

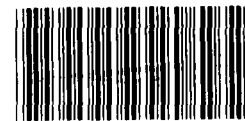
REPORT BY THE U.S.

General Accounting Office

Status Of Strategic Petroleum Reserve Activities As Of September 30, 1983

The Department of Energy reported that during fiscal year 1983 about 83.1 million barrels of oil were delivered to the Strategic Petroleum Reserve, for an annual average fill rate of about 228,000 barrels per day. As of September 30, 1983, the oil inventory of the Reserve was about 361 million barrels.

This report discusses a number of significant events which occurred during the fourth quarter of fiscal year 1983 that affect the Reserve. It also discusses the progress being made in filling, developing, and operating the Reserve.



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RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-208196

The Honorable James A. McClure
Chairman, Committee on Energy and
Natural Resources
United States Senate

The Honorable J. Bennett Johnston
Ranking Minority Member, Committee
on Energy and Natural Resources
United States Senate

On March 25, 1982, the Senate Committee on Energy and Natural Resources requested that we report on a quarterly basis, through fiscal year 1985, on the administration's progress in filling the Strategic Petroleum Reserve (SPR) and in complying with the requirements of applicable law. This is the sixth such report issued pursuant to that request. A listing of the prior GAO reports is contained in table 11 in appendix II.

This report covers SPR activities that occurred during the fourth quarter of fiscal year 1983. It discusses significant events related to the administration's progress in filling, developing, and operating the SPR. Specifically, it notes that:

--Funding measures for the SPR have been the subject of congressional debate during the quarter. Additional fiscal year 1983 SPR funding was dropped from the supplemental appropriations bill by the conference committee. Fiscal year 1984 funds are included in the Department of the Interior and Related Agencies Appropriations bill which was reported from the conference committee on September 30, 1983. The conference committee recommended \$650 million for oil acquisition. These funds would be in addition to about \$2.2 billion that was available to pay for oil deliveries and additional oil purchases as of September 30, 1983. Also, the conference committee stipulated that the fiscal year 1984 fill rate should be no less than 186,000 barrels per day. As of September 30, 1983, neither house of the Congress had acted on the conference committee's report. In this regard, the SPR is entering fiscal year 1984 operating under a continuing resolution approved on October 1, 1983, and with funds carried over from prior years.

- The Department of Energy (DOE) reported that about 28.5 million barrels of oil were added during the quarter, bringing the total oil in the SPR to 361 million barrels as of September 30, 1983. The fourth quarter fill rate was about 310,000 barrels per day. This brought the annual average fill rate to about 228,000 barrels per day for the entire fiscal year, about 8,000 barrels per day higher than DOE's planned level.
- The Defense Fuel Supply Center (DFSC)--the purchasing agent for much of the SPR oil--awarded contracts for about 9.9 million barrels of oil for delivery in fiscal year 1984. With the oil contracted for previously, a total of about 28.7 million barrels had been arranged for fiscal year 1984 delivery as of September 30, 1983.
- The SPR program for developing permanent storage capacity proceeded during the quarter and was about on schedule. The efforts to develop interim storage capacity at Bayou Choctaw, which we reported on previously, have been suspended because DOE does not believe the additional space will be required at the fill rates being considered.
- DOE estimates that payments during the quarter for oil delivery and transportation were about \$440 million, bringing the total fiscal year 1983 payments to about \$1.6 billion. This leaves about \$2.2 billion to pay for oil deliveries and additional oil purchases. DOE also estimates that about \$121 million remains in the on-budget account for SPR operations as of September 30, 1983.

This report also presents information on a test of the oil distribution procedures, the status of the SPR reorganization, potential problems at the Seaway Terminal which services the Bryan Mound site, and the status of efforts to collect overpayments for oil received at the St. James Terminal. Appendix I discusses these topics in more detail. Appendix II presents supporting figures and tables.

OBJECTIVE, SCOPE, AND METHODOLOGY

This report provides information on the status of the SPR as of September 30, 1983. The report is based, in part, on our review of DOE program documents, publications, and studies. In addition, we interviewed managers and operating personnel responsible for planning and managing activities associated with developing and operating the SPR facilities. We also interviewed employees from the private contractors that carry out most project

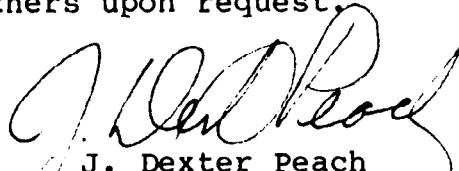
activities. Further, we discussed the SPR reorganization with Oak Ridge Operations Office personnel. We obtained information on the availability and use of SPR funds from both DOE and DFSC.

Except as noted below, our review was performed in accordance with generally accepted government auditing standards. We did not verify the volumes or quality of oil that DOE received or the available capacity of SPR storage facilities because of the limited time available to conduct the audit work for this report.

We did not obtain official agency comments because of the required time frames for issuing this report. However, we provided DOE and DFSC program officials with a draft of this report and discussed its factual accuracy with them. Based on their comments we made appropriate revisions.

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As arranged with your office, we plan no further distribution of this report until 7 days after its issue date unless you publicly announce its contents earlier. At that time, we will send copies to the Secretary of Energy and other interested parties and make copies available to others upon request.



J. Dexter Peach
Director



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ABBREVIATIONS

DFSC	Defense Fuel Supply Center
DOE	Department of Energy

GAO	General Accounting Office
PEMEX	Petroleos Mejicanos
SPR	Strategic Petroleum Reserve

STATUS OF STRATEGIC PETROLEUMRESERVE ACTIVITIES AS OF SEPTEMBER 30, 1983

The Energy Policy and Conservation Act (Public Law 94-163, Dec. 22, 1975) authorized the establishment of the Strategic Petroleum Reserve (SPR). To meet the act's goals, the Department of Energy (DOE) is implementing a three-phase plan to store 750 million barrels of oil. Phase I of this plan consisted of acquiring and modifying for oil storage existing caverns in salt deposits at Bryan Mound, Texas; Bayou Choctaw, Sulphur Mines, and West Hackberry, Louisiana; and a salt mine at Weeks Island, Louisiana, as well as construction of an oil receiving terminal at St. James, Louisiana. Phase II involves creating new caverns at three of these sites through a leaching program. The leaching program entails pumping water into salt deposits and removing the salt-saturated water, or brine. DOE injects oil into the top of the cavern as the leaching process creates the storage capacity. Phase III involves creating additional capacity at two existing storage sites and developing a new site at Big Hill, Texas. However, the development schedule for completing the SPR is uncertain because of proposals made in the administration's fiscal year 1984 budget.

