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Strategic Petroleum Reserve

ANNUAL/QUARTERLY REPORT

February 16, 1993

***U.S. Department of Energy
Assistant Secretary for Fossil Energy
Office of Strategic Petroleum Reserve
Washington, DC 20585***

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***This Strategic Petroleum Reserve
Annual/Quarterly Report is dedicated to
Robert L. Weller, the project manager of the
Strategic Petroleum Reserve, who died on
Sunday, November 1, 1992.***

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EXECUTIVE SUMMARY

Section 165 of the Energy Policy and Conservation Act (Public Law 94-163), as amended, requires the Secretary of Energy to submit annual and quarterly reports to the President and the Congress on activities of the Strategic Petroleum Reserve (SPR). Additional prospective information related to the development and fill of the Strategic Petroleum Reserve is required by the Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509). This report combines the fourth quarter 1992 Quarterly Report with the 1992 Annual Report.

KEY ACTIVITIES

On October 24, 1992, the President signed the Energy Policy Act of 1992 (Public Law 102-486). The bill includes provisions relating to: (1) drawdown of the Strategic Petroleum Reserve, (2) enlargement of the Reserve to one billion barrels, (3) acquisition of stripper well oil to fill the Reserve, (4) eligibility of island states for regional storage, (5) study of insular areas' vulnerability to an oil disruption, and (6) evaluating the costs and benefits of employing futures and options contracts in the Strategic Petroleum Reserve Program to protect against unexpected price surges.

APPROPRIATIONS

On October 5, 1992, the President signed the Department of Interior and Related Agencies Appropriations Act, 1993 (Public Law 102-381) which provided \$176.2 million for operations and management of the Reserve and includes an outlay cap of \$137 million on funds in the SPR Petroleum Account. Congress also provided \$125.6 million in the

Department of Defense Appropriations Act, 1993 (Public Law 102-396) for the Department of Energy to acquire crude oil for the Defense Department for storage in the Strategic Petroleum Reserve.

EXPANSION PLANNING

During 1992 the Department continued planning activities for the expansion of the Strategic Petroleum Reserve to one billion barrels. A draft Environmental Impact Statement for the five candidate sites was completed in October 1992, and a series of public hearings was held during December 1992. Conceptual design engineering activities, life cycle cost estimates and geotechnical studies to support the technical requirements for an Strategic Petroleum Reserve Plan Amendment were essentially completed in December 1992.

STRATEGIC PETROLEUM RESERVE OIL ACQUISITION

At the end of 1992, the Strategic Petroleum Reserve crude oil inventory was 574.7 million barrels and an additional 1.7 million barrels was in transit to the Reserve. During 1992 approximately 6.2 million barrels of crude oil were acquired for the Reserve. The crude oil was acquired under a continuous open solicitation for competitive offers and through the transfer of crude oil from the Naval Petroleum Reserves in California (NPR-1). Transfer of NPR-1 crude oil will continue at least until the end of March 1993, and acquisition of crude oil by the Defense Fuel Supply Center, the Department's purchasing agent, will resume in January 1993 and continue until available funds are expended.

TIGER TEAM

A Department of Energy Tiger Team Environmental, Safety and Health (ES&H) Assessment was conducted at the Strategic Petroleum Reserve from March 9 through April 10, 1992. In general, the Tiger Team found that Strategic Petroleum Reserve activities do not pose undue environmental, safety or health risks. The Strategic Petroleum Reserve's Final Corrective Action Plan, prepared in response to the Tiger Team assessment, was submitted for Department approval in December 1992.

NEW MANAGEMENT AND OPERATING CONTRACTOR

On November 18, 1992, the Assistant Secretary for Fossil Energy selected DynMcDermott Petroleum Operations Company to provide management and operating services for the Strategic Petroleum Reserve for a period of 5 years commencing April 1, 1993. DynMcDermott will succeed Boeing Petroleum Services, Inc.

PROGRAM DEFINITION

MISSION

The Strategic Petroleum Reserve (SPR) is a large crude oil stockpile, under the control of the President of the United States. The Strategic Petroleum Reserve mission is to reduce vulnerability to economic, national security, and foreign policy consequences of supply interruptions by discouraging supply disruptions as a tool of other nations, and by adding to crude oil supplies in the United States, in the event of a disruption due either to political, military, or natural causes. The Strategic Petroleum Reserve is mandated by the Energy Policy and Conservation Act, as amended, and by the comprehensive energy plans of all Administrations since 1975 in recognition of the long term dependence of the United States on imported crude oil and petroleum products.

PROGRAM LEGISLATION

The Strategic Petroleum Reserve was authorized by Congress with the enactment on December 22, 1975, of the Energy Policy and Conservation Act (Public Law 94-163), which declared it to be United States policy to establish a Strategic Petroleum Reserve of up to one billion barrels of petroleum products to reduce the impact of a severe energy supply interruption and to carry out the obligations of the United States under the International Energy Program.

The provisions of the Energy Policy and Conservation Act regarding the Strategic Petroleum Reserve were amended

by title VIII of the Energy Security Act (Public Law 96-294), enacted on June 30, 1980. This Act established a minimum average daily fill rate of 100,000 barrels and precluded sale of Naval Petroleum Reserve Number 1 (Elk Hills, California) crude oil except to fill the Strategic Petroleum Reserve, unless the Strategic Petroleum Reserve was being filled at the minimum rate or had an inventory of 500 million barrels.

The Energy Policy and Conservation Amendments Act of 1985 (Public Law 99-58), enacted on July 2, 1985, extended the provisions of title I, part B, of the Energy Policy and Conservation Act relating to the Strategic Petroleum Reserve until June 30, 1989, and directed the Secretary of Energy to conduct a sale or exchange of 1.1 million barrels of crude oil to test the drawdown and distribution capabilities of the Strategic Petroleum Reserve.

The Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509), enacted on October 18, 1986, amended the Energy Policy and Conservation Act to require that the Strategic Petroleum Reserve be filled at a minimum rate of 75,000 barrels a day until at least 750 million barrels are in storage.

Public Law 100-531, an act amending the Department of Energy Organization Act (Public Law 95-91), enacted on October 25, 1988, authorizes protective force personnel who guard the Strategic Petroleum Reserve's storage and related facilities to carry firearms while performing official duties and to make arrests without warrants. The legislation also establishes trespass on Strategic Petroleum Reserve property as a Federal offense.

Public Law 101-46, an Act to extend Title I of the Energy Policy and Conservation Act, enacted on June 30, 1989, extended the Strategic Petroleum Reserve authorities contained in the Energy Policy and Conservation Act until April 1, 1990. The bill also required the Secretary to submit a report to Congress by February 1, 1990, on alternative means of financing oil acquisition for the Strategic Petroleum Reserve.

Short-term extensions of the Strategic Petroleum Reserve authorities contained in the Energy Policy and Conservation Act were enacted on March 31, 1990 (Public Law 101-262) and August 10, 1990 (Public Law 101-360).

On September 15, 1990, the President signed Public Law 101-383, the Energy Policy and Conservation Act Amendments of 1990, extending the Strategic Petroleum Reserve authorities contained in the Energy Policy and Conservation Act until September 30, 1994. Public Law 101-383 also contained provisions to amend Strategic Petroleum Reserve drawdown authorities, require a Strategic Petroleum Reserve Plan Amendment for completion of storage capacity for one billion barrels, authorize drawdown and distribution tests, provide for a 3-year test program of storage of refined petroleum products within the Reserve, and provide authority to contract for petroleum and facilities not owned by the United States.

On October 24, 1992, the President signed Public Law 102-486, the Energy Policy Act of 1992. The bill includes provisions to (1) add new conditions for Strategic Petroleum Reserve drawdown in emergency situations involving a supply reduction of significant scope and duration coupled with severe price increase likely to cause a major adverse impact on the

national economy, (2) enlarge the Strategic Petroleum Reserve to one billion barrels, (3) permit the Secretary to make payment in advance for delivery of petroleum product not owned by the United States for storage in otherwise unused Strategic Petroleum Reserve facilities, or for crude oil either owned or not owned by the United States for storage in non-Strategic Petroleum Reserve facilities, (4) give the President discretionary authority to acquire domestic stripper well oil at competitive prices to fill the Strategic Petroleum Reserve, (5) amend the eligibility criteria for a Regional Petroleum Reserve, (6) require a study within 9 months of enactment of the implications of the unique vulnerabilities of insular areas to an oil supply disruption, and (7) require a study within 12 months on the use of futures and options to protect against unexpected surges in the cost of purchasing petroleum by government and private entities, including the Strategic Petroleum Reserve.

On October 5, 1992, the President signed into law the Department of the Interior and Related Agencies Appropriations Act, 1993 (Public Law 102-381) providing \$176.2 million for operations and management of the Reserve. The \$176.2 million for operations and management of the Reserve will be financed in part by the transfer from the SPR Petroleum Account of \$125.6 million, derived from funds deposited from the Desert Storm sale. The appropriations act also includes an outlay cap of \$137 million on funds in the SPR Petroleum Account. Total funds available for obligation in the SPR Petroleum Account in fiscal year 1993, after the transfer of \$125.6 million, are \$532.5 million.

The Department of Defense Appropriation Act, 1993 (Public Law 102-396) provides \$125.6 million for Department of

Energy to acquire crude oil for the Department of Defense. The Act also allows the Department of Energy to transfer up to \$700,000 to the Strategic Petroleum Reserve Account to pay for costs of operations and maintenance associated with the extra crude oil acquisition and storage. Taken together, the outlay limit in Public Law 102-381 and the resources provided by Public Law 102-396 will permit up to \$262.6 million to be expended for Strategic Petroleum Reserve oil in FY 1993.

STRATEGIC PETROLEUM RESERVE PLAN AND AMENDMENTS

Section 154 of the Energy Policy and Conservation Act required the preparation of a Strategic Petroleum Reserve Plan. The Plan, addressing the development and implementation of the Strategic Petroleum Reserve, was submitted to the Congress on February 16, 1977, and became effective on April 18, 1977.

