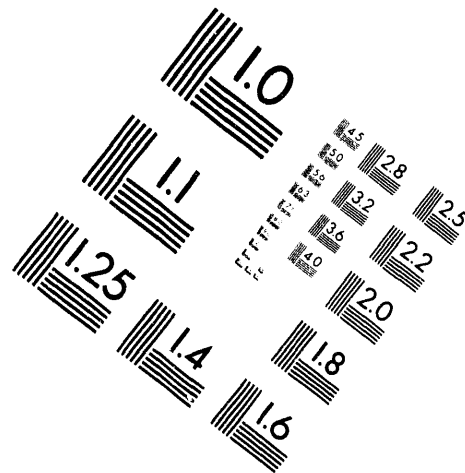
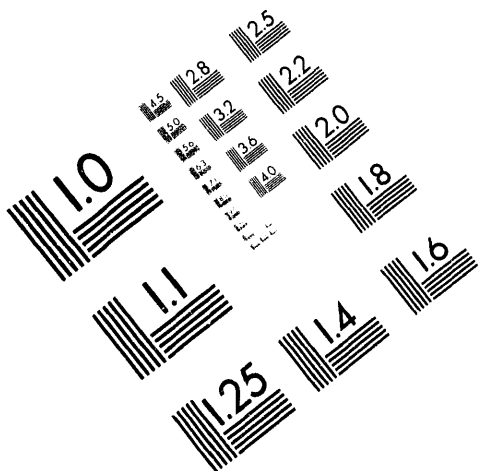




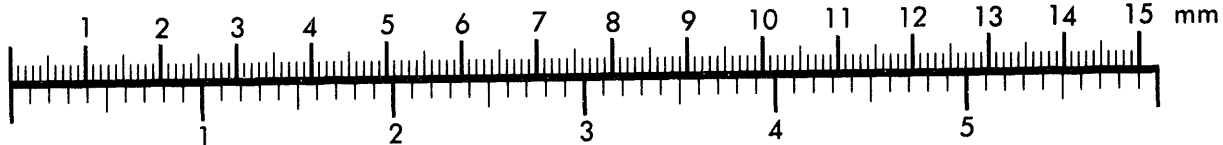
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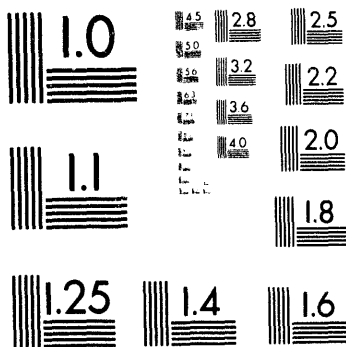
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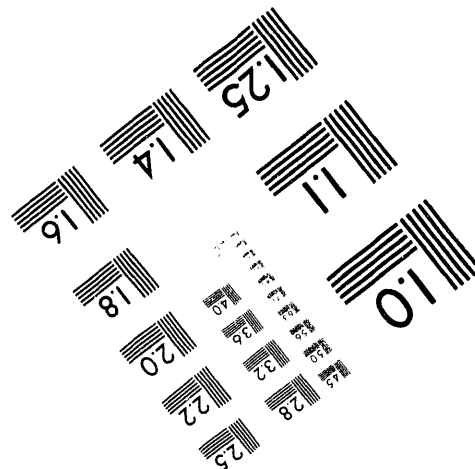
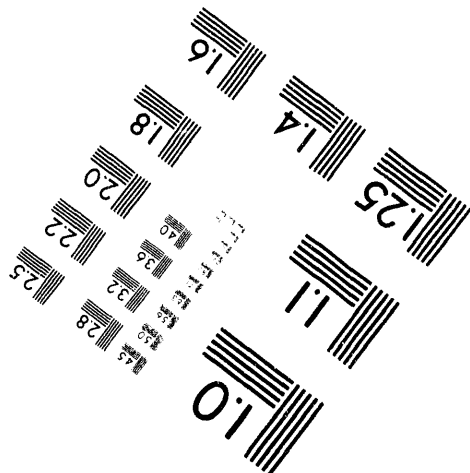
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**Naval Petroleum Reserve No. 1
(Elk Hills)
Supplemental Environmental
Impact Statement**

Record of Decision

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**U.S.
Department of
Energy**

**Petroleum Production at Maximum Efficient Rate,
Naval Petroleum Reserve No. 1 (Elk Hills)
Kern County, California (DOE EIS/0158)**

