2.0 PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

This chapter describes the major elements of construction and operation for the proposed San Ardo to Coalinga Heated Oil Pipeline (Project). The first Section (2.1, Project Overview) contains a summary of the major pipeline components and includes subsections discussing route selection and design considerations. This is followed by Section 2.2, Historic Perspective, a summary of the history of the San Ardo Oil Field as it relates to the current Project. Section 2.3, Purpose and Objectives of the Proposed Project, identifies the need for and goals of the Project. Section 2.4, Proposed Facilities, describes the various components of the Project. Section 2.5, Land Requirements, describes the types and extent of disturbances to be created during construction and operation of the pipeline. Section 2.6, Pipeline Construction, explains construction logistics, construction procedures, and special construction techniques that would be used when encountering an environmentally-sensitive resource or extremely difficult conditions (such as steep and unstable slopes). Section 2.7, Operation, Maintenance, and Safety Controls, describes how the Project will function during the active life of operations. Section 2.8, Future Plans and Decommissioning, outlines how the Project will conclude operations and describes potential future uses of the Project area. Section 2.9 identifies permits, approvals, and regulatory requirements to be met by the Project Applicant in order for the Project to be implemented.

2.1 PROJECT OVERVIEW

2.1.1 Project Location

Chevron Pipe Line Company (CPL or Applicant) has applied for discretionary permits to design, construct, operate, maintain, and eventually decommission an underground, heated crude oil pipeline that would extend from the San Ardo Oil Field in the upper (southern) portion of California’s Salinas Valley to the Kettleman-Los Medanos (KLM) Pipeline southeast of the City of Coalinga in the San Joaquin Valley. The Project would include construction and operation of a 10.75-inch (outside diameter) insulated and heated underground crude oil pipeline with related above-ground facilities and ancillary utility connections. The pipeline would be designed to transport between 4,000 and 32,000 barrels of oil per day (bpd).

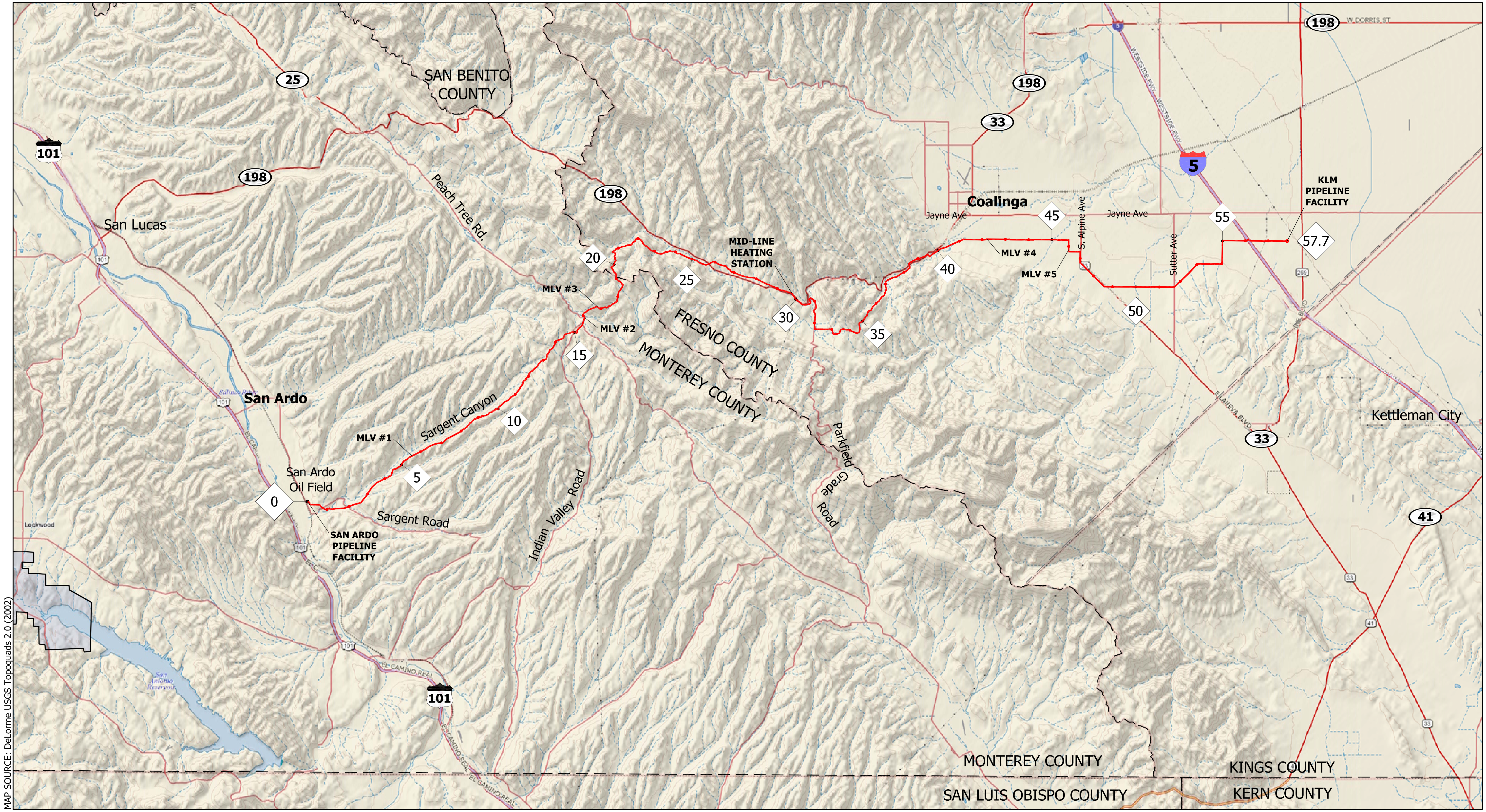
The San Ardo to Coalinga Heated Oil Pipeline would originate at an above-ground facility to be constructed in the currently permitted and operating San Ardo Oil Field about 4 miles southeast of the Town of San Ardo in Monterey County and would traverse eastward through parts of both Monterey and Fresno Counties over a distance of 57-plus miles (see Figure 2-1, Regional Location). At the eastern terminus of the pipeline about 14 miles southeast of the City of Coalinga, another above-ground facility would be constructed and the heavy crude would be mixed with lighter oil, then pumped through an existing pipeline to refineries and distribution points in the San Francisco East Bay area. Trucking, the transportation method upon which oil field operators now rely, would be effectively eliminated except during emergency shutdown of the pipeline.

The proposed route between the San Ardo Oil Field and the tie-in to the KLM Pipeline east of Coalinga encompasses varied terrain in a mostly undeveloped corridor. The route includes about 154 jurisdictional stream, drainage, or wetland crossings and 18 paved road crossings. Elevations in the Project corridor range from about 450 feet above mean sea level (msl) at the San Ardo Oil Field to about 3,200 feet msl at the crest of the Diablo Range (near the Monterey-Fresno County line), and back down to about 400 feet msl at the eastern terminus of the Project.

The actual length of the pipeline would be 57.3 miles; however, because of a reroute over the San Andreas Fault late in the Project planning process, milepost (MP) designations are keyed to an earlier alignment (which ended at MP 57.7) so that studies conducted on environmental resources would remain relevant with regard to milepost citations. The initial alignment and the reasons for the reroute over the fault are discussed and shown graphically in Sections 2.1.5, Route Selection and 2.1.6, Design Considerations. Because of the need to be consistent with MP designations used in on-site surveys and reports conducted and prepared prior to the September 2006 reroute, the endpoint for the pipeline on all graphic presentations in this Draft EIR is shown as MP 57.7. The slight (0.4 mile) adjustment is made between MP 19 and MP 20 (at the end of the reroute) on Draft EIR maps and figures.

2.1.2 Oil Characterization and Heating

The heated oil pipeline would transport oil considered to be 'heavy crude', a term used for oil that will not flow at normal temperatures because of its viscosity. Crude oil is often described in terms of "lightness" or "heaviness" and numeric values measuring



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- Pipeline Alignment

35 - Mile Posts (MP)

NOTE:
MLV = Mainline Valve

Figure 2-1
Regional Location

CHEVRON
SAN ARDO TO COALINGA
HEATED OIL PIPELINE

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relative viscosity are measured by the American Petroleum Institute's (API) gravity index. Crude oils with higher API gravity values are lighter and therefore less viscous; those with lower values are heavier and more viscous. Most API gravity values fall between 10 and 70 API gravity degrees, with heavy oil generally defined as having an API gravity of less than 22.3 degrees (Centre for Energy 2006). Crude oil from the San Ardo Oil Field has an API gravity of 12.5 degrees, clearly indicating its viscous nature.

Pipelines used for transportation of high-viscosity crude oils must have ancillary facilities to heat the crude in order to keep it more fluid, thus allowing it to be pumped and transported using reasonable amounts of energy. In the case of the proposed pipeline, San Ardo crude oil would initially be heated to a temperature of 180° F before being pumped into the pipeline at the western terminus in the San Ardo Oil Field. A proposed 3-inch polyurethane insulation and a polyethylene jacket around the pipe would help to maintain oil temperature, thus enabling the oil to flow in the pipeline. However, by about the mid-point in the pipeline, the oil would likely cool to between 110° and 120° F. Thus, an above-ground Mid-Line Heating Station would be required to maintain an adequate flowing consistency throughout the length of the line.

The Mid-Line Heating Station would be located at MP 29.6 (see Figure 2-1) and would be fueled by natural gas brought to the site by a separate 2-inch pipeline. This gas line would connect to an existing San Ardo Pipeline Company (SAPCO) natural gas pipeline at a valve site on the SAPCO line located about 2.6 miles southeast of the Mid-Line Heating Station site.

2.1.3 Other Project Components

The Project would include above-ground facilities at each end of the pipeline, a Mid-Line Heating Station, and five mainline valve stations located at intervals along the pipeline (see Figure 2-1). The facilities at either end of the pipeline are referred to as the San Ardo Pipeline Facility (western terminus) and the KLM Pipeline Facility (eastern terminus) throughout this document and would include new storage tanks, mixers, metering skids, pumping stations, heater stations and an automated cleaning/maintenance launching and receiving apparatus (referred to as a 'pig launcher' or 'pig receiver'). The function of the Mid-Line Heating Station is described above in Section 2.1.2. The primary function of the mainline valve stations would be to stop oil moving in either direction in the event of a pipeline malfunction.

Figure 2-2, Primary Facilities Schematic, provides an overview of the various pipeline components and facilities, their purpose, and their general location along the pipeline route. Additional details regarding project facilities are provided in Section 2.4, Proposed Facilities.

2.1.4 Pipeline Construction, Operation, and Decommissioning

Construction of the San Ardo to Coalinga Heated Oil Pipeline would begin in 2008 and would continue over an estimated 10- to 15-month timeframe barring weather delays or unforeseen circumstances. Seasonal restrictions and mitigation requirements could also result in a longer construction phase timeframe. Construction details are provided in Section 2.6, Pipeline Construction.

For the purposes of this Draft EIR, a 100-foot-wide maximum construction disturbance corridor has been assumed to assess construction impacts. In actuality, the Applicant has negotiated right-of-way agreements of varying widths along the alignment route. These negotiated landowner agreements include easements ranging from 40 to 100 feet in width. Thus, impact acreages have been evaluated on a 'worst-case' basis throughout this document.

The pipeline would have an operating life of at least 30 years and would be maintained to all applicable regulatory standards and requirements throughout its operating life. The pipeline would be remotely operated from a central control facility. Pipeline corrosion protection and control would be achieved through protective coating and cathodic protection. The cathodic protection system involves the application of direct current electricity from an external source to oppose the discharge or corrosion current from the surrounding electrolyte (soil). Additional discussion regarding system control and safeguards is included in Section 2.7, Operation, Maintenance, and Safety Controls. Permanent (post construction) easement widths along the alignment range from 10 to 50 feet in width.

The operation of the pipeline would be largely undetectable to the public, except at above-ground facility and station locations. At these locations, indications of pipeline operation would be low noise levels associated with rotating equipment operation and periodic nighttime lighting.

It is anticipated that upon decommissioning of the pipeline the pipe itself would be left in place along the entire length of the alignment. The decommissioning process would

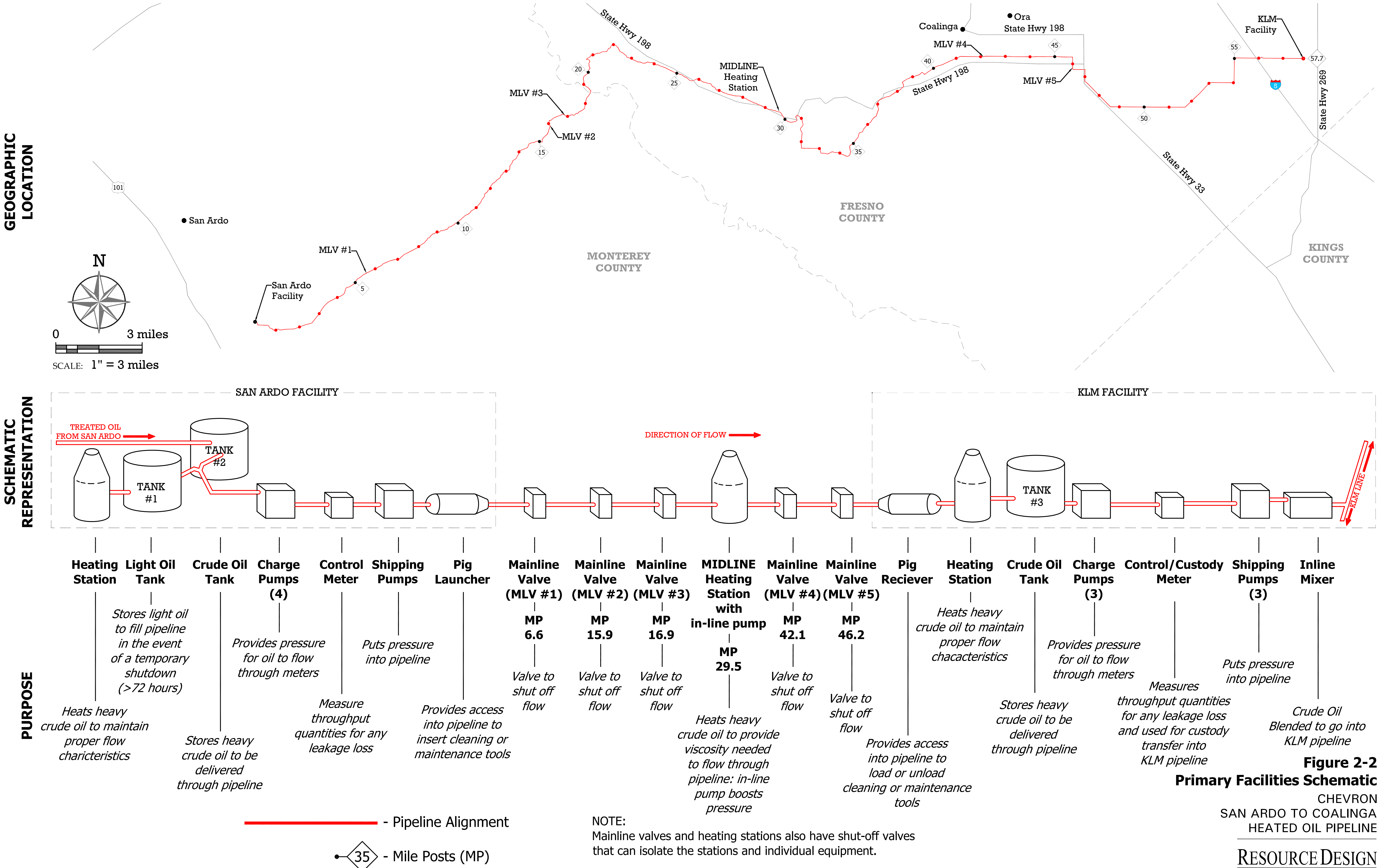

Figure 2-2
Primary Facilities Schematic
CHEVRON
SAN ARDO TO COALINGA
HEATED OIL PIPELINE

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be subject to the applicable local, state, and federal regulations in effect at end of the Project term. Additional information regarding decommissioning procedures is included in Section 2.8, Future Plans and Decommissioning.

2.1.5 Route Selection

The Applicant reports that Project planning and selection of the proposed route for the San Ardo to Coalinga Heated Oil Pipeline has been an evolving process implemented over the past few years. Originally, the line was intended to parallel an existing 16-inch San Ardo Pipeline Company (SAPCO) natural gas pipeline originating in Coalinga and ending the San Ardo Oil Field. The SAPCO line was constructed in 1991 to provide fuel for steam generation and co-generators in the San Ardo Oil field. It is operated by CPL, although it is owned by others.

Initially, CPL's Project Team believed a strategy of paralleling the SAPCO line would likely result in fewer adverse environmental impacts than would other routes through areas that had not previously been disturbed. While working with landowners to obtain rights-of-way agreements along this route, two substantive issues arose that forced the consideration of alternative routes: (1) some landowners along the SAPCO route would not grant CPL an easement to install the pipeline on their property, and (2) one landowner had entered into a conservation easement agreement that would require an amendment to allow the construction or operation of a pipeline within the easement.

Efforts to select alternative routes involved aerial reconnaissance and constructability reviews, along with an in-depth analysis of topographic and other physical constraints. Once potential routes were identified, CPL conducted reconnaissance surveys for biological and cultural resources, with the objective of avoiding sensitive resources to the extent feasible. While two routes (a "southern route" and a "northern route") were initially identified, constructability issues resulted in the elimination of the southern route from further serious consideration because of difficult and potentially dangerous construction considerations as a result of extremely rocky terrain over much of the ± 20-mile southern segment.

Much of the northern route roughly paralleled State Route 198 (SR 198) and, additionally, an existing pipeline right-of-way was identified that also paralleled SR 198 for some distance. Furthermore, CPL was able to reach easement agreements with landowners along this route. Landowner input was solicited to aid in avoidance of specific sensitive habitats and features and CPL conducted more detailed, site-specific environmental surveys. Centerline surveys took information from these resource studies into account as route refinements progressed. By December of 2005 a proposed alignment was identified by CPL and a preliminary project description was prepared by CPL's consultant. The proposed route would parallel the SAPCO line from MP 1 to 9.6 and from MP 32.2 to 37.2, and MP 39.7 to 44.2.

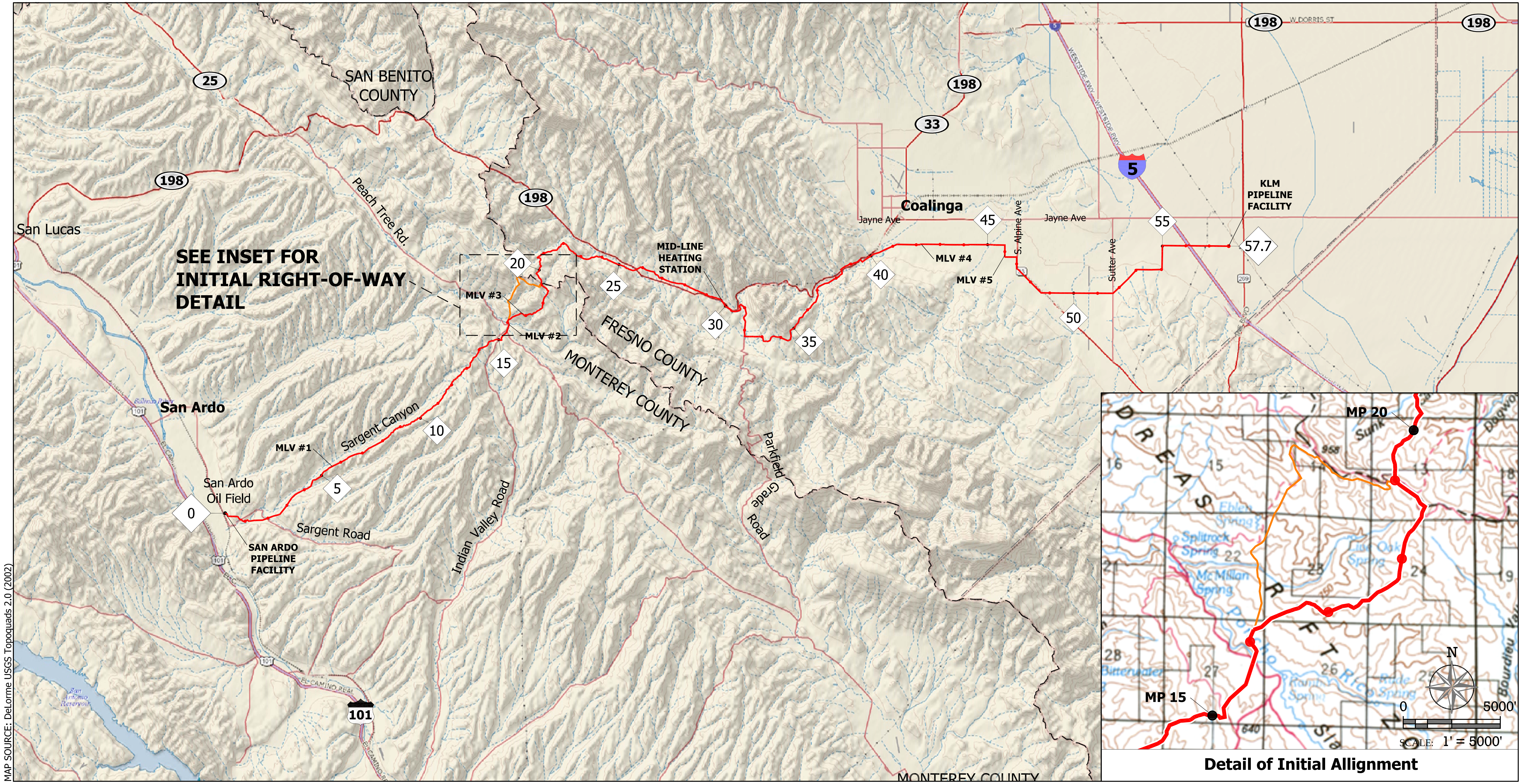
Cultural and biological surveys were completed for the proposed, or initial, route alignment and other resource studies were also undertaken. Numerous small adjustments to the pipeline centerline were made over the course of the next several months to minimize impacts to various resources, including the removal of oak trees, impacts to wetlands and sensitive habitats, and avoidance/minimization of impacts to cultural resources.

