# PART B. DESCRIPTION OF PROPOSED PROJECT AND ALTERNATIVES

## B.1 INTRODUCTION

Section B describes the Carson to Norwalk Pipeline Project proposed by Santa Fe Pacific Pipeline Partners, L.P. (SFPP)[1] and the project alternatives. The information is intended to provide for a common understanding of the project parameters as they are analyzed in the Environmental Settings, Impacts and Mitigation sections. Aspects of the project that are specific to particular issue areas (such as Air Quality or Public Health and Safety issue areas) are summarily presented in those issue areas.

Section B.2 describes SFPP's current pipeline operations. Section B.3 describes the Carson to Norwalk Pipeline project as proposed, with additional details in Sections B.4 (Construction) and Section B.5 (Operation and Maintenance), and Section B.6 (Abandonment).

As required by the California Environmental Quality Act (CEQA), alternatives to the Proposed Project are also evaluated. These are alternatives which might have potential environmental advantages over the Proposed Project and which could feasibly attain the basic overall project objectives. Section B.7 describes the process through which the potential alternatives to this project were considered and selected. Section B.8 also describes each of the alternatives selected for further consideration in this EIR and provides a description of the alternative alignments as compared to the proposed pipeline route. The No Project Alternative is described in Section B.9.

A cumulative impacts scenario has also been prepared (Section B.10). This scenario describes future pending or approved projects that, taken together with the Proposed Project or alternatives, could affect the same environment or community.

## B.2 SANTA FE PACIFIC PIPELINE PARTNERS' CURRENT OPERATION

Santa Fe Pacific Pipeline Partners, L.P. (SFPP) is the primary pipeline company for the distribution of both commercial and military fuels in the western United States. SFPP, which is headquartered in the City of Orange, California, provides transportation and terminal services for refined petroleum products (gasoline, diesel and jet fuel) in six western states. SFPP is a public utility and a common carrier that operates approximately 3,400 miles of pipeline varying in size from 4 inches to 24 inches. Major input locations serving refining centers are Watson-Norwalk-Hynes (Los Angeles), Concord (San Francisco Bay Area), Richmond (San Francisco Bay Area), El Paso, Texas and Portland, Oregon. Approximately 30 million barrels are moved through the pipeline system each month.

[1] After publication of the Draft EIR, Santa Fe Pacific Pipeline Partners, L.P. was purchased by Kinder Morgan Energy Partners, L.P. The new name of Santa Fe Pacific Pipeline Partners, L.P. is SFPP, L.P. (SFPP). Throughout this Final EIR, the Applicant will be referred to as "SFPP or "the Applicant."

SFPP is a master limited partnership, 56.3% owned by public investors, and 43.7% owned by subsidiaries of Burlington Northern Santa Fe Corporation. SFPP is one of the largest independently owned refined products pipeline systems in the United States, operating 3,300 miles of pipeline in six states. Its pipeline systems deliver to 14 SFPP distribution terminals, 44 third party terminals, 15 military installations, three commercial airports and two interconnecting third party pipeline systems.

It should be noted that on October 20, 1997, SFPP announced that it had agreed to be acquired for $1.15 billion by Texas pipeline operator Kinder Morgan Energy Partners. Santa Fe shareholders would own about two-thirds of the combined company. SFPP currently employs 450 people, with 370 in California and 170 of those at SFPP's company headquarters in the City of Orange. The combined companies stated that they expect to eliminate duplicate operating overhead (LA Times, 10/21/97; SFPP/Cornman 11/24/97).

SFPP's southern California operations currently include shipment of about 350,000 BPD of petroleum products (unleaded gasoline, jet fuel, and diesel fuel) from Carson to Colton. At Colton, the products are either (1) returned to shippers for local distribution by truck, (2) sent via SFPP's Phoenix-West Line to Arizona, or (3) transferred to the CalNev pipeline for shipment to the California desert and the Las Vegas area. In addition, SFPP has a pipeline from Carson (via Norwalk) to the Orange County and San Diego areas. The SFPP southern California distribution system is shown in Figure B.2-1; the operations are described in more detail below. Section B.2.1 describes SFPP's station facilities, and Section B.2.2 describes SFPP's pipelines.

## B.2.1 EXISTING SFPP STATIONS

### B.2.1.1 Watson Station

SFPP's Watson Station, located on Del Amo Boulevard in the City of Carson, is the main gathering point for most of the refined product handled by SFPP. In this facility, refined petroleum products are received from the various shippers through a network of proprietary and SFPP-owned pipelines connecting the various Los Angeles area refineries to the Watson Station. These products are usually received and stored in the 17 storage tanks at the Watson Station, and then pumped from the tanks into one of two pipelines that leave the Watson Station: the South Line (to San Diego) or the West Line (to Colton, via Norwalk and Industry).

In addition, ARCO injects products into SFPP's pipelines at the Hynes Station (between Cherry and Paramount in Long Beach). The Military Line starts at the Norwalk Station and extends to Colton. These pipelines are further described in Table B.2-1.

Figure B.2-1 SFPP Southern California Pipeline System
(to download this figure please check the Figures Table of Contents)

**Table B.2-1 SFPP's Existing Southern California Pipelines**

| Name | Length | Start | End | Size | Yr Built | MAOP* |
|---|---|---|---|---|---|---|
| **South Line** | | | | | | |
| LS 10 | 12.2 | Carson | Norwalk | 16-inch | 1955 | Pipe: 945 psi Valves: 720 psi |
| LS 125 | 14.8 | Norwalk | Orange | 16-inch | 1985 | Pipe & Valves: 1440 psi |
| LS 126 | 37.7 | Orange | Camp Pendleton | 16-inch | 1985 | Pipe & Valves: 1425 psi |
| LS 122 | 22.9 | N. end Pendleton | So. end Pendleton | 10-inch | 1963 | Pipe & Valves: 1440 psi |
| LS 126 | 34.7 | Pendleton | Miramar NAS Jet | 16-inch | 1985 | Pipe & Valves: 1425 psi |
| LS 122 | 6.1 | Miramar NAS | Mission Valley Terminal | 10-inch | 1963 | Pipe & Valves: 1440 |
| LS 123 | 7.9 | Mission Valley Terminal | San Diego Harbor Junction | 10-inch | 1963 | Pipe & Valves: 580 |
| **West Line (Phoenix-West)** | | | | | | |
| LS 105 | 12.8 | Carson | Norwalk | 24-inch | 1972 | Pipe & Valves: 1260 psi |
| LS 108 | 32.0 | Norwalk | Industry | 24-inch | 1972 | Pipe & Valves: 1260 |
| | 18.0 | Industry | Colton | 20-inch | 1979 | Pipe & Valves: 1350 |
| LS 111 | 130.4 | Colton | Niland | 20-inch | 1985/ 1988 | Pipe & Valves: 1150 psi |
| LS 112 | 66.1 | Niland | AZ State Line | 20-inch | 1985/ 1988 | Pipe & Valves: 1500 psi |
| LS 113 | 4.2 | AZ State Line | Yuma | 20-inch | 1985 | Pipe & Valves: 1525 psi |
| LS 114 | 121.2 | Yuma | Phoenix | 20-inch | 1989 | Pipe & Valves: 1440 psi |
| **Military Line** | | | | | | |
| LS-1 | 49.4 | Norwalk | Colton | 16-inch | 1955 | Pipe: 945 psi Valves: 720 psi |
| LS-51 | 14.4 | Colton | March AFB | 6-inch | 1957 | Pipe & Valves: 1440 psi |

* Maximum Allowable Operating Pressure

### B.2.1.2 Norwalk Station

The property on which SFPP's Norwalk Station is located is a 50-acre tank storage facility owned and operated by the U.S. Government/Department of Defense (DOD). The facility is called the Defense Fuel Support Point (DFSP) Norwalk, and it is located in a residential area of the City of Norwalk. DFSP Norwalk was constructed by an unidentified oil company to store jet fuel (currently used for JP-5 and JP-8 jet fuels). The DFSP property is managed by the U.S. Army Corps of Engineers Real Estate Division.

