(63) Nasir, N.; Sayeed, M. A.; Jamil, B. Ralstonia pickettii Bacteremia: An Emerging Infection in a Tertiary Care Hospital Setting. *Cureus* **2019**, *11* (7), e5084. DOI: 10.7759/cureus.5084 From NLM.

Supplemental Information

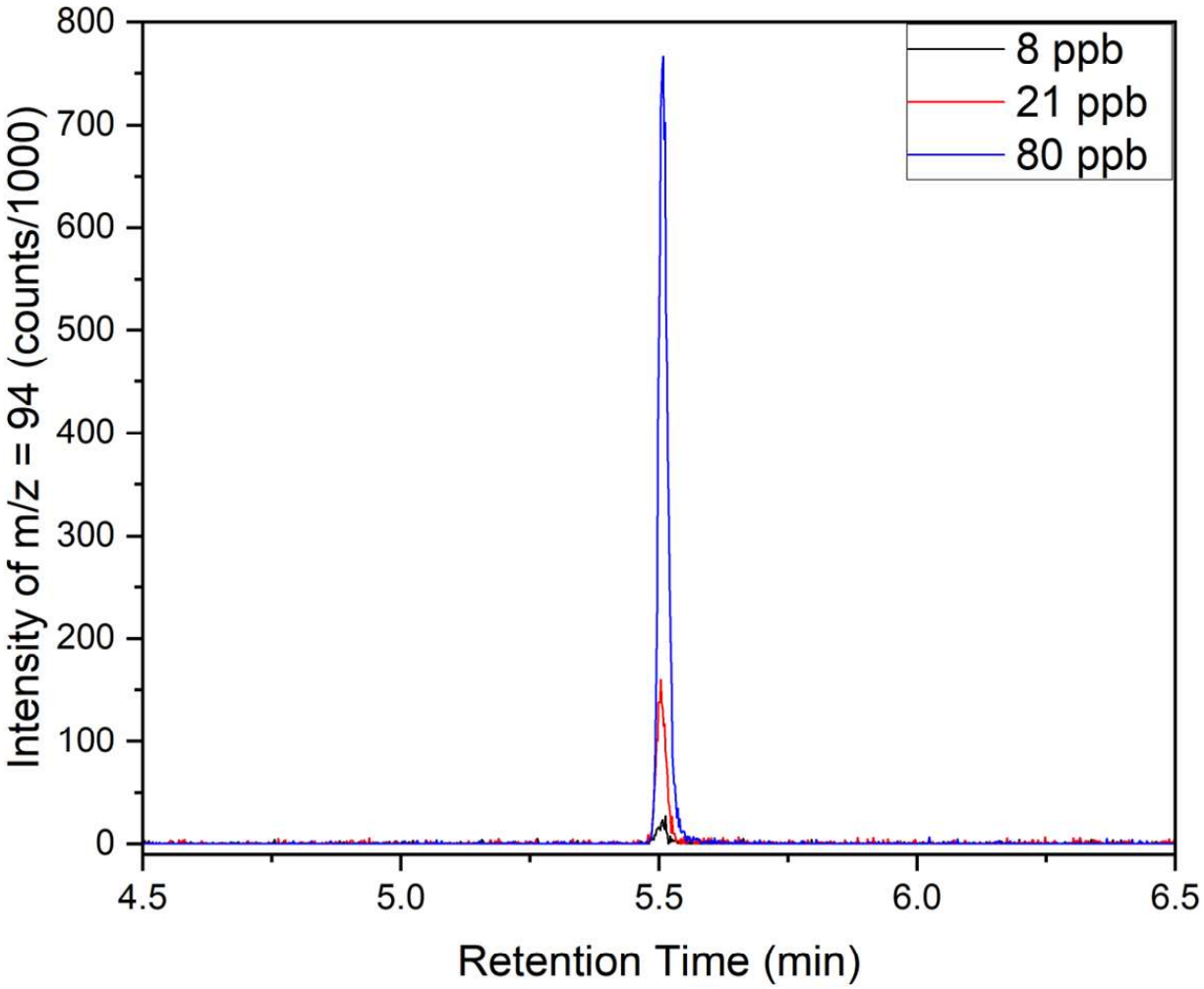

Figure S1 – Extracted ion chromatograms of dimethyldisulfide (DMDS) standards confirming the identification of DMDS in Figure 1.

DMDS standards ranging from 8 to 840ppb were prepared and analyzed with GC-MS. The extracted ion chromatograms (EIC) for m/z = 94 were used to obtain peak areas which were plotted in a calibration curve shown in **Figure S2**. The LOD was calculated using equation S1.

$$LOD = \frac{3.3\sigma}{S} \qquad \text{Eq S1}$$

Where σ signifies the residual of the actual peak area and the predicted peak area based on the equation of the calibration curve, and *S* represents the slope of the calibration curve.