February 1994

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RECORD OF DECISION

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Acronyms to Know

CFR	<i>Code of Federal Regulations</i>
DOE	<i>U.S. Department of Energy</i>
EA	<i>Environmental Assessment</i>
EPA	<i>U.S. Environmental Protection Agency</i>
EIS	<i>Environmental Impact Statement</i>
FR	<i>Federal Register</i>
NEPA	<i>National Environmental Policy Act</i>
NPR-1	<i>Naval Petroleum Reserve No. 1</i>
NPR-2	<i>Naval Petroleum Reserve No. 2</i>
NPR-3	<i>Naval Petroleum Reserve No. 3</i>
SEIS	<i>Supplemental Environmental Impact Statement</i>

I. Summary

Pursuant to the Council on Environmental Quality regulations (40 CFR Parts 1500-1508), which implement the procedural provisions of the National Environmental Policy Act (NEPA), and the U.S. Department of Energy National Environmental Policy Act regulations (10 CFR Part 1021), the Department of Energy, Office of Fossil Energy, is issuing a Record of Decision on the continued operation of Naval Petroleum Reserve No. 1, Kern County, California. The Department of Energy has decided to continue current operations at Naval Petroleum Reserve No. 1 and implement additional well drilling, facility development projects and other activities necessary for continued production of Naval Petroleum Reserve No. 1 in accordance with the requirements of the Naval Petroleum Reserves Production Act of 1976 (Public Law 94-258). The final Supplemental Environmental Impact Statement, entitled "Petroleum Production at Maximum Efficient Rate, Naval Petroleum Reserve No. 1 (Elk Hills), Kern County, California (DOE/SEIS-0158)," was released on September 3, 1993.

II. Addresses:

To receive a copy of the final Supplemental Environmental Impact Statement or Record of Decision, please contact Mr. James C. Killen, Director, Planning, Analysis, and Program Support Division, U.S. Department of Energy, Naval Petroleum Reserves in California, Tupman, California, 93276, (805) 763-6038.

For information on the National Environmental Policy Act process, contact Ms. Carol M. Borgstrom, Director, Office of National Environmental Policy Act Oversight, U.S. Department of Energy, 1000 Independence Avenue, SW, Wash-

ington, DC, 20585, (202) 586-4600, or (800) 472-2756.

III. Supplementary Information:

Naval Petroleum Reserve No. 1 (NPR-1) is a large oil and gas field of approximately 74 square miles (47,409 acres) located about 25 miles southwest of Bakersfield in Kern County, California. NPR-1, which was established by Executive Order in 1912 for National defense purposes, is jointly owned and operated by the Federal Government under the jurisdiction of the Department of Energy (DOE), and Chevron U.S.A. Inc. pursuant to a Unit Plan Contract that became effective in 1944. The Government has a 78 percent interest (approximately) in NPR-1 hydrocarbon production and Chevron's interest is approximately 22 percent. Currently, the Government's share of NPR-1 oil production is sold on the open market, with proceeds deposited in the U.S. Treasury, and/or transferred to the U.S. Strategic Petroleum Reserve for storage as protection against future oil supply disruptions. NPR-1 natural gas production is either processed into natural gas liquids for sale on the open market, or reinjected into NPR-1 hydrocarbon reservoirs for pressure maintenance and/or enhanced oil recovery.

NPR-1 was maintained in essentially a shut-in reserve status until the mid-1970's when Congress, in response to the Arab Oil Embargo of 1973, passed the Naval Petroleum Reserves Production Act of 1976 (Public Law 94-258), which directed that NPR-1 the adjacent NPR-2, and NPR-3 in Wyoming, be produced for an initial period of 6 years at the maximum efficient rate. Under the Act, maximum efficient rate means the maximum rate of hydrocarbon production that optimizes economic return and ultimate hydrocarbon recovery. Public Law 94-258 also provided the President with the authority to continue production from the Reserves beyond the initial 6 years for an additional and unlimited number of increments of up to three years each. For each added period of production, the President must certify to Congress that it remains in the National interest to continue producing the Reserves. Currently, the Naval Petroleum Reserves are authorized for maximum efficient rate production through April 5, 1997. Approximately 700 million barrels of oil and 200 million gallons of natural gas liquids have been produced from NPR-1 hydrocarbon reservoirs since the field was opened up to full development in 1976. In 1992, NPR-1 became only the 13th domestic oil field to produce a cumulative total of 1 billion barrels of oil since its initial development began in 1912. Since 1976, revenues in excess of \$15 billion have been deposited into the U.S. Treasury from NPR-1 operations. In 1988, NPR-1 hydrocarbon reserves were estimated

to be approximately 524-831 million barrels of oil and 1,790-2,497 billion cubic feet of natural gas.

