4.6 Aesthetics and Visual Resources

This section addresses the potential impacts on the existing visual and aesthetic conditions in the vicinity of the Project Site. It describes the existing visual and aesthetic environment, outlines significance criteria for visual and aesthetic impacts from future activities at the site, and proposes mitigation measures for significant impacts, where applicable. The analysis is based on photographs and visual simulations in and around the site and a review of applicable regulations and policies. The analysis also addresses lighting, the current light levels in the area and the light levels that could be produced by the proposed Project.

The proposed Project would develop wells, including constructing a drilling tower, and equipment (e.g., tanks, vessels) at the Project Site.

4.6.1 Environmental Setting

The land parcels comprising the Project Area cover an irregularly shaped area of approximately 1,290 acres (see Section 2.0, Project Description). The combined parcels extend approximately 2.5 miles east to west at their widest and approximately 1.5 miles north to south. The area where development might be visible is at the end of Catalina Avenue, possibly from the end of Ocean View Avenue, from residences along Lodosa Drive, residential areas around Linda Vista Drive (to the west of Ocean View Ave), and from above Colima Road and areas along the ridgeline to the west of Colima Road within the recreational areas accessed from Colima Road. The Project Site is entirely within the Puente Hills Landfill Native Habitat Preserve (Preserve).

City of Whittier urban development surrounds the Project Site on the south and east and portions of the west, and the Preserve surrounds the area on the north and the remaining portions of the west.

The Puente Hills, running from east to west along the northern edge of the City of Whittier, are prominently visible throughout the City since they are the highest elevations within the area and rise conspicuously above the surrounding lowland terrain. Petroleum production has been a historically dominant industrial land use activity in the Puente Hills. Aerial photographs from 1972 indicate heavy impact to the area by drilling pads, roads, tanks and processing equipment. See Section 4.3, Safety, Risk of Upset, and Hazardous Materials.

However, since the establishment of the Puente Hills Landfill Native Habitat Preservation Authority in the 1990s, the area has reverted to a more natural landscape. Some roads and drilling pads are still visible but all oil and gas equipment that could affect a Viewshed (e.g., tanks, towers) has been removed.

The visual baseline was assessed by examining the quality of the views from various viewpoints in the community (the viewshed) and the illumination levels associated with lighting.

The terminology used in this analysis includes:

- Viewshed is the entire scope of view that can be taken in from a particular view point.
- Visual quality is the level of visual appeal associated with a viewshed. This is a function of the vegetation, water sources, and landforms, such as mountains and rock outcroppings, and human modifications to the area. For example, unobstructed views of the hills without

industrialization have a high visual quality, whereas views of the hills through telephone poles, office buildings, or processing equipment have a lower visual quality.

- Visual sensitivity is the relative degree of public interest in a visual resource and the concern over adverse changes in the quality of that resource. Substantial changes to some views of the hills might degrade the visual quality the same as others but not register much community concern, whereas other areas are more sensitive to change, such as views from a recreational trail or viewing area, which would be more sensitive to changes in the visual quality.
- Impacts to visual resources are a combination of the existing visual quality and the degree of visual sensitivity.

4.6.1.1 Viewshed

The viewshed is the total area that would be able to view the project components. Impacts to critical areas, such as the public hiking trails and area residences, are assessed through photo simulations. Photo simulations are generated by producing a series of baseline pictures from critical viewing areas and then electronically inserting project components into the baseline pictures to "simulate" how the area will appear if the Project is developed. The individual characteristics of the simulations are defined by utilizing geographic information system (GIS) software along with project component heights to define the perspectives used in the photo simulations.

Critical viewing locations selected for simulations, and their distance from the closest proposed Project component, are shown in Table 4.6-1. There were a total of five viewing locations examined as part of this study. These viewing locations were selected in order to provide a comprehensive collection of information regarding impacts to the viewshed from various distances and locations, both from areas close to the project, residences and recreational areas along ridgetops that could view the drilling rig, and locations farther from the project that could view up the canyon.

Table 4.6-1 Critical Viewing Locations

Location		Approximate Distance to Closest Project Component (feet)
1	Catalina Avenue	1,800
2	School Playground	925
3	Deer Loop Trail	250
4	Viewing Area	1,450
5	Catalina Ave near Whittier Boulevard	5.280

The photographs in this report attempt to replicate the views that would be experienced by an observer at the viewing location. The focal length of the human eye is estimated to be between 16.9 and 17.2 millimeters (mm). This small focal length would actually be considered a "fish eye" view for a camera. However, the brain analyzes an area of the overall image smaller than what is actually seen by the human eye, corresponding to a cone approximately 25 to 30 degrees in height and 35 to 45 degrees in width. Based on the print size of the text in this report and a normal reading distance from the page, a landscape figure corresponds to this approximate cone

shape. Also, photography designates the "normal" lens as a 50-mm focal length for the 35-mm camera. Consequently the environmental impact assessment industry has adopted the 50-mm focal length as a de facto standard for an approximation of the human eye. Some studies indicate the range runs from 35 mm to nearly 80 mm. However, the 50-mm standard was used in this study and all photographs were taken at a 50-mm setting (equivalent in a 35-mm film camera).

