

## Supplemental Materials

Table S1. Raman spectroscopy of reference samples and samples collected in this work.

Vibration mode		Krishnamurti 1960	Carter et al. 2008		Observed Raman Wavenumbers (cm <sup>-1</sup> )									
		Aragonite	Aragonite	Calcite	MnOx 3 day						HA 3 day			30 min raw
					Spot 5-8	spot 5-1	spot 3a-1	Spot 3-1	carb-2	carb - 1b	point 1	point 4	point 5	Spot 785
lattice		105 w	111 w	155 m										
		114 m	116 w											
		133 v.w	140 sh		133	128	151	139	148	140	147	111	118	146
		143 m	152 s											
		153 v.s	178 w											
		162 m	190 v.w											
		180 s	205 m											
		191 s	215 sh											
		206 v.s	248 w											
		216 m	260 w		269	268	277	267	274	268	276	271	277	272
		222 v.w	272 w											
		250 m	284 w	281 s										
		262 m												
		273 m												
		285 m												
internal			697 sh											
		702 m	702	712 m										
		707 m	706		711	711	713	711	712	711	712			711
		716 w	716											
		854 m	853 v.w											
					1011		1013	1010	1013	1009	1012			1012
		1086 v.s	1085 v.s	1086 v.s	1083	1083	1086	1083	1084	1083	1085	1085	1085	1084
v3		1415 m	1462 v.w	1430 w										
		1463 s												