During fiscal year 1983, DOE reported that about 83.1 million barrels of oil were added to the SPR at an annual average rate of about 228,000 barrels per day. This brought the total oil in the SPR to about 361 million barrels as of September 30, 1983. The fiscal year 1983 fill rate was higher than the fiscal year 1982 rate of 215,000 barrels per day but less than the 292,000 barrels per day fill rate reached in fiscal year 1981.

This report discusses the SPR activities which occurred in the fiscal year quarter ending September 30, 1983. Several major events occurred during this period, including:

- Funding measures for the SPR were considered by the Congress. Additional fiscal year 1983 SPR funding was dropped from the supplemental appropriations bill by the conference committee. Fiscal year 1984 SPR funding is included in the Department of the Interior and Related Agencies Appropriations bill which was reported from conference committee on September 30, 1983. It recommended \$650 million in oil acquisition funds and stipulated that the fiscal year 1984 fill rate be at least 186,000 barrels per day. As of September 30, 1983, neither house of Congress had acted on the conference committee's bill; thus the SPR begins fiscal year 1984 operating under a continuing resolution signed on October 1, 1983, and with funds carried over from prior years.

- DOE reported that about 28.5 million barrels of oil were received during the fourth quarter, for a fill rate of about 310,000 barrels per day. This brought the total oil stored to about 361 million barrels as of September 30, 1983.

- The Defense Fuel Supply Center (DFSC)--DOE's purchasing agent for much of the SPR oil--awarded contracts for about 9.9 million barrels of oil for delivery in fiscal year 1984. With the oil contracted for previously, a total of about 28.7 million barrels had been arranged for fiscal year 1984 delivery as of September 30, 1983.

- The SPR program for developing permanent storage capacity continued during the quarter and was about on schedule. However, the efforts to develop interim storage capacity at Bayou Choctaw, which we reported on previously, have been suspended because DOE does not believe the additional space will be required at the fill rates being considered.

- DOE estimates that payments during the quarter for oil delivery and transportation were about \$440 million, bringing the total fiscal year 1983 payments to about \$1.6 billion. This leaves about \$2.2 billion in the off-budget SPR Petroleum Account to pay for oil deliveries and additional oil purchases. DOE also estimates that about \$121 million remains unobligated in the on-budget account for SPR operations as of September 30, 1983.

The following sections discuss these events more fully. In addition, information is presented on the status of a test of the oil distribution procedures, the SPR management reorganization, potential problems at the Seaway Terminal which services the Bryan Mound site, and the status of efforts to collect overpayments for oil received at the St. James Terminal.

SPR RECEIVES CONTINUED
CONGRESSIONAL ATTENTION

As discussed in our last report,¹ SPR funding and future fill rates have been receiving continued congressional attention. During the fourth quarter, action was taken on the fiscal year 1983 supplemental appropriations bill and the fiscal year 1984 appropriations bill. The funding decisions made will affect the SPR fill rate.

¹Status of Strategic Petroleum Reserve Activities as of June 30, 1983 (GAO/RCED-83-203, July 13, 1983).

The fiscal year 1983 supplemental appropriations bill which was passed on July 30, 1983, contained no additional funding for the SPR. Earlier House and Senate versions of the bill had contained funding measures for the SPR, but those were eliminated by the conference committee. The House version had called for a fiscal year 1983 fill rate of 220,000 barrels per day and a transfer of \$370 million from the off-budget SPR Petroleum Account to the on-budget account to allow construction to begin at the Big Hill site. The Senate's version called for overturning the \$800 million deferral we reported last quarter and for an additional \$370 million for Big Hill. With the elimination of these provisions, DOE continued during the quarter with its plans to purchase oil to achieve a minimum fill rate of 220,000 barrels per day for fiscal year 1983.

The fiscal year 1984 appropriations for the SPR also received congressional attention during the fourth quarter. The Senate passed its version of the bill on September 21, 1983. Like the House version which was passed in the third quarter, the Senate version provided funds to reach a fill rate of 220,000 barrels per day (\$1.3 billion). The Senate version also would have provided funds for construction to begin at Big Hill. The House version did not contain this provision. As discussed above, the House included a provision in the fiscal year 1983 supplemental appropriations bill to transfer funds from the off-budget account to begin this construction, but the provision was dropped by the conference committee.

The House and Senate positions on the fill rate and Big Hill differ from the administration's most recent proposal. In July 1983 the administration and the Chairman of the Senate Energy and Natural Resources Committee agreed to recommend that the SPR be filled at an annual rate of 145,000 barrels per day until the 750-million-barrel goal is achieved and to delay Big Hill funding until fiscal year 1985.

The conference committee reported out a compromise version of the fiscal year 1984 appropriations bill on September 30, 1983. The bill would provide \$650 million for oil acquisition funds but drop funding for Big Hill. The bill further states that the minimum required fiscal year 1984 fill rate shall not be less than 186,000 barrels per day. As of September 30, 1983, neither house of Congress had acted on the bill. In this regard, the SPR is currently operating under a continuing resolution signed on October 1, 1983, and with funds carried over from previous years. Figure 1 and table 1 (see app. II) present information on the impact of various SPR fill rates.

SPR FILL UPDATE

SPR fill-related efforts during the quarter included adding about 28.5 million barrels of oil to the SPR, contracting for fiscal year 1984 oil deliveries, and reissuing the solicitation

for an assessment of the controls over SPR oil receipts and oil inventory.

DOE reported that about 28.5 million barrels were added during the quarter ending September 30, 1983, for an average fill rate of about 310,000 barrels per day. For all of fiscal year 1983, about 83.1 million barrels were added for an annual average rate of about 228,000 barrels per day. As of September 30, 1983, the SPR contained about 361 million barrels of oil.

