

6.0 Impacts and Comparison of Alternatives

This chapter summarizes the environmental advantages and disadvantages associated with the Proposed Project and the alternatives. Based upon this discussion, the environmentally superior alternative is selected as required by the California Environmental Quality Act (CEQA.). The State CEQA Guidelines, Section 15126 (d)(2), state that if the environmentally superior alternative is the No Project Alternative, then the next most environmentally preferred alternative must also be identified.

This comparison is designed to satisfy the requirements of State CEQA Guidelines, Section 15126.6(d), Evaluation of Alternatives, which state that:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed..

In accordance with State CEQA Guidelines Section 15126.6(d) as presented above, this Environmental Impact Report (EIR) provides sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project and the other alternatives. It should be noted that assumptions made regarding the alternatives' descriptions could differ from actual proposals and the analyses are not presented to a project-level of detail.

The following methodology was used to compare alternatives and the Proposed Project in this EIR:

- **Step 1: Identification of Alternatives.** Alternatives screening process (described in Section 5.0) was used to identify a range of alternatives to the Proposed Project. That screening analysis selected alternatives for further consideration. The No Project Alternative is also evaluated in the EIR as required by CEQA.
- **Step 2: Determination of Environmental Impacts.** The environmental impacts of the selected alternatives are identified in Section 6.1.
- **Step 3: Comparison of Proposed Project with Alternatives.** Section 6.2 includes a comparison of the alternatives relative to the Proposed Project.
- **Step 4: Selection of the Environmentally Superior Alternative.** Section 6.3, Environmentally Superior Alternative, provides a detailed comparison of the environmental effects of the Proposed Project and the selected alternatives.

6.1 Impacts of Alternatives

The alternatives considered for further evaluation include:

- No Project Alternative;
- Drilling from the AES Site;
- Oil Development with Reduced Wells;
- Oil Development with Reduced Timeframe;
- Use of Existing Pipelines; and
- Phase 1 Permanent Yard Construction.

The remainder of this section presents an analysis of the environmental impacts of the alternatives selected for further evaluation.

6.1.1 No Project Alternative

Under the No Project Alternative, the Proposed Project would not be built and the maintenance yard would remain in its existing location with no new maintenance yard being developed.

Therefore, impacts associated with the Proposed Project construction and development would not occur and the area would remain in its current condition. No impacts from the Proposed Project would occur.

A more regional, if not global, issue is associated with crude oil production as crude oil is imported to the U.S. from many countries. This issue is discussed in the following paragraphs.

If oil production does not occur in the area, this may result in continued importation of crude oils from overseas that would otherwise be produced locally. The supply of crude oil is driven by the demand for refined products (gasoline, diesel and jet fuel). Currently, the demand for refined products is met through supply to California refineries of crude oil from California domestic production, foreign imports of crude oil, imports of crude oil from Alaska, an increasing amount of crude oil brought in by rail and imports of refined products. There are no crude oil pipelines that bring crude oil into California. This means that the only sources of crude oil to meet refinery crude oil demand are from California production, Alaska production, rail transport or from foreign sources brought into ports by tanker ships.

California production of crude oil per year has been in decline since 1986, (although there has been a slight increase since 2011 to almost 200 million barrels) when production peaked at slightly over 400 million barrels. The decline has averaged about 1.7% per year since 1995.

The production of Alaska North Slope (ANS) crude oil has experienced decline due to the age of the reservoirs. ANS production has declined since its peak in 1989 of about 328 million barrels annually. The average rate of decline since 1995 has been above 4%.

The combination of declining California and ANS production along with a relatively constant, flat demand for crude oil/refined products in California equates to an increase in foreign crude oil imports. Foreign crude oil imports since 1995 have increased by an average of almost 38%.

Rail imports into California from primarily North Dakota have increased to an average of about 2.5 million bbls per year (in 2013).

Oil imports delivered to California from foreign sources by ocean going tankers in 2012 came from Saudi Arabia (27%), Ecuador (19%), Iraq (18%), Colombia (12%) and others. The use of foreign crude oil is associated with substantial emissions associated with transportation as foreign crude oil needs to be transported from between 4,000 miles (Ecuador) and 13,000 miles (Saudi Arabia) one-way to get to California. ANS crude travels about 2,500 miles from Alaska. This causes the greenhouse gas (GHG) lifecycle emissions associated with foreign crude oil to be higher than conventionally-recovered California crude oil as well as increasing the worldwide spill risks associated with tankering crude oil and the resulting impacts on marine biology.

6.1.2 AES Site Alternative

Under the AES Site alternative, the drilling and processing facilities would be located at the AES site located in north-western Redondo Beach on the site of the existing, but mostly inactive, power generating facility. The facility could potentially utilize existing pipelines or could install pipelines in a similar fashion as the Proposed Project. Pipeline connections along Valley Drive would no longer need to be installed.

The exact location would most likely be within the southernmost empty tank bermed area, designated as Pad 5 in Figure 5-4. This location would allow for future projects at the AES site, such as the RBEP.

Impacts of this alternative within each of the issue areas are discussed below.

Impacts associated with the construction and operation of the Proposed City Maintenance Yard would be avoided entirely under this alternative, since the City Maintenance Yard would not be relocated.

6.1.2.1 Aesthetics

The alternative site is located in an industrial zone area with commercial parcels surrounding the site. The site contains old tank berms. The visual impacts and need for mitigation measures would likely be substantially less than the Project Site since it would be located within an area with similar industrial visual character and would be farther away from sensitive viewsheds. The exact location and/or design of the facility on these two parcels is undetermined, so precise visual impact statements cannot be made at this time. The form, mass and scale of the proposed production facility within this viewshed would likely be subordinate to the existing industrial character of the AES facility.

Impact AE.1, related to visual impacts of the rig, would be reduced to less than significant as the rig would be positioned within an existing industrial area. Mitigation measures associated with AE.1 would still apply, as a soundwall would still be used and the material choice of the rig coverings would still serve to reduce visual impacts.

Impacts AE.2 and AE.3, related to views of the site without a drilling rig present and views of the pipeline facilities, would still be applicable as landscaping of the area and pipeline equipment could still be used to reduce visual impacts. Mitigation measures associated with AE.2 and AE.3 would still apply.

Impact AE.4 related to night time glare of the drilling rig and facilities would be reduced to less than significant as the rig would be positioned within an existing industrial area.

AE.5 related to glare from construction of pipeline facilities would still be applicable as the same pipeline would be constructed as under the Proposed Project.

Impacts AE.6 and AE.7 related to the Proposed City Maintenance Yard would be eliminated since the City Maintenance Yard would not be relocated under this alternative.

See Figure 6-1 for a view simulation of the drilling rig at the AES site.

In terms of potential cumulative effects, the AES site is currently the subject of a proposal to remove the existing power generation plant and replace it with a new power generating facility, the Redondo Beach Energy Project (RBEP). If the new power generating facility is built, it would likely generate lower visual quality impacts than the current power plant, but would still retain the industrial nature of the area. In combination with the drilling rig and oil and gas production facilities, the impacts of the alternative drilling and processing site would be less than significant.

6.1.2.2 Air Quality

Construction activities would be similar to the Proposed Project with a similar number and level of activity of construction equipment needed to install processing equipment. Clearing the site might require more or less effort than the Proposed Project depending on the exact location of the alternative and the location of the existing equipment on the AES site. If an area is selected that does not have any equipment, such as the Pad 5 area, then minimal demolition and site preparation activities would be required. Impact AQ.1 would therefore be similar to the Proposed Project and mitigation measures associated with AQ.1 would still apply.

Impact AQ.2, related to excavation of contaminated soils, might be applicable as the AES site is known to potentially have contaminated soils. According to a Phase I Environmental Site Assessment for the Redondo Beach Electrical Power Plant, potential areas of concern for soil contamination do occur in the general area of the site. If contaminated soils are encountered, emissions would be similar to those identified for the Proposed Project for the peak day.

Figure 6-1 Simulated View of Drilling Rig at AES Site

Impacts AQ.3 related to regional air quality impacts, would be the same as the Proposed Project. The same equipment would be operating, including the flare and microturbines as well as the same drilling schedule. Mitigation measures associated with AQ.3 would still apply.

Impacts related to localized pollutant levels, AQ.4, would be less than the Proposed Project depending on the exact location of the processing equipment. For the Proposed Project, the processing equipment would be located immediately next to public areas, businesses and residences. With the AES site, if it is located within one of the old tank bermed areas for example, distances to receptors would range from 200-400 feet. This would reduce the localized impacts from facility emission sources (flare and microturbines). However, as impacts from PM from the unmitigated Proposed Project would extend close to 700 feet from the site, mitigation measures associated with AQ.4 would still apply.

Impacts related to odors, AQ.5, would be applicable as there are still receptors located near the site. Although the receptors would be located farther from the AES site than the Proposed Project Site, odor impacts would be less severe, but odor impacts could still occur. Mitigation measures associated with AQ.5 would still apply.

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As the GHG emissions would be the same as the Proposed Project, GHG emissions, AQ.6, would be the same as the Proposed Project. Mitigation measures associated with AQ.6 would still apply.

As receptors would be located farther away from the facility under this alternative, AQ.7, toxic impacts, would be less than the Proposed Project.

For cumulative impacts, the AES site is currently the subject of a proposal to remove the existing power generation plant and replace it with a new power generating facility, the Redondo Beach Energy Project (RBEP). The new power generating facility would generate localized impacts that could impact the same receptors that the alternative drilling and processing site would impact. In combination, these impacts could exceed the applicable SCAQMD thresholds, for localized criteria pollutant emissions or toxic impacts. At this time, the air quality analysis for the proposed AES site is still under revision. However, the original submission to the CEC by AES indicated that the daily PM emissions would total 428 lbs/day and 1,018 lbs/day of NO_x. Modeling conducted for the RBEP indicated that the maximum ground level impact of PM for the 24 hour period, which is the period and pollutant producing the highest impacts for the Proposed Project relative to the thresholds, would be 1.85 ug/m³. In combination, the Proposed Project and the RBEP could therefore produce localized impacts that exceed the SCAQMD thresholds and be a significant impact. This impact could be mitigated through the reduction of combustion sources at the site.