In 1979, DOE published an Environmental Impact Statement (EIS) (DOE/EIS-0012) which described the existing environment at NPR-1 and analyzed the petroleum development activities that were anticipated at that time. The development activities described and evaluated included the drilling of approximately 350 new oil, gas and water wells; construction of two new Lease Automatic Custody Transfer facilities; construction of two gas facilities to process up to 700 million cubic feet per day of wet natural gas; construction of wastewater facilities capable of disposing of approximately 30,000 barrels per day of produced water; and construction of an additional 40,000 square feet of building space for administration and other support facilities. Implementation of these activities increased NPR-1's oil production to a peak level of approximately 181,000 barrels per day by July, 1981. Oil production at NPR-1 has declined since then to the current level of approximately 65,000 barrels per day. NPR-1 currently produces approximately 299-320 million cubic feet per day of natural gas and processes 379,000-456,000 gallons per day of natural gas liquids (propane, butane and natural gasoline).

In an Environmental Assessment prepared in 1985 (DOE/EA-0261), DOE described the potential environmental impacts that could result from implementation of a pilot steamflood project of the Shallow Oil Zone at NPR-1. The Shallow Oil Zone pilot steamflood project subsequently was implemented and a large expansion of this project is proposed and analyzed in the final Supplemental Environmental Impact Statement (SEIS). In 1987, DOE prepared another Environmental Assessment (DOE/EA-0334) which described the potential impacts that could result from the divestiture of NPR-1 and NPR-3. Implementation of this action would require a Congressional directive, which has not occurred.

Primarily as a result of the need to drill additional oil, gas, and water wells at NPR-1, expand the Shallow Oil Zone steamflood project, expand natural gas operations, and reduce power costs and air pollution emissions by constructing a cogeneration facility, the decision was made to prepare a Supplement to the 1979 EIS to analyze the environmental impact of these and other proposed actions. Accordingly, DOE published a Notice of Intent announcing its decision in the Federal Register on April 4, 1988 (53 FR 10922). Pursuant to the Notice of Intent, three public scoping

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meetings were held in April 1988 and the issues and concerns raised by the public were used in the development of the SEIS. The basis for the SEIS is the April 1989 NPR-1 Long Range Plan, which describes a myriad of planned operations and development projects, maintenance activities, and environmental protection initiatives over the next 25-30 years. A description and evaluation of the existing NPR-1 environment also was provided in the SEIS to assess the level of impacts, if any, that resulted from the NPR-1 activities that were implemented following publication of the 1979 EIS.

In May 1992, DOE published and distributed approximately 200 copies of the draft SEIS. A Notice of Availability of the draft SEIS and an announcement of a public hearing in Bakersfield, California on June 24, 1992 was published in the Federal Register on June 5, 1992 (57 FR 24038). Only one speaker provided oral testimony at the public hearing. DOE received 122 written comments from 13 government agencies and interested individuals during the 55-day comment period following publication of the Notice of Availability. DOE considered and responded to all comments on the draft SEIS in the development of the final SEIS. A transcript of the public hearing and all written comments on the draft SEIS were included in the final SEIS.

The final SEIS on the proposed action was released in August 1993. A Notice of Availability of the document was published in the Federal Register on September 3, 1993 (58 FR 46969) which announced an incorrect due date for comments of October 18, 1993. An amended Notice of Availability subsequently was published in the Federal Register on September 17, 1993 (58 FR 48650) revising the due date to October 5, 1993. Of eight comment letters received on the final SEIS, only the Environmental Protection Agency (EPA) and a local consultant commented on substantive issues. EPA reiterated concerns about the method used to compare impacts of the proposed action and alternatives, completion of the final Biological Opinion for the proposed action, ingestion of oil field chemicals by site wildlife, waste minimization, wetlands delineation, air quality, and sump closures, and recommended deferring expanding operations that may impact groundwater quality in the northeast portion of the site. EPA also recommended discussing in the Record of Decision the feasibility of re-entering shut-in wells as an option to drilling new wells to increase production. Michael R. Rector, a local water resources consultant, raised concerns about groundwater mining and commented that groundwater downdip from site produced water disposal wells should be

analyzed for the presence of benzene, toluene and xylenes.

With the exception of the comments regarding comparison of alternative action impacts, deferring operations in the northeast portion of the site, and the feasibility of re-entering shut-in wells, all concerns have been addressed in this Record of Decision under Major Environmental Impacts and Mitigation Action Plan.