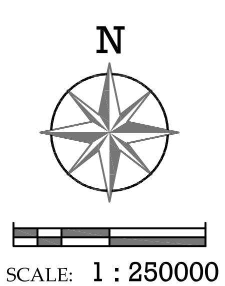
The initial right-of-way alignment proposed in 2005 is shown on Figure 2-3, Initial Right-of-Way Route for Chevron San Ardo to Coalinga Heated Oil Pipeline. Figure 2-3 also depicts an adaptation or reroute that was later (September 2006) proposed and adopted to address geotechnical considerations related to the pipeline crossing of the San Andreas Fault Rift Zone (see discussion below in Section 2.1.6, Design Considerations). As a result of this alignment change, issuance of this Draft EIR was delayed from late 2006 into 2007 so that additional resource surveys and studies could be completed for the approximate 3-mile reroute shown on Figure 2-3.

2.1.6 Design Considerations

In general, Pipeline design specifications are provided through established industry standards and regulatory requirements. Design of the proposed pipeline must adhere to these standards and requirements. Certain design considerations for this particular pipeline are, however, somewhat specific to the geologic, biologic, and cultural resources that occur along the proposed route. The route was selected to avoid landslides and sensitive biological and cultural resources to the extent practicable. Where avoidance was determined to be infeasible, other design considerations came into play. Preliminary design of the pipeline was developed after consideration of the following key issues:

- Available geotechnical and geologic data;
- Drainage considerations;
- Regulatory and industry standards for pipeline design criteria;
- Local stability issues;





- Pipeline Alignment

- Initial Pipeline Alignment

35 - Mile Posts (MP)

Figure 2-3
Initial Right-of-Way for Chevron San Ardo to Coalinga Heated Oil Pipeline

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- Constructability, economics, and access constraints;
- Topographic and geologic features; and
- Environmental resource constraints.

Although detailed engineering pipeline design is not yet complete, conceptual design of the pipeline has progressed to the extent that specific construction techniques have been proposed to avoid certain resources. Alignment plans will potentially incorporate techniques such as horizontal directional drilling (HDD) and retaining walls or rock nail walls at specific locations along the pipeline. These techniques would aid in decreasing impacts to resources, diminishing potential hazards related to landslide features, and increasing overall pipeline safety and slope stability. More specific descriptive information on these construction techniques and features is provided in Section 2.6.3, Special Construction Techniques.

In the case of the pipeline crossing of the San Andreas Fault zone, design considerations ultimately resulted in a proposed reroute of the originally proposed alignment (see Figure 2-3). On the basis of studies undertaken by URS Corporation (CPL's geotechnical specialists) along with SSD, Inc. (an engineering firm specializing in pipeline fault crossing design), and Trigon-EPC (the pipeline design firm contracted by CPL), it was determined that both the initial orientation of the pipeline (i.e., that angle at which the pipeline crosses the fault) and the crossing location were unfavorable in terms of overall pipeline safety and stability considerations.

Further studies resulted in a recommendation that the pipeline be rerouted to cross the fault at an angle that would result in the pipeline being in 'tension' rather than 'compression' as it crosses over the fault zone (URS 2006a and 2006b; SSD Inc. 2006). Additionally, other specialized design features and construction techniques were recommended to meet a design life standard of 70 years in the pipeline segment crossing the San Andreas Fault. These included specific pipe material specifications, trench bedding and backfill specifications, 100 percent X-ray inspection of high quality welds, and implementation of various other quality control procedures. As detailed engineering designs are developed, these recommendations will translate into contract specifications requiring oversight and design review by the appropriate regulatory agencies. Performance standards and design review options by third-party experts contracted to Monterey and Fresno Counties have been incorporated into mitigation measures discussed in Section 3.7, Geology.

2.2 HISTORIC PERSPECTIVE

This brief subsection of the Project Description summarizes the historical and current context of the Project and is meant to provide both the public and County decision-makers with an appropriate understanding of the existing Chevron facilities at the San Ardo Field Unit (SAFU). These existing facilities, in combination with current operational levels, will serve as the environmental baseline for the proposed Project.

The San Ardo Oil Field has produced crude oil since its discovery in the 1940s. Based on cumulative production data, the San Ardo Oil Field is the 13th largest oil field in California. As of 2005, approximately 460 million barrels of oil had been produced from this field.

The Monterey County Use Permit for the SAFU was granted in 1949 and does not specify a maximum capacity or production limit. The peak crude oil production achieved at San Ardo was about 27,000 barrels per day (bpd) in 1987. Current production is considerably less than this, and ranges from about 3,000 to 3,500 bpd. On June 29, 2005, Monterey County approved an Administrative Permit (Monterey County File #PLN030660) designed to facilitate a return to peak crude oil production at San Ardo.

Various facilities including wells, steam generators, and ancillary equipment (e.g., offices, warehouses) are located at the SAFU and are used in crude oil production. Because there is minimal oil storage capacity at San Ardo, oil must be transported by tanker truck to East Bay and Central Valley refineries and distribution points on a daily basis. Trains have also been used at times to transport crude oil out of the San Ardo oilfield. It is anticipated by the Project Applicant that the proposed San Ardo to Coalinga Heated Oil Pipeline Project described in this Draft EIR would provide a proprietary, safe, and reliable means for transporting crude oil produced at the SAFU to market.

2.3 PURPOSE AND OBJECTIVES OF PROPOSED PROJECT

2.3.1 Need for the Project

The availability, consumption, and demand for petroleum resources in California are issues of concern and interest to planning and transportation agencies and industries throughout the state, as well as to consumers. Oil production from domestic sources reduces dependency on foreign production and can bolster local, state, and federal economies as a result of increased revenues associated with crude oil production, refining, and distribution.

CPL asserts that the transport of large quantities of crude oil by pipeline is safer, more environmentally sound, efficient, and cost effective than transport via tanker truck. This assertion is borne out by industry sources (Allegro Energy Consulting 2003). The operation of the proposed pipeline from San Ardo to the existing KLM pipeline near Coalinga would eliminate the need for tanker trucks currently required to transport the crude oil to its site of use and refinement. Currently, 20 trucks per day are used to transport crude oil produced at the San Ardo Oil Field. If future oil production increases to the pipeline capacity of 32,000 bpd, an increase in the number of trucks, up to the equivalent of 200 trucks per day, will be needed to transport the crude oil to market. The construction and operation of the San Ardo to Coalinga Heated Oil Pipeline would eliminate the need for transport of San Ardo crude oil by tanker trucks as a matter of course, although tanker trucks would remain an option during potential operational upsets in pipeline operation.

2.3.2 Project Objectives

The overall objective of the Applicant in proposing the Project is to safely and economically transport heavy crude oil from the San Ardo Oil Field to a terminus near Coalinga, almost 60 miles away. From this terminus, the heavy crude oil from San Ardo can be mixed with lighter oil and then pumped through an already existing pipeline to refineries in the San Francisco East Bay area.

Specific Project objectives include:

- To establish a proprietary method of transporting crude oil produced in the San Ardo Oil Field in a manner that minimizes the risk of spills or accidents;
- To provide a reliable and cost effective means of transporting oil from the San Ardo Oil Field to market in the San Francisco East Bay area;
- To reduce the volume of truck traffic between the San Ardo Oil Field and the Central Valley;
- To provide for transportation of San Ardo crude oil over an approximate 30-year period;
- To minimize impacts to the surrounding environment by reducing air emissions from diesel fuel consumption and engine exhaust, as well as by avoiding, to the extent possible, impacts to sensitive natural resources; and

- To operate a remotely controlled system that would allow for operational flexibility over a wide range of environmental and climatic conditions and process parameters.

2.4 PROPOSED FACILITIES

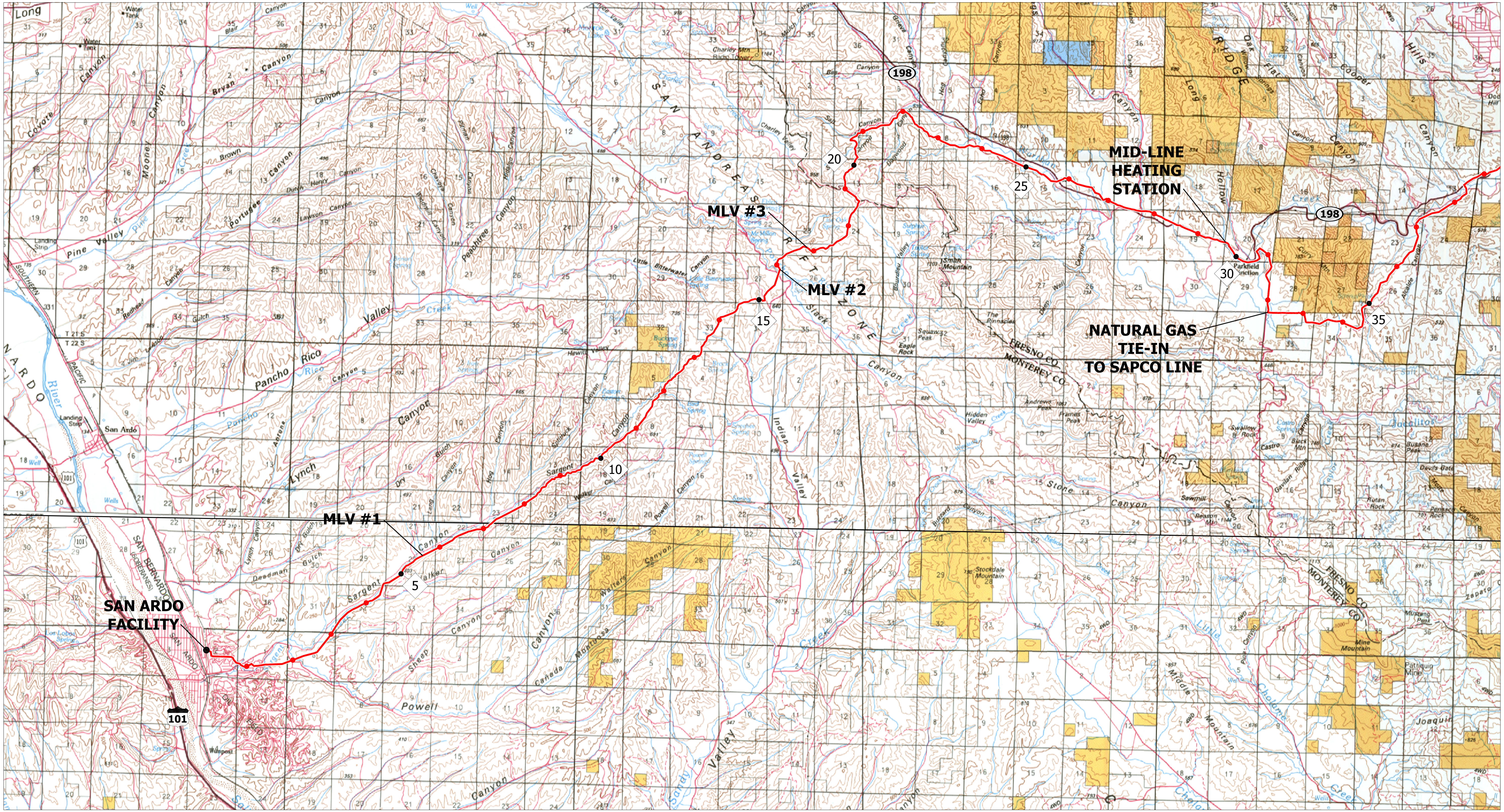
2.4.1 Pipeline Alignment

The San Ardo to Coalinga Heated Oil Pipeline would comprise the construction and operation of 57-plus miles of a buried pipeline, with above-ground operations, maintenance, and monitoring facilities. The pipeline route would begin at milepost (MP) 0.0 at the San Ardo Pipeline Facility located in the San Ardo Oil Field near the Town of San Ardo in Monterey County, California. The pipeline route traverses through the coastal range to a tie-in at the proposed KLM Pipeline Facility southeast of the City of Coalinga, California, about 1.7 miles east of I-5 in Fresno County (MP 57.7). The pipeline would be designed to transport between 4,000 and 32,000 bpd of heavy crude oil produced in the San Ardo Oil Field.

As shown on Figures 2-4a and 2-4b, Project Route Map, the proposed pipeline route starts in the San Ardo Oil Field, heads east for 2.5 miles, then veers to the northeast and follows Sargent Canyon for 8 miles. Past Sargent Canyon it continues northeast until it crosses Slack Canyon perpendicularly. At MP 16, the pipeline route travels northeast for one mile and then follows north-northeast trending ridgelines for two miles before crossing the Monterey-Fresno County line at MP 19. The pipeline route then travels northeast along Salt Canyon and up Dogwood Canyon for approximately 2 miles. From MP 22, the pipeline route parallels State Route (SR) 198 for 8.5 miles until MP 30.5. The pipeline route then diverges from SR 198 for about 6 miles until MP 36.8, where it again parallels SR 198 for about 4 miles. It then heads almost due east to Alpine Avenue where it follows Alpine Avenue to SR 33. It parallels SR 33 until MP 48.6. From MP 48.6, the route trends east-northeast, crossing I-5 about 1.7 miles from the terminus at MP 57.7 where the proposed above-ground facilities for the KLM tie-in would be located.

2.4.2 Above-Ground Facilities

Three main above-ground facilities are proposed by CPL in conjunction with the Project. These would include above-ground facilities at the San Ardo Oil Field (western terminus) and the KLM tie-in (eastern terminus), as well as the Mid-Line Heating Station located just north of SR 198 near the middle of the alignment at MP 29.6 in



N

0 2 miles

SCALE: 1" = 2 miles

- Pipeline Alignment

35 - Mile Posts (MP)

- BLM Land

- Private Land

- State Land

NOTE:
MLV = Mainline Valve

Figure 2-4a
Project Route Map (Map 1 of 2)

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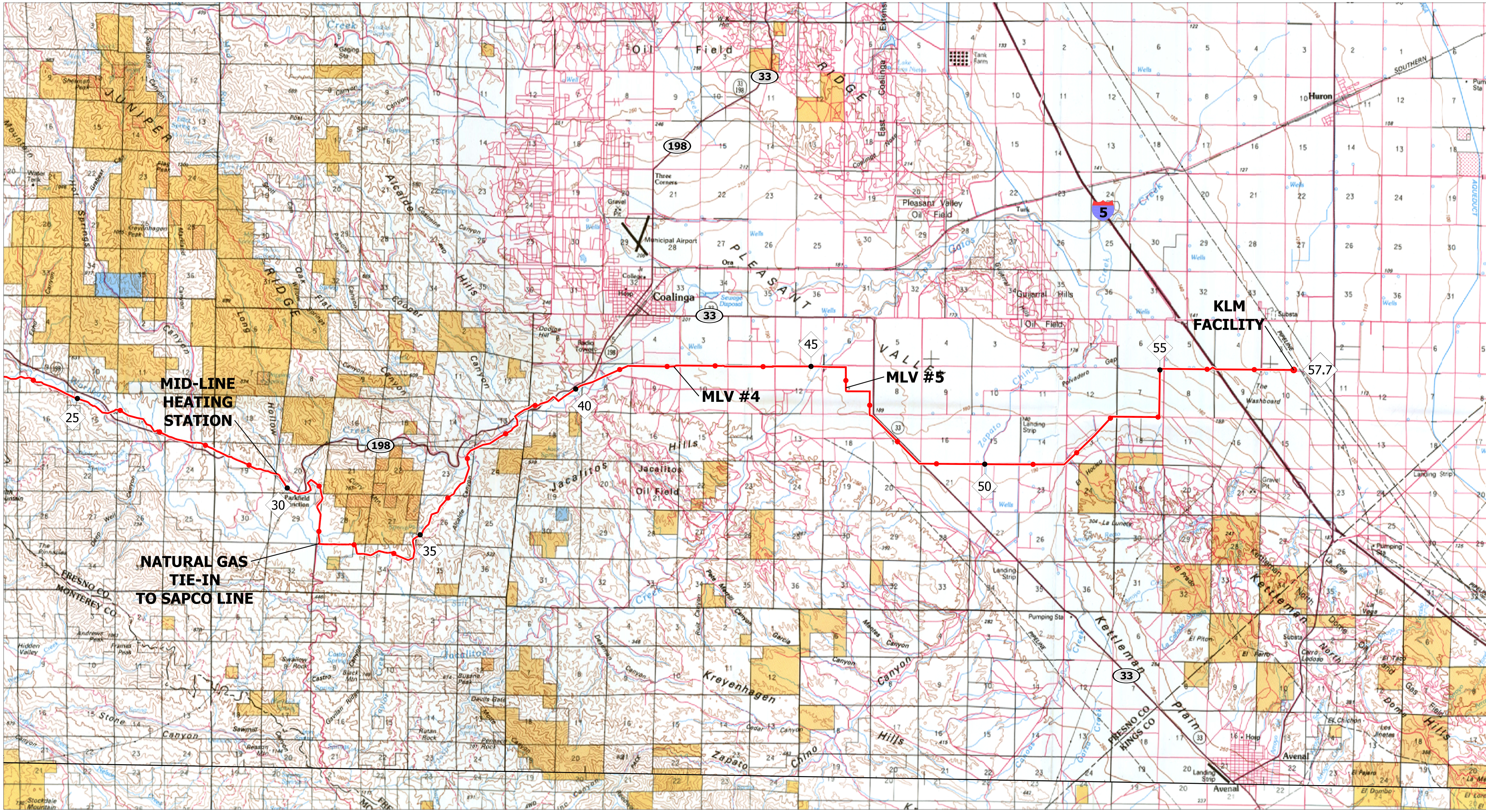

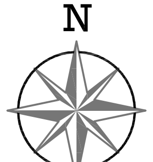

0 2 miles

SCALE: 1" = 2 miles

- Pipeline Alignment

35 - Mile Posts (MP)

- BLM Land

- Private Land

- State Land

NOTE:
MLV = Mainline Valve

Figure 2-4b
Project Route Map (Map 2 of 2)
CHEVRON
SAN ARDO TO COALINGA
HEATED OIL PIPELINE

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Fresno County. These proposed facilities are described in some detail in the following subsections. The Project would also include five above-ground mainline valve stations, described in more detail below, at strategic locations along the pipeline. Additionally, a small above-ground facility would be located at a tie-in point on the 16-inch diameter SAPCO Pipeline for the natural gas line that would supply fuel to the Mid-Line Heating Station (see Section 2.4.3, Natural Gas Supply Line Facilities). The SAPCO connection facility would be located at an existing above-ground valve station on the SAPCO line about 2.6 miles southeast of the Mid-Line Heater Station. The SAPCO valve station/tie-in facility would be located at about MP 32.2 of the proposed route alignment.

2.4.2.1 San Ardo Pipeline Facility

The San Ardo Pipeline Facility would include two new oil storage tanks (with 83,192 barrels of combined storage capacity) and various other types of equipment within a fenced, 6-acre footprint located at the San Ardo Oil Field. Electrical service to the site would be provided by PG&E; natural gas and water would be provided through existing oil field facilities. Figure 2-5, San Ardo Facility Site Layout, provides a not-to-scale schematic of the proposed facility and provides dimensions and photographs of the equipment to be installed at the facility. The facility would include the following components:

- Tank No. 1 – 37,244-barrel, light crude oil storage tank with mixers, floating roof, concrete apron, and cathodic protection;
- Tank No. 2 – 45,948-barrel, insulated heavy crude oil storage tank with mixers, floating roof, concrete apron, and cathodic protection;
- Control meter skid;
- Four charge pumps;
- Three shipping pumps;
- 10-inch pig launcher/receiver; and
- Natural gas-fired oil heater;
- Sump tank and sump pump; and
- Control building.