Strategic Petroleum Reserve Plan Amendment No. 1 accelerated the planned schedule for filling the Reserve. This Amendment was submitted to the Congress on May 25, 1977, and became effective on June 20, 1977. The revised goal for 500 million barrels of crude oil in storage by December 22, 1980, advanced the original schedule by 2 years. Amendment No. 2 to the Strategic Petroleum Reserve Plan authorized an increase in the Strategic Petroleum Reserve size from 500 million barrels to one billion barrels. This amendment was transmitted to the Congress on May 18, 1978, and became effective on June 13, 1978. The Amendment described Department of Energy plans to store 750 million barrels of petroleum in underground storage facilities. Decisions were not made regarding the methods or timing for developing

the final 250 million barrels of storage capacity.

On October 31, 1979, the Department of Energy submitted Amendment No. 3, a Distribution Plan for the Strategic Petroleum Reserve, to the Congress. In accordance with the provisions of the Energy Policy and Conservation Act in existence at that time, this Plan became effective on November 15, 1979. The Distribution Plan described the methods for drawdown and distribution of petroleum from the five existing Strategic Petroleum Reserve storage sites.

On December 1, 1982, the President transmitted Amendment No. 4, a new Drawdown Plan, to the Congress for the use of the Strategic Petroleum Reserve. This Plan, required under the Energy Emergency Preparedness Act of 1982, went into effect immediately and provides procedures for the drawdown, sale, and distribution of petroleum from the Strategic Petroleum Reserve. The Drawdown Plan replaces the Distribution Plan established by Amendment No. 3.

The 1990 amendments to the Energy Policy and Conservation Act (Public Law 101-383) required the Department to amend the Strategic Petroleum Reserve Plan to prescribe plans for completion of one billion barrels of storage capacity.

PROGRAM/PROJECT MANAGEMENT

The Strategic Petroleum Reserve Office was created under the Energy Policy and Conservation Act for the establishment, management, and maintenance of the Strategic Petroleum Reserve. The Assistant Secretary for Fossil Energy has overall programmatic responsibility for achieving the goals and objectives of the

Strategic Petroleum Reserve Program. This responsibility has been delegated to the Deputy Assistant Secretary for Strategic Petroleum Reserve, Richard D. Furiga, and is exercised through offices located in Washington, D.C.

The Project Management Office, located in New Orleans, Louisiana, under the direction of the Project Manager, William C. Gibson, Jr., carries out day-to-day project activities including the management and operation of five oil storage sites and one marine terminal in Texas and Louisiana. On November 1, 1992, the previous Project Manager of the Strategic Petroleum Reserve, Robert L. Weller, died.

FIGURE 1
PROGRAM/PROJECT MANAGEMENT STRUCTURE

STORAGE FACILITY DEVELOPMENT PROGRAM

DEVELOPMENT OF THE 750-MILLION BARREL STORAGE PROGRAM

The Strategic Petroleum Reserve facilities development for the authorized 750-million barrel program was completed in 1991. Over the last 16 years, the Department has acquired and developed underground crude oil storage facilities in salt domes along the Gulf Coast in Texas and Louisiana, and a marine terminal on the Mississippi River at St. James, Louisiana. The five storage sites comprising the 750 million barrel program are Bayou Choctaw, Weeks Island, and West Hackberry in Louisiana, and Bryan Mound and Big Hill in Texas. These storage sites are organized into three distribution systems — the Seaway, Texoma, and Capline — and connected by Department of Energy pipelines to commercial crude oil pipeline networks and to commercial and U.S. Government-owned marine terminal distribution facilities. A sixth site, Sulphur Mines, will be sold in early 1993. Replacement capacity was developed by the enlargement of caverns at Big Hill and Bayou Choctaw. Except for a small amount of residual crude oil, the transfer of all Sulphur Mines oil to the Big Hill facility was completed during the first quarter of 1992.

The locations of the current Strategic Petroleum Reserve storage sites and their associated distribution pipelines and terminals are shown in Figure 2. The chronology of the Strategic Petroleum Reserve's development to 750 million barrels over the last 16 years is illustrated in Figure 3.

FACILITIES DEVELOPMENT STATUS

BRYAN MOUND

The Bryan Mound site is located in Brazoria County, Texas, approximately three miles southwest of Freeport. The Department acquired this storage site in 1977 and converted four existing brine caverns with a total capacity of 66 million barrels to oil storage. Subsequently, the Department expanded this site to a capacity of 226 million barrels through the solution mining of 16 additional 10 million-barrel caverns. The expansion was completed in 1986 and oil fill is near completion.

After being shut down for approximately a year to correct site maintenance deficiencies, the Bryan Mound site resumed normal operations in July 1992. The site's readiness and operability were successfully tested in September 1992.

Due to the extensive corrosion and erosion of the site's brine disposal pipeline from cavern development, the Department has experienced several pipeline leaks since 1989 in both the onshore and offshore sections of the pipeline which required emergency pipeline repair services. Again in November 1992, a new leak was detected approximately 1,000 feet from the site. The pipeline was repaired and returned to service in January 1993. The Department has initiated planning to replace the entire brine disposal pipeline and shorten the offshore section from 12.5 miles to 3.75 miles. An environmental assessment and engineering design effort are expected to be completed in February 1993. The Department plans to award a

FIGURE 2
STRATEGIC PETROLEUM RESERVE COMPLEXES AND ASSOCIATED PIPELINES AND TERMINALS

FIGURE 3
SPR DEVELOPMENT TO 750 MILLION BARRELS

contract for acquisition and construction of the new pipeline in June 1993; however, installation of the pipeline will not occur until September 1994, as a result of a construction restraint imposed by the U.S. Fisheries and Wildlife Service relating to the nesting periods of the Piping Plover, a threatened and endangered species. The condition of the brine disposal pipeline does not impact the site's ability to draw down; however, the pipeline is required for brine discharge associated with future oil fill and cavern pressure control.

WEST HACKBERRY

The West Hackberry site is located in Cameron Parish, Louisiana, approximately 22 miles southwest of Lake Charles. The Department acquired this storage site in 1977 and converted five existing brine caverns with a capacity of 49 million barrels to oil storage. Subsequently, the Department expanded this storage site through solution mining of 17 additional 10 million-barrel storage caverns. Development of this site to the planned level of 219 million barrels was completed in September 1988.

The West Hackberry brine disposal pipeline was taken out of service due to deterioration in 1991 and its ultimate disposition is being studied. In the interim, brine disposal is being accomplished using existing brine disposal wells. The initial brine disposal capability through these wells was approximately 30,000 barrels per day. In an effort to increase this capability, the Department has recompleted an existing brine disposal well in a new disposal zone. In late September, the Strategic Petroleum Reserve initiated brine disposal testing of the well and achieved initial brine flow rates of over 60,000 barrels per day. Additional testing and brine well recompletions are planned for fiscal year 1993. The state of the brine disposal

pipeline does not impact West Hackberry's oil drawdown or distribution capability.

SULPHUR MINES

The Sulphur Mines site is located in Calcasieu Parish, Louisiana, approximately 12 miles west of Lake Charles. The Department acquired this storage site in 1979 and converted three existing brine caverns with a capacity of 26 million barrels to crude oil storage. Development and fill of this site were completed in 1983. Due to its operational costs and limited distribution capabilities, the Department initiated a plan in 1986 to transfer the Sulphur Mines inventory to other existing sites and to decommission and sell the Sulphur Mines Facility. During 1992 the Department completed decommissioning of the Sulphur Mines oil storage facility with the removal of virtually all residual oil in the caverns, and by reducing site activities to a caretaker status. The facility was sold to Pittsburgh Plate Glass in January 1993.

BIG HILL

The Big Hill storage site is located in Jefferson County, Texas, 20 miles southwest of Beaumont. The Department acquired this undeveloped site in 1982 and completed development of the storage facility in 1991. The facility has a capacity of 160 million barrels and a draw-down capability of 930,000 barrels per day.

In July 1992, the Strategic Petroleum Reserve conducted a post-development system test exercise which demonstrated the site's capability to draw down oil at a rate of 400,000 barrels per day. This rate is less than the site's design drawdown rate of 930,000 barrels per day due to the limited site inventory available.

The site's year-end inventory was 26.9 million barrels of which approximately 24

million was crude oil transferred from the Sulphur Mines. In January 1993, the oil transferred from Sulphur Mines was sampled and found to contain trapped gas, primarily methane. This condition has received intensive technical review, and a remedial plan is being implemented starting in fiscal year 1993. In the interim, until this issue is resolved, the oil stored at Big Hill will not be identified as available for drawdown.

BAYOU CHOCTAW

The Bayou Choctaw site is located in Iberville Parish, Louisiana, approximately 12 miles southwest of Baton Rouge. The Department acquired this storage site in 1977 and converted four existing brine caverns with a capacity of 46 million barrels to oil storage. Subsequently, in 1985, the Department acquired a fifth existing cavern with a capacity of 10 million barrels, through an exchange agreement with Union Texas Petroleum, and, in 1987, initiated a site expansion program to create one new cavern of 10 million barrels and enlarge one existing cavern by 6 million barrels. Development of this site to its planned storage capacity of 72 million barrels was completed in September 1991, and the site has achieved full operational readiness status for fill or drawdown operations.

WEEKS ISLAND

The Weeks Island site is located in Iberia Parish, Louisiana, approximately 95 miles southwest of New Orleans. The Department acquired this storage site in 1977 and converted an existing conventional salt mine with a capacity of 73 million barrels to oil storage. Development and fill of this site were completed in 1982. The site is currently in an operational readiness mode.

In 1987, the Department initiated a mine integrity assurance program to

enhance the mine's safety and security against any surface water intrusion. This program consists of: a) installation of an air dryer system to reduce water vapor condensation in the shafts and manways of the mine above the oil chamber and to provide for early detection of water leaks; b) isolation of Morton International Inc.'s Markel Mine from the Strategic Petroleum Reserve's operations area by constructing new bulkheads; c) installation of a backup or alternate drawdown capability to the existing 11-pump system, located at the base of the service shaft; and d) upgrading of existing bulkheads as required to meet potential hydrostatic pressures.