With regard to the comparison of alternatives, EPA commented that it stands by its earlier comment on the draft SEIS that impacts associated with the no action alternative should be the basis for the comparison of alternative action impacts. DOE maintains that the methodology used in the SEIS is the same, substantively, as that advocated by EPA. This is explained as follows. It is EPA's opinion that in comparing impacts between alternatives, the no action alternative should be the baseline for the comparison. For example, if no action has an impact of X, and the proposed action has an impact of X+Y, then comparisons of these two alternatives should state that the impacts of the proposed action are Y greater than no action. In contrast, the SEIS sometimes makes this comparison by stating that no action has an impact that is X less than the proposed action. DOE believes that either comparison satisfies the requirement under 40 CFR 1502.14 "...to present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining issues....". Impacts from existing operations comprising no action are presented in detail in Section 3.0, "Existing Environment." Impacts of the proposed action and the modified proposed action are presented in detail in Section 4.0, "Environmental Impacts of the Proposed Action and Alternatives." A summary of the elements and impacts of no action, the proposed action, and the modified proposed action are presented in comparative form by Tables 2.0-1 and 2.0-2 in Section 2.0, "Alternatives." These tables, together with supporting text, result in a form that sharply contrasts differences between alternatives, as required.

Regarding the comment on the northeast portion of the site, DOE is not proposing to expand operations that may impact groundwater quality in that area. The only activities planned in this area are remediation or facility repair and replacement projects that are designed to enhance the level of environmental protection. These projects are routinely evaluated for environmental impacts, including groundwater impacts, as a matter of standard practice prior to their implementation.

The use of existing shut-in oil production wells for other purposes such as

waterflood, gas injection or in the development of underlying/overlying oil or gas zones can provide a significant capital savings and, therefore, is always given serious consideration at NPR-1. Prior to the formal abandonment of any shut-in wells, a determination is made that the well cannot serve any other useful purpose. Table 1.2-3 of the final SEIS indicates that 382 new wells would be completed through the year 2025 under the proposed action. In comparison, for this same time period, the proposed action would involve a total of 571 conversions of existing wells to a different use.

IV. Alternatives Considered:

Three alternatives were evaluated in the SEIS: Proposed Action, No Action (Alternative 1), and Modified Proposed Action (Alternative 2). In addition, Alternative 3 (Nonsteamflood Tertiary Oil-Recovery Strategies) and two other alternatives were initially considered and dismissed from further evaluation.

A. Proposed Action. The proposed action is to continue operating NPR-1 in accordance with the requirements of the Naval Petroleum Reserves Production Act of 1976 by implementing the activities described in the 1989 NPR-1 Long Range Plan. This includes the operation and maintenance of all existing facilities; a program to drill, redrill, or deepen approximately 382 wells, 148 of which would be for the phased 500-acre, 625 million British thermal units per hour Shallow Oil Zone steamflood project; a program to perform approximately 2,663 well remedial jobs as needed to ensure efficient operation and maintenance of approximately 2,697 wells; a program to recycle produced water to the maximum extent technically and economically feasible for use as source water for waterflood operations; a program to abandon approximately 1,080 wells; construction and operation of approximately 46,250 horsepower of additional gas compression for gas-lift and gas-injection projects (37,500 horsepower gas; 8,750 horsepower electric); construction and operation of compression and processing facilities to compress, transport and process up to an additional 100-150 million cubic feet per day of gas (fourth gas plant); construction of new facilities and increased use of existing facilities to expand waterflood operations by approximately 106,000 barrels per day; construction and operation of a 42-megawatt cogeneration facility; construction and operation of a 170,000-220,000 gallon per day butane isomerization facility; a program to investigate, remediate, or otherwise manage numerous old inactive waste sites; a program to reclaim by 1998 approximately 1,045 acres of disturbed lands not needed for current or future NPR-1 operations; the permitting

of third parties to construct, operate and maintain pipelines, conduct geophysical surveys and perform other necessary oil-field related activities on NPR-1; and the continued implementation of a comprehensive environmental protection program.

B. Alternative 1: No future Development (No Action). This alternative provides for continued production of NPR-1 by operating and maintaining existing wells and facilities only. It does not include any new development projects needed to enhance efficiency or off-set natural production declines (no new drilling, enhanced recovery, cogeneration, etc.). It does include all maintenance projects, facility development projects and environmental protection initiatives included in the proposed action that are necessary for maintaining the safety and quality of the NPR-1 environment.

C. Alternative 2: Proposed Action Excluding the Shallow Oil Zone Steamflood Expansion, Gas Processing Expansion, and Cogeneration Project (Modified Proposed Action). This alternative provides for all activities included in the proposed action, except that the 148-well, 500-acre Shallow Oil Zone steamflood expansion would not be implemented; expansion of NPR-1's gas processing capacity by 100-150 million cubic feet per day (fourth gas plant) would not be undertaken; and the 42-megawatt cogeneration plant would not be constructed.