Project Site Terrain and Vegetation

The terrain comprising the Project Site is defined by Arroyo Pescadero Canyon, stretching northeast parallel to Colima Road, and La Canada Verde Creek, which runs north from Catalina Avenue. The area ranges in elevation from approximately 400 feet in the Arroyo Pescadero Canyon to more than 900 feet in the hills between and adjacent to these two canyons.

Typical in hilly terrain, the steepness and heights of local slopes restrict and limit the extent of public viewsheds from roadways that pass through and around the bases of the hills. Views from sections of Colima Road, or from local streets such as Mar Vista Street and Catalina Avenue, are commonly confined to the immediate foreground portions of the roadways that are closely defined by the roadside terrain. At recreational areas, such as most of the trail along Arroyo Pescaero Loop Trail, views of the project components would be obstructed by the ridge located to the west of the Arroyo Pescadero Canyon.

The public parking and trail network along Colima Road, that provides access to the Preserve at Arroyo Pescadero Canyon along Deer Loop Trail and Arroyo Pescadero Loop Trail, allows for scenic vistas of the canyons and hills from the bluff immediately above the parking area at an elevation of approximately 575 to 620 feet.

The area is also vegetated with numerous large eucalyptus trees and street trees that prevent direct views of the canyons from most locations. It is this urban forest that also gives the City of Whittier a pleasant feel. However, the urban forest limits views into the canyons from Catalina Ave., Lodosa Drive and San Lucas Drive, for example, and views are obstructed by the groves of eucalyptus trees located within the preserve as well as urban trees. The proposed Project would remove some eucalyptus trees along the east side of the project site, which would increase the visibility of the project components from the areas to the east, such as the Deer Loop Trail (location 3) and the Preserve Viewing Area (location 4). These trees were digitally removed from the visual simulations to simulate the views after the project has been constructed.

Visual Conditions in the Vicinity of the Project Site

Residential development has spread into the foothill slopes of the Puente Hills from the surrounding communities, encroaching steadily until it abuts Preserve boundaries in all but a few locations. The residential encroachment indicates overall population growth of the surrounding communities, but it also represents the efforts of residential developers to take specific advantage of the elevated terrain in the Puente Hills and the views of the surrounding area. Aerial photographs from 1952 show that development had already occurred south of the Project Site area, including development along Ocean View and Catalina Avenues, but Colima Road was not established and the areas east of Catalina Avenue were still open spaces. The Ocean View reservoir and associated Murphy tanks were already established by the 1950s.

Public land uses have also developed around the edges of the Project Site in a several locations, including the Whittier Area Community Church and Murphy Ranch baseball fields on Colima

Avenue, the school on Ocean View Avenue, and the Preserve parking and hiking areas access from Colima Road.

The developed recreational facilities and existing walking and hiking trails associated with the Preserve offer the most abundant and widespread public viewing opportunities of the Project Site. Views from private residential properties and residential streets around the perimeter of the Preserve are would be less common, due particularly to the terrain and urban forest and the eucalyptus trees located within the Preserve.

Photographs taken from several viewing locations show the existing visual environment. Figure 4.6-1 shows where these photographs were taken.

Figure 4.6-1 Viewing Locations

Figure 4.6-2 Critical Viewing Location 1: Looking North from Catalina Avenue Toward Project Site

Figure 4.6-3 Critical Viewing Location 2: Looking North from Ocean View School Playground NE Corner Toward Project Site

Figure 4.6-4 Critical Viewing Location 3: Looking Northwest From Deer Loop Trail Toward Project Site

Figure 4.6-5 Critical Viewing Location 4: Looking West from Viewing Area Toward Project Site

Figure 4.6-6 Critical Viewing Location 5: Catalina Avenue near Whittier Boulevard Looking Toward Project Site

4.6.1.2 Illumination

The level of light projected into the environment during nighttime hours and additional light that could be generated by the proposed Project are important factors in determining the Project's impacts. If an area is relatively dark with minimal night lighting, then the addition of even a single strong light could produce impacts on receptors, particularly if those receptors are a residential area. However, if the area already has substantial lighting and some additional lighting is added, then the impacts would be minimal.

Light is generally measured in lumens, which is the total amount of light energy produced by a given light source. Light levels, or luminance, are measured by the amount of light falling on a unit area. The unit of measure is "footcandles"(fc) or "lux," which are the amount of lumens per square foot or square meter, respectively. Light measured by the amount of lumens given off in a defined angle is called a candela. Table 4.6-2 shows luminance levels for several common scenarios.