Impact #	Impact Description	Phase	Residual Impact
AQ.AES.1	Operational activities could generate emissions that, in combination with the RBEP, exceed South Coast Air Quality Management District local thresholds.	Operations Phase 2 and Phase 4.	Class II Less Than Significant with Mitigation

Emissions from the drilling and processing facility, in combination with the RBEP emissions, would potentially exceed the localized thresholds for pollutants due to the emissions in close proximity to a large emitter, the RBEP. These impacts would be potentially significant.

Mitigation Measures

AQ.AES-1 The Applicant shall eliminate all microturbine emissions at the processing site and shall utilize only grid-based power for electricity. Flare activity shall be limited by immediately shutting down all wells in the event of an upset scenario. For additional heat requirements, electricity or some other source (the RBEP) shall be used to avoid localized impacts.

Residual Impacts

By essentially reducing all combustion sources at the facility, localized impacts due to the E&B Project at the alternative AES site would be substantially reduced. Some requirements for heat, for the glycol and amine systems would remain. However, even though these emissions levels would be reduced to about 20% of the level of the microturbines from the Proposed Project, in combination with the RBEP emissions, they could still produce localized impacts. Therefore, under this alternative, the Applicant would be required to use electric power or some other

source, such as waste heat from the RBEP, for heat. Cumulative impacts would therefore be reduced to **less than significant with mitigation (Class II)**.

6.1.2.3 Biological Resources

Under this alternative, the Project would be located within existing bermed areas within the AES site. Impacts related to BIO.1, impacts from pipeline disturbance, would be similar to the Proposed Project, without the pipeline installation down Valley Drive. Mitigation measures identified for the Proposed Project would still apply.

Impact BIO.2 related to a rupture or leak would be the same under this alternative as the same pipelines would be used as under the Proposed Project. Mitigation measures identified for the Proposed Project would still apply.

6.1.2.4 Cultural Resources

Construction activities would be similar to the Proposed Project with a similar number and level of construction activity needed to install processing equipment. Clearing the site might require more or less effort than the Proposed Project, depending on the exact location selected for oil development and the location of extant equipment and/or structures on the AES SITE alternative. If an area is selected that does not have any equipment or structures, such as the area to the eastern side of the site where the old tank berms are still located, then minimal demolition and site preparation would be required. This would place the drilling and processing facilities behind the existing AES power generating plant.

The Redondo Beach Generating Station (RBGS) was constructed by Southern California Edison Company (SCE) and began operation in 1948. RBGS is composed of eight power generating units (four operating power units and four retired units), a standby boiler, an administration building, a guard house, five smokestacks, a switchyard, transmission line towers, and various support facilities such as water tanks, a fuel pump house, and a service water house. These components were built at various times between 1948 and 1968. Historic significance of the plant was evaluated as an element of the proposed Redondo Beach Energy Project (RBEP) (Data Adequacy Supplement permit AES Southland Development, LLC 2013). This controversial project proposes to replace the RBGS with a new power generating facility.

CH2MHILL evaluated the RBGS and concluded that the station was not eligible for the California Register of Historical Resources (CRHR). They stated that the generating station is not significant in the context of the history of SCE, the history of steam-generation of electricity, or the history of post-World War II steam generation plants. Assessed under both the National Register of Historic Places (NRHP) and CRHR, the property was not considered eligible for criteria A or 1, respectively. CH2MHILL found that the RBGS was one of several steam-generating plants built by SCE in the mid-twentieth century. It was built in response to growing demand for electricity experienced by all power providers of the time. The short time-frame for construction of these plants, and their similar technologies and designs, suggested that they were all planned and designed at about the same time using similar technology. Together, this development impacted the nature of power generation in southern California, a trend that

overshadowed the importance of any single plant. CH2MHill concluded that within the context of the time of construction and of other power plants built, RBGS was not unique and was not considered significant under Criteria C or 3 (CH2MHILL 2012). They also found that RBGS was not associated with the life of a historically significant person (Criteria B or 2), nor was it significant under Criteria D or 4 as a potential source of information important in history. CH2MHILL concluded this property was not significant in accordance with Section 5064.5(a)(2)-(3) of the CEQA guidelines, using the criteria outlined in Section 5024.1 (CH2MHILL 2012).

The California Energy Commission has not published a finding of significance for the RBGS and it could be argued that this resource played a significant role in the broad patterns of local historical development (Criteria 1 of the CRHR); the development of the power industry in California at a critical period of time. For the purposes of this project, therefore, the RBGS must be considered potentially eligible for the CRHR under Criterion 1, until determined otherwise.

The proposed use for oil development and processing of the AES alternative site would, however, be limited to parcels AIN 750301-3015 and/or 750301-4010 and all activities would occur to the rear of the RBGS. Under this proposal there would be no physical impacts to standing structures and only limited visual impact as the improvements would be made to the rear of the plant. The rear is a non-crucial, non-character defining view of the RBGS and the installation of oil wells would not be visible in the significant view sheds. There would be no adverse impact to the RBGS were the AES alternative developed by E&B Natural Resources Management Corporation as currently proposed.

The literature and records search undertaken at SCCIC for the Proposed Project also partially incorporated the AES site. This research revealed that a previously recorded archaeological site is situated in proximity to the AES SITE alternative in the area where oil development is proposed. As currently defined archaeological site CA-LAN 1872 (19-001872) occupies a narrow strip of land between Beryl Street on the south and Herondo Street on the north. This site was first recorded and tested by Greenwood and Associates in 1990. This stretch of land generally coincides with the approximately 60 foot wide right of way of the Atchison, Topeka and Santa Fe Railroad (Greenwood and Associates 1990). The site is described as a light density shell scatter containing various chert flakes. There was a historical component of the site which includes three 1880s commercial structures. Following testing of the archaeological component, Greenwood and Associates concluded that the site was severely damaged "...by various historical activities, including: rail road construction and later demolition, building construction, an extensive network of utility pipes, and dumping of fill dirt" (Greenwood and Associates 1990:3). The prehistoric component of the site was thought to be redeposited midden.

The AES SITE alternative is also known to encompass the location of a former salt lake as shown on early twentieth century fire insurance maps (Sanborn 1904 to 1946). The California State Historic Resources Inventory (HRI) lists the property (19-186114) as a California Registered Historical Landmark. A plaque was placed at the site in 1955 on the southeast corner of Harbor Drive and Yacht Club Way in Redondo Beach by the Native Daughters of the Golden West. The plaque reads "This marker locates the site near which the Indians and early California settlers came to obtain their salt, which at many times was more valuable than gold" (Arbuckle 1980). This marker is located approximately 500 feet northwest of the proposed AES Site alternative. However, the HRI indicates the "Entire site is occupied by Southern California

Edison Redondo Generating Station” (Arbuckle 1980). Greenwood and Associates only tested a narrow strip of the site revealing re-deposited artifacts along the eastern margin.

While Greenwood and Associates note that the site was previously disturbed, the potential for significant prehistoric midden deposits outside of the area tested by Greenwood and Associates remains. Subsurface historical remnants of early structures may also exist. Given the prior identification of an archaeological resource in proximity to the AES Site alternative site and its designation as a California Registered Historical Landmark it should be assumed that this is a significant archaeological resource.

Under the scenario of using the AES alternative, impacts to historic landfill deposits and demolition of the historic furnace would not occur, therefore reducing the requirement under mitigation measure CR-1a for developing a site specific historic treatment plan, including collection of artifacts, completion of subsequent analysis and reporting, and the need for permanent curation of artifacts. Nonetheless, it must be assumed that significant historical resources in the form of prehistoric midden deposits potentially exist on the alternative site and that treatment of such a resource would be necessary. Therefore, a similar mitigation measure to CR-1a would be required if the AES alternative were to be selected for development.

Mitigation measure CR-1b relates to developing guidelines for the careful exposure of extant elements of the historic brick and mortar furnace within the City Maintenance Yard at the proposed Site and documentation of remaining structural elements. This measure would not be needed if the AES alternative location were selected.

Impacts related to the inadvertent exposure of human remains would be applicable (CR-1c). Direct evidence of prehistoric archaeological utilization of the area has been documented within or near the AES site (19-001872) and the potential to expose human remains still exists. Therefore, mitigation measure CR-1c would apply.

Impacts related to paleontological resources are applicable in the event that excavations at the AES alternative would exceed 15 feet in depth resulting in the exposure of San Pedro Sand deposits. Therefore, mitigation measure CR-2 would apply.

For cumulative impacts, the AES alternative site is currently the subject of a proposal to remove the existing power generation plant and replace it with a new power generating facility. If components of site 19-001872 remain intact, the combined development of the AES alternative under the current project and under the RBEP would result in cumulative project impacts to historical resources and mitigation measures identified for the Proposed Project would be required.

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Impact #	Impact Description	Phase	Residual Impact
CR.AES.1	Potential subsurface disturbance to archaeological resources.	Phase I Pre-demolition/ construction	Class II Less Than Significant with Mitigation

Mitigation Measures

- CR.AES-1a Prior to the beginning of ground-disturbing activities, an archaeological investigation shall be undertaken by a qualified archaeologist to verify the extent and integrity of any archaeological deposits.
- CR.AES-1b All archaeological deposits that are found to retain integrity shall be presumed to be significant. A treatment plan shall be developed and implemented for recovery of intact archaeological remains prior to implementation of the project.
- CR.AES-1c Native American consultation shall be undertaken prior to beginning site development and in the preparation of an archaeological treatment plan.

