DOE/EIS-0020



**Final Environmental Impact Statement**

(Final Supplement to Dept. of the Navy NPOSR FEIS Issued 9/16/77)

# CRUDE OIL TRANSPORT ALTERNATE FROM NAVAL PETROLEUM RESERVE NO. 1

## Elk Hills/SOHIO Pipeline Connection Conveyance System

## Terminal Tank Farm Relocation to Rialto, California

**U.S. DEPARTMENT OF ENERGY**

**June 1978**

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## Elk Hills/SOHIO Pipeline Connection Conveyance System

### Terminal Tank Farm Relocation to Rialto, California

Responsible Official

James L. Liverman
Acting Assistant Secretary for Environment

**U.S. DEPARTMENT OF ENERGY**
Washington, DC 20545

**June 1978**

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## SUMMARY

Statement Type: ( ) Draft Environmental Impact Statement ( ) Final Environmental Impact Statement

(X) Supplement to Final Environmental Impact Statement

Prepared By: Department of Energy, Assistant Secretary of Resource Applications, Office of Naval Petroleum and Oil Shale Reserves

Comments to: Captain John Dick-Peddie
Officer in Charge of Construction, Elk Hills
P.O. Box 40
San Bruno, California 44066

Title: Crude Oil Conveyance System From Naval Petroleum Reserve No. 1 (Elk Hills), Kern County, California, to the SOHIO Pipeline Connection in Rialto, California

Type of Action: (X) Administrative ( ) Legislative

1. Brief Description of Proposed Action: Pursuant to Public Law 94-258, the Naval Petroleum Reserves Production Act of 1976, Naval Petroleum Reserve No. 1 (NPR-1) was opened up for production for a period of 6 years. The Act also directed the government to acquire pipeline capacity from NPR-1 to marketing terminals for 350,000 barrels per day (B/D) of crude oil. This supplement covers the actions necessary to modify the design of a proposed 250,000 B/D crude oil conveyance system from NPR-1 to connect to the proposed SOHIO West Coast to Mid-continent Pipeline at Rialto, California. The Final Environmental Impact Statement (FEIS) on the original design was published on September 16, 1977.

During the review of the NPR-1/SOHIO Pipeline Connection Conveyance System DEIS, there were a number of strongly worded objections to the proposed terminal tank farm location near Cajon Pass. The chief action covered by this supplement is the relocation of this controversial tank farm to an industrially zoned area in Rialto, California.

Other actions covered in this supplement include:

- reduction in pipeline size
- extension of pipeline 1½ miles
- addition of one mainline pump station
- minor rerouting and milepost changes
- more detailed description of communications system

2. Summary of Environmental Impacts and Adverse Effects: Overall, the proposed project modifications would result in lesser adverse effects than those previously described in the FEIS. The construction difficulties and potential security problems associated with the Cajon Pass Tank Farm would be eliminated; firefighting response at the Rialto site would be vastly improved over that of the remote Cajon site; and the Rialto site would be more compatible with local land use. Also, the smaller pipeline size would reduce the size of potential oil spill. Total hydrocarbon emissions from the tank farm would be reduced but emissions would be in an air basin with poorer air quality than at the Cajon site.

The major additional adverse impacts would be the potential for the loss of a rare plant species (Eriogonum gossypinum) on the old shoreline of the Buena Vista Lakebed and the indirect impact (primarily visual) to the Agua Mansa Cemetery, a California Historic Landmark located adjacent to the proposed Rialto Terminal. Because the proposed modifications would require a greater number of construction employees than the original project, the beneficial economic impact would be increased.

3. Alternatives Considered: Alternatives to the proposed project modifications:

- o construct tank farm at Cajon Pass as originally proposed
- o construct tank farm at alternate site in Colton, California
- o construct tank farm but postpone use
- o decrease size of tank farm
- o eliminate tank farm from project
- o postpone construction
- o cancel project

The postponement and cancellation alternatives would require modification of existing legislation in Public Law 94-258.

4. Comments Requested: The following agencies and organizations have received copies of the Final EIS.

Congressional

Senator Alan Cranston
Senator S. I. Hayakawa
Senator John C. Stennis
Senator Henry M. Jackson
Congressman B. F. Sisk
Congressman Leon E. Panetta
Congressman John H. Krebs
Congressman William M. Ketchum
Congressman Robert J. Lagomarsino
Congressman Barry M. Goldwater, Jr.

Congressman James F. Lloyd
Congressman George E. Brown, Jr.
Congressman Shirley N. Pettis
Congressman Melvin Price
Congressman Morris K. Udall

Federal

Department of Agriculture
    Soil Conservation Service (D.C. and Bakersfield)
Department of Commerce
    Assistant Secretary for Science and Technology
    Deputy Assistant Secretary for Environmental Affairs
        (5 copies)
National Oceaographic and Atmospheric Agency

Department of Health, Education and Welfare
Department of Housing and Urban Development
    Environmental and Land-Use Planning Division
    Regional Administration (Region IX)
Department of Interior
    Office of Environmental Project Review (20 copies)

Department of Labor (Occupational Health and Safety)
Department of Transportation
    Office of Pipeline Safety
Advisory Council on Historic Preservation
Council on Environmental Quality
Environmental Protection Agency (10 copies)
U.S. Water Resources Council

State

State of California
    Office of Planning and Research
        State Clearing House
    Metropolitan Transportation Commission
    University of California at Riverside (Archaeological
      Research Unit)

Regional

South Coast Air Quality Management District
    Metropolitan Zone
    District Headquarters
Southern California Association of Governments

Local

Fresno County Planning Department
Kings County Planning Department
Kern County Planning Department
San Luis Obispo County Office of Environmental Coordination
Santa Barbara County Planning Department
Ventura County Planning Department
Los Angeles County Department of Regional Planning
Los Angeles County Board of Supervisors
San Bernardino County Planning Department
Los Angeles Natural History County Museum
Southern California Association of Governments
Fresno County Council of Governments
Kern County Coulcil of Governments
Ventura Regional County Sanitation District
Ventura County Air Pollution Control District
Kern County Air Pollution Control District
Fresno County Air Pollution Control District
San Luis Obispo County Air Pollution Control District
Kings County Air Pollution Control District
Port of Long Beach
South Coast Air Quality Management District
City of Camarillo Department of Environmental Affairs
City of Coalinga
City of Taft
City of Ventura
Los Angeles Department of Airports
City of Oxnard
City of Port Hueneme
City of Palmdale
City of San Bernardino
City of Simi Valley Department of Environmental Affairs
City of Colton
City of Thousand Oaks Department of Environmental Affairs
City of Bakersfield
City of Rialto
Oxnard Harbor District
City of Victorville
Coalinga Unified School District Library
Frenso County Public Library
Avenal Branch Library
Kings County Library
Taft Branch Library
Kern County Library
San Luis Obispo County Library
San Luis Obispo County Library, Avila Beach Branch
Santa Barbara Public Library
Ventura County Library Services Agency

Simi Valley Branch, Ventura County Library
Oxnard Public Library
Port Hueneme Library
Palmdale Library
Los Angeles County Public Library
Lancaster Public Library
Littlerock Public Library
Victorville Public Library
Huntington Beach Public Library
Bakersfield Public Library
San Bernardino County Library
Colton Public Library
Riverside Municipal Museum
San Bernardino County Museum

Other Groups

Antelope Valley College, Department of Archaeology
Bloomington Municipal Advisory Council
California Chamber of Commerce
League of Women Voters, San Luis Obispo and Riverside
League of California Cities
California Institute of Man in Nature
Environmental Information Center
Environmental Policy Committee
California Marine Affairs and Navigation Conference
California Wildlife Federation
Planning and Conservation League
National Resources Defense Council, Inc.
The Wilderness Society
Environmental Defense Fund
Friends of the Earth (California and National)
National Wildlife Federation
Izaak Walton League of America
Audubon Naturalist Society
Sierra Club (San Francisco, Los Angeles, Santa Lucia, and Gorgonio Chapters)
Western Oil and Gas Association
Pipe Line Technologists
R.M. Parsons Company, Atten: Mr. Thomas Hare
Pace Corporation
Exxon Pipeline Company, Houston, Texas, Attn: Mr. T. Parish
SOHIO Transportation Company, Cleveland, Ohio, Attn: Mr. Fred Garibaldi
Center for Urban Affairs, Northwestern University, Evanston, Illinois, Attn: H. Paul Friesema
Tejon Ranch Company, Attn: Mr. Dennis McCarthy
Wrightwood Chamber of Commerce
University of California, Santa Barbara, Department of Anthropology, Attn: M. Glassow

Phelan Elementary School, P.O. Box 78, Phelan
Phelan Chamber of Commerce
Environmental Center, San Luis Obispo
Clean Air Coalition, San Luis Obispo
Tetra Tech, Inc.
Mission Coast Lung Association
Save Our Coast Coalition
South Bay Conservation Group
Tri-County Conservation League
Atlantic Richfield Company, Transportation Division
Beacon Oil Company
Chevron U.S.A. Inc.
Desert Wide Real Estate, Inc.
Hunt Realty, Inc.
Ben Oman Company
Palmdale Board of Realtors, Inc.

5. Comments Received: Public meetings were held to review the proposed project modification and a draft of this supplement at the Rialto City Council Chambers on April 3, 1978 and April 27, 1978. Comments and questions were raised at the public meetings and subsequent to the meetings, additional written comments were received. All questions and concerns expressed have been addressed in this supplement.

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# I. INTRODUCTION

## A. Project Description

### 1. Purpose

The purpose of this document is to provide a supplement to the final environmental impact statement of the proposed conveyance system needed to transport crude oil from the Naval Petroleum Reserve No. 1 (NPR-1) in Kern County, California, to a connection with the proposed SOHIO Pipeline in Rialto, California. This supplement has been deemed necessary due to modifications in the project design that have occurred since the September 1977 publication of the Final Environmental Impact Statement, Crude Oil Transport from Naval Petroleum Reserve No. 1, Tupman, California, Elk Hills/SOHIO Pipeline Connection System.

This supplement is not meant to be a complete environmental impact statement by itself. It is meant to supplement the previously published Draft EIS (April 1977) and the Final EIS. The supplement is based on the more detailed project description contained in the Final Study Report, Elk Hills Development Crude Oil Pipeline, Phase II - Increment 9 (Pipe Line Technologists, January 1978).

### 2. Approach

The approach of this supplement is to limit the discussion to the components of the project design that have changed since the publication

of the Final EIS. Repetition of the discussion contained in the Final EIS, therefore, will be minimized. To facilitate use of this supplement, essentially the same format and table of contents as the Final EIS have been used.

## 3. Background

The government was directed by Congress in Public Law 94-258 and the Naval Petroleum Reserve Production Act of 1976, to secure pipeline capacity for not less than 350,000 barrels per day (B/D) of crude oil from Naval Petroleum Reserve No. 1 (NPR-1), Kern County, California, in the Elk Hills area to a marketing terminal by April 1979. In addition, petroleum production at NPR-1 is to proceed at the maximum efficient rate consistent with sound engineering practices for a period not to exceed 6 years, at the end of which the President with the approval of Congress may extend the production period for additional periods not to exceed 3 years each. Pipeline capacity available for transporting crude oil out of NPR-1 is less than 150,000 B/D and, therefore, a new conveyance system capable of transporting up to 250,000 B/D of crude from Elk Hills is being proposed to carry out the Congressional mandate.

As of October 1, 1977, the newly created Department of Energy (DOE) has taken over responsibility from the Navy for the production and conveyance of crude petroleum from NPR-1.

The environmental review process on the conveyance of crude oil from NPR-1 was begun in June 1976 when a preliminary Environmental Assessment (EA) was prepared for four conveyance alternatives. The four alternatives consisted of a system of railroad/truck transport of crude oil and three new buried pipelines: (1) northward to Coalinga, California, (2) westward to a Navy marine terminal at Port Hueneme, California, and (3) southward to a connection with the proposed SOHIO Pipeline in the vicinity of Rialto, California.

The three pipeline alternatives were selected for further environmental study; the rail/truck transport alternative was considered infeasible for the quantity of crude oil to be conveyed. A Draft EIS of the pipeline alternatives was published in three parts in April 1977. The Draft EIS contains a full environmental inventory of the study area as well as an environmental impact evaluation of the originally proposed project. Public hearings on each of these three conveyance alternatives were held in the communities of Coalinga, Bakersfield, Taft, San Luis Obispo, Oxnard, San Bernardino, and Palmdale in May and June 1977.

As a result of the review of comments received both in writing and at public hearings it became apparent that the environmental problems associated with the Coalinga and Port Hueneme alternatives were significantly more difficult to deal with than those of the SOHIO connection, particularly with regard to air quality impacts from loading crude oil at marine terminal loading facilities. Taking into consideration the environmental impacts as well as the expected surplus of crude oil in the California area when Alaska oil begins arriving at full projected capacity, the government decided the proposed tie-in to the SOHIO Pipeline would be the preferred method of marketing crude oil from NPR-1. It is believed that implementation of this alternative would maximize distribution of the government's oil to the midcontinent and East Coast regions at the least possible transportation cost, and with the least environmental impact. Furthermore, this alternative would allow the government's share of the oil produced at NPR-1 to be placed in storage facilities of the Strategic Petroleum Reserve to be located on the Gulf Coast, should the President so direct, pursuant to Public Law No. 94-258.

The Final EIS on the Pipeline Conveyance System to the proposed SOHIO Pipeline was published in two volumes in September 1977. Volume I contains the project description and environmental impact analysis; Volume II contains written and public hearing comments on the Draft EIS and responses to these comments. The environmental impact analysis

contained in the Final EIS reflects the project design changes instituted as a result of the public review.

After the Final EIS was published, continuing work on the design of the conveyance system made it apparent that some additional modifications in the project design would have to be made in order to achieve optimum design and system compatibility. As stated in the opening paragraph, this supplement provides the environmental analysis of these modifications.

During review of the draft for this supplement, public meetings were held at the Rialto City Council Chambers on April 3 and April 27, 1978 and written comments were received after these meetings. Concerns expressed at those meetings and in subsequent letters have been considered in preparation of this supplement. A summary of the meetings and the written comments (with responses) are presented in Appendix R.

4. Project Modifications

The pipeline project as proposed in the Elk Hills/SOHIO FEIS consisted of a crude oil pipeline from Naval Petroleum Reserve No. 1 (Elk Hills) near Taft, California, to a tie-in point with the proposed SOHIO Pipeline at Colton, California. Under this plan, crude oil tank farms would have been located at Elk Hills and in the Cajon Pass area northwest of the City of Rialto, California. The Cajon Pass location had been chosen to provide a gravity feed into the proposed SOHIO line, thus saving the energy required to pump into the SOHIO system. A subsequent change in the project economics was created by a revision in the estimated total throughput of crude oil over the life of the project, making the higher cost of construction in the remote Cajon Pass area unjustifiable. High-pressure metering problems in the SOHIO system could also best be solved by relocating the tank farm. Also, relocation of the tank farm to the San Bernardino Valley would mitigate concerns over security of the isolated Cajon tank farm site.

The following is a brief outline of the major project design modifications that will be discussed in this supplement.

- Tank Farm Relocation

  The proposed tank farm at Cajon Pass has been relocated to the City of Rialto, adjacent to the proposed SOHIO Pipeline Rialto Pump Station (see Figs. 1-1 and 1-2).

- Extension of Pipeline

  To accommodate the Rialto Tank Farm and Delivery Terminal, the pipeline would be extended about 1½ miles southwestward from the terminus proposed in the Final EIS, milepost (M.P.) 166 (see Fig. 1-2).

- Reduction in Pipeline Size

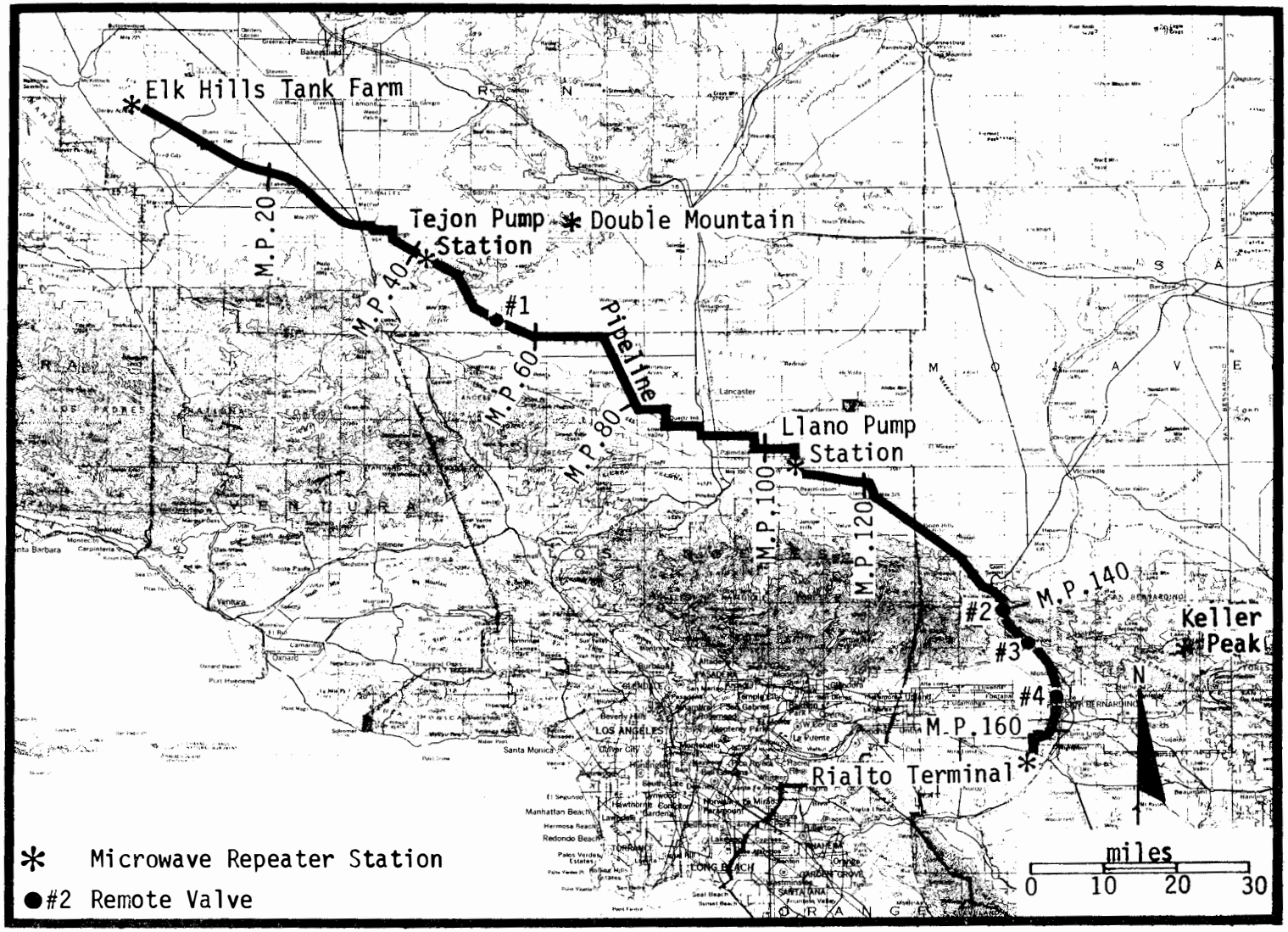
  The size of the entire pipeline has been reduced, from 28 inches to 24 inches for the segment from the Elk Hills Tank Farm to Cajon Pass and from 32 inches to 18 inches from Cajon Pass to the Rialto Tank Farm.

- Additional Mainline Pump Station

  A new mainline pump station (Llano Pump Station) has been added in the vicinity of Antelope Center, near M.P. 107.8 (see Fig. 1-1).

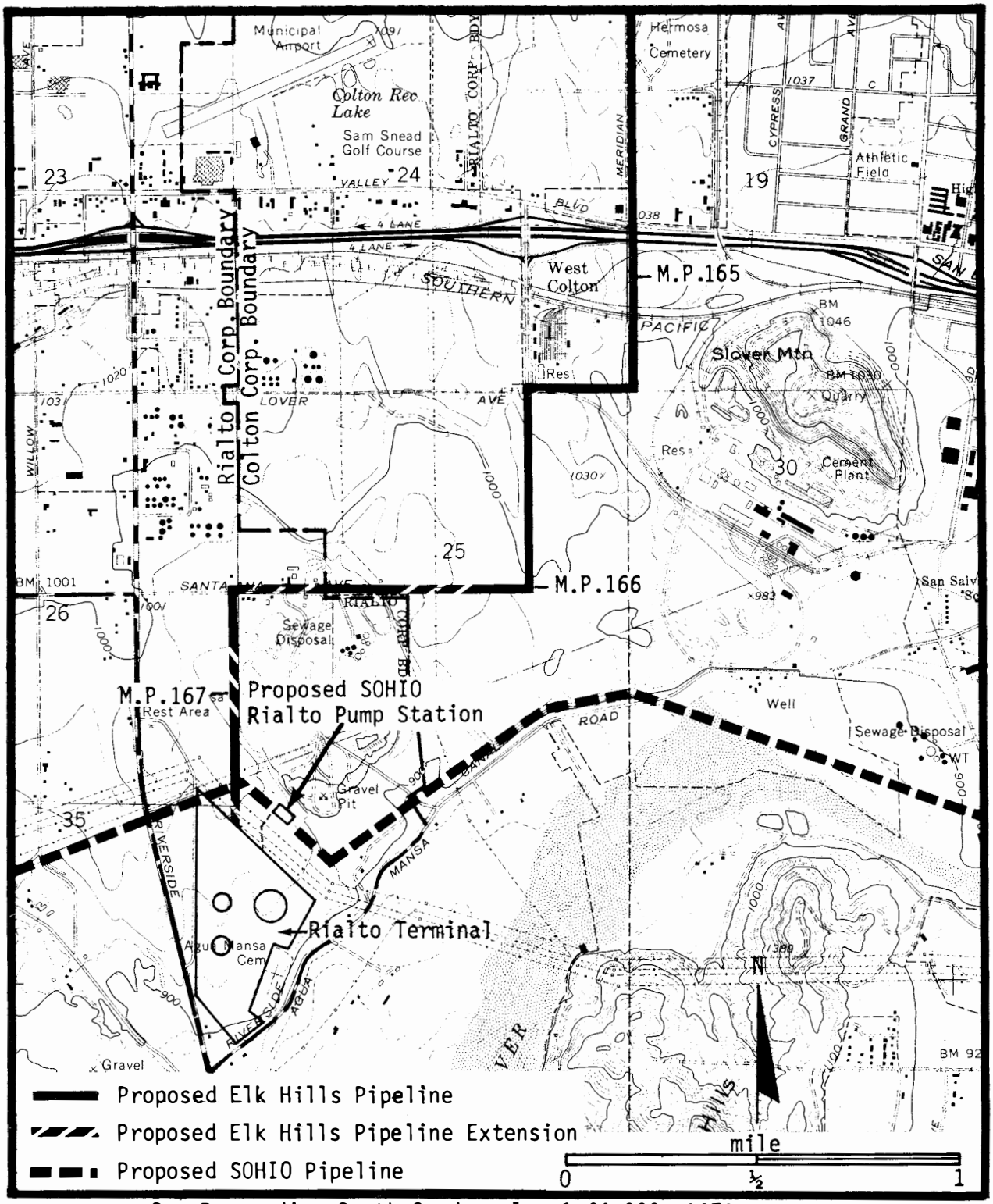
- Minor Rerouting and Milepost Changes

  Minor rerouting of the pipeline has been made in the first 12 miles of the alignment in the vicinity of Buena Vista Lakebed and in Antelope Valley in the vicinity of the proposed Llano Pump Station. This has resulted in a net increase of 2 miles in the total length of the pipeline and corresponding milepost changes from those shown in the Final EIS.




Base Map: State of California, South Half, 1:500,000, 1970.

Figure 1-1. General Map of Elk Hills/SOHIO Project Facilities in Central California




Base Map: San Bernardino South Quadrangle, 1:24,000, 1973.

Figure 1-2. Pipeline Extension to Rialto Terminal

- More Detailed Description of Communication System

  Since the publication of the Final EIS, details of the communication system along the pipeline have been made available. The basic components of this system are six microwave relay stations, one tower each at the Elk Hills, Tejon, and Llano pump stations, and Rialto terminal, and towers at Double Mountain and Keller Peak (see Fig. 1-1).

5. Description of Proposed Facilities

The proposed project would involve construction of a 1,250,000-barrel tank farm at Elk Hills; building a pipeline to Rialto, California, a distance of approximately 168 miles; and construction of a 1,000,000-barrel tank farm and delivery facility at the pipeline terminus in Rialto. The pipeline would connect with the proposed SOHIO midcontinent crude oil pipeline, for the transport of Alaska North Slope Crude from a marine terminal at Long Beach, California, to a distribution center at Midland, Texas.

The following description of the proposed facilities follows the outline of the Final EIS, noting where changes have been made.

a. Elk Hills Tank Farm

No substantial changes in the design of the Elk Hills Tank Farm have been made. Some changes in the booster pumps have been made, which are discussed in Appendix B.

b. Elk Hills/Cajon Pass Pipeline Segment

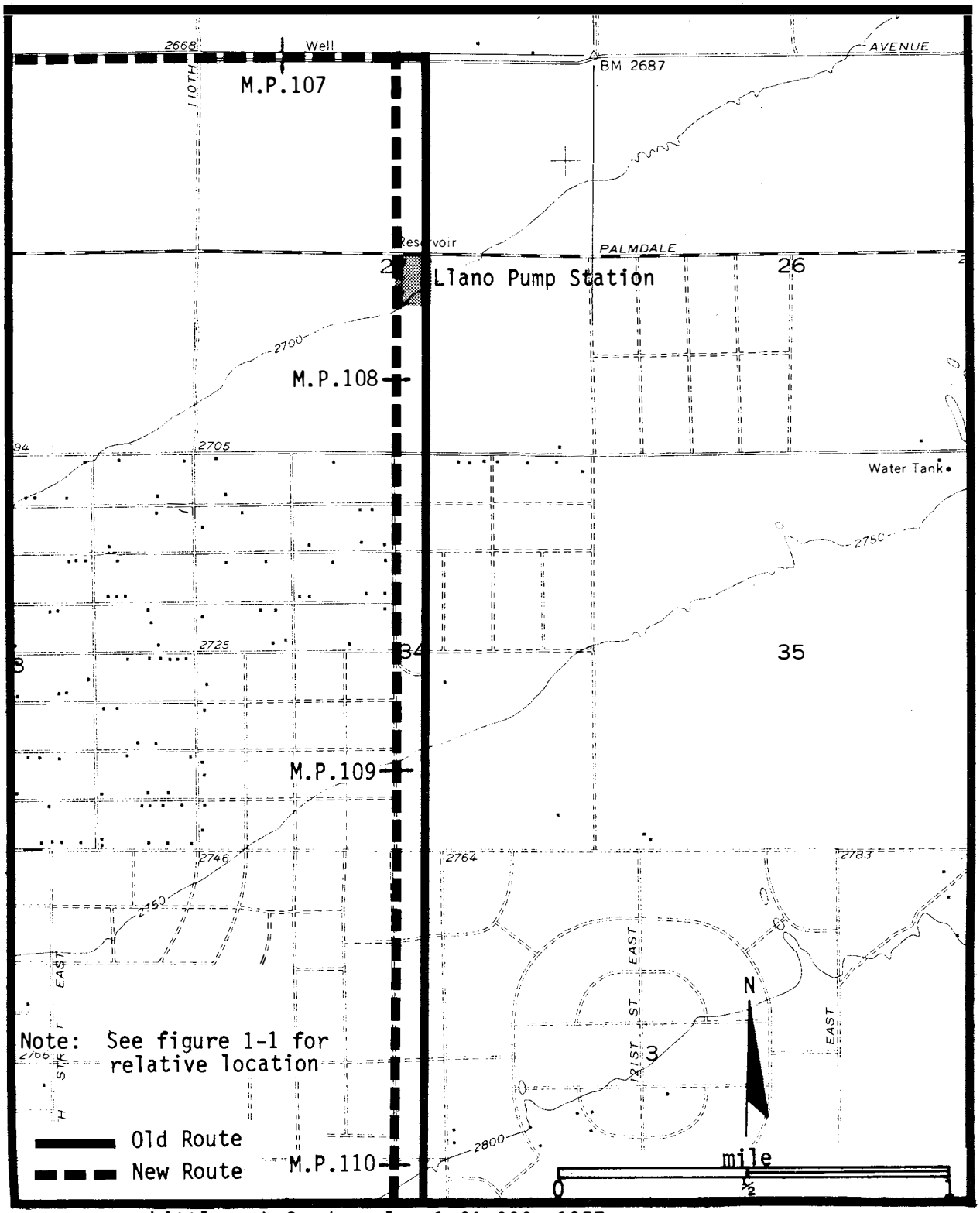
The major design changes in this segment of the pipeline route are the abandonment of the Cajon tank farm site, the addition of a mainline pumping station (Llano Pump Station) near M.P. 107.8, in the

vicinity of Antelope Center, and a reduction in pipeline size. Other minor design changes include adding a block valve at M.P. 87.1; increasing the number of pumps, but decreasing the power requirements at the Tejon Pump Station; and doing minor realignments in the first 12 miles of the pipeline and in the vicinity of the new Llano Pump Station.