The specific use and purpose of these components, as well as components of the other above-ground facilities, are described in Table 2-1, Above-Ground Facilities Equipment for the Chevron San Ardo to Coalinga Heated Oil Pipeline.

TABLE 2-1
ABOVE-GROUND FACILITIES EQUIPMENT FOR THE
CHEVRON SAN ARDO TO COALINGA HEATED OIL PIPELINE

Equipment Type (Quantity)	Use and Purpose	Schematic Location[1]
SAN ARDO FACILITY EQUIPMENT		
Tanks with Mixers (2)	Tank No. 1 (81' diameter x 48' high, maximum capacity 37,244 bbl) stores light crude needed to displace crude oil in the pipeline during a shutdown. Tank No. 2 (90' diameter x 48' high, maximum capacity 45,948 bbl) receives heavy crude from production in preparation to ship down the pipeline. Mixers maintain uniformity in temperature of Tank #2 and minimize settlement of solids and water entrapped in the oil for both tanks.	SW side of station
Control Meter Skid (1)	Checks pipeline flow balance. Required for leak detection.	SE side of station
Charge Pumps (4)	Draw heavy crude from Tank No. 2 and pump it through the meter skid. Pumps re-circulate back to Tank No. 2 when the pipeline is shutdown for an extended time period. One charge pump used to flush out station inlet piping during shutdowns.	East side of station
Shipping Pumps (3)	Transport the heavy crude from San Ardo to KLM. Also pump the light crude during displacement operations.	East side of station
Pig Launcher (1)	Used to load or unload tools (pigs) for cleaning, inspecting and maintaining the pipeline.	East side of station
Heater (1)	Used to heat crude up in advance of flowing down the pipeline. Crude must be heated to maintain proper flow characteristics.	East side of station
Sump Tank (1)	Collects any oil discharged during maintenance operations.	East side of station
Sump Pump (1)	Used to clean out the drain tank.	East side of station
Control Building (1)	Houses Programmable Logic Controller (PLC), electrical, and communications equipment.	East side of station
MID-LINE HEATER STATION EQUIPMENT		
Heater (1)	Reheats the crude already in the San Ardo pipeline to maintain temperature needed for proper flow characteristics.	Center of station
Recirculating Pumps (2, 15 horsepower [hp] each)	Pump used for injecting a slip stream of crude from the main line into the heater. Slip stream of heated crude injected back into mainline to maintain a steady discharge temperature. One spare backup pump will be installed.	SE side of station
Sump Tanks (2)	Collects any oil discharged during maintenance operations	Center of station
Sump Pumps (2)	One pump used to one to life fluid from tank and the other used to inject the fluid back into the mainline.	Center of station

Equipment Type (Quantity)	Use and Purpose	Schematic Location[1]
Control Building (1)	Houses PLC, electrical, and communications equipment.	Northwest area of station
KLM FACILITY EQUIPMENT		
Tank with Mixers (1)	Tank No. 3 (103' diameter x 56' high, maximum capacity 71,375 bbl) receives heavy crude from San Ardo in advance of shipment down the KLM pipeline. Tank No. 3 also serves as surge capacity for storing San Ardo Crude in the event the KLM line is shutdown. Mixers maintain uniformity in temperature minimize settlement of solids and water entrapped in the oil.	Center of station
Inline Static Mixer (1)	Ensure uniformity in blending San Ardo Crude with crude in the KLM line.	Not shown (this is on the KLM line)
Control/ Custody Meter Skid (1)	Checks pipeline flow balance. Required for leak detection. Used for custody transfer of San Ardo crude into the KLM pipeline.	North side of station
Charge Pumps (3)	Draw heavy crude from Tank No. 3 and pump it through the meter skid.	NE corner
Shipping Pumps (3)	Inject heavy crude oil into the KLM pipeline. Also pump the light crude to San Ardo during the systems start up process.	North side of station
Pig Receiver (1)	Used to load or unload tools (pigs) for cleaning, inspecting, and maintaining the pipeline.	NW corner
Heater (1)	Used to heat crude up in advance of transfer into KLM pipeline. Crude must be heated to maintain proper flow characteristics.	NE corner
Heater Recirculation Pump (1)	Pump dedicated to re-circulating heated oil into tank (30 hp).	NE corner
Drain Tank (1)	Collects any oil discharged during maintenance operations.	North side of station
Drain Pump (1)	Used to clean out the drain tank.	North side of station
Control Building (1)	Houses PLCs, electrical, and communications equipment.	North side of station

Source: CPL, 2006

[1] Please see Figures 2-5, 2-6, and 2-7 for specific site layout and component location information.

2.4.2.2 Mid-Line Heating Station

As noted in Section 2.1.2, Oil Characterization and Heating, the Mid-Line Heating Station would be located at MP 29.6 (see Figure 2-4b) and fueled by natural gas brought to the site by a separate 2-inch pipeline originating from a SAPCO line valve station located approximately 2.6 miles southeast of the Mid-Line Heater Station (see discussion below in Section 2.4.3, Natural Gas Supply Line Facilities).

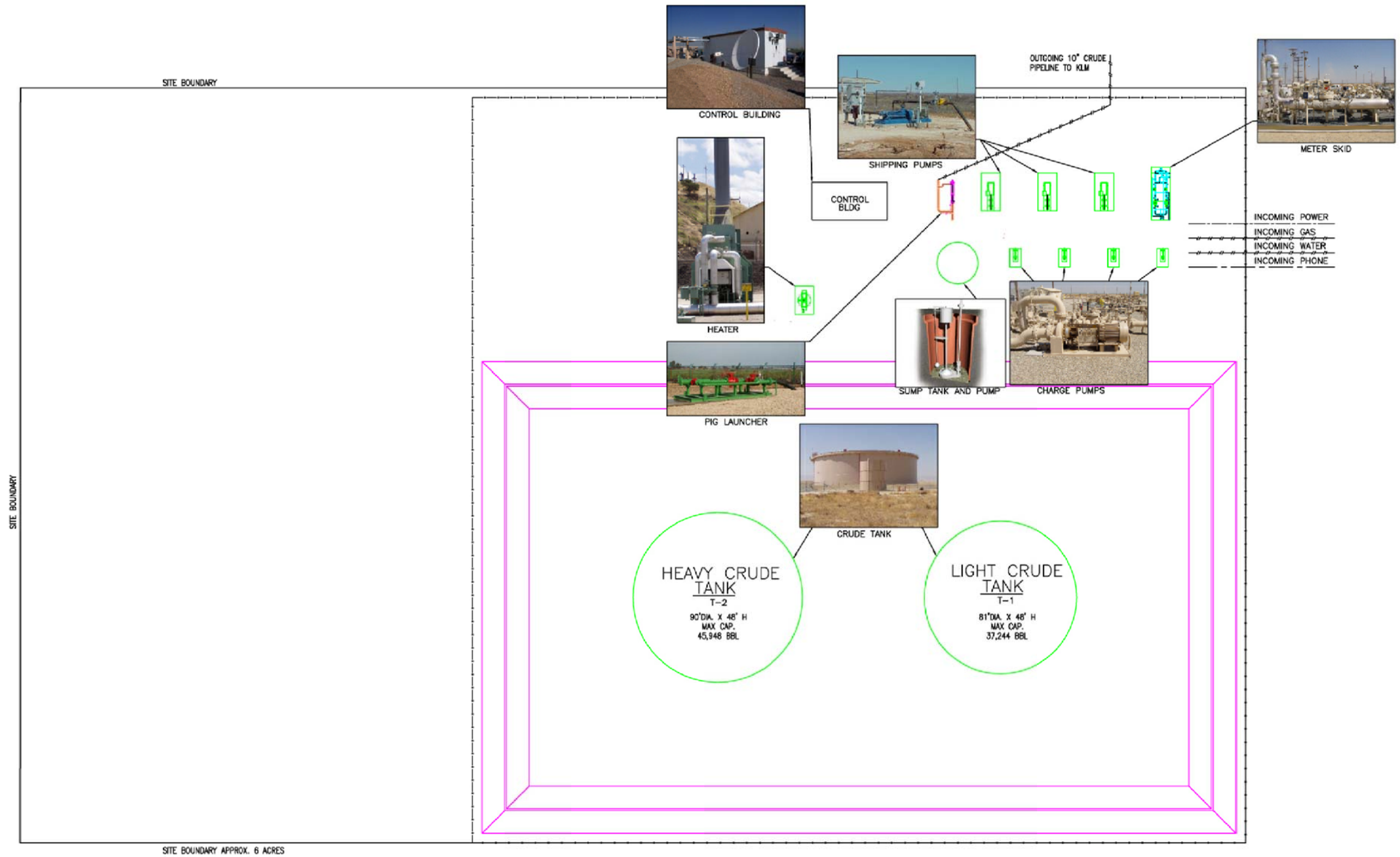
The crude oil heater installed at this site would reheat the oil in the line to approximately 180°F. Other components at this station would include two re-circulating pumps, and a control building in a fenced half-acre (approximately 117 ft x 186 ft footprint). The use and purpose of these components, as well as components of the other above-ground facilities, are described in Table 2-1. Figure 2-6, Mid-Line Heating Station Site Layout, provides a not-to-scale schematic of the proposed facility, including photographs of the equipment to be installed at the Heating Station.

2.4.2.3 KLM Pipeline Facility

The proposed KLM Facility would be located at MP 57.7 and would include equipment related to mixing the heavy crude with lighter oil, temporary storage, and transfer of the San Ardo crude oil into the existing KLM Pipeline. These components would be included within a fenced 6-acre footprint. Figure 2-7, KLM Pipeline Facility Site Layout, provides a not-to-scale schematic of the proposed facility.

Because of the high viscosity of the San Ardo crude oil, blending of lighter oil with the heavy San Ardo crude would be required before introduction into the KLM pipeline. The most likely source of light oil to be blended with the heavy San Ardo oil is a waxy light-heavy blend from the Elk Hills Oil Field; this Elk Hills oil is currently transported by the KLM pipeline. The KLM Pipeline Facility would include the following components:

- Tank No. 3 – 71,375-barrel, insulated heavy crude oil storage tank with mixers;
- Inline Static Mixer for blending the San Ardo crude with the lighter crude oil currently being shipped in the KLM pipeline;
- Control/custody meter skid;
- Three charge pumps;
- Three shipping pumps;
- 10-inch pig receiver;
- Natural gas-fired heater;
- Heater Recirculation Pump;
- Drain Tank;



NOTES:

1) EACH TANK WILL HAVE TWO INTERNAL MIXERS. (ONE A FULL SPARE OF THE OTHER)

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Figure 2-5
San Ardo Pipeline Facility
Site Layout

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NOTES:

1) PROPERTY OWNER'S EXISTING 1½" WATER LINE WILL BE RELOCATED DURING CONSTRUCTION. THERE IS NO PERMANENT WATER CONNECTION AT THIS SITE, AS SUPPLY IS NOT RELIABLE.

Figure 2-6
Mid-Line Heating Station
Site Layout

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HEATED OIL PIPELINE

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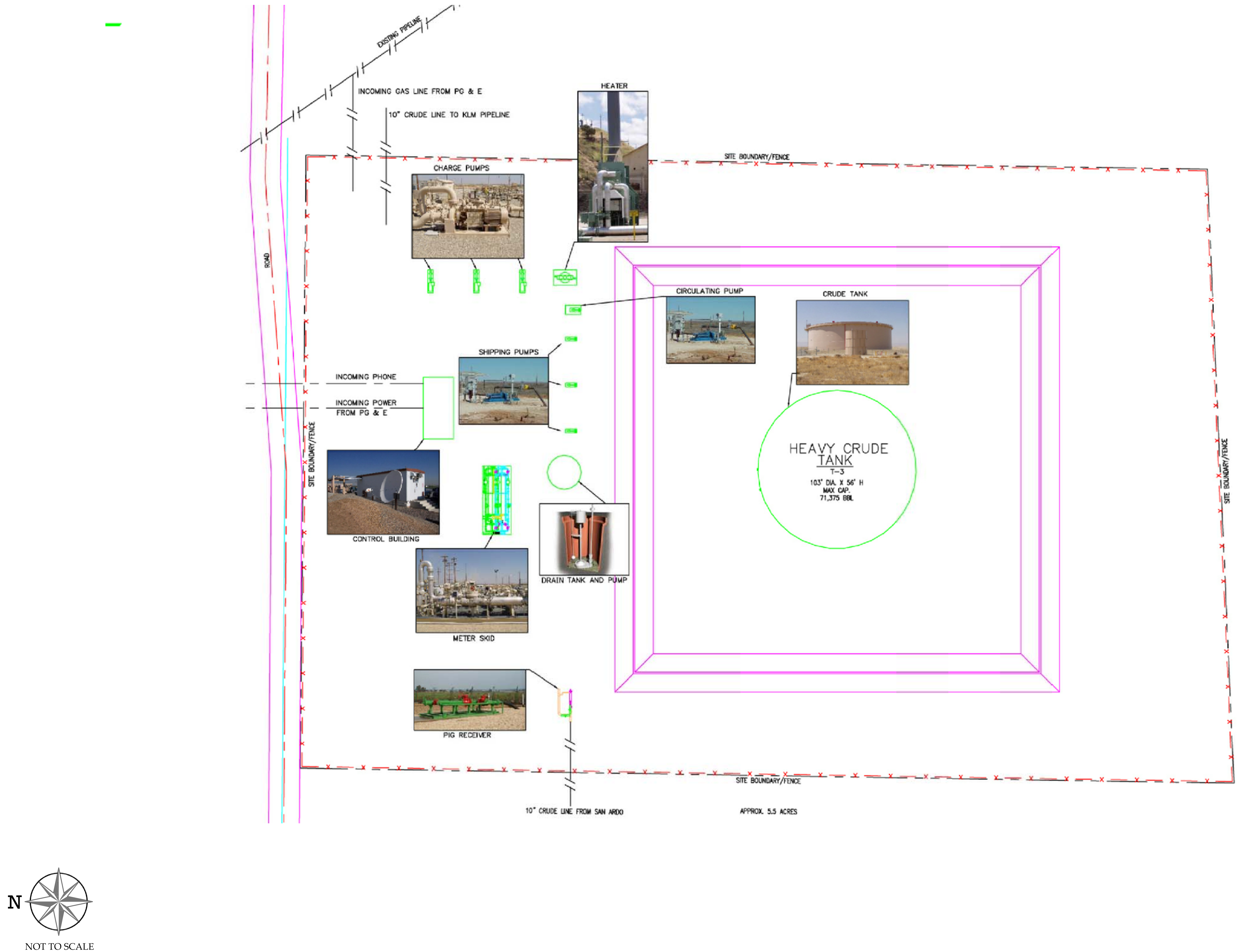

Figure 2-7
KLM Pipeline Facility
Site Layout

CHEVRON
SAN ARDO TO COALINGA
HEATED OIL PIPELINE

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- Drain Pump; and
- Control building.

The use and purpose of these components, as well as components of the other above-ground facilities, are described in Table 2-1.

2.4.2.4 Mainline Valves and Valve Stations

Flow shutoff valves (also known as mainline valves) would be located at MP 0.0 within the San Ardo Pipeline Facility site and at MP 57.7 within the KLM Pipeline Facility site, as well as at the Mid-Line Heating Station (MP 29.6). Additionally, stand-alone valve stations would be sited at other key locations along the pipeline. CPL's general approach to valve spacing is to install one valve for approximately every 10 miles of pipeline, except in sensitive areas such as on either side of the San Andreas Fault, where closer spacing is planned. Valves are placed to work with topography to control flow in the event of a pipeline accident or breach.

Current plans call for stand-alone valve stations at about MPs 6.6, 15.9, 16.9, 42.1, and 46.2. Mainline valves located at MPs 6.6, 42.1, and 46.2 are manual valves and be manually controlled by on-the-ground field operators, rather than by CPL's control center in Houston, Texas.

The valves at MPs 15.9 and 16.9 are the stations attendant to (on either side of) the San Andreas Fault. These valves would be automated, meaning they could be opened and closed without a field operator at the valve site location. The automated valves would open and close when sent a signal from Chevron's pipeline control center in Houston, Texas, known as the Supervisory Control and Data Acquisition (SCADA) system. A more detailed description of SCADA is provided in Section 2.7, Operation, Maintenance, and Safety Controls.

The signal to open or close valves would be generated manually by a pipeline controller monitoring the pipeline through the SCADA system. Controller action would be dictated by abnormal operating conditions, which would be identified through pipeline instrumentation that would bring temperature, pressure, and flow data along the entire length of the pipeline back to the SCADA control center in Houston. Information would be relayed from the pipeline sensors through field computers known as programmable logic controllers, or PLCs, linked by satellite to the SCADA system. The field data would be automatically updated two to three times a minute, thus insuring almost instantaneous monitoring of pipeline conditions. Should the pressure in the pipeline change quickly, or should other conditions outside normal operating conditions arise, an alarm would be triggered in SCADA and the controller on duty would make a determination on shutting down the pipeline (stopping all pumps along the pipeline), closing the automated block valves at the pump stations (and possibly along the entire pipeline), and notifying local operations personnel. The SCADA controller would work closely with field operations personnel to verify issues, investigate abnormal occurrences, and help isolate a pipeline problem, as needed, through operation of the manual block valves along the pipeline (located at MP 6.6, MP 42.1, and MP 46.2).

Each independent valve station would be contained within a 20-foot by 20-foot area surrounded by a chain-link fence with a locked gate and would be graveled for weed abatement. Figure 2-8, Typical Mainline Valve Site, is a photograph of one of CPL's existing valve stations and is representative of the valve stations that would be required along the pipeline route.

2.4.3 Natural Gas Supply Line Facilities

The natural gas supply line for the Mid-Line Heating Station would be brought to the Mid-Line site through a separate 2-inch steel pipeline. The natural gas would be provided through a connection to the SAPCO 16-inch natural gas pipeline at MP 32.2, about 2.6 miles southeast of the Mid-Line Heating Station. The location of this tie-in is shown on Figures 2-4a and 2-4b. At this point, the proposed Project right-of-way converges into a parallel alignment with the SAPCO line for the next 12 miles.

The gas tie-in would be located within an existing 10-foot by 30-foot SAPCO line valve station. The existing valve station is currently graveled for weed abatement purposes and surrounded by a chain link fence; these features would be maintained after the tie-in is constructed. The current station footprint would be expanded to a 20-foot by 30-foot area to accommodate the 2-inch pipeline tie-in equipment which would include a meter to measure gas usage.

From the SAPCO tie-in point, the 2-inch natural gas supply pipeline would be buried in the same trench as the 10.75-inch Chevron San Ardo to Coalinga Heated Crude Oil Pipeline, with a minimum 2-foot separation between the two lines. The natural gas supply line would terminate at the Mid-Line Heating Station.

SOURCE: CPL (2006)
PHOTOGRAPH DATE: 05-18-06

Figure 2-8
Typical Mainline Valve Station

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2.4.4 Other Utilities

Electric power would be provided by Pacific Gas and Electric Company (PG&E) at all three of the above-ground facilities (San Ardo Pipeline Facility, Mid-Line Heating Station, and KLM Pipeline Facility). Fixed station lighting would be installed at all three above-ground facilities once they become operational.

The primary means of communication for the SCADA system would be by satellite. A more detailed description of SCADA is provided in Section 2.7, Operation, Maintenance, and Safety Controls.

Natural gas would be supplied through existing CUSA oil field facilities at the San Ardo Pipeline Facility, through the 2-inch pipeline connection to the SAPCO line at the Mid-Line Heating Station (described above in Section 2.4.3), and from PG&E at the KLM Pipeline Facility.

No permanent standby generators are planned at the three above-ground facilities. CPL would plan to bring portable generators to the facilities on an as-needed basis should standby power be required during the operating life of the pipeline.

2.4.5 Water Supply and Usage

Water would be needed for several different aspects of the Project. During construction, water would be required for dust control and to obtain appropriate compaction of soil placed back into the pipeline excavation areas. Once the pipeline has been installed, water would be needed for the initial hydrostatic testing; potential routine hydrostatic testing during the operational life of the pipeline is unlikely (smart pigs would be used instead), but could, under certain circumstances, be needed and would require additional water. After its useful life, the pipeline would be decommissioned in place or converted to another use. Thus, very little water would be required for decommissioning (e.g., for concrete used to plug certain segments or the endpoints of the pipeline).

