Supplemental Information

Wastewater Surveillance of Illicit Drugs in Southern Nevada:

Sucralose Normalization to Translate Data into Public Health Action

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Text S1. Supplementary Methodology

S1.1   Analytical Methods for Pharmaceuticals and Personal Care Products (PPCPs)

The target pharmaceuticals and personal care products (PPCPs) listed in Table S1 were analyzed by liquid chromatography tandem mass spectrometry (LC-MS/MS). All methods employed a CTC Autosampler (CTC Analytics, Zwingen, Switzerland) and an Agilent 1260 LC Binary Pump (Palo Alto, CA, USA). Tandem mass spectrometry was conducted using SCIEX API 4000-series mass spectrometers (SCIEX, Redwood City, CA) using optimization processes and isotope dilution methods previously reported (Vanderford and Snyder, 2006; Mawhinney et al., 2011; Gerrity et al., 2022). Optimal compound-dependent parameters were established, and source-dependent parameters were optimized for target analytes and confirmatory secondary transitions. Data were collected in multiple reaction monitoring (MRM) mode for electrospray ionization (ESI) negative and ESI positive compounds. An isotopically-labeled analog of each analyte was added to each calibrator and sample at matching concentrations prior to analysis to generate a relative response ratio. Instrumental response for target analytes and added isotopes in samples were matched against the relative response ratio from calibrators, and the concentration of the non-deuterated analyte was calculated. Linear or quadratic regression with $1/x$ weighting was used; regression coefficients typically exceeded 0.995. A method detection limit (MDL) study for each analyte was performed using reagent water fortified with the target compound spiked near the expected MDL. MDLs were then calculated with the appropriate student's t-value ($n=12$), and method reporting limits (MRLs) were set at approximately 3-5 times the MDL.

Automated solid phase extraction (ASPE) was used for cleanup and concentration of target compounds. Isotopically-labeled analogs were added to aqueous samples to produce extract concentrations matching those of the calibrators (assuming 100% recovery). Any isotope reduction was assumed to represent matrix-related effects or target analyte loss during ASPE.

Analytes were extracted from 25-mL aqueous samples (diluted to 500 mL) in batches of six using 6-mL, 200-mg hydrophilic-lipophilic balance (HLB) cartridges from Waters Corporation (Milford, MA). Extractions were performed on an AutoTrace™ automated SPE system (Dionex Corporation, Sunnyvale, CA). The SPE cartridges were sequentially preconditioned with 5 mL of MTBE, 5 mL of methanol, and 5 mL of reagent water. Each sample was loaded onto a cartridge at 15 mL/min. Cartridges were rinsed with 5 mL of reagent water and then dried under a nitrogen stream for 30 min. Each cartridge was eluted with 5 mL of methanol followed by 5 mL of 10/90 (v/v) methanol/MTBE, and both fractions were collected in a single 15-mL calibrated centrifuge tube. The resulting extract was concentrated with a gentle stream of nitrogen to a volume of just below 500 μL and then brought to a final volume of 500 μL using methanol.

Methanol sample extracts produced by ASPE were separated using a 50×4.6 mm Kinetex C18 column (Phenomenex, Torrance, CA). Chromatographic separation was accomplished using a binary gradient of 5 mM ammonium acetate (v/v) in water (A) and 100% methanol (B) at a flow rate of 800 μL/min with a 2-μL injection volume. ESI positive mode was used for analysis of 10 target analytes, and ESI negative was used for analysis of 7 target analytes (Table S1).

Table S1. Target compound list with associated isotopes, method reporting limits (MRLs), multiple reaction monitoring (MRM) transitions, and electrospray ionization (ESI) mode.

Compound	Isotope	MRL (ng/L)	Q1 (m/z)	Q3 (m/z)	ESI Mode
Acetaminophen	d4-acetaminophen	100	150	107 (108)	Negative
Atenolol	d7-atenolol	20	267	145 (116)	Positive
Caffeine	d9-caffeine	100	195	110 (42)	Positive
Carbamazepine	d10-carbamazepine	5	237	165 (194)	Positive
DEET	d7-DEET	20	192	119 (91)	Positive
Fluoxetine	d5-fluoxetine	10	310	44 (148)	Positive
Gemfibrozil	d6-gemfibrozil	5	249	121 (127)	Negative
Ibuprofen	d3-ibuprofen	20	205	161 (159)	Negative
Meprobamate	d3-meprobamate	5	219	158 (97)	Positive

Compound	Isotope	MRL (ng/L)	Q1 (m/z)	Q3 (m/z)	ESI Mode
Naproxen	d3-naproxen	10	229	169 (185)	Negative
Primidone	d5-primidone	10	219	162 (91)	Positive
Sucralose	d8-sucralose	500	395 (397)	35	Negative
Sulfamethoxazole	d4-sulfamethoxazole	5	254	156 (92)	Positive
TCEP	d12-TCEP	200	285	99 (161)	Positive
Triclocarban	d8-triclocarban	40	313	160 (162)	Negative
Triclosan	d7-triclosan	20	287	35 (37)	Negative
Trimethoprim	d9-trimethoprim	5	291	261 (123)	Positive

( ) – confirmation product ions; Abbreviations: DEET = *N,N*-diethyl-meta-toluamide; TCEP = Tris(2-chloroethyl) phosphate.

S1.2   Licit and Illicit Drugs and Metabolites

The licit and illicit drugs and metabolites listed in Table S3 were analyzed in each influent wastewater sample by direct injection LC-MS/MS after 1:10 dilution with reagent water. A 100-µL sample loop (sample volume) was used for each injection. Prior to injection, 50 µL of a 50-200 µg/L stock solution of isotopically labeled analogs was added to a 10-mL aliquot of each sample. This resulted in a final concentration of 0.25-1.0 µg/L of each isotope, which served as the basis for isotope dilution quantitation. Separation was performed on a 150×4.6 mm Raptor Biphenyl column with a 5-µm particle size (Restek, Bellefonte, PA, USA) at room temperature. LC mobile phases consisted of 0.1% formic acid in reagent water solution (A) and 0.1% formic acid in methanol (B). The LC flow rate was set at a constant rate of 700 µL/min with a gradient as follows: initial = 5% B, at 0.5 min = 25% B, at 14 min = 100% B, hold until 22 min, followed by a 5 min equilibration at 5% B. The mass spectrometry source parameters are listed in Table S2. An MDL study was performed using reagent water fortified with the target compounds, each spiked at 5 ng/L, except for THC, THC-OH, and THC-COOH which were spiked at 50 ng/L. MDLs were calculated with the appropriate student's t-value (n=12), and MRLs were set at approximately 3-5 times the MDL and adjusted for the 10-fold dilution factor. Target compounds, MRLs, and MRM transitions are listed in Table S3. Calibration curves were

made fresh for each analysis by spiking concentrated stock solutions (50/100 µg/L in methanol) accordingly in 10 mL of reagent water, along with isotopes. Calibration ranged from 5-1,000 ng/L, except for THC, THC-OH, and THC-COOH which ranged from 10-2,000 ng/L.

Table S2. Mass spectrometer source parameters in electrospray ionization (ESI) positive mode.

Parameter	Value
Curtain gas (CUR)	20
Collision gas (CAD)	12
Ion spray voltage (IS)	5500
Ion source gas 1 (GS1)	60
Ion source gas 2 (GS2)	50
Temperature (TEM)	550
Entrance potential (EP)	10

Table S3. Licit and illicit drug and metabolite compound list with associated isotopes, method reporting limits (MRLs), and multiple reaction monitoring (MRM) transitions.

