3.10 NOISE

This section describes existing noise ordinances in Sacramento and San Joaquin Counties and examines whether the project or project alternatives would violate those ordinances or would otherwise create noise impacts as defined by CEQA. All facets of the project are analyzed for noise concerns, with particular concentration on the components that make the most noise, such as the compressor. Key issues include examining the distance between noise-making components and the nearest place where people live, work, or attend school and discussing measures that can reduce noise to acceptable levels.

3.10.1 ENVIRONMENTAL SETTING

LAND USES AND RECEPTORS SENSITIVE TO NOISE IN THE PROJECT VICINITY

Project activities were examined to determine the potential for noise effects. The analysis focuses on the construction and operation activities surrounding:

- the Lodi gas field area, which include three observation wells, up to six injection/ withdrawal well sites, groundwater monitoring wells, and two water injection wells;
- the 5-acre separation facility site;
- the proposed and alternate compressor facility/field office sites; and
- the area immediately surrounding the alternative pipeline corridors from the Lodi gas field to the pipeline terminus at Sherman Island (affected only during project construction).

The areas surrounding all components of the proposed project and project alternatives are generally agricultural, with limited industrial and rural residential land uses. The predominant noise sources in these areas typically consist of agricultural operations and local traffic.

The Lodi gas field, where project observation wells, gas injection/withdrawal well pad sites, groundwater monitoring wells, and water injection wells would be located, is an agricultural area. Existing noise sources in the area of these sites include local traffic, aircraft flyovers, and agricultural activities. Approximately 50 residences are located within 2,000 feet of the various well sites. The separator facility is located on the south side of Jahant Road, and the closest noise-sensitive receiver is a residence located 450 feet northwest of the site. The proposed compressor station site is bounded on the west by Highway 99 and on all other sides by agricultural land uses. The noise-sensitive receptors nearest to this site are residences approximately 1,000 feet north. The noise-sensitive receptor nearest to the alternate compressor site is approximately 1,500 feet northwest of the center of the site. The primary noise source near both the proposed and alternate compressor sites is traffic on Highway 99. The alternative pipeline corridors traverse predominantly agricultural areas. Between 74 and 170 residences are located within 220 yards of the pipeline alignment, depending on the alternative.

EXISTING NOISE CONDITIONS

Dames & Moore conducted sound level monitoring on August 26, 1998, in the project area to characterize existing ambient noise and generate data for use in the impact analysis. Three monitoring locations were selected for the analysis: the separator facility site along Jahant Road and two areas near Highway 99. Short-term sound-level measurements were conducted at various times of the day and night to characterize the noise environment throughout the day. Sound measurements were conducted using a calibrated Quest 2900 sound level meter set for A-weighting. The noise monitoring effort included measurement of the Leq (time-varying sound levels), measured over a 15-minute period, as well as the L90, L10, Lmin, and Lmax. The measurement results are summarized in Table 3.10-1. These sound levels are typical of rural environments. Definitions of terms commonly used to describe noise are provided in the glossary.

Noise levels in the study area varied substantially depending on whether agricultural activities were taking place during the monitoring period and whether the site was near major roadways. At the separator facility site, average sound levels ranged from 45 A-weighted decibels (dBA) to 55 dBA during daytime hours; during nighttime hours, sound levels ranged from 35 dBA to 45 dBA.

At the western property boundary of the proposed compressor facility, daytime noise levels ranged from 68 dBA to 71 dBA, with noise generated predominantly by freeway traffic. Measured nighttime noise levels did not diminish substantially from daytime noise levels, a result of the high volume of heavy truck traffic on the freeway during the evening and nighttime hours. Toward the eastern side of the compressor site, noise levels were substantially lower, primarily because of the distance from the freeway. Daytime noise levels at the eastern edge of the parcel ranged from 50 dBA to 60 dBA, whereas nighttime noise levels ranged from 40 dBA to 50 dBA.