The Llano Pump Station would be located on about 1 acre of land at the corner of Palmdale Boulevard and 115th Street East in Antelope Center, at about M.P. 107.8 (see Fig. 1-3). Facilities at the pump station would include a small single-story building to house equipment, an asphalt or gravel driveway and parking area, and a 200-foot microwave relay tower. The site would be surrounded by a 6-foot high chain link fence. The pump station would include the same type of equipment as the Tejon Pump Station, but only four 1,500-HP pumps would be required instead of six. Electrical power for the pumps would be supplied by an existing Southern California Edison (SCE) 66-kV overhead transmission line along Palmdale Boulevard. It would be necessary for SCE to construct a customer substation at the pump station site.

The diameter of the pipeline from the Elk Hills Tank Farm to Cajon Pass has been reduced from 28 inches to 24 inches. The pipeline size has been reduced to optimize the capital investment and operating costs.

The location of the Tejon Pump Station would be unchanged; however, six instead of four pumps would be used. The total horsepower of the pumps has been reduced from 12,000 to 10,750. To supply the required electrical power, Pacific Gas and Electric (PG&E) would construct 8.5 miles of 70-kV wood pole transmission line from an existing line along Highway 5.




Base Map: Littlerock Quadrangle, 1:24,000, 1957.

Figure 1-3. Llano Pump Station Setting and Pipeline Realignment

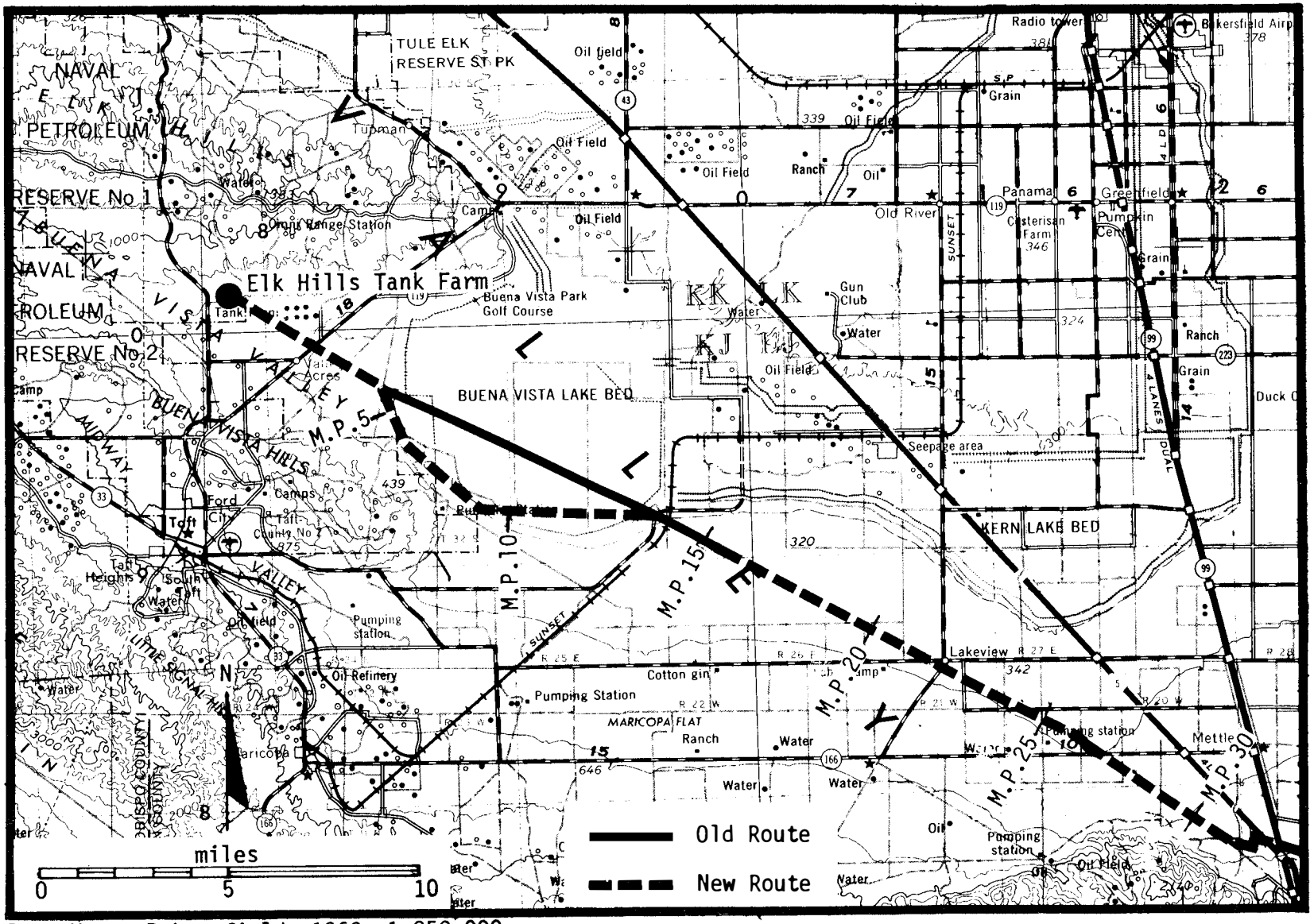
Realignments along this segment of the pipeline route have been made near the Llano Pump Station and in the first 12 miles of the pipeline route (see Figs. 1-3 and 1-4, respectively).

c. Cajon Pass-Rialto Terminal Segment

The Cajon Tank Farm and block valves have been abandoned. The pipeline size from Cajon Pass to the Rialto Terminal has been reduced from 32 inches to 18 inches. A minor route realignment has been made at about M.P. 153.5 to 155.0 along Cajon Boulevard (see Fig. 1-5). The end of the pipeline route has been extended about 1½ miles southwestward from about M.P. 166, located just south of San Bernardino Freeway, to the Rialto Terminal (see Fig. 1-2). The remote block valve previously located at M.P. 164.2 has been eliminated. The proposed SOHIO Delivery Facility, with its pressure relief tank, as described in the FEIS, also has been eliminated in the most recent project design. All other design aspects of this segment of the pipeline, specifically the location of block valves, remain as indicated in the Final EIS.

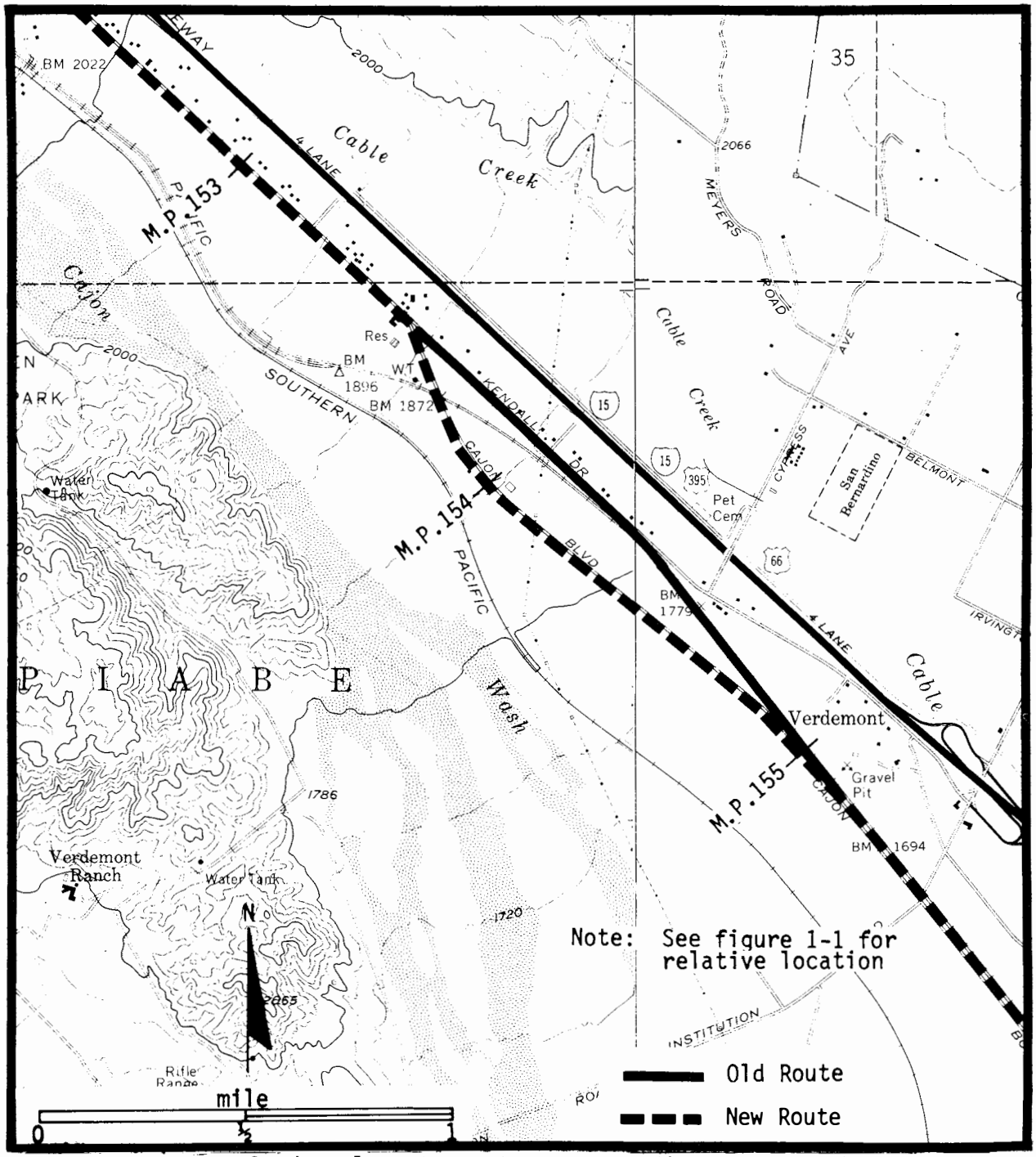
d. Rialto Terminal

The Rialto Terminal would consist of a tank farm, pumping station, and a short delivery line to the connection with the SOHIO Pipeline. The terminal would be located at the terminus of the government pipeline in Rialto, adjacent to the proposed SOHIO Pipeline Rialto Pump Station. Because of this change, the location and design of the proposed SOHIO Delivery System has also been changed. The new site for the tank farm is at the corner of Riverside Avenue and Agua Mansa Drive, approximately 6,000 feet southwest of the originally proposed SOHIO Pipeline tie-in point. The proposed SOHIO Pipeline and Pump Station are located just north of the tank farm site (see Fig. 1-2).




Base Map: Bakersfield, 1969, 1:250,000.

Figure 1-4. Pipeline Realignment - Buena Vista Lakebed



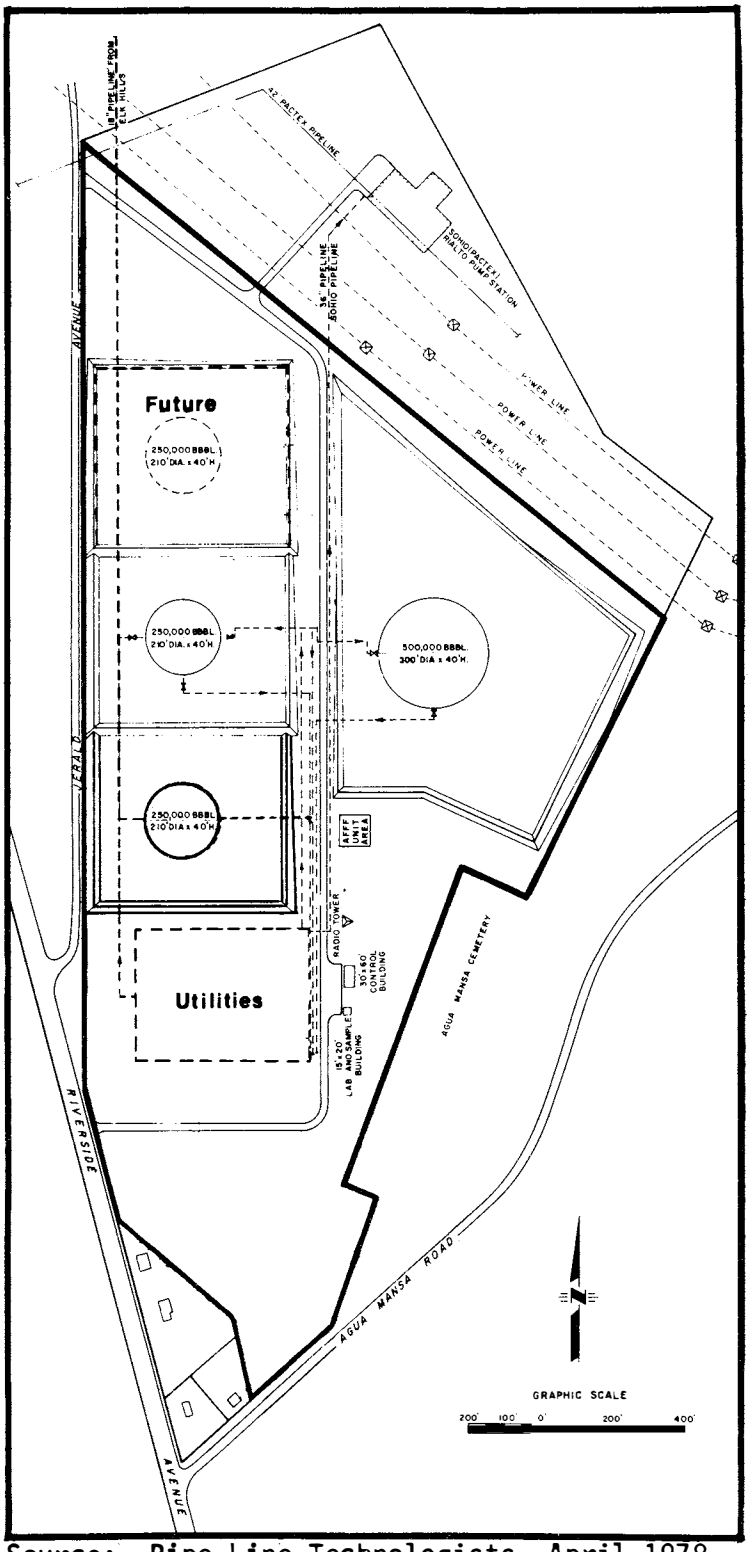

Base Map: Devore Quadrangle, 1966 and San Bernardino North Quadrangle, 1973, 1:24,000.

Figure 1-5. Pipeline Realignment - Cajon Boulevard

The tank farm facility is depicted in Figure 1-6 and would contain components similar to those found in the Elk Hills Tank Farm. Total storage capacity would be 1,000,000 barrels with two tanks of 250,000 barrel capacity (40-feet high and 210-feet in diameter), and one tank of 500,000 barrel capacity (40-feet high and 300-feet in diameter). Sufficient space would be allocated for another 250,000-barrel tank, although it is not presently planned for construction. As with the Elk Hills Tank Farm, clean and treated surface runoff water would be distributed to local surface drainage channels. Fire water supply would be provided from a local 12-inch city water main which parallels Riverside Avenue. An asphalt concrete paved road system would provide local access to all buildings, while the facility would be surrounded by a 8-foot-high chain-link fence, except adjacent to the Agua Mansa Cemetery. Along this boundary, earth berms and landscaping materials would be installed to block the view of the tank farm from the cemetery. In addition, other shrubbery and landscaping materials would be provided to screen the tank farm and chainlink fence from public view. Sanitation facilities for the buildings would include a septic tank and a leach field.

Pumping equipment for the 2,150-foot-long, 36-inch SOHIO Delivery Line would include 2,550 installed horsepower. This would provide the pumping power for Phase I operations up to a maximum capacity of 597,000 B/D. Sufficient space would be allocated for the equipment, including 1,700 additional installed horsepower, necessary to power Phase II operations up to a maximum capacity of 1,100,000 B/D. A pipeline industry-type crude oil custody-transfer metering system would be employed to record the amount of oil flowing into the SOHIO system. Noise barriers would be included to minimize noise impact.

The Rialto Terminal would also have provisions for mixing Stevens and Shallow Zone Crude Oil when viscosity analysis indicates a certain limit has been exceeded. The Stevens and Shallow Zone crude oils could be combined at the terminal booster pump station or shipped




Source: Pipe Line Technologists, April 1978.

**Figure 1-6. Rialto Tank Farm Plan Site**

separately. The delivery line would also have a check valve and motor-operated suction gate valve controlled by the SOHIO controller.

Electrical power for the Rialto Terminal would be provided by SCE from an existing overhead 66-kV transmission line near the proposed site. SCE would construct a customer substation and the required wood-pole transmission line to the substation located on the terminal site.

e. Communication System

Since the publication of the Final EIS, more detail has been made available for the communication system along the pipeline route. The following is a description of the proposed communication system.

The pipeline system would be provided with a highly reliable communication system consisting of a government-owned microwave and VHF radio system with leased commercial telephone circuits. Fixed sites along the pipeline route, which would have both voice and data communication service, include the two tank farms and the three pump stations (see Fig. 1-1).

The backbone of the communication system would consist of a microwave radio communications system that would contain relay stations at the Elk Hills Pump Station, Double Mountain, Llano Pump Station, Keller Peak, and the Rialto Terminal. Communication with the Tejon Pump Station would be a lateral microwave radio link from the Elk Hills Pump Station. Since Remote Valve No. 1 is not in line-of-sight from one of the above-planned repeater sites, communication would be by a VHF radio link from Double Mountain.

Each repeater site would have a transmitting and receiving tower. Power for the Elk Hills, Llano, and Rialto facilities would be provided by existing utility lines. Because of their remote locations,

power for Double Mountain and Keller Peak would be provided by onsite electrical generators. Standby batteries would be provided at all locations.

6. Land Requirements

There would be little change in land requirements associated with the updated project design. The Llano Pump Station would require about an acre of land, but this would be offset by the elimination of the separate SOHIO Delivery Facility. The Rialto terminal site would be 68 acres, or about 10 acres less than the previously proposed Cajon Tank Farm. An additional 1-1/2 miles of pipeline right-of-way would be required for the extension of the pipeline from the previous pipeline terminus to the Rialto Terminal. However, the proposed access road to the Cajon Tank Farm would no longer be required.

7. Construction and Restoration Procedures

Estimates of the total system costs for the project have been revised downward from between $100 and $120 million to $104 million. As presently planned, seven separate contracts with private contractors would be awarded for the following segments of the projects:

- Elk Hills Tank Farm
- Elk Hills Control Center, Pump Stations, Warehouse, and Microwave Repeater Sites
- Rialto Terminal (excluding tanks)
- Rialto Terminal Tanks
- Pipeline - Elk Hills to M.P. 68
- Pipeline - M.P. 68 to M.P. 135
- Pipeline - M.P. 135 to Rialto Terminal.

Each of the above segments would be constructed simultaneously.

a. Schedule

Public Law 94-258 states that pipeline capacity must be secured by April 15, 1979. It now appears this deadline cannot be achieved. The latest estimate of the time for completion (from engineering design to project operation) is 18 months.

The construction of this project is dependent on the construction of the proposed SOHIO midcontinent pipeline. However, the SOHIO Pipeline has not yet received all the required permits. Anticipating the possibility of a delay in the NPR-1 project because of its dependence on the SOHIO project, the government has requested that Congress consider amending P.L. 94-258 to extend the deadline to no later than April 5, 1980, in order to maximize flexibility in making a decision concerning which pipeline alternative should be utilized. In addition, an administration-sponsored bill that would revise the mandatory completion date to December 5, 1980, has been subsequently transmitted to Congress. As of this writing (February 1978), action on this bill has not been taken.

b. Organization and Methods

Although the DOE has assumed overall responsibility for developing and transporting oil from the NPR-1, construction activities would remain under the direct control of the Officer in Charge of Construction (OICC), Naval Facilities Engineering Command Contracts, Elk Hills, San Bruno, California.

c. Tank Farms and Pump Stations

Except for the discussion of construction activities at the Cajon Tank Farm, the previous discussion in the Final EIS still applies. The proposed access road to the Cajon Tank Farm would no longer be

needed. Construction at the Rialto site would be considerably easier than the Cajon Pass site because of easy access. The storage tanks at the Rialto Terminal would be painted a light color in order to decrease temperatures in the tanks thereby minimizing hydrocarbon emissions.

d. Pipeline Construction

As mentioned earlier, the Elk Hills-to-Rialto pipeline would be constructed by three separate pipeline crews in three spreads -- Elk Hills to Milepost (M.P.) 68; M.P. 68 to M.P. 136.7; and M.P. 136.7 to Rialto. No other changes have been made in the actual construction methods as described in the Final EIS.

e. Restoration

The proposed project design modifications would not change the right-of-way cleanup and restoration plans described in the final EIS.

f. Abnormal Effects

Usual construction safety programs and injury and damage liability insurance would be required of all contractors. The potential for construction-related hazards would not be affected by the proposed project design modifications.

8. Operations and Maintenance

a. Elk Hills Tank Farm

The proposed project design modifications would not change the operation and maintenance procedures at the Elk Hills Tank Farm as described in the Final EIS.

b. Rialto Terminal

The discussion in the Final EIS on the operation and maintenance of the Cajon Tank Farm and SOHIO Delivery System would now apply to the Rialto Terminal. The basic operation of the tank farm and delivery system at the Rialto Terminal would be automatically controlled from the Operations Control Center at Elk Hills. Two full-time employees would be assigned to the Rialto Terminal to perform routine maintenance and to take periodic crude oil samples.

c. Pipeline

Operation of the pipeline, including the three pump stations and remote-control block valves, would be by the Operations Control Center at Elk Hills. Scraper pigs for cleaning the pipeline would be used in essentially the same way as described previously in the Final EIS; however, the receiver and launcher facilities formerly proposed for the Cajon Tank Farm site have been relocated about a mile southward to the floor of Cajon Canyon, at M.P. 136.7, at the point where the pipeline diameter narrows from 24 inches to 18 inches. Thus, the Elk Hills-to-Cajon (M.P. 136.7) segment of the pipeline would be cleaned by inserting a scraper pig at Elk Hills and retrieving it at M.P. 136.7. The Cajon-to-Rialto segment would be cleaned by inserting a scraper pig at M.P. 136.7 and retrieving it at the Rialto Terminal.

9. Personnel Requirements

a. Construction Activities

Construction crew requirements have been modified slightly from those indicated in the Final EIS. The estimated average crew size during the construction period would be as follows:

Table 1-1
CONSTRUCTION PERSONNEL

| Crew Type | Average Crew Size |
|---|---|
| Elk Hills Tank Farm | 50 |
| Operations Control Center | 40 |
| Tejon and Llano Pump Stations, 25 each | 50 |
| Microwave Repeater Station | 20 |
| Rialto Terminal | 75 |
| Pipeline, 3 crews | 480 |
| Engineers/Inspectors | 40 |

Source: Marmac Engineers

All construction would be performed simultaneously.

b. Operation

A total of 38 full-time operating personnel would be employed as shown in Table 1-2. This represents an increase of seven over the estimate contained in the Final EIS. Thirty-five people would be employed at the Operations Control Center at Elk Hills. One pump station operator would serve both the Tejon and Llano Pump Stations; and two terminal operators would be employed at the Rialto Terminal on a normal 40-hour, work-week basis.

10. Mothballing Procedures

No changes have been made in the mothballing procedures described in the Final EIS.

Table 1-2

OPERATING PERSONNEL REQUIRED

| | |
|---|---|
| **Operations Control Center** | |
| Pipeline System Manager | 1 |
| Maintenance Manager | 1 |
| Pipeline Engineer | 1 |
| Safety Engineer | 1 |
| Operations Manager | 1 |
| Pipeline Maintenance Supervisor | 1 |
| Electrical Maintenance Supervisor | 1 |
| Communications Maintenance Supervisor | 1 |
| Mechanical Maintenance Supervisor | 1 |
| Warehouseman | 1 |
| Chief Dispatcher | 1 |
| Dispatchers | 5 |
| Scheduler | 1 |
| Operations Supervisor | 1 |
| Terminal Operator (Elk Hills) | 1 |
| Pipeliners | 6 |
| Welder | 1 |
| Electricians | 2 |
| Communication Technicians | 2 |
| Mechanics | 2 |
| Secretaries | 3 |
| **Field Operations** | |
| Pump Station Operator | 1 |
| Rialto Terminal Operators | 2 |
| Total | 38 |

Source: Pipe Line Technologists, 1978.

11. Abandonment Procedures

No changes have been mde in the abandonment procedures described in the Final EIS.

12. Risk Assessment

The following discussion is limited to significant changes in the previously identified risks due to project changes. The major changes affecting the risk assessment are: the relocation of the tank farm from the Cajon site to Rialto; minor modifications in the routing of the pipeline and its extension to the Rialto site; and the overall reduction in pipe size throughout the entire length of the pipeline.

a. Tank Farm

The relocation of the tank farm to the Rialto site has, overall, reduced the risks associated with fire and/or explosion; the risk of spills is little changed. At the Rialto site the tanks would be individually diked with sufficient capacity to contain the entire contents of each tank plus 10 percent overage, sufficient to contain any possible spill.

The use of floating-roof tanks, which have the best fire safety record in the industry (see the Elk Hills/SOHIO FEIS, Appendix D), is expected to minimize the possibility of fire occurrence. Each tank will be equipped with shunts from the floating-roof to the tank to alleviate possible lightning - associated ignitions, the most common source of fire in floating-roof tanks. If, despite this protection, a fire occurs (for example, from a direct lightning strike - a very unlikely eventuality), the fire would be limited to the seal area. (Seal fires are typically very slow burning and, once detected, are often extinguished with hand held dry powder units). Each tank will be protected by fixed

foam outlets around the top of the tank; 3 percent foam will be supplied from a central foam generating system which can also be supplied from truck mounted foam generators. A foam dam will be emplaced around the periphery of the floating-roof to insure foam retention on the seal area.