Military fuel is received into the tanks through an existing 10-inch pipeline owned and operated by the DOD, from DFSP San Pedro (which gathers product from various refineries in the area as well as product barged to San Pedro from other West Coast refineries). Product from the tanks is transferred through a distribution manifold and pumped to SFPP's Norwalk pump station. The product discharged from the DOD pumps is metered by SFPP before the product enters the pipeline.

Fuel is then transported by SFPP to military installations in California, Arizona, and Nevada via pipelines from Norwalk. Military bases served by DFSP Norwalk include Naval Air Station El Toro (via DOD pipeline and trucks), March Air Force Base (AFB), Edwards AFB (via CalNev pipeline), Nellis AFB (via CalNev), Yuma, Miramar, El Centro, and Luke AFB.

In addition to SFPP's 24-inch (Carson to Colton), 16-inch (Norwalk to Colton), and 16-inch pipeline (Norwalk to San Diego), the following other pipelines are connected to the Norwalk DFSP:

- 8-inch and 10-inch Golden West lines from/to Golden West Refinery (inactive)
- 8 inch DFSC pipeline to El Toro
- 6-inch, 8-inch, and 16-inch Powerine lines to/from Powerine Oil Refinery (inactive).

Table B.2-2 shows the military products that SFPP shipped from Norwalk in its pipelines during 1996.

**Table B.2-2 Jet Fuel Shipped from Norwalk Station through SFPP Pipelines**

| Product | Volume (barrels) | Pipeline Used | Destination |
|---|---|---|---|
| Jet Fuel - JP-8 | 3,584,650 | Military Line (16" ) | CalNev Pipeline (67%); Colton Terminal (10%); Phoenix Terminal (23%) |
| Jet Fuel: JP-5 | 767,186 | West Line (20/24") | El Centro NAF; Yuma MCAS |
| **Total Military Product Shipped from Norwalk**: 4,351,836 barrels (average 11,923 BPD) | | | |

**SFPP's Existing Norwalk Station.** SFPP operates a pump station on a 2-acre easement within the 50-acre tank farm property. SFPP operates pumps in this station to boost products passing through the existing 24-inch and 16-inch pipelines to Colton and Orange. Other equipment at the site, including product meters and provers are primarily related to transfer of jet fuel from DFSP to SFPP (for SFPP's shipment to Colton and on to various military facilities). It should be noted that the DFSP Norwalk is a contaminated site under state-regulated cleanup procedures under the jurisdiction of the RWQCB as lead agency. Site contamination, status of cleanup, and causes of contamination are discussed in detail in Section C.5 (Environmental Contamination) of this EIR.

**Future of the Norwalk Station.** Congressman Esteban Torres, who represents the Norwalk area, has attempted to have the DFSP Norwalk facility closed by the military. However, in the past, the military has declared the facility to be essential to national security. SFPP and the DOD are currently discussing the military use of SFPP's existing storage tanks at the Watson Station in place of the existing tanks in Norwalk.

SFPP's proposed project (see Section B.3 below) includes only connection of the new 16-inch pipe to the existing Military Line, and installation of a new block valve. The proposed new 16-inch pipeline would be connected directly to the existing 16-inch line that leaves the facility.

Talks among the Department of Defense, SFPP, the City of Norwalk, and Congressman Torres are ongoing. The City estimates that closure of the station could occur within the next three to five years (Anderson, personal communication).

### B.2.1.3 Industry Station

The Industry Station is located near the southeast corner of Brea Canyon Road and Valley Boulevard in the City of Industry. This station currently consists of only one pump and a maintenance building in a fenced enclosure of approximately 1 acre immediately north of the Union Pacific railroad tracks. The pump is connected only to the West Line, which is a 24-inch pipeline coming into the Industry Station and a 20-inch pipeline from Industry to Colton. The 16-inch Military Line does not currently pass through this station, as it does not need the booster pumping at this time. It is located on the south side of the railroad tracks.

### B.2.1.4 Colton Terminal

This is a major terminal for petroleum product distribution to the southwestern United States. Located in the City of Rialto (San Bernardino County), this approximately 80-acre facility includes truck-loading racks and storage tanks for several major petroleum companies (Mobil, Tosco, Texaco, ARCO, Shell and others). SFPP's current distribution of products from this facility includes:

- 106,000 BPD to CalNev Pipeline (with pump station adjacent to the SFPP terminal) for shipment to California desert and Las Vegas area
- 128,000 BPD to SFPP's Phoenix-West Pipeline for shipment to Arizona
- 87,000 BPD transferred to trucks for distribution to retailers in the Inland Empire and adjacent areas.

SFPP does not ship products by truck, so the products shipped by SFPP to this facility for local distribution is transferred back to the retailer for their distribution to local markets by truck. The facility also includes storage tanks that belong to SFPP, and SFPP owns and operates two community truck loading racks for use by shippers without their own loading facilities.

SFPP is currently constructing a facility at Colton to separate transmix[2] into its separate components. This facility, within SFPP's existing fenced site, will include 4 new tanks.

## B.2.2 SFPP'S EXISTING SOUTHERN CALIFORNIA PIPELINE SYSTEM

Figure B.2-2 shows the routes of SFPP's existing pipelines between Carson and Norwalk, and Table B.2-1 depicts SFPP's existing southern California pipelines. SFPP's system distributes products from Los Angeles area refineries, via the Colton Terminal, to local destinations in the Inland Empire or other southern California

[2] Transmix is a mixture of two petroleum products that results when the product type being shipped in a pipeline is changed, i.e. from diesel fuel to gasoline or jet fuel.

areas, to the Las Vegas, Nevada area and to the Phoenix, Arizona area. SFPP's major southern California shipping activities include the transportation systems described in the following sections.

### B.2.2.1 South Line to San Diego

Refined product leaving Carson's Watson Station for Orange and San Diego Counties is transported through an existing 16-inch pipeline to SFPP's Norwalk Station. Additional product can be added to this line as it passes ARCO's Hynes tank farm on Paramount Boulevard in Long Beach. At the Norwalk Station, a small percentage of product may be delivered to Golden West Terminal Company (currently closed) through a proprietary pipeline for storage in their tanks in the City of Santa Fe Springs.

Most of the product continues through the South Line, a 16-inch pipeline (10-inch in Camp Pendleton and near San Diego) and is delivered to:

- SFPP's Orange Terminal (City of Orange)
- SFPP's Mission Valley Terminal (City of San Diego)
- Miramar Naval Air Station/Point Loma
- San Diego Harbor.

At Orange, Mission Valley, and at the San Diego Harbor, products are loaded onto trucks and delivered to local markets. Pressure on the South Line is boosted by a pump at Norwalk Station and another pump at the Orange Terminal. This line will not be affected by the proposed project from Carson to Norwalk and throughput figures are not included in the SFPP's current 350,000 BPD. The South Line also receives product from ARCO's terminal on Paramount Boulevard, about half way between Carson and Norwalk and from the DFSP Tank Farm in Norwalk.