The installation of the air-dryer system was completed and became operational in December 1990. During 1992 the Department completed the construction of the two new isolation bulkheads and the installation of the backup drawdown system. The in-mine bulkheads provide increased mine integrity by isolating Morton's Markel Mine, a temporary mining area developed during conversion of the main mine to oil storage. The backup drawdown system was completed and tested in September 1992 and is available to provide emergency capability. The backup system includes submersible pumps that can be inserted into the oil-fill holes in the event of temporary or permanent failure of the existing 11-submersible pump system or the service shaft in which the pumps are housed; and connecting electrical power and piping. The remaining construction on upgrading of the service shaft bulkhead and two raisebore bulkheads will be accomplished in 1993.

On August 25, 1992, Hurricane Andrew struck the Louisiana coast directly in the vicinity of the Weeks Island storage facility. Under emergency procedures the Department evacuated all personnel from

the site and reactivated the site once the eye of the hurricane passed. The site sustained some minimal damage to its buildings, fencing and access roads. The total damage was estimated at \$41,600.

RECOVERY PROGRAM

The Strategic Petroleum Reserve initiated a Recovery Program during 1988 to provide a reasonable level of assurance that the Strategic Petroleum Reserve could recover from a range of deliberate acts and natural events and meet designated draw-down rates within a specified period of time. Generally, the Recovery Program requires restoration of not less than 90 percent of the Reserve's full drawdown capability within 30 days of a disabling event.

Procurement and installation of all systems and equipment necessary for the Recovery Program have been completed. Full implementation was achieved in August 1992 and drawdown tests using the Recovery systems were performed at Weeks Island in September 1992 and Bayou Choctaw in December 1992 to demonstrate emergency capabilities.

PLANNING FOR 250-MILLION BARREL EXPANSION

STRATEGIC PETROLEUM RESERVE EXPANSION PLANNING

The Energy Policy and Conservation Act Amendments of 1990 (Public Law 101-383) directed the Department of Energy to submit an Strategic Petroleum Reserve Plan Amendment to Congress by September 15, 1992, providing detailed plans for the expansion of the storage facilities of the Reserve to one billion barrels. The Strategic Petroleum Reserve Plan

Amendment requires a comprehensive environmental assessment, conceptual engineering designs, and geotechnical studies in order to arrive at a site selection decision.

During 1991 the Department submitted a Report to Congress which identified eight candidate sites to be considered for the expansion of the Reserve. This list of candidate sites was subsequently narrowed to two Texas sites and two Louisiana sites during the scoping process; one new candidate in Mississippi was subsequently added. It is anticipated that only two of these sites will be selected for development.

During 1992 the Department prepared a Draft Environmental Impact Statement (EIS) addressing the five candidate sites: Big Hill and Stratton Ridge in Texas, Weeks Island and Cote Blanche in Louisiana, and Richton in Mississippi. The Draft EIS assessed all five candidate sites equally without stating a preferred alternative. The Department issued its Draft EIS in October 1992 and held a series of five public hearings during December 1992.

The public hearings, which were held in Hattiesburg and Pascagoula, Mississippi, Lake Jackson and Beaumont, Texas, and New Iberia, Louisiana, were announced November 17, 1992, in the *Federal Register* (57 FR 54227) and advertised in numerous local and regional newspapers and electronic media. In response to a request from the Environmental Protection Agency (EPA), the Department extended the public comment period by 15 days to January 13, 1993. Subsequently, the Department issued a notice on February 3, 1993 (58 FR 6953) reopening the comment period for an additional 30 days.

During 1992 the Department also prepared conceptual designs and cost estimates on all five candidate sites and associated distribution configurations being considered. The conceptual designs included optimal site locations and cavern layouts from geotechnical studies and analyses, real estate requirements, site process and mechanical/electrical system designs, off-site pipeline designs and commercial terminal and pipeline distribution requirements. The conceptual designs incorporated lessons learned from the 750 million barrel development program as well as some unique design features to minimize cost regarding brine filtration and pipeline intermediate pumping stations. The Department has also developed a life cycle cost model with which to compare the total cost of investment and ownership of the five sites and distribution configurations.

OIL ACQUISITION AND FILL STATISTICS FOR THE FOURTH QUARTER 1992

The Strategic Petroleum Reserve was filled at an average rate of 35,747 barrels per day during the calendar quarter ending December 31, 1992, and the crude oil inventory was 574,724,042 barrels. Table 1 summarizes the Reserve's crude oil inventory and delivery statistics as of December 31, 1992, and includes projections for calendar year 1993.

The weighted average price per barrel of the crude oil delivered to the Reserve during the fourth quarter was \$21.86, including costs for transportation, but excluding costs for customs duties, superfund taxes, terminal services and administration.

OIL FILL, CALENDAR YEAR 1992

During 1992 the Strategic Petroleum Reserve crude oil inventory was increased by 6.2 million barrels, representing an average annual fill rate of approximately 17,000 barrels per day. In addition to the 6.2 million barrels already delivered as of December 31, 1992, approximately 1.7 million barrels were in the domestic commercial pipeline system en route from the Naval Petroleum Reserves in California to the Reserve. Fiscal and calendar year-end inventories and average daily fill rates since 1977 are presented in Table 2. Strategic Petroleum Reserve crude oil fill is illustrated on both an annual and cumulative basis in Figures 4 and 5, respectively.

OIL ACQUISITION, CALENDAR YEAR 1992

During 1992 approximately 6.2 million barrels of crude oil were acquired and delivered to the Strategic Petroleum Reserve. These acquisitions followed a suspension of Reserve fill activities beginning on August 2, 1990, when Iraq invaded Kuwait. Of the quantity delivered to the Strategic Petroleum Reserve during 1992, 3.6 million barrels were acquired by the Department of Defense's Defense Fuel Supply Center, the Department of Energy's purchasing agent under an interagency agreement. The oil was purchased under an open continuous solicitation for competitive offers which were received and evaluated on a periodic basis. Additional crude oil for the Reserve will be purchased by this method during 1993.

The balance of crude oil delivered to the Strategic Petroleum Reserve, 2.6 million barrels, was received from the Naval Petroleum Reserve No. 1 (NPR-1) in California. Pursuant to the Naval Petroleum Reserve Production Act of 1976 (10 U.S.C. 7430(b)(2)), the Secretary may not sell NPR crude oil at a price less than the higher of 90 percent of the current sales price of comparable petroleum in the same area or the price of oil being purchased for the Strategic Petroleum Reserve minus the cost of transporting oil from the NPR to the Strategic Petroleum Reserve. In May 1992, the Department determined that some of the bid prices for

NPR oil did not meet the test, and transfer of NPR crude oil to the Strategic Petroleum Reserve was initiated. These deliveries commenced on June 1, 1992, and are shipped from California through a network of six commercial pipeline systems to the Sun Terminal in Nederland, Texas, for storage at Big Hill and West Hackberry at a rate of approximately 20,000 barrels per day. The current phase of shipments will continue through March 31, 1993. Decisions as to further deliveries beyond that date depend upon the bid prices of NPR-1 oil and the cost of transferring it to the Strategic Petroleum Reserve. During 1992 it is estimated that the Department achieved net savings of \$1.7 million over the expected cost of buying crude oil meeting Strategic Petroleum Reserve specifications on the open market.

Table 3 shows the crude oil quantities received since the inception of the Strategic Petroleum Reserve program through 1992 by country of origin. Of the total oil in storage, 67.7 percent is high sulfur (sour) and 32.3 percent is low sulfur (sweet). Table 4 provides information on the location of this inventory by storage site. The quality specifications used when

acquiring Strategic Petroleum Reserve crude oil can be found in Appendix B of this report.

CARGO PREFERENCE COMPLIANCE

The Cargo Preference Act of 1954 (Public Law 83-664) requires Federal agencies to take such steps as may be necessary and practicable to assure that at least 50 percent of their cargo transported on ocean vessels in a calendar year is transported by privately-owned U.S.-flag vessels, to the extent they are available at fair and reasonable rates. By agreement between the Department of Energy and the Department of Transportation, the Strategic Petroleum Reserve's Cargo Preference Act compliance is measured in long-ton miles; i.e., cargo tons multiplied by the distances transported.

During 1992 three U.S.-flag vessels, transporting a total of 2.6 million barrels, were involved in delivering crude oil to the Strategic Petroleum Reserve. These deliveries equaled 1.36 billion long-ton miles or 55.3 percent of the total long-ton miles.

TABLE 1
STRATEGIC PETROLEUM RESERVE OIL INVENTORY
AND DELIVERY STATISTICS
1992 INVENTORY AND DELIVERY SUMMARY
(BARRELS)

Calendar Year 1992	Average Daily Fill Rate	Quarter Oil Receipts	Ending Oil Inventory
1st Quarter	0	0	568,510,754
2nd Quarter	11,094	1,009,530	569,520,284
3rd Quarter	20,850	1,918,211	571,438,495
4th Quarter	35,712	3,285,547	574,724,042
TOTAL	16,976	6,213,288	574,724,042
Amount of Oil in Transit (December 31, 1992)*			1,683,395
Contracted Quantity Available for Delivery during 1993**			1,800,000

* NPR-1 oil en route via pipeline.

** Additional NPR-1 oil shipments through March 31, 1993.

1993 INVENTORY AND DELIVERY PROJECTIONS*

Calendar Year 1993	Average Daily Fill Rate	Quarter Oil Receipts
1st Quarter	36,700	3,300,000
2nd Quarter	46,200	4,200,000
3rd Quarter	47,200	4,340,000
4th Quarter	13,300	1,223,600
TOTAL	35,790	13,063,600

* Based on anticipated NPR-1 oil shipments, contract awards, crude oil prices and FY 1994 budget assumptions; includes crude oil acquired under the Department of Defense Appropriations Act, 1993.

TABLE 2
STRATEGIC PETROLEUM RESERVE OIL FILL HISTORY

	Fiscal Year		Calendar Year	
	Year-End Inventory (million bbls)	Average Daily Fill Rate (thousand bbls/d)	Year-End Inventory (million bbls)	Average Daily Fill Rate (thousand bbls/d)
1977	1.1	3	7.2	20
1978	49.1	131	68.5	168
1979	91.2	115	91.7	64
1980	92.8	4	107.8	44
1981	199.2	292	230.3	336
1982	277.9	215	293.8	174
1983	361.0	228	379.1	234
1984	431.1	191	450.5	195
1985	489.3	159	493.3	119*
1986	506.4	47*	511.6	51*
1987	533.9	75	540.6	80
1988	554.7	57	559.5	52
1989	577.1	62	579.9	56
1990	589.6	4	585.7	27*
1991	568.5	**	568.5	**
1992	571.4	8	574.7	17
* Fill rates unadjusted for oil deliveries under the 1985/86 and 1990 test sales.				
** Fill was suspended during both fiscal and calendar year 1991; a decrease in inventory resulted from drawdown in early calendar year 1991.				