Compound	Isotope	MRL (ng/L)	Q1 (m/z)	Q3 (m/z)
6-Acetylmorphine	d6-6-acetylmorphine	50	328	165 (211)
Amphetamine	d8-amphetamine	100	136	91 (119)
Benzoylecgonine	d8-benzoylecgonine	50	290	168 (105, 82.3)
Cocaine	d3-cocaine	50	304	182 (82, 105)
Codeine	d6-codeine	50	300	152 (115)
EDDP	d3-EDDP	50	278	234 (186, 219)
Ecgonine	d3-EME[a]	100	186	100.3 (168)
EME	d3-EME	50	200	82 (182)
Heroin	d9-heroin	100	370	165 (268)
Hydrocodone	d6-hydrocodone	50	300	199 (128)
MDA	d5-MDA	100	180	105 (133, 77)
MDMA	d5-MDMA	100	194	163 (135, 77)
Methadone	d9-methadone	50	310	105 (265)
Methamphetamine	d8-methamphetamine	100	150	91 (119)
Morphine	d6-morphine	50	286	152 (165)
Norcocaine	d3-norcocaine	50	290	168 (136)
Norfentanyl	d5-norfentanyl	50	233	84 (150)
Oxycodone	d6-oxycodone	50	316	241 (256)
THC	d3-THC	1,000	315	193 (123)
THC-COOH	d9-THC-COOH	1,000	345	193 (299)
THC-OH	d3-THC-OH	1,000	331	193 (201, 313)
Tramadol	d3-tramadol	50	264	58 (42.2)

( ) – confirmation product ions; Abbreviations: EDDP = 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine; EME = ecgonine methyl ester; MDA = 3,4-methylenedioxyamphetamine; MDMA = 3,4-methylenedioxymethamphetamine; THC = delta-9-tetrahydrocannabinol; THC-OH = 11-hydroxy-delta-9-tetrahydrocannabinol; THC-COOH = 11-nor-9-carboxy-delta-9-tetrahydrocannabinol; [a]d3-ecgonine is not available so ecgonine quantitation is based on the next closest isotope with respect to structure and retention time, which is d3-EME in this method.

Figure S1. Results of the laboratory hold-time study for **heroin and related compounds**. The mass balance table shows ratios of observed heroin-equivalent concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.
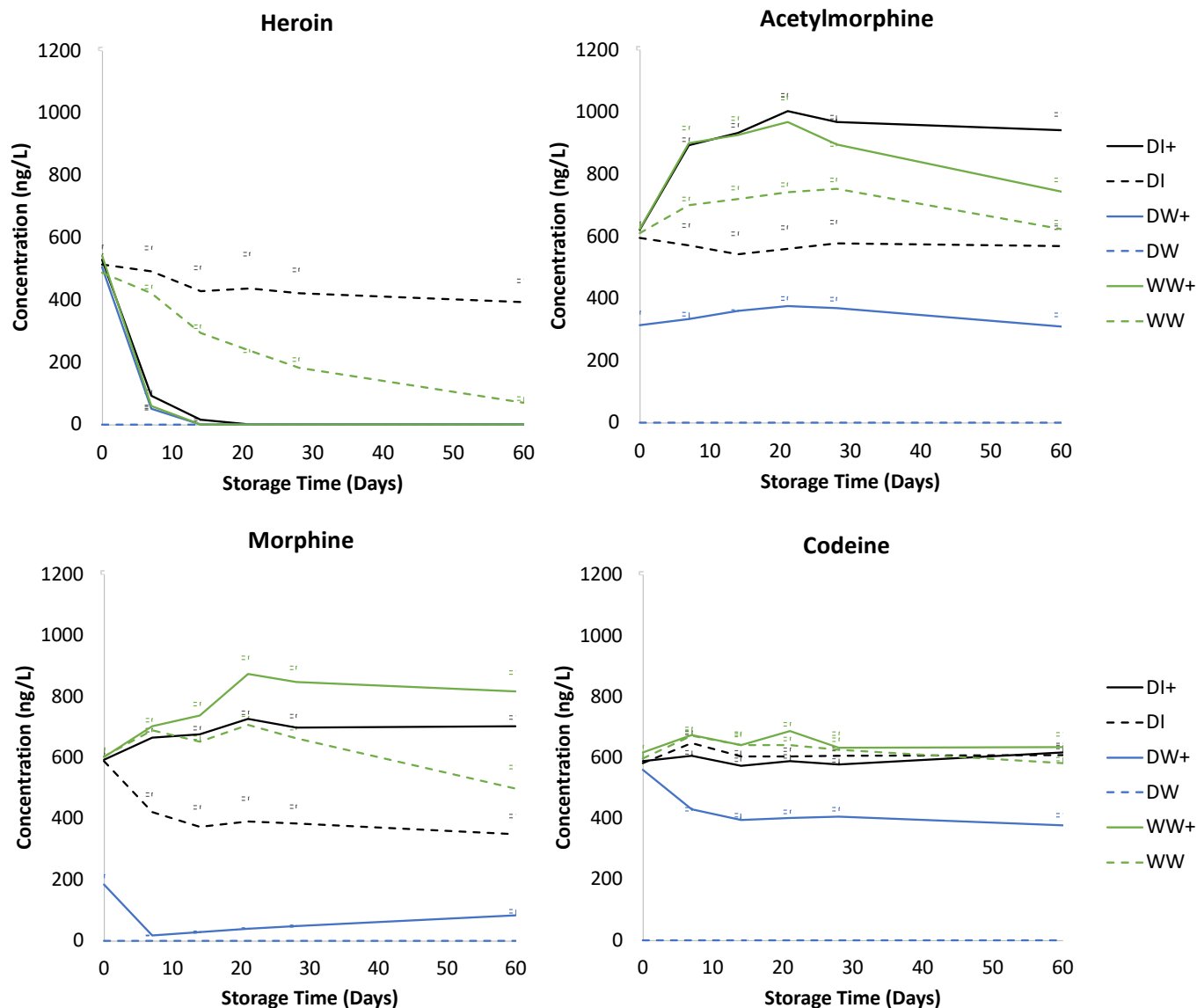
Mass Balance = [Heroin] + [6-Acetylmorphine] + [Morphine]   (Codeine assumed to have no influence)

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.92	0.90	0.90	0.95	0.92	0.91
DI	0.90	0.77	0.70	0.73	0.72	0.68
DW+	0.50	0.21	0.20	0.22	0.22	0.21
DW	0.00	0.00	0.00	0.00	0.00	0.00
WW+	0.93	0.92	0.92	1.03	0.97	0.88
WW	0.90	0.97	0.90	0.92	0.87	0.65

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Figure S2. Results of the laboratory hold-time study for **norfentanyl**. The mass balance table shows ratios of observed concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.
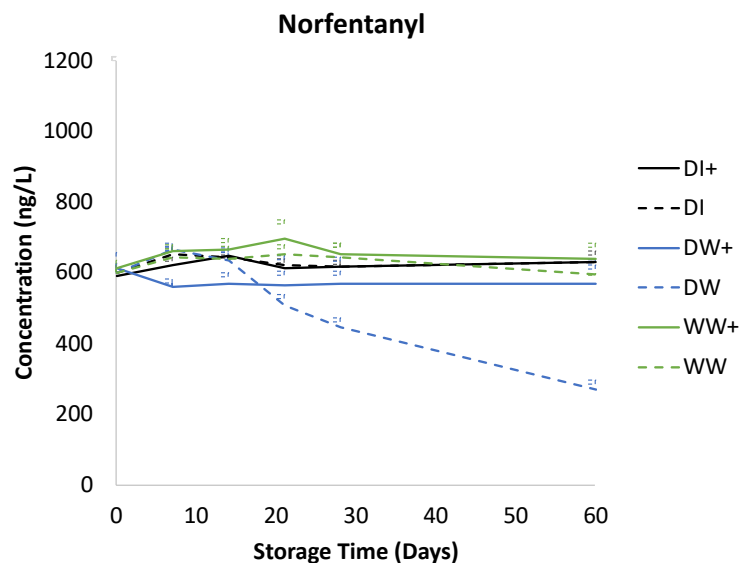
Mass Balance = [Norfentanyl]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.89	0.93	0.97	0.92	0.92	0.94
DI	0.90	0.97	0.96	0.93	0.93	0.94
DW+	0.92	0.84	0.85	0.84	0.85	0.85
DW	0.90	0.99	0.95	0.76	0.67	0.41
WW+	0.90	0.98	0.98	1.03	0.97	0.95
WW	0.89	0.96	0.95	0.96	0.95	0.88