About 16.2 million barrels, or 57 percent of the oil delivered in the fourth quarter of fiscal year 1983, came from the two contracts DOE awarded in 1981 and 1982 to Petroleos Mexicanos (PEMEX)--the Mexican State oil company. About 11.4 million barrels came from awards under DFSC's open, continuous solicitation,² and 0.9 million barrels came from deliveries under long-term contracts awarded by DFSC in fiscal year 1982. All of the PEMEX deliveries were Isthmus crude.³ Figures 1 and 2 and tables 2 through 7 (See app. II) provide further information on SPR fill activities.

For fiscal year 1984, contracts for about 28.7 million barrels of oil have been arranged. The 1981 PEMEX agreement calls for 18.3 million barrels to be delivered in fiscal year 1984. In addition, during the fourth quarter, DFSC awarded contracts to two companies for delivery of about 6.88 million barrels of sweet crude. Further, 1.5 million barrels of sweet crude were purchased for October 1983 delivery under the open, continuous solicitation, and 1.5 million barrels of oil originally scheduled for fiscal year 1983 delivery remained to be delivered as of September 30, 1983. Table 6 provides further information on the oil arranged for fiscal year 1984 delivery.

In addition to the above activities, DOE cancelled the solicitation issued last quarter for an assessment of the SPR's crude oil accountability system and the SPR inventory level. According to DOE officials, the solicitation was cancelled on August 12, 1983, because the degree of accuracy being proposed for conducting a physical inventory of oil levels did not meet minimum acceptable government needs. DOE issued a new solicitation on September 16, 1983, which calls for proposals to review the crude oil inventory accounts and internal control systems, policies, procedures, and

²The open, continuous solicitation involves making contract awards without reissuing the solicitation for offers of oil that is available on the "spot," or short-term market.

³Isthmus crude is a high quality sour oil. Sour crude for the SPR has a sulfur content of over 0.5 percent; sweet crude has a maximum sulfur content of 0.5 percent.

practices affecting the acquisition, receipt, transfer, storage, inventory adjustments, and recordation of crude oil inventories from July 1977 through December 31, 1983. DOE expects to make an award for this work in December 1983. A physical inventory is not called for under this solicitation. Rather, DOE has made arrangements with Sandia National Laboratories to examine possible means to accomplish a physical inventory of crude oil.

DEVELOPING PERMANENT CAPACITY

During this quarter, the Phase II program to develop permanent storage capacity proceeded at the three active sites--Bayou Choctaw, Bryan Mound, and West Hackberry. The operations at Bryan Mound were interrupted for about 4 days by hurricane Alicia which caused power outages in the area, but no major damage occurred at the site. In addition, DOE completed filling Sulphur Mines cavern 2.4.5., and Phase III activities proceeded at three sites.

In total, the Phase II capacity development programs at the Bayou Choctaw, Bryan Mound, and West Hackberry sites were about on schedule. Tables 8 and 9 provide further information on the progress of the capacity development programs.

The arrival of hurricane Alicia in the Bryan Mound area on August 17, 1983, caused site operations to be suspended for about 4 days. As the hurricane approached, action was taken to secure the site's equipment and facilities, to evacuate all personnel and vital records, and send a ship, which was unloading oil, out to sea. Once this was accomplished, DOE vacated the site on the morning of August 17, 1983. According to DOE, five employees returned the next morning to assess the damage. However, because the electric power was out and no backup or emergency power is available to operate the site, normal operations could not be undertaken on August 18, 1983. The power was restored on August 19, 1983, and action was begun to return the site to normal. DOE informed us that the hurricane caused little damage.

The oil fill operations at Sulphur Mines cavern 2.4.5 were completed during the quarter without any reported problems. Fill operations began on this cavern in January 1983 after it was determined that using a layer of nitrogen would prevent the loss of oil through a small leak at the top of the cavern. As of September 30, 1983, the filled cavern contained 12.6 million barrels of oil.

Phase III development activities continued during the quarter at the West Hackberry, Bryan Mound, and Big Hill sites. A contract was awarded on September 26, 1983 for site preparation and drilling at West Hackberry. At Bryan Mound, Phase III drilling activities were completed and construction activities continued, with little effect from hurricane Alicia. At Big Hill, the first

5 of the initial 10 wells are being drilled, but the driller is experiencing problems with subsurface formations which may delay the completion of the wells beyond the contract date of January 5, 1984. In addition, actions are being taken to begin construction and purchase some long-lead-time equipment for the Big Hill site.

STORAGE CAPACITY OUTLOOK
FOR FISCAL YEAR 1984

During fiscal year 1984 DOE expects that total storage capacity at the SPR sites will grow from 361 million barrels (358 million barrels of permanent storage and 3 million barrels of on-site interim storage⁴) to 438 million barrels (428 million barrels of permanent storage and 10 million barrels of on-site interim storage). This would be an increase of about 77 million barrels, or enough to allow a fill rate of up to 210,000 barrels per day. Storing more oil at the sites would require exceeding the current schedule for leaching permanent storage capacity and/or using a 10-million-barrel cavern which could be made available at the Bayou Choctaw site for temporary storage.

DOE's current leaching schedule shows that permanent capacity should increase from the 358-million-barrel level reported at the end of fiscal year 1983 to 428 million barrels by the end of fiscal year 1984. In addition, DOE officials believe it may be possible to exceed the current schedule for leaching permanent capacity. Any such change would be included in DOE's fiscal year 1985 budget submission.

In addition to permanent capacity, DOE has reported that on-site interim storage capacity is available and is expected to increase during fiscal year 1984. At the beginning of fiscal year 1984, 3 million barrels of on-site interim storage capacity was being used to store oil. By the end of the year, DOE believes this volume of on-site interim storage capacity could be increased by an additional 7 million barrels to 10 million barrels. Additional capacity also could be available, if needed, by temporarily using a 10-million-barrel cavern at Bayou Choctaw. As we reported previously, DOE had started to evaluate the possible use of this cavern for temporary oil storage. Early in the fourth quarter, DOE determined that the cavern was suitable for temporary use and began designs for the necessary work associated with using the cavern. However, construction was not started because the additional space is not currently needed and the fill rates being considered would not require using this cavern. DOE estimates that it would take about 9 months to complete the necessary work to use the cavern.