Residual Impacts

Preservation in place is the preferred alternative under CEQA (Section 15126.4(b)(3)(b)). Where preservation in place is not feasible and data recovery through excavation is the only alternative mitigation, a data recovery plan shall be developed. Archaeological deposits have been shown to be present on both the Proposed Project Site and the AES alternative. Recovery of a scientifically significant sample of archaeological remains, reporting of those recovery efforts, and curation of artifacts collected during excavations would result in an impact considered to be **less than significant with mitigation (Class II)**.

6.1.2.5 Energy

Under this alternative, the same number of wells would be drilled and the same amount of crude oil and gas would be developed. Therefore, energy impacts would be the same as the Proposed Project.

6.1.2.6 Fire Protection and Emergency Response

Under this alternative, the AES site would have more room than the Proposed Oil Project Site and, therefore, equipment spacing would be less of an issue. Impact FP.1, related to fire detection, emergency response capabilities (including inspections) and fire water, would still apply and mitigation measures identified for the Proposed Project would still apply. As the Hermosa Beach Fire Department and Redondo Beach Fire Department work closely together in terms of response, response issues would be the same and mitigation related to the enhancement of inspections and hazmat response would still apply. However, inspection requirements as per

the mitigation measures, would need to be supplemented and this may require supplementing the Redondo Beach Fire Department instead or in addition to the Hermosa Beach Fire Department.

Impact FP.2 related to equipment spacing would still apply, but would most likely be easier to design with less need for thermal barriers. Mitigation measures associated with FP.2 would still apply.

6.1.2.7 Geological Resources

The regional geologic setting of this alternative site would be comparable to the Proposed Project location. The AES Power Generating Facility is located approximately one-half mile south of the Proposed Project. As such, the AES alternative would not be any closer to the active Newport-Inglewood or Palos Verdes faults, located approximately six miles east and two miles west of the Proposed Project, respectively. Further, the AES alternative location is not located within a fault-rupture hazard zone, as defined by the Alquist-Priolo Special Studies Zones Act (California Division of Mines and Geology, 1999, and updated by the California Geological Survey, 2010; Geosyntec, 2012; and NMG Geotechnical, 2012). However, the AES site is located within an area of potential liquefaction, as mapped by the State of California (CDMG, 1998 and 1999) (Figure 4.7-4), resulting in potentially greater seismic related impacts than the Proposed Project. Earthquake related Impact GEO.1 would be comparable to the Proposed Project and mitigation measures GEO-1a through GEO-1e would be applicable.

The potential for wastewater injection to induce seismicity would be similar to the Proposed Project; therefore, Impact GEO.2 would be similar to the Proposed Project. Since injection pressures would be maintained below the fracture pressures of the injection zones, the potential for induced earthquakes is low.

Slope stability related impacts would be similar to the Proposed Project. The alternative site is relatively flat and not susceptible to slope failure; however, temporary slopes created during grading may be susceptible to failure. Impact GEO.3 would therefore be similar as under the Proposed Project and mitigation measure GEO-3 would be applicable.

The potential for ground subsidence as a result of oil and gas withdrawal would be similar to the Proposed Project; therefore, Impact GEO.4 would be similar to the Proposed Project. A Subsidence and Induced Seismicity Monitoring Program would be implemented to detect subsidence as a result of drilling activities to ensure that subsidence would not be allowed to the degree that it could endanger the facility, offsite structures, and the shoreline. Mitigation measures GEO-4a and GEO-4b would be applicable.

Grading at the AES site would be less or more than the Proposed Project, depending on the specific geotechnical properties of the site, but excavations associated with pipeline construction would be reduced as less pipeline construction would be required. Less pipeline construction would result in less potential for erosion of spoil piles and offsite siltation of nearby marine waters.

With respect to cumulative impacts, the AES site is currently the subject of a proposal to remove the existing power generation plant and replace it with a new power generating facility, the

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Redondo Beach Energy Project (RBEP). Construction of the new power generating facility would generate localized impacts that would be site-specific and mitigable, with no cumulative impacts. Therefore, cumulative impacts would be similar to those described for the Proposed Project.

6.1.2.8 Safety, Hazards and Risk of Upset

The use of the AES site would provide for some additional separation between the oil development and receptors. Receptors could be located more than 400 feet from the drilling location, depending on the exact location of the drilling rig. As this would be outside of all of the fatality impact zones and most of the injury impact zones, risk levels would be within the acceptable region of the risk profiles. Impact SR.1 related to risk of upset, would be reduced to a Class II. Mitigation measures associated with impact SR.1 would still apply to ensure that the risk levels for injury are in the acceptable region. The location of the drilling rig would need to be located more than 400 feet from the closest receptors in order to ensure that risks are reduced, which, on Pad 5, is possible if the drilling equipment is placed to the northern area of Pad 5 and the area to the north of Pad 5 remains industrial and not used by the public.

Impact #	Impact Description	Phase	Residual Impact
SR.AES.1	Operational activities could generate risk to nearby receptors if the facility is not placed a sufficient distance from receptors.	Operations Phase 2 and Phase 4.	Class II Less Than Significant with Mitigation

Mitigation Measures

SR.1.AES-1 If the AES site is used, the drilling activities shall be placed at least 400 feet from the closest receptor.

Residual Impacts

Residual impacts associated with impact SR.1 would be less than significant, Class II.

For cumulative impacts under this alternative scenario, the construction of the RBEP site would not introduce the potential for new oil spills or releases into the area. There would be the potential for flammable gas releases from the RBEP, but these would not be greater than the current power plant arrangement. Therefore, cumulative impacts under this alternative would be less than significant.

6.1.2.9 Hydrology

Clearing of the AES site might require more or less effort than the Proposed Project; depending on the exact location of the alternative, location of the existing equipment, and site preparation necessary in support of drilling and processing. Construction activities would be similar to the Proposed Project with a similar number and level of activity of construction equipment needed to install processing equipment. As a result of potential clearing and grading of the site, underlying

soils may be exposed, making the site temporarily more permeable. An increase of exposed soil during construction could yield undesirable effects to downstream areas. Sedimentation/siltation generated during site earthworks could potentially alter existing drainage patterns thereby overloading downstream drainage inlets.

The use of construction-related materials such as fuels, solvents, and sealants/paints on the site as well as onsite storage, refueling, and maintenance of construction equipment could also potentially contaminate storm water runoff, thus adversely affecting the water quality. On-site watering activities to reduce airborne dust could contribute to pollutant loading in runoff. Construction and operations may also contribute to incidental spills of drilling wastes, fuels, solvents, and sealants/paints on the site. Major spills could also occur as a result of failure of oil production equipment or from the pipeline related infrastructure. The runoff from the site would ultimately drain into the Santa Monica Bay, which is listed on the Clean Water Act Section 303(d) List of Water Quality Limited Sections (Impaired Water Bodies).

Potential water quality impacts would therefore be similar to Proposed Project Impacts HWQ.1, HWQ.2, and HWQ.3 and correspondingly, mitigation measures HWQ-2a through HWQ-2d and HWQ-3a through HWQ-3c would apply. As the pipeline down Valley Drive would not be constructed, impacts related to pipeline spills would be reduced in severity over the Proposed Project due to a reduction in pipeline length, particularly within areas that are closer to the ocean, but would remain significant and unavoidable, Class I.

As the RBEP would be located on the same site, a new power generating facility on the same site would not result in appreciable changes to the surface hydrology of the site and thereby the quantity of site runoff; once the site is cleared and prepared. In addition, the RBEP would be subject to an NPDES/WDR (Waste Discharge Requirements) permit from the California RWQCB, Los Angeles Region. In compliance with this permit, the RBEP would be required to comply with permit conditions, which would include characterization of the amounts and types of wastes generated and expected to be discharged, effluent limitation thresholds for pollutants of concern, as well as compliance monitoring and reporting requirements for the proposed discharge(s). Therefore, potential discharges from the drilling and processing facility, in combination with the RBEP, is not expected to potentially exceed the water quality standards, nor degrade designated beneficial uses of receiving waters.

6.1.2.10 Land Use and Recreation

The use of the AES parcel for the Project Site would have similar land use impacts as the Proposed Project because the current land use and zoning of the AES is not consistent with an oil and gas development project. Further, the current zoning ordinance states that any new power plant or modification cannot have any adverse impact on surrounding land uses and neighborhoods. In March of 2013 a ballot measure, Measure A, was placed on the ballot in the City of Redondo Beach for rezoning the land under the power plant to a mixture of up to 40 percent institutional and commercial uses and the remaining land designated parkland and open space. Measure A was defeated. Therefore, the use of the AES site would require a ballot measure similar to the one required for the proposed Project Site to amend the City of Redondo

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Beach zoning ordinance and land use plan designation. Therefore, the impact and mitigation for land use for the project site is the same for this alternative as the Proposed Project.

Impacts associated with the construction and operation of the Proposed City Maintenance Yard would no longer apply, since, under this alternative, the City Maintenance Yard would not be relocated.

The surrounding land uses of the AES site include commercial, industrial, office and the City of Redondo Beach Harbor (King Harbor). Due to the fact the harbor is a recreational land use, the impacts of an oil spill and the potential for nuisance from noise, odors, and visual impacts from this alternative to recreational land users would be the same as the Proposed Project.

6.1.2.11 Noise

Noise and vibration impacts associated with demolition and construction (NV.1, NV.3 and NV.7) would be reduced compared to the Proposed Project, because of more favorable topography and increased distance between the AES site and the nearest sensitive receivers. With mitigation, noise impacts would be less than significant.

Impacts related to drilling-plus-production in Phases 2 and 4 (NV.2 and NV.5) and long-term production (NV.6) would be reduced compared to the Proposed Project, because of more favorable topography and increased distance between the AES site and the nearest sensitive receivers. With mitigation, noise impacts would be less than significant.

Pipeline connections along Valley Drive would no longer need to be installed, so the noise impact associated with pipeline construction (NV.4) would no longer apply to Valley Drive, but would apply to the other sections of pipeline installation.