Table 4.6-2 Luminance Levels

Situation	Luminance (footcandles)	Luminance (lux)
Starry night	<0.001	<0.01
Threshold of reading	0.02	0.2
Full moon	0.05-0.1	0.5-1
Parking lot at night (with lights)	1-10	10-100
Office space	50-75	500-750
Fine motor work	100-150	1,000-1,500
Outdoor daytime shade	300	3,000
Sunny daylight	10,000	100,000

Note that the light sources can be strongly directional. Specially designed parabolic lights can produce lighting up to 50 fc directly under the light and drop to less than 0.1 fc within 30 feet. Light levels are also strongly dependant on shielding by trees or by shields installed on the lights. Light shielding called "full cutoff" or "full shielding" and approved by such organizations as the International Dark Sky Association or the Illuminating Engineering Society can effectively prevent light from affecting unwanted areas. Well-shielded lights can drop light levels to under 0.1 fc within 10 to 15 feet.

Light also is produced in a wide range of colors, generally measured by temperature. Some research has been conducted on the impacts of the increasing use of white and blue light and their impacts on humans, specifically indoors related to CFL and LED lightbulbs. However, little research has examined spectral issues in regards to impacts on biology; yet where spectral issues have been examined, some studies indicate that the blue component is more commonly indicated to have particular impacts than other colors (e.g., insects, etc). (IDA 2010). However, other studies have shown that birds are less disoriented by blue and green light (containing less or no visible long-wavelength radiation) (Poot 2008). However, all studies indicate that properly shielded lighting and reduction of spillover effects is the best method for minimizing impacts to both humans and biology.

When compared with the density of development in the surrounding urban landscapes, the Project Site is sparsely illuminated. There is generally no night lighting on the Project Site. Night lighting exists along the parking area at Colima Road, at the reservoir areas, and as street lights along neighboring streets. The ranger's residence, in the Preserve near the Catalina Avenue entrance, has some night lighting also.

Light levels were measured at the proposed Project Site along Deer Loop Trail and at the Catalina Avenue entrance to the Preserve. Light levels ranged from 2.9 fc under the streetlight at the end of Catalina Avenue down to 0.001 fc at the Catalina Avenue entrance gate and 0.002 to 0.01 fc along Deer Loop trail on a moonless night.

4.6.2 Regulatory Setting

The visual impacts assessment is conducted in conformance with California Environmental Quality Act (CEQA) documentation requirements. Appendix G of the Guide to CEQA defines a project as having a significant visual effect on the environment if it would have a "substantial adverse effect on the scenic vista" (Remy et al. 1999). Specifically, Appendix G of this handbook, citing the California Code of Regulations §15387, identifies four areas of concern regarding a project's potential impact on aesthetics:

- Substantial adverse effects on a scenic vista;
- Substantial damage to scenic resources, including trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantial degradation to the existing visual quality of the site and its surroundings; and
- Creating a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

The CEQA Guidelines do not limit consideration to public views; they include protection of private views as well. CEQA cases have stated that both "public and private views are properly studied in an Environmental Impact Report to assess the impacts of a project."

4.6.2.1 State

The California Department of Transportation maintains the State Scenic Highway System, a list of designated scenic highways and highways eligible for designation. Section 263 of the California Streets and Highways Code identifies these highways. Currently, no highways in the Project area are designated scenic highways.

4.6.2.2 Local

Los Angeles County, the Habitat Authority, and the City of Whittier specify land use and scenic resource areas in their general plans. The following sections discuss these plans.

Los Angeles County

The Scenic Highways Element of the County General Plan identifies both state-designated and county-designated scenic routes. Routes that qualify for Scenic Highway status:

- Provide views of Highly Scenic Areas;

- Provide scenic vistas of the ocean or interior mountains; or
- Provide access to major recreation areas.

No officially designated Scenic Highways pass through the Project Area. The closest county-designated scenic highway is State Route 57 south of State Route 60.

The General Plan does designate the Puente Hills as a public resource and that the County supports the protection and preservation of these resources.

The Puente Hills fall within a "Special Management Area" of the County's General Plan, as part of the conservation and open space policy. A specified intent of the Special Management Area is to identify:

> those areas where comprehensive management is needed to protect natural and scenic resources, and to minimize the threat to life and property. It is specifically not the intent of the Conservation and Open Space Element to preclude reasonable use of private property in these areas, but to ensure that where development takes place, identified natural resources are protected and natural hazards are avoided or appropriately mitigated (LAC 1980).

And also to:

> encourage the production and conservation of minerals while addressing concerns related to recreation, watershed, vegetation and wildlife, range and forage, and aesthetic enjoyment during and after mining operations" (Conservation and Open Space Policy Map).

The Special Management Area in the Puente Hills has been recommended for retention in an Open Space category. This categorization aims to protect land that is open and offers potential areas for recreation and scenic enjoyment.

Under the Open Space category, existing mineral operations and new or expanded operations are considered as compatible uses with the stipulation that they "do not significantly degrade other identified open space resources." To protect open space resources, "reasonable conditions may be imposed to minimize adverse impacts on the environment while protecting the production and conservation of natural resources."