### B.2.2.2 West Line

SFPP's 24/20-inch West Line from Carson to Colton becomes the SFPP Phoenix-West Line at Colton and ends in Arizona. SFPP estimates that this pipeline serves about 60% of the market demand in Phoenix and southern Arizona (SFPP provides another 30% of product supply via pipelines to Arizona from El Paso, Texas). Refined product leaving Carson's Watson Station for Colton and markets further east is transported through an existing 24-inch pipeline to SFPP's Norwalk Station, becoming a 20-inch line west of the Industry Station. Additional product can be added to this line as it passes ARCO's Hynes tank farm on Paramount Boulevard in Long Beach. Pressure is boosted by existing pumps at SFPP's Norwalk and Industry Stations. When these products reach Colton, deliveries are made to:

- CalNev for shipment to Las Vegas
- Break out tanks for delivery to Arizona (via the Phoenix-West line) and Imperial County
- Local storage for consumption in Inland Empire and southern California markets.

### B.2.2.3 Military Line

SFPP owns and operates an existing 16-inch pipeline that originates at SFPP's Norwalk pump station. The pipeline is used exclusively for transfer of military product from the DFSP Norwalk tank farm to SFPP's Colton terminal. From Colton, product is delivered to local markets (via truck) and Nevada/Arizona military bases via the CalNev or Phoenix-West lines. There are currently no other pumps on this pipeline between Norwalk and Colton.

### B.2.2.4 Las Vegas and Inland Empire

The CalNev pump station is adjacent to the SFPP Colton Terminal, and product is delivered to Colton via the existing 20/24-inch pipeline from Carson or the 16-inch pipeline from Norwalk (military products). Product is then transferred from SFPP to CalNev by pipeline. SFPP is the only provider of CalNev's products, which also are supplied by CalNev to some local stops (e.g., diesel fuel to Colton and Barstow train yards via smaller pipelines that split off of main CalNev pipeline) prior to reaching Las Vegas. The CalNev line is estimated to serve about 95% of the product demand in the Las Vegas area (SFPP, 10/2/97).

Many retail distributors take possession of petroleum products at SFPP's Colton Terminal and deliver directly to their gas stations in the Inland Empire and beyond (San Bernardino, Riverside, Barstow, Imperial Valley). SFPP estimates that 80 to 85% of the product consumed in the Inland Empire and southernmost California markets is served by trucks from SFPP's Colton Terminal (Cornman, 10/2/97).

## B.3 PROPOSED PROJECT

SFPP proposes to build and operate a new, 13-mile long, 16-inch petroleum products pipeline extending from SFPP's existing Watson Station in Carson to the existing SFPP station at Norwalk, California. The proposed pipeline project will allow SFPP's total shipping capacity between Carson and Norwalk to be expanded from about 350,000 BPD to 520,000 BPD. The proposed pipeline will supplement the capacity of SFPP's existing 20/24-inch pipeline (West Line) and its 16-inch pipeline (South Line) that also connect these two stations. Modifications to several stations would also be made as part of the proposed project.

The proposed pipeline is described in Section B.3.1 and the station modifications are described in Section B.3.2.

Figure B.2-2 SFPP Existing Pipelines: Carson to Norwalk
(to download this figure please check the Figures Table of Contents)

### B.3.1 DESCRIPTION OF THE PROPOSED PIPELINE

The general location of the proposed pipeline route is shown on Figure B.3-1. A detailed map showing the proposed and alternative pipeline routes between the Watson and Norwalk stations is shown on the maps at the end of Section B (Maps 1 through 4).

At Norwalk, the new pipeline will connect to the Military Line, an existing under-utilized 16-inch pipeline, allowing increased shipments of products to SFPP's Colton terminal. At Colton, the product will be separated and used for local and non-local markets, including out-of-state markets.

Table B.3-1 summarizes the components of the proposed project.

**Table B.3-1 Summary of Project Components**

| Component/Location | Description |
|---|---|
| **Components of the Proposed Pipeline** | |
| Pipeline | • 13 miles long<br>• 16-inch diameter pipe<br>• Pipe: API5LX60, wall thickness 0.312" |
| Throughput | • 204,000 Barrels Per Day (BPD) maximum<br>• 190,000 BPD average |
| Products Shipped (approximate breakdown) | • 56% -- Unleaded gasoline<br>• 19% -- Jet fuel<br>• 25% -- Diesel fuel |
| Operating Parameters | • 1,440 psig Maximum Allowable Operating Pressure (MAOP)<br>• 72 °F Product temperature (ambient) |
| Safety/Operating System | • 8 automatic block valves (MOV's) (2 at each waterway crossing; 1 each at Carson & Norwalk Stations)<br>• 2 manual valves at Industry Station<br>• Computerized pipeline monitoring system (SCADA System) |
| **Station Modifications** | |
| Watson Station (in Carson) | • 2 new electric pumps (2,000 hp each); upgrade existing surge pump to 900 hp<br>• New metering equipment<br>• 1 outgoing valve<br>• Vapor recovery systems added to 3 existing tanks<br>• 1 tank converted from diesel to multi-product use<br>• New scraper-launching facility<br>• All changes within the existing station boundaries. |
| Norwalk Station | • New 16-inch pipeline; connect with existing 16-inch Military Line<br>• 1 incoming valve at Station boundary |
| Industry Station | • Re-route existing 16-inch pipeline from south to north side of RR tracks (approximately 300 feet of new pipe) to run through station<br>• Install 2 new electric pumps (1,750 hp each) next to existing pump |
| Colton Terminal | • Piping modifications to allow product from the existing pipelines to ship through to Phoenix-West line |

**River Crossings.** The pipeline would cross three waterways along the proposed route: the Los Angeles and the San Gabriel rivers, and Compton Creek. These waterways are channelized storm drain structures that run approximately north-south through the project area. These waterways would be crossed as follows:

- **Los Angeles River**: SFPP proposes that the pipeline will be bored to cross beneath the Los Angeles River.

- **Compton Creek**: Because Compton Creek does not have a concrete bottom, open cut construction is proposed to be used at the Compton Creek crossing, requiring a trench to be cut across Compton Creek from bank to bank.

- **San Gabriel River**: In order to cross the San Gabriel River, SFPP proposes to place the pipeline on the Artesia Boulevard bridge or bore beneath the channel (depending on engineering factors such as the capacity of the bridge and the space available for boring equipment).

**Valve Locations.** SFPP proposes to install remotely-operated mainline block valves on either side of each waterway crossing: Compton Creek, Los Angeles River, and San Gabriel River. These valves allow SFPP to stop the flow of product on either side of these waterways in the event of an emergency (i.e., a major earthquake or a bridge accident). In addition, remotely-operated valves will be added at the Watson Station and the Norwalk Station, and two manually-operated valves will be added at the Industry Station. The approximate locations of these valves are shown on Maps 1 through 4 (at the end of this section). SFPP is equipping all remotely-operated valves with vapor-sensitive devices to detect leaks at valve sites. This feature should allow faster notification of a valve leak that may be too small to be detected by the SCADA/leak detection system.

#### B.3.1.1 Proposed Pipeline Route

The proposed pipeline route travels east from SFPP's Watson Station in Carson through parts of the cities of Carson, Long Beach, Bellflower, Cerritos and Norwalk, as well as some Los Angeles County jurisdiction. Table B.3-2 lists the streets and jurisdictions that the proposed pipeline would pass through. Modifications in pipeline placement within city streets may result from substructure research. Small portions of the City of Artesia along 166th Street could be included if substructure or other engineering considerations require the pipeline to be located on the south side of 166th Street.

### B.3.2 PROPOSED TERMINAL MODIFICATIONS

SFPP plans to modify certain existing facilities as a part of the proposed expansion project. All terminal-related modifications will occur within the boundaries and easements of the existing facilities. The construction that would occur at each facility is described below in Section B.4.2, Station Construction.