The second most common cause of fire in and about floating-roof tanks is from tank overfilling. To minimize this possibility, each tank will have a high level alarm which, when triggered, will shut down the incoming product pump and, simultaneously, sound an audible alarm at the Supervisory Control Center at Elk Hills. A second high-level alarm will also be provided which, if triggered, will sound an alarm at Elk Hills and also alert the Rialto Fire Department dispatcher's office. In the most unlikely case that, despite these redundant systems, the tank overflows, the crude oil would be retained within the diked area (but drained away from the tank itself) where it could be collected. If a spill were to ignite, the flames could be controlled by mobile foam units which can readily reach any of the tank sites. As additional precautions, all control valves and instrumentation will be placed outside of the diked areas and all piping leading to the tank will be protected, usually by burial.

Pontoon-type floating-roof tanks exposed to seal fires have, in a few cases due to poor construction practices and/or improper firefighting techniques, resulted in involvement of the entire tank surface in fire. To preclude such a possibility each floating-roof tank will use a number of air-tight pontoons which cannot become partially or fully filled with oil or water, thus eliminating the major cause for roof sinkings. As an additional precautionary measure, the contents of any tank can be removed at a rate of up to 20,000 barrels/hr. (Generally uncontrolled fires in large tanks depend on fuel depletion as the major fire control mechanism).

In an uncontrolled fire the radiation from the flames can ignite adjacent tanks, if the distances are small. At the Rialto Tank Farm the tanks are scheduled to be approximately 1-1/2 tank diameters (300 feet) apart which is considered more than adequate to minimize radiation effects. However, if necessary, tank shell cooling can be provided by pumpers from nearby fire stations using fixed nozzles.

Water and foam additives are essential resources for fighting fires. At Rialto the minimum quantities suggested by code (NFPA 11, 30) for fire protection of the 500,000 barrel tank are as follows:

| | Water (gallons per minute) | Foam Concentrate (gallons) |
|---|---|---|
| Tank | 300 | 180 |
| Hydrant | 150 | 135 |
| Shell Cooling | 1,500 | -- |
| Total | 1,950 | 315 |

The Rialto Tank Farm expects to obtain water from one or more mains running near the property. The water supply will exceed minimum suggested quantities and be adequate to meet anticipated peak demands plus a margin of safety. Likewise, on-hand foam supplies will exceed minimum suggested quantities appreciably.

In the extremely unlikely eventuality that fire should spread, additional foam and light water capabilities are available from nearby fire departments (including the Rialto Fire Department and the March and Norton Air Force fire departments) whose capabilities are shown in Appendix O. No fire trucks would be kept at the tank farm itself.

The recent fire at the Southern Pacific Pipeline tank farm on February 21, 1978, near the proposed Rialto Tank Farm provides additional valuable information on the firefighting capabilities in the

Rialto area. In this large fire, which is described in Appendix D, the available water and foam resources were more than adequate.

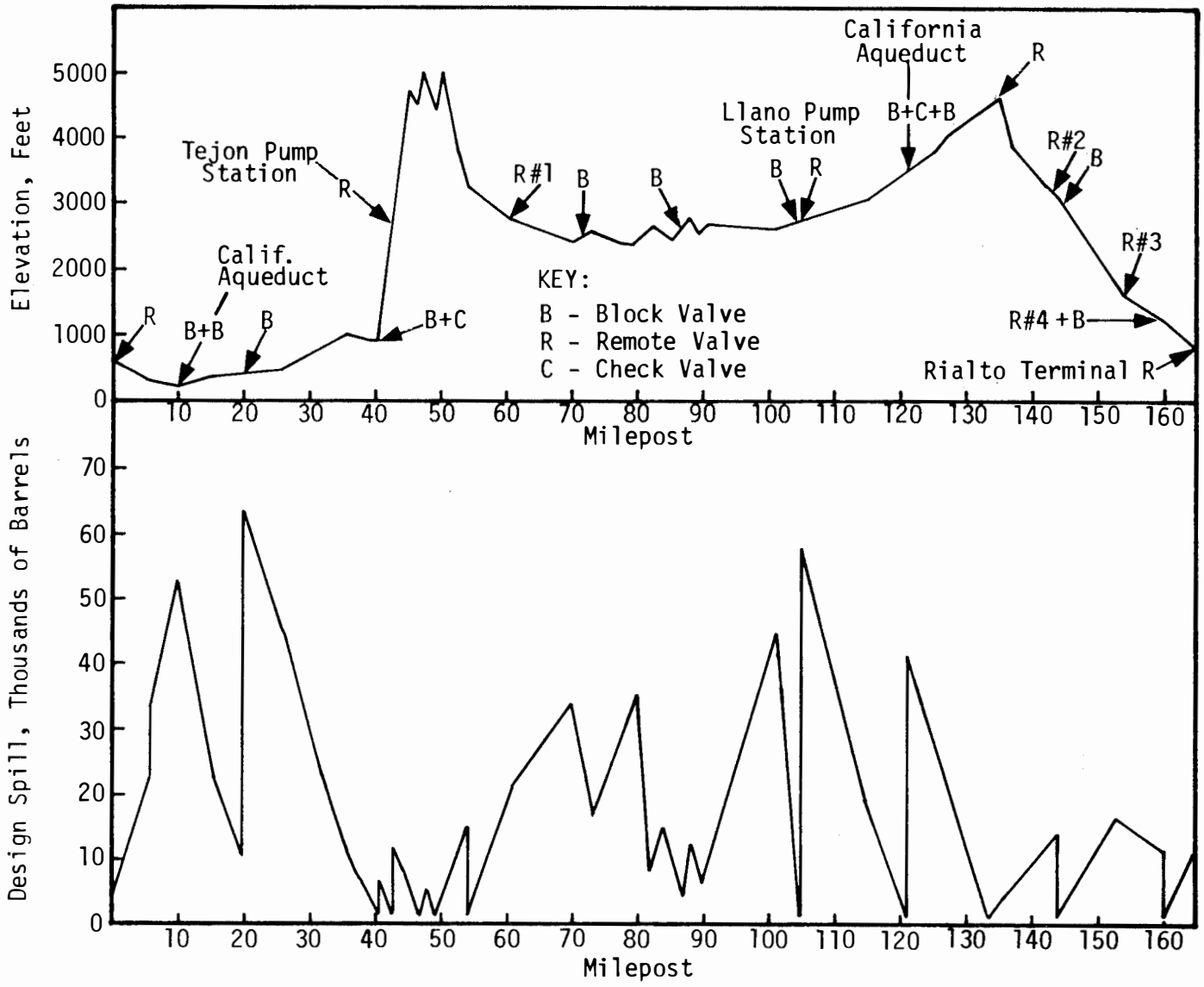
b. Pipeline

The new design calls for a 24-inch pipe from Elk Hills to Cajon Pass and an 18-inch pipe from there to the Rialto Terminal; these represent substantial decreases in pipe size over previous design, but with the same throughput of 250,000 barrels per day. Primarily as a result of this decreased pipe size, and secondarily because of additional remote-control valving in the line and at other control points such as pump stations, the design spill has been reduced substantially.*

In the 24-inch leg of the pipeline, the design spill has been reduced by approximately one-third in most cases; and in the 18-inch segment, which passes through the most populated areas, reduction is from 50 to 70 percent. The design spill for this routing is shown in Figure 1-7.

The spill reporting and control measures, which were adequate in most cases under the previous design, are still considered adequate under the present design criteria. However, present scheduling of construction indicates that the pipeline and the Rialto Tank Farm will be available for operation prior to the completion of the Supervisory Control System. Hence, as interim mitigating measures until the Supervisory Control System can be completed and tested, the pipeline route

*Design spill is based on the worst credible case, which assumes a complete break in the pipe with complete drainage of all uphill sections of the pipe plus that oil lost prior to shutdown. In this case, applicable values used are: a 24-inch pipeline contains 2,957 barrels per mile and an 18-inch pipeline 1,663 barrels per mile. Remotely controlled valves are assumed to be closed within 10 minutes of a major break causing a total loss prior to shut down of 1,700 barrels. Manual block valves are assumed to be closed within 2 hours, preventing further drainage from uphill portions of the line after that time.




Source: Pipe Line Technologists, Inc. and URS Company.

Figure 1-7. Design Spill for Elk Hills, to SOHIO Pipeline

will be overflown twice a week and a man will be on duty at the Rialto Tank Farm at any time when filling is proceeding and volume exceeds 80 percent of tank capacity.

A 36-inch pipeline of approximately 2,000 feet would carry oil from the Rialto Tank Farm to the SOHIO connection. The design spill on this line was not determined since this line is entirely on private or government-owned property so that control over third party accidents (the most probable cause) is very tight. Smaller leaks would be detected by routine inspection of the tank farm facility.

13. Other Federal Activities

In addition to those federal activities mentioned in the Final EIS, the proposed project modifications would affect the U.S. Forest Service. The proposed microwave tower at Keller Peak would be located within the San Bernardino National Forest.

# II. EXISTING ENVIRONMENT OF PROPOSED SITE

## A. Geological Resources

### 1. Physiography

No significant changes from the discussion in the Final EIS are required. References to the Cajon Tank Farm no longer apply. The proposed Rialto Terminal would be located on the nearly level alluvial plain of the San Bernardino Valley. The elevation at the terminal site is approximately 930 feet.

### 2. Areal Geology/Stratigraphy

The proposed Rialto terminal site and the pipeline extension route from M.P. 164 to the Rialto Terminal are underlain by thick alluvial sediments of Holocene and Pleistocene age. The northern end of the site is covered with a thin layer of loose wind-blown sand, the remainder of the site is covered by older, more compact alluvium. The sediments generally become more compact with depth.

### 3. Soils

The soils at the Rialto terminal site and along the pipeline route from M.P. 164 to the terminal are generally part of the soil association composed of Hanford coarse sandy loam and Delhi fine sand (U.S. Soil Conservation Survey, 1971).

4. Mineral Resources

Sand and gravel have been and still are being mined in the vicinity of the Rialto terminal site. Gravel pits occur just northeast of the proposed SOHIO Pump Station and on the west side of Riverside Avenue, just across from the Rialto terminal site. It is assumed the alluvial sediments underlying the terminal site would also be suitable as a source of sand and gravel.

5. Unique Geological Features

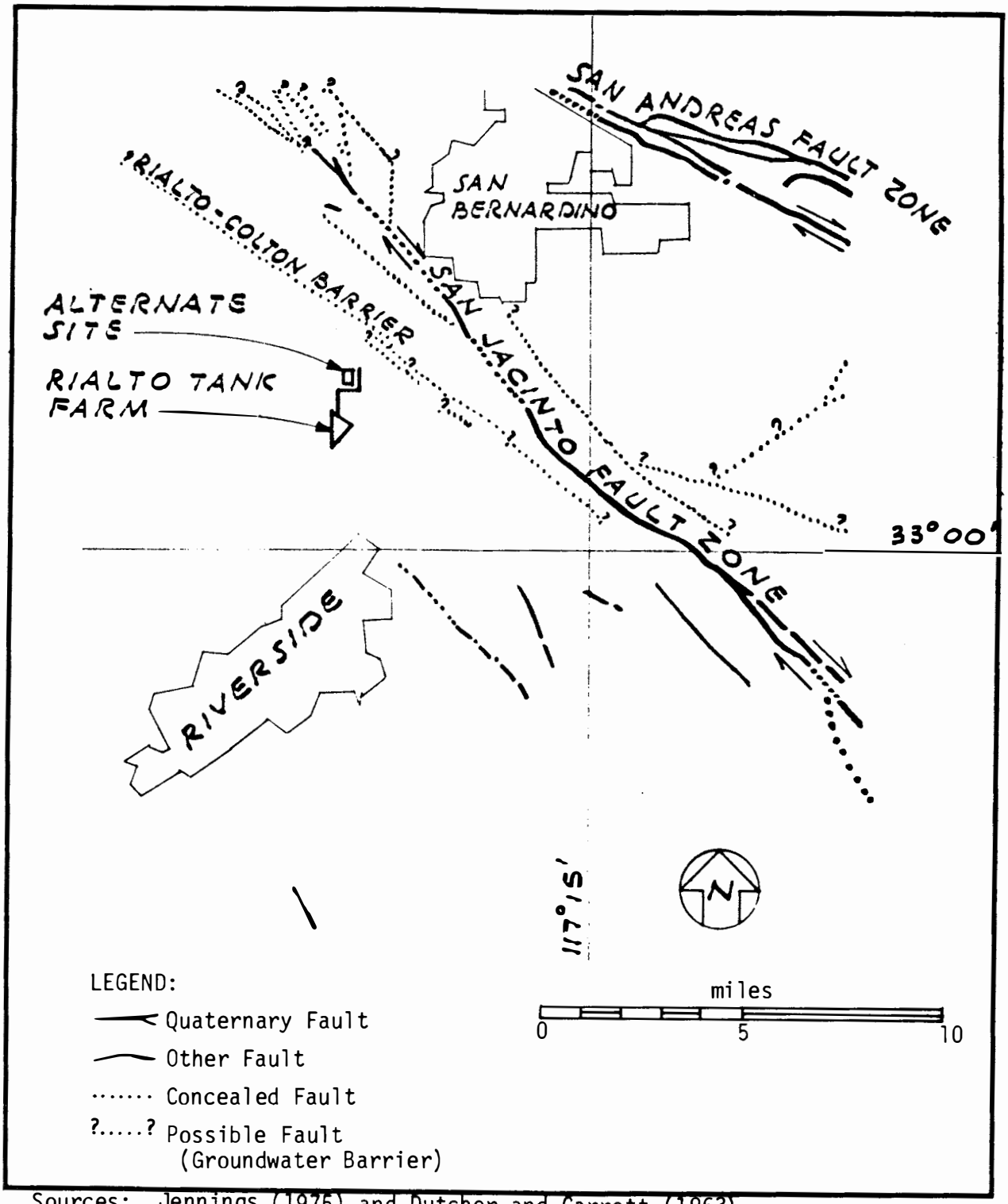
No known unique geological features occur at the location of the proposed project modifications.

6. Seismic Setting

The proposed project modifications, particularly the relocation of the Cajon Tank Farm to the Rialto site, have necessitated an expanded discussion of the seismic setting in the San Bernardino-Riverside area. The following is a summary of the more detailed seismic setting discussion contained in Appendix F.

a. Local Fault Tectonics

The San Bernardino-Riverside area lies about 10 miles southeast of a major bifurcation in the San Andreas fault system. The northern branch, named the San Andreas fault, trends east-southeastward along the southern front of the San Bernardino Mountains. The southern branch of the San Andreas system, named the San Jacinto fault, is at least equal in tectonic importance. It comprises a band of parallel and en echelon traces that trends southeastward from the vicinity of Cajon Pass and crosses the southwest corner of the City of San Bernardino (Fig. 2-1). Recent surface breaks and evidence for fault activity along the San




Sources: Jennings (1975) and Dutcher and Garrett (1963).

Figure 2-1. Faults and Groundwater Barriers in the Vicinity of the Rialto Tank Farm Site and Pipeline Connection

Jacinto fault zone from Cajon Pass to the Imperial Valley have been mapped by Sharp (1972). Geomorphic evidence for Holocene movement (younger than about 10,000 years) is abundant along both the San Andreas and San Jacinto fault zones, demonstrating continuing deformation.

Historic movement along the San Jacinto fault zone has been documented by geodetic measurements across the fault zone in San Bernardino (U.S. Department of Commerce, 1971), by repeated road repairs and ground settlement in San Jacinto Valley 25 miles southeast of the Rialto site (Fett et al., 1967; and Proctor, 1962), and by earthquake occurrences and ground ruptures, especially nearer the southern end of the fault zone in the Imperial Valley region (Jennings, 1975).

b. Fault Rupture and Fault Creep Hazard

With the exception of the proposed powerline to serve the Tejon Pump Station, none of the project modifications would be subject to fault rupture hazard. The westernmost third of the powerline to serve the Tejon Pump Station coincides with the trace of Plieto fault, a thrust fault that has been active in Quaternary time and thus is considered potentially active (Jennings, 1975). Because of the irregular surface trace of this northward thrusting fault, fault rupture hazard should be considered possible over a considerable width of the fault zone. Power poles founded on such a fault trace could not be protected against damage should renewed movement occur.

c. Seismically Induced Ground Failure

Conditions in the vicinity of the Rialto terminal site are considered to be generally favorable to stability during strong shaking because of the nearly flat topography and a usually low groundwater table. Nevertheless, the results of geotechnical studies will be used for foundation designs. It is expected that the same general conclusions for ground stability apply to the Llano pump station site unless detrimental conditions such as shallow ground water are detected during site

development geotechnical studies, in which case there may be a potential for liquefaction for which foundation designs will have to consider.

d. Strong Ground Motion

The expected peak horizontal accelerations at the Rialto terminal site are estimated at 0.2g for a 25-year period and 0.4g for a 50-year period. The site should be expected to experience ground accclerations of 0.1g and greater on an average of more than once per year. These estimates have been made using a probabilistic analysis and are considerably greater than the actual historical record (since 1933) in the vicinity indicates (see Appendix F for further explanation).

The source of most strong ground motion that would be experienced in Rialto would be from earthquakes generated along the San Jacinto fault, the southern branch of the San Andreas fault system that lies abour 4 miles northeast of the Rialto terminal site. At least seven large (magnitude 6 or greater) earthquakes have occurred in the San Jacinto fault zone during the past century (see Table 2-1). The first four events listed in Table 2-1 occurred in the northern section of the fault zone, while the remaining three events occurred in the southern section of the fault zone, farther from the Rialto terminal site.

7. Nonseismic Constraints

The proposed project modifications would not result in any new or revised nonseismic geologic constraints. The discussion contained in the Final EIS still applies.

Table 2-1

LARGE HISTORIC EARTHQUAKES OF THE SAN JACINTO FAULT ZONE

| Event | Date | Magnitude | Length of Surface Rupture (miles) |
|---|---|---|---|
| San Jacinto | 1890 Feb. 9 | -- | -- |
| San Jacinto | 1899 Dec. 25 | -- | 10 |
| San Jacinto | 1918 July 14 | 6.8 | -- |
| San Bernardino | 1923 July 22 | 6.2 | -- |
| Terwilliger Valley | 1937 Mar. 25 | 6.0 | -- |
| Santa Rosa Mountains | 1954 Mar. 19 | 6.2 | -- |
| Borrego Mountain | 1968 Apr. 8 | 6.4 | 17 |

B. Air Resources

1. Climate

The discussion of climate in the Cajon Canyon area is no longer of major importance because of the tank farm relocation. However, the description is correct and requires no changes. The San Joaquin Valley description remains pertinent and correct.

The Rialto site is located within the San Bernardino Valley. The climate of the San Bernardino Valley is characterized by warm, dry summers and cool, wet winters. Summertime winds average about 4 miles per hour prevailing from the west. The gentle winds, in combination with frequent and persistent inversion conditions, trap and concentrate

pollutants emitted at ground level. The sun acts upon these trapped pollutants (mainly reactive hydrocarbons and oxides of nitrogen) to photochemically produce high concentrations of oxidants.

The major direction of pollutant transport appears to be eastward toward the Banning Pass area, although another direction is through the Cajon Pass. Winds are typically stagnant in the summer months from early morning until about noon when the sea breeze reaches the San Bernardino-Riverside area.

A more detailed discussion of the climate in the San Bernardino Valley is presented in Appendix G.

2. Air Quality

The passage of the Clean Air Act Amendments of 1977 incorporated several changes in air quality regulations. These changes include: statutory requirements for emission offsets and Prevention of Significant Deterioration (PSD) as part of the required New Source Review (NSR) procedures; delays in automotive emissions standards (except California); new attainment schedules for State Implementation Plans (SIPs); and the requirement for federal agencies to comply with substantive and administrative requirements of state and local agencies. A more detailed discussion of the new amendments are presented in Appendix H.

Relocation of the Cajon Tank Farm to the Rialto site necessitated a discussion of air quality in the San Bernardino Valley portion of the South Coast Air Basin. The major air quality problem in this area is oxidants. Standards are exceeded well over 100 days each year at San Bernardino, Riverside, Redlands, Banning, and Fontana. The oxidant levels at each station are a result of local sources and transport from other parts of the air basin. The summer months (May through September) are the most prone to excessive oxidant levels.

Future air quality in the San Bernardino Valley is highly dependent upon the control strategies in the entire South Coast Air Basin. In general, automobile emission control devices are expected to reduce hydrocarbon emissions until 1995 when growth is expected to overcome the benefit of emission control devices.

A more detailed discussion of the San Bernardino Valley air quality is presented in Appendix I.

C. Noise

No significant change to the Final EIS discussion on the noise environment is required. Some short-term noise impacts would exist during construction; however, significant long-term noise impacts would generally be negligible because of the industrial character of the area adjacent to the tank farm. The only possible exception would be the homes nearest to the pump station at the intersection of Riverside Avenue and Agua Mansa Road (see Fig. 1-6).

D. Water Resources

Since all of the proposed modifications occur within the study area defined by the project's Final EIS, the water resources setting presented in that document is sufficient for this analysis.

E. Biological Resources

1. Vegetation

The pipeline corridor for the proposed modified route traverses land that is essentially the same as that described in the Final EIS. A few of the changes are biologically significant, however.

The proposed realignment around the southern shore of the Buena Vista lakebed passes very near and may impinge upon a population of cotton eriogonum (Eriogonum gossypinum) in SE¼ Section 6 R25E, T32S. This plant is included in the rare plant inventory of the California Native Plant Society (Powell, 1974), but is not on any federal list. South of Slover Avenue, between M.P. 163 and M.P. 164, the corridor crosses a disturbed field that contains elements of Annual Grassland and Coastal Sage communities, as defined in the Appendix.

The Rialto Tank Farm would occupy a disturbed field of Annual Grassland, in contrast to the sensitive, undisturbed ecotonal desert valley of the Cajon Tank Farm.

2. Wildlife

There are no significant differences between the wildlife environment discussed in the Final EIS, and that in the vicinity of the proposed modifications.

3. Aquatic Biology

All of the proposed modifications occur within the study area are described in the project Final EIS. Thus, the baseline discussion presented in that document is suitable for this analysis.

4. Ecological Relationships

The proposed project modifications would not alter the ecological relationships as previously discussed in the Final EIS.

F. Archaeological, Historical, and Other Cultural Resources

In addition to the discussion contained in the Final EIS, a description of the archaeological and historical conditions at the

Rialto terminal site and the pipeline extension from M.P. 164 are briefly discussed here. A more complete discussion is contained in Appendix N.

1. Archaeological Resources

The proposed pipeline extension to the Rialto Terminal and the Rialto Terminal site lie within the region populated by Shoshonean-speaking Serrano and Cahuilla Indian groups during prehistoric times. These peoples were essentially hunters and gatherers, and emphasized seed gathering and processing. Archaeological sites in this region reflect these activities and are generally in the form of grinding stations (seed-processing sites).

Several archaeological sites have been recorded in the Santa Ana River/Jurupa Mountain area. In the immediate vicinity of the project site, nine archaeological sites have been recorded. A close field examination of the project site, including an alternate site for the Rialto Terminal just north of the selected site (see Appendix N, Map 1), revealed no surface evidence of the existence of any archaeological resources within the boundaries of the proposed project areas. It must be realized, however, that a potential always exists for the occurrence of undetected, subsurface remains at any of the project locations.

A preliminary evaluation, based on the criteria presented in the Federal Register (Vol. 40, No. 24, 1975, "Protection of Properties in the National Register; Procedures for Compliance," and Vol. 42, No. 183, Part 63, 1977, "Determination of Eligibility for Inclusion in the National Register of Historic Places"), suggests that none of the archaeological sites located in the vicinity of the proposed project would qualify for nomination to the National Register of Historic Places. Although the referenced archaeological resources do not appear to be of sufficient size and cultural complexity to warrant such consideration, it must be noted that all these archaeological sites potentially contain unique

data which could contribute to the overall understanding of the prehistory of the Santa Ana River area. Therefore, it must be understood that the preservation of these nonrenewable cultural resources is of utmost importance.

2. Historical/Cultural Resources

A review of the National Register of Historic Places indicates that no historically significant features or structures are currently listed within the immediate vicinity of the defined Rialto project areas.

However, a Registered California Historic Landmark (No. 121), known as Agua Mansa, is located immediately adjacent to the proposed Rialto Tank Farm location. Agua Mansa which consists of the Agua Mansa Cemetery has been recognized as an historically significant landmark of the San Bernardino County area; recognition of the relative historic importance of this cemetery is presented in previously referenced documents (Smith, 1973; Jones, 1973; Whelan, 1973; and Lovelace, 1973), and by the State Historic Landmarks designation. Based on the criteria presented in the above-cited Federal Register, it is conceivable that the Agua Mansa Cemetery would qualify for nomination to the National Register of Historic Places.

The Santa Ana River/Agua Mansa area was settled in the 1840's by farmers from New Mexico. The small community which developed was an important frontier outpost and served as a stopover for east/west travelers. The Agua Mansa community flourished until 1862 when a flood destroyed the majority of the community. The original Agua Mansa cemetery location may well have been destroyed at that time and the present cemetery area may reflect the postflood location established by residents of the area (Patterson, 1978). Whether or not this feature was situated at its present location -- above the Santa Ana River flood plain -- at the time of the referenced flood is an academic matter. It

is certain that the use of this cemetery dates back to the mid-1800's and continued into the early 20th century by both Hispanic and Anglo residents of the area. Today, this feature stands as a distinct monument to the early history of this area, and continued preservation of this location is of utmost importance.

On the southeast side of the Santa Ana River is the site of an equally important historical settlement known as La Placita de los Trujillos. This settlement was also established in the in the 1840's by people from New Mexico, who were of both Hispanic and Indian cultural background. Unlike the closely associated Agua Mansa settlement across the river, this community survived the 1862 flood. The history of La Placita extends from the mid-1800's to the early part of this century and is closely associated with the founding (1870) and early development of the City of Riverside (Vickery, 1977; Patterson, 1978).

With the exception of the Trujillo Adobe, and a wooden structure known as the Garcia House, few surface traces of the original settlement remain. Several structures of a later historic period are located in the vicinity of the Garcia House, however. They include remains from the Pellesier Ranch period from the turn of the century (Patterson, 1978), and two water canals which transported water to Riverside from the 1870's until 1913.

Riverside County has contemplated the development of a historic park at the La Placita location; such a projected use of this area further emphasizes its importance to the cultural history of Riverside and San Bernardino counties.

G. Land Use

The Rialto terminal site and the pipeline extension to this site are located within the corporate limit of the City of Rialto in a rural

area near industry, vacant land, and agriculture. After crossing under the San Bernardino Freeway, the pipeline route heads due south along the edge of a railroad yard, then turns west along Slover Avenue (see Fig. 1-2). The pipeline route follows a utility corridor south again through vacant land, passing near a small agricultural area. The route turns west onto Santa Ana Avenue, crossing south of the agricultural area, and heads past Rialto's sewage treatment plant and other light industry. The route then turns south, and passes along the west edge of the industrial properties until it reaches the terminal site.

The terminal site occupies 68 acres of an abandoned agricultural field with remnants of an irrigation system still in place. A transmission corridor crosses the field. Other vacant land lies immediately to the north and west of the site. There is a gravel quarry to the northeast, the Agua Mansa Cemetery and agriculture to the southeast, and agriculture to the south and northwest. There are two residences adjacent to the site on Riverside Avenue near Agua Mansa Road. Petroleum product tank farms occur in the general vicinity further to the north. The site of the proposed Rialto Tank Farm is zoned for general manufacturing by the City of Rialto.

