

Payne & Dolan, Inc.
Racine Quarry - Village of Caledonia
Recorded Ground Vibration and Airblast Levels for the East Quarry CUP (New) Area
June 2025

All Ground Vibrations (PPV) were below State of Wisconsin and Village of Caledonia Maximum Limits

All Airblasts (AO) were below State of Wisconsin and Village of Caledonia Maximum Limits

Time	Activity	Location	Distance	PPV	Freq	AO
6/25/2025 9:23	EAST 22	Ellis	2,113	0.02	26.3	105
6/25/2025 9:23	EAST 22	St. Rita	1,938	N/T	N/T	N/A
6/25/2025 9:23	EAST 22	Marquette	476	0.2325	62.5	114
6/25/2025 9:23	EAST 22	Berkeley	719	0.1275	25	116
6/24/2025 9:59	EAST 21	Ellis	2,099	0.025	20	109
6/24/2025 9:59	EAST 21	St. Rita	1,923	0.0225	18.5	110
6/24/2025 9:59	EAST 21	Marquette	478	0.23	31.3	115
6/24/2025 9:59	EAST 21	Berkeley	731	0.095	26.3	113
6/19/2025 12:29	EAST 20	Ellis	2,320	0.0275	11.9	112
6/19/2025 12:29	EAST 20	St. Rita	1,931	0.02	22.7	114
6/19/2025 12:29	EAST 20	Marquette	988	0.14	18.5	117
6/19/2025 12:29	EAST 20	Berkeley	598	0.2275	25	112
6/19/2025 9:57	EAST 19	Ellis	2,319	0.0225	9.4	116
6/19/2025 9:57	EAST 19	St. Rita	1,914	0.02	22.7	110
6/19/2025 9:57	EAST 19	Marquette	1,029	0.1	15.2	119
6/19/2025 9:57	EAST 19	Berkeley	627	0.305	20	115
6/17/2025 9:32	EAST 18	Ellis	2,259	N/T	N/T	N/A
6/17/2025 9:32	EAST 18	St. Rita	1,846	N/T	N/T	N/A
6/17/2025 9:32	EAST 18	Marquette	1,033	0.085	23.8	119
6/17/2025 9:32	EAST 18	Berkeley	692	0.22	38.5	110
6/5/2025 10:33	EAST 17	Ellis	1,996	0.025	11.4	112
6/5/2025 10:33	EAST 17	St. Rita	1,760	0.0225	19.2	113
6/5/2025 10:33	EAST 17	Marquette	634	0.1875	26.3	116
6/5/2025 10:33	EAST 17	Berkeley	810	0.24	35.7	111
6/2/2025 10:31	EAST 16	Ellis	2,256	0.03	21.7	115
6/2/2025 10:31	EAST 16	St. Rita	1,932	N/T	N/T	N/A
6/2/2025 10:31	EAST 16	Marquette	823	0.1475	27.8	115
6/2/2025 10:31	EAST 16	Berkeley	578	0.2475	33.3	112

N/T - seismograph did not trigger

Ground Vibration (PPV) Limit - The Village of Caledonia explosives use ordinance states that “The maximum ground vibration at the location of any dwelling, public building, place of employment, school, church or community or institutional building outside or beyond the permitted explosives use area shall have a maximum peak-particle-velocity limit as provided by the Department, the scaled-distance equation of paragraph (ii), or the blasting level chart of paragraph (iii), whichever is applicable hereunder. Notwithstanding this general requirement, an annual permit holder who is subject to the limitations of paragraph (iii)a (Figure A, incorporated by herein reference), below, may exceed the limitation of Figure A on up to five percent (5%) of the blasts it initiates during the six (6) month period from July 1 to December 31 and during the six (6) month period from January 1 to June 30 without violating this Section, provided that the ground vibration produced by such blasts does not exceed 0.65 inches per second or the limitations imposed by the Wisconsin Department of Industry, Labor and Human Relations in Section ILHR 7.64(4), Wis. Adm. Code, as amended from time to time, whichever is more stringent”.

Airblast (AO) Limit - The Village of Caledonia explosives use ordinance states that “Airblast shall not exceed the maximum limits listed in Table A-1 at the location of any dwelling, public building, place of employment, school, church or community or institutional building outside and beyond the permitted explosives use area. Notwithstanding this general requirement, an annual permit holder subject to this limitation may exceed the limitation on up to five percent (5%) of the blasts it initiates during the six (6) month period from July 1 to December 31, and during the six (6) month period from January 1 to June 30, without violating this ordinance, provided that the airblast produced by such blasts does not exceed the limitations on airblast imposed by Wisconsin Department of Industry, Labor and Human Relations in Subsection ILHR 7.64(2), Wis. Adm. Code, as amended from time to time.”

TABLE A-1 AIRBLAST
LIMITS

Lower Frequency Limit of Measuring System in Hz	Maximum Level in db
2 Hz or lower -- Flat response	123 peak
6 Hz or lower -- Flat response	129 peak