#### B.3.2.1 Modifications to Watson Station

This station (in Carson) will be modified by adding 2 new electric pumps (2,000 hp each), upgrading a surge pump to 900 hp, and adding new metering equipment within the existing station boundaries. Additionally, vapor recovery systems will be added to 3 existing tanks; one tank will be converted from diesel to multi-product use; and a new scraper-launching facility will be installed (see Figure B.3-2). The City of Carson has stated that these changes may require issuance of a Special Use Permit.

Figure B.3-1 Proposed Pipeline Route
(to download this figure please check the Figures Table of Contents)

**Table B.3-2 Streets and Jurisdictions of Proposed Pipeline**

| Street | Description | Jurisdiction(s) | Miles | Major Land Uses |
|---|---|---|---|---|
| Del Amo Blvd. | In street, north side | Carson (station) to LA County (street) | 0.4 | Industrial |
| Rancho Way | In street | LA County | 0.6 | Industrial |
| Laurel Park | In street | LA County | 0.7 | Industrial<br>Residential adjacent (trailer park) |
| No street (continue due east from corner of Victoria Street & Laurel Park) | Bore under SPRR tracks and MTA Blue Line; trench across Compton Creek | LA County | 0.4 | Industrial<br>Agriculture (fields adjacent to corner of Victoria and Santa Fe) |
| Victoria Street | In street | LA County | 0.8 | Industrial |
| Gordon and White Streets (continuation of Victoria E/Long Beach Blvd) | In street, down 1 block long narrow residential street | Long Beach | 0.1 | SF residential |
| Bore from Utility Corridor under 710 Fwy and LA River (2 bores) | Entry pits in utility corridors exit pits in White Ave. (west) and DeForest Park (east) | Long Beach | 0.2 | SF residential (Pico)<br>Recreation (DeForest Park) |
| DeForest Avenue | In street, south from DeForest Park | | 0.1 | SF residential |
| South Street | In street, east from DeForest Street | Long Beach | 2.2 | SF residential, commercial |
| Paramount Boulevard | In street, north from South Street | Long Beach | 1.0 | Industrial, Commercial |
| Artesia Boulevard | East from Paramount | Long Beach, Bellflower, Cerritos | 3.5 | Commercial, multi-family residential, mobile home parks, hospitals |
| Studebaker Road | North from Artesia | Cerritos | 0.5 | High school, reservoir |
| 166th Street | East from Studebaker | Cerritos, Artesia, Norwalk | 1.8 | Cerritos College, school, SF residential |
| Norwalk Boulevard | North from 166th Street | Norwalk | 1.0 | SF residential |
| Norwalk Station | Within facility boundaries | Norwalk | 0.3 | Industrial |

### B.3.2.2 Modifications to the Norwalk Station

The new 16-inch pipe will be installed from Norwalk Boulevard to the existing SFPP Norwalk Station (within the DFSP Norwalk). Piping modifications will be made to connect the new pipeline to the existing 16-inch (Military) pipeline which starts at Norwalk and continues to Colton (Figure B.3-3).

SFPP has been discussing removal of existing above-ground equipment at Norwalk with the City of Norwalk and the area residents. However, SFPP has not included removal of these facilities as part of the Carson to Norwalk Pipeline Project. SFPP has described two phases of equipment removal at the Norwalk Station: Phase I (equipment that may be removed after the new pipeline is in place and operational, and Phase II (equipment that may be removed if the DOD tank farm goes out of service). Phase I dismantling of SFPP surface equipment will leave only a meter, prover, and associated minor equipment necessary to accept DOD deliveries at Norwalk.

Figure B.3-2 Watson Station
(to download this figure please check the Figures Table of Contents)

Figure B.3-3 Norwalk Station
(to download this figure please check the Figures Table of Contents)

### B.3.2.3 Modifications to the Industry Station

Two new electric pumps (1,750 hp) will be added at SFPP's Industry Station (which currently has one pump, connected only to the 24/20-inch pipeline) to boost the pressure in the existing 16-inch pipeline (Figure B.3-4). Also, the existing 16-inch pipeline, which currently does not pass through the station but passes south of the railroad tracks, would be re-routed to pass through the station so its product could be boosted by the pumps. This would require an approximately 300-foot re-route of the existing line, including boring under the train tracks in two locations (about 180 feet apart) on each side of the tracks. The bore pits would be approximately 30 feet by 15 feet wide and 10 feet deep. Two manually-operated valves will be installed (incoming and outgoing valves) at the perimeter of the station, near the fence line.

### B.3.2.4 Modifications to the Colton Terminal

Piping modifications will occur at the Colton Station to allow both of the incoming pipelines (16-inch and 20/24-inch) to connect directly with the Phoenix-West line.

## B.3.3 DOWNSTREAM DELIVERIES FROM THE PROPOSED PROJECT

If the proposed project is completed, its operation will result in increased product shipment from Colton via each of the three distribution methods for SFPP's product from that location. Following are the modes of distribution that will receive increased amounts of products from the expanded SFPP system as a result of the proposed project. From SFPP's Colton Terminal, the increased product flow will be distributed as follows:

- **Las Vegas and vicinity via CalNev Pipeline**: The CalNev pump station is adjacent to the SFPP Colton Terminal, and product is transferred from SFPP by pipeline. Currently about 106,000 BPD are shipped and SFPP's proposed project would allow SFPP to give CalNev an additional 52,000 BPD. SFPP is the only provider of CalNev's products, which also are supplied to some local stops (e.g., diesel fuel to Colton and Barstow train yards via smaller pipelines that split off of main CalNev)

- **Inland Empire via Tanker Truck:** Many retail distributors take possession of petroleum products at SFPP's Colton Terminal and deliver directly to their gas stations in the Inland Empire and beyond (San Bernardino, Riverside, Barstow, Imperial Valley). Current transfer from SFPP to trucks is about 87,000 BPD, and this will increase to 133,000 BPD with the proposed project.

- **Phoenix area, Arizona** - via SFPP's Phoenix-West Line which starts at Colton and ends in Arizona. Currently shipping 128,000 BPD, this pipeline has capacity of 200,000 BPD which will be served by the proposed project (an increase of 72,000 BPD).

Figure B.3-4 Industry Station
(to download this figure please check the Figures Table of Contents)

## B.4 PROJECT CONSTRUCTION

This section first describes construction of the proposed pipeline (Section B.4.1) and then construction of station/terminal modifications (Section B.4.2).

### B.4.1 PIPELINE CONSTRUCTION

The pipeline would be placed almost entirely within the existing streets as the project area is highly urbanized. In addition to the pipeline construction work, construction activities at the terminals and pump stations will also include welding, pipefitting, carpentry, electrical and general labor.

Landowners and tenants adjacent to the Right-of-Way (ROW) would be notified in advance of construction in their area. Construction would generally take place in off-peak periods, including night construction where permitted, to minimize impacts to traffic and industrial or commercial business activities. Construction adjacent to sensitive noise receptors such as hospitals, schools, residences, and recreational facilities would be restricted as necessary. Temporary alternative vehicle and pedestrian access would also be established. In the case of small retail businesses, temporary signs would be installed to inform patrons that such businesses were open and to direct them to the proper access. Usual access would be maintained when possible. Construction during holidays would be minimized when possible. The project would also comply with specific permit requirements regarding access established by each relevant municipality.