⁴On-site interim storage is the capacity which is available at the SPR sites to store oil on a temporary basis by overfilling Phase II caverns.

If the 186,000 barrel per day rate (about 68.1 million barrels for the year) set forth in the conference committee's fiscal year 1984 appropriations bill is approved, DOE believes it will be able to store this oil in the permanent capacity scheduled to be developed as well as transfer the 3 million barrels currently in on-site interim storage to permanent storage. However, in order to store this 71 million barrels, DOE would need to exceed its current leaching schedule by 1 million barrels. If this is accomplished, permanent capacity of 429 million barrels would be filled and 10 million barrels of on-site interim storage would be available for future use.

STATUS OF SPR FUNDING

DOE made payments of about \$440 million during the quarter for oil acquisition and transportation. This brought the total spent to about \$1.6 billion for the fiscal year. The unpaid obligations as of September 30, 1983, were estimated to be about \$1.7 billion. Of the oil acquisition funds available for fiscal year 1983 in the off-budget SPR Petroleum Account, about \$561 million remains unobligated by DOE. Table 10 provides further information on the status of the SPR Petroleum Account.

DOE also receives funding in an on-budget account to support SPR operations such as planning, facilities development, and program direction. DOE began fiscal year 1983 with about \$320 million in this account--\$78 million in fiscal year 1982 unobligated funds and \$242 million in fiscal year 1983 appropriations. DOE estimates it obligated about \$199 million of these funds during fiscal year 1983, leaving about \$121 million in unobligated funds to be carried over to fiscal year 1984. The conference committee's fiscal year 1984 appropriations bill would add about \$159 million to this account.

OTHER ISSUES

During our review, we obtained information on some additional aspects of the SPR program, including

- the test of the procedures for drawdown, sale, and distribution of SPR oil;
- the reorganization of SPR management that proceeded during the quarter;
- potential problems at the Seaway Terminal, the private terminal used to receive and distribute Bryan Mound oil; and
- efforts to recover overpayments for oil received at the St. James Terminal.

Test of drawdown, sale, and distribution procedures

From July 11, 1983, through August 19, 1983, DOE conducted a test of the SPR's drawdown, sale, and distribution procedures. The test was called a distribution readiness exercise (DIREX-B). The main objective of the test was to evaluate the management and administration of DOE/SPR response to an oil emergency and to identify any modifications or improvements needed in the administrative procedures. The test did not involve any actual movement of oil.

The test simulated a situation in which a sudden, unexpected, and severe loss of world oil supplies (about 10.4 million barrels per day) had occurred. The test then proceeded through the day-to-day events that would take place in a real oil emergency. This included (1) the decision process which would be followed in determining whether and to what extent the SPR should be used to mitigate the simulated oil loss, (2) the sale of the oil, including issuing notices of sale, evaluating simulated bids, and accepting offers to purchase the oil, and (3) the simulation of the oil distribution system, including establishing delivery schedules and custody transfer procedures.

DOE is evaluating the test to identify areas of needed improvement. An assessment team was established to perform this analysis. The team is made up of employees from DOE and other agencies as well as private consultants. The evaluation is expected to be completed next quarter with a report on the test issued to the Secretary of Energy.

SPR reorganization proceeding

As we reported last quarter, DOE announced the reorganization of the SPR management on June 15, 1983, transferring project management from the New Orleans office to the Oak Ridge Operations Office. During this quarter, a management agreement was developed and approved clarifying the roles and responsibilities of the DOE headquarters program office and Oak Ridge. A similar agreement between the New Orleans office and Oak Ridge is being developed. In addition, the 14-member task force which was established last quarter is continuing its examination of the SPR program and allegations of past mismanagement and misconduct. Further, a 5-member team has been established at Oak Ridge to manage the day-to-day SPR operations.

A management agreement between the Assistant Secretary, Environmental Protection, Safety, and Emergency Preparedness, and the Oak Ridge Operations Office manager was approved on August 9, 1983. This agreement divides responsibilities between the two groups. Generally, Oak Ridge has project management responsi-

bility which includes the day-to-day management and operation of the SPR while the Assistant Secretary's Office has program management responsibilities which include setting SPR policy and guidance. Oak Ridge as part of its effort is developing an agreement with the New Orleans office which will set forth the roles of each. Oak Ridge expects to finalize the agreement early next quarter.

The 14-member task force which Oak Ridge established on June 22, 1983, continued its efforts during the quarter. The task force is to establish the current status of the SPR as a baseline, identify all the allegations of mismanagement and misconduct since the SPR started in 1977, inventory all SPR property, and prepare a report on its findings.

The task force is made up of Oak Ridge personnel with expertise in such areas as personnel, security, safety and fire protection, engineering, construction, property management, industrial relations, performance evaluation, procurement, finance, operations management, and law. The task force members are responsible for examining aspects of the SPR in their area of expertise. Once the task force has completed its evaluation, a report to the Secretary of Energy will be prepared and the task force will be disbanded.

In addition to the task force, Oak Ridge established a 5-member team to oversee the day-to-day operations at the SPR. This team will operate until an Assistant Manager for SPR is designated in the Oak Ridge Operations Office.

Potential problem for SPR at the Seaway Terminal

The Seaway Terminal is a privately owned facility located in Freeport, Texas. This terminal is the only facility available to unload government oil cargoes destined for the Bryan Mound site. DOE also plans to use the terminal to distribute oil from Bryan Mound in the event of an SPR drawdown. However, during the quarter, the Seaway Pipeline Co., owner of the terminal, advised DOE of its intentions to sell the facility. Because the Seaway facilities are the only route for SPR oil to enter or leave Bryan Mound, DOE has requested the Corps of Engineers to obtain appraisals of the facility. In addition, DOE is examining alternatives to the Seaway Terminal such as the construction of an alternate pipeline which would connect the site to other distribution points.

