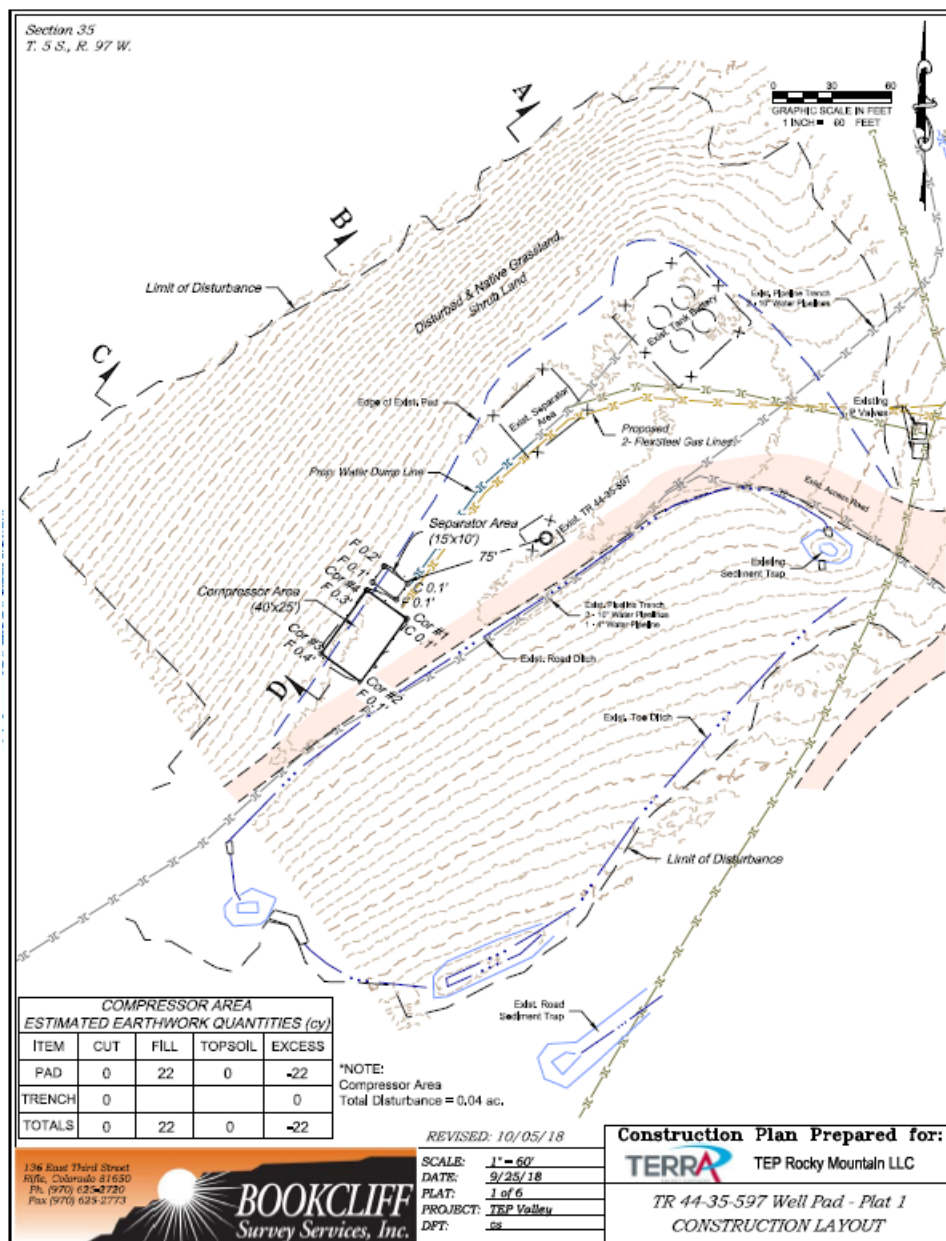


INTRODUCTION

This report describes the results of the noise study done at TEP Doe 360 compressor engine located in Garfield County, Colorado to show the anticipated noise impact of a similar unit at the TR 44-35 Well Pad. The noise survey and evaluation was conducted consistent with the requirements included in Colorado Oil and Gas Conservation Commission (COGCC) Rule 802. A summary of the noise survey data and evaluation results are provided below.