## H. Socioeconomics

### 1. & 2. Employment and Population

Since all of the proposed modifications occur within the study area defined by the project's Final EIS, the employment and population settings presented in that document are sufficient for this analysis.

### 3. Public Services and Utilities

The relocation of the proposed tank farm to Rialto demands consideration of fire protection, schools, and waste treatment facilities in that city.

a. Fire Protection

The City of Rialto's main fire station is located about 2 miles from the tank farm site. The station has oil-fire fighting equipment donated by the Southern Pacific Pipeline Company, which has a tank farm near the proposed government site. The City also has agreements with Norton Air Force Base, which has in the past provided crash units and firefighters to aid the City or supplement the City's forces. Manpower and equipment for Rialto's fire station are shown in Table O-1, Appendix O. Additional information concerning fire protection is presented in Appendix D.

b. Schools

Enrollment data for the Rialto Unified School District is given in Table O-2, Appendix O. Over the past 6 years elementary school enrollment has dropped 15 percent, while high school enrollment has increased by 4 percent.

c. Waste Treatment Facilities

The City of Rialto's wastewater treatment plant capacity is the object of growing concern. The planning department has recently realized that they gave preliminary approval to more housing projects than can be accommodated by the treatment plant's remaining capacity. The city is holding public hearings on a growth management plan and is beginning to plan for plant expansion in order to deal with this problem.

4. Recreation

There are two recreational resources potentially affected by project modifications. The pipeline extension to the new terminal site passes one-half mile east of the Agua Mansa Rest Area. Along the southwest edge of the proposed Rialto tank farm is the Agua Mansa Cemetery

where a county museum has recently been constructed. The town of Agua Mansa is a state historical landmark. The cemetery is all that remains of the town. These two recreational areas are shown in Figure 3-1. In addition, the Trujillo Adobe and the site of a possible future Riverside County park are located across the Santa Ana River at the base of the La Loma Hills.

5. Land Transportation

The proposed changes in the pipeline route would not affect the discussion on land transportation in the Final EIS.

6. Fiscal Effects

Since all of the proposed modifications occur within the study area defined by the project's Final EIS, the fiscal effects setting presented in that document is sufficient for this analysis.

7. Visual Quality

The visual setting for the project from the proposed Elk Hills tank farm site to about M.P. 164 is described in the project's Final EIS.

The visual setting for the pipeline extension from M.P. 164 to the proposed Rialto tank farm site is generally similar to that for portions of the route between M.P. 156 and M.P. 164 described in the Final EIS. The extension would pass through the San Bernardino-Rialto urban fringe in an area characterized by mixed and scattered petroleum-related and industrial uses. The route would generally follow the Santa Ana Avenue right-of-way, or cross open, vacant land. This area is of limited scenic quality and viewability, and may be considered visually insensitive to pipeline installation.

The Rialto terminal site, however, is slightly more sensitive visually because of the proximity of the Agua Mansa Rest Area and Cemetery, Trujillo Adobe, and the site of a possible future Riverside County park. The historical and recreational characteristics of these resources are discussed in Sections II.F. and II.H. of this report.

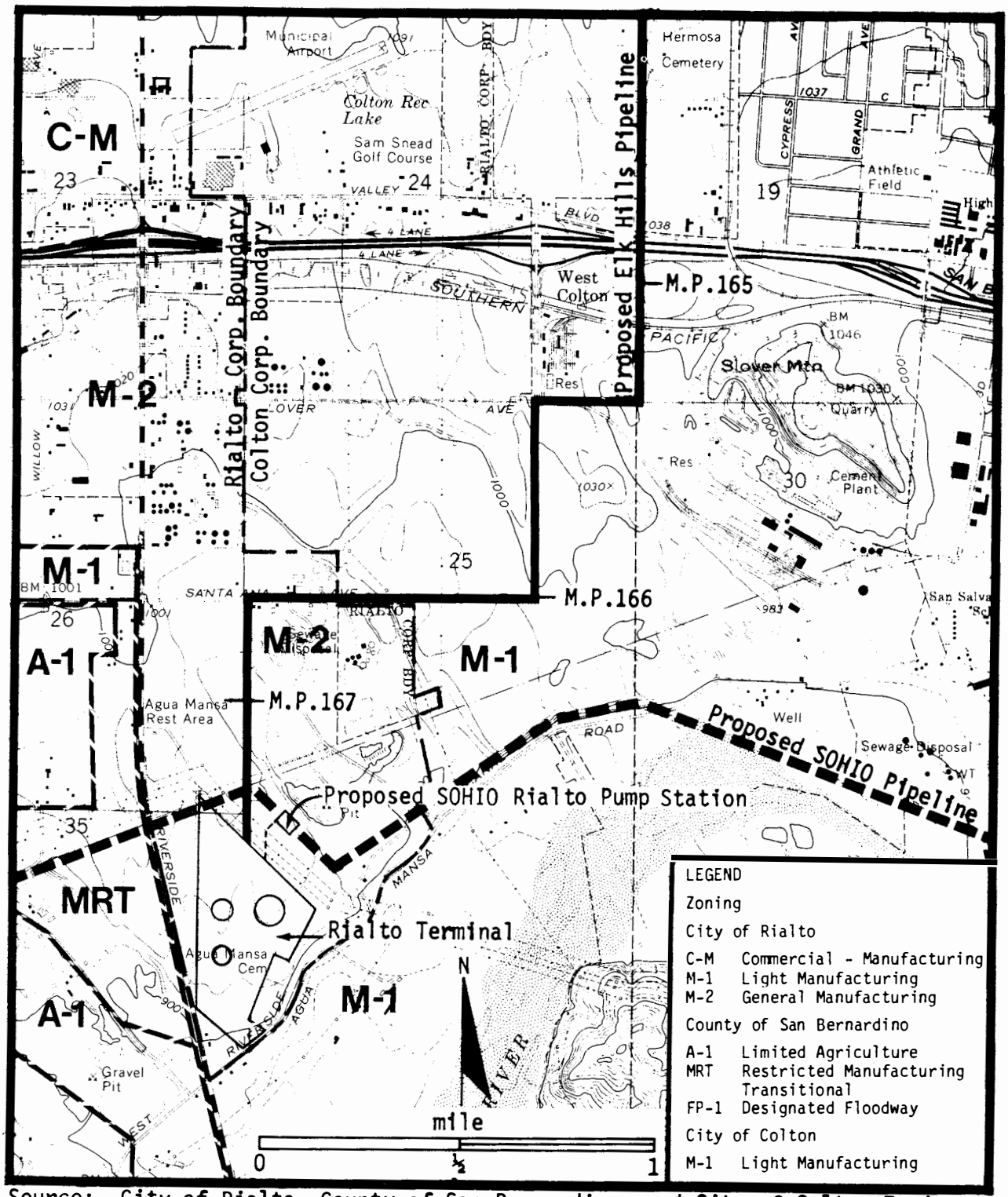
Two proposed microwave relay tower sites not discussed in the Final EIS occur at Double Mountain (elev. 7,981) in the Tehachapi Mountains about 6 miles south of the town of Tehachapi, and at Keller Peak (elev. 7,942) in the San Bernardino Mountains (and San Bernardino National Forest) about 6 miles southwest of the community of Big Bear Lake. Both sites lie atop ridgelines in rugged, remote, and undisturbed areas characterized primarily by scrub forest, shrubs, and seasonal grasses.

# III. RELATIONSHIP OF THE PROPOSED ACTION TO LAND-USE PLANS, POLICIES, AND CONTROLS FOR THE AFFECTED AREA

This section discusses the relationship of the proposed project modifications to the land-use plans, policies, and controls of the City of Rialto. Rialto was not included in a discussion of this subject in the project's Final EIS.

The pipeline route extension through Colton and Rialto and the tank farm site in Rialto are located in areas zoned for general manufacturing (see Fig. 3-1). The Rialto General Plan (adopted 1967) shows the tank farm site to be located within an area designated as park land. Thus, the current zoning of the area does not agree with the 1967 General Plan. However, in the opinion of the City Planning Department, the proposed park, as outlined in the General Plan, is no longer considered economically feasible and all plans for a park as described in the General Plan have been abandoned. A newly formed redevelopment agency is considering the area around the tank farm site for one of three redevelopment study areas. Plans will be made to encourage private industry to locate in these areas.

In general, then, the location of a tank farm and delivery facility at the proposed site is compatible with the City's current plans and policies for the site. Yet the goal of the redevelopment agency's efforts is to attract <u>private</u> industry, which would bring economic benefit to Rialto. The government's project, of course, would not directly create this benefit. Activity on the site would be exempt from




Source: City of Rialto, County of San Bernardino, and City of Colton Zoning Maps.

Base Map: San Bernardino South Quadrangle, 1:24,000, 1973.

Figure 3-1. Land Use Zoning in the Vicinity of the Rialto Terminal Site.

local taxes, and employment on the site would be limited to two people. However, despite this problem, the Rialto Planning Department felt the project is in conformance with current land-use plans (Rialto Planning Department Staff, 1978).

The incompatibility of the Cajon tank farm site with San Bernardino County plans and policies, as discussed in the project's Final EIS, is no longer an issue. Thus, the proposed modifications bring the whole project into closer accord with local jurisdictional plans and policies.

# IV. PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT

## A. Geological Resources

### 1. Construction

The proposed project modifications would result in a reduced potential for construction-related geological impacts. The relocation of the Cajon Tank Farm to the proposed site in Rialto would reduce the potential for erosion and induced slope failure because of the nearly flat terrain at Rialto. Similarly, the total consumption of mineral resources would be reduced somewhat due to the smaller pipeline diameters. Construction of the Rialto Terminal would result in less topographic alteration than a tank farm at the previously proposed Cajon Pass area.

### 2. Operational

The proposed project modifications would not alter the potential operational geologic impacts as discussed in the Final EIS.

### 3. Mitigation Measures

Since there would be no increased geologic impacts associated with the proposed project modifications, no alteration of the discussion of mitigation measures contained in the Final EIS is necessary.

## B. Air Quality

### 1. Construction

Construction of the proposed Rialto Tank Farm and pipeline modifications would not entail any additional impacts, but rather a shift in the location of these impacts. The major new impact area would be the Rialto tank farm site. There are a few homes along Riverside Avenue and Agua Mansa Road within a quarter-mile of the site and fugitive dust emissions may cause an occasional excess of the 24-hour particulate standard near the site.

### 2. Operation

#### a. San Joaquin Valley

No additional significant air quality impacts would occur in the San Joaquin Valley due to the proposed modifications. The increased pumping capacity required would generate about 2 pounds per day additional hydrocarbon emissions. Power generation necessary for the increased pumping capacity and the potential air quality impact is assumed to occur in the South Coast Air Basin as discussed below.

#### b. Southeast Desert

Relocation of the tank farm site from Cajon Pass to Rialto would shift the major air quality impacts from the Southeast Desert Air Basin to the more heavily polluted South Coast Air Basin. Therefore, the impacts on the Victorville and Barstow areas, nearer the original Cajon site, would not occur to the degree indicated in the Final EIS. A small amount of pollutant transport from the new tank farm site could occur through the Cajon Pass toward Victorville, and slightly affect this portion of the Southeast Desert. The Banning area also could be slightly affected by hydrocarbon emissions from the new tank farm.

c. South Coast

Hydrocarbon emissions from the Rialto Tank Farm would be less than estimated for the Cajon Tank Farm because of a lower wind speed at the Rialto site. All other factors affecting evaporative hydrocarbon emissions would remain the same.

Table 4-1 shows that the expected reactive hydrocarbon emissions would be well within the specified regulatory limits for new sources within the South Coast Air Basin and would comprise only a small portion of San Bernardino County emissions.

The Rialto Tank Farm, although contributing a smaller quantity of reactive hydrocarbons than the Cajon Tank Farm, would emit these pollutants into an air basin with poorer air quality, especially in terms of oxidants. The tank farm emissions would primarily affect the local San Bernardino-Riverside area and areas to the west toward Banning Pass. These emissions could contribute to additional oxidant standard violations. However, the emissions themselves would not cause the oxidant standard to be violated, but their effect would be cumulative.

Although the current trend in hydrocarbon emissions in the South Coast Air Basin is downward, a number of new sources, such as the proposed tank farm, could slow that trend. Such a situation could hinder the attainment and maintenance compliance schedule for air quality standards as specified in the Clean Air Act Amendments of 1977.

d. Pump Station and Power Plant Emissions

Modifications to the pipeline route and tank farm relocation would require additional pumping capacity. Pump seals release hydrocarbon at an approximate rate of 0.45 pounds per day per seal (CARB, 1972). For the entire pipeline, the total hydrocarbon loss would be 9 pounds per day -- about 3 pounds more than before.

Table 4-1

RIALTO TANK FARM RHC EMISSIONS COMPARED TO THE
SOUTH COAST PORTION OF SAN BERNARDINO COUNTY

| TANK FARM EMISSIONS | | | SAN BERNARDINO COUNTY | TANK EMISSIONS AS % OF COUNTY TOTAL |
|---|---|---|---|---|
| LB/HOUR | LB/DAY | TONS/YEAR | TONS/YEAR | PERCENT |
| 3.2 | 72.6 | 13.2 | 18,980 | 0.07 |

Source: URS Company, 1978, and California Air Resources Board, 1977.

The increased pumping capacity would require an additional 8,450 horsepower over the previous project. The energy needed to produce this power could potentially come from a number of different types of power plants at a number of locations. As a worst-case analysis, it was assumed that all the additional energy requirements would be provided by an oil-fired power plant in Los Angeles County. Using California Air Resources Board emission factor estimates, it was determined that the resulting emissions would be small in comparison to present emissions. However, the emissions would contribute contaminants into an air basin that currently has poor air quality.

Appendix P provides a more detailed description of the air quality impacts associated with the proposed project modifications.

## C. Noise

### 1. Construction

Except for the change in location of construction-related impacts due to the relocation of the tank farm from Cajon to Rialto, no other impact changes are expected. Noise from construction of the Rialto Terminal could impact some of the nearby homes along Riverside Avenue and Agua Mansa Road.

### 2. Operational

Operational noise impacts could affect the few houses near the pump station, in the vicinity of the intersection of Riverside Avenue and Agua Mansa Road. Noise levels from the project at the nearest house should be below 60 dBA at all times (which meets the normally acceptable U.S. Department of Housing and Urban Development noise criteria).

3. Mitigation

To minimize any possible adverse effects on nearby houses from pump station noise, a noise barrier in between the pump station and sensitive receptors will be installed.

D. Water Resources

1. Construction

With one exception, the proposed modifications should not result in any changes in the expected construction impacts. Only the relocation of the tank farm from Cajon to Rialto should affect such a change and it is expected that such change would be limited to a reduction in the impact associated with the acquisition of local ground water for hydrostatic testing of the tanks. This reduction would result from the greater availability of water at the Rialto site and the elimination of the groundwater effects associated with such acquisition at the Cajon site.

2. Operation (Normal)

The only operational impact change resulting from the proposed modifications would be associated with the tank farm relocation. This change would again cause a reduction in impact stemming from a decreased need for firefighting water. Due to the Cajon site's isolated location, firefighting water would most likely have been provided from local groundwaters resulting in locally significant effects. In contrast, the Rialto site's proximity to various local firefighting agencies with access to local water supplies would cause little or no impact.

3. Operation (Abnormal)

No changes in impact due to abnormal project operations should result from the proposed modifications. Instead, it is expected that these modifications would merely lead to a transfer of impacts from one locale to another locale of similar character.

4. Mitigation

No new mitigation measures would be required by the proposed modifications. Moreover, the mitigation proposed for the protection of the groundwaters underlying the Cajon site from excessive depletion would no longer be necessary.

E. Biological Resources

1. Vegetation

Some changes in expected impact would result from the proposed modifications. The potential for damage to the population of the rare cotton eriogonum (Eriogonum gossypinum) on the southern edge of Buena Vista Lakebed, between M.P. 7 and M.P. 8 (SE¼ Section 6 R 25E T32S) would be much greater than with the original project. In contrast, the damage to the intact community at the former Cajon Tank Farm would be greatly reduced. The land at the Rialto Tank Farm would be lost, but it has already been disturbed. Furthermore, the surrounding land supports considerable industrial development. Therefore, construction at the Rialto site would constitute a less significant impact than construction of a tank farm at Cajon Pass.

2. Wildlife

Less habitat in the sensitive transitional zone at Cajon Pass would be disturbed if the site of the tank farm is moved to Rialto. The

native fauna in this transitional region, which may include the Mojave ground squirrel, would consequently be less adversely impacted. The human-tolerant wildlife at Rialto would be displaced.

3. Aquatic Biology

None of the proposed modifications would result in alteration of either the location or magnitude of the impacts discussed in the Final EIS.

F. Archaeological, Historical, and Cultural Resources

1. Construction

Although no recorded archaeological sites exist within the boundaries of the proposed project sites nor was there any surface evidence of archaeological resources revealed during a surface reconnaissance, it is possible that archaeological materials exist below the ground surface and could be disturbed during the construction of the Rialto Terminal and pipeline extension. Similarly, based on surface evidence, construction activities would not physically disturb the Agua Mansa Cemetery. But, because of the proximity of the Rialto terminal site to the cemetery, there is a potential for encountering buried remains onsite.

2. Operation

If the Rialto tank farm facilities are developed at the proposed location, adverse impacts of an indirect nature would be imposed on the Agua Mansa Cemetery. Although a fenceline defines the boundary of the cemetery, and development of facilities would not physically disturb the cemetery area, the development of the proposed tank farm at this location would surely diminish the historic setting of this important cultural feature.

3. Mitigation

Since undetected, subsurface archaeological remains could be revealed during the process of any grading, leveling, or subsurface construction activities, construction personnel associated with this project would be alerted to these possibilities. Should any archaeological materials ever be uncovered during any phase of the proposed facility developments, work within the general vicinity of the find would be halted, and a qualified archaeologist would be consulted. If human remains of a prehistoric nature should ever be uncovered, representatives of Native American organizations in San Bernardino County and a qualified archaeologist would be contacted immediately.

As discussed above, the placement of the Rialto Terminal at the proposed location would result in adverse indirect impacts on the Agua Mansa cemetery site, and possibly direct impacts to subsurface archaeological resources at that location; whereas, no discernible impacts would exist by utilizing Alternative location B for the proposed tank farm development (see Appendix N, Map 1). The Rialto location is favored and if it is implemented, earth berms and landscaping will be erected along the boundary with the Aqua Mansa Cemetery to screen the tank farm facilities from public view in the cemetery area.

Concerning the pipeline corridors, it is anticipated that no presently discernible adverse impacts would be levied upon any known cultural resources, as long as the proposed pipeline routes are developed within the specified survey corridors along the defined roadways. Should future project planning result in altering the present facility locations, further archaeological survey work would be required.

G. Land Use

The project modifications would have a minimal adverse impact on land use. The new pipeline route generally follows existing streets or

other rights-of-way. No agricultural lands would be disturbed. The new length of pipeline passes no residences. The tank farm site is appropriate for industrial development. The modifications would also eliminate the land-use incompatibilities foreseen around the site of the Cajon Pass Tank Farm.

Impacts from the project on noise or visual quality, traffic, air quality, or recreation, although related to land use, are discussed in this report under the appropriate headings.

## H. Socioeconomics

### 1. Employment

#### a. Construction

Construction impacts on employment would be essentially the same as in the Final EIS. The exact numbers of construction crew members have been revised to reflect an accelerated construction schedule of 8 months, as shown below.

| Task Group | Average Crew Size |
|---|---|
| Elk Hills Tank Farm | 50 |
| Pipeline-Elk Hills to Rialto | 480 |
| Elk Hills Control Center | 40 |
| Engineers/Inspectors | 40 |
| Pump Stations | 50 |
| Repeater Station | 20 |
| Rialto Terminal | 75 |
| TOTAL | 755 |

b. Operation

The impacts on regional and local employment from the operation of this project would be essentially the same as those discussed in the Final EIS. However, the estimate of project employees has been changed slightly. Current estimates are as follows:

| | |
|---|---|
| Elk Hills Tank Farm and Control Center | 35 |
| Tejon and Llano Pump Stations | 1 |
| Rialto Terminal | 2 |
| TOTAL | 38 |

2. Population

Since it is anticipated that no labor shifts would result directly or indirectly from implementation of the Elk Hills/SOHIO project, no population changes are expected in the dependent population.

3. Public Services and Utilities

a. Construction

Fire protection, if needed, during construction of the pipeline and the tank farm site would be located nearby. Because relocation of families would not be necessary during the construction of the project, there would be no effect on school enrollments. The Rialto city wastewater treatment plant could adequately handle a temporary increased load.

b. Operation

Should a fire occur at the Rialto tank farm site during normal duty hours, operating personnel would immediately begin fighting the fire with onsite equipment. Their efforts would be supported by Rialto's

firemen and oil firefighting equipment, and, if necessary, by men and equipment from March and Norton air force bases. Adequate equipment is available from these sources. The Rialto Fire Department sees no problem in working out an agreement with the DOE for their assistance. For a more detailed discussion of firefighting requirements and local capabilities see Section I-12.

Probably no more than five school-age children would in-migrate into the area with the personnel required at the Rialto Tank Farm. An additional four school-age children (beyond those mentioned in the Final EIS) may be associated with personnel at Elk Hills. The school districts would easily be able to accommodate these students.

Requirements for domestic waste disposal would be small during the operation of the project and can easily be accommodated by local waste management systems. To dispose of any industrial wastes, the DOE must apply through the city's engineering department for approval and approval conditions.

4. Recreation

a. Construction and Operation

The Agua Mansa Cemetery, adjacent to the tank farm site, has recently received much attention. It is the last evidence of an early Mexican settlement called Agua Mansa. The county has just completed constructing a museum on the site, which will begin to attract more visitors. During the construction of the tank farm, the cemetery would be affected principally by construction noise. Once the tank farm is completed, the principal impact on the cemetery and the museum would be a reduction in visual quality. This point is discussed under "7. Visual Quality" in this chapter.

b. Mitigation

The impact on the cemetery would be minimized by the barrier of earth berms and landscaping separating the cemetery from the tank-farm structures, thus reducing noise and visual disturbances.

5. Transportation

The proposed project modifications would not affect the overall impacts on transportation as discussed in the Final EIS.

6. Fiscal Effect

With the project modifications, San Bernardino County would continue to collect $200 annually in property taxes from the Cajon tank farm site. But, removal of the 68 acre Rialto tank farm site from tax rolls would result in an annual loss of $2,050 in taxes, of which $291 would have been collected by the City of Rialto. Thus, the impact of the project on public finance would be greater with the Rialto tank farm site than with a Cajon Pass site.* These figures are based on the valuation of unimproved land as it presently exists. The long-term adverse fiscal impact to the City and County could be much greater since private industrial development at the site (with corresponding higher taxes) would be eliminated.

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*Assessors Parcel No. 260 061 05 is assessed at $26,730. The project represents 68 percent of that parcel. The full tax rate is $11.2825 per $100 assessed value, and the City of Rialto's share of that is $1.60 per $100 assessed value.

Source: Bob Meyers, San Bernardino County Assessors Office, Personal communication, March 10, 1978.

7. Visual Quality

a. Construction

The visual impacts of construction activities associated with the proposed project modifications would be essentially the same as those described in the Final EIS for the original project, except that they would occur at or near the new construction sites. Generally, the visual impacts of project construction would be localized and minor. They would be attributable mostly to storages of materials, equipment, and earth, and to construction- and excavation-related activities in the vicinities of construction and pipeline sites.

b. Operation

The visual impacts of inplace project facilities and associated operations activities at the Elk Hills Tank Farm and along the pipeline route from the tank farm to approximately M.P. 166 would be essentially unchanged from those described in the Final EIS.

The extension of the pipeline from M.P. 166 to the Rialto tank farm site would result in negligible operational impacts, since the pipeline would be underground, and therefore invisible, for its entire route. However, some surface traces of the pipeline extension may remain visible if backfilling is not accomplished properly.

The proposed Rialto tank farm site is situated in an area of generally low scenic quality consisting primarily of existing petroleum-related facilities, sewage treatment facilities, gravel quarries, dry-land agriculture and a sewer treatment plant. However, the visual impact of the tank farm would be significant because the site is also viewable from the adjacent portion of Riverside Avenue, and several potentially sensitive viewing sites, including the Agua Mansa Cemetery,

the Agua Mansa Rest Area, and the possible future sites of a museum and a Riverside County Park.* This impact would be similar in magnitude to the magnitude of the Cajon Tank Farm, but for different reasons. The Cajon Tank Farm would be disruptive of a relatively pristine environment, but only minimally viewable, while the Rialto Tank Farm would occur in an area already containing storage tanks, but would be viewable from several sensitive locations and by significantly more viewers.

Additional features of the revised project that have visual implications beyond those discussed in the Final EIS include six microwave sending, receiving, and relay towers.

The proposed communication towers at the Elk Hills Tank Farm (100 feet high) and the Tejon Pump Station (20 feet high) would have only minor visual effects due to their low viewability and their occurrence in already substantially disturbed visual environments. However, the relay stations proposed for Double Mountain (150 feet high) and Keller Peak (80 feet high) would occur in remote and relatively pristine natural environments. Although they would be seen by relatively few people, they would have a substantial disruptive influence on their local visual settings and skylines. The towers at the Llano Pump Station (200 feet high) and the Rialto Terminal (60 feet high) would also be visually disruptive due to their relatively great viewability and their occurrence in populated and/or visually sensitive locations. The Rialto site, however, presently has power transmission lines with towers higher than the proposed tower for the communication system. The visual impacts attributable to these microwave towers are all additional to those discussed in the Final EIS.

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*The historical and recreational implications of the Rialto Tank Farm are discussed in detail in Sections IV.F. and IV.H.

c. Mitigation

Measures for mitigating the adverse visual impacts of the proposed project modifications are identified in the Final EIS.

Additional measures for mitigating the visual effects of the Rialto Tank Farm include the erection of earth berms and landscaping materials along the boundary of the Agua Mansa Cemetery and installation and maintenance of vegetation that would screen views of the tanks and related tank farm facilities from Riverside Avenue and nearby sensitive viewing sites, including the Agua Mansa Cemetery, the Agua Mansa Rest Area, and the possible future museum and park sites. Adequate shrubbery and other landscaping materials will be provided to minimize public view of the chainlink fence surrounding the site.

8. Growth Inducement

No changes in impact due to project construction or operations should result from the proposed modifications.