Additional noise measurements were made by the Applicant (Hoover & Keith, Inc., 1999) (Appendix D) during May and June 1999 to further characterize noise levels in the project area, particularly the areas surrounding the alternate compressor facility location at Lind Airport. Nine monitoring stations were selected for the additional analysis (Figure 3.10-1). Five stations were located surrounding the alternate compressor facility at Lind Airport, two were located near East Peltier Road directly south of the alternate compressor facility, and two were located east of Highway 99. At each location, the A-weighted equivalent sound level (Leq), L90, L10, and the unweighted octave-band sound pressure levels were measured at approximately 5 feet above the ground. Several samples of the ambient noise (e.g., 2-5 minutes in length) typically were taken at each measurement location. The measurements attempted to exclude “extraneous sounds,” such as a car passing immediately by the measurement location or other intermittent sources. Sound measurements typically were performed during periods of relatively low wind speed to minimize the influence of wind blowing across the microphone. The measurement system consisted of a Larson-Davis Model 2900 Real Time Analyzer/Sound Level Meter and a 0.5-inch condenser microphone with a windscreen. The analyzer/microphone was mounted on a tripod during all of the sound measurements. As would be expected, stations closest to Highway 99 (Stations 2 and 7) recorded the highest sound levels, ranging from 55 dBA to 69 dBA (Table 3.10-2). Stations farther from

TABLE 3.10-1
INITIAL SOUND LEVEL MEASUREMENTS

Measurement Duration	L_{eq}	L_{10}	L_{90}	L_{min}	L_{max}
Location 1: Jahant Road, Approximately 40 Feet from the Road					
12:15 a.m. to 12:30 a.m.	46.3	42.4	33.3	32.3	64.1
7:30 a.m. to 7:45 a.m.	52.2	49.4	37.9	32.5	67.2
1:15 p.m. to 1:30 p.m.	53.1	50.3	36.5	35.6	66.3
6:00 p.m. to 6:15 p.m.	54.2	52.4	37.2	34.4	65.9
Location 2: Highway 99 Frontage Road at Edge of Compressor Station Site					
1:00 a.m. to 1:15 a.m.	71.2	75.5	58.7	47.5	83.1
7:00 a.m. to 7:15 a.m.	69.1	72.2	63.7	55.4	82.0
1:45 p.m. to 2:00 p.m.	68.2	68.1	63.4	51.2	80.9
6:45 p.m. to 7:00 p.m.	70.2	72.2	64.1	53.3	81.6
Location 3: Orchard Property					
2:30 p.m. to 2:45 p.m.	57.2	56.3	53.4	49.4	68.1
11:00 p.m. to 11:15 p.m.	50.6	51.4	46.1	64.3	37.4

Notes: All sound levels are expressed in dBA.

Sounds levels were measured on August 26, 1998.

Source: Dames & Moore, 1998.

TABLE 3.10-2
ADDITIONAL SOUND LEVEL MEASUREMENTS

Measurement Duration	L_{eq}	L_{10}	L_{90}
Location 1: 1,500 Feet Northwest of Site Center			
3:30 p.m. to 3:50 p.m.	35.7	38.0	32.3
Location 1A: Off Jahant Road			
9:20 p.m. to 9:25 p.m.	38.3	38.8	37.5
Location 2: 2,000 Feet East-Northeast of Site Center			
4:10 p.m. to 4:30 p.m.	69.0	72.5	62.8
9:40 p.m. to 9:45 p.m.	68.5	71.5	60.8
Location 3: 2,000 Feet Southeast of Site			
4:40 p.m. to 4:50 p.m.	45.6	47.0	44.3
9:00 p.m. to 9:05 p.m.	45.3	47.0	43.3
Location 4: Southwest Corner of Site Property Line			
5:00 p.m. to 5:15 p.m.	44.0	46.8	38.8
9:40 p.m. to 9:45 p.m.	39.4	40.5	38.0
Location 5: 2,600 Feet South of Site Center			
5:20 p.m. to5:35 p.m	43.8	46.0	39.5
9:50 p.m. to 9:55 p.m.	38.3	39.0	37.3
Location 6: 3,000 Feet South-Southeast of Site Center			
5:40 p.m. to 5:55 p.m.	44.5	46.3	40.3
10:00 p.m. to 10:05 p.m.	41.3	43.0	38.5
Location 7: East of Highway 99			
6:00 p.m. to 6:05 p.m.	59.8	62.3	56.0
10:30 p.m.	55.0	57.5	53.0
Location 8: East of Highway 99			
6:30 p.m. to 6:35 p.m.	50.7	52.0	47.0
10:15 p.m. to 10:20 p.m.	51.0	52.3	49.8

Notes: All sound levels are expressed in dBA.
All sound levels represent average values for the time periods measured.
Sound levels measured on May 26, 1999.

