

Low Trihalomethanes Formation during Managed Aquifer Recharge with Chlorinated Desalinated Water

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Table S1. THM concentrations in a small-scale field experiment, untreated DSW (29th April 2018).

| Depth | Sampling Time | Replicate | CHCl₃ | CHCl₂Br | CHClBr₂ | CHBr₃ | Total THM |
|--------------|----------------------|------------------|-------------------------|---------------------------|---------------------------|-------------------------|------------------|
| 1 m | 1 | 1 | 0.79 | 0.33 | 0.53 | 0.68 | 2.32 |
| | | 2 | 0.85 | 0.39 | 0.55 | 0.73 | 2.51 |
| | | 3 | 0.86 | 0.39 | 0.64 | 0.75 | 2.63 |
| 2 m | 1 | 1 | 0.44 | 0.18 | 0.33 | 0.41 | 1.35 |
| | | 2 | 0.35 | 0.17 | 0.28 | 0.34 | 1.14 |
| | | 3 | 0.38 | 0.18 | 0.27 | 0.33 | 1.16 |
| 3 m | 1 | 1 | 0.24 | 0.20 | 0.34 | 0.30 | 1.08 |
| | | 2 | 0.17 | 0.17 | 0.28 | 0.22 | 0.84 |
| | | 3 | 0.23 | 0.18 | 0.30 | 0.25 | 0.94 |
| Pond | 1 | 1 | 0.13 | 0.19 | 0.59 | 0.90 | 1.81 |
| | | 2 | 0.13 | 0.18 | 0.56 | 0.82 | 1.68 |
| | | 3 | 0.15 | 0.19 | 0.54 | 0.88 | 1.76 |
| DSW | 1 | 1 | 0.03 | 0.09 | 0.25 | 0.44 | 0.81 |
| | | 2 | 0.02 | 0.08 | 0.21 | 0.48 | 0.80 |
| | | 3 | 0.03 | 0.10 | 0.24 | 0.47 | 0.84 |
| 1 m | 2 | 1 | 1.67 | 0.60 | 0.61 | 0.60 | 3.48 |
| | | 2 | 1.74 | 0.60 | 0.68 | 0.65 | 3.66 |
| | | 3 | 1.72 | 0.63 | 0.67 | 0.63 | 3.65 |
| 2 m | 2 | 1 | 0.62 | 0.22 | 0.27 | 0.31 | 1.42 |
| | | 2 | 0.53 | 0.17 | 0.24 | 0.27 | 1.22 |
| | | 3 | 0.54 | 0.21 | 0.26 | 0.28 | 1.28 |
| 3 m | 2 | 1 | 0.63 | 0.25 | 0.34 | 0.46 | 1.69 |
| | | 2 | 0.58 | 0.23 | 0.33 | 0.38 | 1.51 |
| | | 3 | 0.64 | 0.26 | 0.37 | 0.43 | 1.69 |
| Pond | 2 | 1 | 0.13 | 0.19 | 0.47 | 0.79 | 1.58 |
| | | 2 | 0.11 | 0.20 | 0.48 | 0.76 | 1.54 |
| | | 3 | 0.18 | 0.19 | 0.48 | 0.75 | 1.60 |
| DSW | 2 | 1 | 0.05 | 0.13 | 0.32 | 0.63 | 1.13 |
| | | 2 | 0.05 | 0.11 | 0.32 | 0.62 | 1.10 |
| | | 3 | 0.03 | 0.10 | 0.24 | 0.46 | 0.83 |
| 0.5 m | 2 | 1 | 0.51 | 0.21 | 0.25 | 0.31 | 1.29 |
| | | 2 | 0.46 | 0.20 | 0.26 | 0.29 | 1.21 |
| | | 3 | 0.49 | 0.19 | 0.24 | 0.30 | 1.21 |

Table S2. THM concentrations in a small-scale field experiment, bromide spiked DSW (1st May 2018).