#### B.4.1.1 Schedule

SFPP's proposed construction schedule would commence in mid-1998 and require approximately six months, based on SFPP's estimate that construction would typically proceed at 300 to 500 feet per day. However, it should be noted that recent (and ongoing) construction of the Pacific Pipeline through urban Los Angeles was projected to proceed at the same rate, but has in fact averaged less than 200 feet per day due to the difficulties associated with urban construction (primarily related to traffic control and avoidance of existing buried utilities). Construction of the 13-mile pipeline could therefore take between 137 days (at 500 feet per day) and 343 days (at 200 feet per day), depending on conditions encountered during construction.

Construction of the Proposed Project currently anticipates the use of one construction "spread" to accomplish most aspects of pipeline construction along the alignment. Highway, railroad, and river crossings, block valve installation, and major street intersections would be accomplished by specialized construction crews supporting the spread. Figure B.4-1 shows a typical construction spread in urban environments. Separate construction crews will be used for construction at each station (see Section B.4.2).

Figure B.4-1 Construction in Urban Environment

### B.4.1.2 Labor Force

Approximately 95 personnel would be employed for pipeline construction and 111 for station construction during the peak construction period (2nd quarter of construction). Table B.4-1 lists personnel requirements and job types for urban construction. Approximately 60 percent of the workforce would be skilled, and 40 percent unskilled labor with a majority of the work force likely originating in southern California, mainly from the Los Angeles Basin.

It is expected that most laborers will meet in a staging yard and go to the construction site in the work trucks and pick-up trucks. The welders will arrive at the construction site in their welding trucks.

### B.4.1.3 Equipment and Material

The equipment estimated for pipeline construction in an urban spread are given in Table B.4-2. These estimates are representative of the type and size of construction equipment to be used on this project. All construction equipment would be fitted with appropriate mufflers and all engines would be maintained regularly. Welding machines would use diesel or unleaded fuel.

Materials that would be truck transported to the site would include: the coated pipe sections (40 to 80 feet each), pipe fittings, valve assemblies, valve vaults, and shoring pile; coating supplies (for weld-joints); welding materials; cement, aggregate, gravel, sand, and slurry (from local plants) for backfill at street crossings; asphalt for re-paving; signs and fencing; fuel and lubrication for equipment; drinking water; and water for dust control. Alternatively, water may be available from fire hydrants in the project area for hydrotesting and dust control. The amounts of each material needed would depend on the location and activity of the spread at any given time.

Generally, waste generation from construction would be in the form of short sections of line pipe, wastes from welding, and coating as well as boxes and crates used in the shipment of materials. These materials would typically be hauled to the local recycling centers. Trash containers would be provided for daily refuse from construction workers. Other construction wastes would include contaminated spoils; asphalt, concrete and rubble from trenching paved areas; and contaminated water used to hydrostatically test the pipeline. The non-hazardous wastes would be hauled to a sanitary landfill or recycler; the used hydrostatic test water would be treated as required and discharged under permit, and hazardous wastes will be sent to a permitted treatment or disposal facility. Construction crews would use portable chemical toilets.

### B.4.1.4 Staging and Storage Areas

Wherever possible, construction material would be stored at the existing facilities of the contractors and suppliers providing equipment, supplies or labor to the project. Additional staging areas may be required but will typically be an empty warehouse, parking area, or developed area. No undisturbed areas will be

**Table B.4-1 Construction Personnel Requirements for Pipeline Construction***

| PERSONNEL | | CREW TYPE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Estimated Wages | General Adm. | Pot Holing | Special Crossing | Boring Crew | Excavation | Mainline | Backfill | Slurry Backfill | Paving |
| **Crews Required** | | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Est. # Weeks per Task** | | 28 | 20 | 12 | 15 | 20 | 20 | 20 | 10 | 10 |
| **Superintendent** | $29.70 | 1 | | | | | | | | |
| **Clerk** | $11.00 | 1 | | | | | | | | |
| **Material Clerk** | $11.00 | 1 | | | | | | | | |
| **Foreman** | $14.50 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Operator** | $19.00 | | 1 | 2 | 2 | 3 | 3 | 2 | | 1 |
| **Fitter** | $16.50 | | | | | | 2 | | | |
| **Welder** | $16.50 | | | 2 | 1 | | 4 | | | |
| **Welder Helper** | $8.50 | | | 2 | 1 | | 4 | | | |
| **Driver** | $13.50 | | | 1 | 2 | 6 | 3 | 2 | 2 | 2 |
| **Laborer/Wrapper** | $13.50 | | 2 | 2 | 2 | 8 | 6 | 2 | 4 | 6 |
| **Total Workers per Task** | | 3 | 8 | 10 | 9 | 18 | 23 | 7 | 7 | 10 |

* Station construction personnel shown separately (see Section B.4.2)

## Table B.4-2 Equipment Requirements for Pipeline Construction*

| EQUIPMENT[1] | | | | CREW TYPE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment Type | Engine Type** | Estimated Rated HP | Estimated Hrs/Week | General Adm. | Pot Holing | Special Crossing | Boring Crew | Excavation | Mainline | Backfill | Slurry Backfill | Paving |
| Estimated No. of Weeks: | | | | 28 | 20 | 12 | 15 | 20 | 20 | 20 | 10 | 10 |
| Pickup Truck | G | 185 | 16 | 3 | 2 | 2 | 2 | 4 | 2 | 2 | 2 | 2 |
| Side Boom | D | 200 | 25 | | | | | | 3 | | | |
| Welding Rig | D/G | 100 | 40 | | | 2 | 1 | | 4 | | | |
| Gang Truck | D | 169 | 20 | | | 1 | | | 1 | | | |
| Compressor | D | 85 | 24 | | | 1 | | | 1 | 1 | | |
| Water Truck | D | 169 | 30 | | | | | 1 | 1 | 1 | | |
| Back Hoe | D | 140 | 40 | | 2 | 1 | | 1 | | | | |
| Track Hoe | D | 180 | 20 | | | | | 1 | | 1 | | |
| Bending Machine | G | 50 | 6 | | | | | | | | | |
| Dump Truck | D | 169 | 60 | | | | 1 | 4 | | 1 | | |
| Boring Machine | D/G | 85 | 10 | | | | 1 | | | | | |
| Boom Truck | D | 169 | 30 | | | 1 | 1 | 1 | 1 | | | |
| Wacker/Compactor | G | 6 | 10 | | | | | | | 1 | | |
| Cement Trucks | D | 212 | 30 | | | | | | | | | |
| Steam Roller | D | 95 | 10 | | | | | | | | 2 | 1 |
| Asphalt Trucks | D | 169 | 6 | | | | | | | | | 2 |
| Pipe Hauling Truck | D | 169 | 6 | | | | | | 2 | | | |
| Diesel Fill Pump[2] | D | 25 | 24 | | | | | | 1 | | | |
| Diesel Test Pump[2] | D | 25 | 4 | | | | | | 1 | | | |
| 1500 scf Compressor[2] | D | 75 | 24 | | | | | | 1 | | | |

* Station construction requirements shown separately (Section B.4.2)

** D: Diesel G: Gasoline

Notes: 1 Equipment needed may vary depending on the route selected and equipment availability at the time of construction.

2 Equipment to be used for testing and cleaning the pipe after construction has been completed.

used for these purposes. Areas to be used for staging and storage yards will be selected by the contractor at the time of construction. A typical storage yard or staging area will be on a lot which has already been improved, with access to large commercial streets to allow easy movement of personnel and equipment.

The major material component of the project would be pipe. It would be stored at a vendor's coating yard, the existing Watson and Colton stations or existing storage yards until it is unloaded along the route. Aggregate, asphalt, sand, and slurry materials would be purchased locally, and storage would be provided by local suppliers.