Source: Hoover & Keith, 1999

Highway 99 recorded substantially lower noise levels (approximately 38 dBA to 50 dBA, depending on the location).

3.10.2 REGULATORY SETTING

SACRAMENTO COUNTY GENERAL PLAN NOISE ELEMENT

Project-related noise-generating activity in Sacramento County would be limited to construction associated with pipeline installation. Under project operation, no noise-generating activity would occur in Sacramento County. The Sacramento County Noise Element of the General Plan (County of Sacramento, 1993) does not regulate noise from construction activities.

SACRAMENTO COUNTY NOISE ORDINANCE

Sacramento County has identified exterior noise standards for various land uses (County Noise Ordinance, Chapter 6.68, Sections 6.68.070 and 6.68.090). Construction activities are exempt from the provisions of the sound-level limits if construction occurs between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on Saturday and Sunday.

SAN JOAQUIN COUNTY GENERAL PLAN NOISE ELEMENT

San Joaquin County regulates noise through the objectives and policies contained in the San Joaquin County General Plan Noise Element (San Joaquin County, 1992). The Noise Element contains thresholds for maximum acceptable noise exposure for noise-sensitive land uses. For residential development, an ambient noise level of no more than 65 A-weighted decibels (dBA) as a day-night averaged sound level (Ldn) is considered acceptable. For schools, group care facilities, and hospitals, an ambient sound level of 60 dBA Ldn or below is considered acceptable. The Noise Element policies also state that development shall be planned and designed to minimize noise impacts on neighboring noise-sensitive areas and noise interference from outside noise sources.

SAN JOAQUIN COUNTY NOISE ORDINANCE

San Joaquin County recently revised its noise ordinance. The revised ordinance establishes performance standards for noise-generating activities occurring within the county. Construction activities that take place between 6:00 a.m. and 9:00 p.m. on any day are exempt from the noise ordinance. Stationary noise sources are required to achieve hourly equivalent sound levels (Leq) of 50 dBA during the daytime (7:00 a.m. to 10:00 p.m.) and 45 dBA at nighttime (10:00 p.m. to 7:00 a.m.) at nearby outdoor activity areas.

The revised noise ordinance specifically exempts any activity whose regulation has been preempted by state or federal law. According to the County (Sullivan pers. comm.), the Lodi Gas Storage project is exempt from the noise ordinance because the project is regulated by the CPUC.

3.10.3 SIGNIFICANCE CRITERIA

Criteria for determining the significance of noise impacts were developed based on questions contained in the environmental checklist form in Appendix G of the State CEQA Guidelines. Based on the checklist questions, a project may have a significant effect on the environment if it would result in:

- exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies,
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels,
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, or
- a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Section 15064(h) of the State CEQA Guidelines states that a change in the environment is not a significant effect if the change complies with a standard that is a quantitative, qualitative, or performance requirement found in a statute, ordinance, resolution, rule, regulation, order, or other standard of general application. For the purposes of assessing the significance of noise impacts associated with the project, a noise impact is considered significant if the project would result in exceedance of noise standards specified in the Sacramento County General Plan, Sacramento County Noise Ordinance, or the San Joaquin County General Plan. In addition, although the project is specifically exempt from the San Joaquin County Noise Ordinance as a state-regulated activity, the standards contained in the ordinance are used as an indicator of potential significance. For purposes of this analysis, noise levels at "outdoor activity areas", as discussed in the ordinance, are assumed to be represented by noise levels predicted at the nearest sensitive receptors to project facilities.