| Depth | Sampling Time | Replicate | CHCl ₃ | CHCl ₂ Br | CHClBr ₂ | CHBr ₃ | Total THM |
|-------|---------------|-----------|-------------------|----------------------|---------------------|-------------------|-----------|
| 1 m | 1 | 1 | 0.16 | 0.25 | 0.58 | 5.77 | 6.77 |
| | | 2 | 0.43 | 0.24 | 0.52 | 5.43 | 6.62 |
| | | 3 | 0.15 | 0.25 | 0.54 | 5.24 | 6.17 |
| 2 m | 1 | 1 | 0.17 | 0.36 | 0.74 | 6.67 | 7.94 |
| | | 2 | 0.17 | 0.37 | 0.83 | 6.94 | 8.30 |
| | | 3 | 0.17 | 0.41 | 0.84 | 7.16 | 8.59 |
| 3 m | 1 | 1 | 0.23 | 0.32 | 0.60 | 3.45 | 4.59 |
| | | 2 | 0.19 | 0.30 | 0.54 | 3.20 | 4.22 |
| | | 3 | 0.19 | 0.30 | 0.53 | 3.22 | 4.25 |
| Pond | 1 | 1 | 0.14 | 0.17 | 0.44 | 4.44 | 5.20 |
| | | 2 | 0.16 | 0.18 | 0.48 | 5.42 | 6.24 |
| | | 3 | 0.15 | 0.16 | 0.44 | 5.27 | 6.02 |
| DSW | 1 | 1 | 0.12 | 0.13 | 0.23 | 0.40 | 0.89 |
| | | 2 | 0.12 | 0.13 | 0.21 | 0.41 | 0.87 |
| | | 3 | 0.13 | 0.13 | 0.22 | 0.35 | 0.83 |
| 1 m | 2 | 1 | 0.16 | 0.22 | 0.53 | 5.84 | 6.74 |
| | | 2 | 0.15 | 0.21 | 0.51 | 5.78 | 6.64 |
| | | 3 | 0.14 | 0.21 | 0.52 | 5.80 | 6.68 |
| 2 m | 2 | 1 | 0.15 | 0.34 | 0.79 | 8.97 | 10.25 |
| | | 2 | 0.15 | 0.34 | 0.73 | 8.02 | 9.24 |
| | | 3 | 0.15 | 0.29 | 0.66 | 7.42 | 8.52 |
| 3 m | 2 | 1 | 0.18 | 0.20 | 0.49 | 3.70 | 4.57 |
| | | 2 | 0.19 | 0.22 | 0.52 | 3.99 | 4.92 |
| | | 3 | 0.18 | 0.22 | 0.47 | 3.85 | 4.73 |
| Pond | 2 | 1 | 0.14 | 0.17 | 0.44 | 6.08 | 6.83 |
| | | 2 | 0.18 | 0.19 | 0.46 | 5.52 | 6.34 |
| | | 3 | 0.13 | 0.17 | 0.43 | 5.34 | 6.07 |
| DSW | 2 | 1 | 0.16 | 0.17 | 0.26 | 0.34 | 0.93 |
| | | 2 | 0.14 | 0.15 | 0.25 | 0.33 | 0.88 |
| | | 3 | 0.14 | 0.16 | 0.27 | 0.41 | 0.99 |
| 0.5 m | 2 | 1 | 0.15 | 0.21 | 0.43 | 4.95 | 5.74 |
| | | 2 | 0.17 | 0.18 | 0.46 | 5.11 | 5.92 |
| | | 3 | 0.16 | 0.21 | 0.42 | 5.14 | 5.92 |

Table S3. Bromide concentrations in a small-scale field experiment, untreated DSW (29th April 2018).

| | Br ⁻ (µg/L) | |
|---------------|------------------------|-------|
| | 2–3 h | 5–6 h |
| DSW | 29 | 9 |
| Ponding Water | 34 | 33 |
| 0.5 | ND | 33 |
| 1.0 | 31 | 33 |
| 2.0 | 35 | 34 |
| 3.0 | 35 | 33 |

Table S4. Bromide concentrations in a small-scale field experiment, bromide spiked DSW (1st May 2018).