# V. ALTERNATIVES

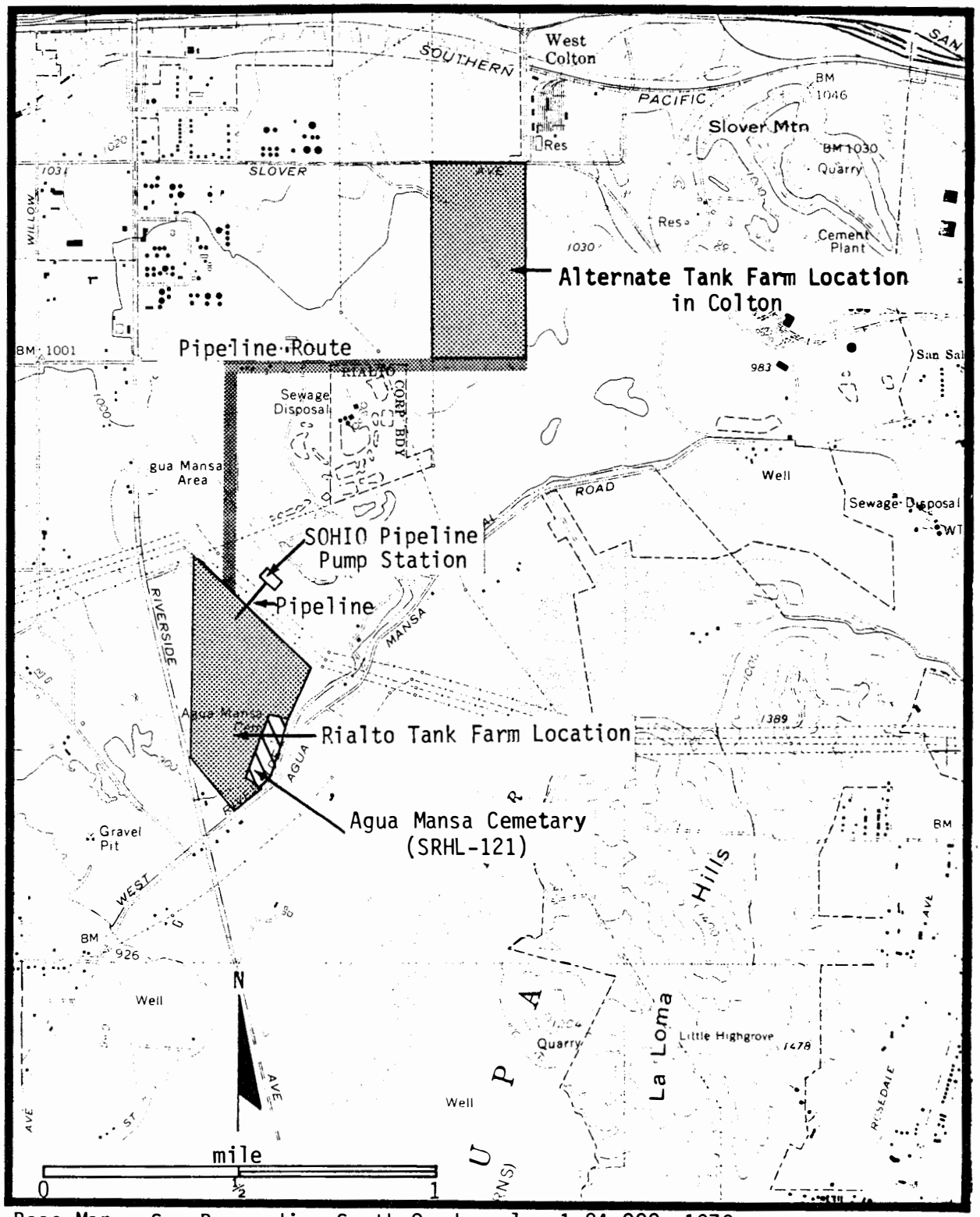
The following is a discussion of the differences in environmental effects for alternatives to the proposed tank farm at Rialto. In general, the proposed project modifications result in no significant changes for the discussion of alternatives contained in the Final EIS.

## A. Tank Farm at Cajon Pass (original location)

This alternative site presents a number of environmental, technical, and economic disadvantages when compared with the proposed Rialto location. Environmentally it has higher erosion potential, requires more topographic alteration of the site, would result in higher quantities of hydrocarbon emissions (although into an air basin with better air quality), and would have greater possible impacts on local groundwaters, vegetation, wildlife, and visual quality. Technical problems are related to security of the isolated site and the high pressure delivery into the SOHIO system. Economically, the Cajon Pass location would require higher construction costs.

## B. Tank Farm at Colton, California

This alternative tank farm site is in the immediate vicinity of the proposed Rialto site and is shown in Figure 5-1. This site is located within the city limits of Colton. Like the Rialto site, it is zoned for industrial use and is presently undeveloped open land.




Base Map: San Bernardino South Quadrangle, 1:24,000, 1973.

**Figure 5-1. Location Map of Alternate Tank Farm Site**

The Colton site is smaller than the Rialto site, thus offering less flexibility in the layout of the tanks and equipment. Specific disadvantages of the Colton site relative to the Rialto site are as follows:

- It is located on cultivated land area.
- Topography of the site is such that the total usage of the complete area is not possible.
- Tank containment dikes would likely require the purchase of fill materials.
- Longer delivery pipeline to SOHIO Rialto Pump Station would be required.
- Booster pump cost would increase due to the greater distance to SOHIO's Rialto Pump Station.
- Increased cost would be necessary because of the extension at Pepper Avenue.
- Existing building on north part of property would require removal.
- An existing pipeline traverses the southwest corner of property, which would limit usage of that area.
- The potential for fault rupture is greater.

The advantages of the Colton site over the Rialto site are that there would be less visual impact on Agua Mansa Cemetery, a state historic landmark, and there would be less potential for disturbing buried archaeologic remains.

C. Construct Tank Farm But Postpone Use

This alternative would satisfy the Congressional mandate to acquire the necessary facilities for transporting petroleum from NPR-1, but the crude oil transport itself would be postponed into the future. Under this alternative, construction effects would occur exactly as for the proposed project, but operating effects would be postponed into the future.

During postponement, the quality of the air affected by the project would improve until the 1980's. After the mid-1980's, concentrations would probably increase as population increases overcome the benefits of emission controls. Postponement would allow more time for decisions and implementation of Phases I and II of the SOHIO Pipeline system and could permit more optimum use of this system. In addition, the west coast crude oil surplus situation could be resolved during the postponement period, which would make use of the SOHIO Pipeline even more optimum.

D. Decrease Tank Farm Size

This alternative would involve either a reduction in the size of the tank farm site itself or a reduction in the total amount of crude oil storage at the site (e.g., 500,000 barrels instead of 1,000,000 barrels).

In the case of a smaller site size, there would be a higher fire risk since the storage tanks would be more closely spaced. All other effects would remain the same.

In the case of lower storage capacity, construction impacts would be correspondingly lower and operating effects would be greatly changed. With less capacity, the stored crude oil would either have to be transferred into the SOHIO Pipeline more frequently or the pipeline from

NPR-1 would have to be operated less often. The latter option would be most likely to happen, but in either case operating costs would increase dramatically.

E. Eliminate Tank Farm from Project

Under this alternative, the pipeline from NPR-1 would have to connect directly into the SOHIO Pipeline without a terminal tank farm at Rialto. This would present major technical difficulties since the pipeline from NPR-1 is designed for flowing 250,000 barrels per day (B/D) and the SOHIO Pipeline is designed for 597,000 B/D under Phase I. The only viable option would be to increase the size of the pipeline from NPR-1 to match the SOHIO Pipeline capacity. This would add prohibitively to the cost of the system and make in infeasible.

F. Postpone Construction

Postponement would require modification of existing legislation under Public Law 94-258. If implemented, this alternative would yield the same construction effects, but postponed into the future. Operating effects would also be postponed and could be somewhat different, depending on how long the postponement period lasted.

During postponement, the quality of the air affected by the project would improve until the 1980's. After the mid-1980's, concentrations would probably increase as population increases overcome the benefits of emission controls. Postponement would allow more time for decisions and implementation of Phases I and II of the SOHIO Pipeline system and could permit more optimum use of this system. In addition, the west coast crude oil surplus situation could be resolved during the postponement period, which would make use of the SOHIO Pipeline even more optimum.

G. Cancel Project

Cancellation of the tank farm only and retention of the rest of the proposed project would be the same as alternative E. above (Eliminate Tank Farm from Project). Cancellation of the entire proposed project would require modification of the existing legislation under Public Law 94-258. If implemented, this alternative would result in elimination of all adverse and beneficial impacts of the proposed project. A primary effect would be that the NPR-1 crude oil would not be delivered into the national supply situation.

## VI. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

Unavoidable adverse effects of the proposed project modifications would include visual disruption at the Agua Mansa Cemetery adjacent to the proposed Rialto Terminal; visual disruption created by the proposed microwave relay towers at Keller Peak in the San Bernardino National Forest, and at the Llano Pump Station; a slight increase in hydrocarbon emissions in the South Coast Air Basin; and an annual loss in property taxes of $2,050 from the Rialto site. Of this figure, $291 would be lost by the City of Rialto and the remainder would be lost by the County of San Bernardino. The potential loss for Rialto and the County could be more since the opportunity for other industrial users of the site would be eliminated.

Many of these unavoidable effects would be offset by the elimination of the adverse effects that would have been created by the Cajon Tank Farm. Visual and biological disruption of the Cajon Canyon area, located near the San Bernardino National Forest, would be avoided by the proposed modifications. Similarly, the risk of an oil spill would probably be reduced; the total amount of hydrocarbon emissions would be reduced (although the air basin involved would have poorer air quality); and the Rialto Tank Farm would be located in accordance with local planning policies.

# VII. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The only significant effect the proposed project modifications would have on the previous discussion in the Final EIS would be a reduction in the size of the design spill. Due to decreased pipeline size and changes in the remote control valve system, the design spill has been reduced by about one-third. Thus, the potential losses created by an oil spill would be reduced.

# VIII. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION IF IMPLEMENTED

The proposed project modifications would increase energy consumption for pumping oil from Elk Hills to the SOHIO Pipeline. The use of smaller diameter pipe has necessitated these increased pumping requirements, which includes the additional in-line pump station at Llano. The use of smaller pipe would result in a slight decrease in the consumption of mineral resources for pipeline fabrication.

# IX. CONSIDERATIONS THAT OFFSET ADVERSE ENVIRONMENTAL EFFECTS

The proposed project modifications would have little effect on the discussion contained in the Final EIS. The relocation of the tank farm from the Cajon Pass area to Rialto would tend to lessen the visual impact. Although the Rialto Tank Farm would be visible to more people, it would be located in a much less visually sensitive area than the Cajon Pass site at the perimeter of the San Bernardino National Forest. In addition, the decrease in visual impact resulting from the tank farm relocation would be somewhat offset by the location of the microwave relay tower only at Keller Peak in the San Bernardino National Forest.

# Appendix A
## Excerpts from Public Laws Nos. 94-258 and 95-91

No amendments to Public Law 94-258 have been made at the time this supplement was prepared, March 1978. However, Public Law 95-91 transfers control of the Naval Petroleum Reserves to the Department of Energy. Excerpts from Public Law 95-91 are attached.

"(h) The Secretary shall, before taking action on any final standard under this section or any modification of or exemption from such standard, notify the Secretary of Energy and provide such Secretary with a reasonable period of time to comment thereon.". Notice.

TRANSFER FROM THE INTERSTATE COMMERCE COMMISSION

SEC. 306. Except as provided in title IV, there are hereby transferred to the Secretary such functions set forth in the Interstate Commerce Act and vested by law in the Interstate Commerce Commission or the Chairman and members thereof as relate to transportation of oil by pipeline. Transportation of oil by pipeline. 42 USC 7155. 49 USC prec. 1 note.

TRANSFERS FROM THE DEPARTMENT OF THE NAVY

SEC. 307. There are hereby transferred to and vested in the Secretary all functions vested by chapter 641 of title 10, United States Code, in the Secretary of the Navy as they relate to the administration of and jurisdiction over— certain naval petroleum reserves. 42 USC 7156. 10 USC 7421.

(1) Naval Petroleum Reserve Numbered 1 (Elk Hills), located in Kern County, California, established by Executive order of the President, dated September 2, 1912;

(2) Naval Petroleum Reserve Numbered 2 (Buena Vista), located in Kern County, California, established by Executive order of the President, dated December 13, 1912;

(3) Naval Petroleum Reserve Numbered 3 (Teapot Dome), located in Wyoming, established by Executive order of the President, dated April 30, 1915;

(4) Oil Shale Reserve Numbered 1, located in Colorado, established by Executive order of the President, dated December 6, 1916, as amended by Executive order dated June 12, 1919;

(5) Oil Shale Reserve Numbered 2, located in Utah, established by Executive order of the President, dated December 6, 1916; and

(6) Oil Shale Reserve Numbered 3, located in Colorado, established by Executive order of the President, dated September 27, 1924.

In the administration of any of the functions transferred to, and vested in, the Secretary by this section the Secretary shall take into consideration the requirements of national security.

TRANSFERS FROM THE DEPARTMENT OF COMMERCE

SEC. 308. There are hereby transferred to, and vested in, the Secretary all functions of the Secretary of Commerce, the Department of Commerce, and officers and components of that Department, as relate to or are utilized by the Office of Energy Programs, but limited to industrial energy conservation programs. Industrial energy conservation programs. 42 USC 7157.

NAVAL REACTOR AND MILITARY APPLICATION PROGRAMS

SEC. 309. (a) The Division of Naval Reactors established pursuant to section 25 of the Atomic Energy Act of 1954, and responsible for research, design, development, health, and safety matters pertaining to naval nuclear propulsion plants and assigned civilian power reactor programs is transferred to the Department under the Assistant Secretary to whom the Secretary has assigned the function listed in section 203(a)(2)(E), and such organizational unit shall be deemed to be an organizational unit established by this Act. 42 USC 7158. 42 USC 2035.

Appendix B

Characteristics of Crude Oil and Project Design Elements

1. Crude Oil Characteristics

No changes are required in Table B-1 in the Final EIS.

2. Pump Motor Horsepower Characteristics

Pumping requirements have been increased by the proposed project modifications. Thus Table B-2 in the Final EIS has been revised as follows:

| Location | Pump Motor Quantity* | Pump Motor Horsepower |
|---|---|---|
| Elk Hills Tank Farm | 2 | 500 |
| | 1 | 300 |
| Elk Hills Pump Station | 7 | 1,500 |
| Tejon Pump Station | 5 | 1,750 |
| | 1 | 2,000 |
| Llano Pump Station | 4 | 1,500 |
| SOHIO Delivery Pump Station | 3 | 850 |

*Quantity shown includes one spare unit at each location.

Source: Pipe Line Technologists, Inc., 1978.

# Appendix C
# Environmental Atlas

Because of the short distance of the pipeline extension and the minor route changes involved, revisions to the route maps contained in Appendix C of the Final EIS were not deemed necessary. Changes in the project have been shown on individual maps contained in Section I. Similarly, the change in the spill line, which is the major alteration to the strip maps, has been depicted in Figure 1-7.

# Appendix D
## Risk Analysis and Spill Prevention

The risk assessments for pipelines and tank farms presented originally (Volume I, SOHIO FEIS) still pertains to the revised project. However, the safety considerations, which relate to specific project changes are no longer applicable (pages D-8 through D-13 and D-20 through D-23). Important changes are, instead, discussed in the main text of this Annex (Section I-12, Risk Assessment).

As a result of a recent fire at the Southern Pacific pipeline tank farm near the proposed Rialto Tank Farm, fire prevention and fighting capabilities at Rialto have been reviewed and the results, where applicable, incorporated into the risk assessment of Section I-12. A summary of this fire and major differences between the Southern Pacific tank farm and the proposed Rialto Tank Farm are discussed below.

The fire occurred at about 8:30 a.m. on February 21, 1978, when a 50,000 barrel unleaded gasoline storage tank owned by Texaco overflowed. About 90,000 gallons (2,140 barrels) of gasoline accumulated within the diked area (which contained three other storage tanks), forming a vapor cloud which alerted the tank farm crew to initiate shutdown of pumping operations. However, ignition of the vapor cloud occurred at about this time causing gasoline overflowing the tank and in the diked area to catch fire.

The nearby Rialto Fire Department, as well as the Central Valley and Colton fire departments (which automatically respond to fires in the

area), quickly extinguished the fire in the diked area using foam. However, the fire in the tank continued unabated and was compounded by a gasket failure in the product line. Product withdrawal was undertaken at the rate of 1,500 gallons/hour to provide sufficient freeboard for subsurface foam injection to be attempted. Meanwhile the gasket leak was controlled. After 7,000 gallons of gasoline had been removed from the product line, foam was injected into the bottom of the tank, successfully extinguishing the fire.

In the meantime, 13 pumpers applied water to the adjacent tanks for cooling purposes at a maximum rate of 12,000 gallons per minute. Water was recycled from the diked area but, because of dike wall weakening by the recent torrential rain, a dike failure occurred, releasing water (but little or no product) into the tank farm area to which it was confined. This break was fixed in about 2 hours. During this 2 hour period, personnel were withdrawn from the tank farm and an adjacent sewage treatment plant to avoid any possibility of being engulfed by flame carried by the escaping water (no such fire involvement occurred, however). A partial evacuation of a few residents in Agua Mansa Road, a distance of over a mile away, was ordered by another local agency. This evacuation was not sanctioned by the Rialto Fire Department and was considered totally unnecessary.

During the fire, some 3 million gallons of water were used, drawing from two independent water mains. The water supply was adequate and did not adversely affect water reserves (because of the nature of the water district's sources, the reserves would have been virtually unaffected even in the recent drought period). Drawing on the mutual aid of nearby fire departments a total of 33 pumpers, not all of which were used, were available at the site. A total of 21,000 gallons of foam concentrate was also onsite; only 12,000 gallons of the concentrate were used (as both 3% and 6% solution). In short, resources were adequate.

Table D-1 compares the salient features of the proposed tank farm and the existing tank farm which experienced the recent fire. The most outstanding difference in the two tank farms are their ages which, in turn, reflects the applicable design criteria. For example, the older tank farm employs a common dike and closer tank placement -- meeting design criteria of the period of construction (and still acceptable for existing tank farms) -- but not acceptable for new installations. The proposed tank farm, by meeting the latest standards, and in some cases exceeding them, is likely to establish a safety record well above the average for the industry as a whole.

TABLE D-1. COMPARISON OF FIRE RISKS BETWEEN TANK FARMS

| FEATURE | GOVERNMENT TANK FARM | TANK FARM WITH RECENT FIRE |
|---|---|---|
| TANK TYPE | FLOATING ROOF | CONE ROOF WITH INTERNAL FLOATER |
| PRODUCT INVOLVED | CRUDE OIL | GASOLINE |
| DESIGN/CONSTRUCTION PERIOD | LATE 1970's | LATE 1950's |
| MINIMUM TANK SEPARATION | 300 FEET | 20 FEET |
| BERMS SURROUNDING TANKS | INDIVIDUAL BERMS FOR EACH TANK | ONE COMMON BERM FOR FOUR TANKS |
| HIGH LEVEL ALARM(S) | 2 | 1 |
| IN-PLACE FIRE SUPPRESSION SYSTEM | YES | NO |

# Appendix E
# Sensitivity Analysis

No revisions to the discussion of the sensitivity analysis contained in the Final EIS are necessary.

# Appendix F
# Seismic Hazards

## 1. Setting

### a. Introduction

This discussion is an extension of work done for Appendix F of the Elk Hills/SOHIO Pipeline Connection Delivery System Final EIS. The principal facilities considered herein are the proposed Rialto terminal site, a nearby alternate site, an associated 1½-mile segment of pipeline that would extend from M.P. 166 southwest of San Bernardino, and two microwave tower sites, one each at Double Mountain in the Tehachipi Mountains and at Keller Peak in the San Bernardino Mountains.

Additional service facilities considered at the Llano Pump Station, located on the Elk Hills pipeline route 10 miles east of Palmdale, and the Double Mountain microwave tower, 16 miles northeast of the pipeline route where it crosses the Tehachapi Mountains. A 7.5 mile-long power-line, to service the Tejon Pump Station, would be constructed to connect with existing lines.

### b. Local Fault Tectonics, San Bernardino-Riverside

The San Bernardino-Riverside area lies about 10 miles southeast of a major bifurcation in the San Andreas fault system. The northern branch, named the San Andreas fault, trends east-southeastward along the southern front of the San Bernardino Mountains. A prominent line of

linear depressions, benches, and offset stream courses marks the fault trace along the northeast side of the city of San Bernardino (Hope, 1969).

The southern branch of the San Andreas system, named the San Jacinto fault, is at least equal in tectonic importance. It comprises a band of parallel and en echelon traces that trends southeastward from the vicinity of Cajon Pass and crosses the southwest corner of the city of San Bernardino (Fig. 2-1). Recent breaks and evidence for fault activity along the San Jacinto fault zone from Cajon Pass to the Imperial Valley have been mapped by Sharp (1972). Geomorphic evidence for Holocene movement (younger than about 10,000 years) is abundant along both the San Andreas and San Jacinto fault zones, demonstrating continuing deformation. The Bunker Hill dike, for example, is a linear mound that can be traced for about 5 miles along the southwestern corner of San Bernardino. Based on $C^{14}$ dating of faulted sediments, Sieh et al. (1973) concluded that this was associated with ruptures that occurred in the last several thousand years.

Historic movement along the San Jacinto fault zone has been documented by geodetic measurements across the fault zone in San Bernardino (U.S. Department of Commerce, 1971), by repeated road repairs and ground settlement in San Jacinto Valley 25 miles southeast of the Rialto site (Fett et al., 1967; and Proctor, 1962), and by earthquake occurrences and ground ruptures, especially nearer the southern end of the fault zone in the Imperial Valley region (Jennings, 1975).

c. Fault Rupture Hazard

The Rialto terminal site lies 4 miles southwest of the principal known trace of the San Jacinto fault zone (Fig. 2-1). The alternate tank farm site and the connecting segment of the Elk Hills pipeline approach to within 3 miles of the fault.

Ruptures characteristically occur along the main trace of a fault. However, some rupture hazard may exist even at a distance from the main break. The San Andreas fault zone, for example, is more than 1/4-mile wide at many locations. The San Jacinto fault zone, with its complicated pattern of breaks and possible fault traces, could be 3 miles wide near San Bernardino.

Ground-water studies in the San Bernardino area have disclosed a number of buried obstructions to subsurface water flow. Dutcher and Garrett (1963) proposed that these barriers are caused by reduced permeability along fault planes. A major ground-water barrier, the Rialto-Colton barrier, passes about 2 miles northeast of the Rialto tank farm site. Because of its linearity and continuity over a stretch of more than 15 miles, this feature has been classified by Jennings (1975) among faults showing possible evidence of Quaternary activity. Other known faults are located farther than 4 miles from the site, and none of them are known to be active (Fig. 2-1).

Greensfelder (1974) suggested a maxium credible earthquake of magnitude 7.5 for the San Jacinto fault zone. Right lateral displacements of about 8 feet would be expected to accompany such an event.

The proposed Llano Pump Station is located on the Antelope Valley portion of the Elk Hills pipeline. This region was considered for the delivery system Final EIS. Two short faults of probable Quaternary age are located at distances of 2 to 3 miles from the pump station, based on the fault map compiled by Jennings (1975). These faults, as well as the San Andreas fault about 4 miles to the southwest, trend parallel to the pipeline route. They are considered not to present a rupture hazard to the pump station or the 1.5-mile powerline serving it.

The powerline proposed to serve the Tejon Pump Station would extend westward from the pipeline route along the northern front of the Tehachapi

Mountains. The westernmost third of this line coincides with the trace of the Plieto fault, which has been in Quaternary time (Jennings, 1975). Fault rupture hazard in the event of renewed activity on the Plieto fault should be considered over a considerable width because the style of faulting was thrusting toward the north with an irregular surface trace. Power poles founded on such a fault trace could not be protected against damage.

The proposed microwave tower at Double Mountain is located about 3 miles northwest of an historically active segment of the Garlock fault. Based on the maps of Clark (1973) and Jennings (1975), this location is outside of the fault zone and is expected to be unaffected by surface fault rupture.

d. Fault Creep

Gradual fault plane slippage may occur without accompanying seismicity. Creeping deformation of about 2 millimeters per year was detected across the San Jacinto fault 4 miles northeast of the Rialto site (U.S. Department of Commerce, 1971). This occurrence was over the period 1964 to 1968; at least one other episode has been reported. No other instances of fault creep are known in the areas surrounding the proposed facilities.

e. Seismically Induced Ground Failures

The occurrence of seismically induced ground failure depends upon ground conditions as well as the intensity and duration of seismic shaking. Conditions in the vicinity of the Rialto Tank Farm are considered to be generally favorable to stability during strong shaking because of nearly flat topography, a low ground-water table, and coarse granular foundation materials.

The Rialto site and the alternate tank farm site lie on a gently sloping modern alluvial fan adjacent to the dry wash of the Santa Ana River. According to Dutcher and Garrett (1963) the alluvium consists of travel, sand, silt, and clay; has generally high permeability; and ranges from about 50 to 100 feet in thickness in the Rialto area.

f. Landslides

The forces imposed on soil and rock by earthquake ground motions commonly cause landslides. Susceptibility to such seismically induced slope failures will be influenced by steepness of topography, the degree of competence and fracturing of the geologic formations, degree of water saturation due to springs and rainfall, and the presence of vegetative cover as well as intensity of shaking.

Owing to the flat-lying topography at the Rialto site, landslide susceptibility even in the event of a major earthquake on the San Jacinto fault will be negligible except where man has altered the landscape by constructing fill slopes and excavations. Minor landslide potential may exist where there are undercut or steep banks along stream washes.

The proposed Double Mountain microwave tower in the Techachapi Mountains should be founded on bedrock or soil sufficiently dense to preclude densification and liquefaction. Landsliding will be the principal seismic ground failure hazard at this site.

g. Vibratory Densification

When granular soils are strongly vibrated, they may experience a loss in volume with consequent subsidence of the ground surface. Subsidence is rapid and uneven due to inhomogeneities within the soil layers. Granular soils of low density are particularly suceptible to densification. Densifiable soils have not been identified in the Rialto

area. However, alluvium deposited by flash floods in a semiarid environment may sometimes contain poorly consolidated horizons that are susceptible to vibratory collapse. If such soils are encountered, densification can be mitigated by proper earthquake engineering.

h. Liquefaction and Lurching

Liquefaction is the momentary transformation of soil from a solid state to a liquid state during vibratory ground motion. The soil may then suffer a catastrophic loss of bearing strength. Lurching is a special case of liquefaction in which level ground moves laterally toward an unconfined surface such as a canal or streambank.

In order for liquefaction to occur, the soils must be saturated. In addition, this phenomenon normally occurs when sandy soils with low density and low clay content are subjected to strong ground shaking. Such a combination of ground-water and soil conditions has not been identified in the vicinity of the Rialto tank farm site. An exploratory trench has been dug across the San Jacinto fault zone in San Bernardino less than a mile from the intersection of the proposed Elk Hills pipeline and the fault and about 4 miles from the Rialto site. Sieh et al. (1973) discovered sand boils preserved in the walls of the trench, indicating that subsurface liquefaction has occurred in the past at some nearby locations.

The proposed Llano pump station site lies on similar alluvial terrain in the Antelope Valley. It is expected that the same general conclusions for ground stability will apply to this site unless detrimental conditions such as shallow ground water are detected.

i. Exposure to Strong Ground Motion

The seismic setting of the facilities under consideration is described in Appendix F of the Final EIS. Major active faults pass

within about 15 miles of the sites of all the facilities under consideration, namely the Rialto Tank Farm, the Llano Pump Station, and the Double Mountain microwave tower.

In the Elk Hills/SOHIO Final EIS, a probabilistic ground-motion calculation was conducted for the Elk Hills terminal. Expected peak horizontal ground accelerations for 25-year and 50-year periods were estimated to be 0.15g to 0.2g and 0.3g, respectively. It was noted that there would be similar expectancies along most of the length of the Elk Hills/SOHIO pipeline route. At some points within a few miles of the major active faults, the recurrence expectancies might be 50 to 100 percent greater than at Elk Hills. The Rialto tank farm site and the alternate site lie within 4 miles of the principal known trace of the San Jacinto fault zone. Expected peak horizontal accelerations for 25-year and 50-year periods are estimated to be 0.2g and 0.4g, respectively.