6.1.2.12 Public Services

The project will not trigger the need for new facilities in Redondo Beach. It is expected that solid waste will go to same landfills as those addressed in the Public Services section for the Proposed Project. This alternative would draw on a similar set of police services as the Proposed Project since the AES Site is in close proximity to the Proposed Project Site. Because Redondo Beach has similar public services as Hermosa Beach, impacts related to public services under this alternative would be the same as under the Proposed Project and would be less than significant.

6.1.2.13 Transportation

Under this alternative, transportation routes for the Phase 2 crude oil trucks and the construction vehicular traffic would be similar to the Proposed Project except that they would not use Valley Drive. The routes along PCH and 190th and Artesia would continue to be used. The AES site access would mostly likely use the Herondo Street and Harbor Drive intersection and access the site from the site access immediately south of that intersection. As traffic is light on Herondo

Street (as per discussions with Hermosa and Redondo Beach Public Works Departments), and traffic levels and impacts would be similar to the Proposed Project. During Phase 3 RAP implementation, as contaminated soils might not need to be transported (depending on the extent of contaminated soils at the AES site), traffic levels might be lower.

Impact TR.1 related to construction and impact TR.2 related to the use of prohibited traffic routes, would be the same as the Proposed Project and the same mitigation measures identified for the Proposed Project would apply.

6.1.2.14 Water Resources

Potential surface water and groundwater quality impacts associated with generation of increased sewage and operational wastewater would be similar to Proposed Project impacts as both areas use the same wastewater treatment facilities. Impacts WR.1 through WR.3, and correspondingly, mitigation measure WR-1 would apply.

6.1.2.15 Environmental Justice

Environmental justice impacts would be the same as under the Proposed Project because there is no net change in existing conditions and the area and population profiles are similar to the Proposed Project. The site is also already in industrial use, and nearby residences are further away than the Proposed Project and there is even less of a likelihood that environmental justice impacts would occur.

6.1.3 Reduced Wells Alternative

Under the Reduced Wells alternative, fewer wells would be drilled and less crude oil and gas would be produced. Drilling would take place for about 1 year only.

Impacts related to the Proposed City Maintenance Yard Project would be the same as the Proposed Project and the same mitigation measures identified for the Proposed Project would apply.

6.1.3.1 Aesthetics

Under this alternative, active drilling visual impact duration would be reduced from 2.5 years to 1 year in Phase 4. When the drill rig is in operation, it will still have the same visual impacts as the Proposed Oil Project under AE.1 and AE.4 (views and glare, respectively). The second westerly cellar would not be drilled, therefore peak impacts to sensitive views to the west would be reduced. The duration of visual impact exposure would be reduced; however the impact would still be considered Significant and Unavoidable. The potential for re-drills of the reduced well count still remains, though this potential may be reduced given that fewer wells would have the potential need for a re-drill. The potential for collective recurring impacts (under AE.1) from re-installation of the rig, 32-foot sound attenuation wall and/or workover rig throughout the life-cycle of the Project remains, but is reduced.

Impacts related to operational views of the facility or pipeline facilities, (AE.2 and AE.3), and impacts related to glare (AE.4) and mitigation measures identified for the Proposed Project would be the same as the Proposed Oil Project.

6.1.3.2 Air Quality

Impacts associated with construction, AQ.1, would be the similar to the Proposed Project as the same equipment arrangement would have to be installed. Phase 3 construction would be slightly less because it is likely that one less crude oil tank would need to be constructed and only one well cellar would be constructed. Mitigation measures associated with impact AQ.1 would still apply.

Impacts related to excavation of contaminated soils, AQ.2, would be the same as the Proposed Project as the same amount of soils would be removed.

Impacts related to operational regional emissions, AQ.3, would be less than the Proposed Project during the flaring peak day as the flare would be sized smaller in coordination with the reduced gas input. Emissions on a peak day with the microturbines would be the same as the Proposed Project. Mitigation measures associated with impact AQ.3 would still apply.

Impacts related to operational localized emissions. Impact AQ.4, would be less significant than under the Proposed Project as the flare would be smaller. Emissions on a peak day with the microturbines would be the same as the Proposed Project. Mitigation measures associated with Impact AQ.4 would still apply.

Impacts related to odors, AQ.5, would be similar to the Proposed Project as drilling would still take place and a similar number of components would be onsite. However, drilling would not last as long and therefore the period of highest odor potential (drilling) would be less under this alternative. Mitigation measures associated with Impact AQ.5 would still apply, but impacts would remain Class I.

Impacts related to GHG, AQ.6, would be less as less electricity would be required to operate with fewer wells and less crude pumping requirements and fewer wells would be drilled. However, emissions from the microturbines would remain the same as the Proposed Project. Mitigation measures associated with impact AQ.6 would still apply.

Impacts related to toxic emissions, AQ.7, would be less than under the Proposed Project. The microturbine and fugitive emissions would be similar, but the use of the workover rig would most likely be less as there would be fewer wells. However, mitigation measures identified for the Proposed Project would still apply.

6.1.3.3 Biological Resources

Impacts on biological resources would be the same as under the Proposed Project. Impacts BIO.1 and BIO.2 related to construction would not change as most construction related items

would be the same as the Proposed Project. Mitigation measures identified for the Proposed Project would still apply.

6.1.3.4 Cultural Resources

Impacts associated with construction would be similar to the proposed project as the same equipment and support structures would have to be installed. Phase 3 construction would be slightly less as probably one less crude oil tank would need to be constructed and only one well cellar would be built. Impacts related to excavation of contaminated soils, would be the same as the Proposed Project, as the same amount of soils would be removed.

Mitigation measures developed for the Proposed Project would still apply.

6.1.3.5 Energy

Under this alternative, fewer wells would be drilled and less crude oil and gas would be developed. The amount of energy required to construct the site would be about the same. Energy required to drill the wells would be less and to operate the system would be less as less crude oil and gas would need to be processed. However, as less crude oil and gas would be developed, less energy would also be produced to be used by area consumers.

6.1.3.6 Fire Protection and Emergency Response

Under this alternative, impacts on emergency response, fire water related to impact FP.1 would be the same as the Proposed Oil Project as the same equipment arrangement would be required to process the crude oil and gas. Resources and inspection requirements would be the same as the Proposed Oil Project. Impacts FP.1 would be the same and mitigation measures associated with impact FP.1 would still apply.

Impacts related to spacing would be less than the Proposed Project as only one well cellar would be constructed and possibly one crude oil tank would not be constructed. However, spacing issues would still remain (see impact FP.2) due to the small site and mitigation measures identified for the Proposed Project would still apply.

6.1.3.7 Geological Resources

Impacts related to slope stability (GEO.3) and erosion (GEO.5) would be the same as the Proposed Project, because construction would be the same as for the Project. However, impacts related to seismicity (GEO.1), wastewater injection (GEO.2), and ground subsidence (GEO.4), would be reduced in duration as the drilling portion of the project would last only one year. Mitigation measures identified for the Proposed Project would still apply.

6.1.3.8 Safety, Hazards and Risk of Upset

As fewer wells are drilled under this alternative, there would be less time drilling, which is potentially the most risky activity associated with the Project. This would reduce the risk levels over the Proposed Project. However, the peak risk levels, which are those depicted by the risk profiles, would remain the same under this alternative. Therefore, peak risk levels would be reduced in duration, but would remain significant as per SR.1. Mitigation measures associated with impact SR.1 would still apply.

As less crude oil would be transported under this alternative, spill volumes related to pumping would be reduced. Spill volumes under the unmitigated worst case would be reduced by more than 1,200 gallons at the corner of Herondo and Valley Drive.

6.1.3.9 Hydrology

Impacts related to surface runoff (HWQ.1) and demolition, grading, remediation, and construction (HWQ.2) would be the same as the Proposed Project, as construction would be the same as for the Project. However, potential impacts related to operational oil spills (HWQ.3) would be reduced as the spill volume would be less (see section 5.2.3.8 above). However, impacts would remain Class I and mitigation measures identified for the Proposed Project would still apply.

6.1.3.10 Land Use and Recreation

Under this alternative fewer wells would be drilled but the amendments to the land use plans, policies, and land use maps would still be required. Therefore, the impacts to land use would be the same as the Proposed Project.

Similarly, the land use amendments necessary for approval for the relocation of the City Maintenance Yard would be the same so the land use impacts would remain the same as for the Proposed Project.

Drilling of fewer wells would lessen the potential of an oil spill from the actual drilling activity due to the shorter drilling timeframe; however, the risk of oil spill would remain from the production phase of the Project. Therefore, this alternative would not significantly change the impact of the potential for oil spills to recreational land users and thus the significant and Class I impact would remain. The potential for nuisance impacts from noise, odor, and visual impacts would be reduced by this alternative because the drill rig would be onsite for a shorter time period. However, because these nuisance impacts were determined to be less than significant due to the short term and temporary nature of the impacts, this impact is the same as the Proposed Project.

6.1.3.11 Noise

Impacts related to construction noise, NV.1, NV.3 and NV.4, would be the same as under the Proposed Project as the facility and the pipelines would still be built. Mitigation measures identified for the Proposed Project would still apply. Operational noise impacts, NV.2 and NV.5, would be a lower severity as the drilling period would not last as long. The peak drilling noise, however, would remain the same and would therefore remain a Class I. Mitigation measures identified for the Proposed Project would still apply. Production noise levels, NV.6, would be the same as under the Proposed Project and mitigation measures identified for the Proposed Project would still apply.

6.1.3.12 Public Services

As fewer wells are drilled under this alternative, there would be less waste generated from drilling activities, however, drilling muds and cuttings are either recycled or taken to an approved hazardous waste facility. The solid waste and trash taken to public landfills would remain the same as the proposed Project and the impact would remain less than significant.

This alternative would be the same as the Proposed Project for Police services.

6.1.3.13 Transportation

Impact TR.1 related to construction and impact TR.2 related to the use of prohibited traffic routes, would be the same as the Proposed Project as a similar amount of construction would be required under this alternative and the same routes would be used. Mitigation measures identified for the Proposed Project would apply.