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Figure S3. Results of the laboratory hold-time study for **hydrocodone**. The mass balance table shows ratios of observed concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.
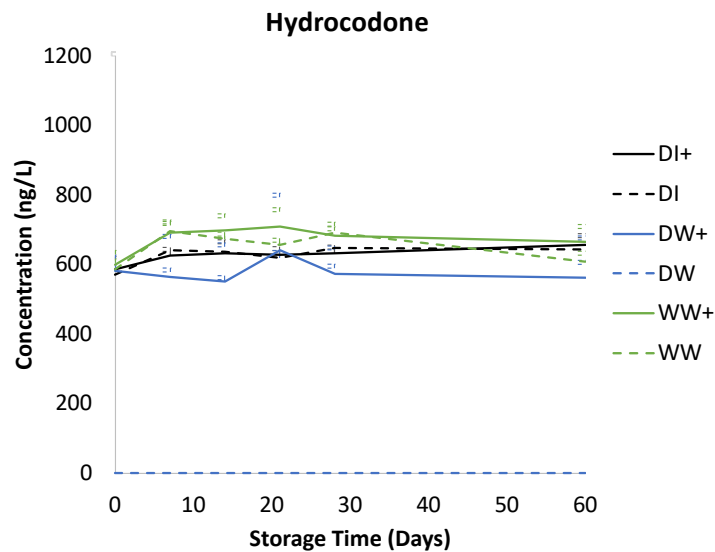

Mass Balance = [Hydrocodone]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.84	0.90	0.91	0.90	0.91	0.94
DI	0.82	0.92	0.91	0.89	0.93	0.93
DW+	0.84	0.81	0.79	0.92	0.82	0.81
DW	0.00	0.00	0.00	0.00	0.00	0.00
WW+	0.81	0.93	0.94	0.95	0.92	0.90
WW	0.79	0.94	0.90	0.88	0.93	0.82

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Figure S4. Results of the laboratory hold-time study for **oxycodone**. The mass balance table shows ratios of observed concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.
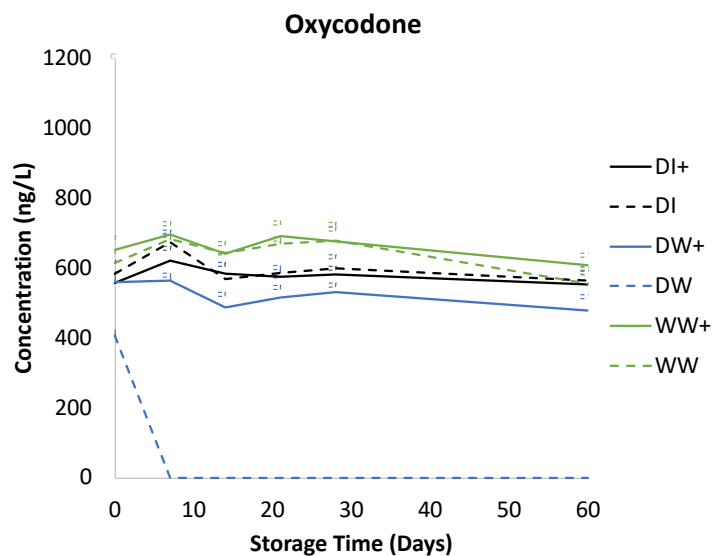
Oxycodone

Mass Balance = [Oxycodone]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.83	0.93	0.87	0.86	0.87	0.82
DI	0.87	1.00	0.85	0.87	0.89	0.84
DW+	0.83	0.84	0.73	0.77	0.79	0.71
DW	0.61	0.00	0.00	0.00	0.00	0.00
WW+	0.90	0.96	0.88	0.96	0.93	0.84
WW	0.85	0.94	0.89	0.92	0.94	0.77

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Figure S5. Results of the laboratory hold-time study for **tramadol**. The mass balance table shows ratios of observed concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.
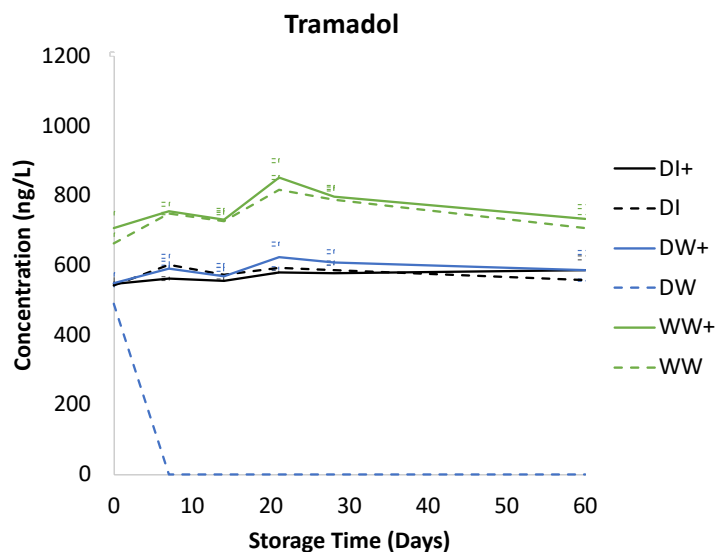

Mass Balance = [Tramadol]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.96	0.99	0.98	1.02	1.02	1.03
DI	0.95	1.06	1.01	1.04	1.03	0.98
DW+	0.97	1.04	1.00	1.10	1.07	1.03
DW	0.86	0.00	0.00	0.00	0.00	0.00
WW+	0.94	1.00	0.97	1.13	1.06	0.97
WW	0.88	0.99	0.96	1.08	1.05	0.94

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Figure S6. Results of the laboratory hold-time study for **methadone and its metabolite EDDP**. The mass balance table shows ratios of observed methadone-equivalent concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.


Mass Balance = [Methadone] + [EDDP]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.94	0.99	0.99	0.98	0.96	0.97
DI	0.91	0.98	0.97	0.97	0.99	0.94
DW+	0.92	0.91	0.89	0.90	0.91	0.88
DW	0.83	0.08	0.06	0.03	0.02	0.01
WW+	0.97	1.06	1.04	1.10	1.02	0.98
WW	0.92	1.04	1.01	1.03	1.01	0.92

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Figure S7. Results of the laboratory hold-time study for **cocaine and its metabolites**. The mass balance table shows ratios of observed cocaine-equivalent concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.