DESCRIPTION OF SITE AND PROPOSED COMPRESSOR STATION

TEP is proposing to construct a compressor station on the existing TR 44-35 well pad. The site diagram is included below



APPLICABLE NOISE REGULATIONS

According to COGCC Rule 802.b.(2) in remote locations, where there is no reasonably proximate Building Unit or Designated Outside Activity Area, the light industrial standard is applicable. The TR 44-35 well pad and proposed site of the compressor station is in a remote location and is located more than 7 miles from the nearest Building Unit or Designated Outside Activity Area.

Table 1 details COGCC's zoning designations and permissible noise levels.

Table 1

Zone	7:00 am to next 7:00 pm	7:00 pm to next 7:00 am
Residential/Agricultural/Rural	55 dB(A)	50 dB(A)
Commercial	60 dB(A)	55 dB(A)
Light Industrial	70 dB(A)	65 dB(A)
Industrial	80 dB(A)	75 dB(A)

As the proposed compressor station could operate 24 hours per day, the most stringent nighttime Light Industrial limit of 65 dB(A) may be applicable.

SUMMARY OF RESULTS

The major noise producing equipment associated with the proposed compressor station consists of one engine/compressor package. The engine/compressor package is a 2-stroke lean-burn, Ajax DPC-2802 LE, with a site rated HP of 274 at 440 RPM. The engine/compressor package will be housed in a structure that will provide further noise abatement.

A noise survey was performed on April 18, 2018 to evaluate potential noise impacts in the area around a similar engine. The DOE 360 compressor station is located on private property with the same land use designation as the proposed area. The noise study at the DOE 360 compressor station was conducted to determine the noise levels of the 2-stroke lean-burn, Ajax DPC-360 that is housed in a structure that will be similar to the structure that will house the unit at the proposed location. The results of the study are shown below in Table 2.

Table 2

DOE 360 CS Noise Readings		
	Level dB(A)	Distance to Source (Feet)
North	52.7	350'
South	52.5	350'
East	53.4	350'
West	56.3	350'

The DOE 360 engine was below the standard of 65 dB(A) for Light Industrial permissible noise levels at 350 feet. As you can see from the manufacture specs in Table 3 these two units are very similar in HP, RPM and noise levels. With the addition of a structure around this unit and based on the surveys conducted, the TR 44-35 compressor station is anticipated to be below the permissible levels of the Light Industrial standard as defined by the COGCC. A noise survey will be conducted after the installation of the compressor and the structure to demonstrate compliance with COGCC Rule 802.

Table 3

Manufacture Specs

DPC-2802 Std & LE		Distance	Sound Pressure Levels (dB) at Specified Distance from Exhaust Silencer									A-Weighted dBA
RPM	BHP		31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	
440	384 (LE) 422 (Std)	3FT	96	92	95	91	89	85	81	73	68	91
		10FT	94	90	92	88	86	82	79	70	65	89
		500ft	71	63	63	57	56	58	58	47	39	63
		1000ft	65	57	57	51	50	52	50	39	28	56

ENGINE EMISSIONS

The DPC-2802 LE engine will be APEN Only and registered with Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment (CDPHE). The emissions from the engine/compressor package are below.

DPC-2802 LE		
NOX	g/bhp-hr :	1
	ppmvd @ 15% O2 :	65
	lb/hr :	0.6
Co	g/bhp-hr :	0.8
	ppmvd @ 15% O2 :	86
	lb/hr :	0.48
VOC	g/bhp-hr :	0.33
	ppmvd @ 15% O2 :	22
	lb/hr :	0.2