D. Alternative 3: Nonsteamflood Tertiary Oil-Recovery Strategies. This alternative provides for all of the activities included in the proposed action and implementation of nonsteamflood tertiary recovery techniques that have been carried out on a limited basis at other oil fields. Examples of these techniques include alkali surfactant polymer injection, micellar polymer injection, carbon dioxide injection and in-situ combustion. Although these techniques may have potential in the long term, their implementation in NPR-1 hydrocarbon reservoirs cannot be considered by decision-makers in the reasonably foreseeable future due to limited technical data and unfavorable current and projected future economic conditions. For this reason, studies were not completed to scope these programs to the level of detail needed to address potential environmental impacts. Accordingly, this alternative was dismissed from further consideration in the SEIS.

E. Divestiture. The possibility of selling the Government's interest in NPR-1 (divestiture) was initially announced in the Notice of Intent to prepare this SEIS as an alternative in the context of continued operations and future development (53 FR

10922, April 4, 1988). Analysis of this alternative would have expanded on the 1987 Environmental Assessment of Divestiture (DOE/EA-0334). This alternative is considered highly speculative in the absence of Congressional action and, therefore, was not developed in the SEIS.

F. EPA's Proposed Alternative (No Action followed by Proposed Action). In its comments on the draft SEIS, EPA recommended analysis of an additional alternative that would involve implementing the no action alternative for the near term and then proceeding with the proposed action at a later date. A brief analysis of this alternative was included in the final SEIS. The analysis indicated that ultimate hydrocarbon recovery losses of approximately 66 million barrels of oil and 132 billion cubic feet of natural gas would occur by deferring development activities at NPR-1 for a period of 10 years. Because this alternative would not allow DOE to meet the purpose and need for the proposed action, which is to produce NPR-1 at the maximum efficient rate in accordance with the Naval Petroleum Reserves Production Act of 1976, it was dismissed from further consideration in the final SEIS.

G. Environmentally Preferred Alternative. The environmentally preferred alternative is the no action alternative (Alternative 1). Habitat disturbance associated with this alternative is significantly less than for all other alternatives analyzed in the SEIS. Future impacts associated with continued NPR-1 operations would diminish more rapidly under this alternative as NPR-1's economic life would be reached much sooner than would occur under other alternatives (approximately 2000-2010). This alternative would require legislative redirection of DOE's current mission to produce NPR-1 in accordance with the Naval Petroleum Reserves Production Act of 1976.

V. Decision:

DOE has decided to continue current NPR-1 operations and implement additional well drilling, facility development projects and other activities necessary for continued production of NPR-1 in accordance with the requirements of the Naval Petroleum Reserves Production Act of 1976 (Public Law 94-258).

A. Discussion and Justification of Decision. Pursuant to the Naval Petroleum Reserves Production Act of 1976 and subsequent Presidential certifications, DOE is required to produce NPR-1 at the maximum efficient rate through April 5, 1997.

To continue to meet this mandate, continued and enhanced NPR-1 operations are necessary.

The decision to produce the Naval Petroleum Reserves at the maximum efficient rate was initially authorized by Congress in 1976 to address emergency energy needs in response to the Arab oil embargo of 1973-1974. At that time, the Naval Petroleum Reserves were administered by the Secretary of the Navy. Effective October 1, 1977, the DOE Organization Act (Public Law 95-91) transferred jurisdiction of the Naval Petroleum Reserves to the new DOE. NPR-1 oil production since 1976 has either been sold on the open market, transferred to the Department of Defense for national security purposes, or transferred to the Strategic Petroleum Reserve for storage in the event of future oil supply disruptions.

In recent years, Congress has recognized other significant reasons for continued maximum efficient rate production of the Naval Petroleum Reserves. In addition to military preparedness and National defense reasons, the following issues were considered in the most recent extension of the Naval Petroleum Reserves Production Act:

1. National economic impacts, including the direct effect on net Federal revenues and the broader effects on the economy;
2. National energy strategy, reflecting the effects of oil import requirements in the absence of an extension; and
3. Local and regional concerns, involving the effects of operating the Naval Petroleum Reserves on local economies and on upstream and downstream elements of the petroleum industry in the areas served by the Naval Petroleum Reserves.

Selection of the no action alternative (Alternative 1) would not allow DOE to meet the statutory mandate to produce NPR-1 at the maximum efficient rate, and would result in ultimate recovery losses of up to 500 million barrels of oil and more than 250 billion cubic feet of natural gas reserves. This represents a reduction of 58 percent of the remaining oil reserves and 20 percent of the remaining gas reserves, respectively. Under this alternative, the economic return on NPR-1 investment would be greatly diminished in comparison to that of the proposed action.

Selection of the modified proposed action alternative (Alternative 2) would eliminate important facility projects including Shallow Oil Zone steamflooding, expanded gas processing, and cogeneration power production that are needed to ensure continued maximum efficient rate production at NPR-1, as required by the Naval Petroleum Reserves Production Act of 1976. As in the case of Alternative 1, implementation of Alternative 2 would not allow DOE to meet its statutory mandate.