Table 2-2, Water Demand (Sources and Disposition**),** shows the anticipated water use and water sources for each component of the Project. A total of about 123 acre-feet (AF) of water is anticipated to be needed during construction of the pipeline for hydrostatic pressure testing of the pipeline and the tanks at the KLM and San Ardo facilities, fire suppression water storage, dust control, and revegetation.

TABLE 2-2
WATER DEMAND (SOURCES AND DISPOSITION) DURING CONSTRUCTION

Use	Volume (AF)	Source (see notes)	Disposition
HYDROTESTING			
Pipeline	4.0	1, 2, 3, 4	Return to San Ardo Production Facility, or discharged to land under WDR (except Source 1 & 2).
KLM Tank	9.2	1, 2, 3	Return to San Ardo Production Facility, or discharged to land under WDR (except Source 1 & 2).
San Ardo Tank 1	5.9	1, 2, 4	Return to San Ardo Production Facility, or discharged to land under WDR (except Source 1 & 2).
San Ardo Tank 2	4.8	1, 2, 4	Return to San Ardo Production Facility, or discharged to land under WDR (except Source 1 & 2).
OTHER			
Fire Water	0.26	3, 4	Maintained in storage unless needed for fire suppression
Dust Control	94.1	3, 4	Applied to ground
Revegetation	4.3	3, 4	Irrigation
Total During Construction	122.6	- -	- -
Operations	0.02	3, 4	Cleaning, maintenance, dust suppression

Source: CPL 2006

Notes:
AF = Acre-feet; WDR = Waste Discharge Requirement
Water Sources:
1. Untreated produced water from San Ardo Production Facility;
2. Treated produced water from San Ardo Production Facility;
3. Westlands Water District, Fresno County;
4. Rosenberg property wells, Monterey County.

During operation of the pipeline, very minimal amounts of water would be needed for activities of cleaning, maintenance, and dust suppression.

Water for the Project would be supplied from several sources. Both treated and untreated produced water (water associated with crude oil production) from the San Ardo oil field would be supplied from the production facility. Untreated produced water could be used for hydrostatic testing of the pipeline and storage tanks. Due to the high dissolved solids content of the untreated produced water (see glossary for definitions), it would not be used for fire suppression, dust control, or revegetation. Treated produced water would have most of the dissolved solids removed. CPL has obtained a "will serve" letter from Westlands Water District in Fresno County to provide water during construction. In addition, the Applicant could use groundwater from wells on the Rosenberg property along near the proposed San Ardo Pipeline Facility in Monterey County. The water from these latter two sources could be used for any Project need.

2.5 LAND REQUIREMENTS

2.5.1 Pipeline Construction and Life-of-Project Disturbances

For purposes of this Draft EIR, a 100-foot-wide maximum construction disturbance corridor along the entire length of the pipeline is assumed to be the maximum area of Project corridor impact. Figure 2-9, Typical Construction Disturbance Cross Section, illustrates CPL's typical utilization of the right-of-way corridor during construction. Table 2-3, Project-Related Disturbance Summary, presents maximum anticipated disturbance acreages associated with Project construction. Based on the 100-foot maximum construction disturbance corridor, disturbance within the corridor would total about 695 acres, of which about 225 acres would be in Monterey County and 470 acres would be in Fresno County. Other Project-related disturbances are described below.

It should be noted that CPL actually proposes to employ a fluctuating-width construction right-of-way corridor that would range from 40 feet to 100 feet wide, depending on site-specific construction techniques and individual landowner agreements. CPL's construction right-of-way disturbance estimate based on this more minimalist fluctuating-width scenario would be about 480 acres—considerably less than described above and shown on Table 2-3. However, as noted above, the larger area (695 acres) has been used for purposes of impact assessment in this document.

The 695-acre maximum disturbance corridor impact acreage does not include work areas, staging areas, and temporary use areas that would occur outside the 100-foot maximum disturbance corridor, nor does it include the above-ground facilities areas which would initially be disturbed during construction and would remain for the estimated 30-year Project life. The above-ground facilities would occupy about 12.5 acres, according to the most recent engineering drawings provided by CPL (CPL 2006).

Of this total, the San Ardo Pipeline Facility would cover 6 acres, the Mid-Line Heating Station would occupy 0.5 acres, the KLM Pipeline Facility would occupy 6 acres, and the five mainline valves (20-foot by 20-foot each) would collectively occupy less than one tenth of an acre.

TABLE 2-3
PROJECT-RELATED DISTURBANCE SUMMARY

Disturbance Type	Monterey County (Acres)	Fresno County (Acres)	Total (Acres)
100-ft. Maximum Construction Disturbance Corridor	225	470	695
Identified Work Areas Outside ROW	20	26	46
As-yet unidentified work/staging Areas Outside ROW	Est. max. = 33	Est. max. = 67	Max. = 100
Work Area Sub-Total	Est. max. = 53	Est. max. = 93	Max. = 146
Above-Ground Facilities[1]			
• San Ardo Pipeline Facility	6		
• Mid-Line Heating Station	-	0.5	
• KLM Pipeline Facility	-	6	
• Mainline Valves	< 0.1	< 0.1	
Above Ground Facilities (Life of Project) Sub-Total	6	6.5	12.5
TOTAL (including currently identified work/staging areas outside ROW)	**251**	**502.5**	**753.5**
TOTAL (including as-yet unidentified work/staging areas)	**Est. max. = 284**	**Est. max. = 569.5**	**Est. max. =853.5**

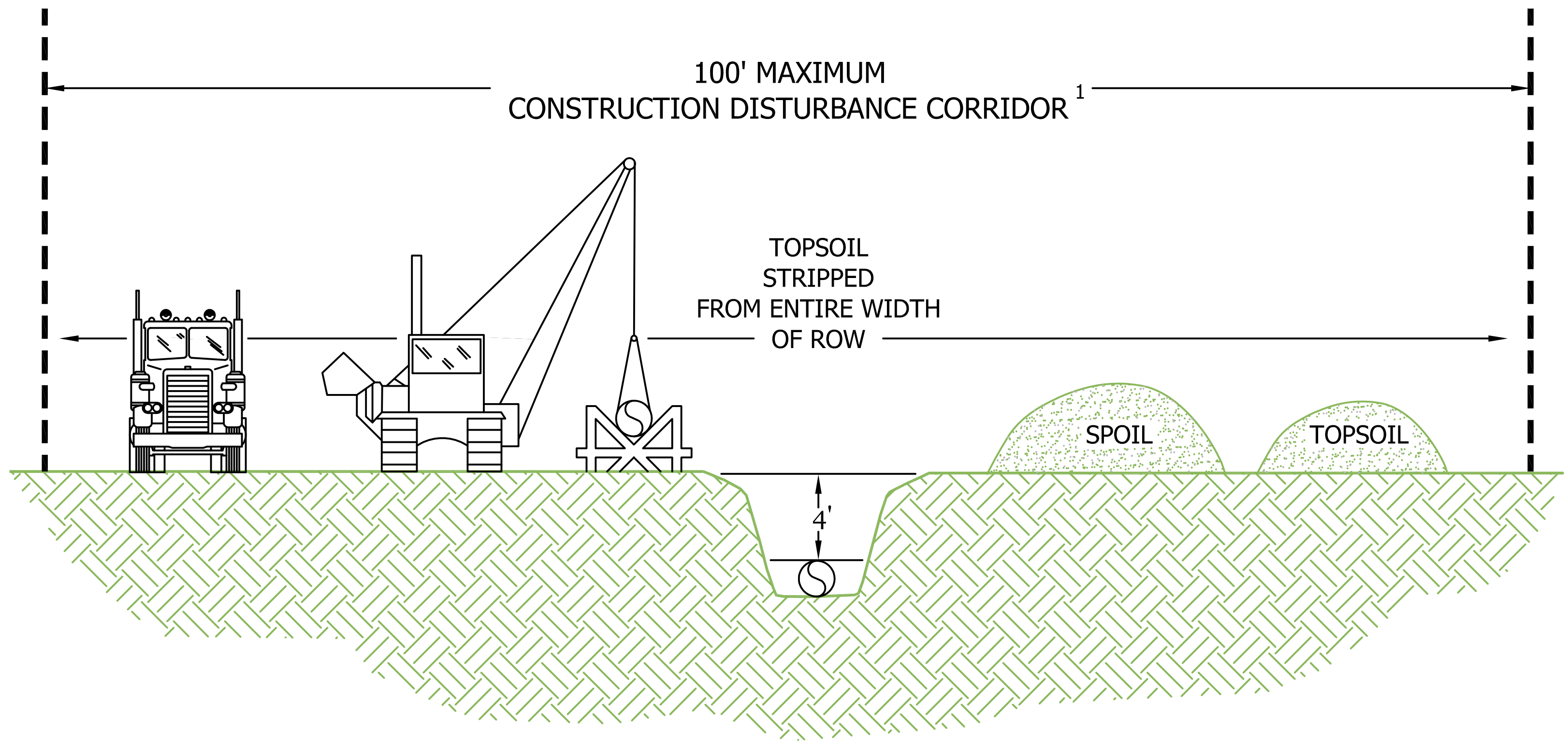
Notes:

[1] Above-Ground Facilities disturbances initially would be disturbed during construction. Unlike other construction disturbance, these areas would be impacted throughout the operating life of the Pipeline.

Source:

URS, 2007

CPL would need temporary extra workspaces that would be required for staging areas and construction at wetlands, waterbodies, roads, and in areas of steep slopes and rugged terrain. The approximate locations and sizes of temporary extra workspaces identified by CPL are shown on large format (2 ft x 3 ft) route alignment sheets prepared at a scale of 1-inch equals 500 feet ('Revision H', Trigon-EPC 2007). These



SOURCE: Washington State Department of Ecology, Northwest Pipeline Capacity Replacement Project (2005)

Figure 2-9
Typical Construction Disturbance Cross-Section

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NOTE:
1. Actual right-of-way easements range from 40 to 100 feet in width; construction disturbance will not exceed easement width specified in landowner agreements.

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detailed route alignment sets are available for public review at the Monterey and Fresno County Planning Departments (refer to Section 1.1.3, Application and Technical Documents Availability, for information on accessing technical documents). The Applicant has noted that additional staging areas, workspaces, and soil storage areas beyond those shown on the most recent ('Revision H') alignment sheets will likely be required during the anticipated 10- to 15-month construction period. These additional work spaces are anticipated to require a maximum of 100 acres. Thus, construction workspaces and soil/spoil disposal areas could impact about 146 acres.

In summary, the overall temporary construction period disturbance acreage would include the permanent facilities acreage of 12.5 acres, a maximum of 146 acres of workspace outside of the 100-foot-wide maximum construction disturbance corridor, and 695 acres within the 100-foot maximum construction disturbance corridor, for a total maximum construction disturbance acreage of about 853.5 acres. The total life-of-Project disturbances would include 12.5 acres and would be split almost evenly between the two Counties.

CPL reports that they would avoid sensitive resources to the extent practicable when siting work areas and would require their contractors to do the same when siting soil disposal areas. Because these areas would not be identified until detailed design of the Project is complete, mitigation measures in Chapter 3 include survey and clearance procedures for ensuring adequate protection and/or mitigation of sensitive resources (e.g., wetlands, sensitive habitats, cultural resources). All work areas located outside of the original biological and cultural resources survey areas would be surveyed prior to any construction disturbance, as discussed in Section 3.5, Biological Resources and 3.6, Cultural Resources. On-site resource monitors would implement standard clearance procedures prior to any ground disturbance. Oversight and approval, employing a standard checklist designed for this purpose by a construction supervisor, would complete the clearance procedure loop.

2.5.2 Natural Gas Supply Line Facilities

As described in Section 2.4.3, a 2.6-mile natural gas supply pipeline would extend from the SAPCO tie-in point at about MP 32.2 (Figures 2-4a and 2-4b) to the Mid-Line Heating Station at MP 29.6 and would be located in the same trench as the San Ardo to Coalinga Heated Oil Pipeline. Thus, no additional area would be impacted by the natural gas supply line to the Mid-Line Heating Station, although the footprint of an existing SAPCO line valve station would increase slightly (from 10 x 30 ft to 20 x 30 ft).

2.5.3 Possible Soil Disposal Areas

In certain areas there is the potential, particularly where the right-of-way traverses steep and/or unstable slopes, that more soil would be removed from trenching activities than could be replaced as backfill once pipeline installation in the trench was complete. As noted above in Section 2.5.1, soil disposal areas would likely not be sized and sited until such time as final pipeline design is complete. Contractors and construction supervisors responsible for disposal of excess material would be required to supply proof of landowner permission for either on- or off-site disposal and such areas would be cleared by environmental monitors as discussed above and more specifically in Chapter 3 mitigation measures.

2.5.4 Construction Access

CPL proposes to obtain access to construction areas from existing roads and from within the construction corridor itself. Actual use widths would vary, although the entire 100-foot maximum construction disturbance corridor could be used to allow adequate access for equipment where allowed by landowner agreements. Where easement agreements are less than 100 feet, construction would be limited to the area specified in individual agreements. CPL intends to obtain access to the construction corridor from the nearest state, county, or private roads along the entire length of the pipeline route.

Construction traffic would be limited to the transportation of workers and the delivery of equipment. CPL does not propose to build any new access roads during Project construction or operation.

Improvement of existing access roads could be necessary, including widening of some narrow county and private roads to a width of 20 feet. Such improvements would be coordinated with the Public Works Departments of Monterey and Fresno Counties and encroachment permits for such work would be obtained from these County agencies. Other necessary improvements could include grading, watering, or gravel placement, work that would also be coordinated through the Counties. CPL has committed to minimizing the acreage impacts from road improvements, and states that no road improvement activities would be proposed in environmentally sensitive areas.

Following construction, the permanent easements for access would range from 10 to 50 feet, and would vary among landowners, location of pipeline facilities and maintenance activities, and operational requirements.

2.6 PIPELINE CONSTRUCTION

2.6.1 Construction Schedule, Planning, Labor Force, and Facilities

Construction would commence after securing all required approvals and permits. Current plans call for pipeline construction to commence in spring 2008. Construction is expected to require 10 to 15 months, barring weather delays or unforeseen circumstances. Seasonal restrictions and mitigation requirements could also result in a longer construction phase timeframe. Landowners and tenants adjacent to the pipeline right-of-way would be notified in advance of construction in their areas. Construction work hours would generally be from 6:00 a.m. to 7:00 p.m., six days a week, but would reflect any limitations outlined in environmental permits and county and local ordinances. Longer construction hours (potentially up to 24-hours per day), though not planned, could occur in certain specific circumstances (i.e., when HDD operations need to be completed for stability reasons; when working in a narrow right-of-way; or when performing hydrostatic testing). These longer construction hours would be temporary and occasional, if at all, according to CPL management and would be subject to applicable County permits and/or approvals. Construction in stream crossings and wetlands would be scheduled during the low-flow season (May to October) to the extent practicable.

Two construction 'spreads' would be employed during the construction of the San Ardo to Coalinga Heated Oil Pipeline. A spread can be defined as an assemblage of crews performing specific tasks (e.g., clearing, trenching, welding, etc.) concurrently in an orchestrated sequence along the length of the pipeline. Approximately 350 construction personnel would be employed on the Project during the peak construction period which would last for about half of the anticipated 10- to 15-month construction period. The amount of time each crew would spend in an area would vary with task and terrain. For example, a crew clearing in the flat lands might complete a specific pipeline segment in one day, while later requiring two days to clear a similar area in the mountains.

The construction contractor hired by CPL would be responsible for transporting workers to designated pipeline job sites in buses, vans, trucks, pick-up trucks, and welding rigs, depending on the size of each specific crew. Each morning workers would report to assigned centralized pick-up points (e.g., contractors' yards, staging areas) where adequate personal vehicle parking would be provided. It is anticipated that different crews would report to different designated drop-off and pick-up sites planned in advance of construction initiation. Advance planning would help to minimize traffic congestion at the beginning and end of each shift. Workers would board company-furnished vehicles at the site designated for their particular crew and would be transported to the appropriate work locations along the right-of-way. Likely housing for crews would be local motels or apartments.

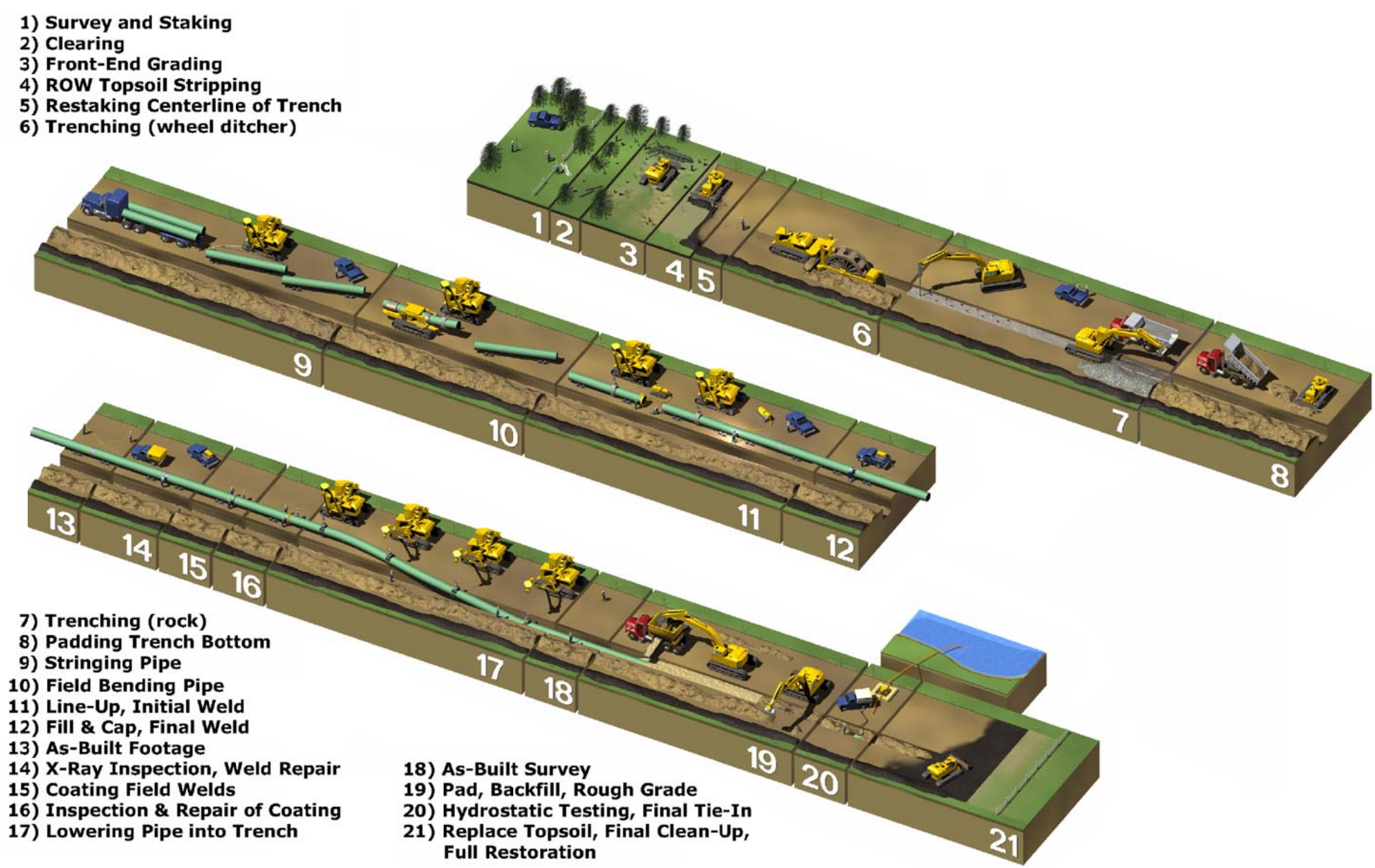
Sanitation facilities (port-a-johns) would be provided by a contract sanitation provider who would be responsible for delivering and servicing the temporary lavatories on a regular basis. Port-a-johns on wheels would be towed along by most crews to adequately accommodate the crews' sanitation needs. Trash containers would be provided for daily refuse from construction workers. Worker-generated trash and other solid wastes from the construction sites would be hauled to a sanitary landfill at appropriate intervals.

Office trailers for CPL and contractor supervisors would be tentatively located at MP 2 along Sargent Canyon Road, MP 16, MP 41, and at the KLM Pipeline Facility at the eastern terminus of the pipeline. These trailers would have above-ground sanitation boxes, also provided and serviced by the contract sanitation company.

Provision of utilities for construction offices and staging areas would vary with location along the alignment. Electric, natural gas, and phone service would be provided by local utilities at the western and eastern termini facilities. Diesel-powered 300- to 400-kilowatt generators would be provided at other construction office sites. Telephone communication amongst construction crews would be primarily via satellite phone, as cellular phone service is very limited along the length of the pipeline alignment. Internet connections would be by satellite for all construction-related needs.