The potential increase in noise from the project is also considered in determining significance. Research into the human perception of changes in sound level indicates the following (White, 1975):

- a 3-dB change is barely perceptible,
- a 5-dB change is a noticeable difference, and
- a 10-dB change is perceived as being twice or half as loud as the original condition.

These and other factors relating to the duration, frequency, and tonal content of project-related noise are considered when evaluating the significance of changes in sound levels. Therefore, for project operations, a project-related increase of 5 dBA above the ambient sound level at nearby sensitive receptors will be used as the threshold for a substantial increase.

3.10.4 IMPACTS OF THE PROPOSED PROJECT AND MITIGATION MEASURES

Impact 3.10-1: Exposure of Noise-Sensitive Land Uses to Noise from Construction Activities Other than Well Drilling

Construction of the well pad sites, separator facility, and compressor facility and installation of pipelines would result in temporary increases in noise in the area of construction activity. Primary noise-generating activities would include excavation, grading, scraping, and compaction activities. Vehicles traveling to and from construction sites also may affect noise in the area, but to a lesser degree. The magnitude of construction-noise impacts would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the activity, the distance between the activity and noise-sensitive receptors, and shielding effects from local barriers and topography. Noise increases from pipeline installation typically would last no more than a few days. Noise from construction of other facilities would occur over several weeks. Table 3.10-3 shows Leq values for various types of construction equipment that may be used during construction.

TABLE 3.10-3
NOISE EMISSION LEVELS TYPICAL FOR CONSTRUCTION EQUIPMENT

Equipment	Typical Noise Level (dBA) 50 feet from Source
Backhoe	80
Bulldozer	85
Grader	85
Loader	85
Roller	75
Scraper	89
Truck	88

Source: Federal Transit Administration 1995.

Construction is anticipated to occur between 7:00 a.m. and 7:00 p.m. on Monday through Saturday. Because construction activity during these hours would be exempt from the requirements of the San Joaquin County and Sacramento County Noise Ordinances during these hours (the project is specifically exempted from the San Joaquin County Noise Ordinance because it is a state-regulated activity), no county-enforced noise ordinance criteria are relevant.

A reasonable worst-case assumption is that the three loudest pieces of equipment would operate simultaneously and continuously over at least a 1-hour period. The combined sound level of three of the loudest pieces of equipment listed in Table 3.10-3 (scraper, truck, and bulldozer) is 92 dBA measured at a distance of 50 feet. Table 3.10-4, which assumes this combined-source noise level, summarizes predicted noise levels at various distances from an active construction site. Approximately 74 residences are located within 220 yards of the pipeline alignment and would be exposed to substantial temporary increases in noise.

The minimum ambient sound level measured between 7:00 a.m. and 7:00 p.m. in rural areas near project sites were approximately 35-45 dBA (Table 3.10-2). Table 3.10-4 indicates that under the worst-case assumption, construction noise could exceed 40-55 dBA as far as 3,000-4,000 feet from construction sites. Numerous residences are located within this distance along the pipeline alignment, and several residences are located within this distance near the well pad sites, separator facility, and compressor facility sites. Therefore, this impact is considered significant. However, it should be noted that, as described above, such activities are typically exempt from noise ordinance requirements between the hours of 6:00 a.m. and 9:00 p.m. In addition, such worst-case noise increases would occur only occasionally, they would occur during the daytime, and construction activities would result in only temporary impacts to any individual sensitive receptor. Therefore, implementation of Mitigation Measure 3.10-1 would reduce this impact to a less-than-significant level even though increases in noise from construction activities at some sensitive receptors would occasionally exceed the 5-dBA threshold for a substantial increase discussed under Section 3.10.3, " Significance Criteria", above.

Mitigation Measure 3.10-1: Employ noise-reducing construction practices to reduce construction noise to acceptable levels

The Applicant and the construction contractor shall employ noise-reducing construction practices to reduce construction noise. Specifically, the Applicant shall notify owners of all residential and other noise-sensitive properties within 3,000 feet of proposed construction sites that construction will be occurring at the site. A notification packet shall be sent to the property owners that identifies the intended construction schedule, the duration of noise-generating construction activities, and a telephone number to call with noise complaints. Notification packets shall be sent to property owners at least 30 days before the commencement of construction activity within 3,000 feet of the owners' property.