It is of interest to compare these estimates with the record of strong motion obtained at Colton (situated 2 to 3 miles to the east of the proposed tank farm site and its alternate), where strong-motion accelerographs have been operating at a Southern California Edison substation since January 1933. The major Kern County earthquake of July 21, 1952, produced the largest acceleration, about 0.07g, that has been recorded at Colton in the past 45 years. Accelerations exceeding 0.01g have been recorded at an average rate of two or three events per decade.

The actual recurrence rates obtained from the strong-motion intruments at Colton are considerably lower than the long-term recurrence rates estimated in the probabilistic analysis. For example, the probabilistic analysis indicates a long-term average rate of more than once per year for ground accelerations of .01g and greater. Also, the expected peak acceleration for a 50-year period is about 0.4g, much larger than the maximum of 0.07g recorded at Colton over the past 45 years.

The probabilistic analysis is considered to provide more reliable long-term average estimates of ground motion recurrence expectancy than the relatively brief accelerograph record provides. At least seven large (magnitude 6 or more) earthquakes have occurred in the San Jacinto fault zone, while the remaining three events (since 1933) occurred in the southern section of the fault zone. Thus, it is likely that the incidence of strong ground motion near the proposed Rialto tank farm site was considerably greater in the 45 years preceding the installation of the Colton accelerographs than in the subsequent 45 years. This serves to illustrate the reason for preferring recurrence estimates based on the probabilistic analysis rather than on the short-term accelerograph record from Colton.

Accelerograms recorded during the magnitude 5.4 Lytle Creek earthquake of September 12, 1970, provide an example of ground motions that have a high probability of occurring within the lifetime of the proposed tank farm. This event occurred on the nothern part of the San Jacinto fault, a few miles west of where the Elk Hills/SOHIO route crosses the San Andreas fault. The earthquake did not rupture the fault at the surface, although it did cause local ground cracking and landslides. The event was recorded at eight accelerograph stations within 20 miles of the epicenter. Peak horizontal accelerations exceeding 0.1g were recorded at Wrightwood (0.195g), Devils Canyon (0.193g), and San Bernardino (0.125), at epicentral distances of 9, 12, and 17 miles, respectively. At Colton, about 20 miles southeast of the epicenter, a peak acceleration of 0.046g was recorded.

2. Seismic Hazard Impacts

a. Introduction

Seismic impacts related to the proposed Rialto tank farm and delivery system modifications may be separated into two categories: impacts of

the facilities upon the existing seismologic regime and impacts of the seismologic regime upon the facilities. The first case includes possible changes in the level of seismic hazards due to the activities of man. For example, concentrated surface loadings could contribute to the severity of seismically induced collapse.

Impacts of the seismologic regime upon the facilities are phenomena resulting from earthquake occurrence and fault motions that could interfere with safe and efficient pipeline operations; structural integrity of oil storage facilities, pump stations, microwave towers, and powerlines; and the aesthetic appearance of the facilities and surrounding lands.

Seismic impacts can range from severe and widespread to minor and localized. An example of a minor impact would be a seismically induced landslide that did no damage but altered the appearance and future stability of a fill slope. A significant impact to a facility would be one that resulted in pipeline breakage or an oil spill.

b. Construction Impacts

The construction of pipeline and oil storage facilities at the Rialto site would have negligible effect upon the seismologic regime. Large storage tanks are proposed, involving heavy foundations load and/or excavations that could contribute to the severity of seismically induced ground failures. However, these hazards can be effectively mitigated by careful foundation engineering and safe construction practices. The loads imposed by pipelines, roadways, pumps, communications towers, and powerlines would not affect the soil below depths of a few tens of feet.

Landslides. The additional forces imposed on sloping ground by strong earthquakes may cause landslides. No natural slopes sufficiently

steep to constitute a landslide hazard are present in the vicinity of the Rialto site. Minor landslide hazard may exist where there are steep tanks along the intermittent Santa Ana River. Protective measures such as shoring or trimming can be used for any temporary excavation slopes. Construction of large cut-and-fill slopes is not anticipated. Therefore, the possible hazard due to landsliding can be effectively mitigated.

Vibratory Densification. Granular soils may be densified by strong vibratory ground motions. The resulting subsidence experienced at the ground surface is rapid and uneven due to the inhomogeneous nature of granular soils.

No densifiable soils have been identified at the Rialto site. However, because high levels of vibratory ground motion can be expected within the projected lifetime of the tank farm, susceptibility to densification will be assessed by soils investigations. Appropriate design measures will be taken to ensure that damage to the pipeline and oil storage tanks does not occur in the event of such a soil failure.

Liquefaction and Lurching. Liquefaction is the momentary transformation of soil from a solid state to a liquid state as a result of vibratory ground motion. Lurching is a special case of liquefaction in which level ground moves laterally toward an unconfined surface such as a canal embankment or streambank. These phenomena normally occur only when sandy soils are saturated and then subjected to strong shaking.

These necessary conditions have not been noted in the vicinity of the tank farm. However, susceptibility to liquefaction hazard should be assessed by soils investigations because of high exposure to potential seismic shaking. Impact due to liquefaction would then be mitigated by foundation design sufficient to resist settlement, flotation, or overturning.

c. Operation Impacts

General Statement. Operation of the pipeline and tank farm facilities involves the action of pumps at several locations and the movement of oil through the pipe. These activities would have no effect upon the surrounding seismic environment.

The seismic impacts upon the pipeline considered here involve the direct effects of earthquake occurrence. These hazards would be present at all times; however, the most significant impacts would be upon the operational phase.

Seismic Shaking. Exposure to strong ground motion has been discussed in the foregoing text. The potential impacts due to seismic shaking will vary among classes of structures. It appears that seismic ground motion hazard can be mitigated to a low risk level with adequate earthquake-resistive design. However, structures that have not been so designed would probably be exposed to potentially damaging ground motion within the projected lifetime of the facilities.

Ground-motion impact would be generally low for well-constructed service facilities and braced pipelines and pumps. Minor damage to these structures could be expected in the event of a major earthquake.

Large structures, on the other hand, would be more vulnerable to damage from long-period motion likely to be generated by a major earthquake. Structures in this class may include oil storage tanks, microwave towers, and powerlines. The impact of seismic shaking upon the Rialto Tank Farm and pipeline service facilities would depend upon the adequacy of earthquake-resistive design of these critical structures. Structures founded on alluvium could experience significantly higher amplitude ground motion for periods greater than 1 second. Special attention would therefore be given to the stability of tanks and their

foundations. Provisions would be made for earthquake-resistive design and adequate containment of possible spills.

Ground Rupture. The occurrence of a damaging earthquake is often accompanied by ruptures of the ground surface along the causative fault zone. Structures located on an active fault trace may be subjected to large differential movements. There is no practical way to design rigid structures against this kind of deformation. However, pipelines and some service facilities can be designed so they are protected from severe damage at the fault crossing by providing for additional flexibility. Rigid structures -- such as pump stations, oil storage tanks, and foundation footings -- would not be placed on a fault trace that may rupture in an earthquake.

No known faults intersect the tank farm sites and the connecting pipeline segment, as shown on Figure 2-1. Thus, it appears that hazard due to fault rupture at the Rialto tank farm site would be negligible.

The alternate tank farm site has potentially greater exposure to fault rupture. It is located about 1 mile from the Rialto-Colton groundwater barrier, which is not accurately located and may be a fault trace. Proximity to a potentially active fault argues against selection of the alternate tank farm site because direct fault rupture beneath a tank could mean disastrous losses.

The proposed pump station near Llano and the microwave tower at Double Mountain would have negligible fault-rupture impact.

The powerline proposed to serve the Tejon Pump Station could be vulnerable to fault-rupture damage if movement occurred on the Plieto fault. However, the powerline route and support locations could easily be modified to avoid the possible zones of faulting. Rupture hazard would thereby be mitigated to a low level.

Tectonic Creep. General fault creep may occur without accompanying damaging earthquakes and sudden ruptures. Structures are more easily protected against damage due to this kind of slow deformation. Rigid structures should not be placed directly on the fault trace. More flexible structures such as a pipeline should be designed to facilitate repeated minor repairs at the fault crossing.

Active creep deformation is occurring across the San Jacinto fault zone at San Bernardino, based on geodetic measurements (U.S. Department of Commerce, 1971). However, the tank farm sites and pipeline segment shown in Figure 2-1 are located 4 miles from the zone of tectonic creep and will not be affected by this deformation. No other instances of fault creep are known in the tank farm area or near the proposed pipeline service facilities.

3. Mitigation of Seismic Hazards

It appears that the seismic hazards affecting the Rialto site and proposed pipeline service facilities can be mitigated to a low risk level with adequate earthquake-resistive design, as indicated by the following list. Structures for which earthquake-resistive design is essential include oil storage tanks, microwave towers, and any other large or rigid strcutures that may be constructed at the Rialto site.

| Hazard | Proposed Mitigative Measures |
|---|---|
| Seismic shaking | Mitigated by engineering design and earthquake-resistive construction, e.g., strengthening of tanks and towers to prevent overturning and planning for adequate containment of spills and preventing ignition. |
| Fault rupture and fault creep | Mitigated by judicious site selection, e.g., tanks and other rigid structures will not be placed near potentially active faults |

| | |
|---|---|
| Landslides | Mitigated by soils engineering design of cut-and-fill slopes as needed and by safe construction and excavation practices; careful site selection, slope analysis, and design of proposed power and communications facilities located in mountainous terrain. |
| Vibratory densification | Mitigated by soils investigations that permit appropriate engineering design of oil storage tank foundations and at other sites, as needed. |
| Liquefaction | Mitigated by soils investigations that permit appropriate engineering design of oil storage tank foundations and at other sites, as needed. |

# Appendix G
# Climate

## 1. General Climatic Features

No changes to this section are necessary since only general southern California climate is discussed.

## 2. San Joaquin Valley

The proposed modifications to the project would not affect the baseline description of climate in the San Joaquin Valley.

## 3. Cajon Pass Area

Relocation of the Cajon Tank Farm to the site near Rialto would move it from the Southeast Desert Air Basin to the South Coast Air Basin with its markedly different climate. The discussion of climate in the Cajon Pass area in the Final EIS, while not incorrect, is not pertinent to the revised project and its impact potential.

## 4. San Bernardino Valley

The climate of the San Bernardino Valley area is characterized by warm, dry summers and cool, wet winters. Table G-1 shows a temperature and precipitation summary for San Bernardino Fire Station No. 5 for over 50 years of record.

Table G-1

TEMPERATURE AND PRECIPITATION DATA FOR SAN BERNARDINO FIRE STATION NO. 5

| | JAN. | FEB. | MARCH | APRIL | MAY | JUNE | JULY | AUG. | SEPT. | OCT. | NOV. | DEC. | ANNUAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TEMPERATURE SUMMARY ($^{o}$F) | | | | | | | | | | | | | |
| Highest* | 92 | 93 | 97 | 103 | 109 | 116 | 116 | 116 | 114 | 107 | 99 | 93 | 116 |
| Mean Daily Maximum** | 66 | 68 | 71 | 76 | 80 | 88 | 96 | 96 | 92 | 85 | 76 | 68 | 80 |
| Mean Daily*** | 51 | 54 | 56 | 60 | 64 | 70 | 76 | 76 | 72 | 65 | 58 | 53 | 63 |
| Mean Daily Minimum** | 37 | 40 | 42 | 45 | 49 | 52 | 57 | 57 | 53 | 47 | 41 | 37 | 46 |
| Lowest* | 17 | 21 | 26 | 27 | 33 | 37 | 42 | 42 | 36 | 29 | 24 | 19 | 17 |
| PRECIPITATION SUMMARY (inches) | | | | | | | | | | | | | |
| Greatest Monthly**** | 15.5 | 12.2 | 10.1 | 9.4 | 3.3 | 1.0 | 0.4 | 2.2 | 2.4 | 4.6 | 7.5 | 10.9 | |
| Mean Precipitation**** | 3.2 | 3.3 | 2.8 | 1.4 | 0.6 | 0.1 | 0.0 | 0.2 | 0.2 | 0.8 | 1.3 | 2.8 | 16.7 |
| Least Monthly**** | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Greatest Daily* | 5.3 | 3.8 | 4.5 | 3.9 | 1.2 | 1.0 | 0.3 | 1.2 | 1.7 | 1.7 | 2.1 | 3.9 | 5.3 |

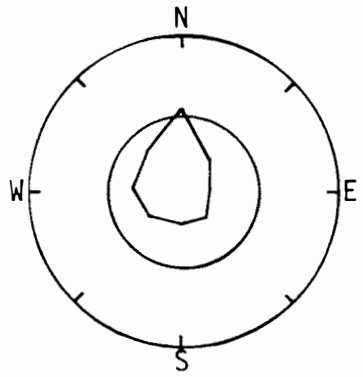
*Based on 54 years of record.
**Based on 53 years of record.
***Based on 59 years of record.
****Based on 80 years of record.

Source: United States Department of Commerce, 1951.

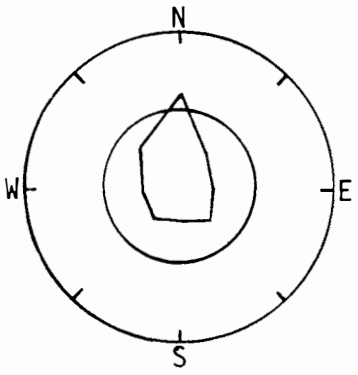
Winds in the San Bernardino Valley are generally quite weak. The yearly average is only 4 miles per hour as measured at Norton Air Force Base. However, in the fall, winter and early spring months, occasional Santa Ana winds blow from the north through the San Bernardino Mountains, sometimes reaching speeds of 35 to 50 miles per hour. There is a high percentage of calm winds in the San Bernardino Valley (41%). In the summer, the air is typically stagnant from the early morning hours (about 3 a.m.) until approximately noon. These stagnant periods, combined with frequent and persistent temperature inversions, are responsible for trapping and concentrating air pollutants emitted at ground level. The sun acts on these trapped pollutants (mainly reactive hydrocarbons and oxides of nitrogen), and photochemically produces high concentrations of oxidants.

Wind direction, as measured at Norton Air Force Base in San Bernardino, is primarily from the north. However, during the summer "oxidant season," the prevailing direction is from the west. At March Air Force Base in Riverside, the prevailing wind direction is from the northwest. Therefore, the prevailing wind direction in the vicinity of the proposed Rialto tank farm site is from the north to northwest since it lies between these two Air Force Bases. The wind rose for Norton AFB is shown in Figure G-1.

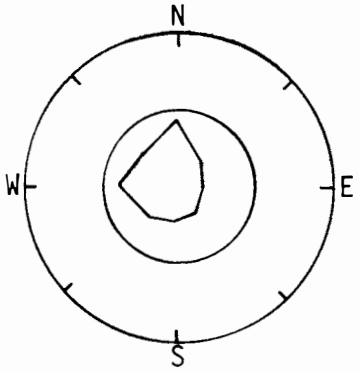
Because of the local topography and distance of San Bernardino Valley from the coast, the wind speed and direction in the area of the proposed tank farm change diurnally as well as seasonally. A number of studies have been completed which attempt to define the daily windflow streamlines on an hourly basis (Haming, 1971 and SCAQMD, 1977). The primary purpose of these studies was to determine transport phenomena of photochemical pollutants. During high oxidant periods, winds are normally calm from the early morning hours until noon when the sea breeze reaches the Riverside-San Bernardino area. From there the winds, and associated pollutants, diverge in a number of directions. One major streamline



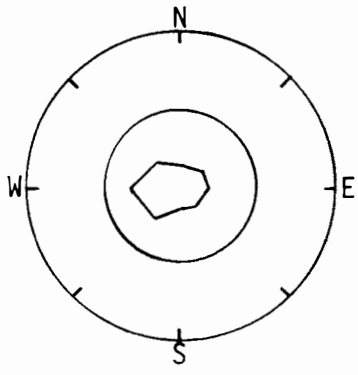

Annual Mean Speed 3.5 Knots
40.7% Calm



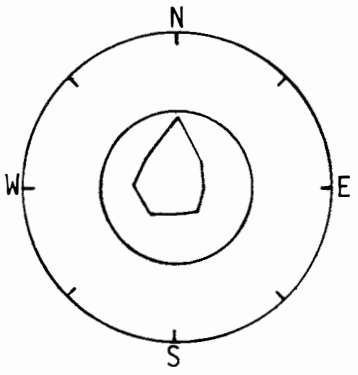

January Mean Speed 3.5 Knots
39.2% Calm




April Mean Speed 3.7 Knots
37.8% Calm




July Mean Speed 3.6 Knots
41.6% Calm




October Mean Speed 2.8 Knots
46.1% Calm

Source: Data Processing Branch, USAFETAC, Air Weather Service.

Figure G-1. Winds (Hourly %) at Norton AFB, San Bernardino, California (1943-1972)

continues eastward to the Banning Pass area while another is deflected by the San Bernardino Mountains and proceeds northward through the Cajon Pass. These sea breeze winds typically originate in the Santa Ana area or the Los Angeles basin.

In the evenings, northerly offshore winds can transport unreacted hydrocarbons from the Rialto tank farm site toward the Riverside area and through the Santa Ana Canyon. These pollutants would then affect areas south of the proposed tank farm site.

As mentioned earlier, mixing depth, or height of the inversion layer, is another important factor in determining the potential for the formation of photochemical oxidants. Mixing depths measured in Santa Monica are shown in Table G-2. Morning mixing depths are generally much more restrictive than those in the afternoon; however, the morning surface inversion is normally destroyed shortly after sunrise. Afternoon mixing depths in the South Coast Air Basin are most restrictive in the summer months when winds are light and the sun is at its greatest intensity. Such conditions produce the poor air quality described in Appendix I.

Table G-2

MEAN MIXING DEPTHS IN THE SAN BERNARDINO AREA*
(Meters)

| | Morning | Afternoon |
|---|---|---|
| Winter | 422 | 893 |
| Spring | 676 | 963 |
| Summer | 562 | 603 |
| Fall | 510 | 798 |
| Annual | 542 | 814 |

*Actual measurements taken in Santa Monica.

Source: Holzworth, G.C., "Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States."

# Appendix H

## Air Quality Regulations And Standards

### 1. Federal Regulations and Standards

The Clean Air Act Amendments of 1977 incorporated several changes in air quality regulation that were not included in the Final EIS. These changes include: statutory requirements for emission offsets and Prevention of Significant Deterioration (PSD) as part of the required New Source Review (NSR) procedures; delays in automotive emissions standards (except California); new attainment schedules for State Implementation Plans (SIP); and the requirement for federal agencies to comply with substantive and administrative requirements of state and local agencies.

The federal NSR procedures remain in effect until July 1, 1979, when states are required to develop an approved SIP for the EPA detailing their own procedures for attaining and maintaining ambient air quality standards. The NSR procedures include requirements for emissions offsets and Best Available Control Technology (BACT) in order to build new or modified major sources in nonattainment areas (those areas where standards are exceeded). They also require a new or modified major source to comply with PSD regulations in an attainment area. PSD regulations incorporate incremental limits of air quality deterioration depending upon the degree of development which regulatory authorities specify in specific geographical areas. There is also a requirement for BACT in the PSD regulations.

A major source in the context of these regulations is defined as any source which will emit more than 100 tons per year of any pollutant for the purposes of offsets. A new or modified source is subject to PSD if it is one of 28 specified source categories emitting more than 100 tons per year or any new or modified source emitting more than 250 tons per year of a particular pollutant if not a specified source.

The revised SIPs, scheduled to take effect by July 1, 1979, are required to develop a plan to meet National Ambient Air Quality Standards by 1982, or to show cause why the standards cannot be met by that time and thereby develop plans to meet the standards by 1987. The Air Quality Maintenance Plans (AQMPs) required by EPA will presumably serve as input into the revised implementation plans.

2. State and Local Regulations and Standards

No changes to state and local regulations and standards have occurred since the printing of the Final EIS. The State of California and local agencies will be required, however, to adopt and comply with all of the new regulations specified in the Clean Air Act Amendments of 1977.

# Appendix I
# Air Quality -- Past, Present, and Future Trends

## 1. San Joaquin Valley Air Basin

The proposed changes in the SOHIO Conveyance System would not affect the baseline discussion of air quality in the San Joaquin Valley Air Basin.

## 2. San Bernardino--Southeast Desert Air Basin

Relocation of the proposed Cajon Tank Farm would shift hydrocarbon emissions (and therefore air quality impacts) from the Southeast Desert Air Basin portion of San Bernardino County to the South Coast Air Basin. Consequently, the baseline discussion of air quality in the Southeast Desert Air Basin is not pertinent.

## 3. San Bernardino Valley--South Coast Air Basin

The South Coast Air Quality Management District (SCAQMD) operates a large network of ambient air quality monitoring stations in the air basin. This section will present monitoring data from those stations that would be most affected by hydrocarbon emissions from the proposed tank farm. As discussed in Appendix G of this supplement, hydrocarbons emitted near Rialto can potentially be transported in a number of directions before reacting to form photochemical oxidants. For the purposes of this discussion, data from five stations will be presented to illustrate the severity of the air quality problem in this part of the air

basin. The Banning station is actually within the South East Desert Air Basin, but could potentially be affected by the tank farm emissions.

Table I-1 shows historical data for the frequency with which the federal oxidant standard (0.08 ppm) has been exceeded for the five stations chosen. There appears to be a slight downward trend; however, a change in instrument calibration on June 1, 1975 may be responsible for the drop from 1975 to 1976 shown at four of the five stations. The obvious conclusion to be drawn from these data is that oxidants have been, and continue to be a severe air pollution problem in the area where the tank farm would be located and the areas it would impact. Data from 1977 are not included because they were not available at the time of this writing.

Table I-2 shows the typical monthly distribution of oxidant standard excesses and the maximum hourly average recorded concentration for each month during 1975. The months of May through September contain the bulk of the days on which the federal standard is exceeded. Most stations in the San Bernardino Valley area exhibit two oxidant peaks during the day -- one in the early to mid-morning and another in the mid- to late afternoon. The morning peak is due to local sources of hydrocarbons and oxides of nitrogen which have reacted to form oxidants. When the sea breeze picks up about noon, these locally generated pollutants are transported out of the area and replaced by oxidants generated in other parts of the air basin. As described in the climatic setting, the afternoon peaks could be due to oxidants generated in the Santa Ana area or areas to the west such as the Los Angeles basin or Ontario region.

Suspended particulates are also a problem in the San Bernardino Valley. Table I-3 shows the historical particulate trend at the San Bernardino, Riverside and Redlands stations. Table I-4 illustrates the frequency with which the State 24-hour secondary standard (100 $\mu g/m^3$) was exceeded in 1976 at the three stations.

Table I-1

NUMBER OF DAYS FEDERAL OXIDANT STANDARD (0.08 ppm)
HAS HISTORICALLY BEEN EXCEEDED AT STATIONS
NEAR THE PROPOSED RIALTO TANK FARM

| Station | Year | Frequency (days) |
|---|---|---|
| Fontana | 1976 | 181 |
| | 1975 | 200 |
| | 1974 | 200 |
| | 1973 | -- |
| | 1972 | 173 |
| Redlands | 1976 | 159 |
| | 1975 | 184 |
| | 1974 | 207 |
| | 1973 | -- |
| | 1972 | 155 |
| Riverside | 1976 | 184 |
| | 1975 | 196 |
| | 1974 | 200 |
| | 1973 | 190 |
| | 1972 | -- |
| San Bernardino | 1976 | 168 |
| | 1975 | 155 |
| | 1974 | 182 |
| | 1973 | 168 |
| | 1972 | 145 |
| Banning | 1976 | 125 |
| | 1975 | 137 |
| | 1974 | 155 |
| | 1973 | -- |
| | 1972 | 145 |

Source: California Air Resources Board (1974, 1975) and South Coast Air Quality Management District, 1977.

Table I-2

NUMBER OF DAYS FEDERAL OXIDANT STANDARD WAS EXCEEDED AND MAXIMUM HOURLY AVERAGE (PPM) BY MONTH DURING 1975

| Month | Station | | | | |
|---|---|---|---|---|---|
| | Fontana | Redlands | Riverside | San Bernardino | Banning |
| January | 4(.12) | 2(.15) | 5(.17) | NA(-) | 2(.10) |
| February | 7(.20) | 4(.16) | 5(.19) | 4(.16) | 5(.12) |
| March | 8(.20) | 8(.16) | 7(.18) | 9(.17) | 6(.14) |
| April | 7(.18) | 8(.17) | 11(.22) | 5(.13) | 10(.13) |
| May | 27(.41) | 24(.20) | 26(.32) | 16(.25) | 25(.23) |
| June | 27(.29) | 27(.26) | 23(.25) | 23(.32) | 23(.23) |
| July | 28(.38) | 30(.32) | 30(.29) | 30(.30) | 19(.27) |
| August | 31(.34) | 30(.28) | 29(.31) | 30(.38) | 21(.25) |
| September | 28(.31) | 25(.30) | 27(.35) | 26(.32) | 18(.22) |
| October | 19(.29) | 18(.27) | 19(.29) | 8(.21) | 8(.17) |
| November | 13(.20) | 8(.18) | 11(.19) | 3(.12) | 0(.08) |
| December | 1(.09) | 0(.07) | 2(.10) | 1(.09) | 0(.06) |
| | 200 | 184 | 196 | 155 | 137 |

Source: California Air Resources Board, 1976.

Table I-3

ANNUAL GEOMETRIC MEAN CONCENTRATIONS OF SUSPENDED PARTICULATES ($\mu g/m^3$)

| Year | Station | | |
|---|---|---|---|
| | San Bernardino | Redlands | Riverside |
| 1966 | 124 | 124 | |
| 1967 | 109 | 88 | |
| 1968 | 110 | 88 | |
| 1969 | 91 | 94 | |
| 1970 | 119 | 102 | 112 |
| 1971 | 131 | 94 | |
| 1972 | 100 | 96 | 119 |
| 1973 | 100 | 89 | 127 |
| 1974 | 115 | 109 | 136 |
| 1975 | 102 | 76 | 149 |
| 1976 | 102 | 69 | 131 |

Source: South Coast Air Quality Management District, 1977.

Table I-4

FREQUENCY WITH WHICH STATE 24-HOUR SECONDARY SUSPENDED PARTICULATE STANDARD WAS EXCEEDED DURING 1976

| | Station | | |
|---|---|---|---|
| | San Bernardino | Redlands | Riverside |
| Days Sampled | 58 | 56 | 53 |
| Days Standard Exceeded | 32 | 10 | 41 |
| Percentage | 55 | 18 | 77 |

Source: South Coast Air Quality Management District, 1977.

There were no excesses of the short-term standards for carbon monoxide or sulfur dioxide at the three stations discussed above. The one-hour state standard (0.25 ppm) for nitrogen dioxide was exceeded one day at the Redlands station.

Table I-5 shows the hydrocarbon emissions inventory for the South Coast Air Basin portion of San Bernardino County. The years of 1975 and 1980 are included to illustrate that emissions are projected to decrease between now (1978) and the time the project would be completed. This decrease is expected to continue in San Bernardino County and the entire South Coast Air Basin through 1985 and then rise again in 1990. Achieving the state and federal standards for oxidant is almost totally dependent upon the progress of the automobile industry in implementing the means for building automobiles that meet California State Air Resources Board requirements for emission controls. Control of stationary sources of hydrocarbons and oxides of nitrogen will also be a significant factor in assisting the South Coast Air Basin attain and maintain the oxidant standard.