Mass Balance = [Cocaine] + [Norcocaine] + [Benzoylecgonine] + [Ecgonine Methyl Ester] + [Ecgonine]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.87	0.87	0.74	0.78	0.73	0.75
DI	0.88	0.90	0.80	0.81	0.82	0.79
DW+	0.98	1.00	0.91	0.93	0.99	0.85
DW	0.96	1.01	0.92	0.84	0.86	0.93
WW+	0.95	0.99	0.86	1.04	0.91	0.96
WW	0.93	1.00	0.84	0.96	0.89	1.03

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)
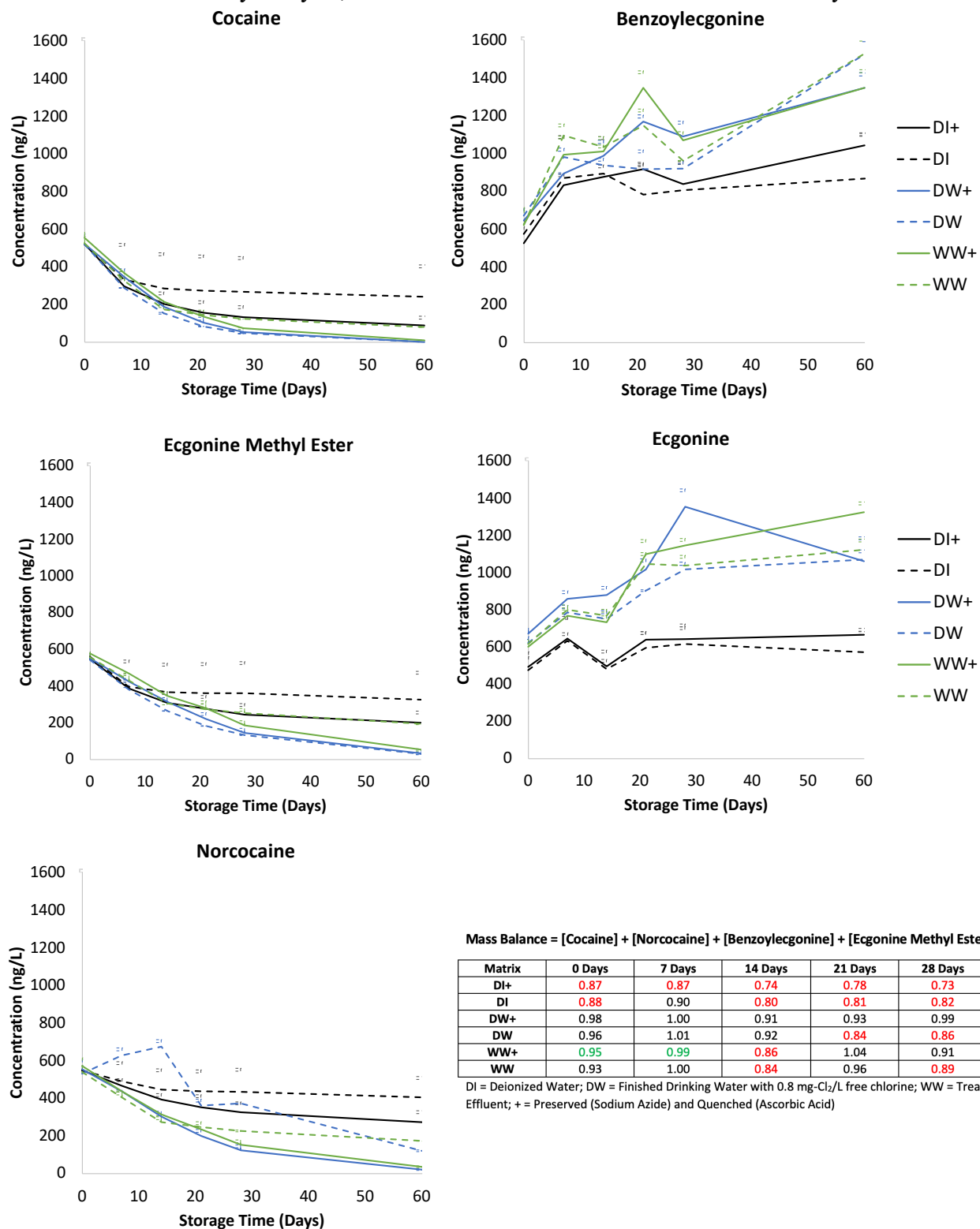
Figure S8. Results of the laboratory hold-time study for **MDMA and its metabolite MDA**. The mass balance table shows ratios of observed MDMA-equivalent concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.
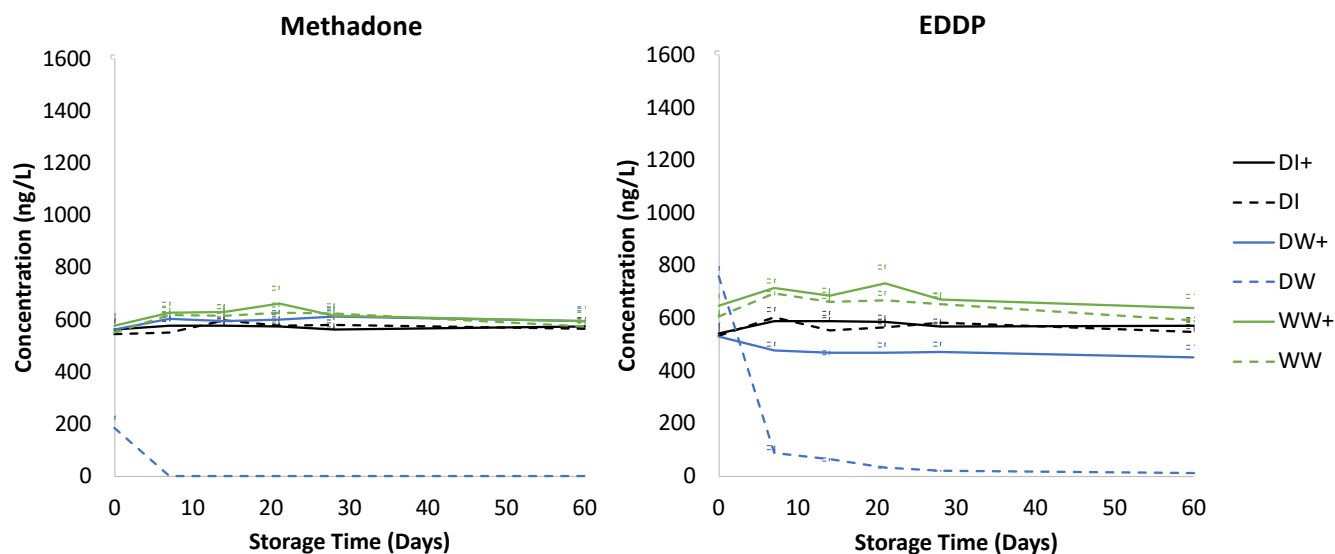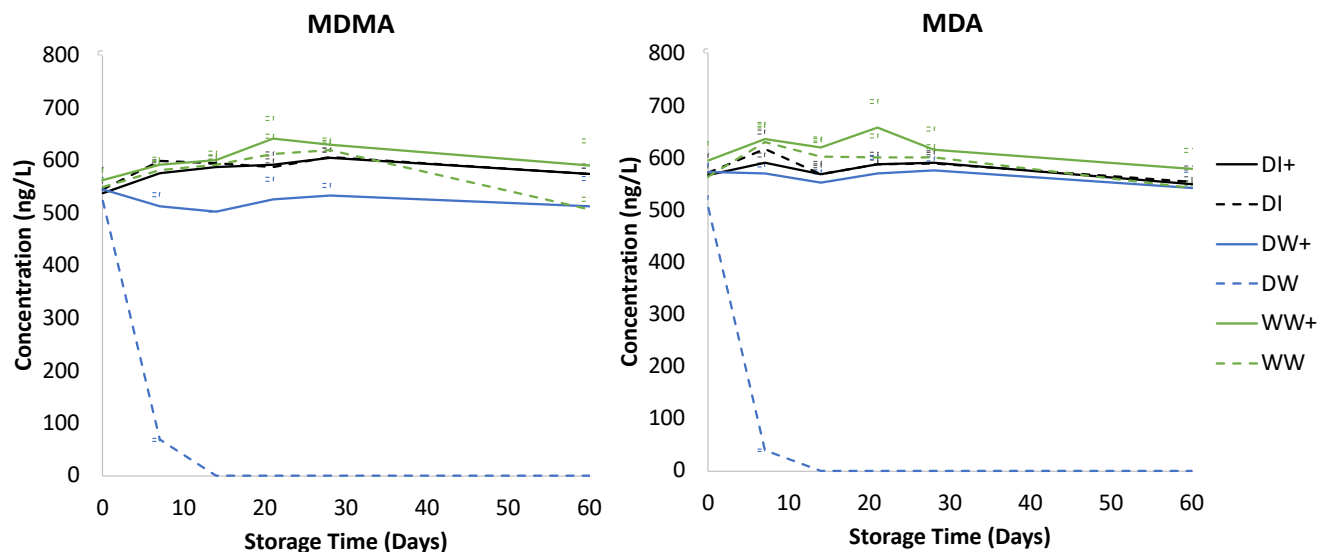