6.1.3.14 Water Resources

Under this alternative, potential surface water and groundwater quality impacts associated with generation of increased sewage and operational wastewater would be less than Proposed Project impacts WR.1 through WR.3 as a result of only one year of Project operations.

6.1.3.15 Environmental Justice

Environmental justice impacts would be the same as under the Proposed Project as the area and population profiles are similar to the Proposed Project.

6.1.3.16 Reduced Timeframe Alternative

Under the Reduced Timeframe alternative, the same number of wells would be drilled, and the same rate of crude oil and gas would be produced, but for a maximum 10 year timeframe. At the conclusion of the Phase 4 drilling, all equipment would be removed from the site and the site would be restored.

Impacts related to the Proposed City Maintenance Yard Project would be the same under this alternative as no changes are proposed for that portion of the Proposed Project.

6.1.3.17 Aesthetics

Active drilling visual impact duration for initial Phase 2 and 4 drilling (AE.1) would be the same as the Proposed Oil Project, except that the potential for collective recurring impacts associated with re-drills and workovers would be limited to a 10-year time frame as opposed to 30-35 years. Under a reduced timeframe, the thresholds under which a re-drill or maintenance activity might be considered necessary may be increased in order to maximize efficiency of the allowable production period, thereby increasing the average number of re-drills per year. This would result in a higher probability of a rig being on site in any given month/year, leading to increased collective recurring impact potential over the 10-years of operation. When the drill rig is in operation, it will still have the same significant visual impacts.

The visual impacts related to views of operations (AE.2 and AE.3,) or glare (AE.4 and AE.5) would be the same as the Proposed Project, but would be limited to a 10-year duration. Mitigation measures identified for the Proposed Project would still apply.

6.1.3.18 Air Quality

Impacts related to construction (AQ.1), contaminated soil excavation (AQ.2), operational regional and local emissions (AQ.3 and AQ.4), odors (AQ.5) and GHG (AQ.6) would be the same as the Proposed Project , but would be reduced in duration as the Project would last 10 years rather than 35.

Impact AQ.7, related to toxic impacts, would be reduced because the emissions from operations would last only 10 years, thereby reducing the cancer risks associated with the project. Mitigation measures identified for the Proposed Project would still apply.

6.1.3.19 Biological Resources

Impacts on biology would be the same as the Proposed Project. Impacts BIO.1 and BIO.2 related to construction would not change as most construction related items would be the same as the Proposed Project. Mitigation measures identified for the Proposed Project would still apply.

6.1.3.20 Cultural Resources

Impacts associated with construction, would be the same as the proposed project as the same equipment and support structures would have to be installed. Impacts related to excavation of contaminated soils, would be the same as the proposed project as the same amount of soils would be removed.

Mitigation measures developed for the Proposed Project including would still apply.

6.1.3.21 Energy

Under this alternative, fewer wells would be drilled and less crude oil and gas would be developed. The amount of energy required to construct the site would be about the same. Energy required to drill the wells and to operate the system would be the same during the timeframe of the operations (10 years). However, over the life of the project, less crude oil and gas would be processed. Because less crude oil and gas would be developed, less energy would be produced to be used by area consumers over the life of the Project.

6.1.3.22 Fire Protection and Emergency Response

Under this alternative, impacts on emergency response, fire water related to impact FP.1 would be the same as the Proposed Oil Project as the same equipment arrangement would be required to process the crude oil and gas. Resources and inspection requirements would be the same as the Proposed Oil Project, but for less duration. Impacts FP.1 would be the same and mitigation measures associated with Impact FP.1 would still apply.

6.1.3.23 Geological Resources

Impacts related to slope stability (GEO.3) and erosion (GEO.5) would be the same as the Proposed Project, as construction would be the same as for the Project. However, impacts related to seismicity (GEO.1), wastewater injection (GEO.2), and ground subsidence (GEO.4), would be reduced in duration.

6.1.3.24 Safety, Hazards and Risk of Upset

The Reduced Timeframe alternative would involve drilling the same number of wells as the Proposed Oil Project. The risk levels associated with this alternative would be the same as the Proposed Oil Project over the first 10 years of the Project. After 10 years, the risk levels associated with the Reduced Timeframe alternative would be eliminated as the facilities would be removed. However, the peak risk levels, which are those depicted by the risk profiles, would remain the same under this alternative. Because significant and unavoidable risks are only associated with the drilling, after 10 years, significant and unavoidable risks would only be associated with re-drills, while facility operations would present less than significant risks. Reduced risk impacts due to the reduced timeframe of this alternative would be primarily associated with the less than significant risks during facility operations, as most drilling would have already occurred and reduced reservoir pressures, as the field matures, would reduce the chances for blowouts during re-drills. Although risk levels would be eliminated after 10 years, they would remain significant due to peak drilling levels during the first 2.5 years of drilling, as described in impact SR.1. Mitigation measures associated with impact SR.1 would still apply.

Spill volumes under this alternative would be the same as the Proposed Project for the first 10 years. However, after 10 years, the spill risk would be eliminated. Using the probability calculations discussed in section 4.8, the probability of any spill along the entire pipeline over the facility life would be reduced to 15% from 34%.

6.1.3.25 Hydrology

Impacts related to surface runoff (HWQ.1) and demolition, grading, remediation, and construction (HWQ.2) would be the same as under the Proposed Project, as construction would be the same as for the Project. However, potential impacts related to operational oil spills (HWQ.3) would be reduced in duration as the Project would be reduced to 10 years of production. Mitigation measures identified for the Proposed Project would still apply.

6.1.3.26 Land Use and Recreation

Under this alternative the amendments to the land use plans, policies, and land use maps would still be required. Therefore, the impacts to land use would be the same as the Proposed Project.

Similarly, the land use amendments necessary for approval for the relocation of the City Maintenance Yard would be the same so the land use impacts would remain the same as for the Proposed Project.

Reducing the lifetime of the Project would lessen the potential of an oil spill to the 10 year time frame of this alternative. However, the impact of the potential for oil spills to recreational land users would remain significant and a Class I impact for the 10 year timeframe. Therefore, the impact for this alternative remains the same as the Proposed Project for the life of the Project. The potential for nuisance impacts from noise, odor, and visual impacts would be reduced by this alternative because of the shorter time period of the Project. These nuisance impacts were determined to be less than significant due to the short term and temporary nature of the impacts, and this impact is the same as the Proposed Project.

6.1.3.27 Noise

Impacts related to construction noise, NV.1, NV.3 and NV.4, would be the same as the Proposed Project as the facility and the pipelines would still be built. Mitigation measures identified for the Proposed Project would still apply. Operational noise impacts, NV.2 and NV.5, would be the same as the Proposed Project as the drilling period would last as long. The peak drilling noise would remain the same and would therefore remain a Class I. Mitigation measures identified for the Proposed Project would still apply. However, the duration of operations that would require re-drills or workover rigs would be reduced to 10 years, thereby reducing the severity of the impacts and periods of time over the life of the Project when the area experiences noise levels above the thresholds.

Production noise levels, NV.6, would be the same as the Proposed Project and mitigation measures identified for the Proposed Project would still apply.

6.1.3.28 Public Services

Due to the shorter Project life of this alternative, there would be less solid waste and trash generated and thus less taken to public landfills. However, the impact to solid waste from the

Proposed Project was determined to be less than significant; therefore, the impact classification for this alternative would remain the same as the Proposed Project.

This alternative would be the same as the Proposed Project for Police services and the Proposed Project was found to have minimal impacts on police services, and these impacts would be the same for the Redondo Beach police.

6.1.3.29 Transportation

Impact TR.1 related to construction and impact TR.2 related to the use of prohibited traffic routes, would be the same as the Proposed Project as a similar amount of construction would be required under this alternative and the same routes would be used. Mitigation measures identified for the Proposed Project would apply.

6.1.3.30 Water Resources

Potential surface water and groundwater quality impacts associated with generation of increased sewage and operational wastewater would be less than Proposed Project impacts WR.1 through WR.3 as the Project would be reduced to 10 years of production.

6.1.3.31 Environmental Justice

Environmental justice impacts would be the same as under the Proposed Project as the area and population profiles are similar to the Proposed Project.

6.1.4 Existing Pipelines Alternative

Under the Existing Pipelines alternative, existing pipelines along 190th Street would be utilized instead of installing new pipelines along 190th Street. Pipelines would still need to be constructed along Valley Drive. Construction and operations at the Project Site would remain the same as the Proposed Project.

Impacts related to the Proposed City Maintenance Yard Project would be the same the same as the Proposed Project and mitigation measures identified for the Proposed Project would still apply.

6.1.4.1 Aesthetics

Under this alternative, existing pipelines along 190th street would be utilized instead of installing new pipelines. The pipes are underground and would reduce the potential for temporary impacts as a result of construction. The same mitigation measures identified for the Proposed Project would apply though the potential for significant impacts would be reduced. Impact AE.1 and AE.2, related to views of the drilling rig and the Project Site, and impacts AE.4 related to glare, would be the same as the Proposed Project. Impacts AE.3 related to views of the pipeline

facilities or AE.5, glare from the pipeline facilities, would still be applicable to any above-ground facilities installed as part of the modifications to the existing pipeline.

6.1.4.2 Air Quality

Impacts related to construction emissions (AQ.1) would be reduced under this alternative as less construction would be required to install pipelines only along Valley Drive. However, peak day emissions would remain the same as only the duration of pipeline construction would be changed.

Impacts related to site construction (AQ.2) or operations (AQ.3, AQ.4, AQ.5, AQ.6 and AQ.7) would be the same as the Proposed Project, although AQ.6, GHG, would be slightly reduced as the GHG emissions associated with construction would be less under this alternative.

6.1.4.3 Biological Resources

Impacts on biology would be the same as the Proposed Project except along the pipeline route past Valley Drive, where the existing pipeline would eliminate the potential biological impacts from vegetation removal. Impacts BIO.2 related to construction at the Project Site would not change as most construction related items would be the same as the Proposed Project. Mitigation measures identified for the Proposed Project would still apply.