FIGURE 4
ANNUAL STRATEGIC PETROLEUM RESERVE OIL FILL

FIGURE 5
CUMULATIVE STRATEGIC PETROLEUM RESERVE OIL FILL

TABLE 3
CRUDE OIL RECEIVED THROUGH 1992
(MILLION BARRELS)

Source Country	1992	Cumulative	Percent of Total
Mexico		256.7	43.0
United Kingdom	1.6	140.8	23.6
United States:		41.0	6.9
Alaska		31.4	5.3
Other*	2.6	9.6	1.6
Saudi Arabia		27.1	4.5
Libya		23.7	4.0
Iran		20.0	3.4
United Arab Emirates		18.4	3.1
Nigeria		15.1	2.5
Norway	2.0	10.9	1.8
Oman		9.0	1.5
Egypt		8.9	1.5
Ecuador		6.2	1.0
Algeria		6.2	1.0
Cameroon		3.4	0.6
Iraq		3.4	0.6
Gabon		2.4	0.4
Qatar		2.3	0.4
Venezuela		0.9	0.2
Peru		0.4	0.1
TOTAL RECEIPTS**	6.2	596.8	100.0
* Includes shipments from Naval Petroleum Reserves			
** Unadjusted for deliveries during 1985/1986 and 1990 test sales and 1991 drawdown and for operational gains and losses.			

TABLE 4
STRATEGIC PETROLEUM RESERVE CRUDE OIL INVENTORY
AS OF DECEMBER 31, 1992
(MILLION BARRELS)

Storage Site	Location	1992 Cumulative Total			Total End of Year 1991
		Sour*	Sweet**	Total	
Bryan Mound	Brazoria County, TX	155.3	61.5	216.8	217.0
Big Hill	Jefferson County, TX	24.9	2.0	26.9	25.6
West Hackberry	Cameron Parish, LA	99.9	104.5	204.4	203.1
Bayou Choctaw	Iberville Parish, LA	35.6	15.2	50.8	47.2
Weeks Island	Iberia Parish, LA	71.9	0.0	71.9	71.9
Sulphur Mines	Calcasieu Parish, LA	0.1	0.0	0.1	.02
SUBTOTAL		387.7	183.3	571.0	565.0
Tanks and Pipelines		1.2	2.5	3.7	3.5
TOTAL		388.9	185.8	574.7	568.5
* Sulphur content greater than 0.5 percent.					
** Sulphur content not exceeding 0.5 percent.					

OTHER PROJECT ACTIVITIES

STRATEGIC PETROLEUM RESERVE MANAGEMENT AND OPERATING CONTRACTOR

On November 18, 1992, following a 5-month evaluation of competitive proposals, the Department's Assistant Secretary for Fossil Energy selected DynMcDermott Petroleum Operations Company for a cost-plus award fee contract to provide management and operating services to the Strategic Petroleum Reserve for a period of 5 years commencing April 1, 1993. DynMcDermott will succeed Boeing Petroleum Services, Inc., the Reserve's current management and operating contractor, whose contract expires March 31, 1993. The Department will conduct final negotiations with DynMcDermott during early 1993 and a 2-month transition period will occur during February and March 1993.

PROCUREMENT AND CONTRACTOR SUPPORT

Obligations in fiscal year 1992 for Strategic Petroleum Reserve procurements totaled approximately \$290.4 million. Obligations for ongoing Strategic Petroleum Reserve operations, maintenance, and management totaled \$200.5 million, and a further \$89.9 was obligated for the acquisition of crude oil during fiscal year 1992.

Boeing Petroleum Services, Inc., provided management and operating services and Tucker and Associates, Inc., provided technical management and support services.

Other prime contractors who provided services to the Strategic Petroleum Reserve program during fiscal year 1992 included: Tucker; Fluor Daniels, Inc., and Jacobs Engineering Group for architect engineering services; Mitre for Engineering Support Services; ARCO Pipe Line Company, Phillips 66 Company, Sun Pipe Line Company, and Sun Marine Terminals for transportation and terminalling services; Kaough & Jones Electric Company, Miners, Inc., Foley Company, Surface Prep & Coating Enterprises, Plaquemine Contracting Company, and Atlantic Electric Service Construction, Inc. for construction; and Timco Electric, Vindicator Corporation, and MJS Inc. for hardware.

SECURITY

Boeing Petroleum Services, Inc., under its management and operating contract, has been assigned responsibility to implement the Department of Energy's Strategic Petroleum Reserve Security Program. Boeing administers the protection services program through a subcontract with Wackenhut Services, International. The Strategic Petroleum Reserve currently has a protection force of 249 armed officers.

A Master Security Agreement (MSA), prepared by Boeing and approved by the Department of Energy in 1990, defines the appropriate level of security necessary to provide reasonable assurance for protection of the Strategic Petroleum Reserve's facilities and personnel against hostile acts.

Due to recent changes in the world political climate, the Strategic Petroleum

Reserve conducted a Vulnerability Assessment of its facilities in 1992 with the assistance of the Department's Office of Safeguards and Security and Pacific Northwest Laboratory. The assessment was completed in October 1992 and recommended several cost-effective modifications to the Strategic Petroleum Reserve's security program. The recommendations are being evaluated and changes to the security program will be reflected in a revised Strategic Petroleum Reserve Security Plan that will be completed in 1993.

REAL ESTATE

Subsequent to a 1991 announcement in the *Commerce Business Daily* of the Department's intent to conduct competitive negotiations for the sale of the Sulphur

Mines facility, the Department concluded a negotiated sale with Pittsburgh Plate Glass. At the request of the Department, the General Services Administration (GSA), using a contractor to the U.S. Army Corps of Engineers, evaluated Strategic Petroleum Reserve's official appraisal of the facility. GSA concluded that the appraisal value of the site was consistent with the offer and was acceptable. A contract to sell the facility to Pittsburgh Plate Glass was accepted by DOE in January 1993. The Department anticipates that Pittsburgh Plate Glass will take possession of the site in early 1993.

In December 1992 Strategic Petroleum Reserve exercised its first 5-year renewal option with Elmwood Office Park for 102,822 square feet of office space in New Orleans, Louisiana, for the Strategic Petroleum Reserve Project Management Office.

ENVIRONMENT, SAFETY AND HEALTH

ENVIRONMENTAL COMPLIANCE

A contract to gather baseline ground water data at all Strategic Petroleum Reserve sites began in November 1992. This will be the basis for prioritizing future corrective action plans, as necessary, for brine pond systems at all Strategic Petroleum Reserve sites. Corrective actions have been initiated at the West Hackberry site based on brine contamination monitoring studies conducted in 1990 and 1991; these actions will continue for several years and quarterly progress reports will be submitted to the Louisiana Department of Environmental Quality (LDEQ).

The Department has developed a plan for total replacement of the Bryan Mound brine disposal pipeline and relocating the diffuser closer to shore. The Department has submitted applications to the cognizant state agencies and the Environmental Protection Agency (EPA) Region VI to move the brine diffuser from approximately 12.5 miles (70 foot water depth) to approximately 3.5 miles (38 foot water depth) offshore in the Gulf of Mexico. An environmental assessment has been prepared and is pending final review in early 1993.

Renewal of all current National Pollutant Discharge Elimination System (NPDES) permits has been delayed pending the transition phase from the current Management and Operating (M&O) contractor to a new M&O contractor to be completed in April 1993 in accordance

with an agreement with the Environmental Protection Agency (EPA). EPA had established a new policy requiring operating contractors of Governmental facilities to co-sign NPDES permits with the Government, thereby accepting shared responsibility for compliance with permit conditions. However, the Department was unsuccessful in achieving a modification to the current M&O contract to include the contractor as co-operator on NPDES permits. Subsequently, the Strategic Petroleum Reserve Project Management Office negotiated an agreement with EPA Region VI to extend all current NPDES permits through the performance period of the current M&O contract in return for a promise to include a requirement in future contracts that the M&O contractor jointly sign permits as co-operator. This agreement is consistent with Departmental policy promulgated by SEN-22-90, "DOE Policy on Signatures of RCRA Permit Applications."

In September 1990 the Louisiana Department of Environmental Quality issued an order for the installation of Maximum Achievable Control Technology (MACT) at all permitted facilities in the Baton Rouge non-attainment area which are major emitters (more than 100 tons per year) of volatile organic compounds. The applicability of this order to St. James was at issue because the terminal would exceed the threshold annualized rate of 100 tons per year only during a complete drawdown at the design rate. The Department requested a hearing with LDEQ regarding implementation of this order. Subsequently, however, in a related action,

the Department applied to LDEQ for an amendment to its existing permit to reflect actual experience which shows that St. James emissions have averaged only 21 tons per year over the past 8 years. This application was considered and approved by LDEQ. The new permit exempts the Strategic Petroleum Reserve from having to meet the same regulatory requirements as a major polluter and resolves the issue concerning MACT.

OTHER ENVIRONMENTAL, SAFETY AND HEALTH ACTIONS

TIGER TEAM ES&H ASSESSMENT

A Department of Energy Tiger Team Environment, Safety and Health (ES&H) Assessment was conducted at the Strategic Petroleum Reserve from March 9 through April 10, 1992. The scope of the assessment included the six operational sites used for crude oil storage and handling, the Project Management Office, the decommissioned crude oil storage site at Sulphur Mines and the Strategic Petroleum Reserve Program Office in Washington, D.C.

The Strategic Petroleum Reserve's Final Corrective Action Plan, prepared in response to the Tiger Team assessment, was submitted for Departmental approval in December 1992. Strategic Petroleum Reserve personnel have made substantial progress in implementing both the Tiger Team corrective actions and correction of deficiencies identified through a formal self-evaluation conducted in 1991.