Mass Balance = [MDMA] + [MDA]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.90	0.95	0.94	0.96	0.98	0.92
DI	0.91	0.99	0.95	0.96	0.98	0.92
DW+	0.91	0.89	0.86	0.90	0.91	0.86
DW	0.84	0.09	0.00	0.00	0.00	0.00
WW+	0.93	0.99	0.98	1.04	1.00	0.94
WW	0.89	0.97	0.96	0.97	0.98	0.84

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Figure S9. Results of the laboratory hold-time study for **methamphetamine and amphetamine**. The mass balance table shows ratios of observed methamphetamine-equivalent concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.
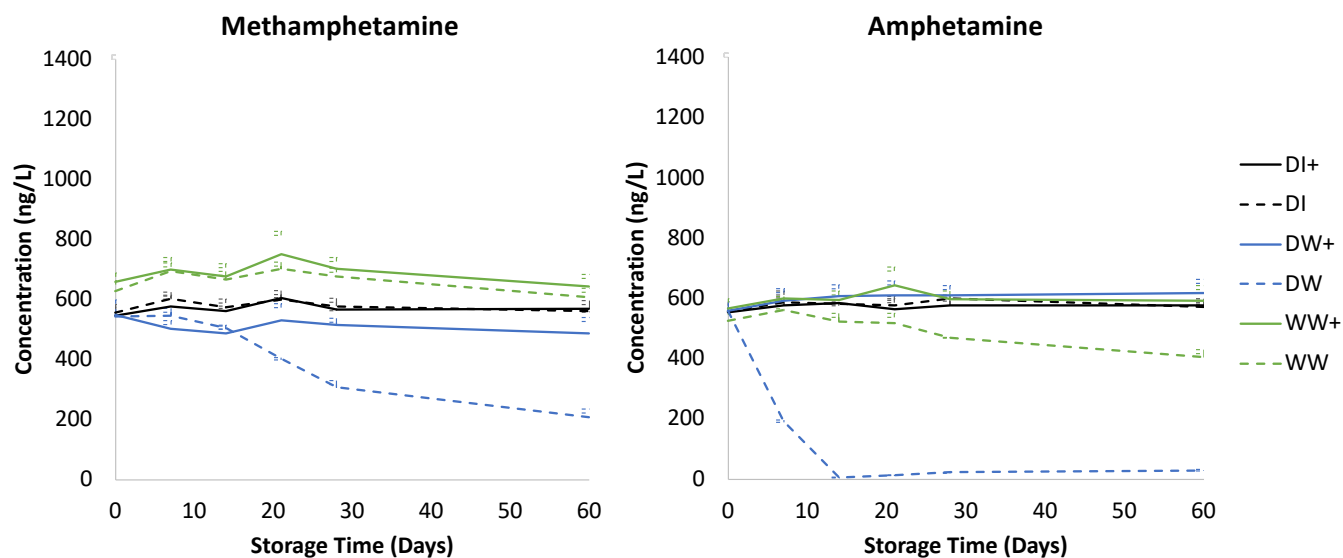
Mass Balance = [Methamphetamine] + [Amphetamine]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.99	1.04	1.04	1.05	1.03	1.04
DI	1.00	1.07	1.04	1.06	1.06	1.02
DW+	1.00	0.99	0.99	1.03	1.02	1.00
DW	1.00	0.65	0.44	0.36	0.28	0.21
WW+	1.03	1.09	1.07	1.17	1.09	1.04
WW	0.97	1.05	1.00	1.02	0.96	0.84

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl_2/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Figure S10. Results of the laboratory hold-time study for **THC and its metabolites**. The mass balance table shows ratios of observed THC-equivalent concentrations at each time point relative to the predetermined spikes and ambient concentrations. Green font indicates the typical timeframe for laboratory analysis, and red font indicates conditions that differed by >10%.
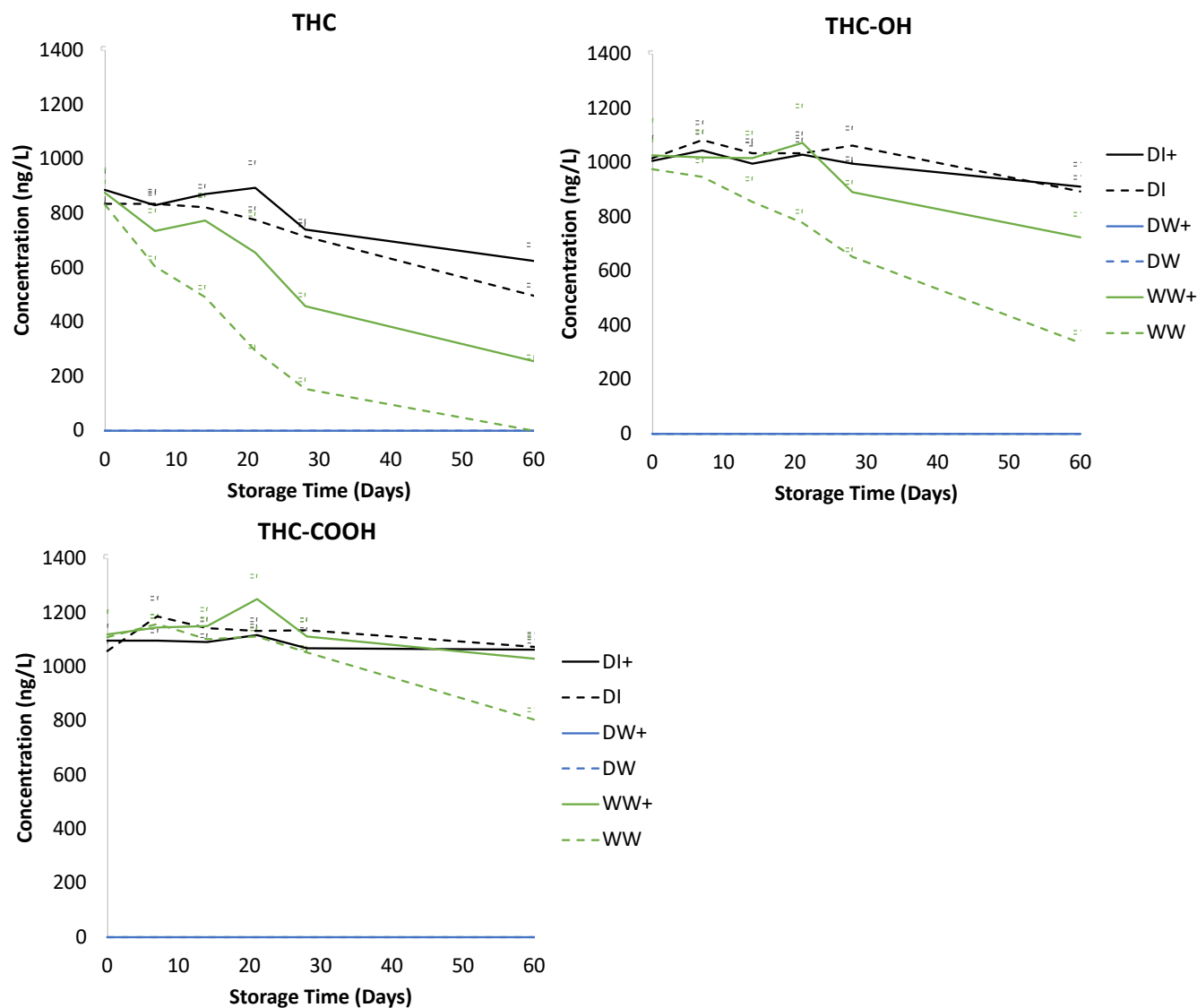