2.6.2 General Pipeline Construction Procedures

This section describes the general procedures proposed by CPL for the construction of the San Ardo to Coalinga Heated Oil Pipeline facilities. Figure 2-10, Typical Pipeline Construction Sequence, shows the typical steps of cross-country pipeline construction. Standard pipeline construction is composed of specific activities that make up the linear construction sequence. These operations collectively include survey and staking of the right-of-way; clearing and grading; trenching; pipe stringing, bending, and welding; lowering the pipeline into the trench; backfilling the trench; hydrostatic testing; and cleanup, restoration, and revegetation. The procedures CPL would follow to conduct these activities are described below. In addition, CPL would use special construction



SOURCE: Washington State Department of Ecology, Northwest Pipeline Capacity Replacement Project (2005)

Figure 2-10
Typical Pipeline Construction Sequence

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techniques where warranted by site-specific conditions (see Section 2.6.3, Special Construction Techniques).

2.6.2.1 Survey and Staking

The first step of construction would involve marking the limits of the approved work area (i.e., the construction right-of-way boundaries and temporary extra workspaces) and the pipeline centerline, and flagging the location of approved access roads. Establishing the clearing limits would preserve vegetation adjacent to the right-of-way and allow for more effective erosion control. Wetland boundaries and other environmentally sensitive areas (e.g., archaeological sites) would be marked or fenced for protection. Construction personnel would be trained to recognize these markers and understand the equipment movement restrictions involved.

Underground Service Alert would be contacted and all existing underground utilities (i.e., cables, conduits, and pipelines), as well as agricultural drainages would be located and flagged to prevent accidental damage during construction.

2.6.2.2 Clearing and Grading

Prior to clearing, fences would be braced and cut, and temporary gates and fences would be installed where needed to contain livestock and/or limit public access. As noted above, landowners would be notified prior to any activity on their property.

A clearing crew would clear the work area of vegetation and obstacles (e.g., trees, logs, brush, and rocks). Trees, shrubs, and other vegetative debris either would be chipped or stored along the edge of the construction right-of-way for later use as an erosion control mulch, or would be disposed of in some another manner consistent with local regulations and landowner or agency requirements. When possible, oak trees would be avoided, but it would not be possible to avoid all oak trees within the construction right-of-way. Potential impacts to oak trees and other vegetation, along with proposed mitigation measures, are addressed in Section 3.5, Biological Resources. Section 3.7, Geology, describes potential impacts to paleontological resources along with proposed mitigation measures to minimize impacts to a less than significant level.

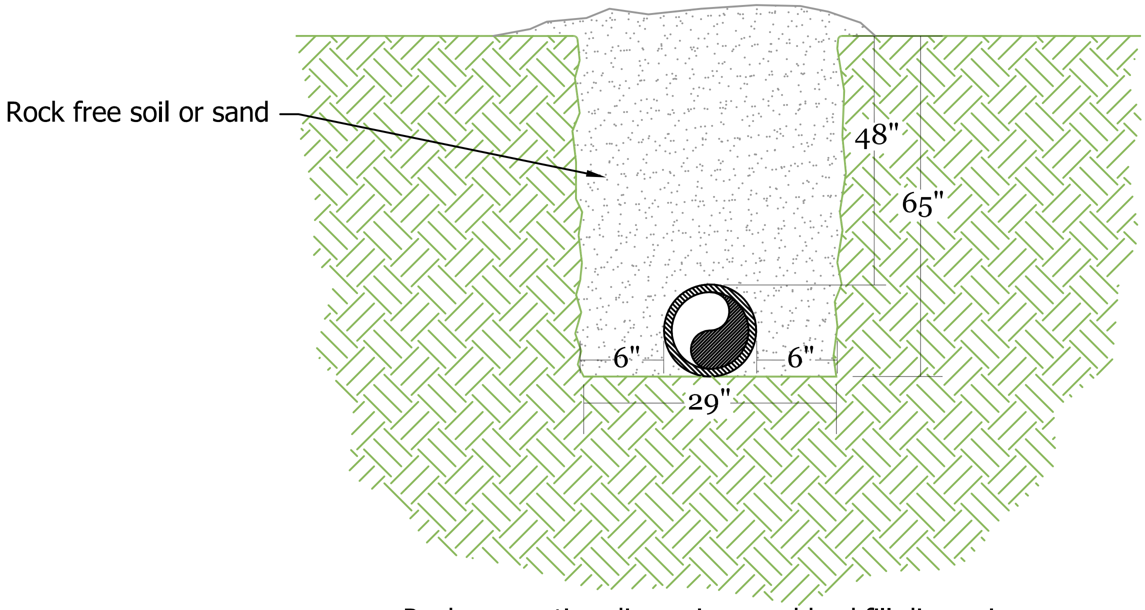
Once cleared, the right-of-way would be graded where necessary to create a reasonably level working surface to allow safe passage of equipment. Temporary erosion control measures (e.g., silt fences, straw bales) would be installed where erosion could be a factor. A minimum of 6 inches of topsoil would be stripped from the entire width of the construction disturbance corridor and stockpiled along one side of the right-of-way in areas where stripping is possible (i.e., where there are no major impediments such as bedrock outcrops). This would leave the other side of the right-of-way available for access, material transport, and pipe assembly, as depicted on Figure 2-9. Salvaged topsoil would be replaced on disturbed areas as part of the restoration and clean-up phase of construction activities.

2.6.2.3 Trenching

The trench would be excavated by rotary trenching machines, track-mounted backhoes, or other similar equipment. Figure 2-9 depicts a typical construction disturbance right-of-way with equipment working on one side of the trench and spoil and topsoil stockpiled on the non-working side of the construction right-of-way. Figure 2-11, Typical Trench Section, shows excavation dimensions and backfill dimensions for coated and insulated pipe in both normal and rocky soil conditions.

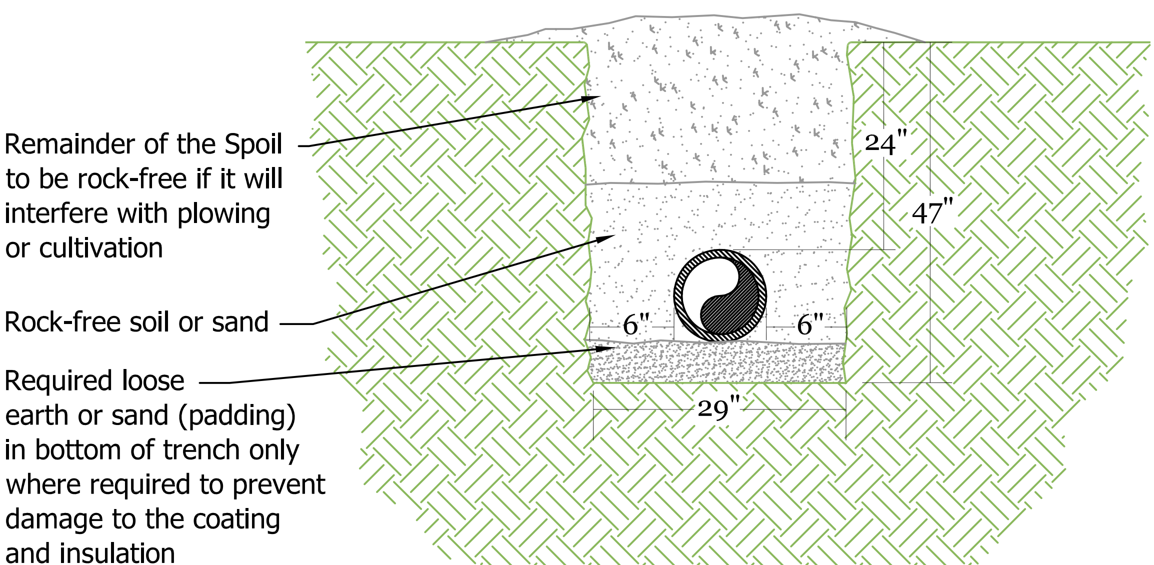
The depth and width of the trench would vary depending on the soil type and other variable factors, but at a minimum the trench would be excavated at least 12 inches wider than the diameter of the pipe at the bottom of the trench (see Figure 2-11). In typical terrain the trench would be excavated to a sufficient depth to allow 4 feet of soil cover between the top of the pipe and the final land surface after backfilling (see Figures 2-9 and 2-11). The trench would be a minimum of about 65 inches deep (to allow for 4 feet from the top of the pipe to grade) and about 29 to 60 inches wide in stable soils and rock. In sandy soils, the trench could be considerably wider because the walls could cave or slough. In very rocky terrain (as depicted in the lower illustration on Figure 2-11), backfill over the pipe could be as little as 2 feet.

In areas of special concern (e.g., road crossings, agricultural lands with tile drains, drainage/waterway crossings, etc.), the pipeline would be buried deeper; depth would be based on engineering and landowner requirements, among other factors. CPL's proposed burial depths in these areas would be: 5 feet in agricultural lands to facilitate resumption of crop productivity after construction; 10 feet at road crossings and other sites where a jack-and-bore construction method is used; and a maximum depth of 30 feet at sites where an HDD method is employed to avoid disturbance to resources or interstate highways. As discussed in the preceding subsection and shown on Figure 2-9, excavated topsoil would be stockpiled along the right-of-way on the side of the trench away from construction traffic and the pipe assembly area.



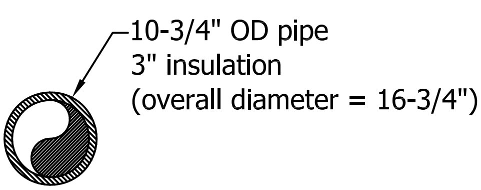
Rock excavation dimensions and backfill dimensions
for coated pipe and insulation

NORMAL EXCAVATION
NOT TO SCALE



Rock excavation dimensions and backfill dimensions
for coated pipe and insulation

ROCK EXCAVATION
NOT TO SCALE



SOURCE: Trigon EPC, Inc. (May, 2005)

Figure 2-11
Typical Trench Section

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* Dimensions shown are the minimum acceptable values and may be varied depending on specific location

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During trenching activities and prior to backfilling, escape ramps for wildlife would be installed as required by resource agencies and/or landowners to provide a means of escape for livestock, mammals, reptiles, and other wildlife that could fall into the trench.

Typically, rocks occurring within the excavated trench area would be removed by conventional equipment or other mechanical rock-trenching methods and the trench bottom would be padded with a layer of rock-free soil. In areas where conventional excavation techniques are not adequate, blasting may be necessary and is discussed in Section 2.6.3.5, Construction Using Drill-and-Blast Technique.

2.6.2.4 Pipe Stringing, Bending, and Welding

Steel pipe would be procured in 40- or 60-foot lengths (also referred to as joints), protected with an epoxy coating applied at the factory, as well as a urethane insulation. The beveled ends of the pipe sections would be left uncoated for welding. The pipe would be shipped to strategically-located temporary pipe storage yards. As needed during the pipe laying activities, the pipe would be loaded onto pipe trucks/trailers and transported to the right-of-way and placed along the excavated trench in a single, continuous line on the working side of the trench. Pipe that could not be strung directly off of the pipe trailers would be dropped off at designated sites and transported down the right-of-way with side-boom tractors.

The pipe would be delivered to the Project site in straight sections. Some bending of the pipe would be required to enable the pipeline to follow natural grade and direction changes of the right-of-way. Selected joints would be bent in the field by track-mounted hydraulic bending machines as necessary before line-up and welding. Following stringing and bending, the joints of the pipe would be placed on temporary supports adjacent to the trench for welding. Welding is a crucial phase of pipeline construction, as the overall integrity of the pipeline depends on this process. Welding would be completed by experienced welders proficient in pipeline welding; all welding would be completed in accordance with the applicable standards of the American Welding Society, American Society of Mechanical Engineers (ASME), and American Petroleum Institute (API).

Each weld (i.e., 100 percent of welds) would be inspected by quality control personnel to ensure the quality of the weld; non-destructive testing using radiographic (x-ray), or other approved non-destructive test methods also would be carried out. Defective welds would be repaired or cut out and removed; re-welding would be completed, followed by inspection as described above.

Upon approval of the welds, the previously uncoated ends of the pipe at the joints would be cleaned and epoxy coated with material compatible with the factory applied coating. The coating on the remainder of the completed pipe section would be inspected for defects and any damaged areas repaired prior to lowering the pipe into the trench. Specific engineered negative buoyancy features such as concrete coating, concrete weights, or soil anchors may be required in certain areas of the pipeline trench.

2.6.2.5 Lowering-In and Backfilling

Before lowering-in the pipeline, the trench would be cleaned of rocks and other debris that could damage the pipe or protective coating. In sloped areas of the right-of-way where movement of subsurface water could occur, trench barriers and breakers would be installed before backfilling, as necessary.

In rocky portions of the pipeline right-of-way, sand, gravel, screened soils, sandbags, or support pillows could be used to pad the bottom of the trench prior to lowering the pipe. No topsoil would be used as padding material.

After lowering the pipe into the trench, it would be backfilled with previously excavated materials using bladed equipment or backhoes. Where the previously excavated trench spoil contains rocks, the pipe would be secured prior to backfilling with a protective wrap of rock shield, or with screenings from the trench spoil. In areas where topsoil has been segregated, it would be placed on top of the backfilled material to serve as a native seed source and plant growth medium. Any excess excavated material or materials deemed unsuitable for backfill would be evenly spread over the right-of-way or disposed of in accordance with applicable regulations and landowner requirements. Following backfilling, a small crown likely would be left to account for possible future soil settling.

2.6.2.6 Hydrostatic Testing

After backfilling, the pipeline and storage tanks would be tested to ensure the system is capable of withstanding the operating pressure for which it was designed. This procedure is called hydrostatic testing and is completed by pressurizing water in the pipeline. The pipeline would be divided into sections to be tested individually, with test segments ranging from 3 to 20 miles in length. Segment length would be determined based on water availability and terrain conditions. The water for testing would be withdrawn from approved sources in compliance with all applicable federal and state regulations. Produced water (water that is associated with crude oil production) possibly could be used for hydrotesting. Additional detail on water sources for hydrostatic testing is provided in Section 2.4.5, Water Supply and Usage. Test water would contact only new pipe and no chemical would be added to the test water.

All testing would be in accordance with U.S. Department of Transportation (USDOT) and California State Fire Marshall (CSFM) specifications to verify the pipeline's integrity and to ensure its ability to withstand the maximum designed operating pressure. Any leaks detected during the testing would be repaired and that particular section of the pipeline would be retested until specifications could be met. CPL states that in their experience, any significant leaks in the system are highly unlikely during the hydrostatic testing process. If any leakage of water were to occur, CPL anticipates it could be contained within the right-of-way using sand bags or earthen dams. Nonetheless, appropriate containment plans would be in place prior to testing.

Pre-hydrotested pipe would be used for directional drilling areas (see Section 2.6.3 for discussion on special construction techniques) and would then be hydrostatically tested again after tie-in with the rest of the pipeline system.

Upon completion of hydrostatic testing on a pipe segment, the water would either be pumped to the next segment to be reused for hydrostatic testing purposes or would be discharged (with the exception of produced water, which would be recycled back to the San Ardo Oil Field production facilities). Discharged water would be directed into discharge or dewatering structures (see Figure 2-12, Typical Hydrostatic Dewatering Structure). The dewatering structures would be designed and constructed in accordance with discharge requirements from the Regional Water Quality Control Board (RWQCB). Sampling and analysis of hydrostatic test water prior to discharge through dewatering structures is discussed in Section 3.9, Hydrology and Water Quality. Untreated produced water would not be discharged through dewatering structures, but would be recycled back through the San Ardo Plant.

Once successfully tested and dried, each pipe segment would be connected to the remainder of the pipeline. Pigs and squeegees would be used to dry long pipe sections after testing is complete. Pig runs would remove all free water. For test sections where water or water vapor remaining in the pipe could cause future operating problems, the test section would be further dried using dehydrated air or other means (e.g., nitrogen).

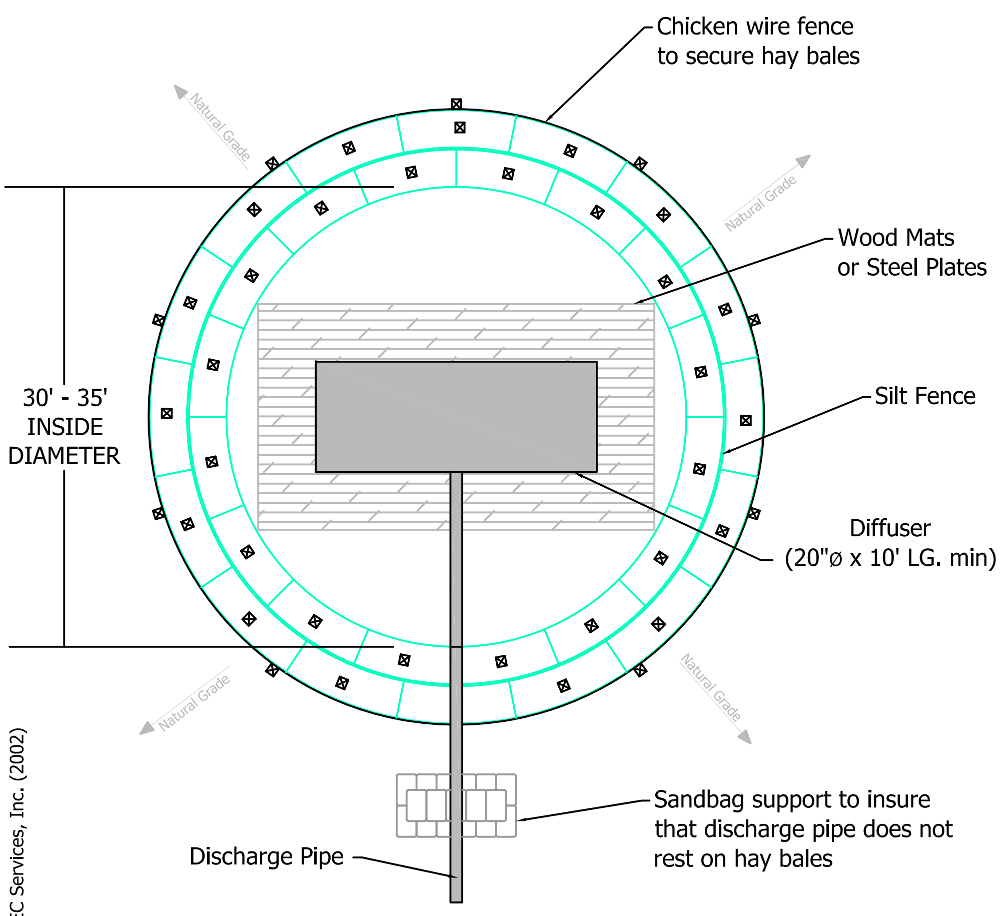
2.6.2.7 Hazardous Materials

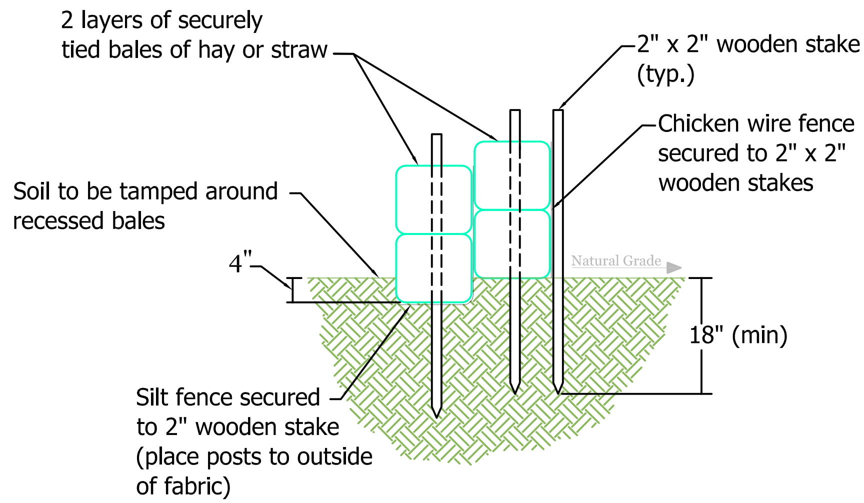
Some lube oils, fuel, and other types of hazardous materials related to pipeline construction would be required on site. Specific preventative measures and practices would be employed by CPL to reduce the likelihood of an accidental release of a hazardous or regulated liquid, and to expedite cleanup of any release that might occur during construction activities. If the use of explosives is necessary in steep and rocky terrain, the Best Practices Guideline for blasting operations developed by the Institute of Makers of Explosives (IME) would be adhered to by CPL (see Section 2.6.3.5, Construction Using Drill-and-Blast Technique).