Approximately 90 percent (194) of the 218 Occupational Safety and Health Administration (OSHA) non-compliances identified by the Tiger Team have been

corrected. The remaining non-compliances will be resolved in the near future. Corrective action plans have been prepared for an additional 250 non-OSHA-related findings involving regulatory non-compliance, programmatic and procedural deficiencies in the project implementation of environmental, safety and health activities. Approximately 10 percent of these findings have been corrected.

The Tiger Team found that Strategic Petroleum Reserve activities do not pose an undue environmental, safety and health risk; that employees are motivated to work safely and perform their jobs correctly; and that an environmental, safety and health awareness has taken hold.

ENVIRONMENT, SAFETY AND HEALTH MANUAL

The Strategic Petroleum Reserve Project Management Office Environmental, Safety and Health Manual, an operating requirements document, was revised and expanded in 1992 to incorporate changes in DOE and Federal Environment, Safety and Health standards, and to incorporate lessons learned from past operations and experiences. The Manual also sets forth Environment, Safety and Health criteria for the Strategic Petroleum Reserve in areas not covered by the Department or other Federal regulatory programs. Organizational responsibilities have been defined to provide guidance for establishing procedures to protect Strategic Petroleum Reserve Federal employees, contractor employees, and the general public from potential ES&H hazards.

During 1992 there were no accidents that involved the convening of a Class A or B Accident Investigation Board at the Strategic Petroleum Reserve.

BUDGET AND FINANCE

APPROPRIATIONS

A total of \$20.7 billion has been appropriated for the Strategic Petroleum Reserve through FY 1993. Included in this total are the distribution of annual and total appropriations as shown in Table 6. Figures 6 and 7 illustrate annual and cumulative appropriations for storage facilities operations and management and petroleum acquisition and transportation.

MAJOR BUDGET AND FINANCING ACTIONS DURING 1992

The previous Administration's fiscal year 1993 budget for the Strategic Petroleum Reserve requested appropriations of \$176.6 million for continued operation and management of the Reserve, which includes \$1.0 million to continue planning activities for the development of storage for a one billion barrel Reserve. The budget also proposed to transfer \$125.6 million from the SPR Petroleum Account to finance part of the Strategic Petroleum Reserve facilities appropriation request. This transfer was proposed from the proceeds of oil sales in support of Operation Desert Storm in January 1991. The previous Administration's fiscal year 1993 budget also proposed to acquire crude oil, using prior year balances, at a rate of 25,000 barrels per day.

On October 5, 1992, the President signed into law the Department of Interior and Related Agencies Appropriations Act, 1993 (Public Law 102-381) providing \$176.2 million for operations and manage-

ment of the Reserve. The \$176.2 million for operations and management was financed in part by the requested transfer from the SPR Petroleum Account of \$125.6 million derived from funds deposited from the Desert Storm sale. The appropriations act also included an outlay cap of \$137 million on funds in the SPR Petroleum Account. Total funds available for obligation in the SPR Petroleum Account in fiscal year 1993 after the transfer of \$125.6 million are \$532.5 million.

Also for fiscal year 1993, the Congress provided \$125.6 million through the Department of Defense Appropriations Act, 1993 (Public Law 102-396) for the Department of Energy to acquire crude oil for the Department of Defense for storage in the Strategic Petroleum Reserve. The appropriation act also allows the Department of Energy to transfer up to \$700,000 to the Strategic Petroleum Reserve Account to pay for costs of operations and maintenance associated with the extra oil acquisition and storage.

STRATEGIC PETROLEUM RESERVE ACCOUNT TRANSACTIONS, LAST QUARTER OF 1992 (FIRST QUARTER OF FISCAL YEAR 1993)

The Strategic Petroleum Reserve Account funds the development, operation, and maintenance of Reserve facilities; the salaries and expenses necessary to plan and manage the program, including the operation of the Project Management Office in New Orleans, Louisiana; and the activities pertinent to major issues concerning the development and use of the Strategic Petroleum Reserve.

FIGURE 6
STRATEGIC PETROLEUM RESERVE ANNUAL FUNDING

FIGURE 7
STRATEGIC PETROLEUM RESERVE CUMULATIVE FUNDING

TABLE 5
Strategic Petroleum Reserve Appropriations
(thousands of dollars)

Fiscal Year	Petroleum Acquisition and Transportation	Storage Facilities Development and Operations	Management ¹	Total
1976	\$ 0	\$ 300,000	\$ 13,975	\$ 313,975
1977	440,000	0	7,824	447,824
1978	2,703,469	463,933	14,704	3,182,106
1979	2,885,670	103,290	18,111	3,007,071
Reprogramming	<u>-529,214</u>	<u>529,214</u>	<u>0</u>	<u>0</u>
	2,356,456	632,504	18,111	3,007,071
1980	-2,000,000 ²	0	0	-2,000,000
Reprogrammings:				
Number 1	-20,391	0	20,391	0
Number 2	<u>-1,881</u>	<u>0</u>	<u>1,881</u>	<u>0</u>
	-2,022,272	0	22,272	-2,000,000
1981	2,688,282 ³	82,834	19,391	2,790,507
Entitlements	542,146	0	0	542,146
Reprogrammings:				
Number 1	-18,000	18,000	0	0
Number 2	<u>-7,334</u>	<u>7,334</u>	<u>0</u>	<u>0</u>
	3,205,094	108,168	19,391	3,332,653
1982	3,684,000	171,356	20,076	3,875,432
Reprogramming	<u>-4,300</u>	<u>4,300</u>	<u>0</u>	<u>0</u>
	3,679,700	175,656	20,076	3,875,432
1983	2,074,060	222,528	19,590	2,316,178
1984	650,000	142,357	16,413	808,770
1985	2,049,550	441,300 ⁴	17,890 ⁴	2,508,740
1986	0	94,015	13,518	107,533
Reprogramming	<u>-12,964</u>	<u>12,964</u>	<u>0</u>	<u>0</u>
	-12,964	106,979	13,518	107,533
1987	0	134,021	13,412	147,433
1988	438,744	151,886	12,276	602,906
1989	242,000	160,021	13,400	415,421
1990	371,916 ⁵	179,530	12,953	564,399
1991	566,318 ⁶	187,728	12,846	766,892
1992	88,413 ⁷	171,678	13,384	273,475
1993	-125,625 ⁸	161,542 ⁸	14,192	50,109
DOD Transfer	<u>124,925⁹</u>	<u>700⁹</u>	<u>0</u>	<u>125,625⁹</u>
TOTAL	\$16,704,859 ⁹	3,739,831 ⁹	276,227	20,720,917 ⁹

¹ Excludes funds appropriated to other DOE accounts but used to finance aspects of Strategic Petroleum Reserve program management.

² Rescission.

³ Included supplemental appropriations of \$1,305,000,000.

⁴ Included in FY 1984 second supplemental appropriations.

⁵ Includes indefinite appropriation for excess NPR receipts of \$56,050,529.

⁶ Includes \$122,680,683 proceeds from the Test Sale carried out in the Fall of 1990, proceeds from the Desert Storm drawdown of \$315,424,985 and \$19,755,064 in FY 1991 excess NPR receipts plus the FY 1991 advance appropriation of \$108,457,000.

⁷ Net of an FY 1992 advance appropriation of \$196,188,000 and the FY 1992 appropriation of \$14,910,000 less the \$122,685,000 transferred to the Strategic Petroleum Reserve appropriation (89X0218.91).

⁸ Transferred \$125,625 from the SPR Petroleum Account to the Strategic Petroleum Reserve Account.

⁹ DOD transferred a total of \$125,625,000 to DOE for oil acquisition and storage costs for the DOD-Strategic Petroleum Reserve. Neither the oil acquired nor the cost of acquisition or storage is counted in the total of Strategic Petroleum Reserve inventory or appropriations.

A total of \$53.3 million of the Strategic Petroleum Reserve Account funds remained available for obligation at the end of fiscal year 1992.

The appropriation for fiscal year 1993, which included the transfer of \$125.6 million from the SPR Petroleum Account, increased available funds by \$176.2 million to a total of approximately \$229.4 million. Additionally, from a Department of Defense appropriation (which was transferred to the Strategic Petroleum Reserve Account during the first quarter of fiscal year 1993), \$0.7 million was added to the Strategic Petroleum Reserve Account for operational activities in support of the Defense Strategic Petroleum Reserve oil acquisition program, for a total of \$230.1 million. Of this total, \$42.1 million were obligated in the quarter ended December 31, 1992 (first quarter of fiscal year 1993), leaving a balance of \$188 million available for future obligation.

SPR PETROLEUM ACCOUNT TRANSACTIONS, LAST QUARTER OF 1992 (FIRST QUARTER OF FISCAL YEAR 1993)

The SPR Petroleum Account funds the acquisition of oil for the Strategic Petroleum Reserve; the associated costs for transportation and terminalling; U.S. customs duties and Superfund and Oil Spill Liability Trust Fund taxes; and other miscellaneous costs, such as Defense Fuel Supply Center administration costs, associated with acquiring and transporting oil. In the event of a drawdown and sale of Strategic Petroleum Reserve oil, the SPR Petroleum Account also funds the costs of withdrawing oil from the storage caverns and transporting it to the point where the purchasers take title. An amount equal to Federal receipts from a drawdown and sale is deposited in the SPR Petroleum Account and creates additional budget authority for refilling the Reserve.

At the end of fiscal year 1992, \$658.1 million remained available for obligation in the SPR Petroleum Account. Outlays (payments) from the account during the fiscal year were \$131.7 million.

During the quarter ending December 31, 1992 (first quarter of fiscal year 1993), the funds available in the SPR Petroleum Account were increased by the appropriation of \$125.6 million from the Department of Defense and decreased by the transfer of \$0.7 million from the Defense funds to the Strategic Petroleum Reserve Account. The SPR Petroleum Account funds were further decreased by a transfer of \$125.6 million from ending fiscal year 1992 balances to the Strategic Petroleum Account, leaving a balance of \$657.4 million for future obligation.

In addition to the appropriations for fiscal year 1993, an outlay ceiling of \$137 million was enacted limiting the use of funds carried over from fiscal year 1992.

During the first quarter of fiscal year 1993, \$109.6 million was obligated and outlays (payments) from the account during the quarter were \$36.1 million.