6.1.4.4 Cultural Resources

Under this alternative, existing pipelines along 190th street would be utilized instead of installing new pipelines. Construction and operations at the Project Site would remain the same as the Proposed Project.

Impacts associated with construction, would be similar to the Proposed Project, as the same equipment and support structures would have to be installed, although pipeline trench excavation would be reduced. Impacts related to excavation of contaminated soils would be the same as the proposed project, as the same amount of soils would be removed.

Mitigation measures developed for the proposed project including CR-1a, CR-1b, CR-1c, and CR-2 would still apply.

6.1.4.5 Energy

Under this alternative, the amount of energy required to construct the site would be about the same as the Proposed Project. Energy required to drill the wells would be the same and to operate the system would be the same. Less energy would be required for pipeline construction as less pipeline length would need to be constructed. Impacts would be about the same as the Proposed Oil Project.

6.1.4.6 Fire Protection and Emergency Response

Under this alternative, impacts on emergency response, fire water related to impact FP.1 would be the same as the Proposed Project as the same equipment arrangement would be required to process the crude oil and gas. Resources and inspection requirements would be the same as the Proposed Project. Impacts FP.1 would be the same and mitigation measures associated with impact FP.1 would still apply.

6.1.4.7 Geological Resources

Impacts GEO.1 through GEO.5 would be the same as the Proposed Project with respect to construction and operation of the drilling facilities. However, potential seismic related impacts to the pipeline (GEO.1) and erosion related impacts associated with construction of the pipeline (GEO.5) would be reduced as a result of utilizing existing pipelines for a portion of the pipeline route.

6.1.4.8 Safety, Hazards and Risk of Upset

Under this alternative, risk levels at the facility would be the same as the Proposed Project. Impacts and mitigation measures identified for the Proposed Project would be the same.

Spills volumes would be the same as the Proposed Project. However, spill risk would increase as the use of an older pipeline would potentially increase the spill frequency. Although internal inspections would still be conducted to identify corrosion and other issues, the spill frequency would still increase. Historical data (CSFM 1992) on older pipelines shows that pipelines older than 40 years have an increase in spill risks by a factor of 5 times.

6.1.4.9 Hydrology

Impacts HWQ.1 and HWQ.2 would be the same as the Proposed Project with respect to construction and operation of the drilling facilities. Potential surface water quality related impacts associated with operation of an existing pipeline (HWQ.2) would be increased as a result of utilizing existing pipelines that may be more susceptible to spills due to age for a portion of the pipeline route.

6.1.4.10 Land Use and Recreation

Under this alternative the amendments to the land use plans, policies, and land use maps would still be required. Therefore, the impacts to land use would be the same as the Proposed Project.

Similarly, the land use amendments necessary for approval for the relocation of the City Maintenance Yard would be the same, so the land use impacts would remain the same as for the Proposed Project.

The use of existing pipelines may increase the potential for an oil spill from pipelines due to the age of the pipelines as opposed to new pipelines. However, the overall potential for oil spills to recreational land users from the other Project components would remain the same. Therefore, the potential for oil spills to recreational land users for this alternative is the same as the Proposed Project, significant and Class I. The potential for nuisance impacts from noise, odor, and visual impacts would be the same as the Proposed Project.

6.1.4.11 Noise

Noise impacts associated with pipeline construction (NV.4) would be reduced compared to the Proposed Project, but would still occur along Valley Drive. Under the Existing Pipeline alternative, all other noise impacts associated with the project would remain unchanged.

6.1.4.12 Public Services

The use of existing pipelines under this alternative would not significantly change the amount of solid waste from the Proposed Project. Therefore, the impact classification for this alternative would remain the same as the proposed Project and remain less than significant.

This alternative would be the same as the Proposed Project with regard to use of and impacts on Police services. The Proposed Project was found to have minimal impacts on police services, and these impacts would be the same for the Redondo Beach police.

6.1.4.13 Transportation

In this alternative, construction traffic related to pipeline installation (TR.1) would be reduced as less pipeline construction would be required. Impacts related to construction of the pipeline within the 190th Street would be eliminated and the potential impacts to traffic and circulation during the construction activities would be eliminated. Some impacts to traffic and circulation would remain, however, as the pipelines down Valley Drive would still need to be constructed, but impacts would be reduced.

Impacts related to the use of prohibited roadways, TR.2, would be the same as the Proposed Project because the same traffic routes would be used under this alternative as under the Proposed Project.

6.1.4.14 Water Resources

Potential surface water and groundwater quality impacts associated with generation of increased sewage and operational wastewater would be the same as under the Proposed Project and mitigation associated with impacts WR.1 through WR.3 would apply.

6.1.4.15 Environmental Justice

Environmental justice impacts would be the same as under the Proposed Project as the area and population profiles are similar to the Proposed Project.

6.1.5 Phase 1 City Maintenance Yard Construction

Under the Phase 1 City Maintenance Yard Construction alternative, the Proposed City Maintenance Yard permanent location at the self storage facility would be construction prior to Phase 1 of the Proposed Project. The temporary maintenance yard located next to the self-storage facility and City Hall would not be constructed.

All impacts related to the other components of the Proposed Project (i.e., the oil drilling and extraction activities and the pipelines) would be the same as the Proposed Project. Mitigation measures identified for these other components of the Proposed Project would still apply.

6.1.5.1 Aesthetics

Impacts AE.6 and AE.7, related to views and glare of the permanent City Maintenance Yard would be the same as the Proposed City Maintenance Yard Project, the impacts would just occur earlier in the Proposed Project. As the temporary yard would not be constructed, impacts associated with views of the temporary yard would be eliminated. Although these are not significant from public viewing areas, the 8 foot wall and 17 foot building placed in front of residences located to the west of the temporary site would be eliminated under this alternative.

6.1.5.2 Air Quality

Construction emissions associated with the construction of the temporary maintenance yard would be eliminated as the temporary yard would not be constructed. Impacts related to the permanent City Maintenance Yard under this alternative would be the same as the Proposed Project as the same construction activities would be required.

6.1.5.3 Biological Resources

Impacts on biology would be the same as the Proposed Project. Impacts BIO.1 and BIO.2 related to construction would not change as most construction related items would be the same as the Proposed Project. Mitigation measures identified for the Proposed Project would still apply.

6.1.5.4 Cultural Resources

Impacts on cultural resources would be the same as the Proposed Project. Impacts CR.1 and CR.2 are related to construction and would not change as most construction related items would be the same as the Proposed Project. Mitigation measures identified for the Proposed Project would still apply.

6.1.5.5 Energy

Energy use would decrease from the Proposed Project due to fewer construction requirements, and therefore less fuel and transportation of materials that would be required.

6.1.5.6 Fire Protection and Emergency Response

Fire protection and emergency response issues would be the same as the Proposed Project as, except that, with the elimination of the temporary facilities, impact FP.3 would be eliminated and the functions of the fire department would not potentially be impacted as Bard Street would not be closed to through traffic.

6.1.5.7 Geological Resources

Under this alternative, a new temporary maintenance yard area would not be constructed and construction related impacts (GEO.3 and GEO.5) would be reduced for the period of time that the temporary yard is constructed. Impacts would be the same for the construction of the permanent facility.

6.1.5.8 Safety, Hazards and Risk of Upset

Safety and Risk impacts would be the same as the Proposed Project because the temporary facility, which would be eliminated under this alternative, did not introduce any significant safety and risk issues.

6.1.5.9 Hydrology

Under this alternative, construction related impacts (HWQ.2) would be reduced the period of time that the temporary yard is constructed. Impacts would be the same for the construction of the permanent City Maintenance Yard.

6.1.5.10 Land Use and Recreation

Under this alternative the amendments to the land use plans, policies, and land use maps would still be required. Therefore, the impacts to land use would be the same as the Proposed Project.

Similarly, the land use amendments necessary for approval for the relocation of the City Maintenance Yard would be the same so the land use impacts would remain the same as for the Proposed Project.

This alternative would not change the potential for oil spills to recreational land users; therefore, the potential for oil spills to recreational land users for this alternative is the same as the Proposed Project. The potential for nuisance impacts from noise, odor, and visual impacts would be the same as the Proposed Project.

6.1.5.11 Noise

Noise impacts related to construction would be reduced under this alternative because less construction would be required. Construction impacts related to the temporary City Maintenance Yard would last for 9 months, and would produce significant and unavoidable Class I impacts (impact NV.7). This period of Class I impacts would be eliminated. The noise associated with the permanent City Maintenance Yard would be the same as the Proposed Project and would remain Class I.

Noise associated with the operations of the temporary City Maintenance Yard was determined to present significant and unavoidable impacts to the City Hall and nearby residences. This Class I impact would be eliminated under this alternative.

6.1.5.12 Public Services

Under this alternative, the temporary maintenance yard area would not be constructed, therefore, less solid waste and trash would be generated. However, the impact to solid waste for the Proposed Project was determined to be less than significant, thus the impact classification for this alternative would be the same as the proposed Project, less than significant.

This alternative would be the same as the Proposed Project with regard to use of and impacts on Police services because the temporary City Maintenance Yard, which would be eliminated under this alternative, would not have impacts on police services.

6.1.5.13 Transportation

Impacts on transportation under this alternative would be the same as the Proposed Project except that additional trips would be eliminated due to the elimination of construction related traffic to construct the temporary City Maintenance Yard. Because the trips related to the construction of the Proposed Project temporary City Maintenance Yard would occur prior to Phase 1, and would be small in number, these impacts were less than significant.

Impacts would be the same for the construction and operations of the permanent City Maintenance Yard.

6.1.5.14 Water Resources

Under this alternative, the temporary City Maintenance Yard area would not be constructed and potential surface water and groundwater quality impacts associated with generation of increased sewage (WR.1) would be the same as the Proposed Project as the same amount of sewage would be generated under each scenario (with or without the temporary facilities).

Impacts would be the same for the construction and operations of the permanent City Maintenance Yard.