The LOD was further evaluated using the signal-to-noise ratio (SNR) approach. Noise levels were measured at the retention time of DMDS across eight ersatz blank chromatograms and averaged. This average noise level was multiplied by three to define a peak area corresponding to an SNR of 3. DMDS peaks observed in chromatograms obtained from culture headspaces were compared to this threshold, as well as to the LOD determined using Eq. S1. Peaks exceeding both criteria were considered detectable and were subsequently reported.

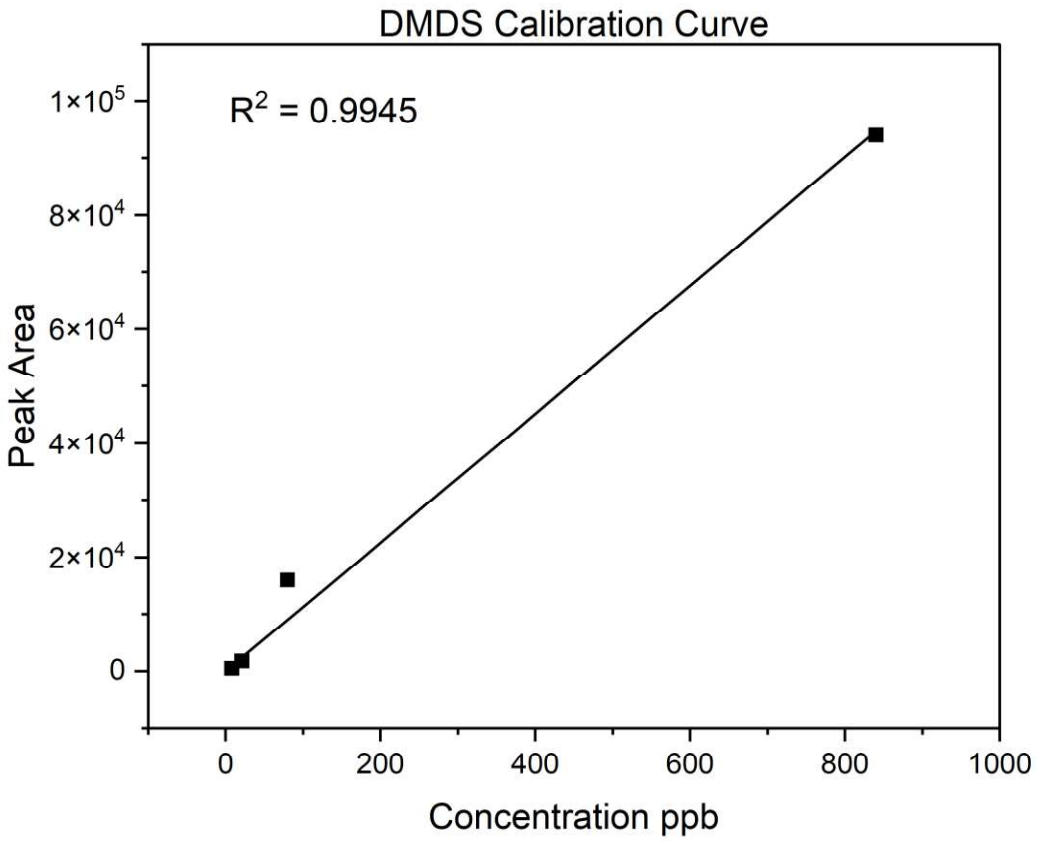

Figure S2- Calibration curve prepared from DMDs standards at 8, 21 and 840ppb. The quantitative analysis in this study served only to determine when DMDS exceeded the detection limit. Because DMDS did not show a strong correlation with population growth, presence of DMDS serves as the indicator of bacteria in this study rather than the concentration. Therefore, the quantitative analysis performed is not exhaustive and a more rigorous quantitation should be performed in applications that require accurate DMDS concentrations.