Mass Balance = [THC] + [THC-OH] + [THC-COOH]

Matrix	0 Days	7 Days	14 Days	21 Days	28 Days	60 Days
DI+	0.95	0.94	0.94	0.96	0.89	0.82
DI	0.92	0.98	0.95	0.93	0.92	0.78
DW+	0.00	0.00	0.00	0.00	0.00	0.00
DW	0.00	0.00	0.00	0.00	0.00	0.00
WW+	0.96	0.92	0.93	0.94	0.77	0.63
WW	0.92	0.86	0.77	0.68	0.58	0.35

DI = Deionized Water; DW = Finished Drinking Water with 0.8 mg-Cl$_2$/L free chlorine; WW = Treated Wastewater Effluent; + = Preserved (Sodium Azide) and Quenched (Ascorbic Acid)

Table S4. Results of simulated sewer transport study. Values indicate average percent reductions (±1 standard deviation) relative to initial concentration at time 0 (negative values indicate a net increase in concentration). N = 3 experiments unless otherwise indicated (i.e., for compounds that were <MRL for one, two, or three replicate experiments).

Compound	1 hr	2 hr	4 hr	8 hr	24 hr	48 hr	72 hr
Acetaminophen	-1 ± 11%	-4 ± 4%	-1 ± 13%	4 ± 10%	54 ± 11%	>94 ± 0%	>94 ± 0%
Acetylmorphine	5 ± 12%	2 ± 18%	5 ± 11%	8 ± 16%	9 ± 15%	7 ± 17%	9 ± 15%
Amphetamine	4 ± 5%	4 ± 5%	4 ± 5%	1 ± 7%	1 ± 7%	16 ± 9%	59 ± 23%
Atenolol	0 ± 8%	-4 ± 7%	1 ± 12%	-8 ± 6%	-2 ± 11%	1 ± 7%	1 ± 7%
Benzoylecgonine	-1 ± 2%	-1 ± 2%	-2 ± 2%	-4 ± 2%	-9 ± 4%	-13 ± 2%	-12 ± 4%
Caffeine	3 ± 7%	1 ± 9%	1 ± 5%	-2 ± 13%	5 ± 12%	22 ± 5%	36 ± 5%
Carbamazepine	4 ± 13%	1 ± 7%	-3 ± 7%	-1 ± 11%	-4 ± 12%	-1 ± 9%	-4 ± 15%
Cocaine	2 ± 4%	0 ± 0%	0 ± 0%	4 ± 4%	18 ± 5%	42 ± 14%	57 ± 16%
Codeine	-1 ± 8%	-1 ± 6%	-7 ± 10%	-5 ± 12%	-19 ± 13%	-26 ± 5%	-26 ± 15%
DEET	8 ± 21%	11 ± 18%	11 ± 22%	6 ± 13%	10 ± 24%	9 ± 19%	3 ± 16%
EDDP	2 ± 3%	1 ± 8%	0 ± 5%	4 ± 18%	3 ± 15%	5 ± 14%	3 ± 16%
Ecgonine	0 ± 4%	1 ± 4%	0 ± 3%	-7 ± 12%	-38 ± 20%	-74 ± 23%	-78 ± 34%
Ecgonine methyl ester	0 ± 8%	0 ± 8%	2 ± 9%	2 ± 9%	11 ± 5%	33 ± 7%	48 ± 10%
Fluoxetine	-38 ± 73%	-36 ± 80%	-46 ± 95%	-32 ± 65%	-34 ± 72%	-21 ± 66%	-28 ± 62%
Gemfibrozil	-2 ± 6%	-9 ± 8%	-9 ± 8%	-7 ± 8%	-12 ± 11%	-10 ± 15%	-12 ± 12%
Heroin (N = 0)	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
Hydrocodone	0 ± 5%	1 ± 3%	3 ± 5%	4 ± 9%	3 ± 5%	3 ± 9%	5 ± 4%
Ibuprofen	6 ± 2%	6 ± 2%	2 ± 7%	1 ± 8%	4 ± 4%	2 ± 2%	15 ± 4%
MDA (N = 0)	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
MDMA	-6 ± 8%	-1 ± 7%	0 ± 13%	5 ± 18%	-3 ± 6%	-1 ± 16%	4 ± 4%
Meprobamate	-2 ± 9%	3 ± 12%	-6 ± 8%	3 ± 10%	-3 ± 6%	-9 ± 10%	-23 ± 9%
Methadone	-3 ± 2%	3 ± 3%	1 ± 0%	12 ± 19%	6 ± 23%	7 ± 20%	22 ± 16%
Methamphetamine	1 ± 4%	0 ± 3%	-1 ± 3%	0 ± 3%	-4 ± 7%	-1 ± 2%	5 ± 4%
Morphine	2 ± 3%	0 ± 3%	-3 ± 6%	-4 ± 6%	-5 ± 5%	-4 ± 6%	1 ± 2%
Naproxen	1 ± 7%	0 ± 0%	0 ± 5%	-4 ± 7%	2 ± 4%	4 ± 3%	5 ± 5%
Norcocaine (N = 1)	3%	20%	25%	>28%	>28%	>28%	>28%
Norfentanyl	-2 ± 19%	0 ± 15%	5 ± 17%	8 ± 24%	10 ± 22%	5 ± 34%	10 ± 27%
Oxycodone	8 ± 7%	4 ± 4%	6 ± 15%	10 ± 7%	10 ± 12%	8 ± 13%	8 ± 13%
Primidone	-4 ± 14%	-2 ± 13%	1 ± 7%	-4 ± 14%	2 ± 16%	-1 ± 18%	-3 ± 5%
Sucralose	2 ± 7%	4 ± 10%	3 ± 2%	7 ± 3%	1 ± 13%	1 ± 8%	-1 ± 9%
Sulfamethoxazole	5 ± 9%	-2 ± 8%	-3 ± 15%	0 ± 20%	1 ± 10%	27 ± 23%	38 ± 27%
TCEP (N = 0)	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
THC (N = 0)	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
THC-COOH	2 ± 5%	3 ± 5%	6 ± 6%	11 ± 7%	16 ± 11%	18 ± 6%	48 ± 14%
THC-OH (N = 0)	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
Tramadol	1 ± 1%	1 ± 3%	-1 ± 1%	0 ± 4%	-1 ± 4%	-2 ± 4%	-4 ± 3%
Triclocarban (N = 0)	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL	<MRL
Triclosan (N = 2)	-42 ± 67%	-59 ± 72%	-72 ± 115%	-3 ± 76%	51 ± 39%	-8 ± 92%	43 ± 37%
Trimethoprim	-5 ± 23%	-15 ± 23%	-12 ± 27%	-13 ± 29%	-25 ± 25%	-8 ± 26%	-9 ± 20%