At present, the use of the terminal for drawdown purposes is constrained because the Seaway metering system can only measure oil being loaded into one ship at a time. DOE had planned to correct this problem but has run into difficulty with getting Seaway's agreement because of the uncertainty of the terminal's

operation. This matter, according to DOE officials, is being examined and considered along with the other options involving the Seaway Terminal.

Recovery of overpayments for oil
delivered to St. James Terminal

DFSC continued its efforts during the quarter to collect overpayments for oil delivered to the St. James Terminal between September 1980 and November 1981. During that period, the mathematical tables used to convert the levels of crude oil in storage tanks at the terminal into an equivalent number of barrels were incorrect. According to DFSC, this caused overpayments of about \$13.8 million to 12 suppliers and underpayments of about \$48,000 to 2 suppliers. The underpayments have been satisfied, and three of the overpayments totaling about \$1.3 million have been recovered. Of the nine outstanding overpayments, six have been appealed to the Armed Services Board of Contract Appeals. Efforts are in process to collect the remaining three overpayments, which were not appealed. In future reports we will discuss, as appropriate, any significant changes in the status of DFSC efforts to recover the overpayments.

FIGURES AND TABLES ON THE STATUS OF THE
STRATEGIC PETROLEUM RESERVE

FIGURE 1: COMPARISON OF FILL RATES IN REACHING 750 MILLION BARRELS

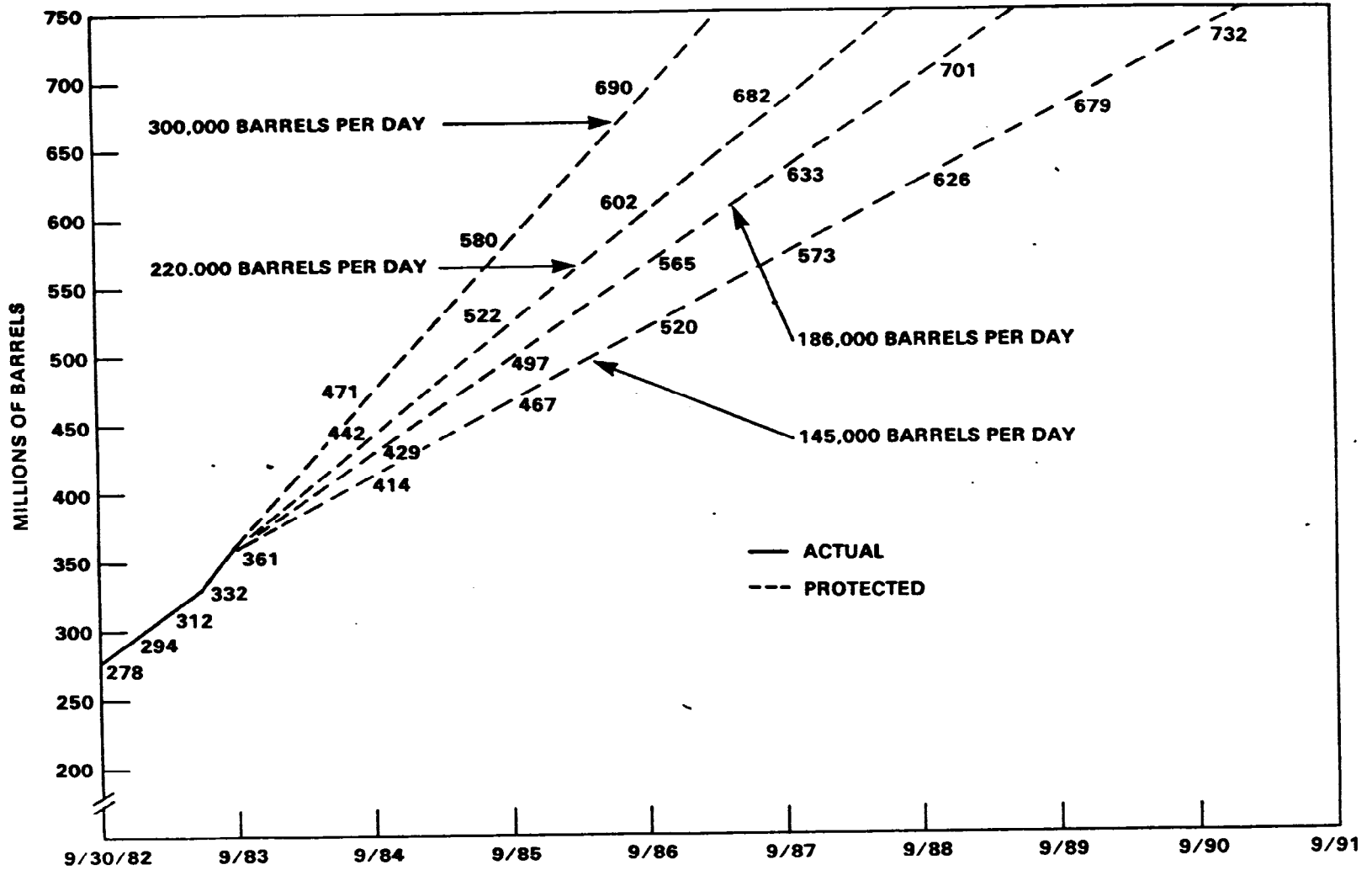


TABLE 1
COMPARISON OF FILL SCHEDULES AND
STORAGE REQUIREMENTS IN REACHING 750 MILLION BARRELS

Fiscal Year	Storage capacity ^a	<u>300,000 barrels per day</u>		<u>220,000 barrels per day</u>		<u>186,000 barrels per day</u>		<u>145,000 barrels per day</u>	
		<u>Oil volume^b</u>	<u>Additional storage needed^c</u>	<u>Oil volume^b</u>	<u>Additional storage needed^c</u>	<u>Oil volume^d</u>	<u>Additional storage needed^c</u>	<u>Oil volume^a</u>	<u>Excess storage available^c</u>
1984	428	471	43	442	14	429	1	414	14
1985	473	580	107	522	49	497	24	467	6
1986	538	690	152	602	64	565	27	520	18
1987	593	750	157	682	89	633	40	573	20
1988	653		97	750	97	701	48	626	27
1989	684		66		66	750	66	679	5
1990	750							732	18
1991								750	

13

^aThe storage capacity shown is the total amount of permanent space DOE plans to have available by the end of the fiscal year. This schedule assumes oil fill at Big Hill will begin in fiscal year 1987.