B. Major Environmental Impacts and Mitigation Action Plan. The environmental impacts that could result from implementation of the proposed action were summarized in Table 2.0-2 and analyzed in detail in Section 4.0 of the final SEIS. DOE believes that most of these impacts can either be eliminated or reduced to acceptable levels. Accordingly, a total of 88 mitigation commitments were made in the final SEIS to ensure impact levels would be minimized to the maximum extent possible. These mitigation commitments form the basis of the NPR-1 Mitigation Action Plan to reduce potential impacts from proposed action activities. The NPR-1 Mitigation Action Plan provides detailed activities, implementing organizations, activity milestone dates and mitigation monitoring protocol. Upon publication of the Record of Decision in the Federal Register, the Mitigation Action Plan will be made available for public review in reading rooms at the offices of the Naval Petroleum Reserves in California and DOE Headquarters in Washington, DC. The plan will also be provided to local libraries.

As noted earlier, EPA and a private water resources consultant provided substantive comments on the final SEIS. EPA encouraged DOE to continue ongoing efforts to identify wetland resources on NPR-1. As detailed in the Mitigation Action Plan, a formal wetland delineation study of potential wetlands on NPR-1 will be conducted in 1994. This study will be coordinated with both the U.S. Army Corps of Engineers and EPA. If jurisdictional wetlands are identified, DOE will comply with the provisions of the Clean Water Act regarding wetland disturbances.

As indicated in the final SEIS and associated Mitigation Action Plan, DOE is committed to remediating all inactive sumps and managing active sumps in accordance with Waste Discharge Requirements issued by the State of California's Central Valley Regional Water Quality Control Board. DOE is actively proceeding with plans to continue the remediation of historic produced water sumps. The Mitigation Action Plan also provides details (Mitigation Nos. WG-30 and WR-9)

of a site-wide sump closure plan that was approved in 1991 by the Central Valley Regional Water Quality Control Board. EPA will be provided a copy of this closure plan as suggested in their comment. DOE is permitted to sump wastewater at NPR-1 by Waste Discharge Requirements #58-491 and #68-262, which prohibit the release of wastewater into unlined sumps located on alluvial soils if the wastewater exceeds 1,000 parts per million total dissolved solids. Accordingly, wastewater sumps on or near alluvial soils have been lined or taken out of service. DOE will continue to ensure the integrity of the liners at these locations.

DOE will complete a Groundwater Management Protection Plan for NPR-1 in 1994. The management plan will include, among other components, a site-wide Groundwater Monitoring Plan. On September 28, 1993 DOE briefed the California Department of Water Resources, the California Central Valley Regional Water Quality Control Board and the Kern County Water Agency on the development of these groundwater plans. DOE acknowledged the need to better characterize groundwater in the northeast portion of NPR-1 due to its proximity to a subsurface water bank under development by the water agencies. DOE facilitated a discussion of their respective interests regarding the development of NPR-1 groundwater plans. Future data review and exchange activities were discussed, which DOE will honor. Continued interactions with these agencies will be given a high priority by DOE.

The Groundwater Protection Management Plan will also address concerns raised by Mr. Rector regarding the withdrawal of waterflood source water and produced water injection activities on the south flank of NPR-1. DOE regularly monitors the quality of the source well water, including tests for volatile organics such as benzene, toluene, and xylenes as Mr. Rector suggested in his comment. Potential adverse impacts to the NPR-1 aquifer from groundwater withdrawal will continue to be monitored as well.

Other concerns raised by EPA regard issues with the potential for major environmental impacts. Acknowledgement of these concerns is included in the following discussion of the major environmental impacts associated with the proposed action and the principal mitigation measures planned to minimize the impacts.

1. **Potential erosion from construction disturbances to 1,569 acres on and off NPR-1.**

Soil Conservation Service erosion control/site-rehabilitation measures will be implemented in planning, design, and operational activities.

2. **Slight possibility of subsidence and induced seismicity due to increased withdrawal of source water from the Tulare Formation and oil and gas withdrawal from deep producing formations.**

NPR-1 facilities will be designed in accordance with the latest edition of the Uniform Building Code and the recommendations of the NPR-1 Geotechnical and Earthquake Engineering Study.

3. **Production of drilling wastes associated with a 382-well drilling program, 2,663 remedials, and 1,080 abandonments.**

Drilling fluid additives utilized at NPR-1 will be limited to those that are included on the list of approved nonhazardous drilling fluid additives issued by the California Department of Health Service in 1982.

4. **100,000-181,000 barrels per day of produced wastewater would require recycling or disposal.**

To the extent technically and economically feasible, produced water will be recycled for use as source water for waterflood operations.