Preventative measures would include restricting the location of fuel storage, fueling activities, and maintenance of construction equipment along the construction right-of-way. During all phases of construction, refueling and lubrication of construction equipment would occur at the staging yards or along the construction right-of-way. Fueling locations would be equipped with spill kits and secondary containment (e.g., plastic liners with sand bags underneath to form the curbs). Incompatible hazardous materials would be stored separately from one another. All hazardous materials would be stored in the original labeled containers with secondary containment until used. Equipment would be regularly checked for leakage. Adequate training for pipeline personnel, and the establishment of lines of communication and reporting would facilitate prevention, response, containment, and cleanup of spills during construction activities.

CPL has stated that the following waste minimization practices would be followed and all pipeline job sites and facilities:

- Waste would be recycled when economically feasible;
- Nonhazardous and hazardous wastes would not be mixed;
- The quantity of a hazardous material to be purchased would be limited to the minimum quantity needed for a specific use and only the quantity needed would be transported to the field for use;
- Spills and releases of hazardous materials would be prevented through careful management of the materials and personnel training;





SOURCE: SPEC Services, Inc. (2002)

NOTES:

1. Structure should be placed on a level, well-vegetated site such that water will flow away from structure and any work areas.
2. Flow rates through discharge and diffuser pipe shall be such that structure will not overflow.
3. A 30' x 30' rectangular structure may be substituted for the circular configuration shown. Other configurations may be acceptable to take advantage of terrain conditions.
4. Dimensions shown are the minimum acceptable values and may be varied depending on specific location.

Figure 2-12
Typical Hydrostatic Dewatering Structure

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- Hazardous materials handlers would be required to review and understand storage, handling, use, and disposal requirements described in the Material Safety Data Sheet (MSDS) for hazardous materials;
- Hazardous material containers would be resealed immediately after use to avoid spillage and evaporation;
- Regular inspections of storage areas would be conducted to identify damaged or leaking containers;
- Nonhazardous alternative products would be purchased and used when available;
- Preventative equipment maintenance practices would be employed to avoid potential spills and releases;
- Secondary containment would be provided for portable bulk storage fuel tanks; and
- Equipment and vehicle fueling would be performed in a manner that would prevent fuel from being spilled on the ground.

It is possible that contaminated soil would be encountered during construction through the oil field areas, on agricultural lands, and perhaps at other locations along the Project. If previously contaminated soils are encountered during construction, they would be tested to determine the level and type of contamination. If approved by the applicable agencies, contaminated soil could be used as backfill material at the site of origin. Materials found through testing to be unsuitable for backfill use would be disposed of or treated in accordance with all federal, state, and local regulations. Hazardous soils would only be transported by contractors with hazardous waste transportation licenses under hazardous waste manifest control. Workers handling any hazardous soils would be certified as specified in 29 CFR 1910.120. If contaminated soils are disposed off-site, the trucks transporting the soils would be covered with tarpaulins to minimize dust losses. Depending on the contaminant(s), dust and volatile organic compound (VOC) monitoring and documentation could be required.

2.6.2.8 Cleanup, Restoration, and Revegetation

During cleanup, construction debris, surplus materials, and temporary structures would be disposed of in accordance with applicable federal, state, and local regulations and work areas would be finish graded. Land contours would be restored to conform to and blend with adjacent areas. In agricultural areas soils compacted as a result of construction activities would be disked, and the segregated topsoil would be returned as nearly as possible to its original horizon. Private and public property, such as fences, retaining walls, gates, driveways, and roads disturbed by construction would be restored to original or better condition, consistent with individual landowner agreements. Where construction disturbances in rugged terrain included terracing or cutting to grade, topsoil would be spread over the disturbed areas. Temporary and permanent erosion control measures, including site-specific contouring, permanent slope breakers, and reseeding would be implemented. The soil erosion control measures would be in accordance with CPL's Project-specific Erosion Control Plan, Best Management Practices (BMPs), and their Restoration and Revegetation Plan.

Several mitigation measures in Section 3.5 require that reseeding be accomplished using an appropriate seed mix or containerized stock approved by the landowner or jurisdictional agency. Seedbed preparation and seeding operations would be conducted in accordance with accepted techniques for the particular area and task. On cultivated or improved lands, the ground surface would be restored to a condition agreed upon with the landowner. Restoration and revegetation in sensitive stream and wetland crossings would be completed in compliance with Mitigation Measure 3.5-2b, as well as in compliance with CPL's Restoration and Revegetation Plan.

Markers showing the location of the pipeline would be installed at line-of-sight intervals, at public road and railroad crossings, and in other locations as necessary in accordance with USDOT and the CSFM requirements. Pipeline markers would include the word "warning," "caution," or "danger"; identify the contents of the pipeline; and identify the operator and the emergency contact telephone number. Special markers providing information and guidance to aerial patrol pilots would also be installed as required in certain areas. Figure 2-13, Typical Pipeline Signage, provides photographs of representative signs to be included at appropriate locations along the right-of-way.

2.6.2.9 Construction Equipment

Table 2-4, Construction Equipment, identifies the general construction equipment typically used for some or all phases of pipeline construction.

TABLE 2-4
CONSTRUCTION EQUIPMENT

- Rubber Tired Backhoes
- Rubber Tired Hoes
- Compaction Equipment
- Grader
- Bulldozer
- 18-Wheeler tractor/stretch bed trailer (Pipe Transport)
- 35-Ton Crane
- Concrete Trucks (Equipment Foundations)
- Water Truck (Dust Control, Compaction, Dewatering)
- Horizontal Boring Rig
- Generator
- Mud Pumps
- Pickup Trucks
- Trackhoes
- Wheel Trenches
- Stringing Trucks
- Side Booms
- Bending Machines
- Tack Rigs
- Crew Buses
- All Terrain Vehicles
- Air Compressors
- Welding Trucks
- Hydro & Dewatering Pumps
- Manlifts/Scissor Lifts
- Cranes (28-60 ton)
- Beveling Machine
- X-ray Rigs
- Mud Cleaner
- Extendable All-Terrain Forklift
- Stationary Welding Machines
- Scaffolding
- Sandblaster

2.6.3 Special Construction Techniques

Special construction techniques would be required for construction across roads and highways; steep and unstable geologic terrain; fault lines; and waterbodies and sensitive habitats (e.g., wetlands and cultural resource sites). Special techniques would also be used if blasting is required. Construction techniques likely to be employed by Project construction crews are discussed below. Preliminary locations where these techniques would be employed are shown on the large format route alignment sheets (CPL 2006, Revision H). These detailed route alignment sets are available for public review at the Monterey and Fresno County Planning Departments (refer to Section 1.1.3, Application and Technical Documents Availability, for information on accessing these and other technical documents). Finalization of the construction techniques to be used at specific locations along the pipeline will be a function of final pipeline design which will be completed well in advance of the commencement of construction. A final design peer review will be completed by an expert to be retained by Monterey and Fresno Counties to ensure compliance with design-related mitigation measures included in Chapter 3 of this Draft EIR.

2.6.3.1 Roads and Highways (Jack and Bore)

Construction of the pipeline across most hard-surfaced roads in areas with adequate soil and acceptable construction conditions would be accomplished by boring under the roadbed utilizing a method termed 'jack and bore' by the construction industry. The exception to this would be the Interstate 5 (I-5) crossing which would be constructed using an HDD construction method (see subsequent Section 2.6.3.4 for a description of HDD methodology).

For jack and bore crossings, the pipeline would be buried to a depth of about 10 feet below road surfaces and would be designed to withstand anticipated external loadings. Boring requires the excavation of a pit on each side of the road, the placement of boring equipment in the slightly larger pit on the entry side, then boring of a tunnel/hole under the road having a diameter at least equal to the diameter of the pipe. Figure 2-14, Typical Jack and Bore Hard-Surfaced Road Crossing, provides a schematic representation of the under-road boring procedure.

Once the hole is bored, a prefabricated pipe section would be pushed through the borehole to the pit on the tie-in side of the crossing. Pit sizes would be at least 10 feet wide at the bottom and 20- to 24-feet wide at the top, with pit depth being at least 12 feet on the entry side and the depth of the pipeline trench tie-in on the receiving end of the crossing. For most crossings, more than one pipe section could be required; these additional sections would generally be welded to the first section of pipe in the bore pit prior to being pulled through the borehole.

CPL would complete all road crossings in accordance with road crossing permits obtained from the appropriate government entities prior to construction at each road crossing. Both Monterey and Fresno Counties require encroachment permits all work (including signage) within the County right-of-way. CalTrans encroachment permits are required for state roads and major highways. Traffic warning signs, detour signs, and other traffic control devices would be used as required by federal, state, and local regulatory bodies. There would be little or no disruption of traffic at road crossings that are bored, as CPL has committed to keeping public (county, state, and federal) roads and highways open at all times. Locations and details of paved road crossings along the San Ardo to Coalinga Heated Oil Pipeline Route are provided in Table 2.5, Road Crossings.

PHOTOGRAPH DATE: 05-18-06

Figure 2-13
Typical Pipeline Signage

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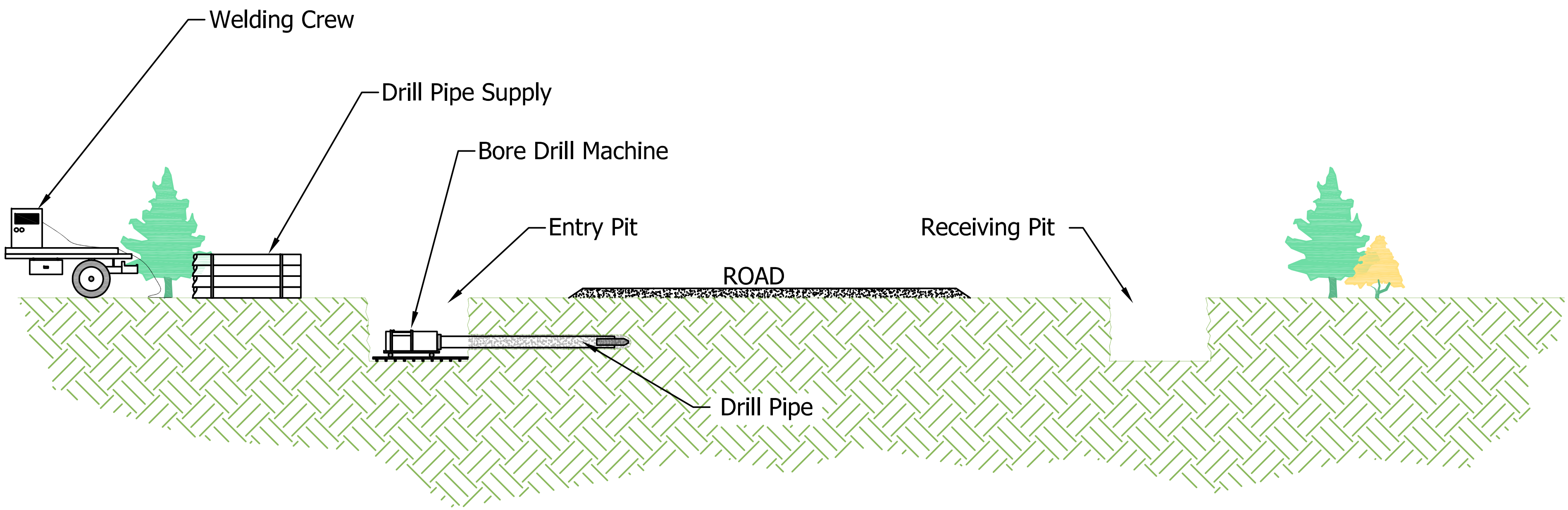

SOURCE: SPEC Services, Inc. (2002)

Figure 2-14
Typical Jack and Bore
Hard-Surfaced Road Crossing

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TABLE 2-5
ROAD CROSSINGS

Road Crossing	County	Owner Name
Sargent Canyon Road	Monterey	Monterey County Public Works, 312 E. Alisal Street, Salinas, CA 93901, 831-755-4925
Sargent Canyon Road	Monterey	Monterey County Public Works, 312 E. Alisal Street, Salinas, CA 93901, 831-755-4925
Peach Tree Road	Monterey	Monterey County Public Works, 312 E. Alisal Street, Salinas, CA 93901, 831-755-4925
Crump Lane	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
Highway 198	Fresno	CalTrans District 6, P.O. Box 12616, Fresno, CA 93778-2616 (559) 488-4082
Coalinga Mineral Springs Road	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
Crump Lane	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
Highway 198	Fresno	CalTrans District 6, P.O. Box 12616, Fresno, CA 93778-2616 (559) 488-4082
Parkfield Grade Road Section 28 and 29-21S/14E	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
Highway 198	Fresno	CalTrans District 6, P.O. Box 12616, Fresno, CA 93778-2616 (559) 488-4082
Highway 198	Fresno	CalTrans District 6, P.O. Box 12616, Fresno, CA 93778-2616 (559) 488-4082
Alcalde Road	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
Merced Road	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
San Joaquin Road	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
Highway 33	Fresno	CalTrans District 6, P.O. Box 12616, Fresno, CA 93778-2616 (559) 488-4082
Sutter Avenue	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
Glenn Avenue	Fresno	Fresno County, Department of Public Works and Planning, Maintenance and Operations Division, Attention: Mr. Bret Connors, 2220 Tulare Street, 6th Floor, Fresno, CA 93721
I-5	Fresno	CalTrans District 6, P.O. Box 12616, Fresno, CA 93778-2616 (559) 488-4082

Unpaved roads and driveways would be open-cut. The open-cut method would require establishment of detours and/or temporary closure of the road to traffic. CPL plans to keep County roads open in both directions at all times by using flagpersons and detours or steel plates bridging open trenches. If no reasonable detour is feasible, at least one lane of the road being crossed would be kept open for traffic, except during brief periods when it is essential to close the road to install the pipeline. Most open-cut crossings would be completed in one day. CPL and its contractors would comply with local road weight limits and restrictions and would keep roads free of mud and other debris that could be deposited by construction equipment. Track-driven equipment would cross paved roads on tires or equipment pads to minimize road damage. Any roadways damaged by construction activities would be repaired.

2.6.3.2 Steep and Unstable Geologic Terrain

Additional grading could be required in areas where the pipeline route crosses steep slopes. Steep sideslopes often need to be graded down to a gentler slope to accommodate pipe bending limitations. In such areas, the slopes would be cut away, and, after the pipeline is installed, reconstructed to blend with the adjacent land surface. In areas where the pipeline route crosses laterally along the side of a slope, soil from the high side of the right-of-way would be excavated and moved to the low side of the right-of-way to create a safe and level work terrace. During restoration, (i.e., after installation of the pipeline), the soil from the low side of the right-of-way would be returned to the high side, and the slope's original contours would be restored to the extent possible.

Temporary and permanent erosion control measures would be installed in all areas of steep terrain in accordance with an erosion control plan. Temporary measures could include slope breakers consisting of mounded and compacted soil or other materials (e.g., silt fence, staked straw bales, or sandbags) and/or sediment barriers such as silt fence and straw bales. Temporary measures would be installed immediately after initial disturbance and would be maintained throughout construction. Permanent measures could include trench breakers and/or permanent slope breakers and would be installed during cleanup. CPL's Project-specific Restoration and Revegetation Plan would provide detailed techniques for controlling erosion during and after construction.

CABLE AND WINCH CONSTRUCTION

In areas of very steep terrain, construction typically would be completed using cables operated by winches stationed up-slope of the work which support the construction equipment used to clear and level the right-of-way, excavate the trench and perform other operations necessary to install the pipeline. Figure 2-15, Rugged Terrain Winching Operation, illustrates this type of construction operation through a series of photos from another right-of-way construction project. The pipe would be either welded in the trench one piece at a time or welded together at the top or bottom of the slope, and then pushed or pulled into place using the same support cables that were used to support the construction equipment. Once the pipe is in the trench, trench breakers and padding material would be installed. Backfilling of the trench would be completed and the right-of-way restored.

STEEP SLOPE CONSTRUCTION CONSIDERATIONSONS

CPL is currently evaluating alternative construction methods in specific areas of steep slopes. CPL has identified three such areas along the alignment (MP 8.3 - 10.2, MP 20.6 - 21.1, and MP 22.1 - MP 22.6) where there are significant construction limitations due to topographic and geological/geotechnical constraints. The preparers of this EIR have identified other areas (see Section 3.7, Geology) where special construction measures also may be required. CPL has not yet prepared specific construction plans, but they are evaluating alternative methods to address steep and potentially unstable slopes, including methods to avoid these areas and various slope stabilization methods, such as retaining walls (e.g., soldier pile walls) and soil nail walls. Figure 2-16, Typical Soil Nail Wall Slope Stabilization System, depicts the nail wall concept, which is a method of construction that reinforces the existing ground by inserting passive inclusions (the 'nails') into the existing slope materials in a closely spaced pattern to increase its overall shear strength. As noted above, this is just one of the techniques being evaluated for stabilizing slopes in the special construction areas. Final design for these areas is currently being developed; final design concepts will be peer reviewed and approved by County-designated experts prior to construction.

2.6.3.3 Fault Crossings

CPL has developed a conceptual fault crossing design for the San Andreas Fault Zone (SAFZ). The conceptual design involves a range of measures, including increased wall thickness, steel pipe grade, 'slip-wrap', engineered trench, and others. Detailed geotechnical studies are ongoing, and these will form the basis for final design features employed. Mitigation Measure 3.7-1a in Section 3.7, Geology, addresses the specific concerns of the SAFZ crossing design. County-designated experts will peer review and approve final designs prior to construction.

2.6.3.4 Waterbody and Other Sensitive Habitat Crossings

Construction of the Project would result in 154± total stream crossings, including an estimated 8 perennial streams, 33 intermittent streams (or wetlands in intermittent streams) and 113 ephemeral streams. The construction methods proposed for these crossings would include dry open cut, wet open cut, and a technique known as HDD. CPL's preferred method of crossing streams is the dry open cut method which can be used for many streams in this region during the dryer part of the year. It is anticipated that most construction will occur during the dry season, and therefore most stream crossings will be completed using the dry open cut method. The wet open cut method and HDD are available options if a stream channel is wet at the time of construction.

The dry open cut, wet open cut, and HDD stream crossing methods are described in more detail in the following subsections. In addition, some wetlands would be crossed using construction mats. The mats would be used in wetlands where construction activities would cause soil compaction, ruts, or excess disturbance due to inundated soil conditions in the wetland. The mats would serve to distribute the weight of construction equipment to keep it from sinking; they also reduce potential impacts to the wetlands. A wetland crossing using mats is depicted on Figure 2-17, Typical Wetland Crossing.

Construction work in wetlands, streams, and "waters of the U.S." require permits from and coordination with several regulatory agencies. CPL has prepared a wetland delineation which has been verified by the U.S. Army Corps of Engineers (ACOE). A Nationwide 404 Permit Application has also been submitted to the ACOE for 'Utility Line Activities and Temporary Construction, Access, and Dewatering' pursuant to the proposed Project. The Applicant also has submitted a Notification of Lake or Streambed Alteration to the California Department of Fish and Game (CDFG). Both of these permits must be granted prior to the commencement of construction activities along the pipeline right-of-way. Additionally, the Regional Water Quality Control Board (RWQCB) will require Waste Discharge Requirement order for any release of process water or waste to surface waters. Specific requirements for each of these permits are discussed in Chapter 3, Sections 3.5, Biological Resources and 3.9, Hydrology and Water Quality.