^bThe Energy Emergency Preparedness Act requires a minimum average annual fill rate of 300,000 barrels per day until at least 500 million barrels of oil are stored. However, the act allows a lower rate if the President finds the 300,000 barrel per day rate not to be in the national interest. With the finding, the act requires a minimum rate of at least 220,000 barrels per day, or the highest practicable fill rate achievable with available funds.

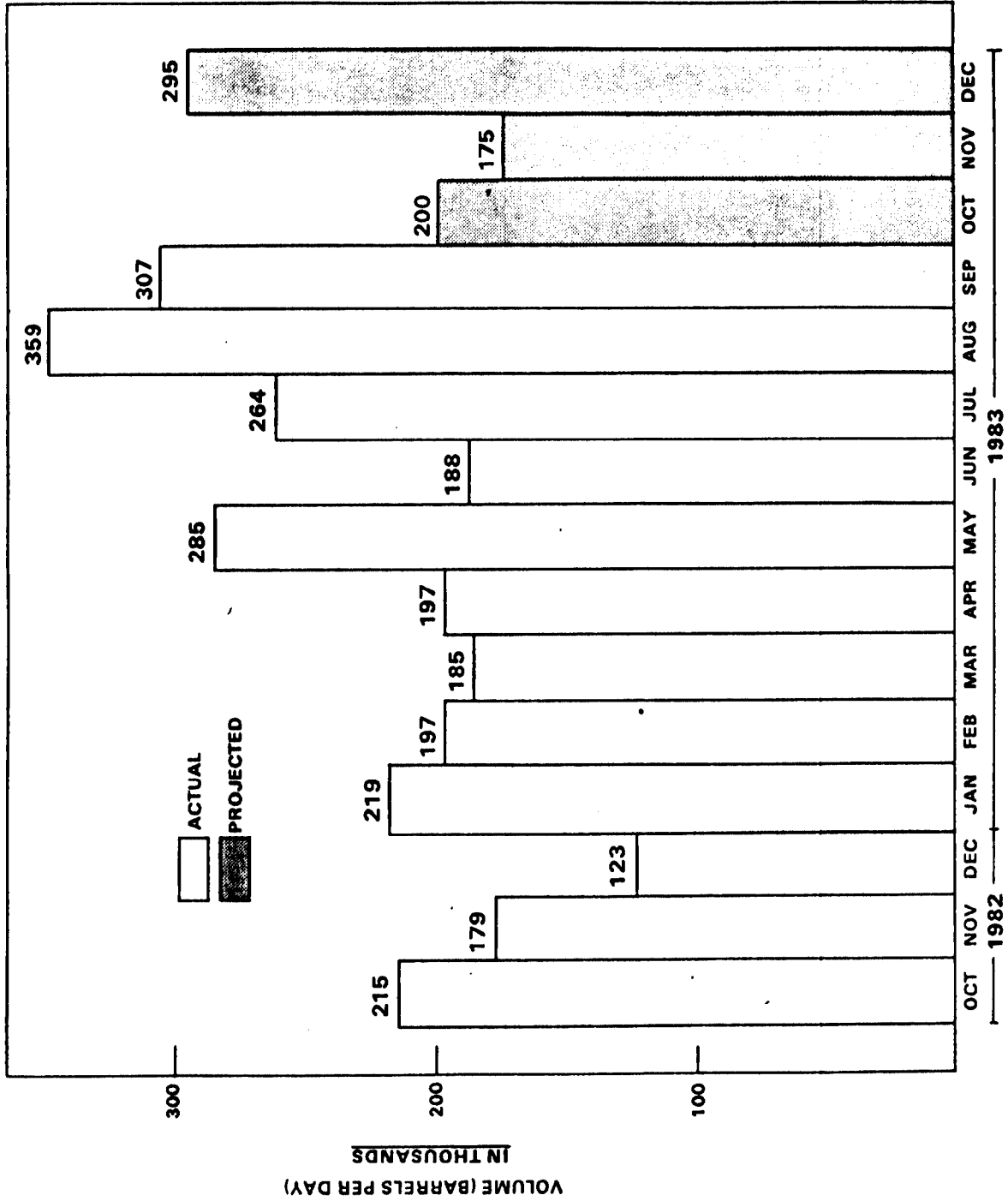
^cDOE has determined that up to about 20 million barrels of on-site interim storage capacity could be available by the end of fiscal year 1984. This amount could grow to 22.35 by the end of fiscal year 1985. Further, DOE believes it may be possible to develop storage capacity somewhat faster than the schedule shown and anticipates revising the schedule in the fiscal year 1985 budget submission. Additional storage needed above these amounts could require contracting for privately owned space.

^dThe conference committee on the Interior and Related Agencies fiscal year 1984 appropriations recommended a minimum fill rate of 186,000 barrels per day. In addition it stated that a similar fill rate would be expected in fiscal year 1985.

^eOn June 30, 1983, the Secretary of Energy proposed a tentative compromise fill rate of 145,000 barrels per day.

Source: DOE and GAO calculations.

FIGURE 2: AVERAGE DAILY SPR RECEIVING RATE^a



^a/DAILY RECEIVING RATES FOR OCTOBER, NOVEMBER AND DECEMBER 1983, ARE BASED ON DOE PROJECTIONS OF FUTURE DELIVERIES AND ARE SUBJECT TO CHANGE.