During all phases of construction, refueling and lubrication of construction equipment would occur at the Contractors' staging yard or onsite. Equipment would be regularly checked for leakage.

### B.4.1.5 Transport

Most of the heavy construction equipment would be delivered to the initial point of the spread on lowboy trucks or trailers. Mobile cranes and dump trucks would be driven in from local contractors' yards. Construction equipment would be left overnight at the site as feasible, or at the contractor yards or at other storage yards in the area. All equipment would be lubricated, refueled and repaired by the Contractor or local servicing companies.

All construction materials would proceed to the construction spread by truck on existing roadways. For pipe delivery by truck it is assumed that each truck would carry nine 60- to 80-foot lengths of pipe.

When street rubble and spoils must be hauled offsite, the number of dump truck trips could reach 36 trips per day (assuming a 400-foot trench per day and 12 cubic yard capacity trucks).

### B.4.1.6 Utility and Services Requirements

Construction equipment would require both gasoline and diesel fuel. Estimated consumption per spread per day is 300 gallons of gasoline and 2,000 gallons of diesel fuel.

Water from water districts or treatment plants would be used as necessary to control fugitive dust and to wash streets as a supplement to sweeping streets. A total use of 10,000 gallons of water per day is estimated for these purposes. In addition to the daily construction water needs, hydrostatic testing of the pipeline would also require water. The volume of water estimated to be required to test the proposed 16-inch pipeline would be approximately 675,000 gallons. Hydrotest water will be obtained from local water districts.

Project construction would require little demand for electrical power; where needed, generators would be used onsite for power. As part of SFPP's contract with the construction contractor, the contractor will be required to use only equipment with all required permits and licenses. Telephone service may be required for

construction activities if a field office is established, but generally communications will be through mobile phones. Construction activities would not require natural gas.

**Disposition of Excavated Materials.** Trench excavation activities will generate approximately 45,760 cubic yards (cy) of material along the 13-mile route. SFPP estimates that 22,880 cy of excavated soils will be used to backfill the trench. The remaining volumes for disposal will include approximately 7,626 cy of concrete/asphalt rubble and 15,253 cy of soil. The following facilities may be used:

- The Puente Hills landfill (about 14 miles from the project area) is the primary sanitary landfill that will be utilized, with the Scholl Canyon or Olinda Alpha landfills as alternative sites. The Puente Hills landfill currently receives about 12,000 tons per day of municipal solid waste and inert wastes.
- Concrete and asphalt will likely be sent to Blue Diamond Inc., a demolition materials recrushing company with locations in Carson, South Gate, Orange, and Fullerton.
- If the material is not acceptable to Blue Diamond, the material will be sent to landfills. Surplus soil will be sent to the landfill, or depending on construction timing and needs, it could be brokered and used for fill at other sites.

Two types of hazardous wastes will be generated by the project: nominal quantities of oils or solvents from maintenance of construction equipment, and contaminated soils encountered during construction. Oils and solvents will be sent to a treatment facility selected by the construction contractor. Contaminated soil that requires treatment will be sent either to a permitted contaminated soil treatment company or to a landfill permitted to accept these materials. There are three major Class I landfills in California that could accept such soils; they are located in Kern County, Kings County, and Imperial County.

### B.4.1.7 Pipeline Construction Methods within ROW

A pipeline construction spread would be composed of several units. The units would be organized to proceed with the work in the order listed below. The various pipeline construction activities are generally described in the following sections.

- Pre-construction activity
- Ditching
- Hauling and stringing the line pipe
- Pipe bending, line-up and welding
- Weld inspection
- Applying protective coating to the weld joints
- Lowering and tying in
- Backfilling and compaction
- Hydrostatic testing
- ROW cleanup and street resurfacing.

The ROW for this project will be in existing paved streets except at waterway crossings, railroad crossings, and highway crossings. Since the pipeline construction ROW is located within major road corridors, construction would require closure of at least one lane of traffic to accommodate the construction ROW. Approval to construct and operate a pipeline will be obtained or authorized by franchise agreements or permits from the agency with jurisdiction over the streets along the proposed route. After ROW is obtained and the project is permitted, landowners, permittees, and business owners along the ROW would be notified in advance of construction activities that could affect their business or operations. Notification to landowners would be

by mail. Tenants would be notified in person a few days ahead of construction. Other notification would be made by various means, including placing signs at road crossings in advance of construction.

Emergency response providers near the proposed route would be notified in advance of construction locations, road closure schedules, and potential alternate routes. Schedules for necessary on-street parking closures would be published well in advance of the street closure. Directly affected businesses and residents would be given ample notice and information to plan alternatives. Signage would be provided to direct motorists to alternate routes. SFPP would work with local police and traffic engineers to plan appropriate access alternatives for temporary street closures and traffic disruptions. Traffic control requirements from municipalities would also be followed.

Where construction activities may adversely affect pedestrian access or transit stops, transit providers would be contacted to develop temporary alternatives with appropriate signage and public notification. Businesses along the pipeline route would be informed in advance of planned construction dates. Temporary signs would be installed and alternate vehicular and pedestrian access established. Existing access to businesses near the proposed route would be maintained throughout the construction period to the degree possible consistent with safe and efficient construction practices. Where such access must be temporarily disrupted, SFPP will provide advance notice and work with business operators to minimize disruptions.

SFPP will notify Underground Service Alert (USA) who will notify service providers of intended construction to avoid conflict with existing utilities and disruptions of service to utility customers.

Since construction will occur almost exclusively in paved streets, no extensive grading is proposed. No construction of roads and bridges is anticipated. Temporary diversion of streams or stabilization of soil to support heavy equipment would occur only at the trenched crossing of Compton Creek. Surface preparation would include breaking and removing pavement with concrete saws, pavement breakers, and where necessary, jack hammers. The broken debris would be hauled off to approved landfill sites or a crusher plant via dump trucks. An estimated nine truck trips per day, each having a 12 cubic yard capacity, would be required to haul the rubble away.

**Ditching**

Once traffic control measures are in place, ditching operations would begin. Typically a six-foot-deep ditch would be excavated (varying depending on the conditions encountered), and a typical trench would be 30 inches wide. The total work area would be up to 50 feet wide. The ditch would be excavated using backhoes and track hoes. An exception to the mechanical excavation would be hand-digging to locate buried utilities, such as other pipelines, cables, water mains and sewers. No blasting is anticipated.

Fugitive dust emissions at the construction site during earthmoving operations would be controlled by water trucks equipped with fine spray nozzles. Approximately 10,000 gallons of water would be used per day for dust suppression.

Spoils from cuts, including cuts in streets, would typically be used as backfill materials at the site of origin (see Section B.4.1.7). In many areas, limited capacities are available at the local landfills. Thus, an effort would be made to minimize the amount of the excess material. Materials unsuitable for backfill use and economically not usable for other purposes would be disposed of in accordance with local and county guidelines in available landfills.

When used for backfill, spoils from the trenches will be hauled to previously disturbed sites to be determined by the construction contractor. Based on SFPP's previous construction and maintenance activities in the project area, no screening will be required due to the sandy nature of the existing soils.

Generally, dewatering techniques are not proposed for open trenches. At the Compton Creek crossing, should open-cut stream crossing techniques be utilized, a trench would be excavated to a depth four feet below calculated 100-year scour depths. (Scour depth is the maximum predicted scour depth created by a 100-year storm event.) The entire length of pipeline, for the stream crossing, would be pre-welded, and the joints coated, insulated and covered with concrete before lowering the pipeline into place. The submerged pipe would then be backfilled with spoils; padding backfill would be screened to eliminate rocks.