Habitat Authority Resource Management Plan

The Resource Management Plan for the Preserve addresses goals and objectives associated with visual resources. Goal VISUAL-1 is to "protect and enhance views and distinctive landscape features that contribute to the setting, character and visitor experience of the Preserve." The objective of VISUAL-1.1 is to "expand interpretive opportunities associated with the visual and scenic resources of the Preserve." And VISUAL-1.2 aims to "protect views from within the Preserve to outlying properties. Evaluate proposed projects surrounding the Preserve with a priority to retain the visual quality of the Preserve's undeveloped landscape."

City of Whittier General Plan

The City of Whittier General Plan Environmental Resource Management Element addresses scenic resources, including the Puente Hills and scenic roadways such as Colima Road. The Environmental Resource Management Element addresses Resource Conservation, Energy Conservation, Open Space, Acquisition of Open Space, Recreation, Scenic Roadways and Corridors, Hillside Areas, and Source Reduction and Recycling.

Policies relevant to the proposed Project include:

- Policy 1.4: Work with appropriate agencies to rehabilitate the oil fields or encourage the rehabilitation of these lands within the planning area for open space, recreation, or other beneficial resource conservation uses after site reclamation.
- Policy 3.1: Protect existing wildlife habitats through the preservation of open space.
- Policy 6.2: Protect scenic corridors that have aesthetic, recreational, cultural, or historic values.
- Policy 6.3: Identify the portions of the street system that, together with the adjacent scenic corridors, require special scenic treatments.

The Scenic Corridor Plan portion of the General Plan specifies that Colima Road north of the City Boundary (north of Mar Vista Street) is a scenic corridor and that the portion of Colima Road just north of Mar Vista Street is an "entryway" to the City. Colima Road south of the city boundary, near Mar Vista Street, is a design corridor. These corridors have specific standards, such as development of landscaping plans, undergrounding utilities where appropriate, limited and controlled signs, minimum grading, and controlled development that may detract from existing scenic qualities.

4.6.3 Significance Criteria

The proposed Project would result in significant impacts to aesthetic resources if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.6.4 Project Impacts and Mitigation Measures

The proposed Project would install a 125-foot tall drilling rig during the testing phase (3 months), the operational drilling phase (5 years), and the operational phase when well re-drills are necessary.

Proposed equipment at the Gas and Processing Areas includes amine and glycol regeneration towers (40 feet tall), flare stack (50 feet tall), two shipping tanks (50 feet tall), and various other tanks ranging up to 24 feet tall. Grading and contouring activities would create cut slopes and retaining walls on the east side of the facility.

Equipment at the Well Area, during operations but when not drilling, would include a separator and discharge scrubbers, each 10 feet tall, and the 14-foot tall air cooler. An 8-foot wall would surround portions of the Project Site.

Surrounding vegetation, including eucalyptus trees as tall as 75 feet, would effectively shield much of the shorter equipment from views in the area. However, some of the eucalyptus trees

would be removed from the area as part of the project, and this would allow an increased exposure of facility equipment, particularly from the Deer Loop Trail and Preserve viewing area.

The retaining walls on the east side of the facility would not be visible from the recreational areas and they would be shielded from residential views by terrain and vegetation. The top of cut slopes on the east side of the facility may be visible to some residences southwest of the facility through existing vegetation, but these areas would be re-vegetated to blend into the existing area.

Since views of the equipment are a strong function of vegetation, such as trees and tall shrubs, it is difficult to ascertain the exact location of the views from residential areas that present worst-case impacts. Therefore, a viewshed analysis was conducted for the tallest pieces of equipment. These maps are generated by examining the terrain surrounding the equipment and developing contours with a geographic information system program that show how much of the equipment could be seen from various areas if the view is unobstructed. These maps do not take into account the effect of vegetation and only include the effects of terrain on the visibility of the Project components. For example, hikers along the Arroyo Pescadero Loop Trail up Arroyo Pescadero Canyon would not be able to see the Project components along most of the trail length except at the end of the trail near the viewing area. Figure 4.6-7 shows the viewshed contours for the drilling rig at the Project Site.

View simulations were generated with a picture of a drill rig, tanks and equipment that would be similar to the proposed equipment. Images of this equipment are then edited into the photos using Adobe Photoshop© to produce visual simulations of what it would look like from the different viewing areas. A 3D model of the site utilizing digital elevation models and 3D models of the equipment was created to estimate the size and location of facility equipment as viewed from different locations. In addition, balloons were utilized to act as "story poles" to also demonstrate the location and size of equipment at the site. This information was used to generate photo simulations. These photo-simulations are shown in the Figures 4.6-8 through 4.6-12.