Emissions of particulates in San Bernardino County are projected to increase steadily from the present time to 1995. However, a large portion of the particulate burden in San Bernardino County is the result of photochemical reactions and this phenomena is expected to decrease. Thus, it is uncertain what the long-term trend in particulate levels will be.

Table I-5

SAN BERNARDINO COUNTY EMISSIONS INVENTORY FOR TOTAL HYDROCARBONS (THC) AND REACTIVE HYDROCARBONS (RHC)* 1975 AND 1980 FOR SOUTH COAST AIR BASIN PORTION ONLY (tons/day)

| Source | 1975 | | 1980 | |
|---|---|---|---|---|
| | THC | RHC | THC | RHC |
| Petroleum | | | | |
| Production | -- | -- | -- | -- |
| Refining | -- | -- | -- | -- |
| Marketing | 7.7 | 7.4 | 0.8 | 0.8 |
| Other Stationary Sources | 19.5 | 8.8 | 21.1 | 9.6 |
| Mobil Sources | 63.6 | 58.2 | 45.2 | 41.6 |
| TOTAL | 90.8 | 74.4 | 67.1 | 52.0 |

*Reactive hydrocarbons are Class II and Class III hydrocarbons as defined by the California Air Resources Board.

Source: California Air Resources Board, 1977.

# Appendix J
# Noise

## 1. Introduction

No changes are required on this section.

## 2. Derivation of Impact Criteria

(see discussion in Final EIS)

## 3. Derivation of Contruction Noise Impact Criteria

(see discussion in Final EIS)

## 4. Setting

The noise setting is explained sufficiently in the final environmental impact statement up to M.P. 165. From M.P. 165 to the Rialto Terminal the existing noise environment is described in Section II of this supplement.

## 5. Impacts

### a. Construction

Except for the change in location of noise impacts due to the relocation of the tank farm from Cajon to Rialto, the impacts described

in the Final EIS are sufficiently explained up to M.P. 165. The construction of the Rialto Terminal, and the 1-1/2 mile pipeline extension to the terminal, should not significantly impact the area because of distance attentuation of noise and the noise sources already in the area, namely: gravel pits, sewage disposal areas, cement plants, railroad switchyard, etc. Possible exceptions are the nearest houses to the Rialto terminal site.

b. Operation

The noise impacts described in the Final EIS adequately describe the impacts of this alternative, with the possible exception of the nearest houses to the pump station on the Rialto terminal site.

# Appendix K
# Water Resources

## 1. Setting

The proposed tank farm relocation and pipeline modifications involve alterations in the Elk Hills/SOHIO Conveyance System in each of the three water basins through which it passes. For example, pipeline realignments are occurring in both the Tulare Lake and South Lahontan basins, while the tank farm at Cajon Pass in South Lahontan Basin is being moved to Rialto in the Santa Ana River Basin. Yet, for all this movement, none of the alterations are occurring outside of the study area originally described in the final environmental impact statement for the Elk Hills/SOHIO Conveyance System. Thus, the water resources setting provided in that document is sufficient for this analysis and will be used as the basis for estimating the impacts associated with the proposed project alterations.

## 2. Impacts

### a. Impact Criteria

The criteria used in this impact evaluation are identical to the ones previously presented in Final EIS for the proposed project.

b. Construction

Similarly, the alterations discussed in this supplement should not result in any significant changes in the water resources impacts associated with the construction of the proposed conveyance system. For example, the proposed pipeline modifications would simply shift such construction impacts as increased erosion potential and water consumption from one location to another with no real change in the severity, or lack thereof, of impact. Only in the instance of the tank farm relocation from Cajon to Rialto would any impact change. This transfer can be expected to reduce slightly the water resources impact associated with the hydrostatic testing of the proposed tank farm. In particular, the potential difficulties associated with the acquisition of these test waters and the subsequent effects of this acquisition on local groundwaters would be lessened by this relocation.

c. Operation (Normal)

Relatively few impacts are associated with normal project operation. Of these impacts, only one, the effects of providing firefighting water to the tank farm, would be affected by the proposed project modifications. The distance of the Cajon facility from existing firefighting systems would have required the creation of an onsite firefighting capability. If local groundwaters were used as the water source for this supply as has been tentatively proposed, locally significant effects would have resulted. However, the movement of this tank farm to Rialto would essentially eliminate these concerns. Local municipalities immediately adjacent to the Rialto site could be contracted to provide this necessary service with little or no impact to themselves.

d. Operation (Abnormal)

While abnormal project operation (e.g., oil spills) has the greatest potential for impact, the proposed modifications to the Elk Hills/SOHIO Conveyance System would not result in any significant changes in this impact. Instead, it is expected that these modifications would only lead to a transfer of impacts from one locale to another. The tank farm relocation would, for instance, have no major effects since the tank farm would be surrounded by protective berms in either location. Similarly, the areas impacted by the proposed pipeline realignment are close enough in character to the original alignment to effectively eliminate any change in impact.

# Appendix L
# Characterization of Plant Communities

The proposed project modifications would affect two additional plant communities. The discussion of the eight plant communities contained in the Final EIS is not repeated here.

## 9. Annual Grassland

This vegetational association, as defined for the project area, occupies formerly cultivated plains in the southwestern San Bernardino and western Riverside counties. The dominant species are wild oats (Avena spp.). Other common plants include field cress (Brassica campestris), red-stemmed filaree (Erodium cicutarium), and Russian thistle, or tumbleweed (Salsola kali). None of these species are native.

## 10. Coastal Sage Scrub

Munz and Keck (1974) have defined this type for all of the South Coast Ranges of California. Within the project area, the dominant species are California sagebrush (Artemesia californica), brittlebrush (Encelia farinosa), and flattop buckwheat brush (Eriogonum fasciculatum). These form a dense or scattered shrub stratum over an herbaceous ground cover that includes the dominant species of the Annual Grassland association.

# Appendix M
# Wildlife

There are no additional wildlife species associated with the proposed changes.

References to extensive damage at the Cajon Tank Farm are no longer valid.

Appendix N

Cultural Resources Evaluation of the Rialto Tank Farm Location and Associated Pipeline and Pump Station Locations, San Bernardino County, California

1. Preface

The proposed project modifcations have necessitated an additional archaeological survey. This appendix is an edited version of the above-titled report which was prepared by David Chavez, a qualified consulting archaeologist. All references to exact locations of archaeological sites, including maps, have been deleted from this appendix in order to protect these archaeological resources from uncontrolled excavation and destruction. Uncontrolled access to portions of the report that delineate specific archaeologic site locations and descriptions could result in extensive damage (through acts of vandalism and/or illegal excavations) of nonrenewable cultural resources. However, the complete report, including maps, is available to qualified persons and researchers.

The scope of the cultural resources evaluation included a detailed review of records, maps, and relevant archaeological and historical documents at the San Bernardino County Museum at Redlands, California, and the Archaeological Research Unit at the University of California, Riverside. Background information was also obtained from conversations with the San Bernardino County Museum Director, G. A. Smith. A field reconnaissance of two alternatives sites for the Rialto Terminal, and of the route of the pipeline extension from M.P. 164 to the Rialto terminal site, was made by archaeologist David Chavez and Jan Hupman during the last week of January 1978.

## 2. Archaeological Perspective

The Santa Ana River Basin in the Slover Mountain and La Loma Hills area was populated by Shoshonean-speaking Serrano and Cahuilla Indian groups during prehistoric times (Smith, 1973). These peoples were essentially hunters and gatherers, and emphasized seed gathering and processing. Archaeological sites in this region generally reflect that type of subsistence economy and are found in the form of grinding stations (processing sites). These types of sites consist of deep-basin metate surfaces (early form) and polished grinding surfaces on bedrock exposures (later form) which are occasionally accompanied by manos. Associated habitation areas are characterized by the occurrence of bone tools (such as awls), stone and shell beads and notched circular charmstones. Pottery occurs at some sites and reflects a late cultural influence from the Mojave and Colorado River areas.

Hunting activities consistently supplemented the subsistence economy of seed gathering in this area, and therefore, lithic artifacts associated with the earlier use of the atlatl (spear thrower) and the later utilization of bow and arrow, are to be encountered in association with archaeological sites. Other lithic materials which are associated with sites are core and flake tools, scraperplane-like tools, and a variety of griding stones. Also, the mortar and pestle does occur late in this region, as well. Further discussions of the material remains of prehistoric cultural activity in this area are presented in Smith (1973) and Wilke and Hommone (1973).

Several archaeological sites have been recorded in the general environs of Santa Ana River/Jurupa Mountain area. Many of these sites have been documented as a result of comprehensive archaeological studies conducted over the years; such studies include works by Smith (1942), King (1972), Kirkish and McCoy (1972), and Wilke and Hammond (1973).

In the immediate vicinity of the project areas which are the subject of this study, nine archaeological sites are recorded. These sites are SMCM-711, SBCM-75, SBCM-40, SBCM-113, SBCM-3144, SBCM-34, SBCM-65, SBCM-2224, and SBCM-868.

3. Historical Perspective

A review of the National Register of Historic Places indicates that no historically significant features or structures are currently listed within the immediate vicinity of the defined Rialto project areas. However, the Agua Mansa/Santa Ana River area is not without its own interesting early history, and reference is given to documents by Jones (1973), Whelan (1973), Lovelace (1973), and Vickery (1977), for more specific information.

Of considerable significance is a State Registered Historic Landmark (No. 121), known as the Aqua Mansa Cemetery. This historic site is located immediately adjacent to the proposed Rialto Tank Farm location (Alternative A). This historic feature is discussed in the several articles noted in the referenced publications, and the reader is directed to those articles for details concerning this cultural resource. According to those articles, the Sana Ana River/Agua Mansa area was settled in the 1840's by farmers from New Mexico. The small community which developed was an important frontier outpost and served as a stopover for east/west travelers. The Agua Mansa community flourished until 1862 when a flood destroyed the majority of that community. The original Agua Mansa cemetery location may well have been destroyed at that time and the present cemetery area may reflect the postflood location established by residents of the area (Patterson, 1978). Whether or not this feature was situated at its present location -- above the Santa Ana River flood plain -- at the time of the referenced flood is an academic matter. It is certain that the use of this cemetery dates back to the mid-1800's and continued into the early 20th century by both Hispanic and Anglo

residents of the area. Today, this feature stands as a distinct monument to the early history of this area, and continued preservation of this location is of utmost importance.

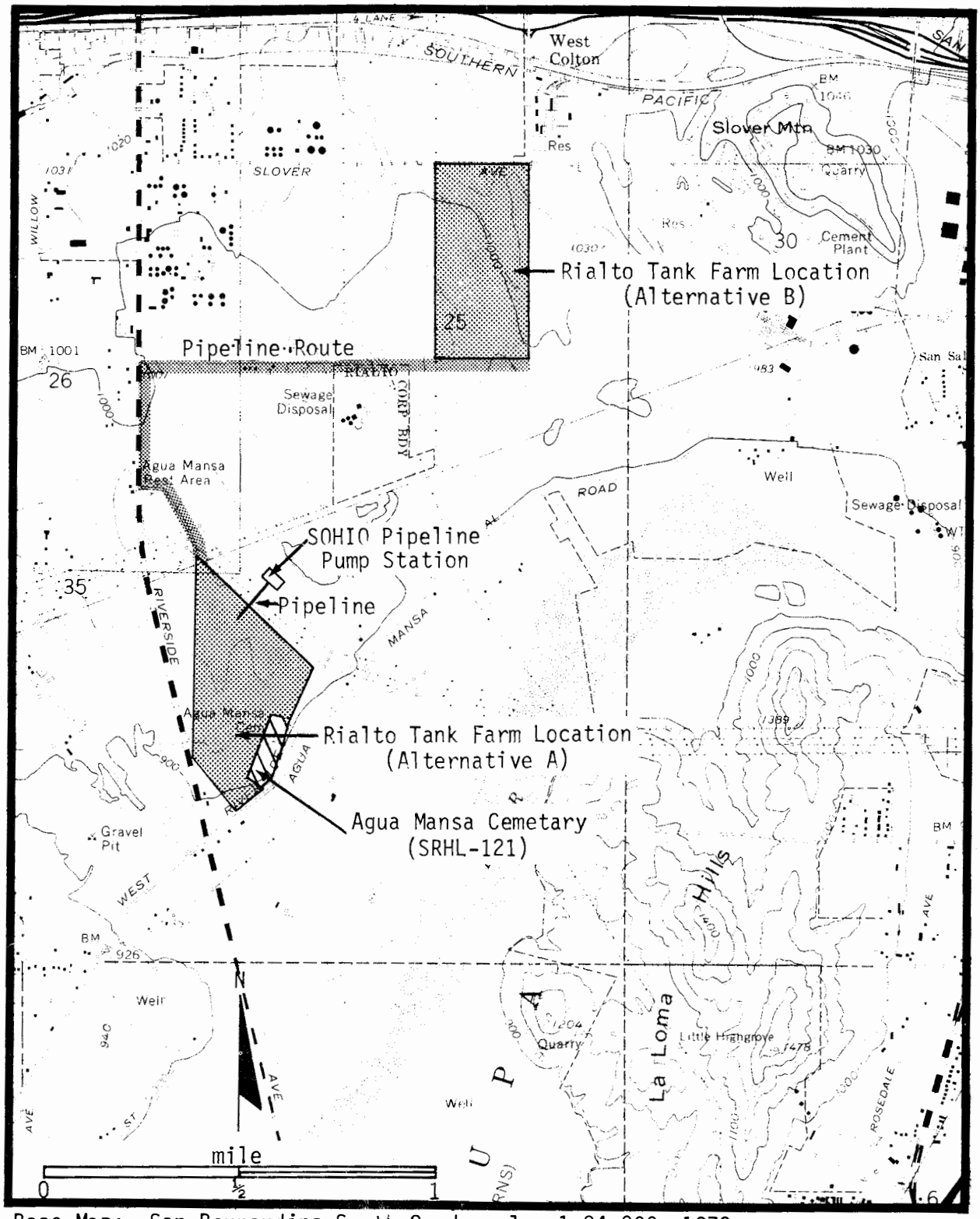
4. Field Investigation

The Rialto Tank Farm locations (Alternatives A and B) were subjected to comprehensive archaeological surveys of a type described as a General Surface Reconnaissance (King, Moratto and Leonard, 1973).

> "Inspection of all land surfaces that can resonably be expected to contain visible archaeological resources. Every portion of the study area whose surface can be seen without major modification of the vegetation or the structure cover, and where it is reasonably possible that human activities that leave traces might be carried out, is inspected in a general surface reconnaissance. Every foot of ground is not necessarily covered. A general surface reconnaissance is the functional equivalent of a complete reconnaissance in areas where soil, vegetation or other conditions make it highly unlikely that some kind of archaeological phenomena would be preserved, or where surface conditions obscufe such phenomena to a point at which they would not be observed without undertaking large-scale brush clearing, grading, etc."

These two locations were systematically inspected by transecting the areas at 3- to 5-meter intervals. At the time of the survey, it was noted that the Rialto location (Alternative A, see Fig. N-1) consisted of a grass-covered plateau overlooking the Santa Ana River; some fill and debris were present on the property, otherwise survey conditions were quite good. The alternate location (B, see Fig. N-1) was characterized by agricultural land in the southern portion of the property and sandy, rolling hills with some grass and tumbleweeds present in the north. Survey conditions were relatively good at this location as well.

During the course of this field reconnaissance, close attention was given to the detection of any of the physical indications for the




Base Map: San Bernardino South Quadrangle, 1:24,000, 1973.

Figure N-1. Location Map of Archaeological Survey

presence of archaeological resources in this particular geographic location.

Close examination of both of these considered locations for the Rialto tank farm site, revealed no surface evidence of the existence of archaeological resources within the boundaries of those areas. It is noted, however, that the close proximity of Alternate site A, to the location of the historic cemetery raises serious considerations as to what effects such a project would have on that important historic resource. This issue will be addressed in greater depth in a later section of this report.

The pipeline routes along Santa Ana Avenue, Riverside Avenue, and the secondary road immediately west of Riverside Avenue were surveyed by inspecting a 10- to 15-meter corridor on both sides of the designated roadways. During the course of this phase of the field survey, all open space within the specified corridors was closely examined for the presence of archaeological remains, and no such evidence of archaeological resources were encountered.

No evidence of the archaeological site SBCM-57 was encountered within the survey corridor. The proposed pipeline along the roadway should not create an adverse impact to any archaeological resources in this immediate area.

The locations of the Pump Station and Pipeline Connector on the northeast end of the Rialto Tank Farm location (A) were surveyed as well. No surface evidence of archaeological resources were encountered at these locations.

5. Significance of Identified Resources

It is apparent that numerous archaeological resources are recorded in the vicnity of the Rialto project areas. A preliminary evaluation would suggests that none of these sites would qualify for nomination to the National Register of Historic Places. This determination is based on the criteria presented in the Federal Register (Vol. 40, No. 24, 1975 "Protection of Properties on the National Register; Procedures for Compliance," and Vol. 42, No. 183, Part 63, 1977, "Determination of Eligibility for Inclusion in the National Register of Historic Places.") Although the referenced archaeological resources do not appear to be of sufficient size and cultural complexity to warrant such consideration, it must be noted that all these archaeological sites potentially contain unique data which could contribute to the overall understanding of the prehistory of the Santa Ana River area. Therefore, it must be understood that the preservation of these nonrenewable cultural resources is of utmost importance.

The Agua Mansa Cemetery has been recognized as an historically significant landmark of the San Bernardino County area; recognition of the relative historic importance of this cemetery is presented in previously referenced documents (Smith, 1973; Jones, 1973; Whelan, 1973; and Lovelace, 1973), and by the State Historic Landmarks designation. Based on the criteria presented in the above-cited Federal Register, it is conceivable that the Agua Mansa Cemetery would qualify for nomination to the National Register of Historic Places.

6. Discussion of Impacts

Based on the review of current maps and records at the referenced Cultural Resources facilities and the field investigations of the various Rialto project locations, the following statements are presented.

If the Rialto Tank Farm facilities are developed on Alternative location A, adverse impacts of an indirect nature may be imposed upon the Agua Mansa Cemetery. Although a fenceline defines the boundary of the cemetery and development of facilities would not physically disturb the cemetery area, the development of the proposed tank farm at this location would surely diminish the historic setting of this important cultural feature. Such alteration of the physical setting would certainly constitute indirect adverse impacts. Also, it is possible that further archaeological materials exist below the ground surface at this location, and could be disturbed as a result of the proposed project development.

Whereas, the location of the Rialto Tank Farm at Alternative area B would result in no discernible impacts to any known cultural resources.

The development of the proposed pipeline along Santa Ana Avenue, Riverside Avenue, and the secondary road east of Riverside Avenue and the development of the SOHIO Pipeline Pump Station and Connector Pipeline (east of Rialto Tank Farm location Alternative A), would result in no adverse impacts to known cultural resources. This conclusion must be qualified, however; that is, if the proposed pipelines are placed within the survey corridors (10 to 15 meters of either side of the designated roadways), and if the SOHIO Popeline Pump Station and Connector Pipeline are located as designated on Figure N-1, then no such impacts are anticipated.

# Appendix O
# Socioeconomics

In addition to Socioeconomic data contained in Appendix O of the Final EIS, the proposed project modifications necessitate adding the following information.

Table O-1

FIRE PROTECTION MANPOWER AND EQUIPMENT

| Location | Jurisdiction | Men | Equipment |
|---|---|---|---|
| Rialto & Riverside Avenues, Rialto | City of Rialto | 6 on duty | 3 pumpers, 1-1,250 gal/min<br>2-1,000 gal/min<br>2 rescue ambulances<br>2 rush tankers for wild land<br>1 airport-type crash unit with 1,000 lbs dry chemical powder<br>1 foam trailer with 700 gallons lightwater |

Source: Purdy, Roger, and Richard Bridges, Chief and Ass. Chief, Rialto City Fire Department. Personal communication, February 1, 1978.

Table O-2

SCHOOL ENROLLMENT TRENDS, CITY OF RIALTO

| School District | 1971-1972 | 1972-1973 | 1973-1974 | 1974-1975 | 1975-1976 | 1976-1977 | Percent Change |
|---|---|---|---|---|---|---|---|
| Rialto Unified | | | | | | | |
| Elementary | 9,065 | 8,580 | 8,143 | 7,819 | 7,912 | 7,666 | - 15.4% |
| Secondary | 3,782 | 3,780 | 3,721 | 3,736 | 3,796 | 3,940 | + 4.0% |

Source: San Bernardino County Superintendent of Schools. February 17, 1978, personal communication.

Table O-3

RIALTO CITY WASTEWATER
TREATMENT PLANT

| | |
|---|---|
| Capacity | 3.2 mgd |
| Current flow | 2.4 mgd |
| Remaining Connections | 3,200 |
| Level of Treatment | Secondary |

Source: Steve Randall, Rialto City Engineering Department, personal communication. Feb. 1, 1978.

# Appendix P
# Air Quality Impacts

## 1. Construction

The proposed project modifications would result in a slight shift of impacts from one locale to another. Dust generated during construction of the proposed Rialto Tank Farm would have a negligible impact since the site is rather remote from any sensitive receptors.

## 2. Operation

### a. San Joaquin Valley

The proposed project changes and modifications would not significantly affect the air quality impacts identified for the San Joaquin Valley. The increased pumping requirements at the Elk Hills Tank Farm and Pump Station would generate approximately 2 pounds per day of additional hydrocarbon emissions. Power generation necessary for the increased pumping capacity and the potential air quality impact is assumed to occur in the South Coast Air Basin and is discussed below.

### b. Southeast Desert

Relocation of the tank farm site would shift air quality impacts from the Southeast Desert Air Basin to the more heavily polluted South

Coast Air Basin. Therefore, the impacts identified in the FEIS for the Southeast Desert would not occur to the degree indicated. Wind flow streamlines indicate that there is some transport from the San Bernardino-Riverside area through the Cajon Pass. However, given the volume of expected hydrocarbon emissions from the Rialto Tank Farm, the impact in the Cajon portion of the Southeast Desert Air Basin should be minimal.

Wind flow streamlines also indicate that transport frequently occurs through the Banning Pass and into the Banning area of the Southeast Desert Air Basin. The potential impacts of this phenomenon will be discussed in the next section dealing with the South Coast Air Basin.

c. South Coast

Tank Farm Emission Calculation. Hydrocarbon evaporative emissions from the Rialto Tank Farm would be less than estimated for the Cajon Tank Farm. The reduction is due to a lower average wind speed at the Rialto site (4.7 mph versus 8.5 mph). All other factors affecting evaporative emissions would remain the same.

A comparison of the Rialto and Cajon tank farm hydrocarbon emissions is shown in Table P-1. The Rialto Tank Farm emissions are well within the SCAQMD specified limits for new sources in the South Coast Air Basin.

Impact Upon Oxidant Concentrations. As noted in the Final EIS, the impact of hydrocarbon emissions on oxidant concentrations is difficult to quantify. Photochemical models are undoubtedly the optimal means by which to assess the effects of a new hydrocarbon source. However, since the volume of hydrocarbon emissions from the proposed tank farm does not qualify it as a major source, it would be impractical to run a large, expensive photochemical model. Therefore, this analysis will rely upon

Table P-1

COMPARISON OF HYDROCARBON EMISSIONS FROM THE RIALTO AND CAJON TANK FARMS

| Source | Total Hydrocarbons* lb/hour | lb/day | Reactive Hydrocarbons* lb/hour | lb/day |
|---|---|---|---|---|
| Rialto Tank Farm | 3.2 | 76.4 | 3.0 | 72.6 |
| Cajon Tank Farm | 5.8 | 139.2 | 5.5 | 132.0 |

*Numbers shown are 25 percent of the calculated API value.
**Moderate or highly reactive hydrocarbons comprise about 95 percent of total hydrocarbon emissions.

Source: URS Company, 1978

Table P-2

RIALTO AND CAJON TANK FARM EMISSIONS IN COMPARISON WITH RESPECTIVE 1980 COUNTY EMISSIONS (Tons/yr)

| Source | Reactive Hydrocarbons | | Percent of County |
|---|---|---|---|
| | Tank Farm | County | |
| Rialto Tank Farm | 13.2 | 18,980* | 0.07% |
| Cajon Tank Farm | 24.1 | 6,278** | 0.38% |

*South Coast Air Basin portion of San Bernardino County.
**Southeast desert portion of San Bernardino County.

Source: URS Company, 1978, and California Air Resources Board, 1977.

a semiquantitative proportional technique for assessing the effects of hydrocarbon emissions from the Rialto Tank Farm.

The tank farm would be located in an air basin of very poor air quality as previously described in Appendix I. Appendix G detailed the various wind flow patterns in the San Bernardino-Riverside area and where potential impact areas could be. From the meteorological data available, it appears that the tank farm emissions could affect oxidants on a local level, such as the San Bernardino-Riverside area as well as areas to the north and east. In particular, during the peak oxidant periods, the prevailing wind is from the west, which would blow both reacted and unreacted hydrocarbons in the direction of the Banning Pass. The tank farm emissions may also increase oxidant levels slightly in the Cajon Pass area.

The degree to which oxidant levels would increase can be roughly estimated using a proportional technique. This involves comparing hydrocarbon emissions from the tank farm with emissions from a specific geographical area. The smallest geographical breakdown available for comparison purposes is the San Bernardino County emissions inventory for the portion of the county within the South Coast Air Basin. Table P-2 presents a comparison of Rialto Tank Farm reactive hydrocarbon emissions to San Bernardino County emissions. The estimated 0.08 percent contribution is a relatively small increase which would have a small impact upon ambient levels of oxidant. However, the oxidant standard is exceeded frequently in the San Bernardino Valley and any new sources delay the attainment and maintenance schedule of compliance with air quality standards.

This order-of-magnitude estimate is consistent with a calculation of downwind reactive hydrocarbon concentration contributed by the tank farm. Using the same assumptions used in the Final EIS for this analysis, the downwind concentration of nonmethane hydrocarbons is less

than 0.01 ppm as methane. Therefore, the additive effect of the new source
upon existing hydrocarbon and oxidant concentrations would be small. The new tank farm emissions would not, in and of themselves, cause the oxidant standard to be violated. Rather, the effect would be cumulative.

d. Pump Station and Power Plant Emissions

The modifications to the pipeline size and tank farm relocation would require additional pumping capacity. This would cause a small incremental increase in hydrocarbon emissions over those defined in the Final EIS. The sources of these emissions are the pump seals which release an average of 0.45 lb. per day per seal of hydrocarbon losses (CARB, 1972). For the entire pipeline route the total hydrocarbon loss would be nine pounds per day.

The additional pumping capacity required for all modifications and tank farm relocation would be 8,450 horsepower. The electricity needed to deliver this horsepower would require additional energy consumption. However, the electricity could potentially be delivered from a nuclear power plant, a fossil fuel power plant, a geothermal generating station, or even hydroelectric. Additionally, power networks are so interconnected that the electricity may be generated at a number of different stations. As a worst-case scenario, it will be assumed that all the power required to operate the additional pumps will come from an oil-fired plant in Los Angeles County, burning 0.5 percent sulfur content fuel. With this assumption, the California Air Resources Board has made estimates of pollutant emissions per megawatt of power generation.

Table P-3 shows the emission factors, pollutant burden, and a comparison to 1980 Los Angeles County emissions. The additional pollutant burden would be very small compared to Los Angeles County emissions, but would contribute contaminants into an air basin that currently has poor quality.

