

Payne & Dolan, Inc.
Racine Quarry - Village of Caledonia
Recorded Ground Vibration and Airblast Levels for the East Quarry CUP (New) Area
November 2023

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
11/20/2023 9:30	EAST 74	Ellis	1,035	0.125	41.7	110
11/20/2023 9:30	EAST 74	St. Rita	932	0.155	23.8	114
11/20/2023 9:30	EAST 74	Marquette	1,223	0.1975	20.8	113
11/20/2023 9:30	EAST 74	Berkeley	1,778	0.065	25	111
11/16/2023 9:11	EAST 73	Ellis	1,925	0.0475	23.8	122
11/16/2023 9:11	EAST 73	St. Rita	1,697	0.0525	33.3	123
11/16/2023 9:11	EAST 73	Marquette	641	0.3975	23.8	118
11/16/2023 9:11	EAST 73	Berkeley	881	0.22	33.3	112
11/10/2023 10:59	EAST 72	Ellis	1,832	0.0375	27.8	111
11/10/2023 10:59	EAST 72	St. Rita	1,623	0.0475	29.4	118
11/10/2023 10:59	EAST 72	Marquette	646	0.31	29.4	120
11/10/2023 10:59	EAST 72	Berkeley	974	0.14	33.3	110
11/10/2023 9:20	EAST 71	Ellis	2,421	N/T	N/T	N/A
11/10/2023 9:20	EAST 71	St. Rita	2,170	N/T	N/T	N/A
11/10/2023 9:20	EAST 71	Marquette	701	0.065	29.4	112
11/10/2023 9:20	EAST 71	Berkeley	391	0.1275	50	114
11/7/2023 12:31	EAST 70	Ellis	1,327	0.11	31.3	112
11/7/2023 12:31	EAST 70	St. Rita	1,229	0.0825	23.8	119
11/7/2023 12:31	EAST 70	Marquette	911	0.17	33.3	117
11/7/2023 12:31	EAST 70	Berkeley	1,480	0.055	20	120
11/7/2023 11:33	EAST 69	Ellis	1,024	0.1325	15.6	107
11/7/2023 11:33	EAST 69	St. Rita	833	0.125	20.8	114
11/7/2023 11:33	EAST 69	Marquette	1,310	0.1775	20.8	116
11/7/2023 11:33	EAST 69	Berkeley	1,814	0.0675	27.8	118
11/2/2023 12:01	EAST 68	Ellis	1,545	0.1175	20.8	112
11/2/2023 12:01	EAST 68	St. Rita	1,408	0.1275	25	120
11/2/2023 12:01	EAST 68	Marquette	744	0.33	20.8	116
11/2/2023 12:01	EAST 68	Berkeley	1,263	0.1125	19.2	116
11/1/2023 13:45	EAST 67	Ellis	1,665	0.045	11.4	112
11/1/2023 13:45	EAST 67	St. Rita	1,495	0.0925	13.2	119
11/1/2023 13:45	EAST 67	Marquette	691	0.29	38.5	116
11/1/2023 13:45	EAST 67	Berkeley	1,142	0.16	25	114
11/1/2023 10:52	EAST 66	Ellis	2,410	N/T	N/T	N/A
11/1/2023 10:52	EAST 66	St. Rita	2,146	N/T	N/T	N/A
11/1/2023 10:52	EAST 66	Marquette	727	0.0975	18.5	119
11/1/2023 10:52	EAST 66	Berkeley	397	0.2625	55.6	115

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