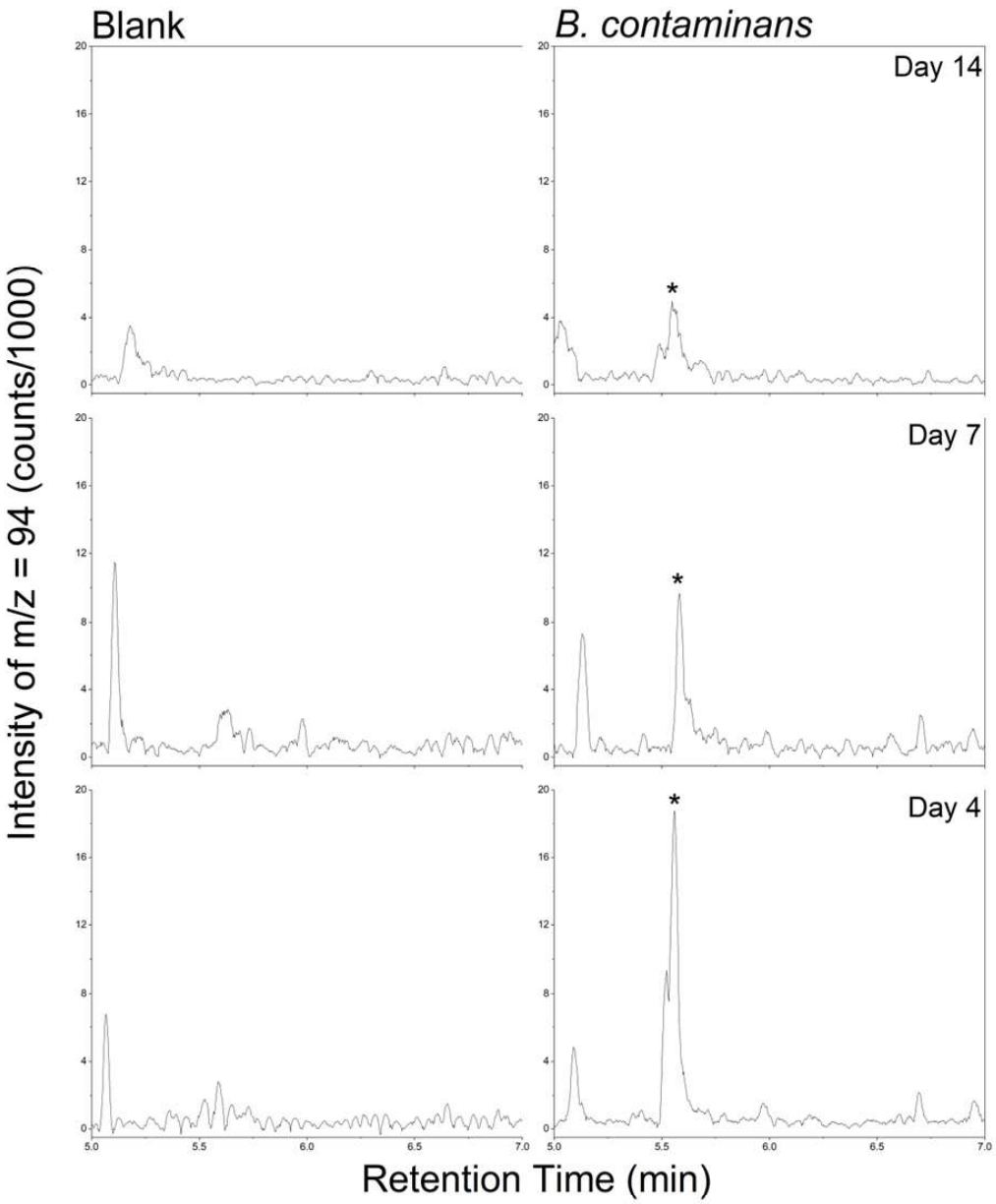

Figure S3– Extracted ion chromatograms (m/z = 94) showing an initial spike in DMDS (marked with an asterisk) from *B. contaminans* grown in ersatz wastewater with a subsequent decrease with further growth time. Note the lack of DMDS in the blank wastewater.