OIL COSTS THROUGH FISCAL YEAR 1992

During fiscal year 1992, 2.9 million barrels were delivered to the Strategic Petroleum Reserve. Cumulative cost for the oil in the Strategic Petroleum Reserve at the end of fiscal year 1992 was \$15.7 billion for an average cost of approximately \$27.39. An additional 3.3 million barrels of oil acquired during fiscal year 1992 were in transit and scheduled for delivery during the first quarter of fiscal year 1993.

ESTIMATED COST TO COMPLETE THE STRATEGIC PETROLEUM RESERVE

The cost to complete fill from the present inventory level of 574.7 million barrels (MMB) to the storage capacity of 750 MMB will depend on acquisition approach, price, and timing. At \$20 per barrel, acquisition of 175.3 MMB could cost \$3.5 billion. At 25,000 barrels per day, fill would be completed by the year 2012; at 50,000 barrels per day, fill would be completed by the year 2002; at 100,000 barrels per day, fill would be completed by 1997.

DRAWDOWN AND DISTRIBUTION

DISTRIBUTION PLAN

The current plan for distributing Strategic Petroleum Reserve petroleum, in the event that the Reserve is drawn down to respond to a severe energy supply interruption or to meet obligations of the United States under the Agreement on an International Energy Program, is provided in the "Strategic Petroleum Reserve Drawdown (Distribution) Plan," Amendment Number 4 to the Strategic Petroleum Reserve Plan submitted on December 1, 1982. The Strategic Petroleum Reserve Distribution Plan provides that, pursuant to the President's decision to use the Strategic Petroleum Reserve, the principal method of distributing Strategic Petroleum Reserve oil will be by price competitive sale with the oil being sold and delivered to those offering the highest prices. The sale will be open to the largest possible universe of eligible buyers to ensure efficient distribution of Strategic Petroleum Reserve oil. The plan also provides that in any calendar month, the Secretary of Energy may direct the distribution of up to 10 percent of the volume of oil sold in that calendar month. The price for such oil will be the average price of Strategic Petroleum Reserve oil sold at the contemporaneous competitive sale or at the most recent competitive sale if no contemporaneous competitive sale is held.

COMPETITIVE SALES PROCEDURES

Appendix A to the Department of Energy's final rule (10 CFR Part 625) governing price competitive sales of

petroleum from the Strategic Petroleum Reserve provides for Standard Sales Provisions containing or describing contract clauses, terms and conditions of sale, and performance and financial responsibility measures, which may be applicable to a particular sale of Strategic Petroleum Reserve oil. The most recent edition of the Standard Sales Provisions was published in the *Federal Register* on December 11, 1992. This version revised the previous edition of the Standard Sales Provisions, published in June 1988, to reflect improvements identified during the Reserve's 1990 test sale and 1991 drawdown.

Under the Standard Sales Provisions, the Strategic Petroleum Reserve sales process starts with the issuance of a Notice of Sale which specifies the amount, characteristics, and location of the petroleum being sold; the delivery dates and the procedures for submitting offers and other information pertinent to a particular sale. In addition, the Notice of Sale specifies which sales provisions and performance and financial responsibility measures are applicable.

During the course of a Strategic Petroleum Reserve drawdown, a number of Notices of Sale may be issued, each covering a sales period of one to two months. Initially, Notices of Sale issued during a Strategic Petroleum Reserve drawdown could allow an extremely short lead time for offers and deliveries. Under the Standard Sales Provisions, it is contemplated that offerors might be given as little as 7 days from the issuance of the Notice of Sale until offers are due, and 30 days or less from the time of such issuance, until

the purchasers must accept delivery of the oil, with a less compressed schedule becoming more feasible after the initial stages of drawdown. Because of the possible short lead time, the Standard Sales Provisions provide for the establishment of a list of prospective offerors who will receive all Notices of Sale.

The next step in the sales process is the preparation by prospective purchasers of their offers, which must be submitted before a time specified in the Notice of Sale. The Standard Sales Provisions require that the offerors unconditionally accept all terms and conditions made applicable to that sale by the Notice of Sale, include an offer guarantee of \$10 million or 5 percent of the maximum potential contract amount, whichever is less, and offer at least the minimum price, if any, specified in the Notice of Sale.

Following the receipt of offers, the Department of Energy would evaluate the offers to select the "apparently successful" offerors. The evaluation process is structured so that the offerors bidding the highest prices can select the method by which the Strategic Petroleum Reserve petroleum is to be transported, up to the limits of the Strategic Petroleum Reserve distribution systems, with specific delivery arrangements to be negotiated later.

Under the Standard Sales Provisions, all apparently successful offerors are required, within as little as 5 business days after being notified, to provide a letter of credit to equal 100 percent of the contract amount or a cash deposit in an amount equal to 110 percent of the contract value as a guarantee of performance and payment of amounts due under the contract.

Upon timely receipt of the financial guarantees, and upon a final determination

by the Contracting Officer that the offers were responsive and the offerors responsible, the Department of Energy will publicly announce the results of the sale, issue the Notices of Award and commence deliveries of oil from the Reserve to the purchasers consistent with their arrangement of commercial pipeline or marine vessel means of transportation. Such deliveries could commence as soon as the 16th day after the commencement of the sales process, to the extent that the purchasers are able to provide their financial guarantees and arrange transportation expeditiously.

REMOVAL OF STRATEGIC PETROLEUM RESERVE CRUDE OIL ALLOCATION REGULATIONS

During the quarter, the Department eliminated regulations codified at 10 CFR, part 200, entitled "Strategic Petroleum Reserve Crude Oil Allocation." These regulations were proposed for elimination because they refer to options for allocating crude oil which are no longer available, due to the expiration of the Emergency Petroleum Allocation Act. Also, in 1982 Strategic Petroleum Reserve Plan Amendment Number 4 added a number of terms and conditions that would apply to the use of a directed or allocated sales method to distribute Strategic Petroleum Reserve crude oil.

DRAWDOWN AND DISTRIBUTION CAPABILITIES

The crude oil acquired for the Strategic Petroleum Reserve has been commingled in storage in a manner that allows for eight distinct crude oil streams to be made available for sale in the event of a drawdown.

Table 6 depicts these streams and their inventories as of December 31, 1992, as well as their typical characteristics and available delivery modes and locations.

Ongoing analysis suggests that up to a total of 200 million barrels of crude oil at Strategic Petroleum Reserve sites may contain excess gas. The Department is performing additional tests and developing an aggressive mitigation plan. An update will be provided in the Strategic Petroleum Reserve Quarterly Report.

Based on the Strategic Petroleum Reserve's December 31, 1992, crude oil stream inventories, excluding the small quantity stored at the Big Hill site, and the existing Strategic Petroleum Reserve drawdown systems and commercial distribution capabilities, the Reserve's current drawdown and distribution capabilities are as shown in Table 7.

The Strategic Petroleum Reserve is currently capable of initially being drawn down and distributed at a maximum sustained rate of 3.5 million barrels per day for a 90-day period. After 90 days, the drawdown/distribution rate would decrease gradually as site inventories are depleted and the declining number of caverns containing crude oil becomes a constraint. Figure 8 illustrates the Strategic Petroleum Reserve's current physical drawdown/distribution capability, which provides for a distribution of approximately 57 percent of the Reserve in 90 days, 92 percent of the Reserve in 180 days and 100 percent of the Reserve in 210 days.

COMMERCIAL CAPABILITIES AND ENHANCEMENTS

The distribution capabilities of the Strategic Petroleum Reserve are estimated to be approximately 3.9 million barrels per day through commercial pipelines and

marine terminals, as shown in Figure 9. The Reserve is currently accessible to 56 refiners through commercial pipelines. These refiners accounted for approximately 49 percent of the U.S. 1992 refining capacity and processed over 57 percent of non-Canadian crude imports during 1992. The Reserve is further connected to four marine terminals for water borne distribution: ARCO, Phillips, Sun and DOE's St. James Terminal. These terminals have a total of 12 tanker berths and 3 barge berths and have a capability of outloading over 2 million barrels of Strategic Petroleum Reserve crude oil per day.

The SPR's distribution capability will increase from 3.9 to 4.3 million barrels per day by October 1993. This increase is due to a contract award to Unocal Corporation for marine distribution at its Nederland, Texas, Terminal in April 1992 and a contract award to Texaco Pipeline Incorporated for pipeline distribution to Houston, Texas, in June 1992. Construction required for these services will be completed in 18 months and 12 months respectively. Enhancements to increase the SPR's distribution capability beyond 4.3 million will require further analysis to determine cost effective ways to add distribution capability without major pipeline or terminal construction.

TABLE 6
STRATEGIC PETROLEUM RESERVE CRUDE OIL STREAMS*

CRUDE OIL STREAM	INVENTORY (MMB)	TYPICAL API GRAVITY	TYPICAL SUL- FUR CONTENT	DELIVERY MODE AND LOCATION
SEAWAY GROUP:				
Bryan Mound Sweet	61.5	36.0°	0.34%	Pipeline or tankship at Phillips Terminal, Freeport, TX or Arco Terminal, Texas City, TX
Bryan Mound Sour	144.2	33.1°	1.51%	
Bryan Mound Maya	11.1	22.8°	3.28%	Tankship at Phillips Terminal
TEXOMA GROUP:				
West Hackberry Sweet	106.5	36.9°	0.31%	Pipeline, tankship or barge at Sun Terminal, Nederland, TX; Pipeline at Texaco-22/DOE connection, Lake Charles, LA
West Hackberry Sour	99.9	33.7°	1.44%	
CAPLINE GROUP:				
Weeks Island Sour	71.9	28.9°	1.41%	Pipeline at Capline or LOCAP Terminals, St. James, LA; Tank- ship at DOE's terminal, St. James, LA
Bayou Choctaw Sweet	15.2	36.1°	0.39%	
Bayou Choctaw Sour	35.6	33.2°	1.47%	

* Data as of December 31, 1992.