Table P-3

POTENTIAL AIR POLLUTANT EMISSIONS IN LOS ANGELES COUNTY DUE TO INCREASED PUMPING CAPACITY OF THE ELK HILLS/SOHIO CONNECTION PIPELINE

| | POLLUTANT | | | |
|---|---|---|---|---|
| | $SO_X$ | $NO_X$ | PARTICULATES | THC |
| Emission Factor (lb/mw-hr) | 5.3 | 3.0 | 0.5 | 0.2 |
| Emissions (T/yr) | 144 | 81 | 14 | 5 |
| Los Angeles County Emissions (1980-T/yr) | 139,430 | 305,140 | 73,730 | 352,225 |
| Percent due to Pumps | 0.1% | 0.03% | 0.02% | .001% |
| Los Angeles County Power Plant Emissions (1980-T/yr) | 50,370 | 58,035 | 19,272 | 1,278 |
| Percent Due to Pumps | 0.29% | 0.14% | 0.07% | 0.39% |

Source: URS Company, 1978 and California Air Resources Board, 1977.

# Appendix Q
## Elk Hills Crude Oil Markets and Marketing Factors

The following revisions to Appendix Q in the Final EIS should be made:

Page Q-3, under the discussion of Conveyance Systems. The reference to the Port Hueneme alternative should be deleted since this alternative is no longer considered viable for environmental reasons (see discussion in Section V). Similarly, the reference to lateral facilities for transporting a small portion of crude oil to Avila Beach and Estero Bay marine facilities, as contained in the dsicussion of the Coalinga alternative, should be deleted. These options also have been dropped for environmental reasons.

Page Q-17, Present Markets. New sales contacts for Elk Hills oil have been made which expire in February 1979. The number of contracts has been reduced by seven, and the total amount contracted has been reduced by 23,505 B/D. The revised contract list is shown in Table Q-1.

Page Q-21, Summary. As stated above, new sales contracts for Elk Hills oil have been made which expire in February 1979.

Table Q-1

REVISION OF TABLE Q-6 IN FINAL EIS --
AWARDS OF CONTRACTS FOR SALE OF ELK HILLS CRUDE OIL
(Feb. 1978 - February 1979)[1]

| BUYER | LOCATION | AMOUNT (B/D) |
|---|---|---|
| Powerine Oil Company | Los Angeles | 19,500 |
| Fletcher Oil & Refining Company | Los Angeles | 3,000 |
| Newhall Refining Company, Inc. | Los Angeles | 3,000 |
| U.S.A. Petrochem Corporation | Ventura | 11,500 |
| Beacon Oil Company | Hanford | 6,500 |
| Pacific Resources, Inc. | Honolulu | 19,500 |
| Chevron U.S.A., Inc. | (All of California) | 19,520 |
| Sunland Refinery Corporation | Los Angeles | 10,000 |
| Mohawk Petroleum Corporation, Inc. | Bakersfield | 6,275 |
| TOTAL | | 98,795 |

[1]Source: Department of Energy, Office of Public Affairs, Washington, D.C. 20461, Weekly Announcements, Vol. 2, No. 9, Week Ending March 15, 1978.

# Appendix R
# Summary of Rialto Public Meetings, Written Comments, and Responses

## 1. Background

During preparation of this supplement, inputs were solicited from members of the Rialto Planning Department staff and copies of a draft version of the supplement were supplied to the city. Subsequently, two public meetings were held in the Rialto City Council Chambers, during which the proposed project was explained and public comments were received. After the meetings, written comments on the project and the supplement were received.

Concerns expressed at these meetings and in subsequent letters received have been considered in preparation of this supplement. The following paragraphs present summaries for each of the meetings, the written comments, and responses to the comments.

## 2. Meeting of April 3, 1978 (City Council Meeting)

A presentation was made to the Rialto City Council and assembled public by Captain John I. Dick-Peddie of the Department of the Navy, Officer in Charge of Construction for the Elk Hills/SOHIO Connection Pipeline System. He provided background information about the pipeline project and explained how Rialto had been selected as the site for the proposed terminal tank farm after the original site at Cajon Pass became infeasible. He gave details about the facilities planned for the Rialto Tank Farm and then opened the meeting up for questions.

The Council and the audience expressed opposition to the tank farm since they felt it was a high risk operation and that the citizens of Rialto had been bypassed. Typical comments were as follows:

| | |
|---|---|
| Mayor Elvin Meek: | Risk is the major concern. Is the Navy planning to bury these tanks so that a reoccurrence of the fire which occurred on February 21 would be prevented? |
| Capt. Dick-Peddie: | The tanks will not be buried, but will present a lesser risk than the tank which burned recently. |
| Councilman Jerry Eaves: | Please explain the foam system. |
| Capt. Dick-Peddie: | Each storage tank will be connected to a foam system to catch any tank fire. |
| Councilman Tom Sawyer: | What about the homes south of the tank farm? Will the Navy buy them and relocate the present occupants (who wants to live beside one million barrels of oil?). |
| Capt. Dick-Peddie: | Acquisition of property would not be undertaken until project is approved. |
| Councilman Sawyer: | Buy up the property, including all the horse ranches. |
| Capt. Dick-Peddie: | We will have to look more closely at the situation. |
| Councilman Hamilton: | Would the government give serious consideration to purchase and relocation? |
| Capt. Dick-Peddie: | No commitment can be made at this time. |
| Councilman Curtis: | According to the authorizing legislation (PL 94-258) the government has not maintained the time schedule and have not touched base with Congressmen or local officials as they should have. |

Capt. Dick-Peddie: We are trying to catch-up now and we did actually contact the local congressman (Brown).

Mrs. Walter Baczkowski spoke for a group of 20 opposed citizens and described her fear during the recent tank fire.

Ms. Margaret Kauffman expressed her concern about oil seeping into underground water wells.

Councilman Sawyer questioned the SOHIO Pipeline project itself and City Administrator Walter Pudinski noted that SOHIO had received approval from the Council and had taken all the necessary steps.

Councilman Eaves: Will the citizens of Railto have any choice? Will there be any public meetings?

Capt. Dick-Peddie: Yes, the citizens will have a choice. This is a public meeting now and we will hold another one soon.

3. Meeting of April 27, 1978 (public meeting)

Captain Dick-Peddie began the presentation by expressing appreciation to the city for being able to hold the meeting in the Council Chambers. He then indicated the surprize with which the concerns expressed in the last meeting had been received. The Captain then provided a detailed background concerning the pipeline project and how the Rialto site came to be chosen. He told of the copies of the draft supplement to the FEIS which had been given to the City. Finally, he said that questions could be asked after other members of the presentation team provide details on the actual facilities planned, fire protection features, earthquake protection, and air quality aspects.

Mr. Leo G. Bellarts, Jr., Director of Pipeline Engineering for Captain Dick-Peddie gave a presentation on details of the project. He showed various maps and photos which indicated the project location and visual appearance. He delineated the various facilities of the tank farm and provided details on the proposed tank design to be used.

Mr. James Edwards, Fire Protection Engineer of the Western Division, Naval Facilities Engineering Command gave a presentation on fire protection aspects. He described the specific fire protection details to be incorporated into the proposed tank farm design. Finally, he gave a comparison between the proposed tank farm and the tank farm which experienced a recent fire.

Mr. William H. Van Horn, Environmental Consultant for URS Company (which assisted the Navy in preparation of the supplement to the FEIS) gave a presentation on earthquakes and air quality. He indicated that earthquake design techniques would be used in developing the tank farm. He also talked about hydrocarbon air emissions from the storage tanks and said that the total emissions would be about the same as two medium size gasoline service stations.

Captain Dick-Peddie then said that the presentation was completed and questions would now be received. The material below provides the essence of the questions and comments which followed.

Ann Vines said that the proposed project really upsets her. She said the largest tank would be located just above her house. From the map it was determined that her home would be 800 to 900 feet from the tank.

| | |
|---|---|
| Mr. Hugh Graves: | Does the Navy use the oil from Elk Hills? |
| Capt. Dick-Peddie: | No, it is sold to the highest bidder. |
| Mr. Graves: | How does the Navy get its oil for use? |
| Capt. Dick-Peddie: | From oil companies, as needed. |
| Mr. Graves: | Is the project going to be tanks and a pump station? |
| Capt. Dick-Peddie: | Yes, but the pump station is only just enough to get the oil into the SOHIO Pipeline. |

Mrs. E. L. Dunn: We get damage in our houses from the blasting at a nearby cement plant, will the blasting hurt the new tanks?

Mr. Van Horn: Soil sampling will be done on the site to ensure that foundations will be sufficient to avoid damage.

Mrs. Dunn: Horses are sensitive to smells and vibrations, will the project affect the horses?

Mr. Van Horn: No, it will be just like a gas station.

Mr. Harold Hutson: Would you buy a house in this area after the tank farm goes in? I say no!

Capt. Dick-Peddie: I don't think property values will go up.

Mrs. Kennedy: What will this do to water wells? We are getting an oily taste now!

Mr. Bellarts: Soils will be treated to prevent penetration of any spilled oil. Ground water will be protected.

Mrs. Kennedy: Where will drainage go?

Mr. Bellarts: Oil/water separators will be used for drain water and the separated oil will be recycled back into the tanks.

Mrs. Hopkins: I've been in the hospital with problems due to the air. Why can't this project be put on a government base?

Capt. Dick-Peddie: The engineering demands and technical needs of the project prohibit that.

Someone indicated that we have desert lands available and asked why not use them for the tank farm?

Capt. Dick-Peddie: We have to connect with the SOHIO Pipeline. Use of a desert tank farm would require a longer pipeline with more disruption and cost.

Mr. Hutson: Does the tank farm have only 3 tanks? It looks like you are planning for 4.

Capt. Dick-Peddie: Only 3 are planned at this time. The fourth tank would be added only if the SOHIO Pipeline goes to Phase II. No more tanks would be needed beyond this since there is no more oil at Elk Hills to justify more.

Mr. John Longville (from Congressman Brown's Office): What earthquake design will be used for the tank farm?

Mr. Van Horn: It is designed for an event of 7.5 magnitude on the Richter scale or a 50 year earthquake.

Mr. Longville: The fire protection seems good. Will the portable equipment be available for use on other fires in the area?

Mr. Edwards: We hope to work out an arrangement for use by the Rialto Fire Department. The fixed equipment would increase the storage of firefighting agents in the general area.

Mr. Longville: There are nearby homes immediately south of the tank farm -- what will be the noise levels there?

Mr. Milton Staackmann (another representative from URS Company): The noise level at the nearest house would be about 60 decibels or less and will meet HUD criteria.

Mr. Longville: That can be pretty loud in an area that is quiet. Why not mitigate this noise?

Capt. Dick-Peddie: The designer can include noise barriers. Final details are not yet completed. We will look at the problem and find ways to mitigate any problems.

Someone asked if accidents from airplanes had been considered.

Mr. Van Horn: Such accidents were not considered in the risk analysis. In the event of a crash in the area, a plane would be most likely to strike the power lines before hitting the storage tanks. In addition, a pilot would generally avoid sensitive areas like tank farms in the event of a potential crash.

Mr. Graves: Some of us have horses. If a fire occurs, how would our horses be evacuated?

Rialto Fire Chief Roger Purdie: It should be made clear that the evacuation during the recent tank farm fire was not ordered by the Rialto Fire Department. It was ordered by another organization with no authorization. The evacuation was not necessary. In the event of a fire at the proposed tank farm, no evacuation would be anticipated.

Someone asked about sparks from the nearby power lines causing a fire at the tank farm.

Mr. Edwards: The lines are far enough away not to be a problem.

Mrs. Dunn: How about lightning strikes?

Mr. Edwards: Shunts will be provided on all tanks to avoid the problem of fire from lightning.

Mrs. Dunn: Why hasn't Congress been in touch about this?

Mr. Longville: Congressman Brown did know about the SOHIO Pipeline project. This new tank farm was learned about through the newspapers. The concern of the citizens was not known, but the supplement to the FEIS is now the vehicle for identifying those concerns and this meeting is part of the process.

Mr. Hopkins: I own a horse ranch worth three quarters of a million dollars right nearby. How far is it to my house?

Mr. Bellarts: From the map I see that the nearest tank will be about 1,800 feet from your property.

Mr. Hopkins: Will I see the tanks?

Mr. Bellarts: You may not see all or any of the tanks from your property. I stood on the tank farm site this morning and I couldn't see your house, but then I'm not 40 feet high (as high as the tanks will be).

Mr. Hopkins: What will this do to my property values?

Capt. Dick-Peddie: I don't really know. I don't think it will go up.

Mrs. Hopkins: I have had many health problems here. The air quality has gotten worse and my health has gotten worse. I don't think we need the tank farm.

Capt. Dick-Peddie: The tank farm emissions are considered to be insignificant in accordance with regulation agencies.

Someone said that fire insurance rates in the area had tripled lately. If the risk goes up, insurance will go up.

Mr. Edwards: The measurable risk should not go up. Insurance cost usually depends primarily on the fire protection available.

Someone said that tumbleweeds can't be burned here, but a tank farm can come in. I can't understand it.

Capt. Dick-Peddie: The regulations have been developed for the best effect in the whole area.

Mr. Longville: Who would pay for increased costs in supplying fire protection water requirements?

Capt. Dick-Peddie: Any equipment upgrading which the City would require due to the tank farm would be worked out with the City.

Mrs. Dunn: Why are you here?

Capt. Dick-Peddie: We want to have all community concerns expressed before making a decision.

Mrs. Dunn: I think a decision has been made!

Capt. Dick-Peddie: No, but we don't think the impact is great.

Mrs. Dunn: We don't want it! Why can't we continue to live here as we always have?

Capt. Dick-Peddie: The law requires that a pipeline be built and it must be done, but with a minimum effect. This tank farm is being planned for an area that is zoned for industry.

Someone asked if the berms around the tanks would be landscaped.

Mr. Bellarts: Not on the berms, this would present a structural integrity problem.

Mr. Longville: Mrs. Dunn has asked why you are here. I presume that any objections will be considered. If the decision is to use Rialto, would the problems of noise and appearance be taken into account?

Capt. Dick-Peddie: Yes. We will install noise barriers to minimize possible noise effects.

Ann Vines: This area is so quiet at night you can here the lions roar from an animal farm more than a mile away.

Capt. Dick-Peddie: We will install noise barriers to minimize impacts.

Ann Vines: Why not put the tank farm at March Air Force Base?

Capt. Dick-Peddie: It is an engineering reason, we must be near the SOHIO Pipeline Pump Station. Going to March AFB would require an additional 26 miles of pipeline and there may not be space available at March.

Ann Vines: This tank farm will be more expensive for us and less for you. Why not more expensive for you and less for us?

Capt. Dick-Peddie: It is a matter of overall economics.

Ann Vines: Why does it have to be by people?

Capt. Dick-Peddie: It has to be by the SOHIO Pipeline and it would be noticed less here than any other place.

Mrs. Dunn: How about the City Council's reaction?

Capt. Dick-Peddie: They have provided comments on the supplement to the FEIS.

Ann Vines: Why not rearrange the tanks on the property to be further away from our homes?

Mr. Edwards: The planned spacing is actually better from a fire hazard view.

Mrs. Dunn: I thought you said there were no hazards!

Mr. Edwards: There are some, but the design has been carefully planned to minimize hazards.

Ann Vines: What happens after the oil runs out?

Capt. Dick-Peddie: The tank farm would be torn down and sold. Or it could be used by others. We don't know for certain.

Mr. Longville: If the City Council doesn't want the tank farm they can't stop it. The Federal Government can get in with their project, but private industry would have trouble.

Capt. Dick-Peddie: The government is bound by the applicable environmental laws just as all others are.

Mr. Longville: But it's harder to keep the Federal Government out.

Mrs. Hopkins: This air basin gets worse every year. The tank farm and oil should be outside the basin.

Capt. Dick-Peddie: We are complying with all regulations as necessary. Are there any more questions or comments?

Silence

Capt. Dick-Peddie: This concludes the public meeting.

4. Written Comments

Subsequent to the public meetings, two letters were received (one from the City of Rialto and one from Ann A. Vines) with comments and questions about the project and the supplement. These letters are shown on the following pages. Responses to the comments and questions are provided following the letters.

# City of Rialto
## California

April 27, 1978

John I. Dick-Peddie
Captain, CEC, USN
Officer in Charge of Construction
NAVFACENGCOM Contracts, Elk Hills
P O Box 40
San Bruno, California 94066

Dear Captain Dick-Peddie:

The City of Rialto has reviewed the supplemental Environmental Impact Statement ( EIS ) on the proposed conveyance system to transport crude oil from Elk Hills to a connection with the planned SOHIO pipeline in Rialto. More specifically, the Staff has focused it's review on the terminal tank farm facility proposed within this City.

In general, the EIS adequately assesses the major potential impacts anticipated to result from the development of the tank farm facility. The following responses made by the City are clarifications and comments on the sufficiency of the document in addressing certain possible adverse impacts on the environment. Also included are recommendations for certain additional mitigating measures to be considered by the project sponsor to ensure that all forseeable adverse environmental impacts are mitigated to the greatest extent possible:

A. Pages II-1 and II-4 ( Soils and Seismically Induced Ground Failures).

The EIS indicates that the soils at the Rialto site are part of the Foster-Grangeville Association ( U.S. Soil Conservation Survey, 1968). According to Planning Department data, based on a 1971 U.S. Soil Conservation Survey, the soils on the project site are generally composed of the Hanford Coarse (Hac) and Deihi Fine Sand ( DaD2) Soil Associations, not the Foster-Grangeville Association as noted in the report. The importance of this discrepancy may be significant. The West San Bernardino Municipal Water District has indicated to the City that the depth to groundwater is generally 100 feet during the rainy season, with a high level recorded this year of 33 feet. With a combination of seasonal shallow ground water levels and the existing



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sandy soil base, the project site would be subject to potential liquefaction during intense ground shaking in a strong seismic event. The City will require an approved geotechnical investigation of the project site. The design of the facility must incorporate all identified measures to mitigate potential seismic constraints.

B. Pages IV-8 and 9 ( Archaeological, Historical and Cultural Resources).

The EIS indicates that the development of the proposed tank farm at this location would diminish the historic setting of the Agua Mansa Cemetery ( Registered California Historic Landmark No. 121). The proposed mitigating measures recommend that priority be given to considering the placement of the tank farm facility at Alternative B location ( within the City of Colton shown on Figure N-1 on Page N-5). However, in the event that Alternative A location is selected ( within the City of Rialto adjacent to the Agua Mansa Cemetery), the City recommends that the tank farm facilities be screened from public view in the cemetery area to the greatest extent possible through the placement of earthberms and extensive landscaping along the entire boundary line between the two properties.

C. Page IV-11 ( Public Services and Utilities).

The EIS indicates that fire protection would initially be provided by operating personnel on-site, with the primary support provided by the City's Fire Department using oil fire-fighting equipment. A detailed discussion of fire-fighting requirements and local capabilities is contained in Section I-12 ( Page I-25). The City's Fire Department has reviewed the EIS and has provided the following requirements and recommendations to be considered as additional measures to mitigate potential fire hazards:

1. National Fire Codes shall be followed as minimum standards with a Fixed Foam System required.

2. An overflow and fire detection alarm system shall be automated and transmitted to Emergency Fire Dispatch- either directly or through a Central Receiving Center.

3. The Development of a reimburseable agreement to the City of Rialto to cover all direct costs for fire protection operation.

   Direct Costs Include:
   (a) Fire fighting foam AFFF
   (b) Manpower costs - overtime
   (c) Logistic Supplies - food, fuel, etc.

4. In order to explore all feasible and practical fire extinguishment

techniques available, project personnel will, with support and assistance of the foam production industry and Rialto Fire Department, make an indepth review of the latest fire fighting operations, including sub-surface injection of AFFF.

This review will attempt to seek alternate solutions to fire extinguishment by total fuel consumption or removal.

5. Project Administration are requested to utilize whatever influence available to assist the Rialto Fire Department in modernizing their present flammable liquid equipment.

Present equipment consists of a dated 4x4 powder unit (1000 lbs), and a foam trailer with 700 gallons of AFFF concentrate, 6%. The unit should be twinned into a single vehicle. Such an alteration would greatly increase the fire-fighting potential and provide for quicker response. The truck-trailer now is limited to a 20-30 mph due to the weight of the trailer and response times to the proposed tank facility would be excessive. A twinned unit would have greater flexibility and response times would be much shorter. The conversion could be accomplished with the acquisition of a new chassis, all wheel drive with a five ton minimum. Present equipment and systems could be mounted on such a chassis, and with a few modifications, become an asset for fire-fighting operations in the proposed Tank Farm Project.

D. Page IV-13 ( Fiscal Effect).

The EIS indicates that the removal of the 68 acre tank farm site from the tax rolls would result in an annual loss of $291 to the City of Rialto. This figure is based on the valuation of unimproved land as it presently exists. However, the long-term adverse fiscal impact to the City and County could be significant. Development of the tank farm facility will eliminate the opportunity for the development of private industrial uses on site. The potential tax loss as compared with the valuation of future industrial uses will be far greater than $291 per year.

E. Pages IV-13 through 16 ( Visual Quality).

The EIS "identifies" adverse impacts associated with a general reduction in the visual quality of the area resulting from the development of the tank farm site. The proposed mitigating measures include the installation and maintenance of landscaping that would screen views of the tanks and related facilities from Riverside Avenue and other sensitive viewing areas. It is anticipated that a minimum 8-foot high chainlink fence will be installed for security purposes along the perimeter of the property. The City recommends that consideration be given to also providing adequate

shrubbery and other landscaping materials to screen the chainlink fence from public view.

F. Page VI - Any Probable Adverse Environmental Effects which Cannot Be Avoided Should the Proposal be Implemented.

The EIS indicates that the unavoidable effects associated with the Rialto Tank Farm site would be offset by the elimination of the adverse effects that would have been created by the Cajon Tank Farm Alternative. The statement that the risk of an oil spill would be reduced is an assumption not necessarily borne out by fact. Considering the greater potential for liquefaction at the Rialto site, assumptions on the level of risk of an oil spill resulting from a seismic event should be based on a detailed geotechnical study of the Rialto site. The indication that the total amount of hydrocarbon emmissions would be reduced at the Rialto site is an oversimplification of the discussion on probable impact on Air Quality ( Page IV-3 of Report). The estimated smaller quantities of reactive hydrocarbons will be emitted into an air basin having a much poorer air quality than the Cajon Pass. The implication that the Rialto site is more acceptable because of a lower level of hydrocarbon emmissions is questionable.

G. Page F-8 - Seismic Hazards Impact.

Subsections a and b of this portion of the EIS are not provided in the copies of the report submitted to the City for review ( pages F-9 and F-10 not included).

In the event that the Rialto site is selected for the tank farm location, it is the intention of the City to impose all local building and planning requirements normally applied on private industrial development. As previously mentioned, the City is concerned about the potential impact of the development on the community and it's environment. Thank you for the opportunity to review the Environmental Impact Statement as it relates to the City of Rialto. If you have any questions regarding the statements contained in this response, please do not hesitate to contact me.

Very truly yours,

Rod Taylor

ROD TAYLOR,
Planning Director

RT:v
cc: City Departments
Mr. Dick Russell

May 4, 1978

Department of the Navy
Officer in Charge of Construction
Naval Facilities Engineering Command Contracts, Elk Hills
P. O. Box 40
San Bruno, California 94066

Gentlemen:

On April 27, 1978 I attended a hearing regarding the proposed location of an oil storage farm in Rialto, California.

As a member of this community and actually one of the very closest residents to this proposed tank farm (to be located approximately 800 feet from our property line) I resent the intrusion of the Navy Department in our neighborhood.

Agua Mansa Road is a street lined with horse ranches. Everyone that lives along this road, lives here because we enjoy the peace and quiet and our rural atmosphere. We have all worked hard to be able to enjoy this life style. To place a tank farm here would completely ruin the life style we have chosen. I want my children to be raised away from the noise and pollution of the city. With the tank farm comes the very thing I have moved from the city to get away from.

Is it to be that no matter where we choose to live we are going to have to put up with such intrusions? Why can't the storage farm be located somewhere in the desert where is wouldn't intrude with anyone, or at March Air Force Base since they are going to run a line there anyway. With the money they save by not purchasing the property in Rialto they can afford to put the lines a little further. There must be land close by owned by the government on which the storage tanks could be located at a savings to the taxpayers.

I hope you look into this very thoroughly before disrupting the lives of all the residents on Agua Mansa Road. We as citizens of the United States deserve to live as we choose in peace and quiet.

Sincerely,

Ann A. Vines

Ann A. Vines
795 Agua Mansa Road
Colton, California 92324

R-15

Copies to: Governor Jerry Brown
Rialto City Council

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5. Responses to Comments

Letter from City of Rialto

Comment A: The EIS supplement has been amended to show the correct soils at the Rialto site (see pages 2-1 and 2-4). The geotechnical investigations are now going on and appropriate measures will be incorporated into the design as required by the existing soil conditions.

Comment B: The government will follow the City's recommendation and provide landscaping and architectural mounds to screen the tank farm facilities from public view in the cemetery area (see page 4-9).

Comment C: The government will comply with items 1. and 2. With regard to item 3., the government will develop a cooperative agreement with the City. Item 4. will be complied with and an in-depth review will be conducted. Concerning item 5., the government will attempt to find ways to provide a suitable vehicle for the City.

Comment D: The EIS supplement has been modified to reflect the possibility of alternate private development at the tank farm site and corresponding greater tax losses (see page 4-13).

Comment E: The government will follow the City's recommendation and provide shrubbery and other landscaping materials to minimize public view of the chainlink fence (see page 4-16).

Comment F: Geotechnical investigations are now being conducted as indicated under Comment A. The EIS supplement has been amended to include the fact that the lower level of emissions will occur in an air basin having poorer air quality (see page 6-1).

Comment G: The omitted pages F-9 and F-10 of the EIS supplement were provided to the City on the day of the public meeting (April 27, 1978).

Concluding Comment (following Comment G): The facility is planned for an area which is designated for general manufacturing and is, therefore, in compliance with the City's zoning regulations. Although the Federal government is not required to comply with local requirements, the government will attempt to provide a facility which will meet or exceed local standards and will cooperate with local officials.

Letter from Ann A. Vines

Comments on peace and quiet and rural atmosphere (2nd and 3rd paragraphs): The proposed tank farm site is in an area designated by the City of Rialto for industrial use. The proposed use is compatible with other activities already in the area, i.e., tank farms and a sewage treatment plant. Although there are rural residences in the area (primarily across Agua Mansa Road, outside the Rialto city limits), none of the impacts resulting from the proposed project are expected to significantly affect continued use of these properties as residences and horse ranches. Mitigating measures described in the report (see pages 4-3, 4-6, 4-9, 4-13, and 4-16) will minimize intrusion on the rural atmosphere by reducing the air quality, visual, noise, and other impacts to acceptable levels or better for even the nearest residences (400 feet from the proposed facilities).

Questions on locating the tank farm elsewhere (4th paragraph): The engineering requirements of the project dictate that the tank farm must be in the vicinity of the SOHIO Pipeline and pump station. If the tank farm were located at March Air Force Base, larger pumps would be required and additional length of 36-inch-diameter pipe would have to be installed

from March Air Force Base back to the SOHIO Pump Station at Rialto. This would be impractical from an engineering and economic view.

Comments on not purchasing the Rialto property and making longer lines (4th paragraph): The value of the property is insignificant in comparison to the pipeline cost.

Comments on disruption and peace and quiet (5th paragraph): The government fully concurs with these comments and does not believe that the proposed facilities will disrupt the residents of the area.

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