MEMO

TO: Chris Nordle

FROM: Eddie Duncan, INCE Bd. Cert.

DATE: January 27, 2015

SUBJECT: Rock Saw Data for Halifax Quarry's Act 250 Application (#2W1318)

The purpose of this memorandum is to provide information on sound levels from a rock saw, similar to what would be used at the proposed Halifax Quarry on Jacksonville Stage Road in Halifax, Vermont. This information is supplemental to the project's Noise Impacts Assessment prepared by RSG and dated April 2014.

MONITORING DESCRIPTION AND PROCEDURES

Rock saw sound pressure level measurements were carried out on December 18, 2014 at a quarry in Vermont. Weather during the site visit featured temperatures of approximately 28°F, with cloudy skies, snow showers, and gusty winds between 5 and 10 mph. Fresh snow covered the ground to a depth of 2 to 3 inches.

Rock saw operations included three main pieces of equipment: two saws and a diesel generator. All equipment was located near the bottom of a large rock face. The generator and one of the saws were located in front of the main part of the face, with the saw cutting perpendicular to face. The second saw was located in a 46 foot (14 meters) deep niche, cutting parallel to the main face.

Measurements were collected with Larson Davis 831 ANSI/IEC Type 1 sound level meters, logging A-weighted equivalent, fast-response sound levels, and 1/3 octave band sound pressure levels, once each second. Microphones were covered with 90 mm (3.5 inch) windscreens, to minimize wind-caused pseudo-sound, and were mounted on 1.5 meter (5 foot) tall tripods. The sound level meters were calibrated before and after measurements using a Larson Davis LD200 calibrator. Distance measurements were made using a Nikon Prostaff 7 range finder and a Leica Disto D5 laser distometer.

Sound level measurements were made at various distances around the saw/generator setup while it was in operation. It was the perception of the field technician that the majority of the sound was due to the generator, and that the noise emissions of the saw were minor in comparison to the generator.

MEASUREMENT RESULTS

The sound pressure level data was converted to sound power levels for comparison with the other sources proposed to be used at Halifax Quarry. The maximum fast-response sound power levels (Lfmax) and the maximum 1-second equivalent sound levels (max $Leq_{1\text{-sec}}$) are provided in Table 1.

TABLE 1: ROCK SAW SOUND POWER LEVEL

Source	Metric	Octave Band Frequency (Hz)									Overall Sound Power Level	
		31.5	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	dBA	dB
Rock Saw with Diesel Generator	Maximum 1-second Leq	57	78	92	97	96	99	96	104	101	108	113
	LAfmax	60	79	92	101	110	102	99	99	95	111	116

DISCUSSION

The maximum sound power levels from the rock saw were 111 dBA (Lfmax) and 108 dBA (max $Leq_{1\text{-sec}}$). These sound power levels are low relative to other proposed equipment such that it does not affect the results of the Noise Impact Assessment for the project. It is my understanding that the project will only utilize one generator at the site. The generator will be used to run either the rock saw or the hand rock drill, but not both at the same time. The hand rock drill, which was modeled in the Noise Impact Assessment, has a sound power level of 123 (Lfmax) and 122 (max $Leq_{1\text{-sec}}$) which is over 10 dB higher than the rock saw. Therefore, potential noise impacts when the rock saw are in use, would be less than those when the hand rock drill are in use, and the potential noise impacts when the hand rock drill are in use are presented in the Noise Impact Assessment.

With this supplemental information on the rock saw, our conclusions remain that this proposed project can be constructed and operated in such a way as to not cause an undue adverse impact on aesthetics with regard to noise and can comply with the noise limit in the Halifax zoning regulations.

EDDIE DUNCAN, INCE BD. CERT.
Director