

NueVida Resources, LLC's Noise Mitigation Plan

For the

Ardourel 33081718 Pad

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Prepared for:



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1 INTRODUCTION

NueVida Resources, LLC (NueVida) is providing this Noise Mitigation Plan (Plan) to the Colorado Oil and Gas Conservation Commission (COGCC), to Colorado Parks and Wildlife (CPW), and to the La Plata County Planning Department, the La Plata County Planning Commission, and the La Plata County Board of County Commissioners (collectively LPC) in compliance with requirements under COGCC's Rule 304.c.(2) and Rule 423.a, as well as LPC's Land Use Code (LUC) Section 90-108.II and Section 90-122.IV related to noise mitigation measures for minor oil and gas facilities. The purpose of this Plan is to address the requirements and mitigate concerns regarding impacts from noise generated by the proposed project.

NueVida proposes to develop the Ardourel 33081718 Pad (Project), a natural gas extraction and transportation system within 34.51 acres of total disturbance. NueVida plans to initially drill two (2) test wells into the Mancos Formation utilizing horizontal drilling technologies on its leasehold within La Plata County, Colorado. Based on results of the initial wells, an additional six (6) wells may be drilled on the well pad for a total of eight (8) wells. To accommodate these wells, NueVida is proposing a multi-well gas location (well pad), access roads, pipeline, tank pad Temporary Use Area (TUA), and temporary pump pad on private land owned by the Ardourel Trust. The purpose of the wells would be to extract, separate, dehydrate, and transport natural gas from the wells to an above ground header system from which three different gathering companies in the area have the ability to transport the gas for additional offsite treatment and processing for gas sales.

Access to the Project would be from County Road 318 to an existing graveled access road that is currently utilized by a different operator. From the existing graveled access road, two separate access roads will connect with the tank pad TUA, and two separate access roads will connect to the well pad from the existing access road to accommodate for pass through traffic on both pads.

Construction of the well pad and tank pad TUA and installation of the water storage tanks will take approximately 58 days to complete. Drilling operations will take approximately 40 days to complete for the two wells. The drilling rig will then be removed, and a two-week period will begin for preparation to complete the wells. Completion operations for both wells will take approximately 30 days to complete. After completion, the tanks on the tank pad TUA will be removed, however, the produced water pad will remain in place while testing of the wells occurs to determine if additional wells may be drilled in subsequent years. The tank pad TUAs will be reseeded with use of tackifiers and/or erosion blankets after the removal of the tanks to stabilize the soils from potential erosion.

2 PROJECT DESCRIPTION

2.1 Project Location

The location for this proposed Project has been selected to meet a variety of technical and logistical needs. Key among these is an acceptable location between the field from which the gas is coming and the plant to which it is being delivered. This Project would be located near Ignacio, Colorado on Parcel Number 595318300056 owned by the Ardourel Trust and will be accessed from County Road 318, Ignacio, CO. The legal location for the project is the W/2 SW/4 of Section 18, Township 33 North, Range 8 West, N.M.P.M. This proposed location is currently occupied by sagebrush (*Artemisia tridentata*) shrubland with sparse pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) trees

scattered throughout. It is zoned for agricultural use. The location abuts other private properties on three sides and County Road 318 on the southern border.

The two residential building units (RBU) nearest the Project are to the southwest of the Project location. Each is within the 2,000-foot setback distance.

2.2 Project Description and Details

The 34.51 acres of disturbance is comprised of 29.61 acres of area of disturbance, 4.31 acres of pipeline ROW, and 0.59 acre of existing graveled and two-track roads. The 29.61-acre area of disturbance would include a 6.54-acre level pad area for the well facilities and an additional 14.34-acre leveled pad for the tank pad TUA, 0.09 acre of new access roads, 0.42-acre temporary pump pad, 2.73 acres for TUA topsoil storage, and 5.09 acres of area that could be utilized for storm water management areas. The total 4.41 acres of pipelines will be both within the area of disturbance (0.10 acre) and on 4.31 acres of right-of-way (ROW) outside of the area of disturbance. The associated cut and fill slopes, additional room to implement necessary mitigations and Best Management Practices (BMP), soil storage, and a tank pad TUA are included in the overall surface disturbance. There is an existing graveled and two-track access road that totals 0.59 acre of disturbance. The well pad and all access roads will be graveled and maintained for the pre-production phases of the Project.