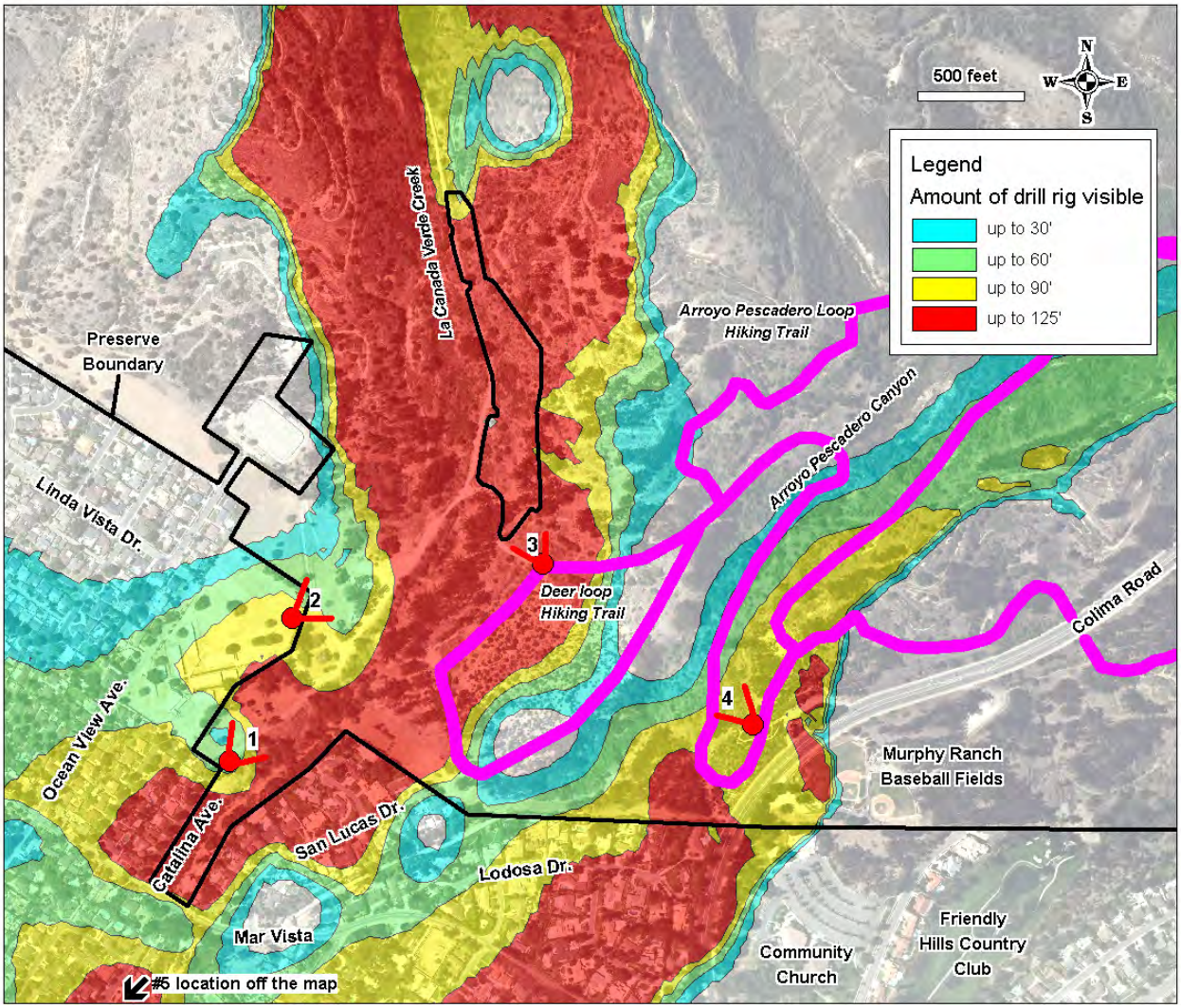
A summary of Viewing Locations is provided in Table 4.6-3. The table indicates the location, as well as some of the criteria associated with determining significance, including extension of the rig above the tree or horizon lines, if the equipment can be seen at all and other protruding man-made objects.

Table 4.6-3 Viewing Locations Impact Summary

Location		Visible Items	Extend Above Ridgeline?	Other Man-Made Items Extend Above Ridgeline?
1	Catalina Avenue	Drill Rig (obstructed upper portion)	No	Yes
2	School Playground	Drill Rig (obstructed upper portion)	No	No
3	Deer Loop Trail	Drill Rig (unobstructed upper portion), processing equipment (tanks, etc)	Yes	No
4	Viewing Area	Drill Rig (obstructed upper portion)	No	No
5	Catalina Ave near Whittier Boulevard	Drill rig obstructed through trees	No	Yes

The visual impacts of Phase 1 of the Project, during testing, would be similar to the drilling rig views during the operational drilling phase. Test drilling would be conducted at close to current grade and not at the other well cellars locations within the area to be substantially graded.

Figure 4.6-7 Theoretical Drilling Rig Viewshed – Unobstructed Drill Rig Visibility



Note: Many areas that could view the rig would not be able to because of obstructions from trees and buildings. The figure shows the areas that could view the drilling rig based only on terrain and assumes an "unobstructed" view. There are relatively few "unobstructed" view locations.

Figure 4.6-8 Critical Viewing Location 1: Looking North from Catalina Avenue Toward Project Site

Figure 4.6-9 Critical Viewing Location 2: Looking North from Ocean View School Playground NE Corner Toward Project Site

Figure 4.6-10 Critical Viewing Location 3: Looking Northwest From Deer Loop Trail Toward Project Site

Figure 4.6-11 Critical Viewing Location 4: Looking West from Viewing Area Toward Project Site

Figure 4.6-12 Critical Viewing Location 5: Catalina Avenue near Whittier Boulevard Looking Toward Project Site

Note: The rig would not have be visible from this perspective due to existing tree vegetation if the photo not been altered to specifically show the rig from this distance.