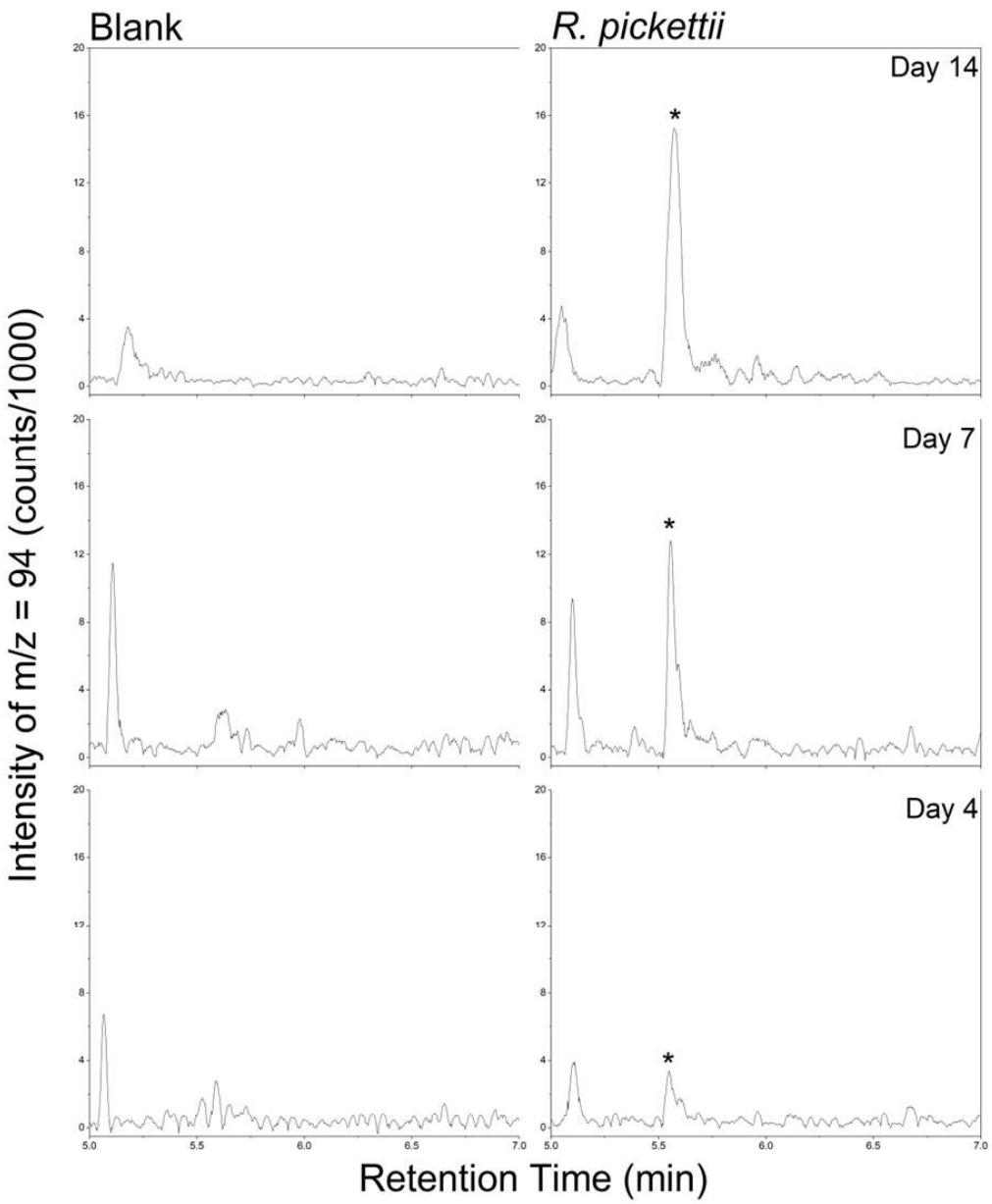

Figure S4 – Extracted ion chromatograms (m/z = 94) showing the slow growth in DMDS (marked with an asterisk) from *R. pickettii* grown in ersatz wastewater. Note the lack of DMDS in the blank wastewater.

Table S1 – Volatile organic species present in filtered R2A media following 24-hour growth of *B. contaminans* and *R. pickettii*.

Analyte		Blank R2A (filtered 24-hour)	*B. contaminans* R2A (filtered 24-hour)	*R. pickettii* R2A (filtered 24-hour)	*K. aerogenes* R2A (filtered 24-hour)
Total Organic Carbon	mg/L	1020	403	446	408
1-Propanol	µg/L		< 400	< 400	< 400
2-Propanol (Isopropanol)	µg/L		< 400	< 400	< 400
3-Methyl-1-butanol (Isopentanol)	µg/L		< 400	< 400	5110
Acetone	µg/L		435	< 400	86
Dimethyldisulfide (DMDS)	µg/L		not found	100	not found
Ethanol	µg/L		6160	2280	< 400
Methanol	µg/L		< 400	< 400	< 400

Table S2 – Volatile organic species present in filtered ersatz wastewater following 7-day growth of *B. contaminans* and *R. pickettii*.

Analyte		Ersatz stock	Blank Ersatz (filtered 7-day)	*B. contaminans* ersatz (filtered 7-day)	*R. pickettii* ersatz (filtered 7-day)
Total Organic Carbon	mg/L	73.9	87.8	59.4	52.0
1-Propanol	µg/L	686		< 400	415
2-Propanol (Isopropanol)	µg/L	802		< 400	627
Acetone	µg/L	20400		11100	10800
Ethanol	µg/L	31700		< 400	20900
Methanol	µg/L	16900		14600	15900
Trimethylsilanol	µg/L	480		140	160