6.1.5.15 Environmental Justice

Environmental justice impacts would be the same as under the Proposed Project as the area and population profiles are similar to the Proposed Project

6.2 Proposed Project Options and Scenarios

The Proposed Project has a number of different options and scenarios related to the valve box location, the pipeline route and the No Added Parking/Parking option associated with the Proposed City Maintenance Yard. Although these are not technically alternatives, they have been addressed in this section to identify what options are environmentally preferable. In addition, depending on the results of the Phase 2 testing, the project might not proceed past Phase 2 and this scenario is also addressed herein.

6.2.1 Valve Box Options

Of the four valve box options, none of which create significant and unavoidable impacts, the locations which provide the greatest separation from receptors provide for the least environmental impacts. These would be Valve Box Option 2 and 4 sites. Between these two, Valve Box Option 2, located next to railroad tracks and the industrial Praxair Facility, provides the greatest separation because it is not located next to busy streets, as in Option 4. Of the Valve Box options, Valve Box 2 provides an environmentally superior option as it would be located farthest from receptors, even though there are no significant and unavoidable impacts associated with the other valve box options.

6.2.2 Pipeline Scenarios

Of the three pipeline route scenarios, none of which create significant and unavoidable impacts aside from the potential for crude oil spills, which is the same between all three options, scenario 3 (within the SCE Corridor) avoids transportation and circulation impacts by avoiding construction on streets or lane closures and reduces air quality impacts by reducing paving activities. Other impacts associated with the three alternatives would be the same. Pipeline Scenario 3, which would place the pipeline within the SCE ROW underneath the power lines and not in roadways, would provide an environmentally superior option as it would avoid short-term impacts to traffic, circulation and air quality.

6.2.3 City Maintenance Yard No Added Parking/Parking Option

The Proposed City Maintenance Yard Project could be built either with an added 97 parking spaces or without the added spaces. The Parking Option would generate additional impacts in air quality due to the additional construction requirements. Some traffic impacts could also be realized through a re-distribution of traffic in order to utilize the new parking spaces, thereby increasing traffic congestion at nearby intersections, such as Valley Drive and Pier Avenue or at Bard Street and Pier Avenue. However, these would not be new trips, just redistributed trips.

The Parking Option may allow for reduced congestion in other areas of the City due to an increased availability of parking and may enhance the visitor experience. There are no significant and unavoidable impacts associated with either option.

Between the two No Added Parking and Parking Options, the No Added Parking produces fewer impacts in the area of less construction time and emissions and the potential for less congestion at the intersections near the Parking area. However, the Parking Option may allow for reduced congestion in other areas of the City due to an increased availability of parking and may enhance the visitor experience. The two options essentially are environmentally equal. Table 6.1 compares the changes in intensity of the various pertinent issue area impacts.

Table 6.1 Proposed Project Options - Impact Comparison

Impact	Valve Box Options				Pipeline Scenarios			City Maintenance Yard Options	
	Option 1	Option 2	Option 3	Option 4	1	2	3	Parking	No Added Parking
1. Aesthetics: views of components	↑	↓	↑	↓	-	-	-	↑	↓
2. Air Quality: odors	↑	↓	↑	↓	-	-	-	-	-
3. Air Quality: construction emissions	-	-	-	-	↑	↑	↓	↑	↓
4. Land use: incompatibility to adjacent uses	↑	↓	↑	↓	-	-	-	-	-
5. Noise: noise impacts during construction	↑	↓	↑	↓	↑	↑	↓	↑	↓
6. Noise: impacts during operations	-	-	-	-	-	-	-	↑	↓
7. Risk of Upset: risks from operations	↑	↓	↑	↓	-	-	-	-	-
8. Transportation: impacts during construction	-	-	-	-	↑	↑	↓	↑	↓

None of these options would cause significant and unavoidable impacts. For the less than significant impacts, ↓ indicates less severity, ↑ indicates greater severity. All impacts in other issue areas would be the same for all options.

6.2.4 Phase 2 Unsuccessful Scenario

During Phase 2 of the Proposed Oil Project, the crude oil production levels would be assessed by the Applicant to determine if it is feasible to continue to Phase 3, build the full processing facility and invest in the full well drilling program. If the test wells during Phase 2 are unsuccessful, and the Applicant decides not to continue, then the test wells would be abandoned, the test equipment would be removed and the site would be vacated.

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At this point in the Project, remediation would not have been implemented and the site would remain contaminated. Depending on the future use, the site would need to have some level of remediation performed, but that level would be equal to or less than the remediation proposed by the Applicant. Impacts related to the soil excavation, removal and treatment would be the same or less than the Proposed Project. Air emissions related to excavation and trucking of the contaminated soils would be the same or less than the Proposed Project and impacts have therefore been assessed within this EIR for the remedial actions that would be necessary under this scenario.

The City Maintenance Yard would need to move from its temporary site to a permanent facility. The permanent facility could be the Proposed City Maintenance Yard Project, located at the Hermosa Beach Self-Storage facility immediately next to City Hall. The impacts of this scenario have been examined in this EIR as part of the Proposed Project.

The City Maintenance Yard could be built and relocated to the current City Maintenance Yard site, which would be vacated by the Applicant under this scenario. The construction requirements of this scenario would be equal to the air emissions, traffic, noise and aesthetic impacts of the Proposed City Maintenance Yard Project. Air impacts associated with construction, noise impacts associated with operations, aesthetic impacts and traffic impacts would be less than significant. Only noise impacts associated with construction would be significant and unavoidable, as they are for the Proposed City Maintenance Yard Project under the Proposed Project. Impacts would therefore be the same as the Proposed Project for construction and operation of a new City Maintenance Yard at 555 6th Street and have been assessed within this EIR.

6.3 Comparison of Proposed Project and Alternatives

The following discussion compares impacts associated with the Proposed Project with those associated with the No Project Alternative and the other alternatives. These impacts are identified as a result of the analysis provided in Section 4.0 Environmental Analysis and Section 5.0. In cases where the impact from an alternative is in the same class as for the Proposed Project, differences in severity of the impact are analyzed.

6.3.1 Environmentally Superior Alternative Analysis

The approach taken in this EIR is to provide an assessment of alternatives to the following components of the Proposed Project:

- Alternative production and drilling sites (location);
- Alternative operational parameters;
- Alternative transportation modes; and
- Alternative City Maintenance Yard construction timing.

A larger range of potential alternatives was screened in Section 5.0, and a reasonable range of alternatives was selected for further analysis in this Section 6.0. The Environmentally Superior Alternative analysis considers all the options to distill the Environmentally Superior Alternative.

CEQA does not require any particular methodology for comparing alternatives to the Proposed Project. In this EIR, each of the alternatives is compared to the corresponding Project component to determine whether the alternative would cause any additional or more severe impacts compared to the Proposed Project or would reduce impacts or the impact severity.

In addition, CEQA Section 15126.6 states " An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project" and " the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly."

CEQA 15126.6 also states, in regards to feasibility of an alternative site, that the EIR must assess "whether the proponent can reasonably acquire, control or otherwise have access to the alternative site".

Impacts related to the Proposed Project are shown below in Table 6.2.

6.3.1.1 Alternatives Compared to the Proposed Project

In addition to the No Project Alternative, the following alternatives were assessed.

- AES Site Alternative;
- Reduced Wells Alternative;
- Reduced Timeframe Alternative;
- Existing Pipelines Alternative; and
- Phase 1 City Maintenance Yard Construction Alternative.

As required by CEQA, each of these is compared to the Proposed Project to disclose the respective environmental advantage or disadvantage over the Proposed Project.

Table 6.3 and 6.4 provide a comparison between the Proposed Project and the Alternatives for each Class I impact identified in the issue areas. For other issue areas, where mitigation measures identified in the EIR would reduce the impacts to a less-than-significant level for the alternatives and the Proposed Project, all of the alternatives and the Proposed Project would be the same and no further comparison is required. For significant and unavoidable impacts where the classification would not change, an increase or decrease in severity is denoted with an up or

Table 6.2 Proposed Project - Significant Unavoidable Impacts Summary

Impact		Significant Unavoidable Impact?	
		Construction, Drilling, Re-drilling	Operations
Aesthetics:	views of the drilling/workover rig	Yes	No*
	night lighting of the rig	Yes	No
Air Quality: odors		Yes	Yes
Biology: oil spills into the marine environment		Yes	Yes
Cultural		No	No
Energy		No	No
Environmental Justice		No	No
Fire Protection and Emergency Response		No	No
Geology		No	No
Hydrology: oil spills into the marine environment		Yes	Yes
Land use: incompatibility to adjacent uses		Yes	Yes
Noise:	noise impacts during drilling	Yes	No
	noise impacts during construction	Yes	No
Public Services		No	No
Recreation: oil spill impacts on recreational areas		Yes	Yes
Safety and Risk of Upset: risks from drilling		Yes	No
Transportation		No	No
Number of Significant and Unavoidable Impacts		10	5

Notes: a Yes with shading = significant impact that cannot be mitigated to less than significant. Impacts classified as less than significant or less than significant with mitigation are discussed within the main EIR document. *During Workovers significant unavoidable impacts would occur for aesthetics.

down arrow, respectively. The “Y” means Yes, indicating where a significant and unavoidable impact occurs. A discussion of each alternative compared to the Proposed Project follows.

No Project Alternative Compared to the Proposed Project

With the No Project Alternative, no development of the oil and gas resources would occur. There would be no drilling and no construction at the Project Site or along pipeline routes. The City Maintenance Yard would not be relocated and rebuilt. None of the impacts associated with the Proposed Project would occur. No new impacts would occur under the No Project Alternative.

AES Site Alternative Compared to Proposed Project

The AES Site Alternative has environmental advantages over the Proposed Project primarily because it would be farther from residential and commercial/light industrial locations. This reduces the severity of impact in aesthetics, air quality, noise and safety and risk of upset. This site would eliminate the following significant and unavoidable impacts:

- Aesthetics: views of the drilling rig;
- Aesthetics: glare from the drilling rig and operational facilities;
- Noise: noise impacts from drilling activities; and

- Safety and Risk of Upset: releases and impacts from drilling releases.