TABLE 2
VOLUME OF OIL STORED
BY FISCAL YEAR 1983 QUARTER

<u>Quarter</u>	<u>Volume of oil at start of quarter</u>	<u>Deliveries</u>	<u>Volume of oil at end of quarter</u>	<u>Average receiving rate</u>	
				<u>For quarter</u>	<u>Since 10/01/82</u>
	- - - (millions of barrels) - - - -			(barrels per day)	
Oct. 1, 1982 through Dec. 31, 1982	277.9	15.9	293.8	173,288	173,288
Jan. 1, 1983 through Mar. 31, 1983	293.8	8.0	311.8	200,035	186,515
Apr. 1, 1983 through June 30, 1983	311.8	20.7	332.5	226,966	199,998
July 1, 1983 through Sept. 30, 1983	332.5	28.5	361.0	309,923	227,705

Source: DOE.

TABLE 3

SUMMARY OF OIL DELIVERIES FOR FISCAL YEAR 1983

	Oil deliveries for quarter ending 9/30/83	Total oil deliveries for FY 1983
	- - - (millions of barrels) - - -	
Open, continuous solicitation ^a	11.4	19.9
PEMEX contracts	16.2	54.6
Term contracts		
Exxon International Co.	0	3.8
Transocean Gulf Oil Co.	.9	3.6
Citation Oil and Gas, Ltd.	0	1.0
Naval Petroleum Reserve	b	0.2
Consent orders (note c)	-	-
Total	<u>28.5</u>	<u>83.1</u>

^aThe open, continuous solicitation involves making contract awards without reissuing the solicitation for offers of oil that is available on the "spot," or short-term market. See table 4 for further information on awards made under the open, continuous solicitation.

^bIncludes delivery of Naval Petroleum Reserve oil through a memorandum of understanding with DOE's Office of Naval Petroleum and Oil Shale Reserves. The deliveries under this agreement have been completed.

^cDuring the quarter, Chaplin Petroleum elected to pay DOE \$3.55 million under a consent order rather than deliver oil valued at the amount to the SPR. In addition, a consent order with Conoco, Inc., requires a payment of \$11 million in oil or cash by October 25, 1983. No payment has yet been made by Conoco, Inc.

Source: DOE and DFSC.

TABLE 4

CONTRACTS AWARDED IN FISCAL YEAR 1983UNDER THE OPEN CONTINUOUS SOLICITATION

<u>Supplier</u>	<u>Number of contracts</u>	<u>Total barrels awarded</u>	<u>Percent of oil awarded</u>
BP Oil International, Ltd.	3	4,300,000	21
GATOIL International, Inc.	4	2,804,022	14
Gulf-Tex Resources, Inc.	2	2,750,000	13
T.W. Oil, (Houston) Inc.	2	2,730,000	13
Derby & Company, Inc.	2	2,520,000	12
Citation Oil & Gas, Ltd.	1	1,000,000 ^a	5
Coastal States Trading, Inc.	2	1,000,000	5
Occidental Crude Sales, Inc.	1	1,000,000	5
Shell International Trading Co.	1	1,000,000	5
Transocean Gulf Oil Co.	2	1,000,000	5
Coral Petroleum, Inc.	<u>1</u>	<u>500,000^b</u>	<u>2</u>
Total (note c)	21 ---	20,604,022 -----	100 ----

^aCitation had difficulties in obtaining about 500,000 barrels of oil under this contract and defaulted on this portion.

^bCoral defaulted on this contract. Shell International Trading Co. was awarded a contract to deliver this 500,000 barrels. Combined with Shell's other award shown above, this increases its portion of the awards to about 7 percent.

^cThe total represents awards during fiscal year 1983. Oil deliveries under the open, continuous solicitation differ (see table 3) because actual deliveries may vary from award amount, 2.8 million barrels were delivered early in the fiscal year from awards made in fiscal year 1982, and 3 million barrels of the total shown are to be delivered in fiscal year 1984.

Source: DFSC.

TABLE 5
FOURTH QUARTER OPEN, CONTINUOUS
SOLICITATION AWARDS

<u>Contract date</u>	<u>Supplier</u>	<u>Total barrels</u>
July 12, 1983	GATOIL International, Inc.	500,000
July 12, 1983	Occidental Crude Sales, Inc.	1,000,000
July 12, 1983	Derby & Company, Inc.	520,000
July 12, 1983	Gulf-Tex Resources, Inc.	1,850,000
July 12, 1983	Coastal States Trading, Inc.	350,000
July 27, 1983	BP Oil International, Ltd.	1,500,000
Sept. 7, 1983	BP Oil International, Ltd.	<u>1,500,000</u>
Total		<u>7,220,000</u>

Source: DFSC.

TABLE 6

CONTRACTED DELIVERIES FOR FISCAL YEAR 1984

	<u>Quarter 1</u>	<u>Quarter 2</u>	<u>Quarter 3</u>	<u>Quarter 4</u>
	- - - - - (barrels per day) - - - - -			
PEMEX contract	50,000	50,000	50,000	50,000
Other term contracts ^a				
Shell International Trading Co.	15,738	15,738		
BP Oil International, Inc.	21,858	21,858		
Contract under open, continuous solicitation	16,304			
Contracts originally scheduled for fiscal year 1983 delivery	<u>16,304</u>	-----	-----	-----
Total ^b	120,204	87,596	50,000	50,000
	=====	=====	=====	=====

^aTo achieve the daily rates shown, the total quantity of oil contracted for was divided by the number of days in the delivery period. The actual deliveries may vary.

^bTotal represents quantities of oil under contract as of September 30, 1983. Additional purchases are expected during the year. Currently, DFSC has requirements to purchase an additional 4.3 million barrels under the open, continuous solicitation for delivery in the first quarter of fiscal year 1984. This would raise the first quarter deliveries by about 46,700 barrels per day to about 166,900 barrels per day.

Source: DOE and DFSC.

TABLE 7

TOTAL SPR DELIVERIES BY CRUDETYPE AS OF SEPTEMBER 30, 1983

	<u>Type I^a</u>	<u>Types II-V^b</u>	<u>Type VI^c</u>	<u>Type VIa^d</u>	<u>Maya^e</u>	<u>Total</u>
	----- (millions of barrels) -----					
Volume delivered	179.0	123.3	31.4	16.6	10.7	361
	----- (percent)-----					
Percentage of total oil delivered	50	34	9	5	3	100 ^f

^aHigh-sulfur crude (maximum 1.99-percent sulfur content) with an API gravity range of 30 to 36 degrees. Type I oil includes Arabian Light and Isthmus crudes.