Current plans call for open-cut construction in the dry season for all but about 10 of the 154 stream crossings. It is anticipated that HDD would be required at six or seven

1. Winch Arrives on Site

2. Equipment Attachment

PHOTOGRAPH DATE: 05-18-06

3. Positioning Winch

4. Equipment Operation with Winch Support

Figure 2-15
Rugged Terrain Winching Operation

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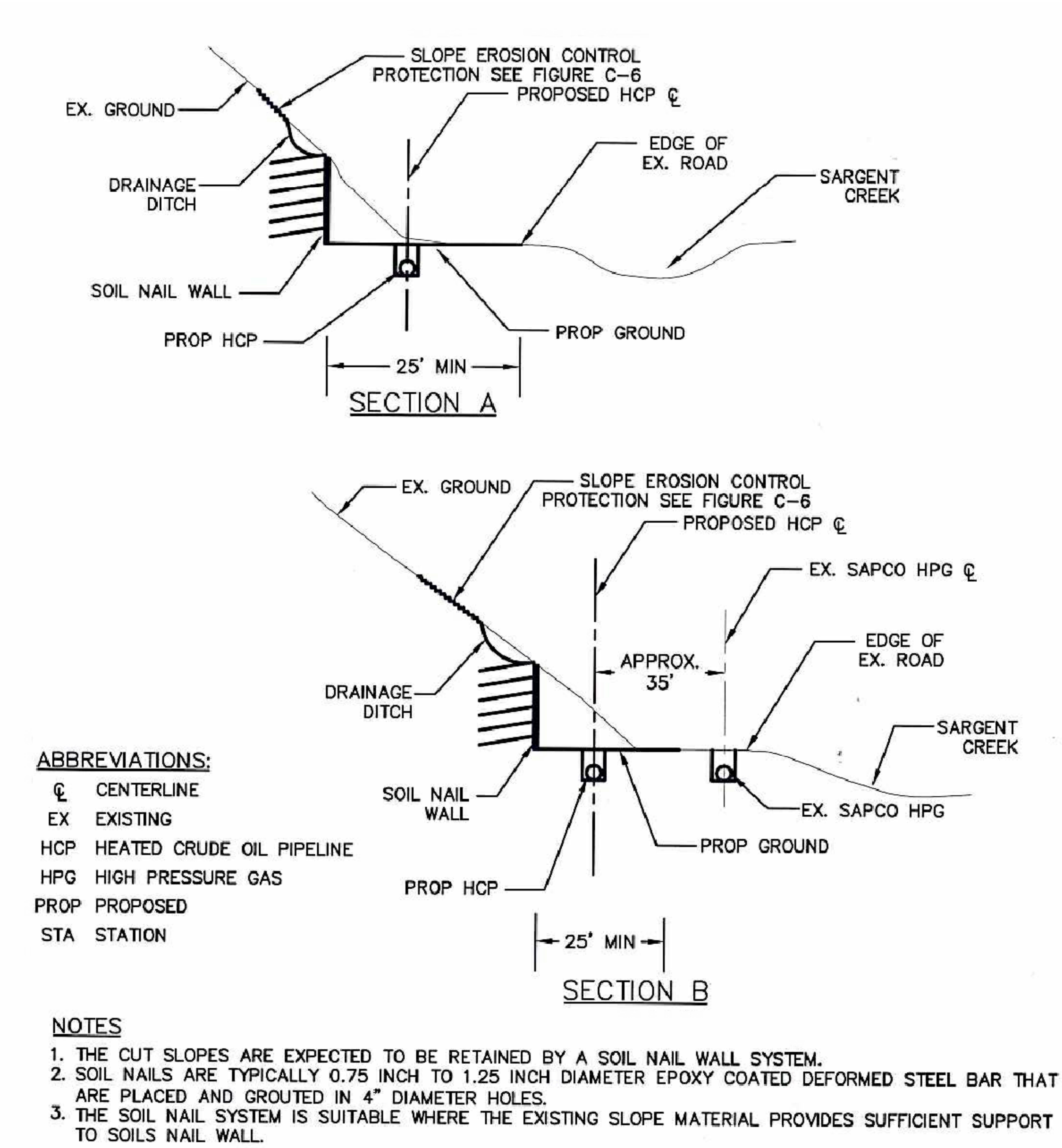

SOURCE: National Resource Conservation Service

Figure 2-16
Typical Soil Nail Wall
Slope Stabilization System

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NOTES:

1. Silt fences will be used when needed to prevent sediment flow. This use of silt fences shall be at the discretion of the biological monitors in consultation with construction contractors in instances where soil is moist, but no surface flow is present in the summer/fall dry season. Use of silt fence shall comply with SWPPP and terms of natural resource permits.

2. Silt fence installed along either side of wetland to intercept surface runoff.

3. Silt fence installed along edge of the construction limits to prevent sediment flow into adjacent portion of wetland.

4. Silt fence installed at spoil piles to keep sediment within construction limits.

5. Permanent interceptor dikes installed at base of all slopes adjacent to the wetland during final grading.

6. Silt fence or hay bales placed in gap at timber mats by end of each day during rainy season or when approaching rains are forecast to prevent sediment flow into wetland. Use of these materials in other locations and times shall be at the discretion of biological monitors in consultation with construction contractors.

7. No vegetation to be cleared in buffer zone.

8. In unsaturated (dry) wetlands, top 12" of topsoil segregated from over pipeline trench.

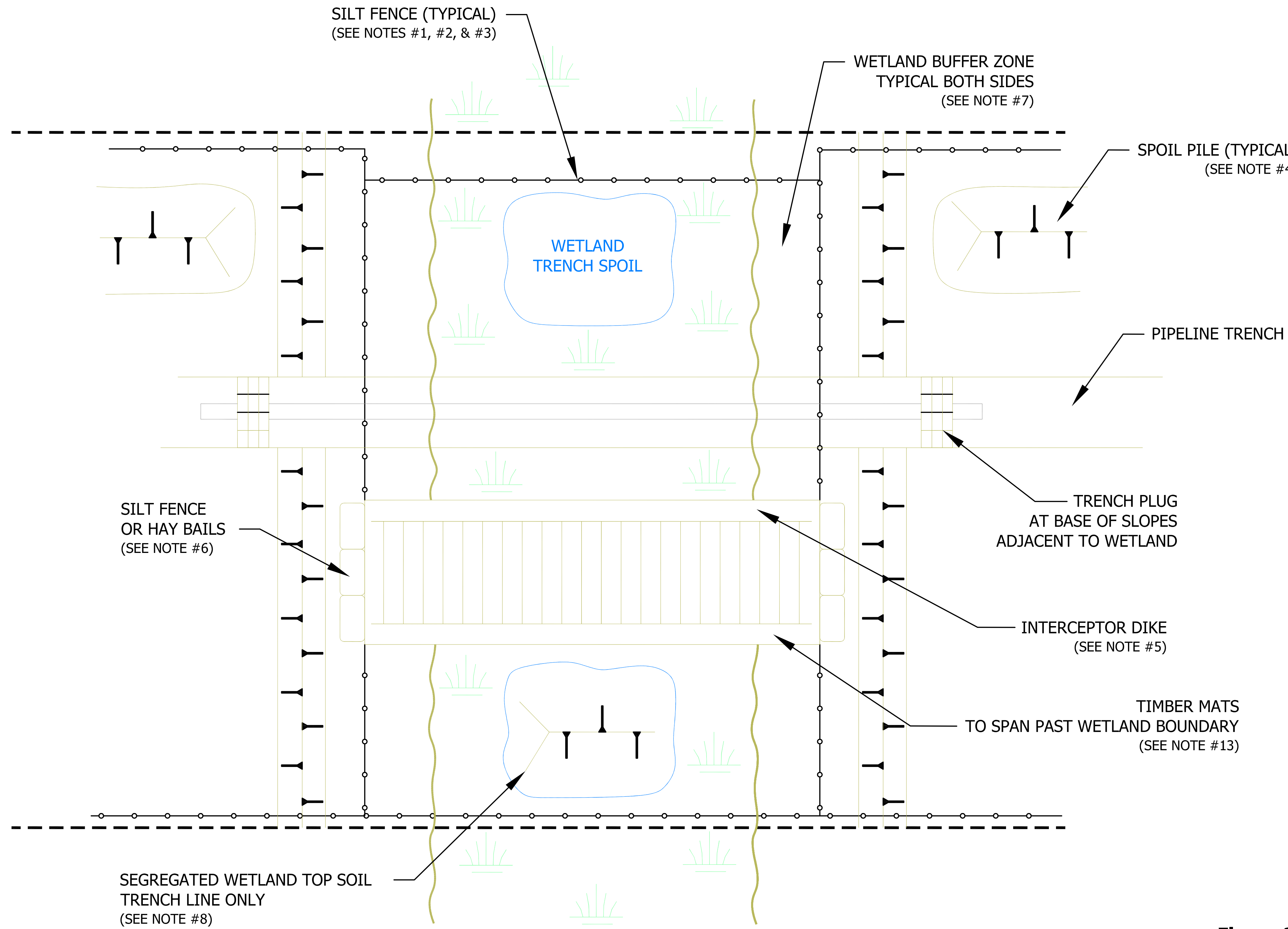
9. Staging area(s) for wetland crossing(s) located at least 50' from the wetland's edge (where topographic conditions permit) and the minimum size needed for convenient preparation.

10. Sediment control measures shall be inspected periodically and repaired as required.

11. Equipment operating in the wetland limited to that needed to perform construction.

12. Foreign materials placed in wetlands during construction shall be completely removed during final clean-up. Removal is not contingent upon establishment of permanent vegetation.

13. Mats may not be needed for all wetland crossings, but rather only when compaction and surface damage are likely due to moist soil conditions.



SOURCE: Chevron Pipeline Company

Figure 2-17
Typical Wetland Crossing

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HEATED OIL PIPELINE

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crossings, with plans for wet open cut crossings at the remaining three or four locations identified in the wetland delineation.

DRY OPEN-CUT CONSTRUCTION METHOD

About 144 of the 154 streams/waterbodies to be crossed are intermittent or ephemeral and are expected to be without flow at the time of pipeline construction. For these crossings, CPL would utilize the dry open-cut method, which involves the standard construction methods described in Section 2.6.2, General Pipeline Construction Procedures, and shown schematically on Figure 2-9. This method would be used only when no flowing water is present in waterbodies. After backfilling, the stream banks would be reestablished to approximate preconstruction contours and stabilized, and erosion and sediment control measures would be installed across the construction right-of-way to reduce stream bank and upland erosion and sediment transport into the waterbody.

WET OPEN CUT CONSTRUCTION METHOD

As noted previously, the wet open cut technique is an option if a stream channel is wet at the time of construction. The wet open cut construction method involves trench excavation, pipeline installation, and backfilling in a waterbody with stream flow. As noted above, three or four streams or wetlands may have flow or wet conditions during the pipeline construction phase and therefore would be crossed using the wet open cut method. These streams would consist of features where alternative construction techniques would not be feasible or desirable for one or more of the following reasons: topographic constraints, limits to the radius of pipe bends during boring, mitigation of seismic hazards that preclude the use of boring techniques, or the work space needed for alternative techniques would result in increased impacts to other natural resources (i.e., oak trees).

Figure 2-18, Typical Wet Open-Cut Method Waterbody Crossing, depicts the wet open-cut crossing method. With the wet open-cut method, a cofferdam would be installed upstream and downstream of the trench excavation. A bypass pipe (or flume) would convey water between the cofferdams. Depending on the size of the stream and the substrate of the streambed, the cofferdams would consist of one or more of the following materials: plastic sheeting, metal sheeting, and/or sandbags. The trench would be excavated across the stream between the cofferdams using backhoes or draglines working within the waterbody, on equipment bridges, and/or from the stream banks.

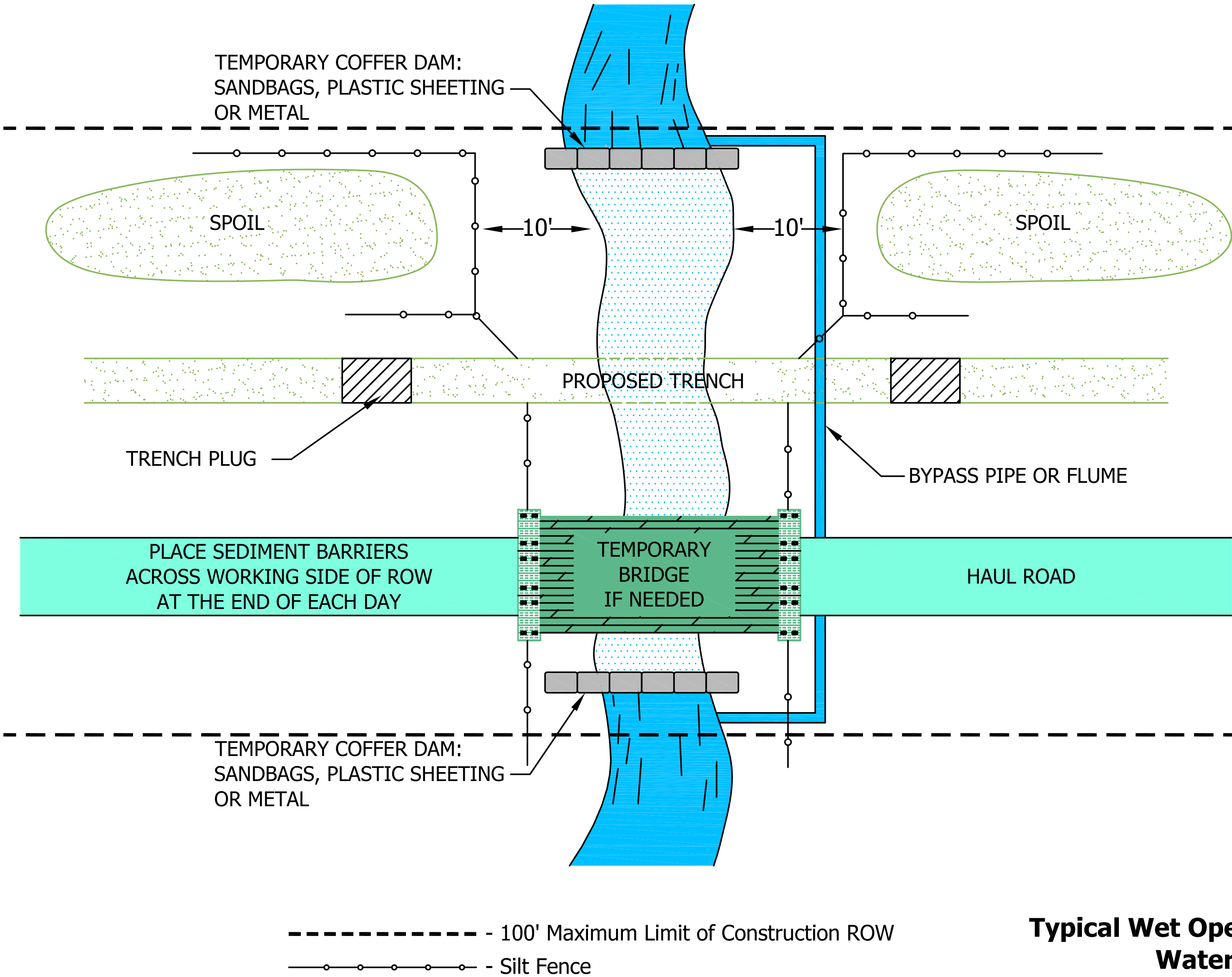
For smaller streams, the trench spoil would be typically stored in an upland area adjacent to the stream. For larger waterbodies where excavated spoil cannot be readily stored in an upland area, the excavated trench material would be stored within the stream on the downstream side of the trench to reduce additional handling overlaying of the spoil and minimize the duration of in-stream activities. The spoil would be stored in windrows. The stream substrate would influence the stability of the trench walls and directly affect the time required to adequately excavate the trench and complete the crossing.

Once trench excavation across the entire waterbody is complete, a prefabricated section of pipe would be promptly lowered into the trench. The trench would then be backfilled with the previously excavated material, and the pipe section tied-in to the pipeline. If dewatering is necessary to install the pipe, the trench water would be pumped out in a controlled manner and could be discharged to a straw bale structure typically located in an upland area where heavier sediments and suspended particles can be filtered before the discharge reaches the stream or in a manner in accordance with Regional Water Quality Control Board requirements. Following pipe installation and backfilling, the stream banks and channel would be reestablished and stabilized, as previously described.

HORIZONTAL DIRECTIONAL DRILLING (HDD) CONSTRUCTION METHOD

HDD is one potential method of construction that can be used in avoiding or minimizing adverse impacts to streams, wetlands, cultural resources, landslides, or other sensitive habitats or hazards. CPL proposes to use this method for most environmentally sensitive stream crossings, as well as at known cultural resource sites, and for pipeline installment underneath I-5.

To complete a directional drill, a pilot hole would be drilled at an entry angle determined by engineering calculations. Concurrent to drilling the pilot hole, a larger diameter “wash pipe” would be run to encase the pilot drill string. Once the pilot hole is drilled, it would be enlarged to accommodate the pipeline by reaming the hole to successively larger diameters. Joints of drill pipe would be added at the end of the drill string as the reamer is pulled back to the drilling rig. Once reaming is complete, the segment of the pipeline to be installed would be attached to the rotating drill string with a swivel mechanism, and pulled from the exit point to the drilling rig, thus completing the installation. Throughout the drilling operation, drilling fluids would be pumped into the drilled hole for stabilization, to carry any cuttings away from the drill bit, and to reduce friction on the drill pipe and the pipeline as it is pulled through the



SOURCE: Washington State Department of Ecology, Northwest Pipeline Capacity Replacement Project (2005)

Figure 2-18
Typical Wet Open-Cut Method Waterbody Crossing

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hole. Appropriate waste discharge regulations would be adhered to through WDRs issued by the RWQCB or through containment and proper disposal at appropriate disposal sites.

Figure 2-19, Conceptual Horizontal Directional Drill Waterbody Crossing, provides a simplified depiction of the HDD pipeline construction method and illustrates how both the waterbody and the associated wetland and riparian vegetation on both sides of the crossing are protected from major disturbance. HDD crossings require pads or work areas on both the entry and exit sides of the crossing. These work areas are depicted on Figure 2-20, Typical Horizontal Directional Drill Work Areas. The size of the excavated work areas can vary, depending on the site specific topography and constraints, but generally each pad occupies an area of about 200 feet by 200 feet. In addition, HDD locations require a pipe laydown area similar in length to the HDD crossing. Pipe laydown areas are designated on the Alignment Sheets (Revision H, Trigon-EPC 2007) and would be used to assemble and weld the pipe string together prior to pulling it through the boring.

2.6.3.5 Construction Using Drill-and-Blast Technique

Blasting may be required in areas where mechanical equipment cannot break up and loosen the bedrock. Initial right-of-way surveys have identified potential blasting areas in the San Andreas Rift Zone between MP 16 and MP 18 in Monterey County, as well as between MP 20 and MP 22.5 in Fresno County.

The drill-and-blast technique, when used, is typically specified by the Project engineers with appropriate construction constraints. Actual procedure for blasting would be based on the construction contractor's means and methods. Drill-and-blast construction would be carried out using controlled blasting techniques to minimize overbreak and to prevent excessive loosening, damage, or deterioration of the rock mass outside the excavated perimeter. Blasting would be conducted far enough in front of laid and buried pipe or other facilities to minimize damage caused by vibrations or ground shifting. Blasting would also be controlled to minimize blast damage that could significantly alter the engineering behavior of the rock. The contractor would be responsible for design of drilling and blasting patterns, explosive types, and quantities.

Local geology is important in trench blasting. Because of variations in rock type and bedding, different blasting techniques could be required during Project construction. In closely-bedded materials, difficulties in limiting gas migration into the bedding planes could result in overbreak and rock fracturing, whereas in massive rock, little cratering would likely occur, resulting in low breakage. Localized scaling and/or installation of rock bolts would be required to improve stability and rockfall hazards on finished rock cut slopes.

If blasting is required, applicable federal, state, and local requirements would be observed, and any necessary permits and authorizations would be obtained. Measures would be taken to prevent damage to property and livestock during blasting operations, including the use of blasting mats, if warranted.

The Institute of Makers of Explosives (IME) has developed Best Practices Guidelines for blasting operations (IME 2005). IME maintains that implementation of Best Practices can eliminate or minimize the potential for environmental impacts. The basic tenets of the IME guidelines pertain to four basic categories:

- Education/Training of Explosive Users;
- Selection of Appropriate Explosives for the Job and Conditions;
- Explosives Loading and Handling; and
- Attention to Technical Matters.

CPL has committed to the implementation of the IME measures which are also referenced in Section 3.9, Hydrology and Water Quality, of this Draft EIR.