5. **Nonhazardous solid waste quantities from construction and operations would increase above the current volume of 24,000 cubic yards per year.**

NPR-1 will establish and implement a waste minimization program to reduce the volume of all nonhazardous solid wastes.

6. **Hazardous waste from construction and operations would increase slightly above the current level of approximately 19,800 pounds per year.**

Hazardous waste minimization reviews will be conducted for all proposed facility projects. State of California regulatory requirements, such as the Hazardous Waste Reduction and Management Review Act of 1989 (SB 14) will be followed. In addition, NPR-1 will comply with Executive Order 12856 (Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements) which was signed on August 3, 1993. This order requires Federal agencies to the maximum extent possible to reduce, recycle and treat toxic chemical waste. As required by the Order, NPR-1 will report in a public manner toxic chemicals entering any wastestream from the facility, and will improve local emergency planning, response and accident notification procedures.

7. Fugitive particulate emissions from construction activities and seismic survey disturbances on approximately 8,349 acres.

NPR-1 will develop and implement a particulate matter control plan.

EPA also recommended that measures be implemented to ensure compliance with the requirements of EPA's emissions trading policy. It should be noted that all air permitting operations at NPR-1 are closely coordinated with the San Joaquin Valley Unified Air Pollution Control District to ensure compliance with applicable regulations. Accounting of emission reductions is a District staff function. These issues are closely monitored by the California Air Resources Board and Region IX of EPA.

8. Increases in current operational emissions by a maximum of approximately 133.6, 124.2, 367.0, 0.7, 5.8, and 85.8 pounds per hour of reactive organic gas, nitrogen oxide, carbon monoxide, sulfur dioxide, total suspended particulate, and particulate matter with aerodynamic diameters less than 10 microns, respectively, as the result of proposed new sources.

New compressor engines will be equipped with low nitrogen oxide emission precombustion chambers. Steam generators, heaters, and cogenerators also will be equipped with appropriate low nitrogen oxide combustion technology. Anode beds will be watered frequently to reduce reactive organic gas emissions.

EPA also inquired if, in the absence of a State Implementation Plan, whether the impacts of continued and proposed NPR-1 operations would be in conformity with the provisions of the Federal Clean Air Act. NPR-1 will operate either under locally mandated New Source Review regulations if the State Implementation Plan is approved by EPA, or under Federally mandated New Source Review regulations if the plan is not approved. Further, operations regulated under New Source Review would be exempt from the conformity provisions as outlined in the March 1993 draft Rule (55 FR 13866). It should also be pointed out that in 1994, EPA will review the local Air Pollution Control District's proposed Federal operating permit program. Even if EPA approves the operating permit program, EPA would still retain the authority to veto permits that are not issued in accordance with the approved program.

9. Oils, chemicals, and produced waters could inadvertently spill and degrade groundwater.

All spills will be cleaned up as they are identified in accordance with the NPR-1 Spill Prevention, Control, and Countermeasure Plan.

10. Development of 1,569 acres of wildlife habitat on and off NPR-1 and potential for adverse impacts to wildlife from inadvertent harassment, vehicle mortality and contact with hydrocarbons and/or oil-field chemicals.

Preactivity surveys will be conducted by qualified personnel prior to any construction, maintenance, clean-up, or other ground disturbance in undeveloped areas to minimize the amount of habitat disturbed and to avoid protected species and their habitat to the maximum extent possible. Disturbed habitats will be revegetated as part of an ongoing habitat reclamation program.

In 1987, the U.S. Fish and Wildlife Service rendered a non-jeopardy Biological Opinion for the continued operation and development of NPR-1 at the maximum efficient rate of production. On October 9, 1991, consultation for maximum efficient rate production was reinitiated by DOE for the SEIS, and by letter dated May 28, 1993 (received by DOE on June 7, 1993), the U.S. Fish and Wildlife Service issued a draft Biological Opinion for this action which also concluded non-jeopardy. This consultation is still in progress, and when it is completed DOE will

comply with the requirements contained in the new Biological Opinion. The U.S. Fish and Wildlife Service indicated by letter dated April 12, 1993, that the 1987 Biological Opinion will remain in effect for all activities specifically described therein until the current consultation is complete. DOE will continue to comply with the requirements of the 1987 Biological Opinion until such time as they are superseded by new requirements in subsequent Biological Opinions.