v.s: very strong, s: strong, m: medium, w: weak, v.w: very weak, sh: shoulder

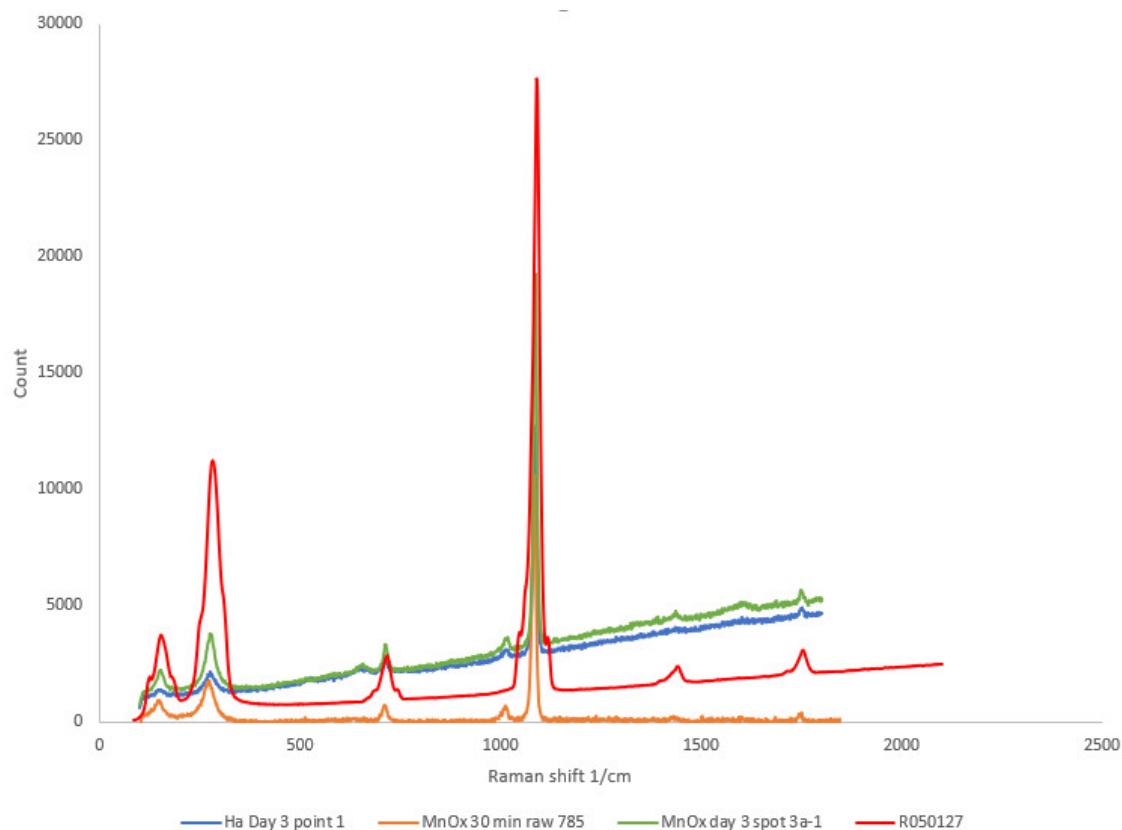


Figure S1. Sample R050127 is a pure calcite (light red), HA Day 3 point 1 sample (blue) is a precipitate on the media pretreated with haloacetic acid where media submerged in water for 3 days, MnOx 30 min raw 785 (orange) where media was not pretreated with and was submerged for 30 min, sample MnOx 3 day spot 3a-1 media was not pretreated with anything and it was submerged for 3 days (green).

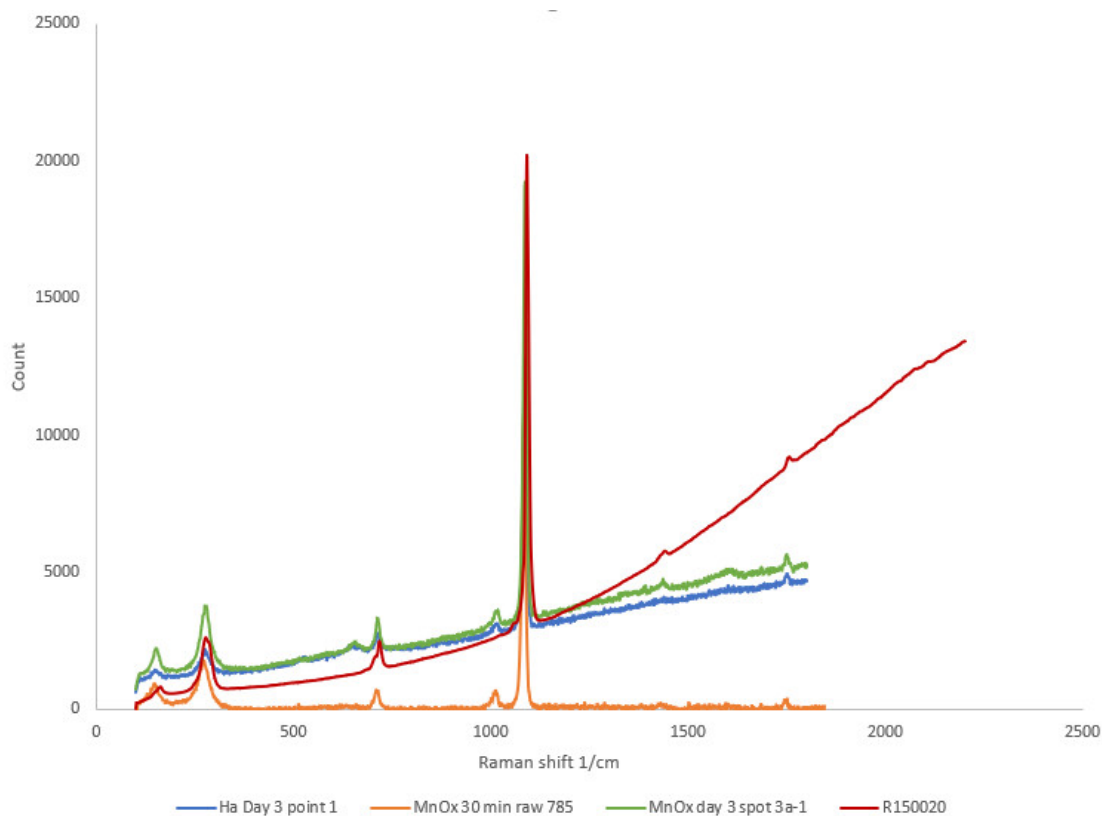


Figure S2. Sample R050020 is a calcite with 99.3% of calcium and trace amounts of strontium (dark red), HA Day 3 point 1 sample (blue) is a precipitate on the media pretreated with haloacetic acid where media submerged in water for 3 days, MnOx 30 min raw 785 (orange) where media was not pretreated with and was submerged for 30 min, sample MnOx 3 day spot 3a-1 media was not pretreated with anything and it was submerged for 3 days (green).