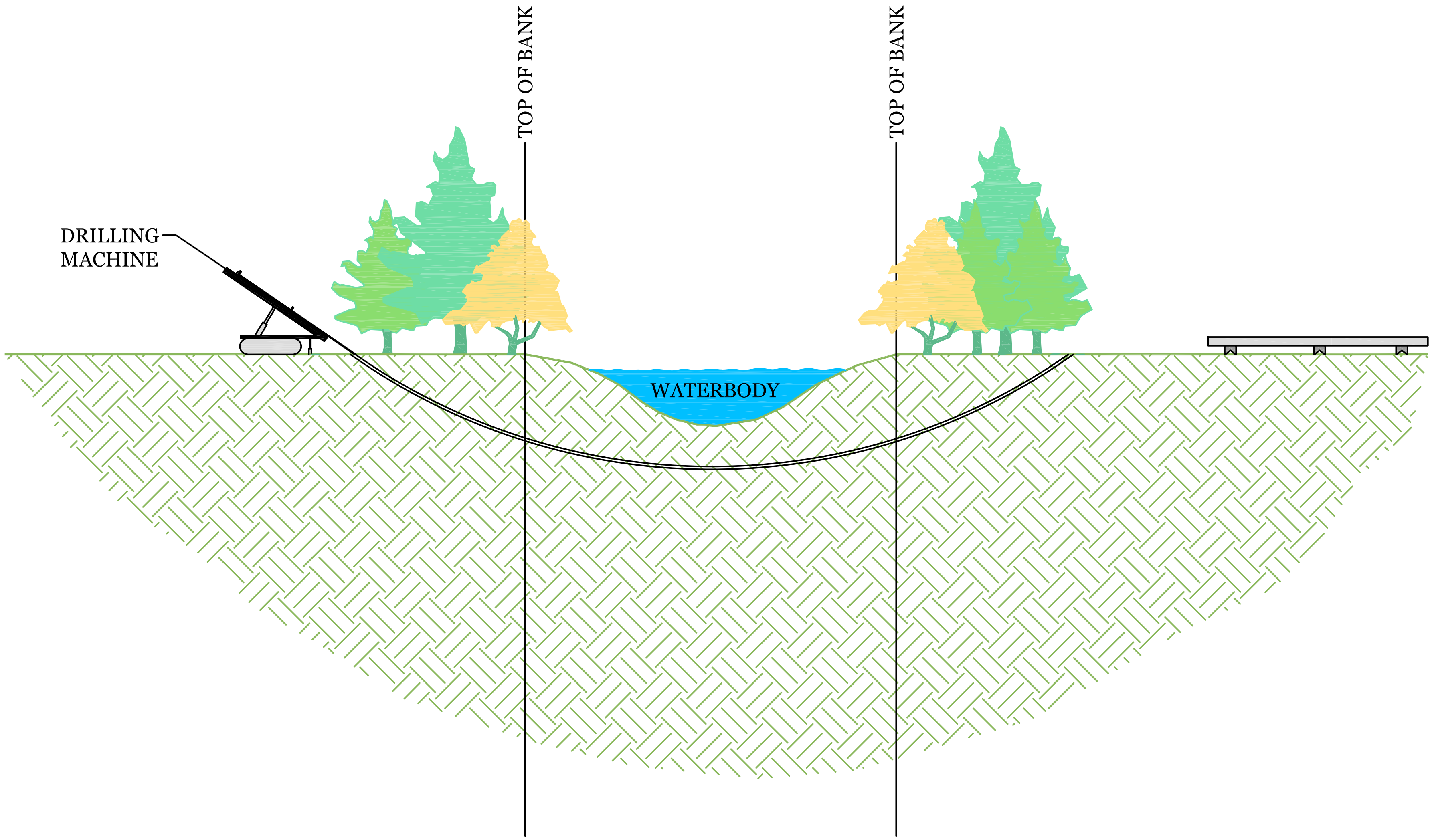
2.7 OPERATION, MAINTENANCE, AND SAFETY CONTROLS

2.7.1 System Control, Operation, and Safety Features

2.7.1.1 System Control

The Project would be operated and monitored from CPL's central pipeline control facility in Houston, Texas using sophisticated, system-wide technology overseen by trained management and technical personnel. The Houston pipeline control center operates and monitors Chevron's pipeline facilities throughout the United States. As previously noted in Section 2.4.2.4, Mainline Valves and valve Stations, the computerized system of pipeline communications and system control is referred to as the Supervisory Control and Data Acquisition (SCADA) system.

The function of SCADA is to send instructions to and receive data from the pipeline instrumentation on a continuous basis. Trained operators monitor the SCADA system 24 hours a day using telecommunications systems (radios, phone lines, and/or satellites)



SOURCE: Washington State Department of Ecology, Northwest Pipeline Capacity Replacement Project (2005)

Figure 2-19
Conceptual Horizontal Directional Drill Waterbody Crossing

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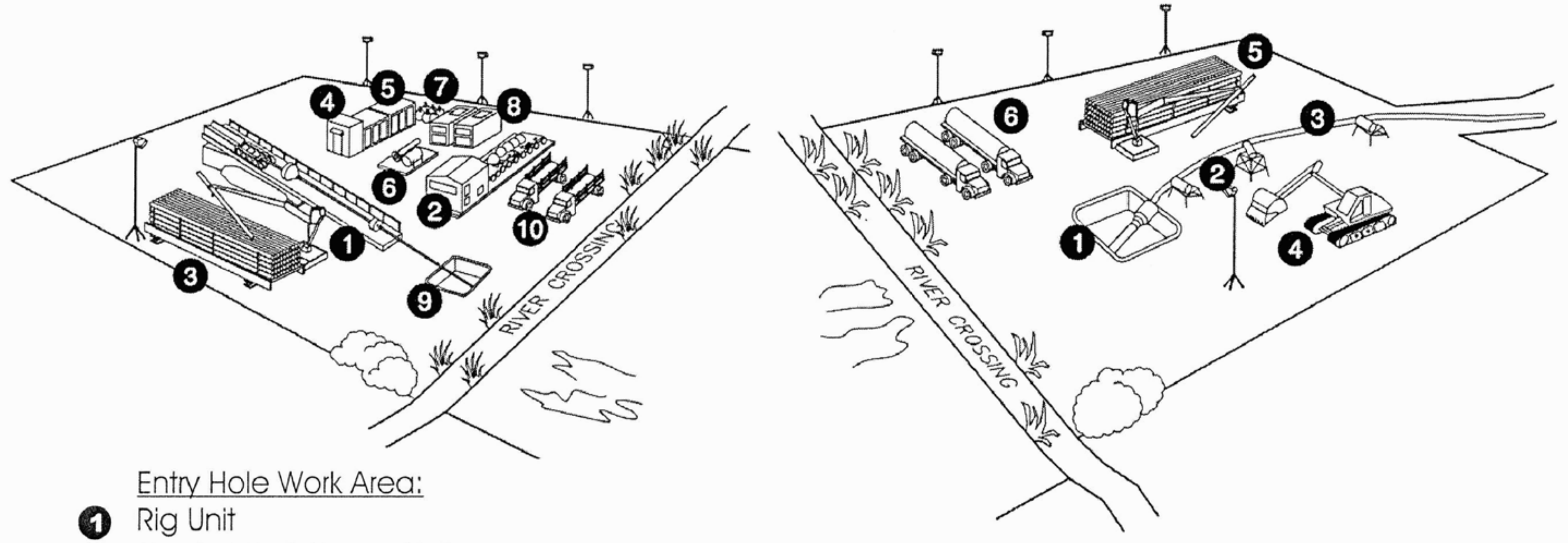

SOURCE: SPEC Services Inc. (2002)

Figure 2-20
Typical Horizontal Directional Drill Work Areas

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that monitor and update remote terminal units (RTUs) every 20-30 seconds. RTUs are designed to measure pipeline flow volumes, as well as being equipped with software capable of controlling flow rates and pressures. Data (including alarms) are received and archived on the SCADA system, which includes automatic high pressure shutdown of shipping pumps at pump stations.

Controllers and operators evaluate all alarms/status signals for appropriate action or acknowledgement of the alarm condition. Any equipment failure and operation alarms would be transmitted to the controller for corrective action. A deviation in input and output volume or pressure would trigger such an alarm. The volumetric detection systems typically provide readings every second and are able to detect leaks as small as 15 to 20 barrels within two to four minutes. The SCADA system is designed to provide many levels of safety backup throughout the system.

2.7.1.2 Above-Ground Facility Operations

All three major above-ground facilities (San Ardo Facility, Mid-Line Heating Station, and the KLM Facility) would be remotely controlled and operated, although operators would visit weekly for inspection/maintenance purposes.

Access to the San Ardo Pipeline Facility would be through the existing CPL San Ardo Oil Field. The Mid-Line Heating Station would be accessed from SR 198, and the KLM Facility would be accessed via existing Fresno County roads. Sufficient space would be provided for maintenance vehicles to park inside the fence of each facility where space and safety conditions allow, or immediately adjacent to the sites, out of the public right-of-way. Signs identifying the facility and its ownership would be placed on or adjacent to the fence surrounding each above-ground facility. Signs would not be illuminated, though the facilities would be lit both for security purposes and in order to safely monitor equipment, if necessary, during nighttime hours. Lighting would be directed downward and designed to minimize glare and disturbance of surrounding land uses. CPL does not propose landscaping at the three above-ground facility sites. The lighting could be used automatically or manually, depending on the need.

Other than maintenance personnel, the above-ground facilities would have few visitors; no customers would be allowed at these facilities and it is not anticipated that visitors would be allowed access except on very infrequent occasions. No on-site sales or regular deliveries would take place at the above-ground Project facilities. Necessary supplies and spare equipment would be centrally housed at the San Ardo Oil Field or other corporate facilities. Natural gas, as discussed in Section 2.4.3, Natural Gas Supply Line Facilities, would be delivered to the Mid-Line Heating Station via a separate pipeline constructed as part of the Project.

Operations at the above-ground facilities would consume minimal water; a limited amount of water would be needed for equipment wash-down or other similar maintenance activities. The only solid or liquid wastes generated would be from the tanks located at the San Ardo and KLM Facilities. Sediments entrained in the crude oil would accumulate at the bottom of the tanks over time, necessitating sediment removal at five to ten year intervals. Sediment removed from tanks would be sent to certified laboratories for analysis to determine the appropriate disposal method. The sediments would not be reused on-site, and would be disposed of in a state-approved facility.

2.7.1.3 Safety Considerations and Corrosion Protection

System safety is a function of many elements of overall pipeline operations and control. The SCADA system which, as described above, gathers and analyzes data from many sources throughout the pipeline system, is a major component of this overall safety system. Other components include corrosion protection, pipeline signage, and pipeline inspection and maintenance.

CORROSION PROTECTION/CONTROL

External corrosion of the steel pipe used in virtually all petroleum and gas pipelines in service today is a primary safety concern in terms of long-term pipeline operation. Thus, pipeline safety is dependent upon the implementation of effective safety measures that prevent and monitor internal and external pipe integrity.

Measures to prevent external corrosion of the pipe would include a protective coating on the exterior of the pipe (see discussion in Section 2.6, Pipeline Construction) and the application of a cathodic protection system. All pipelines installed after July 31, 1971 must be properly coated and have cathodic protection. Cathodic protection is a technique to control the corrosion of the external steel pipe surface by interrupting the electro-chemical reaction of the metal with its environment. The cathodic protection system would impress a direct current on the pipe, providing a ground-bed anode that would then corrode instead of the pipe. The main components of the cathodic protection system would be anode beds, rectifiers, and test stations. Cathodic protection would be tested regularly to ensure compliance with regulatory requirements.

PIPELINE INSPECTION/MAINTENANCE

The pipeline would be visually inspected by line riders (on foot or using all-terrain vehicles) or line flyers (low-flying small aircraft) at regular intervals (at least 26 times a year, no inspection interval to exceed three weeks, in accordance with USDOT requirements [49 CFR, Part 195]). The purpose of the inspections would be to look for evidence of possible leaks, pipeline damage, damage to permanent erosion control devices, erosion and washouts that could expose the pipeline, third-party excavation, construction encroachment, or other activities that could affect the safety and operation of the pipeline. Above-ground pipeline markers would be included in the routine inspections and would be maintained or replaced as necessary to ensure that the pipeline location is visible from the air and ground. Pipeline signage is an important safety tool, as described in Section 2.6.2, General Pipeline Construction Procedures (see also Figure 2-13).

Inspection access to the pipeline would be along the right-of-way (maintained to allow access for inspection) from existing local public and private roads (paved and unpaved). These inspection access points would be identified during pipeline construction.

Should active corrosion, leakage, encroachments, soil erosion, ground movements, missing or damaged markers, or other changes requiring attention be identified during routine inspections, they would be reported and repairs would be implemented immediately. Such activities could require ground-disturbing activities. Should this be the case, biological and cultural resource surveys would be conducted concurrently with this work, along with agency notification and permitting, if applicable.

Internal inspection instruments, also known as “smart pigs,” are used to inspect and record the internal and external condition of the pipe. Smart pigs detect where corrosion or other damage has affected the wall thickness or shape and in conjunction with visual and computerized monitoring techniques, provide a clear indication of pipeline problems that could develop. A smart pig run would be performed after 10 years of pipeline operation and at five year intervals thereafter in accordance with USDOT and California State Fire Marshal (CSFM) regulations and requirements.

As noted previously, weekly inspection/maintenance visits will be made to the three main above-ground facilities (San Ardo Facility, Mid-Line Heating Station, and the KLM Facility). Typical activities would include inspecting equipment for operation efficiency and to ensure that equipment is operating within design parameters. Tank integrity would be routinely monitored, along with tank levels. Meter stations would be "proved" on a scheduled frequency to ensure accurate measurement of the crude oil flow.

2.7.2 Road and Right-of-Way Monitoring and Maintenance

The permanent pipeline right-of-way in non-wetland areas would be monitored and maintained only as required to facilitate visual inspection and access. However, it is likely that at the above-ground facilities, mowing, cutting, and trimming would be required at least occasionally over the life of the Project. The right-of-way would be allowed to revegetate; however, any trees that pose a potential safety hazard would be removed periodically. The frequency of required vegetation maintenance would depend upon the vegetation growth rate. Cultivated areas would be allowed to revert to prior use and vegetation maintenance would not normally be required in these areas.

2.7.3 Emergency Response

CPL has prepared a draft Emergency Response Plan for operation of the pipeline. The objectives of the Emergency Plan are:

- To establish guidelines and procedures to be followed in emergencies;
- To minimize the hazards resulting from oil pipeline emergencies;
- To establish procedures to train employees for emergencies; and
- To establish liaisons with appropriate fire, police, and other community officials with respect to the elements of the plan.

Key elements of the plan include procedures for:

- Receiving, identifying and classifying emergency events such as spills, fires and natural disasters;
- Establishing and maintaining communications with local fire, police and public officials, and coordinating emergency response;
- Making personnel, equipment, tools and materials available at the scene of an emergency;
- Protecting people first and then property, and making them safe from actual and potential hazards; and
- Emergency shutdown of system and safe restoration of service.

2.8 FUTURE PLANS AND DECOMMISSIONING

Present plans call for the San Ardo to Coalinga Heated Oil Pipeline to remain in service for about 30 years. This timeframe could either increase or decrease, depending on many factors, some of which include the advancement of pipeline technology, future oil production from the San Ardo Oil Field, crude oil needs, and other, possibly currently unknown, factors.

Current plans call for the pipeline to be left in place along its entire length. The decommissioning process would be subject to applicable local, state, and federal regulations in effect at the time the pipeline is taken out of crude oil service. As required by federal and state laws, CPL would be liable for cleaning up and remediation of any potential contamination that could have resulted from the operation of the pipeline.

After the pipeline is taken out of service, the crude oil remaining in the line would be evacuated to storage tanks located at either the eastern or western pipeline termini or pumped into tanker trucks to be transported to refineries for processing. Cleaning pigs would be sent through the line and the crude oil residue would be purged using additional cleaning pigs and residue purging liquid or 'cutter stock'.

The purged pipeline would be inspected to determine overall pipeline integrity and then valves would be sealed off. The purged, sealed pipeline would be filled with pressurized inert nitrogen gas or other inert material. Alternatively, the decommissioned pipeline possibly could be used for other purposes such as a conduit for fiber optic lines, underground electrical utilities, or telephone or data circuits. Any such use would likely require new environmental review under CEQA.

Above-ground facilities associated with the pipeline would be disassembled and removed. Pumps and motors would be disconnected and also removed, and all residual oil would be evacuated from pumping equipment and from drains and pump tanks into tanker trucks for transport. Valve connections to the pipeline would be sealed off and all other above-ground piping and equipment would be removed and/or salvaged. Utility services would be disconnected. All surface facilities including control buildings, concrete pads, fencing, light poles, and containment berms would be removed. Equipment and materials that could not be sold or salvaged would be taken to an appropriate disposal site. The surface would be regraded and revegetated to its original condition or to conform to future land uses.

The inert gas pressure in the decommissioned pipeline would be annually monitored. Any loss of pressure in a pipeline segment would indicate a leak. Such detection would require appropriate action by the pipeline operator and oversight by the appropriate regulatory agencies in conformance with regulations in force at that time.

2.9 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS

2.9.1 Monterey County Approvals

Pursuant to a Memorandum of Understanding between Monterey and Fresno Counties, Monterey County has assumed the Lead Agency role for this Project. Monterey County, as the lead agency for purposes of environmental review under CEQA, will consider the following actions:

- Certify the EIR as adequate under CEQA;
- Approve or deny the Conditional Use Permit;
- Adopt a Mitigation and Reporting Program; and
- Adopt applicable and necessary findings.

2.9.2 Fresno County Approvals

Fresno County will be a Responsible Agency; will participate in the preparation of the EIR to ensure the adequacy of the EIR for its use in Fresno County; and will consider the following actions:

- Approve or deny the Conditional Use Permit;
- Adopt a Mitigation and Reporting Program; and
- Adopt applicable and necessary findings.

2.9.3 Other Potential Permits and Approvals

Table 2-6, Potential Permits and Approvals for Chevron San Ardo to Coalinga Heated Oil Pipeline Project, identifies the agencies that are expected to use the EIR in their decision-making processes, as well as the potential permits and approvals required by these agencies.

TABLE 2-6
POTENTIAL PERMITS AND APPROVALS FOR
CHEVRON SAN ARDO TO COALINGA HEATED OIL PIPELINE PROJECT

Agency/Department	Permit/Authorization/Reports	Required For
FEDERAL AGENCIES		
Army Corps of Engineers	Individual/Nationwide Section 404 Discharge Permit (Clean Water Act, 33 USC 1341)	Dredge/fill into "waters of United States," including wetlands
Environmental Protection Agency	Chemical Release Notifications and Chemicals Handled Inventory (42 USC 11001 *et seq.*)	Response actions, if emergency response is necessary
U.S. Fish and Wildlife Service	Biological Assessment, Section 7 Consultation, Biological Opinion (Endangered Species Act, 16 USC 1531-1544)	Activity where they may be an effect on federally-listed endangered/ threatened species
	Section 10 Permit (Endangered Species Act, 16 USC 1531-1544)	Activity where incidental take of federally-listed species anticipated
STATE AGENCIES		
California Department of Fish and Game	Lake/Streambed Alteration Agreement (Fish and Game Code 1602)	Change in natural state of river, stream, lake (includes road or land construction across a natural streambed)
	California Endangered Species Act Section 2081 Permit (Fish and Game Code 1603)	Activity where incidental take of state-listed threatened or endangered species is anticipated
California Department of Transportation (CalTrans)	Encroachment Permit	Encroachments of state highway right-of-way
California State Fire Marshall	No specific permit; Oversight of 49 CFR, Part 95	Implementation of USDOT regulations in California, including pipeline burial (depth) requirements
Regional Water Quality Control Board	General Construction Activity Stormwater Permit; Notice of Intent (40 CFR Part 122)	Stormwater discharges associated with construction activity
	Water Discharge Permit (Water Code 13000 *et seq.*)	Discharge of wastewater that may affect groundwater quality
State Water Resources Control Board, Division of Water Rights	401 (Water Quality) Certification (Clean Water Act, 33 USC 1251: if the project requires Army Corps of Engineers 404 permit)	Discharge into "water of the United States," including wetlands

Agency/Department	Permit/Authorization/Reports	Required For
State Water Resources Control Board, Division of Water Rights	Spill Prevention Control and Countermeasures Plan. (Health and Safety Code 25270 *et seq.*; 40 CFR Part 112)	Underground storage of petroleum of 42,000+ gallons. Above ground storage with 10,000+ gallons; or any spill affecting surface waters, single tank of 600 gallons or 1320 total
State Office of Historic Preservation	Section 106, National Historic Preservation Act (16 USC 470; 36 CFR 62; 36 CFR 65)	Avoidance of historic, architectural, archaeological, or cultural characteristics of properties that meet National Register Criteria
MONTEREY AND FRESNO COUNTIES		
Fresno and Monterey Counties	Environmental Impact Report	Compliance with the California Environmental Quality Act (CEQA)
	Use Permit	Activities where use is conditional in a particular zone
Fresno County Department of Public Works and Planning Development Services Division	Road encroachment	Activities within county rights-of-way
	Encroachment permit	Crossing of local flood control facilities or rights-of-way
Monterey County Resource Management Agency Planning Department	Erosion Control Plan	Required when the County issues a discretionary permit
	Conditional Use Permit (CUP)	Required when the County issues a discretionary permit
	Biological Report	Required when the County issues a discretionary permit
	Geologic Report	Required when the County issues a discretionary permit
	Geotechnical Report	Required when the County issues a discretionary permit
	Archaeological Report	Required when the County issues a discretionary permit
Monterey County Department of Public Works	Transportation permit	Movement of oversized/extra-legal sized vehicles/loads
	Encroachment permit	Activities within county rights-of-way

Agency/Department	Permit/Authorization/Reports	Required For
Monterey County Resource Management Agency Building Services Department	Grading permit	Excavation and fill activities
	Building Permit	Construction/use of structures
Monterey County Resource Agency	Drainage Plan	Required when the County issues a discretionary permit
	Landscape Plan	Required when the County issues a discretionary permit
Monterey County Environmental Health Department	Hydrological Report	Required when the County issues a discretionary permit