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Figure S11. (Left) Unitless sucralose-normalized concentrations. (Right) Results of Pairwise Wilcoxon Rank Sum Tests, with significant sewershed differences denoted by orange (0.01<p<0.05) or red (p<0.01) shading. Outlier dates are provided in Tables S5 and S6. For morphine, the negative outlier for Facility 3 results from a high acetylmorphine concentration coupled with a low morphine concentration. This resulted in an erroneous (negative) estimate for direct morphine consumption.
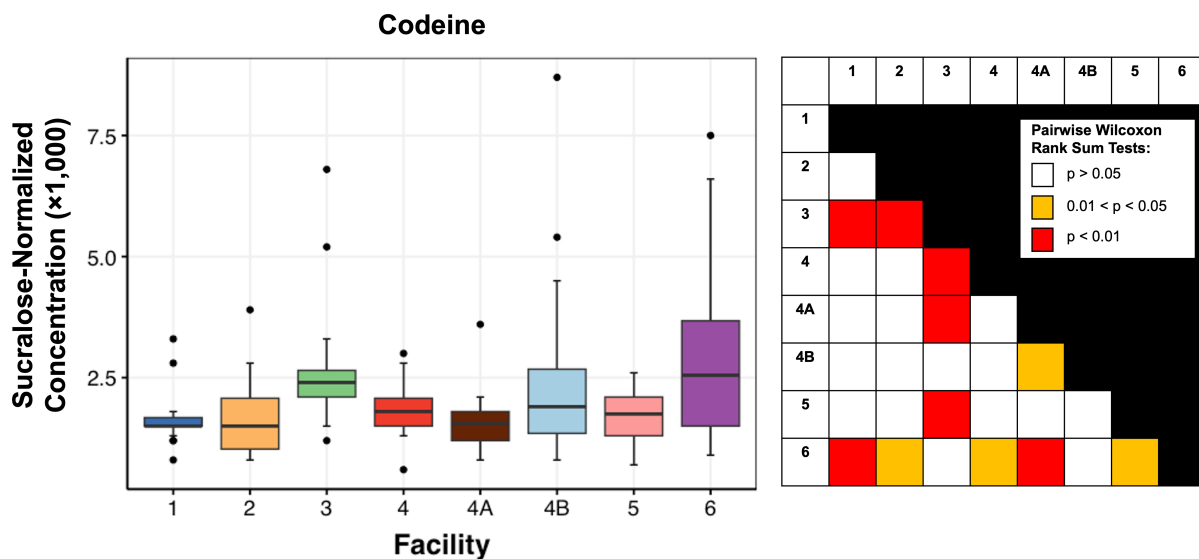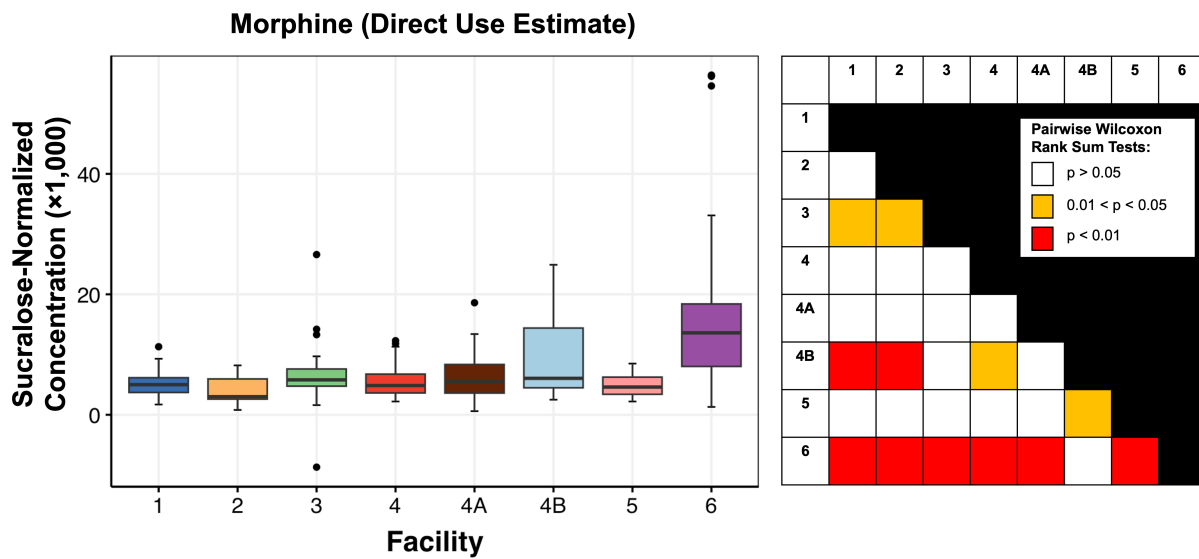
Figure S12. (Left) Unitless sucralose-normalized concentrations. (Right) Results of Pairwise Wilcoxon Rank Sum Tests, with significant sewershed differences denoted by orange (0.01<p<0.05) or red (p<0.01) shading. Outlier dates are provided in Tables S5 and S6.
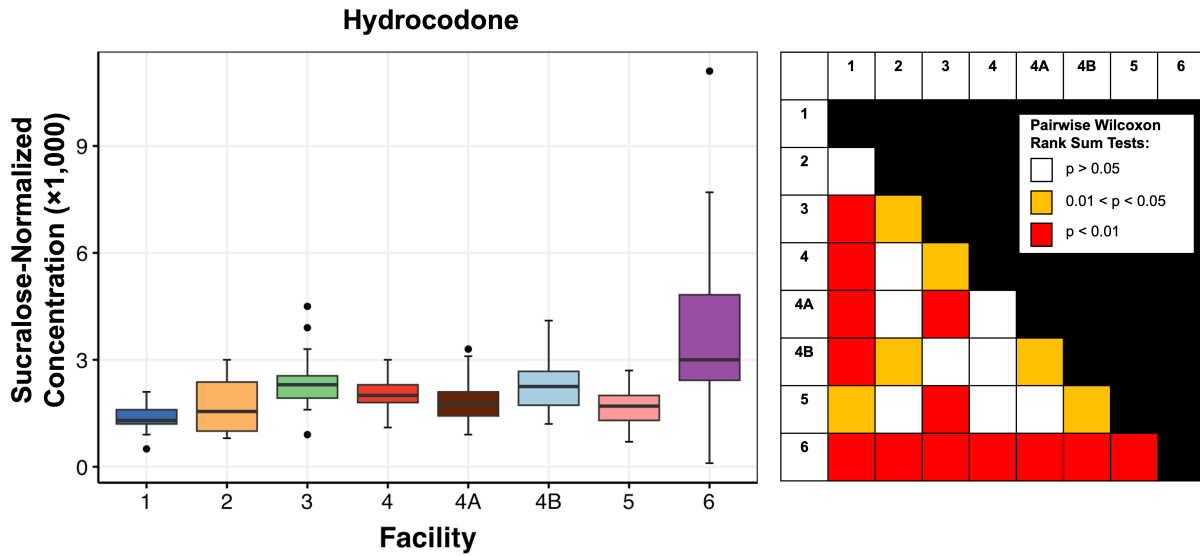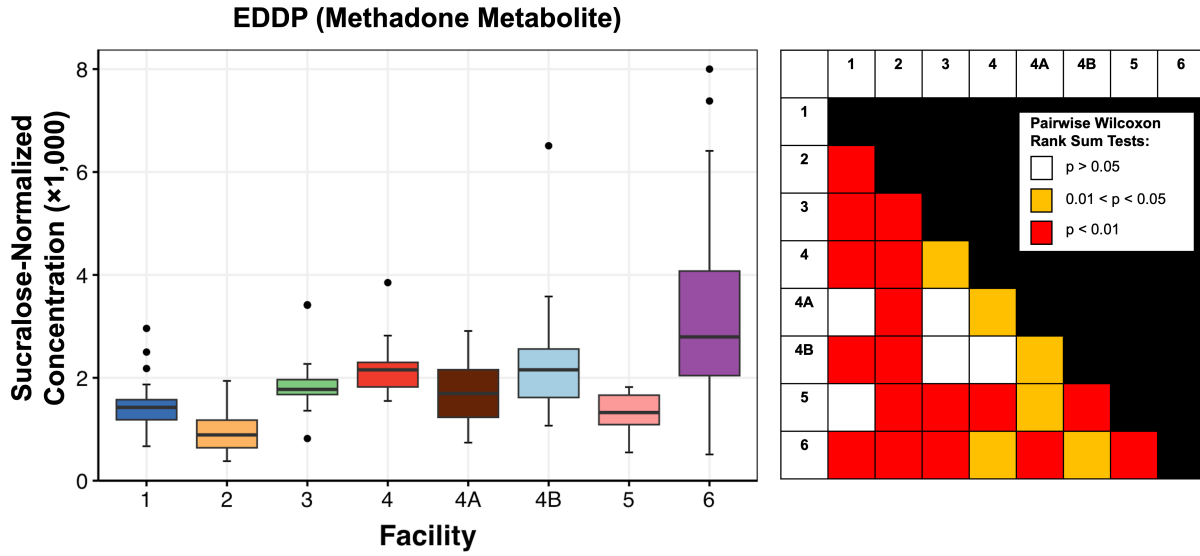
Figure S13. (Left) Unitless sucralose-normalized concentrations. (Right) Results of Pairwise Wilcoxon Rank Sum Tests, with significant sewershed differences denoted by orange (0.01<p<0.05) or red (p<0.01) shading. Outlier dates are provided in Tables S5 and S6.
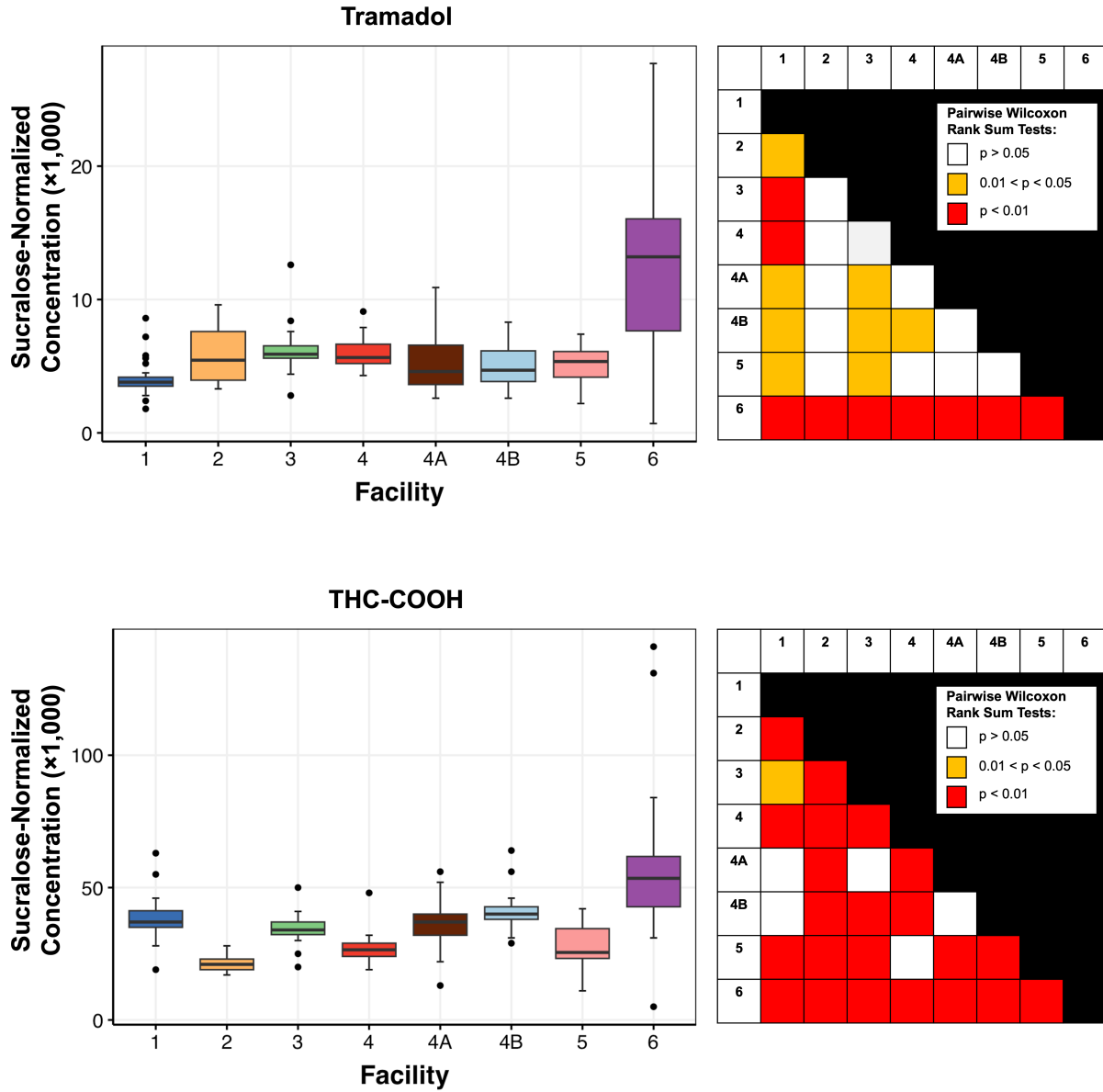
Table S5. Dates associated with high outliers. Red font and orange font indicate sucralose-normalized outliers that may be driven by low sucralose concentrations (outliers or noticeably lower than average) rather than a true spike in the target compound.