After drilling and completion phases are finalized, the tank pad TUA, its associated access roads, and a portion of the well pad will be fully reclaimed (approximately 25.31 acres) for the production phase of the Project. Approximately 2.90 acres of the well pad will be leveled and reseeded only, leaving a total of 1.40 acres of long-term disturbance to remain as a graveled surface on the well pad and its associated access roads (see Table 2.1). The existing access road does provide access to an existing well pad location and will continue to be utilized by both NueVida and the existing well pad operator for the life of all wells.

When fully operational, the well pad location will include 8-inch inlet and outlet pipelines, two (2) 400-barrel steel water tanks, two (2) 2-phase vertical indirect heated vessels, one (1) small vertical fuel gas separator, one (1) dehydrator skid, and one (1) enclosed combustor. The Ardourel tank pad TUA will have approximately fifteen (15) 40,000-barrel tanks and four (4) 20,000-barrel tanks. NueVida would install an 8" HDPE (High Density Polyethylene) buried water pipeline and a 10" steel buried gas pipeline from the northwestern corner of the well pad continuing north for 3,901.6 feet to an above ground header system where three different gathering companies would tie to. An additional 8" HDPE buried water pipeline would be installed from the northwestern corner of the tank pad TUA continuing north for 966.9 feet to the northwestern corner of the well pad where it would tie to the aforementioned proposed 8" HDPE buried water pipeline.

Table 2.1 Project Disturbance Estimates for the Proposed Ardourel 33081718 Pad

Area of Disturbance Surface Disturbance (acres)					
Feature	Total Disturbance	New Disturbance	Fully Reclaimed	Reseeded Only	Long-term Disturbance
Well Pad	6.54	6.54	2.61	2.90	1.03
Tank Pad TUA	14.34	14.34	14.34*	-	-
Pump Pad	0.42	0.42	0.42*	-	-
Pipeline Corridor	0.1	0.1	0.1	-	-
New Access Roads for Well Pad	0.07	0.07	-	-	0.07
New Access Roads for Tank Pad TUA	0.02	0.02	0.02*	-	-
Existing Access Roads	0.3	-	-	-	0.3
TUA (Topsoil Storage for Well Pad)	1.55	1.55	1.55	-	-
TUA (Topsoil Storage for Tank Pad TUA)	1.18	1.18	1.18*	-	-
Area of Disturbance for Stormwater BMPs	5.09	5.09	5.09	-	-
Area of Disturbance Disturbance Total:	29.61	29.31	25.31	2.90	1.40
Outside Area of Disturbance Surface Disturbance (acres)					
Pipeline Corridor	4.31	-	4.31	-	-
Existing Access Roads	0.59	-	-	-	0.59
Outside Area of Disturbance Total:	4.9	-	4.31	-	0.59
Overall Disturbance Total:	34.51	29.31	29.62	2.90	1.99

* Blue text indicates temporary disturbance that may remain for up to 5 years, all other temporary disturbance will be reclaimed no later than 2 years from the start of construction.

2.3 Vegetation and Wildlife

The Project will be constructed within a sagebrush shrubland habitat with some sparse pinyon-juniper trees scattered throughout the well pad and tank pad TUA areas. The area surrounding the Project is a very similar landscape with continued sagebrush shrublands. Pinyon-juniper forests surround the proposed Project area at varying distances.

Wildlife species, specifically mule deer, do have High Priority Habitat (HPH) within the disturbance area of the Project (see Appendix 1). This HPH is considered Mule Deer Severe Winter Range and typically operators are requested to restrict new construction or development activities during the winter closure period of December 1 through April 30. NueVida would not perform any pre-production construction or drilling operations during the closure period.

3 NOISE SOURCES AND DESCRIPTIONS

Noise emitted from the proposed project activities would mingle with noise from existing sources. NueVida has assessed existing noise and sources as well as predicting how its project activities could create noise and add to the total noise in the area. Based on these assessments of existing and potential additional noises, NueVida has considered what Best Management Practices (BMPs) could be implemented to mitigate possible noise impacts on potential receptors in the area and to remain in compliance with COGCC's permitted noise levels.

As the Project location is located within an agriculturally zones area, the maximum permissible noise levels as set by the COGCC, are as listed in Table 3.1 below.

