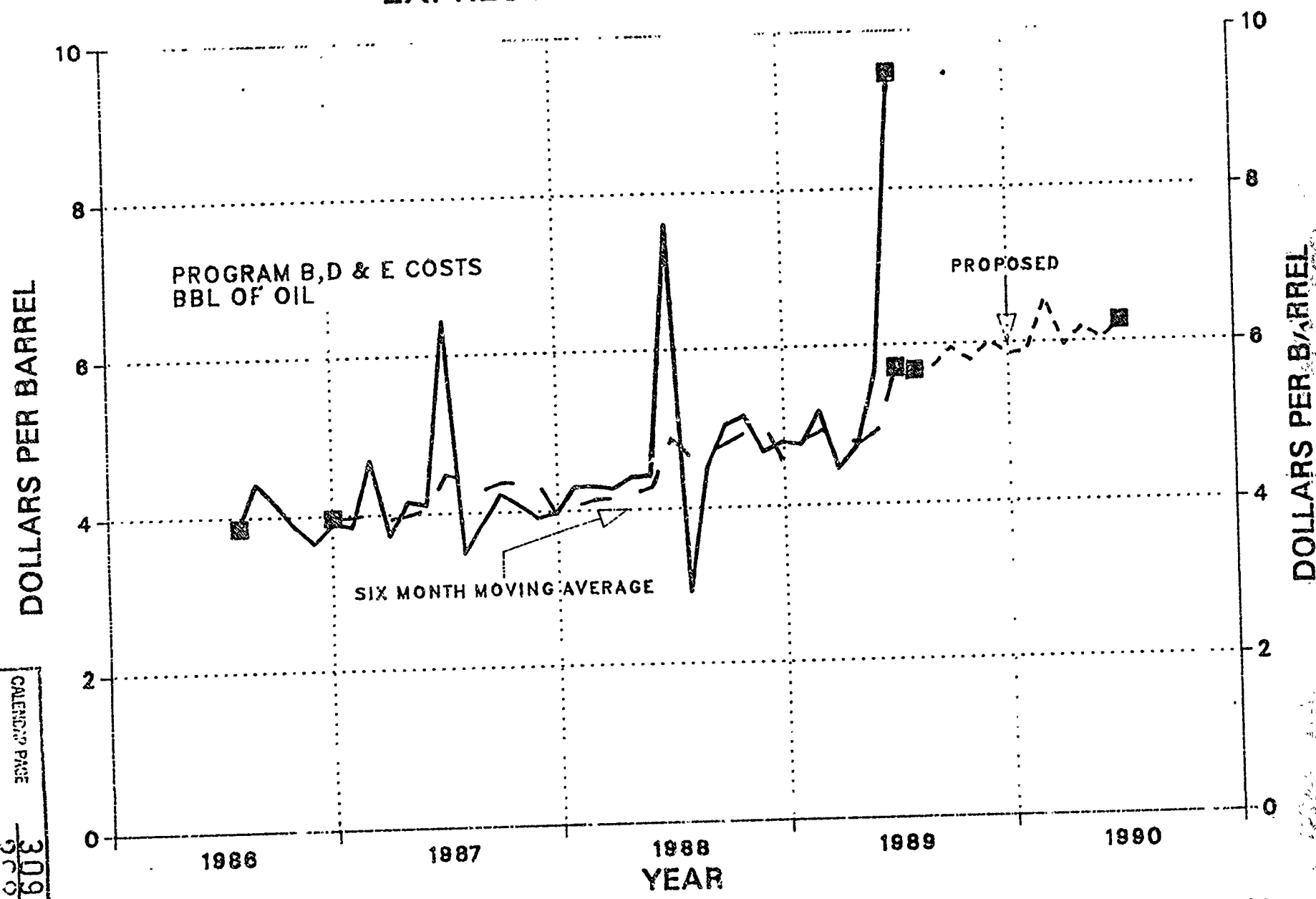
# LONG BEACH UNIT ELECTRICAL ENERGY COSTS



CALENDAR PAGE  
REQUIRE PAGE  
309 .29  
2889

# OIL & GAS, WATER INJECTION AND MANAGEMENT PROGRAMS COSTS EXPRESSED AS \$/BBL OF OIL

EXHIBIT 2.3



CALENDAR PAGE  
309.30  
1691  
1691

Jul 27 1989