In addition, the following measures shall be included in the construction contract specifications:

- All equipment shall have sound-control devices no less effective than those provided on the original equipment, and all equipment shall be operated and maintained to minimize noise generation. No equipment shall have an unmuffled exhaust.

- As directed by the CPUC, the Applicant and the construction contractor shall implement appropriate additional noise mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment,

TABLE 3.10-4
ESTIMATED CONSTRUCTION NOISE IN THE VICINITY OF ACTIVE CONSTRUCTION SITES

Distance Attenuation	
Distance to Receptor (feet)	**Sound Level at Receptor (dBA)**
50	92
100	86
200	80
500	71
600	69
800	67
1,000	64
1,500	60
2,000	57
2,500	54
3,000	51
4,000	47
5,280	43
7,500	36

Notes: The following assumptions were used:

Basic sound level drop-off rate: 6.0 dB per doubling of distance
Molecular absorption coefficient: 0.7 dB per 1,000 feet
Anomalous excess attenuation: 1.0 dB per 1,000 feet
Reference sound level: 92 dBA
Distance for reference sound level: 50 feet

This calculation does not include the effects, if any, of local shielding that may reduce sound levels further.

rescheduling construction activity, or installing acoustic barriers around stationary sources of construction noise.

Monitoring Action — Construction activities will be monitored daily to ensure compliance with this mitigation measure. LGS will provide the CPUC with documentation clearly indicating compliance with the mailing requirements of this measure. LGS will also provide weekly reports to CPUC regarding the number of noise complaints received on the telephone hotline and how each complaint was addressed.

Responsibility — CPUC and LGS.

Timing — Monitoring will occur throughout project construction.

Impact 3.10-2: Exposure of Noise-Sensitive Land Uses to Noise from Well Drilling Activities

A total of 10 or up to 11 gas injection/withdrawal wells, three observation wells, several groundwater monitoring wells, and two water injection wells would be drilled for the proposed project using rotary drilling techniques. For the purpose of this study, it is assumed that the drill rig would have characteristics similar to those measured at other drilling projects. A reference sound level measured at 85 dBA at 50 feet has been used for this analysis (Dames & Moore, 1998). This is considered a reasonable worst-case source level for this type of equipment. Table 3.10-5 summarizes predicted noise levels at various distances from active well drilling sites based on a source level of 85 dBA at 50 feet and the same sound attenuation assumptions used for construction noise.

Well drilling is proposed to be conducted on a 24-hour basis for approximately 12 weeks. Well drilling is considered a construction activity that is exempt from the San Joaquin County Noise Ordinance (note that the project is exempt from the San Joaquin County Noise Ordinance because it is a state-regulated activity) between 6:00 a.m. and 9:00 p.m. on all days. The minimum ambient sound level measured between 7:00 a.m. and 7:00 p.m. in rural areas near project sites were approximately 35-45 dBA (Table 3.10-2). Table 3.10-5 indicates that noise from well-drilling activities could exceed 50 dBA within approximately 2,000 feet. Approximately 50 residences are located within 2,000 feet of the well pad sites. However, it should be noted that, as described above, such activities are typically exempt from noise ordinance requirements, such noise increases would occur during the daytime, and daytime well-drilling activities would result in only temporary impacts. Therefore, implementation of Mitigation Measure 3.10-2 would reduce this impact to a less-than-significant level even though increases in noise from construction activities will occasionally exceed the 5 dBA threshold for a substantial increase discussed under Section 3.10.3, “Significance Criteria”, above.

Mitigation Measure 3.10-2: Restrict the hours of construction, install noise-reducing barriers around drilling sites, and employ other noise-reducing "best management practices" to reduce drilling noise

Other project construction activities are limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday. To minimize noise impacts from well-drilling activities, the Applicant and the construction contractor shall limit the hours of well-drilling activities to these hours and employ other noise-reducing construction practices. Specifically, the Applicant shall notify owners of all residential and other noise-sensitive properties within 2,000 feet of proposed well sites that construction will be occurring at the site. A notification packet shall be sent to the property owners that identifies the intended construction schedule, the duration of noise-generating construction activities, and a telephone number to call with noise complaints. Notification packets shall be sent to property owners at least 30 days before the commencement of well-drilling activity within 2,000 feet of the owners' property.