**Pipe Handling**

Pipe-stringing trucks would be used to transport the pipe in 40- to 80-foot lengths from the shipment point or storage yards to the pipeline ROW. Where sufficient room exists, trucks would carry the line pipe along the ROW, and sideboom tractors would unload the joints of pipe from the stringing trucks and lay them end to end beside the ditch line for future line-up and welding.

The pipe would be bent by a portable bending machine to fit the contour of the ditch both vertically and horizontally. Construction ROW conditions could sometimes require pipe bends that field bending would not be practical. In these cases, manufactured or shop-made bends would be used; pipe would be bent prior to application of coating.

Laying the pipe would involve use of line-up clamps that would hold the pipe sections in position until 50% of the first welding pass was completed. Following the line-up crew, the welding crew would apply the remaining weld passes to bring the thickness of the weld to more than the thickness of the pipe by approximately 1/16-inch. All pipeline welds would be radiographically inspected.

**Pipe Coating**

State of the industry pipeline coating would be applied at the mill before delivery to the construction site. However, field coating would be necessary on all field weld joints made at the site in order to provide a continuous coating along the pipeline. After the pipe has been welded and radiographically inspected (x-rayed), heat shrink polyethylene sleeves will also be used or alternatively, polyken tape and tape primer could be used.

A detection test would be conducted to locate any coating discontinuities that could permit moisture to reach the pipe, such as thinning, or other mechanical damage. The testing device (a holiday detector) develops an electrical potential between the pipe and an electrode in contact with the outside of the coating or ground. Pinholes in the coating of microscopic size can be located using the electrical detector. All coated pipe, including field joints, fittings, and bends would be tested as it is lowered into the trench, and repaired as necessary prior to backfilling.

**Lowering and Backfilling**

The pipe would be lifted and lowered into the ditch by two more side-boom tractors spaced so that the weight of unsupported pipe would not cause mechanical damage. Cradles with rubber rollers or padded slings would be used so the tractors could lower the pipe without damage as they travel along the ditch line. Ditch welds could be required whenever the ditch line is obstructed by other utilities crossing the pipe ditch. These welds would usually be made in the ditch at the final elevation, and each weld would require pipe handling for line-up, cutting to exact length, and coating, and backfilling, in addition to normal welding and weld inspection.

Backfill material would be obtained from the ditch spoils. Spoils would be screened as the material is returned to the ditch using standard construction screening equipment. The pipe would be covered along the sides with a maximum of six inches of native fill free of rocks, and then covered on top with a minimum of 12 inches of fill free of rocks. This zone is referred to as the pipeline padding and shading. In certain areas where damage might occur to the pipe coating from abrasive soils, clean sand or earth backfill would be used to pad the pipeline. Any required padding material would be obtained from local commercial sources. The backfill in the remainder of the trench above the padding would be native material excavated during trenching. At the time of backfilling, a colored warning tape would be buried approximately 18 inches above the pipeline to the ground surface to indicate the presence of a buried pipeline to third-party excavators. The backfilled earth would be compacted using a roller or hydraulic tamper prior to paving. The trench would be filled with slurry where required by local authorities. The slurry would be purchased from a local slurry plant and transported to the site. Steel plates would be used to cover any open trench left at the end of each workday.

The potential volume of contaminated soils from sites contaminated with hazardous materials that would be restricted from disposal at a non-hazardous waste landfill, is unknown at this stage of the project.

**Testing and Inspection**

All field welding would be performed by qualified welders to SFPP's specifications and in accordance with all applicable ordinances, rules, and regulations, including API 1104 (Standard for Welding Pipe Lines and Related Facilities) and the rules and regulations of the U.S. Department of Transportation (DOT) found in the Code of Federal Regulations (CFR) Title 49 (Part 195 for liquid pipelines). As a safety precaution, a minimum of one 20-pound dry chemical unit fire extinguisher would accompany each welding truck on the job.

All welds (100%) would be visually and radiographically inspected, exceeding the 10% inspection requirement found in CFR Title 49, Part 195 (49 CFR Part 195). Radiographs would be recorded and interpreted for acceptability according to requirements of API 1104. All rejected welds would be repaired or replaced as necessary and re-radiographed. The X-ray reports as well as a record indicating the location of welds would be kept for the life of the pipeline.

In addition to standard mill testing of all pipe and fittings, hydrostatic testing would be performed after construction and prior to startup. Federal regulations (49 CFR Part 195) mandate hydrostatic testing of new, cathodically-protected oil pipelines prior to placing the line into operation.

As required by DOT, a hydrostatic test would be completed. This test involves filling a test section of the pipeline with fresh water and increasing pressure to a predetermined level. This pressure level would be maintained at least 1.25 times the pipeline maximum operating pressure (1,800 psig) for a minimum of 4 hours. Such tests are designed to prove that the pipe, fittings, and weld sections would maintain mechanical integrity without failure or leakage under pressure.

Permanent records would be kept on each hydrostatic test. These records would contain the exact location of the test segment, the elevation profile, a description of the facility, and continuous pressure and temperature of the line throughout the test. Deadweight testers would be used to verify the accuracy of pressure-recording devices and charts during the test, as required by 49 CFR Part 195.

The pipe will be hydrostatically tested in one continuous 13-mile segment. SFPP estimates that a total of 16 acre-feet (675,000 gallons) would be used in testing. Water will be obtained from local water districts.

**Cleanup and Restoration**

The restoration process would entail removal of debris, construction signs, surplus material and equipment, followed by re-paving.

**Start-Up Procedures**

SFPP will develop specific start-up procedures when final design is completed. A typical start-up procedure involves the following steps:

- **Electrical Systems:** A complete check of the new electrical system and mechanical equipment at Watson and Industry Stations will be performed. Pumps are un-coupled and their motors tested for rotation and valves are cycled. A complete test of the SCADA controls is performed with computer simulated inputs to test the response of the Programmable Logic Control (PLC) and the software.

- **Hydrotesting:** The pipeline will be filled with water from the fire system at Watson Station, and pressurized to 1,800 psi to test the integrity of the pipe and mainline valves. While the pipe is under pressure, the pipeline will be patrolled and inspected for leaks. Water will be displaced from the pipe using oil-free compressors and collected in a breakout tank at Watson to be tested and treated, if necessary, before it is discharged.

- **Cleaning:** The pipeline will be cleaned using multiple passes of abrasive and cleaning foam pigs.

- **Static Test:** After cleaning, the final connections will be made and these last welds x-rayed. Diesel will be introduced into the pipeline. Air in the pipe will be vented at Norwalk through a vacuum truck until the truck is completely filled with diesel. A static pressure test is then performed on the pipe using the mainline pump to less than 440 psi between Watson and Norwalk. During the test, the pipeline will be monitored and checked for any abnormalities.

- **Performance Test:** The pipeline will be started and the booster and mainline pumps will be operated at maximum discharge pressure at Watson. Again, the pipeline will be patrolled and checked for any abnormalities.

- **Test Industry Pumps:** After this test is completed at Watson, the pumps at Industry will be started and a running test will be performed between the Industry and Colton stations, during which the pipeline will be patrolled and checked for any abnormalities.

After these tests have been completed, the pipeline will be ready for normal operation.

### B.4.1.8 Crossing Techniques

### Water Course Crossings

The Compton Creek, Los Angeles River and San Gabriel River are the three waterways crossed by this project. Each of these waterways is an improved storm water conveyance channel in the project area. The pipeline would be bored at the Los Angeles River, open cut at Compton Creek, and placed on an existing bridge or bored beneath the channel at the San Gabriel River crossing (proposed route and Alondra Alternative route).