Most impacts associated with the proposed action of the SEIS and the 1993 draft Biological Opinion (including those associated with no action) were addressed in the 1987 Biological Opinion. For those proposed new activities that were not so addressed, DOE will not make any irreversible or irretrievable commitments of resources which would foreclose the formulation or implementation of any reasonable and prudent alternatives needed to avoid violating section 7(a)(2) of the Endangered Species Act until the impacts of these new activities have been subjected to review under section 7 of the Endangered Species Act. EPA recommended that no Record of Decision be issued until a new final Biological Opinion had been issued, and discussed the need to prepare additional National Environmental Policy Act documentation should the final Biological Opinion require modified operations not evaluated in the SEIS. DOE believes that the limitation on proceeding with new activities pending receipt of a final Opinion assures compliance with the Endangered Species Act. Furthermore, DOE commits to completing such documentation if required by the new Opinion.

EPA also questioned what steps DOE will take to prevent ingestion of chemicals by threatened, endangered and other animal species on NPR-1. DOE has in place a comprehensive program to prevent the ingestion of oil field chemicals by wildlife. This program includes, but is not limited to, adherence to the facility Spill Prevention Control and Countermeasure Plan; proper storage, handling and disposal of chemical containers; procuring bulk chemicals whenever possible to eliminate storage in the field; proper management of hazardous wastes in conforming 90-day storage facilities; prompt evacuation of oily fluids from structures; managing current waste disposal sites in accordance with permit requirements; and remediating historical waste disposal sites. These standard management practices all provide protection from ingestion of oil field chemicals by wildlife.

To further reduce the potential for adverse impacts to listed species, DOE agrees to implement the following mitigation activities addressed in the May 28, 1993 draft Biological Opinion:

- a. Continue to implement an endangered species program, including the NPR-1 Wildlife Management Plan;
- b. Continue to conduct the endangered species worker education/training program;
- c. Continue to conduct preactivity surveys as appropriate to minimize habitat disturbances and harm or mortality to listed species;
- d. To the extent feasible, avoid sensitive habitats such as San Joaquin kit fox dens, giant and Tipton kangaroo rat burrows, and burrows potentially utilized by blunt-nosed leopard lizards;
- e. Refrain from destroying San Joaquin kit fox dens that cannot be avoided until approval is obtained from the U.S. Fish and Wildlife Service;
- f. Continue to implement a habitat reclamation program to reclaim disturbed areas that are no longer needed for oil-field operations;
- g. Minimize off-road vehicle travel;
- h. Prohibit employees from bringing pets onto NPR-1;
- i. Clean up oil and chemical spills in accordance with the Spill Prevention Control and Countermeasure Plan.
- j. Continue to evaluate sumps and catch basins to identify potential hazards to wildlife and remediate these hazards to the extent feasible;
- k. Continue to evaluate and, to the extent feasible, remediate well cellar covers posing hazards to wildlife; and

1. Continue to report to the U.S. Fish and Wildlife Service on an annual basis on the status of the endangered species program.

11. Potential disturbance of cultural resources from development of 1,569 acres on and off NPR-1.

NPR-1 will develop and implement a cultural resource management plan for the protection of cultural resources.

12. Potential for well blowouts and gas explosions from closed compressor facilities.

DOE will continue to conduct internal safety appraisals of all NPR-1 facilities.

C. Unavoidable Adverse Impacts. The unavoidable adverse impacts resulting from the proposed action that cannot be fully mitigated are as follows:

1. Some soil erosion would occur, especially in areas of new construction if major storms occur before soil stabilization measures take effect.
2. There is some potential for subsidence as the result of oil, gas, and water withdrawals from underlying geologic structures.
3. Inadvertent releases of oil or other oil field chemicals that are not entirely recovered on a timely basis could, over a period of time, migrate into and degrade groundwater aquifers.
4. Small net increases in the NPR-1 emissions of carbon monoxide and particulate matter could occur, resulting in minor increases in ambient concentrations of these pollutants in western Kern County.
5. There would be unavoidable, long-term adverse impacts to a net of 74 acres of wildlife habitat on and off NPR-1 as a result of permanent construction disturbances. (See Table 2.2-1 on page 2-11 of the final SEIS.)

6. The loss of habitat, potential exposure to hydrocarbons or other oil field chemicals and site activities may result in the death, injury and displacement of some plants and animals, including threatened and endangered species.

7. There is a very small potential that produced wastewater disposed of into disposal wells and sumps might degrade off-site groundwaters.

8. Increased consumption of energy and fresh water supplies would occur.

VI. Conclusion.

The production of NPR-1 in accordance with the Naval Petroleum Reserves Production Act of 1976 continues to serve a vital role in National defense, U.S. Treasury revenues, and local, regional, and National economics. Until Congress and the President modify the mission of DOE with respect to the Naval Petroleum Reserves, DOE will continue to produce NPR-1 in the most efficient and environmentally responsible manner possible.

Issued at Washington DC, this ____ day of _____, 1994.

ORIGINAL SIGNED BY:

Marvin I. Singer

Acting Assistant Secretary for Fossil Energy

**DATE
FILMED**

8/18/94

END