Table 3.1. COGCC Maximum Permissible Noise Levels by Land Use Designation

Land Use Designation	7:00am to next 7:00pm	7:00pm to next 7:00am
Residential/Rural/State Parks & State Wildlife Areas	55 dB(A)	50 dB(A)
Commercial/Agricultural	60 dB(A)	55 dB(A)
Light Industrial	70 dB(A)	65 dB(A)
Industrial	80 dB(A)	75 dB(A)
All Zones	60 dB(C)	60 dB(C)

3.1 Background Noise Surveys

Background ambient noise surveys were conducted prior to this Plan being completed to get an indication of existing noise sources and noise levels in the area. As there are two RBUs within 2,000 feet of the proposed location, noise surveys were conducted at each RBU to determine what the ambient noise level is. RBU #1 is surrounded by a pinyon-juniper forest and sits at an elevation higher than the proposed well location. The line of sight to the proposed well location is interrupted by some of the surrounding trees but there is a portion of the tank pad TUA that has a clear line of site from the RBU. It is also approximately 1,199 feet from the southwest corner of the tank pad TUA and approximately 2,442 feet from the southwest corner of the proposed well pad location. RBU #2 does not have a clear or direct line of sight to the well pad or tank pad TUA and is also surrounded by a pinyon-juniper forest. It is located approximately 1,553 feet from the southwest corner of the tank pad TUA and approximately 2,259 feet from the southwest corner of the proposed well pad location. Both RBUs have a small direct line of sight to County Road 318 but vehicles passing by on the road can be easily heard at both locations.

For the purpose of assigning a noise point of compliance in the general direction of the RBUs within 2,000 feet of the working pad surface, Location #3 was determined using Geographic Information System

(GIS) as an adequate location to monitor noise levels. Location #3 lies in the direction of both the RBUs from the proposed well pad location and will give a more accurate reading of ambient noise levels closer to the proposed well pad location than measuring noise at either RBU. Location #3 is not within a line of sight from either RBU but is within 475 feet of the well pad working pad surface. Existing average noise levels at all three locations are shown below in Table 3.2.

Table 3.2. Existing Average Noise Levels (dB(A)) at Noise Points

Noise Point	Average dB(A) 7:00am to next 7:00pm	Average dB(A) 7:00pm to next 7:00am
RBU # 1 (app. 1,199 feet from SW Corner of Proposed Tank Pad TUA)	41 dB(A)	46 dB(A)
RBU # 2 (app. 1,553 feet from SW Corner of Proposed Tank Pad TUA)	45 dB(A)	49 dB(A)
Location # 3 (app. 475 feet from SW Corner of Proposed Well Pad)	50 dB(A)	52 dB(A)

3.2 Existing Noise Sources

The area surrounding the proposed Project has existing oil and gas development within a mile of the location. The El Paso Compressor Station is located approximately 1,308 feet southwest from the proposed well head of the Project. This compressor station does run regularly and is a main source of noise in the area adjacent to the proposed location. The Ignacio Gas Plant is also located approximately 1,735 feet northwest of the proposed location. The closest oil and gas location to the project is an active location 757 feet from the well head and is east of the entire proposed development. This location utilizes the existing access road on the Ardourel property.

County Road 318 runs east and west and is directly south of the tank pad TUA. It is a paved road and is heavily utilized by vehicles in the area. It connects US Highway 550 to US Highway 172 and is vital for residences in the area and for commuters traveling between Ignacio, Colorado and the Colorado-New Mexico state line.

3.3 Project Noise Sources

A variety of noises would be emitted during all stages of NueVida's pre-production and production activities. Construction of the location and its associated TUAs and pipelines would occur during the daylight hours and would have noise associated with truck traffic and equipment clearing, grading, leveling, and hauling in aggregate material. As drilling and completion activities would occur twenty-four (24) hours a day and seven (7) days a week from commencement to completion, noise emitted from these activities would be related to rig and drilling noise and equipment operating. Production activity related noise would be minimal as the production equipment does not emit high volumes. Occasional truck traffic would be on location daily to perform routine checks of equipment operation but would create minimal noise.

Drilling Operations

The initial construction of the well pad and tank pad TUA will take approximately 24 to 28 days to complete. Noise associated with this phase would come from equipment and heavy machinery used to clear vegetation and level the working pad surfaces. Installation of the needed production facility equipment and storage tanks for recycled water storage will take approximately 30 days. Drilling operations will take approximately 36 to 40 days to drill both wells once the drilling rig sets up on the location. The drilling rig would be the greatest noise source during this phase. Drilling operations would require crews to be on location 24 hours a day for seven (7) days a week once drilling starts to the completion of drilling. Noise generated from the rig during drilling operations would be expected to be around 60 to 65 dB(A) at 500 feet from the rig.