| | Br⁻ (µg/L) | |
|----------------------|------------------------------|--------------|
| | 2–3 h | 5–6 h |
| DSW | 17 | 10 |
| Ponding water | 2045 ± 205 | |
| 0.5 | ND | 2,074 |
| 1.0 | 1,994 | 2,086 |
| 2.0 | 1,908 | 2,035 |
| 3.0 | 1,897 | 2,137 |

Table S5. THM concentrations in a large-scale infiltration event, day 8 (15th January 2018).

| Depth | Replicate | CHCl₃ | CHCl₂Br | CHClBr₂ | CHBr₃ | Total THM |
|--------------|------------------|-------------------------|---------------------------|---------------------------|-------------------------|------------------|
| 0.5 m | 1 | 1.72 | 0.89 | 1.39 | 2.27 | 6.28 |
| | 2 | 1.09 | 0.53 | 0.95 | 1.65 | 4.22 |
| | 3 | 2.28 | 1.05 | 1.91 | 2.39 | 7.63 |
| 1 m | 1 | 0.86 | 0.40 | 0.62 | 1.59 | 3.47 |
| | 2 | 0.87 | 0.42 | 0.61 | 0.78 | 2.67 |
| | 3 | 1.06 | 0.51 | 0.81 | 0.99 | 3.38 |
| 2 m | 1 | 2.49 | 1.16 | 1.70 | 1.34 | 6.69 |
| | 2 | 2.61 | 1.17 | 1.83 | 1.91 | 7.52 |
| | 3 | 2.71 | 1.24 | 1.92 | 2.21 | 8.08 |
| 3 m | 1 | 1.67 | 0.59 | 0.71 | 1.41 | 4.38 |
| | 2 | 1.13 | 0.41 | 0.52 | 0.51 | 2.57 |
| | 3 | 1.40 | 0.51 | 0.63 | 1.57 | 4.11 |
| Pond | 1 | 0.32 | 0.88 | 2.40 | 4.21 | 7.82 |
| | 2 | 0.33 | 0.94 | 2.51 | 4.26 | 8.03 |
| | 3 | 0.35 | 0.96 | 2.35 | 3.93 | 7.59 |
| | 4 | 0.36 | 0.92 | 2.53 | 4.23 | 8.04 |
| | 5 | 0.39 | 1.12 | 3.13 | 5.46 | 10.09 |
| | 6 | 0.35 | 0.92 | 2.76 | 5.43 | 9.46 |
| | 7 | 0.30 | 0.82 | 2.32 | 4.50 | 7.94 |
| | 8 | 0.30 | 0.83 | 2.35 | 4.03 | 7.51 |

Table S6. THM concentrations in a large-scale infiltration event, day 17 (24th January 2018).