Impact #	Impact Description	Phase	Residual Impact
AE.1	The drilling rig could degrade public viewsheds.	Drilling, Operations	Significant and Unavoidable

The proposed drilling rig location would be proximate to recreation areas that contain hiking trails, a scenic overlook, as well as residential areas. Many of the locations offer public visibility of the Puente Hills ranging from views of near-field creeks and wooded areas as well as farther-field views of the hills. The proposed Project may affect public views from hiking trails associated with the recreation areas. Due to the proximity of recreational facilities to the proposed oil field operations, installation of the drilling rig could create significant visual resource impacts that would be perceived as incompatible with adjacent uses.

While the drilling rig would not obstruct scenic views from trails, recreation areas, or residences, placement of the drilling rig could significantly degrade the existing visual conditions within selected viewsheds seen from public trails, recreation areas, and, to a lesser extent, residences. The drilling rig would protract above ridgelines when viewed from the Deer Loop Trail area, thereby exacerbating the impacts associated with a degradation of view quality. Items placed that extend above ridgelines are more noticeable than items placed below ridgelines. However, the drilling rig would generally not be seen protruding above ridgelines from residential areas due in part to terrain and in part due to shielding from area vegetation. The proposed Project drilling rig could create potentially significant visual impacts to public viewsheds.

The drilling rig would be present during the first 3 months of the Project for test drilling, then removed for approximately 2 years, then installed for 5 years or more of Project operations after construction, then removed and brought back only for maximum 3-month periods per year. Therefore, there would be substantial periods in the future when impacts associated with the drilling rig would not be realized.

Mitigation Measures

AE-1a Landscaping with native vegetation shall be planted at the periphery of the Project Site for the specific purpose of beautifying and screening the operations from adjoining residential and recreational areas, adjacent public streets, and highways. Berms shall be used in combination with landscaping where it would further reduce visibility. Care should be taken to ensure that the proposed screening does not affect existing desirable views by neighboring properties. A Landscaping Plan shall be prepared to address berms, screening, irrigation, and planting protocols. The Plans and vegetation selection shall be reviewed and approved by the City and the Habitat Authority. The Habitat Authority and a certified landscape architect shall implement and monitor compliance with the Landscaping Plan. Landscaping at the site shall be inspected regularly and maintained in good condition.

AE-1b Within 30 days of installation, all structures visible from public locations at the well or processing sites shall be painted non-reflective earth-tone colors or otherwise

surfaced with a color or textured surface in consultation with the City, so that they are less obtrusive to the surrounding area.

AE-1c The Applicant shall redesign the project footprint, in coordination with the Habitat Authority and the Fire Department, to prevent the removal of the eucalyptus trees on the east side of the project site to preserve the visual shielding that these trees provide.

Residual Impacts

Measures to either beautify or effectively screen the proposed Project drilling rig from view would reduce impacts. However, the drilling rig mast and views of the drilling rig from the preserve trails and the Preserve viewing area would continue to be visible and degrade the existing visual conditions. The drilling rig would be minimally visible from most residential areas since it would not extend above the ridge lines and existing vegetation would shield it in the neighborhoods where it might be visible, such as the slightly elevated terrain areas just south of Mar Vista Road, which potentially have views up Canada Canyon or along Catalina Road.

The eucalyptus trees currently located on the east side of the proposed Project site would provide substantial visual shielding of the project equipment and drilling rig. With the installation of a berm on the east side of the site, the Project equipment would be shielded. However, the drilling rig would still be visible from the Deer Loop Trail. By redesigning the Project, the eucalyptus trees could remain. This measure would reduce the impacts from the Deer Loop Trail location to less than significant as the drilling rig would only be visible through the trees. Impacts from other viewing locations, such as the viewing area, would remain significant and unavoidable.

Figure 4.6-19 shows the view from the Preserve viewing area with mitigation, including painting the drilling rig and placing a berm and planting vegetation to the immediate east of the facilities. The berm is assumed to be 15 feet high and about 350 feet in length extending from the Deer Loop Trail up the ridge to the north. The berm would require about 10,000 yds^3 of material, which could be available as there would be excess cut associated with the project. Although impacts would be reduced, they would still be significant and unavoidable due to the drilling rig mast.

Some rigs exist that can drill to 10,000 foot depth and have a mast height of less than 85 feet. The Ensign Rig #535, for example, is a rig owned by Ensign United States Drilling Company, has a mast height of 70 feet and can drill to 10,000 foot depth with similar equipment arrangements and capacities. The use of this drilling rig would most likely reduce the visual impacts to less than significant from all viewing locations. However, the availability of this type of rig is not known.

Therefore, the impacts to public viewsheds would be reduced but still significant and unavoidable.