FIGURE 8
STRATEGIC PETROLEUM RESERVE DRAWDOWN/DISTRIBUTION
CAPABILITY
INVENTORY AS OF 12/31/92

Million Barrels Per Day

TABLE 7
CURRENT DRAWDOWN AND DISTRIBUTION CAPABILITIES
(THOUSANDS OF BARRELS PER DAY)

	Drawdown	Distribution
Seaway Group	1,250	1,250
Texoma Group	1,250	1,540
Capline Group	1,070	1,070
TOTAL	3,570	3,860

FIGURE 9
STRATEGIC PETROLEUM RESERVE PIPELINE AND MARINE DISTRIBUTION CAPABILITIES

1992 DRAWDOWN SYSTEMS TESTS

During calendar year 1992 the Department of Energy conducted five tests of the Strategic Petroleum Reserve storage site drawdown system capabilities. These tests are summarized as follows:

- On June 30, 128,000 barrels were drawn down from the Big Hill site and delivered to Sun Terminal, demonstrating a sustained rate capability of 408,000 barrels per day.
- On September 3, 223,000 barrels were drawn down from the Bryan Mound site and delivered simultaneously to ARCO and Phillips terminals, demonstrating a combined rate capability of 1.16 million barrels per day.
- On September 19, 77,000 barrels were drawn down from the Weeks Island site, using the site's recovery drawdown system, and delivered to the Department's St. James Terminal, demonstrating a sustained rate capability of 643,000 barrels per day.
- On November 6-8, 703,000 barrels were again drawn down from Weeks Island and delivered to St. James Terminal achieving a maximum instantaneous rate of 427,000 barrels per day.
- On December 11, 64,000 barrels were drawn down from the Bayou Choctaw site, using its recovery drawdown system, and delivered to St. James Terminal, demonstrating a rate capability of 480,000 barrels per day.

APPENDICES

A. Strategic Petroleum Reserve Site Status

***B. Strategic Petroleum Reserve Crude Oil
Specifications***

APPENDIX A

Strategic Petroleum Reserve Site Status

BAYOU CHOCTAW

LOCATION

Iberville Parish, Louisiana (12 miles southwest of Baton Rouge, Louisiana).

ACQUISITION

Acquired 355.95 acres fee simple, by condemnation April 1977, from numerous private owners. Union Texas Petroleum (a subsidiary of Allied Corporation) was the previous operator.

In 1985 the Department of Energy acquired an additional existing cavern through a cavern exchange agreement with Union Texas Petroleum. The transaction involved a 3.5 acre exchange with no net change in Government-owned acreage.

ENVIRONMENTAL/PERMITS

Environmental Impact Statement published December 1976; supplement published May 1977.

Four major Federal and State permits related to pipeline, well pad, storage, and storm water runoff acquired in 1978, and updated in 1980 and 1981.

SITE DESCRIPTION

A 72-million-barrel storage facility consisting of 62 million barrels in five existing caverns, plus 10 million barrels of storage capacity in a new Strategic Petroleum Reserve-developed cavern.

Oil, brine, and raw water piping distribution system connecting caverns with central plant, a water intake structure, 12 brine disposal wells located 2.5 miles offsite, and a pipeline for supplying brine to Union Texas Petroleum, Inc. Oil and water distribution system consists of over 50,000 feet of piping and 16 pumps totaling 22,000 horsepower. A 100,000 barrel brine pond and an oil/brine separator are also onsite.

Numerous permanent specialized buildings include: Control Center, Security Operations Center, Maintenance Shop and Laboratory, Electrical Switch Gear (5KV), Spare Parts Warehouse, Foam Storage, Instrument Shop, Documentation Storage and a Guard House.

SYSTEM PARAMETERS

Oil fill via 36-inch-diameter, 37.2-mile pipeline from St. James Terminal. Sustained system rate - 110,000 bbl/d (brine disposal-constrained).

Raw water design pumping rate - 495,000 bbl/d.

Brine disposal design pumping rate - 110,000 bbl/d.

DRAWDOWN

Drawdown via 36-inch-diameter, 37.2-mile pipeline to St. James Terminal and to Capline pipeline.

Design drawdown capability upon completion - 480,000 bbl/d.

MAJOR ACCOMPLISHMENTS

Approximately 56 million barrels of oil are in storage.

Completed designed capacity of 72 million barrels in 1991 with a 6-million-barrel expansion of an existing cavern.

WEEKS ISLAND

LOCATION

Iberia Parish, Louisiana (95 miles southwest of New Orleans).

ACQUISITION

Acquired 382.92 acres fee simple subsurface and 6.63 acres fee simple surface, by condemnation September 1977, from Morton Salt Company.

ENVIRONMENTAL/PERMITS

Environmental Impact Statement published January 1977; supplement published August 1977.

Major Federal permit related to oil pipeline to St. James Terminal acquired in 1978. Three major Federal and State permits related to oil storage, air emissions and storm water, and treated sewage effluent discharge acquired in 1979; EPA National Pollutant Discharge Elimination System permit updated in 1982.

SITE DESCRIPTION

Conventional room and pillar salt mine containing 72 million barrels of storage capacity in two levels. Dedicated to sour crude oil storage.

Oil piping distribution system consists of 11 (10 operational and one reserve) submersible electric pumps in the mine to boost crude to the surface and twin mainline pumps (plus one reserve) to deliver crude to the St. James, Louisiana Terminal during drawdown. Pumps total 17,000 horsepower. Firewater system has a 500,000 gallon tank with pumps, and mine

inert gas and vapor recovery systems provide for safety.

Numerous permanent specialized buildings include: Administration and Maintenance, Control Center, Security Operations Center, Spare Parts Warehouse, Electrical Substation, Laboratory and Sample, Inert Gas Generator, Foam Storage, Fire Water Pump House, Mainline Pump House, Production Shaft Headframe, Production Shaft Hoist, Service Shaft Headframe, Service Shaft Hoist, Service Shaft Motor Control Center, and a Guard House.

SYSTEM PARAMETERS

Oil fill via 36-inch-diameter, 67.2 mile pipeline from St. James Terminal. Sustained system rate - 350,000 bbl/d (terminal throughput limited).

DRAWDOWN

Drawdown via 36-inch-diameter 67.2-mile pipeline to St. James Terminal and to Capline pipeline.

Design drawdown capability - 590,000 bbl/d.

MAJOR ACCOMPLISHMENTS

Approximately 72 million barrels of crude oil are in storage.

Installed an alternate (redundant) draw-down system utilizing high capacity submersible pumps to be installed in the oil-fill holes.

Constructed two new bulkheads as part of the mine integrity assurance program.

BRYAN MOUND

LOCATION

Brazoria County, Texas (three miles southwest of Freeport, Texas).

ACQUISITION

Acquired 499.47 acres fee simple, by condemnation April 1977, from Freeport Mineral Company and other owners. Dow Chemical Company was the previous operator.

In 1986 Department of Energy acquired the pre-existing Brazoria County Road 242 within the site boundary through a relocation agreement with the county.

ENVIRONMENTAL/PERMITS

Environmental Impact Statement published January 1977; supplement published December 1977. Phase III supplement published October 1981.

Five major Federal and State permits related to pipelines, water intake, and storage acquired in 1977 and 1978. National Pollution Discharge Elimination System updated 1981; renewed 1984. Seaway Environmental Impact Statement published June 1978. Supplement published October 1981.

Two major Federal permits related to brine disposal pipeline issued in 1978. Permit for brine discharge increased to 1.1 million bbl/d August 1981.

SITE DESCRIPTION

226-million-barrel storage facility consisting of 66 million barrels of capacity in four caverns existing upon site

acquisition, plus 160 million barrels of storage capacity in 16 Strategic Petroleum Reserve-developed caverns.

36-inch-diameter, 14.6-mile brine disposal pipeline extending 13 miles offshore in the Gulf of Mexico.

Oil, brine and raw water piping distribution system connecting caverns with central plant and water intake structure located on Brazos River and connected by a 36-inch pipeline. Oil/brine/water distribution system consists of over 101,000 feet of piping and 33 pumps totaling over 43,000 horsepower. Four 200,000-barrel oil storage tanks, two brine ponds (15,000 and 150,000), and an oil-brine separator.

Numerous permanent specialized buildings include: Control Center, Security Operations Center, Maintenance, Spare Parts Warehouse, Foam Generator, Foam Storage (3), Electrical Switch Gear, and a Guard House.

SYSTEM PARAMETERS

Fill via 30-inch-diameter, 3.6-mile pipeline from Phillips 66 Freeport Marine Terminal. Design oil fill rate - 240,000 bbl/d. Sustained system rate - 180,000 bbl/d.

Raw water design pumping rate - 1,140,000 bbl/d.

Brine disposal design pumping rate - 980,000 bbl/d (permit limitation 1,100,000 bbl/d).

DRAWDOWN

Drawdown via 30-inch diameter, 3.6 mile pipeline, to Phillips 66 Freeport Marine Terminal.

Drawdown via 40-inch diameter, 46-mile pipeline to ARCO Pipeline Company's Texas City Pipeline Terminal and Docks.

Design drawdown capability - 1,250,000 bbl/d.

MAJOR ACCOMPLISHMENTS

Approximately 217 million barrels of crude oil are in storage.

Modifications to increase the site's drawdown/distribution capability to 1.25 million barrels per day have been completed.

Plans have been completed for commencing construction of a new brine disposal pipeline in June 1993 to replace the existing worn-out pipeline.

SULPHUR MINES

LOCATION

Calcasieu Parish, Louisiana (two miles south west of Sulphur, Louisiana, and 12 miles west of Lake Charles).

ACQUISITION

Acquired 109.63 acres fee simple and 64.52 acres conditional fee, by condemnation February 1979, from Union Texas Petroleum Company.

ENVIRONMENTAL/PERMITS

Environmental Impact Statement published March 1978.

Three major Federal and State permits for pipeline construction, oil storage, and air emissions acquired in 1978. Environmental Protection Agency discharge permits for storm water and sewage acquired in 1980.

Published Environmental Assessment and Finding of No Significant Impact in 1990 for decommissioning facility.

SITE DESCRIPTION

26-million-barrel storage facility consisting of three existing caverns.

Oil, brine, and raw water piping distribution system connecting caverns with central plant, water intake structure located 1.8 miles offsite on Sabine River Diversion Canal No. 5, connected by 12 and 16-inch pipelines, four brine disposal wells, and two 100,000 barrels brine ponds. Includes over 77,000 feet of piping and 18 pumps totaling over 8,000 horsepower.

Permanent specialized buildings include: Control & Maintenance Center, Security Operations Center and Foam Storage.