Completion & Flowback Operations

Completion operations for both wells will take approximately 28 to 33 days to complete. Flow back operations would take approximately 10 to 14 days to finish the total drilling and completion processes prior to production of the wells beginning. Noise associated with this phase of the Project would come from equipment being used and from the hydraulic fracturing equipment and is expected to be around 60 dB(A). If available, a Quiet Frac Fleet would be used for this phase. This phase of the project would be expected to also require crews to be on location 24 hours a day for seven (7) days a week once the completion and flowback starts until the process has been completed.

Production Operations

Once the flowback and clean-out of the wells are completed, then the wells will be directly produced from each wellhead and into the production facilities. Both wells are expected to be in production for up to 30 years. Noise levels would be more reflective of the current ambient noise levels for the area around 47 to 55 dB(A). The equipment on the location for long-term production would have very little noise associated with it. Trucks for routine inspections of the well pad would cause temporary and short-term noise as they drive to and from the location but are unexpected to have any negative impacts on surrounding noise volumes.

4 POTENTIAL IMPACTS AND BEST MANAGEMENT PRACTICES FOR MITIGATION

4.1 Potential Noise Impacts

NueVida has taken into account all sources of noise that could occur during all phases of the Project that could have a potential impact to surrounding homes, roadways, and wildlife in the area. As indicated above, noise would be mostly associated with the rig during drilling operations with an expected noise level of 60 to 65 dB(A) at 500 feet from the rig. Existing noise levels in the area are already at elevated levels due to existing road use and oil and gas locations in the area. The additional long-term noise that could result from the Project is not expected to increase noise levels above the current conditions.

Furthermore, due to the surrounding landscape and additional natural buffers created by trees in the area, noise emitted from the Project would likely be muffled some in the direction of the two RBUs nearest the Project. Additionally, the tank pad TUA would reduce noise emitted as the tanks filled with water would block some impacts associated with the noise created by the Project during the pre-production phase and would reduce noise heard by motorists passing by on County Road 318. These tanks are approximately 15

feet tall. Short-term noise from the pre-production phases would be audible to surrounding residences and motorists but are unlikely to have lasting or long-term impacts to the surrounding resources due to the short duration of the work.

Mule deer are not likely to be impacted by noise associated with the pre-production activities because NueVida has agreed to adhere to timing restrictions from December 1 until April 30 and will not have any pre-production activities take place during the closure period. Once the wells have been completed and are in production, noise emitted during this stage will be very low from the equipment on location. Minimal traffic will be associated with the production phase of the Project as operators will perform routine maintenance checks on the equipment on location but would be limited to one trip daily. Existing traffic using the access road proposed for the Project does occur as the operator checks the existing location on the property.

If additional background surveys are needed, the operator will conduct the following procedure for background ambient noise surveys between 30 and 90 days prior to the start of construction. Preliminary noise measurements mentioned above in Table 3.2 at the RBUs and noise point within 2,000 feet of the proposed project were taken as a baseline for the noise mitigation plan. Additional noise surveys would be completed at the noise points listed in Table 3.2 to get current background ambient noise recordings of the surrounding noise levels. Surveys would be conducted per COGCC Rule 423.b guidelines for establishing baseline conditions.

4.2 Noise Mitigation

Based on several onsite field visits with COGCC, CPW, La Plata County personnel, environmental consultants, and the landowner, NueVida is committed to implementing the avoidance and mitigation measures listed below to reduce noise from impacting receptors surrounding the Project.

BMPs for Pre-Production Phases

- Timing restrictions for construction activities during December 1 to April 30 would reduce noise impacts to mule deer in the area.
- Quiet Frac Fleet would be used for fracking operations, if available during the timing of completion operations, which would tentatively be scheduled during September through October pending permit application approval. The winter closure for mule deer habitat starts on December 1 and operations would need to be completed by the start of the closure.
- Water storage tanks on tank pad TUA would aid in blocking some noise from impacting portions of the nearby County Road 318.
- Noise levels would not exceed maximum permissible levels for extended periods of time.

BMPs for Production Phase

- Equipment on location would not emit high levels of noise and therefore no negative noise impacts are expected during the production phase of the Project.

5 LIST OF APPENDICES

Appendix I. Map of Potentially Impacted Resources