^bHigh-quality crudes with a low-sulfur content (maximum 0.5-percent sulfur content) and an API gravity range of 30 to 45 degrees. These types include some North Sea and West African crudes.

^cType VI was established for Alaskan North Slope crude, an intermediate-sulfur crude (maximum 1.25-percent sulfur content) with an API gravity range of 26 to 30 degrees.

^dType VIa was established for the Maya/Isthmus blend under the PEMEX contract. The blend is a high-sulfur mixture with an API gravity of at least 28 degrees.

^eMaya crude is a lower quality oil which has a maximum sulfur content of 3.5 percent and an API gravity of at least 22 degrees.

^fDoes not add due to rounding.

Source: DOE.

TABLE 8
STATUS OF SPR UNDERGROUND CAPACITY
AS OF SEPTEMBER 30, 1983

<u>Phase I sites</u>	<u>Permanent capacity available</u>	<u>Capacity filled</u>
	(millions of barrels)	
Bayou Choctaw	45.9	44.6
Bryan Mound	65.2	64.4
Sulphur Mines	26.3	26.0
Weeks Island	73.0	73.0
West Hackberry	<u>48.8</u>	<u>48.8</u>
Total	<u>259.2</u>	<u>256.8</u>
	<u>Planned capacity</u>	<u>Capacity filled</u>
<u>Phase II sites</u>		
Bayou Choctaw	10.0	(a)
Bryan Mound	120.0	73.2
West Hackberry	<u>160.0</u>	<u>26.7</u>
Total	<u>290.0</u>	<u>99.9</u>
Total for SPR	<u>549.2</u>	<u>356.7^b</u>

^aA newly leached cavern with 4.5 million barrels of usable capacity will be exchanged for an existing 10-million-barrel cavern owned by Allied Chemical Corporation at the Bayou Choctaw site after leaching is completed. DOE currently expects to complete leaching in August 1984.

^bAn additional 1.3 million barrels of oil is in pipelines and surge storage tanks, and 3 million barrels is in on-site interim storage. This brings the total oil in the SPR system to 361 million barrels.

Source: DOE.

TABLE 9

SUMMARY OF LEACHING ACTIVITIESFOR QUARTER ENDING SEPTEMBER 30, 1983^a

	<u>Brine disposal</u>		<u>Cumulative cavern volume</u>		<u>Cumulative oil fill</u>	
	<u>Baseline</u>	<u>Actual</u>	<u>Baseline</u>	<u>Actual</u>	<u>Baseline</u>	<u>Actual</u>
	(thousands of barrels per day)		- - - - - (millions of barrels) - - - - -			
Bryan Mound:						
July	950	968	101.8	102.4	64.2	64.1
August	950	784 ^b	105.4	104.2	67.9	67.5
September	950	989	109.0	107.9	71.4	73.2
West Hackberry:						
July	900	949	70.6	72.4	21.8	20.5
August	900	919	73.8	76.4	25.3	23.6
September	900	856	76.9	80.4	28.6	26.7
Bayou Choctaw:						
July	51.4	50	2.4	2.6	(c)	-
August	53.3	49	2.6	2.7	-	-
September	53.3	46	2.9	2.9	-	-

^aThis table compares the actual leaching activities with baselines that have been established for the SPR contractor. To allow for contingencies, the contractor baselines are more stringent than the overall baselines established for the SPR program. The brine disposal baselines were changed for West Hackberry and Bryan Mound in July 1983.

^bThe Bryan Mound site was closed, and leaching activities were stopped for about 4 days due to the arrival of hurricane Alicia.

^cThe leaching activities at Bayou Choctaw are directed at creating a cavern with 4.5 million barrels of usable capacity. This cavern will not be used to store oil but will be exchanged for an existing 10-million-barrel cavern owned by Allied Chemical Corporation. This cavern is expected to be completed in August 1984.

Source: DOE.

TABLE 10

STATUS OF THE SPR PETROLEUM ACCOUNTAS OF SEPTEMBER 30, 1983^a

<u>Funds made available</u>	<u>Amount</u> (millions)
Carryover from fiscal year 1981	\$1,806
Fiscal year 1982 appropriations	3,684
Fiscal year 1983 appropriations	<u>2,074</u>
Total available	<u>\$7,564</u>
<u>Funds used or committed</u>	
Fiscal year 1982 payments	\$3,687
Estimated fiscal year 1983 payments as of 09/30/83 ^b	1,639
DOE's unpaid obligations ^c as of 09/30/83	<u>1,677</u>
Total used or committed	<u>\$7,003</u>
Unobligated funds at DOE	<u>\$ 561</u>

^aThe SPR Petroleum Account was established in October 1981 to pay for petroleum acquisition and transportation. This is an off-budget account.

^bAmounts of DOE's actual reported payments through August 31, 1983, and DOE's estimated payments for September 1983.

^cUnpaid obligations represents funds that have been committed to pay for fiscal year 1984 oil deliveries under the first PEMEX contract, or are obligated to DFSC for upcoming oil deliveries or purchases, and expected transportation costs. DFSC estimates that of the funds obligated to it, about \$520 million is available as of September 30, 1983, for future purchases. The actual amount of funds available may vary because of year-end reconciliations.

Source: DOE and DFSC.

TABLE 11PRIOR GAO QUARTERLY REPORTS

1. Progress in Filling the Strategic Petroleum Reserve Continues, but Capacity Concerns Remain (GAO/EMD-82-112, July 15, 1982).
2. Status of Strategic Petroleum Reserve Activities as of September 30, 1982 (GAO/RCED-83-29, Oct. 15, 1982).
3. Status of Strategic Petroleum Reserve Activities as of December 31, 1982 (GAO/RCED-83-93, Jan. 14, 1983).
4. Status of Strategic Petroleum Reserve Activities as of March 31, 1983 (GAO/RCED-83-136, Apr. 15, 1983).
5. Status of Strategic Petroleum Reserve Activities as of June 30, 1983 (GAO/RCED-83-203, July 13, 1983).

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