The Applicant shall also employ the following noise-reducing measures to reduce noise from well-drilling activities:

- Noise barriers shall be installed in strategic location around the drill pad.
- All equipment and vehicles shall be kept in good repair and fitted with manufacturer-recommended mufflers.
- Well-drilling equipment shall be selected that has the lowest feasible acoustic height and sound level.
- Other equipment located at well pads shall be selected that generates minimal noise so that it will not be audible beyond the well pad site boundary.

Alternatively, the Applicant may obtain releases from each household potentially significantly affected (i.e., greater than a 5-dBA increase) by well-drilling activities at each well site, indicating that well-drilling activities that would result in noise impacts beyond those permitted by the mitigation measure are acceptable.

Monitoring Action — Well-drilling activities will be monitored weekly to ensure compliance with this mitigation measure. The Applicant and CPUC will meet weekly to coordinate well-drilling activities and determine which measures should apply at each well-drilling site prior to the initiation of well-drilling activities at that site. LGS will provide the CPUC with documentation clearly indicating compliance with the mailing requirements of this measure. LGS will also provide weekly reports to CPUC regarding the number of noise complaints received on the telephone hotline and how each complaint was addressed.

Responsibility — CPUC and LGS.

Timing — Monitoring will occur during well-drilling activities.

TABLE 3.10-5
ESTIMATED WELL DRILLING NOISE IN THE VICINITY OF ACTIVE WELL DRILLING SITES

Distance Attenuation	
Distance to Receptor (feet)	**Sound Level at Receptor (dBA)**
50	85
100	79
200	73
500	64
600	62
800	60
1,000	57
1,500	53
2,000	50
2,500	47
3,000	44
4,000	40
5,280	36
7,500	29

Notes: The following assumptions were used:

Basic sound level drop-off rate: 6.0 dB per doubling of distance
Molecular absorption coefficient: 0.7 dB per 1,000 feet
Anomalous excess attenuation: 1.0 dB per 1,000 feet
Reference sound level: 85 dBA
Distance for reference sound level: 50 feet

This calculation does not include the effects, if any, of local shielding that may reduce sound levels further.

Impact 3.10-3: Exposure of Noise-Sensitive Land Uses to Noise from Operation of the Separator Facility

For this analysis, the following equipment associated with the operation of the facility was considered to be the primary source of sound:

- pressure regulator valves and noise generated by the regulator valves that radiate from the aboveground piping;
- motor-driven water injection pumps; and
- two air-conditioning units on the building at the site.

Based on the most recent analyses provided by the Applicant and reviewed by the Commission, the noise level contribution at the nearest sensitive receptor would be expected to be 37 dBA during release of gas from storage, which is considered the operation that would generate the loudest noise. This sound level is below the 45- to 55-dBA ambient Leq measured at the site and would not exceed the 5-dBA sound level significance criterion. In addition, this predicted noise level would be in compliance with the requirements of the San Joaquin County Noise Ordinance for stationary sources. Therefore, the separator facility would have minimum to no noise impact and would not be expected to be audible indoors at the nearest residence. This impact is less than significant. No mitigation is required.

Mitigation Measures

None required.

Impact 3.10-4: Exposure of Noise-Sensitive Land Uses to Noise from Operation of the Compressor Facility

Additional analyses were performed for the Applicant and reviewed by the Commission for the alternate compressor location at Lind Airport (Hoover & Keith, Inc., 1999). The information from this new analysis provides a more thorough analysis of potential noise generation from the compressor facility because it incorporates more detailed design information, including probable layout of facilities at the site and specific equipment and operational parameters that were not previously available. Although this information is focused on the alternate compressor facility location, it is equally relevant to the proposed compressor facility location and is therefore used in this analysis.