In addition, the severity of some Class I impacts would be reduced, including:

- Air Quality: the impacts on air quality due to odors would be reduced because the facility would be located farther away from receptors, thereby allowing more distance for odors to dissipate and reducing the number of minor upset scenarios that could cause impacts to receptors;
- Hydrology: the impact on hydrology of spills to the environment would be reduced, because the section of pipeline along Valley Drive would be eliminated, thereby reducing the spill frequency in an area where spills could more readily reach the marine environment;
- Land Use: the incompatibility of the land use with surrounding neighbors would be less due to the industrial nature of the surrounding land use and the distance to receptors, thereby reducing impacts in land use compatibility issues such as aesthetics and noise;
- Recreation: the impact on recreation resources would be reduced due to the reduced frequency of crude oil spills.

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Table 6.3 Proposed Project Versus Alternatives - Significant Unavoidable Impacts Only

Impact	Proposed Project		No Project Alternative	AES Site Alternative		Reduced Wells Alternative		Reduced Timing Alternative	
	Construction, Drilling Re-drilling	Operations		Construction, Drilling Re-drilling	Operations	Construction, Drilling Re-drilling	Operations	Construction, Drilling Re-drilling	Operations
1. Aesthetics: views of the drilling/workover rig	Y	*			*	Y↓	*	Y↓	*
2. Aesthetics: night lighting of the rig	Y					Y↓		Y↓	
3. Air Quality: odors	Y	Y		Y↓	Y↓	Y↓	Y	Y↓	Y↓
4. Biology: oil spills into the marine environment	Y	Y		Y↓	Y↓	Y↓	Y↓	Y↓	Y↓
5. Hydrology: oil spills into the environment	Y	Y		Y↓	Y↓	Y↓	Y↓	Y↓	Y↓
6. Land use: incompatibility to adjacent uses	Y	Y		Y↓	Y↓	Y↓	Y	Y↓	Y↓
7. Noise: noise impacts during drilling	Y					Y↓		Y↓	
8. Noise: noise impacts during construction	Y			Y↓		Y		Y	
9. Recreation: spill impacts on recreational areas	Y	Y		Y↓	Y↓	Y↓	Y↓	Y↓	Y↓
10. Safety and Risk of Upset: risks from drilling	Y					Y↓		Y↓	
Number of Significant Impacts	10	5	Zero	6	5↓	10↓	5↓	10↓	5↓

Shaded = significant impact that cannot be mitigated to less than significant. ↓ indicates significant and unavoidable but less severity, ↑ indicates significant and unavoidable but greater severity. *During Workovers significant unavoidable impacts would occur for aesthetics.

Table 6.4 Proposed Project Versus Project Component Alternatives - Significant Unavoidable Impacts Only

Impact	Proposed Project		City Maintenance Yard Phase 1		Existing Pipeline	
	Construction, Drilling Re-drilling	Operations	Construction, Drilling Re-drilling	Operations	Construction, Drilling Re-drilling	Operations
1. Aesthetics: views of the drilling/workover rig	Y	*	Y	*	Y	*
2. Aesthetics: night lighting of the rig	Y		Y		Y	
3. Air Quality: odors	Y	Y	Y	Y	Y	Y
4. Biology: oil spills into the marine environment	Y	Y	Y	Y	Y↑	Y↑
5. Hydrology: oil spills into the environment	Y	Y	Y	Y	Y↑	Y↑
6. Land use: incompatibility to adjacent uses	Y	Y	Y	Y	Y	Y
7. Noise: noise impacts during drilling	Y		Y		Y	
8. Noise: noise impacts during construction	Y		Y↓		Y↓	
9. Recreation: spill impacts on recreational areas	Y	Y	Y	Y	Y↑	Y↑
10. Risk of Upset: risks from drilling	Y		Y		Y	
Number of Significant Impacts	10	5	10↓	5	10↑	5↑

Shaded = significant impact that cannot be mitigated to less than significant. ↓ indicates significant and unavoidable but less severity, ↑ indicates significant and unavoidable but greater severity. *During Workovers significant unavoidable impacts would occur for aesthetics

Reduced Wells Alternative Compared to Proposed Project

The Reduced Wells Alternative has environmental advantages over the Proposed Project primarily because it would reduce the duration of some impacts. This would reduce the severity of impacts in the areas of aesthetics, air quality and odors, noise and safety and risk of upset. This alternative would not eliminate any significant and unavoidable Class I impacts. However, it would reduce the severity of the following Class I impacts:

- Aesthetics: the impacts associated with viewing the drilling rig would be reduced because the drilling rig during Phase 4 would be located onsite only 1 year instead of 2.5 years;
- Aesthetics: the impacts associated with glare from the drilling rig would be reduced because the drilling rig during Phase 4 would be located onsite only 1 year instead of 2.5 years;
- Air Quality: the impacts on air quality due to odors would be reduced because drilling would occur for less time, thereby decreasing the potential for drilling-related odors;

- Hydrology: the impact on hydrology of spills to the environment would be reduced, because less crude oil would be produced, thereby reducing the spill volume along the pipeline route in an area where spills could more readily reach the marine environment;
- Land Use: the incompatibility of the land use with surrounding neighbors would be reduced due to the reduction in impacts from aesthetics, odors and noise;
- Noise: impacts from noise would be reduced because noise from drilling would have a shorter duration (1 year instead of 2.5);
- Recreation: impacts to recreational resources would be reduced because of the reduced spill volume from less production;
- Risk of Upset: impacts to receptors would be reduced due to the reduced duration of drilling, which is the main reason for the significant risk levels.

Reduced Timeframe Alternative Compared to Proposed Project

The Reduced Timeframe Alternative has environmental advantages over the Proposed Project primarily because it would reduce the duration of some impacts. This would reduce the severity of impact in the areas of aesthetics, air quality and odors, noise and safety and risk of upset. This alternative would not eliminate any significant and unavoidable Class I impacts. However, it would reduce the severity of the following Class I impacts:

- Aesthetics: the impacts associated with viewing the drilling rig during re-drills would be reduced because the Project would be limited to 10 years;
- Aesthetics: the impacts associated with glare from the drilling rig during re-drills would be reduced because the project would be limited to 10 years;
- Aesthetics: the impacts associated with glare from the facility would be reduced because the Project would be limited to 10 years;
- Air Quality: the impacts on air quality due to odors would be reduced because the facility would be located at the Project Site for 10 years, thereby reducing the odor events over the facility lifetime;
- Hydrology: the impact on hydrology of spills to the environment would be reduced, because crude oil would be transported for less time along the pipeline route in an area where spills could more readily reach the marine environment;
- Land Use: the incompatibility of the land use with surrounding neighbors would be reduced due to the reduction in aesthetic, odors and noise;
- Noise: impacts from noise would be reduced because re-drilling would occur only over a period of 10 years;
- Recreation: impacts to recreational resources would be reduced because impacts could occur only over a 10 year timeframe;
- Risk of Upset: impacts to receptors due to the reduced Project life would be reduced because fewer re-drills would occur over the 10 year timeframe than over the Proposed Project life.

Existing Pipelines Alternative Compared to Proposed Project

The Existing Pipelines Alternative has environmental advantages over the Proposed Project because it would reduce the need to construct pipelines along area streets or within the SCE ROW. This would reduce traffic and circulation impacts during the construction activities as

well as reduce air emissions due to construction. However, neither of these impacts is significant and unavoidable and this alternative would not eliminate any significant and unavoidable impacts.

However, older pipelines have a higher failure rate, and would increase the spill frequency along the pipeline from Valley Drive eastwards, where it would tie in to the existing pipeline. This would increase the severity of impacts in Hydrology due to oil spills, which is currently a significant and unavoidable Class I impact.

Phase 1 City Maintenance Yard Construction Compared to Proposed Project

The Phase 1 City Maintenance Yard Construction Alternative has advantages over the Proposed Project as it would reduce the need to construct a temporary City Maintenance Yard. This would reduce air quality, traffic and circulation, cultural, fire protection, hydrology and water impacts during the temporary site construction activities. However, none of these impacts are significant and unavoidable.

The construction of a permanent City Maintenance Yard before Phase 1 would decrease the severity of construction noise impacts by decreasing the duration of construction activities around the Self Storage site and City Hall by 9 months. It would also eliminate the operational noise impacts on City Hall and residences to the west of the temporary City Maintenance Yard site. These noise impacts are significant and unavoidable Class I impacts.

6.3.2 Environmentally Superior Alternative

The Proposed Project has been designed by the Applicant in an effort to reduce the number of impacts and still obtain the objectives of the Project. The alternatives provide an alternative site, operations, pipeline and phasing that allows for a selection of different components of the Project that could provide for a different mix of impacts.

The AES site reduces the greatest number of the Proposed Project's significant and unavoidable impacts to less than significant with mitigation. Therefore, the AES Site alternative is the Environmentally Superior Alternative. The use of the AES site has a number of potential land use issues, however, related to City of Redondo Beach Charter Article 27 and would most likely require a vote of the people of Redondo Beach and a re-zoning in order to move forward. These land use issues are similar to those presented by the Proposed Project Site within the City of Hermosa Beach. The EIR recognizes that while both the Proposed Project and the AES Site Alternative have similar land use challenges in contrast to the Proposed Project the Applicant has no control over the AES site.

The Phase 1 City Maintenance Yard Construction provides for advantages over the use of a temporary City Maintenance Yard primarily in the areas of noise and air emissions from increased construction. For noise, the elimination of a temporary City Maintenance Yard would eliminate a potentially significant and unavoidable impact. Therefore, the Phase 1 City Maintenance Yard construction alternative would be environmentally superior over the Proposed Project.

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Under the AES alternative, the City Maintenance Yard would not need to be moved as the drilling site would be located at the AES site.

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