| Depth | Replicate | CHCl₃ | CHCl₂Br | CHClBr₂ | CHBr₃ | Total THM |
|--------------|------------------|-------------------------|---------------------------|---------------------------|-------------------------|------------------|
| 0.5 m | 1 | 0.38 | 0.43 | 0.90 | 1.31 | 3.02 |
| | 2 | 0.42 | 0.41 | 0.94 | 1.35 | 3.13 |
| | 3 | 0.45 | 0.44 | 1.05 | 1.60 | 3.54 |
| 1 m | 1 | 0.42 | 0.40 | 0.87 | 1.02 | 2.71 |
| | 2 | 0.44 | 0.40 | 0.90 | 1.03 | 2.77 |
| | 3 | 0.49 | 0.44 | 0.99 | 1.13 | 3.05 |
| 2 m | 1 | 0.48 | 0.53 | 1.18 | 0.83 | 3.02 |
| | 2 | 0.45 | 0.53 | 1.08 | 0.79 | 2.84 |
| | 3 | 0.47 | 0.52 | 1.04 | 0.77 | 2.79 |
| 3 m | 1 | 0.48 | 0.49 | 0.87 | 0.37 | 2.20 |
| | 2 | 0.45 | 0.46 | 0.82 | 0.33 | 2.06 |
| | 3 | 0.47 | 0.47 | 0.85 | 0.36 | 2.16 |
| Pond | 1 | 0.27 | 0.69 | 2.02 | 3.86 | 6.84 |
| | 2 | 0.27 | 0.69 | 2.05 | 3.79 | 6.80 |
| | 3 | 0.29 | 0.76 | 2.27 | 4.24 | 7.57 |
| | 4 | 0.24 | 0.60 | 1.76 | 3.36 | 5.96 |
| | 5 | 0.32 | 0.65 | 1.72 | 3.09 | 5.78 |
| | 6 | 0.32 | 0.62 | 1.76 | 3.15 | 5.86 |
| | 7 | 0.33 | 0.66 | 2.05 | 3.70 | 6.74 |
| | 8 | 0.29 | 0.60 | 1.92 | 3.47 | 6.28 |
| | 9 | 0.24 | 0.58 | 1.73 | 3.08 | 5.63 |
| | 10 | 0.22 | 0.56 | 1.59 | 2.86 | 5.24 |
| | 11 | 0.31 | 0.59 | 1.70 | 3.07 | 5.67 |
| | 12 | 0.30 | 0.64 | 1.75 | 3.21 | 5.91 |
| | 13 | 0.27 | 0.69 | 1.97 | 3.85 | 6.78 |
| 14 | 0.29 | 0.69 | 2.07 | 4.07 | 7.12 | |
| 15 | 0.27 | 0.70 | 2.02 | 4.04 | 7.04 | |
| 16 | 0.35 | 0.66 | 2.07 | 3.73 | 6.81 | |
| 17 | 0.42 | 0.81 | 2.38 | 4.46 | 8.07 | |
| 18 | 0.35 | 0.71 | 2.02 | 3.67 | 6.74 | |
| 19 | 0.04 | 0.07 | 0.03 | 0.03 | 0.18 | |
| 20 | 0.40 | 0.91 | 2.80 | 4.90 | 9.02 | |
| 21 | 0.40 | 0.97 | 2.86 | 5.02 | 9.25 | |
| 22 | 0.39 | 0.96 | 2.81 | 5.06 | 9.22 | |
| 23 | 0.04 | 0.07 | 0.03 | 0.03 | 0.18 | |
| 24 | 0.33 | 0.82 | 2.40 | 4.61 | 8.16 | |
| 25 | 0.33 | 0.80 | 2.33 | 4.57 | 8.04 | |
| 26 | 0.34 | 0.84 | 2.40 | 4.49 | 8.07 | |

Table S7. THM concentrations in a large-scale infiltration event, day 24 (31 January 2018).

| Depth | Replicate | CHCl ₃ | CHCl ₂ Br | CHClBr ₂ | CHBr ₃ | Total THM |
|-------|-----------|-------------------|----------------------|---------------------|-------------------|-----------|
| 0.5 m | 1 | 0.08 | 0.10 | 0.16 | 0.18 | 0.53 |
| | 2 | 0.08 | 0.09 | 0.14 | 0.16 | 0.48 |
| | 3 | 0.08 | 0.09 | 0.14 | 0.18 | 0.49 |
| 1 m | 1 | 0.29 | 0.21 | 0.42 | 0.47 | 1.39 |
| | 2 | 0.27 | 0.20 | 0.41 | 0.45 | 1.32 |
| | 3 | 0.30 | 0.20 | 0.42 | 0.44 | 1.36 |
| 2 m | 1 | 0.35 | 0.30 | 0.61 | 0.44 | 1.71 |
| | 2 | 0.39 | 0.35 | 0.71 | 0.47 | 1.92 |
| | 3 | 0.35 | 0.33 | 0.64 | 0.42 | 1.74 |
| 3 m | 1 | 0.23 | 0.24 | 0.37 | 0.10 | 0.94 |
| | 2 | 0.25 | 0.24 | 0.41 | 0.11 | 1.01 |
| | 3 | 0.25 | 0.26 | 0.41 | 0.11 | 1.03 |
| Pond | 1 | 0.18 | 0.15 | 0.34 | 0.55 | 1.23 |
| | 2 | 0.16 | 0.13 | 0.29 | 0.50 | 1.07 |
| | 3 | 0.16 | 0.06 | 0.30 | 0.50 | 1.03 |



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