The noise analysis assumes that all four engine-driven gas compressor units operating at full load conditions and that all auxiliary equipment is operating simultaneously. This analysis is therefore considered a worst-case analysis. These conditions will occur periodically during the operation of the project but do not necessarily represent average-day conditions. This analysis also assumed full implementation of all of the noise-reduction measures identified in the Applicant's noise impact analysis and referenced in the project description (Chapter 2, "Project and Alternatives Description") (Hoover &

Keith, Inc., 1999). For this analysis, the following sound sources associated with the operation of the compressor facility were considered:

- noise associated with the exhaust system of each unit, which includes exhaust noise radiated from the stack opening and from exhaust ductwork outside the building;
- noise generated by the air intake system of each unit;
- noise generated by the engine-compressors that penetrate the building;
- noise radiated from outdoor aboveground gas piping and associated components, including any aboveground valves and suction separators;
- noise of the outdoor jacket-water/gas cooler associated with each unit; and
- noise of the outdoor reboiler and other miscellaneous equipment.

Based on the most recent analyses provided by the Applicant and reviewed by the Commission, the noise level contribution at the nearest sensitive receptor would be expected to be approximately 45 dBA during worst-case operational conditions described above. This sound level is much lower than the 58- to 68-dBA ambient noise levels existing at the nearest sensitive receptors (which are located adjacent to Highway 99) and would therefore not be noticeable. Similarly, noise level contribution at other sensitive receptors slightly farther from the site would be expected to be between 40 and 45 dBA. Existing noise levels at these receptors range from 45- to 55-dBA ambient Leq measured near these sites and therefore would have minimum to no noise impact, would not exceed the 5-dBA noise criterion, and would not be expected to be audible indoors at the nearest residence. In addition, this predicted noise level would be in compliance with the requirements of the San Joaquin County Noise Ordinance for stationary sources. This impact is less than significant. No mitigation is required.

Mitigation Measures

None required.

3.10.5 IMPACTS OF THE PUBLIC RIGHT-OF-WAY ROUTE ALTERNATIVE AND MITIGATION MEASURES

IMPACTS

Noise impacts of this alternative would be essentially identical to those described for the proposed project, except that a substantially greater number of residences would be exposed to short-term pipeline construction impacts because the project alternative follows road rights-of-way for a significant length. A higher concentration of residences generally exists along roads east of Interstate 5 and particularly east of Highway 99. Approximately 140 residences are located within 220 yards of this alternative pipeline alignment, and many of these are located close to area roads and would be closer to construction areas than would residences under the proposed project. Exposure of noise-sensitive land uses to noise from construction activities is a significant impact under the Public Right-of-Way Route Alternative and would be more severe than under the proposed project.

The other primary difference between the proposed project and the Public Right-of-Way Route Alternative is that the compressor facility is at the airport site rather than the original site included in the proposed project. Based on the most recent analyses provided by the Applicant and reviewed by the Commission, the noise level contribution at the nearest sensitive receptor would be expected to be 40 dBA during maximum operation of the compressor facility. This sound level is higher than the 36-dBA ambient Leq measured at the nearest sensitive receptor site approximately 1,500 northwest of the center of the compressor facility site. At this level, the compressor facility would be expected to be slightly audible outdoors at the nearest sensitive receptor but would not be audible indoors and would not exceed the 5-dBA significance criterion. Also, this predicted noise level would be in compliance with the provisions of the San Joaquin County Noise Ordinance for stationary sources. In addition, because winds are frequently from the west and because these noise levels would occur only during maximum facility operation (possibly 30-40 percent of the time), this impact is less than significant. No additional mitigation is required.

Potential noise impacts from well-drilling activities and separation facility operations are identical to those described for the proposed project and are significant.

Mitigation Measures

Implementation of Mitigation Measures 3.10-1 and 3.10-2, as described above, would reduce significant noise impacts of construction of the Public Right-of-Way Route Alternative to less-than-significant levels.