**Boring.** Conventional boring (Figure B.4-2) requires bore pits on each side of the waterway. These pits, approximately 10 to 15 feet wide by 30 feet long and 10 feet deep. The work area is usually approximately ½ acre for the entry pit and 1/4 acre for the exit pit. The pit would be excavated with a backhoe outside the paved storm water channel. Depth of the pits would depend on final pipeline depth. Spoils from the excavation would be placed alongside the pits. Spoils would be used as backfill and wet spoils would be placed in detention basins if uncontaminated and otherwise suitable. A crane would be used to lower the boring machine, casing, and pipe lengths into the pit. Casing and pipe sections would be welded, inspected and coated in the pit prior to boring. Section lengths would be limited by the length of the bore pit.

The bore would be drilled a minimum of 4 feet below the 100-year scour depth of the stream channel. Any contaminated wastes would be loaded into barrels or dump trucks and hauled off-site to an approved disposal site. Any groundwater encountered during drilling would be pumped out of the pit into tank trucks for transport and disposal in an approved manner (e.g., in a sanitary sewer). Steel casing, where required, would be used to encase the bored pipeline. The casing will be carbon steel pipe. It would be uncoated and electrically isolated from the pipeline cathodic protection system. Upon completion of the pipeline installation, the excavated areas would be backfilled, compacted, re-contoured and restored according to permit requirements. If the San Gabriel River is bored, sufficient room is available at the Artesia Boulevard crossing

for the bore pits and staging areas. The bore pit will be located on the east side of the River, within the flood control right-of-way, and south of Artesia Boulevard.

**Open Cut.** The open cut technique will require a trench to be cut across Compton Creek from bank-to-bank. This would require equipment such as backhoes, bulldozers, and draglines to prepare the ditch. The trench will be deep enough to allow the pipe to be placed a minimum of 4 feet below the 100-year scour depth of the stream channel. The creek would be crossed during the normal period of low flow. The creek would be returned to its original configuration, substrate replaced, banks stabilized, and revegetated as necessary. It is anticipated that a U.S. Army Corps of Engineers Nationwide Permit No. 12 (Utility Line Discharges) will be obtained for this crossing.

**Pipeline on Existing Bridge.** Existing bridges may be used to cross the San Gabriel River along Artesia Boulevard (proposed project) or Alondra Boulevard (Alondra Alternative segment), both of which SFPP believes have room to install the pipeline. The Artesia bridge has concrete piers that appear to be sufficient to carry the pipeline. No bridge upgrades are planned. The pipeline is proposed to be attached to the outside of bridges using structural steel braces fastened to the bridge or other techniques that may be developed and implemented as part of final project design. Where exposed above ground, the insulated pipeline could be installed in an outer casing painted to blend into the environment. The outer casing would be electrically isolated from the cathodically protected pipeline.

Figure B.4-2 Conventional boring
(to download this figure please check the Figures Table of Contents)

**Highways, Railroad and Pipeline Crossings**

In some cases, the proposed pipeline would be bored underneath interstate highways, freeways, under other pipelines and utilities, and under railroads. Placement of the pipeline bore with respect to other utilities would be in accordance with 49 CFR 195.250 that requires a minimum clearance of 12 inches from any underground structure. In the same manner as a conventional stream boring, an entry and exit pit for the boring machine would be excavated using a backhoe on each side of the crossing; these pits would range in dimension from 10 to 15 feet wide by 30 feet long and 10 feet deep.

The only interstate highway requiring boring will be the Long Beach Freeway. All other freeway crossings will be done at grade, where the street within which the pipeline is located passes beneath the freeway. SFPP does not yet know the number of utility crossings that will require boring.

### B.4.2 STATION CONSTRUCTION

Station construction crews of approximately 111 workers (including specialized workers) will be responsible for the construction activities at the existing terminal and pump stations. Modifications to the existing stations would require a two- to six-month construction period. Modifications are proposed at the Watson, Norwalk, Industry, and Colton stations (shown on Figures B.3-2 to B.3-4). Table B.4-3 lists personnel and equipment requirements for station construction.

**Table B.4-3 Construction Requirements for Station Construction***

| | Crew Type | | | | |
|---|---|---|---|---|---|
| | **General Admin.** | **Mechanical Work** | **Civil Work** | **Electrical Work** | **Total** |
| **LABOR** | | | | | |
| Superintendent | 2 | | | | 2 |
| Material Clerk | 2 | | | | 2 |
| Foreman | | 4 | 2 | 5 | 11 |
| Operator | | 5 | 1 | 2 | 8 |
| Fitter | | 14 | | | 14 |
| Welder | | 14 | | | 14 |
| Welder Helper | | 6 | | | 6 |
| Electrician | | | | 18 | 18 |
| Laborer | | 17 | 6 | 13 | 36 |
| Total Workers | 4 | 60 | 9 | 38 | 111 |
| **EQUIPMENT** | | | | | |
| Pickup Truck | 1 | 5 | 3 | 5 | 14 |
| Crane | | 5 | | | 5 |
| Welding Rig | | 14 | | | 14 |
| Gang Truck | | 5 | | | 5 |
| Backhoe | | 2 | 1 | 1 | 4 |

* Pipeline construction personnel and equipment are shown separately (see Section B.4.1)

Worker selection will be done by the construction contractor, but SFPP anticipates that the workers will come from the local area.

### B.4.2.1 Construction at Watson Station

Modifications at Watson Station will take approximately six months. Work to occur at Watson includes:

- Civil work includes clearing certain areas for construction of equipment foundations. New foundations will be constructed to support the meter proving equipment, switch gears, and the main line pumps. Additional foundations will be constructed to support above ground piping after the pipe is installed.
- Piping work will include installation of a new line from the surge pumps to the metering station and the main line pumps. The mechanical crew will install a new scraper (pig) launcher.
- Three existing tanks will be connected to the existing vapor recovery system. A new overhead pipe will be installed from each tank to the vapor recovery system to allow for the collection of vapors during tank filling operations.
- Electrical crews will install new conduits and wires to power the new equipment, and they will relocate or upgrade any existing electrical facilities which may be in conflict with the new equipment. They will also install the control of the wiring and the termination of the control loops.

### B.4.2.2 Construction at Norwalk Station

Construction at Norwalk Station is expected take about two months, and will include:

- Installation of the new 16-inch pipe and connecting it to the existing 16-inch (Military) pipeline
- Minimal electrical work, related to dismantling of existing equipment after the new project is operational.

### B.4.2.3 Construction at Industry Station

At the Industry Station, construction activities will take approximately 3.5 months, and will include the following:

- Site clearing and installation of foundations for the two new pumps.
- Two sets of bores under the Southern Pacific railroad tracks will be completed to allow the existing 16-inch pipe (currently south of the tracks and not connected to the existing pump) to be brought into the station. Four bore pits (two entry pits and two exit pits) will be excavated.
- Approximately 300 feet of trenching will be completed for the 16-inch pipe, and the pipe will be installed using the same techniques described in Section B.4.1.7.
- Pump and pipe layout and installation will be completed.
- Electrical crews will install new electrical conduits and wires to power the new pumps. The electrical crew will also be responsible for the relocation and upgrading of any existing electrical facilities which may be in conflict with the new equipment.

### B.4.2.4 Construction at Colton Terminal

Construction at the Colton Terminal will take approximately two months, and will include:

- Piping modifications, performed by the mechanical crew, to allow products received in the 16-inch and 24/20-inch lines to ship directly into the Phoenix-West line and other station line changes.

- Electrical instrumentation and control equipment will be installed to support the piping. Electrical crews will also terminate the control loop in the Programmable Logic Controller (PLC) and modify the software to support the operational changes.