Impact #	Impact Description	Phase	Residual Impact
AE.2	Oil processing equipment could degrade public viewsheds.	Operations	Less than Significant with mitigation

The proposed Processing Area would include tanks and vessels and would be proximate to several nearby recreation areas, a scenic overlook that contains hiking and walking trails, and residential areas. Once drilled, the wells would be below grade in the well cellars, would use down-hole pumps and not pumper units, and would not be visible from recreational areas. Due to the proximity of recreational facilities to the proposed oil field operations, installation of tanks and other industrial development could create significant visual resource impacts that would be perceived as incompatible with adjacent uses. In addition, the installation of the facilities would necessitate the removal of a number of eucalyptus trees that could have provided shielding of project components. The visual simulations show the extent to which the areas up Canada Canyon would be opened to views from the Deer Loop Trail and the viewing area. This removal of eucalyptus trees would exacerbate the impacts of installing industrial equipment in the area.

While oil field production activities would not likely obstruct scenic views seen from trails, recreations areas, or residences, the placement of oil production facilities could significantly degrade the existing visual conditions within selected viewsheds from public trails and recreation areas. Views of the crude oil tanks and equipment would not be significant from residences as existing vegetation would shield most equipment from residences' direct lines of sight. The proposed Project processing equipment could create potentially significant visual impacts to public viewsheds.

Mitigation Measures

Implement mitigation measures AE-1a and AE-1b.

Residual Impacts

Measures to either beautify or effectively screen the proposed Project Processing Area facilities (e.g., tanks) from view would reduce impacts. Landscaping and berms could minimize the view of the tanks from the Deer Loop Trail and views from the viewing area.

As the growth of vegetation to conceal the Processing Area equipment could take years, this impact would remain from a number of years before vegetation grows to a substantial height to conceal the equipment. Although this impact would be adverse, since visual impacts are determined on a long-term scale, vegetation would conceal most, if not all, facility equipment over time (except the drilling rig; see impact AE.1). The use of berms, which would be re-vegetated with grasses and lower-growing shrubs (thereby faster growing than trees) would reduce the timeframe in which the Processing Area equipment would be visible.

Implementing mitigation measures AE-1a and AE-1b would reduce the impacts to public viewsheds over the long-term to less than significant with mitigation.

Figure 4.6-13 Critical Viewing Location 4: Looking West from the Viewing Area with Proposed Project with Mitigation (berm and vegetation)

Impact #	Impact Description	Phase	Residual Impact
AE.3	The use of the north access road could degrade public viewsheds.	Drilling Operations	Less than Significant

The north access road that connects the proposed facilities to the Landfill and Penn Street is visible from residences located to the north of the Preserve along Holmes Circle. The roadway and accompanying traffic would be visible from these residences. This could degrade the visual quality for the residences. However, as the traffic would utilize the North Access Road only during the daytime (hence no nighttime headlights) and the level of traffic over the longer term after construction is completed would number up to a peak of only six trucks per day, these impacts are determined to be less than significant. Note that the drilling rig and the processing equipment would not be visible from this area.

Mitigation Measures

None recommended.

Residual Impacts

The potential visual impacts from the use of the North Access Road would be less than significant.

Impact #	Impact Description	Phase	Residual Impact
AE.4	The proposed Project could increase nighttime lighting and glare.	Construction, Drilling, Operations	Less Than Significant With Mitigation

Visual impacts associated with night-lighting in activity areas would be potentially significant but capable of being mitigated to less than significant levels with mitigation, including shielding exterior night lighting and containing spill-over lighting from fixed point lighting sources.

The governments of most countries require warning lights on all high towers and on low towers near airports, because towers are a hazard to aircraft. The Federal Aviation Administration (FAA), in the Federal Code of Regulation 14 CFR part 77, and in the FAA Advisory Circular 70/7460 and 150/, describes requirements associated with lighting objects that may affect navigable airspace. Objects more than 200-feet high require lighting at a level of approximately 2,000 candela and a flashing rate of between 40 and 60 flashes per minute. A red light would be placed on top of the drilling rig to aid its visibility to aircraft, although this is not specifically required by the FAA. This light would be visible from areas offsite and throughout the area. However, the illumination created by the red flashing light on top of the 125-foot drilling rig would be less than the level that would produce a significant illumination impact.

Where oil wells would be drilled and operations would be scheduled 24 hours per day, lighting the work site drilling platforms for safety may create prominent night lighting during drilling. Lighting impacts from drilling would be potentially significant but would be less than significant with mitigation by shielding exterior night lighting and containing spill-over lighting from fixed point lighting sources.

Mitigation Measures

AE-4 All point lighting sources that may be introduced onsite in support of nighttime operations shall be screened and directed to prevent offsite spillover lighting effects. Spillover lighting shall be limited to 0.1 fc within 30 feet of facility boundaries. Outdoor lighting should be restricted to only those lights that are required by code for lighting building exteriors and safety and security needs. Consistent with public safety needs, street lighting, pedestrian walkway lighting, and parking lot lighting shall use light fixtures that shield and direct light with a backlight shield or other equivalent type of shielding to minimize light spill-over effects into adjacent areas. Light standard heights shall distribute light at ground level consistent with light levels for security, spill-over effects, and efficiency.