3.10.6 IMPACTS OF THE EXISTING PIPELINE CORRIDOR ALTERNATIVE AND MITIGATION MEASURES

IMPACTS

Noise impacts of the Existing Pipeline Corridor Alternative would be essentially identical to those described for the proposed project, except that a greater number of residences would be exposed to short-term pipeline construction impacts because this alternative follows road rights-of-way for a significant length and passes through the City of Isleton along a street right-of-way. A higher concentration of residences generally exists along roads east of Interstate 5 and particularly east of Highway 99. Approximately 145 residences are located within 220 yards of this alternative pipeline alignment, and many of these are located close to area roads and would therefore be closer to construction areas than residences along the pipeline alignment of the proposed project. Exposure of noise-sensitive land uses to noise from construction activities is a significant impact under the Existing Pipeline Corridor Alternative and would be more severe than under the proposed project.

As with the Public Right-of-Way Route Alternative, the other primary difference between the proposed project and the Existing Pipeline Corridor Alternative is that the compressor facility is at the airport site, rather than the original site included in the proposed project. Based on the most recent analyses provided by the Applicant and reviewed by the Commission, the noise level contribution at the nearest sensitive receptor would be expected to be 40 dBA during maximum operation of the compressor facility. This sound level is higher than the 36-dBA ambient Leq measured at the nearest sensitive receptor site approximately 1,500 northwest of the center of the compressor facility site. At this level, the compressor facility would be expected to be slightly audible outdoors at the nearest sensitive receptor but would not be audible indoors and would not exceed the 5-dBA significance criterion. Also, this predicted noise level would be in compliance with the provisions of the San Joaquin County Noise Ordinance for stationary sources. In addition, because winds are frequently from the west and because these noise levels would occur only during maximum facility operation (possibly 30-40 percent of the time), this impact is less than significant. No additional mitigation is required.

Potential noise impacts from well-drilling activities and separation facility operations are identical to those described for the proposed project and are significant.

Mitigation Measures

Implementation of Mitigation Measures 3.10-1 and 3.10-2, as described above, would reduce significant noise impacts of construction of the Existing Pipeline Corridor Alternative to less-than-significant levels.

3.10.7 IMPACTS OF THE COMPOSITE ROUTE ALTERNATIVE AND MITIGATION MEASURES

IMPACTS

Noise impacts of the Composite Route Alternative would be essentially identical to those described for the proposed project, except that a greater number of residences would be exposed to short-term pipeline construction impacts because this alternative follows road rights-of-way for a significant length and passes through the City of Isleton along a street right-of-way. A higher concentration of residences generally exists along roads east of Interstate 5 and particularly east of Highway 99. Approximately 170 residences are located within 220 yards of this alternative pipeline alignment, and many of these are located close to area roads and would therefore be closer to construction areas than residences along the pipeline alignment of the proposed project. Exposure of noise-sensitive land uses to noise from construction activities is a significant impact under the Composite Route Alternative and would be more severe than under the proposed project.

As with the Public Right-of-Way Route Alternative, the other primary difference between the proposed project and the Composite Route Alternative is that the compressor facility is at the airport site, rather than the original site included in the proposed project. Based on the most recent analyses provided by the Applicant and reviewed by the Commission, the noise level contribution at the nearest sensitive receptor would be expected to be 40 dBA during maximum operation of the compressor facility. This sound level is higher than the 36-dBA ambient Leq measured at the nearest sensitive receptor site approximately 1,500 northwest of the center of the compressor facility site. At this level, the compressor facility would be expected to be slightly audible outdoors at the nearest sensitive receptor but would not be audible indoors and would not exceed the 5-dBA noise criterion. Also, this predicted noise level would be in compliance with the provisions of the San Joaquin County Noise Ordinance for stationary sources. In addition, because winds are frequently from the west and because these noise levels would occur only during maximum facility operation (possibly 30-40 percent of the time), this impact is less than significant. No additional mitigation is required.

Potential noise impacts from well-drilling activities and separation facility operations are identical to those described for the proposed project and are significant.

Mitigation Measures

Implementation of Mitigation Measures 3.10-1and 3.10-2, as described above, would reduce significant noise impacts of construction of the Composite Route Alternative to less-than-significant levels.

REFERENCES—NOISE

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