SYSTEM PARAMETERS

Oil fill via 16-inch-diameter, 15.9-mile spur pipeline connecting to Department of Energy's 42-inch West Hackberry pipeline at Intra-coastal Waterway. Sustained system rate - 80,000 bbl/d (brine disposal-constrained).

Raw water design pumping rate - 100,000 bbl/d.

Brine disposal design pumping rate - 80,000 bbl/d.

DRAWDOWN

Drawdown via 16-inch-diameter, 15.9 mile spur pipeline, which connects to the 42-inch-diameter West Hackberry line to Sun Terminal, Nederland, Texas.

Design drawdown capability - 100,000 bbl/d.

MAJOR ACCOMPLISHMENTS

Completed transfer of Sulphur Mines oil to the Strategic Petroleum Reserve Big Hill facility in December 1991.

Conducted negotiations with potential buyers to sell Sulphur Mines.

WEST HACKBERRY

LOCATION

Cameron Parish, Louisiana (22 miles southwest of Lake Charles, Louisiana).

ACQUISITION

Acquired 405.36 acres fee simple, by condemnation April 1977, from numerous private landowners. Olin Corporation was the previous site operator.

Acquired 160.0 additional acres fee simple by condemnation in two actions, July 1979 and March 1980.

ENVIRONMENTAL/PERMITS

Environmental Impact Statement published January 1977; supplement published April 1977. Phase III supplement published October 1981.

Six major Federal and State permits related to pipelines, drilling pads, water intake, and storage acquired in 1977 and 1978; National Pollutant Discharge Elimination System permit renewed 1984.

Texoma Environmental Impact Statement published November 1978; supplement published in October 1981.

Two major Federal permits related to a brine pipeline acquired in 1980.

SITE DESCRIPTION

219-million-barrel storage facility consisting of 49 million barrels in five caverns existing upon site acquisition, plus 170 million barrels of storage capacity in 17 Strategic Petroleum Reserve-developed caverns.

Oil, brine, and raw water piping distribution system connecting caverns with central plant, water intake structure located on Intracoastal waterway connected by a 42-inch diameter, 4.5 mile pipeline, and 10 brine disposal wells. Consists of over 160,000 feet of piping and 45 pumps totaling over 82,000 horsepower. Thirty-six-inch-diameter, 27-mile brine disposal pipeline extending nine miles offshore in the Gulf of Mexico, a 175,000-barrel brine pond and an oil-brine separator.

Numerous permanent specialized buildings include: Control Center, Security Operations Center, Maintenance, Spare Parts Warehouse, Covered Lay-Down, Film Storage, Foam Storage, and a Guard House.

SYSTEM PARAMETERS

Fill via 42-inch diameter, 42.8-mile pipeline from Sun Terminal, Nederland, Texas. Design oil fill rate - 225,000 bbl/d. Sustained system rate - 175,000 bbl/d.

Raw water design pumping rate - 1,450,000 bbl/d.

Brine disposal design pumping rate - 900,000 bbl/d (permit limitation 1,088,000 bbl/d) via 36-inch pipeline to the Gulf of Mexico.

DRAWDOWN

Drawdown via a Department of Energy 42-inch-diameter, 42.8-mile pipeline to Sun Terminal, Nederland, Texas.

Drawdown via a 36-inch diameter, 12-mile oil pipeline (Department of Energy Lake Charles Pipeline) connecting to the Texas 22-inch common carrier pipeline and to refineries in Lake Charles, Louisiana.

Design drawdown capability - 1,250,000
bbl/d.

MAJOR ACCOMPLISHMENTS

Planned capacity development of 219 million
barrels completed.

Initiated recompletion of existing brine
disposal wells to provide subsurface disposal
capability while brine disposal pipeline to the
Gulf of Mexico remains shut down for
evaluation.

BIG HILL

LOCATION

Jefferson County, Texas (20 miles southwest of Beaumont, Texas).

ACQUISITION

Acquired 271 acres fee simple, by condemnation November 1982 and July 1983, from three landowners, i.e., 238.48 acres from Amoco, 27.06 acres from the Pipkin estate, and 5.46 acres from the Patrick Henry Phelan estate.

ENVIRONMENTAL/PERMITS

Environmental Impact Statement published October 1981.

State permits for drilling, underground hydrocarbon storage, pipeline operations, air quality, water appropriation, and water quality certifications were acquired in 1983. The EPA National Pollutant Discharge Elimination System permit was acquired in 1984.

SITE DESCRIPTION

160-million-barrel storage facility consisting of fourteen Strategic Petroleum Reserve-developed 11.5-million-barrel storage caverns.

Oil, brine, and raw water systems connecting caverns with central plant, water intake structure located on the Intracoastal Waterway connected by a 48-inch diameter, and brine disposal pipeline extending 3 miles offshore in the Gulf of Mexico. Oil and water distribution system consists of over 29 miles of piping and 15 pumps totaling 32,000 horsepower.

Numerous permanent specialized buildings include: Control Center, Administration,

Security Operations Center, Communications, Guard House, Covered Lay-Down, Fire House, Sample Storage, and Maintenance.

SYSTEM PARAMETERS

Fill via 36-inch-diameter, 25 mile pipeline from Sun Terminal, Nederland, Texas. Sustained system rate 280,000 bbl/d.

Raw water design pumping rate - 1,400,000 bbl/d.

Brine disposal design pumping rate - 1,400,000 bbl/d (permit limitation of 1,700,000 bbl/d).

DRAWDOWN

Drawdown via 36-inch-diameter, 25 mile pipeline to Sun Terminal, Nederland, Texas.

Design Drawdown capability - 930,000 bbl/d.

MAJOR ACCOMPLISHMENTS

Completed planned 160-million-barrel capacity development.

Conducted system test/exercise to establish drawdown capability of 400,000 barrels per day which will increase to 930,000 barrels per day as oil inventory increases.

ST. JAMES TERMINAL

LOCATION

St. James Parish, Louisiana (45 miles south-east of Baton Rouge, Louisiana, on the Mississippi River).

ACQUISITION

Acquired 104.76 acres of fee simple for terminal by condemnation in May 1978.

Acquired 47.68 acres fee simple for docks by condemnation in July 1978.

ENVIRONMENTAL/PERMITS

St. James' Terminal Environmental Impact Statement is a component of the Bayou Choctaw supplement, published May 1977, and the Weeks Island supplement, published August 1977.

Two major Federal and State permits related to dock construction were acquired in 1978. Environmental Protection Agency discharge permit for storm water and sewage acquired in 1980. Dock Construction Permit modified 1982.

SITE DESCRIPTION

Terminal facilities include six storage tanks totaling two million barrels of capacity, tie-ins to Bayou Choctaw and Weeks Island sites, and to LOCAP and Capline pipeline terminals.

Oil distribution piping system connecting docks, tanks, and pump station consists of over 35,000 feet of piping and five pumps totaling over 7,500 horsepower, metering systems, and maintenance and control buildings.

Two docks with one berth each, able to accommodate vessels of up to 123,000 long tons maximum loaded displacement. A 42-inch-diameter pipeline connects the docks to the storage tanks.

SYSTEM PARAMETERS

Tanker unloading - design unloading capacity of 40,000 bbl/hr.

Fill capabilities from terminal to:

Bayou Choctaw: design pumping rate - 240,000 bbl/d.

Weeks Island: design pumping rate - 480,000 bbl/d.

Terminal sustained system fill rate: 350,000 bbl/d.

DRAWDOWN

Crude oil from Bayou Choctaw and/or Weeks Island to be distributed across docks and to LOCAP and Capline Pipeline Terminal.

SUSTAINED TANKER LOADING RATE:
435,000 bbl/d.

MAJOR ACCOMPLISHMENTS

Completed security improvements at St. James terminal.

APPENDIX B

Strategic Petroleum Reserve Crude Oil Specifications

Characteristic	Sour ^b	Sweet ^c	Primary ASTM Test Method ^d
API Gravity [°API]	30 - 45	30 - 45	D 1298
Total Sulfur [Wt. %], Max.	1.99	0.50	D 1552
Pour Point [°F(°C)], Max.	50 (10)	50 (10)	D 97
Salt Content [Lbs./1,000 Bbls.], Max.	50	50	D 3230
Viscosity [SUS @ 60°F (cSt @ 15.6°C)], Max. [SUS @ 100°F (cSt @ 37.8°C)], Max.	150 (32) 70 (13)	150 (32) 70 (13)	D 445 & D 2161
Reid Vapor Pressure [Psia @ 100°F (kPa @ 37.8°C)], Max.	11 (76)	11 (76)	D 323
Total Acid Number [mg KOH/g], Max.	0.40	0.40	D 664
Water and Sediment [Vol. %], Max.	1.0	1.0	D 473 & D 4006 or D 4928
Yields [Vol. %] Naphtha [82-375°F (28-191°C)] Distillate [375-620°F (191-327°C)] Gas Oil [620-1050°F (327-566°C)] Residuum [>1050°F(>566°C)]	24 - 30 17 - 31 26 - 38 10 - 19	21 - 42 19 - 45 20 - 42 14 Max.	D 2892 & D1160
^a Marketable virgin crude petroleum suitable for normal refinery processing and free of foreign contaminants or chemicals including, but no limited to, chlorinated and/or oxygenated hydrocarbons, and lead. ^b Crude oils that meet these sour specifications include Arabian Berri, Arabian Light, Dubai (Fateh), Flotta, Isthmus, Lagomedio, Oman, Qatar Marine, Tia Juana Light, Upper Zakum, and West Texas Sour. ^c Crude oil that meet these sweet specifications include Bonny Light, Brass River, Brent Blend, Ekofisk, Escravos, Forties, Kole Marine, Oseberg, Palanca, Saharan Blend, Statfjord, West Texas Intermediate, and Zarzaitine. NOTE: Crude oils other than those listed above may be acceptable. The acceptability of any crude oil depends upon an assay typical of current production quality of the stream. ^d Alternate methods may be used if approved within the contract. Offerors shall submit requests to use alternate methods to the Contracting Officer for determination of acceptability. In case of disputes arising from a difference between origin and destination test results, results from testing of the custody transfer sample using the primary test method shall be binding.			

**DATE
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8 / 23 / 93

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