Residual Impacts

Current lighting designs, such as a RUUD Lighting, Inc. area cutoff light, can be equipped with a backlight shield that can reduce lighting levels to less than 0.05 fc within 30 feet horizontal distance utilizing a 400-watt high pressure sodium bulb and forward throw sharp cutoff. With proper shielding and control of the directional nature of the installed lighting, illumination impacts on the Project area and adjacent uses would be less than significant with mitigation.

4.6.4.1 Other Issue Area Mitigation Measure Impacts

Other issues areas may have proposed mitigation measures that could produce increased impacts to aesthetics if they are implemented. This section discusses those potential mitigation measure impacts.

Installing 30-foot sound barrier walls would introduce structures that could be visible from area residences. The sound walls would be installed around the drilling site to reduce noise impacts to the nearby residences and the school. Sound walls installed at the Well Area would be minimally if at all visible, except from recreational areas near to the facilities, such as at the Deer Loop Trail. Even with mitigation, it would still be minimally visible through the trees from some areas. No new significant impacts are expected from this mitigation measure since the presence of the drilling rig and its visibility already produces a significant impact.

No other mitigation measures are anticipated to produce additional visual impacts. Therefore, the mitigation measures would not result in additional significant impacts, and additional analysis or mitigation is not required.

Figure 4.6-14 Critical Viewing Location 3: Towards Proposed Project with Sound Walls

4.6.5 Cumulative Impacts and Mitigation Measures

The County of Los Angeles Fire Department and the City of Whittier have determined that a Vegetation Management Plan is necessary for long-term mitigation to reduce wildfire risk (see Section 4.12, Fire Protection and Emergency Response). Eucalyptus trees have been cleared due to fire department concerns related to wildfire risk and the removal of eucalyptus trees is part of the exotic plant control program detailed in the Habitat RMP. Recent clearance areas include close to 20 acres immediately east of Colima Road and in the area around the Colima Road parking area. Removal of eucalyptus trees along the boundary of the proposed Project Site would increase the visibility of proposed Project equipment. Existing eucalyptus trees would provide extensive shielding of proposed Project equipment from areas along hiking trails and residences along San Lucas and Lodosa Drives. The proposed Project would remove a number of eucalyptus trees from the east side of the Project Site. If additional eucalyptus trees are removed, particularly those to the south of the Project Site, this could be considered a significant impact. Mitigation measure AE.1 requires planting vegetation, in consultation with the Habitat Authority, to screen project components. This mitigation measure would be implemented to reduce these cumulative impacts to less than significant.

No other cumulative projects would be constructed within the same viewsheds as the proposed Project. Therefore, there would be no other potential cumulative significant impacts.

4.6.6 Mitigation Monitoring Plan

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
AE-1a Landscaping with native vegetation shall be planted at the periphery of the Project Site for the specific purpose of beautifying and screening the operations from adjoining residential and recreational areas, adjacent public streets, and highways. Berms shall be used in combination with landscaping where it would further reduce visibility. Care should be taken to ensure that the proposed screening does not affect existing desirable views by neighboring properties. A Landscaping Plan shall be prepared to address berms, screening, irrigation, and planting protocols. The Plans and vegetation selection shall be reviewed and approved by the City and the Habitat Authority. The Habitat Authority and a certified landscape architect shall implement and monitor compliance with the Landscaping Plan. Landscaping at the site shall be inspected regularly and maintained in good condition.	Landscaping plan	Plan inspection and installed vegetation inspection	Before and during operations	City of Whittier and Habitat Authority
AE-1b Within 30 days of installation, all structures visible from public locations at the well or processing sites shall be painted non-reflective earth-tone colors or otherwise surfaced with a color or textured surface in consultation with the City, so that they are less obtrusive to the surrounding area.	Earth-toned painting of visible structures	Design drawings review	Before and during construction	City of Whittier
AE-1c The Applicant shall redesign the project footprint, in coordination with the Habitat Authority and the Fire Department, to prevent the removal of the eucalyptus trees on the east side of the project site to preserve the visual shielding that these trees provide.	Design of project to retain vegetation	Design drawings review, including a vegetation plan	Before construction	City of Whittier
AE-4 All point lighting sources that may be introduced onsite in support of nighttime operations shall be screened and directed to prevent offsite spillover lighting effects. Spillover lighting shall be limited to 0.1 fc within 30 feet of facility boundaries. Outdoor lighting should be restricted to only those lights that are required by code for lighting building exteriors and safety and security needs. Consistent with public safety needs, street lighting, pedestrian walkway lighting, and parking lot lighting shall use light fixtures that shield and direct light with a backlight shield or other equivalent type of shielding, to minimize light spill-over effects into adjacent areas. Light standard heights shall distribute light at ground level consistent with light levels for security, spill-over effects, and efficiency.	Shield lighting	Review design documents specifying lighting	Before and during construction	City of Whittier