

Payne & Dolan, Inc.
Racine Quarry - Village of Caledonia
Recorded Ground Vibration and Airblast Levels for the East Quarry CUP (New) Area
May 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
5/30/2023 13:16	EAST 17	Ellis	1,870	0.063	10.6	118
5/30/2023 13:16	EAST 17	St. Rita	1,634	0.04	13.5	126
5/30/2023 13:16	EAST 17	Marquette	680	0.298	23.8	117
5/30/2023 13:16	EAST 17	Berkeley	937	0.185	27.8	110
5/30/2023 11:58	EAST 16	Ellis	1,341	0.148	25	112
5/30/2023 11:58	EAST 16	St. Rita	1,338	0.123	27.8	116
5/30/2023 11:58	EAST 16	Marquette	819	0.19	13.9	116
5/30/2023 11:58	EAST 16	Berkeley	1,489	0.14	16.7	121
5/30/2023 9:18	EAST 15	Ellis	1,034	0.148	17.2	110
5/30/2023 9:18	EAST 15	St. Rita	845	0.095	31.3	118
5/30/2023 9:18	EAST 15	Marquette	1,298	0.183	10.9	116
5/30/2023 9:18	EAST 15	Berkeley	1,802	0.06	12.2	116
5/17/2023 11:43	EAST 14	Ellis	1,120	0.165	29.4	111
5/17/2023 11:43	EAST 14	St. Rita	1,026	0.113	35.7	109
5/17/2023 11:43	EAST 14	Marquette	1,123	0.13	25	118
5/17/2023 11:43	EAST 14	Berkeley	1,687	0.045	25	116
5/17/2023 9:30	EAST 13	Ellis	1,251	0.15	26.3	110
5/17/2023 9:30	EAST 13	St. Rita	1,257	0.153	29.4	110
5/17/2023 9:30	EAST 13	Marquette	909	0.213	14.3	115
5/17/2023 9:30	EAST 13	Berkeley	1,572	0.078	15.2	120
5/10/2023 11:24	EAST 12	Ellis	1,465	0.058	31.3	106
5/10/2023 11:24	EAST 12	St. Rita	1,316	0.068	11.6	111
5/10/2023 11:24	EAST 12	Marquette	832	0.278	22.7	112
5/10/2023 11:24	EAST 12	Berkeley	1,341	0.08	26.3	112
5/4/2023 13:31	EAST 11	Ellis	1,820	0.063	15.2	113
5/4/2023 13:31	EAST 11	St. Rita	1,549	0.035	15.2	116
5/4/2023 13:31	EAST 11	Marquette	772	0.353	17.9	112
5/4/2023 13:31	EAST 11	Berkeley	997	0.2	15.6	104
5/4/2023 12:26	EAST 10	Ellis	1,506	0.07	19.2	114
5/4/2023 12:26	EAST 10	St. Rita	1,344	0.053	20	117
5/4/2023 12:26	EAST 10	Marquette	811	0.265	17.9	115
5/4/2023 12:26	EAST 10	Berkeley	1,301	0.08	33.3	109
5/4/2023 10:26	EAST 9	Ellis	1,778	0.073	17.2	118
5/4/2023 10:26	EAST 9	St. Rita	1,558	0.043	14.3	124
5/4/2023 10:26	EAST 9	Marquette	699	0.24	17.2	114
5/4/2023 10:26	EAST 9	Berkeley	1,028	0.15	21.7	110

N/T - seismograph did not trigger

Ground Vibration (PPV) Limit - The Village of Caledonia explosives use ordinance states 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