Compound/Sewershed	1	2	3	4	4A	4B	5	6
Cocaine[a]	N/A	N/A	8/8/22 8/22/22 4/17/23	5/31/22	N/A	12/26/22 1/9/23	N/A	8/8/22 12/26/22 3/6/23 4/17/23
Codeine	5/31/22 12/26/22	10/17/22	8/22/22 4/17/23	7/11/22	5/31/22	5/31/22 6/27/22	N/A	3/6/23
Fentanyl[a]	N/A	10/17/22 3/6/23 4/17/23	N/A	N/A	5/31/22	11/14/22 12/26/22	N/A	10/17/22 11/14/22 2/21/23
Heroin[a]	N/A	5/2/22 7/25/22 3/20/23 4/3/23	7/25/22 8/22/22	N/A	10/17/22	5/31/22 10/31/22 12/12/22 12/26/22 1/9/23	N/A	12/12/22 12/26/22
Hydrocodone	N/A	N/A	8/8/22 8/22/22	N/A	12/12/22	N/A	N/A	10/17/22
MDMA	9/19/22	5/16/22 5/31/22 7/25/22 9/19/22 10/3/22 10/31/22	9/19/22 10/3/22	5/31/22 9/19/22 10/3/22 11/14/22	5/16/22 5/31/22 6/27/22 9/19/22 10/3/22 11/28/22	6/13/22 8/8/22 8/22/22 10/17/22	6/27/22 10/3/22 4/17/23	10/17/22 12/26/22 3/20/23 4/3/23 4/17/23
Methadone[a]	5/2/22 5/16/22 5/31/22	N/A	3/20/23	5/31/22	N/A	5/31/22	N/A	3/6/23 4/17/23
Methamphetamine	5/2/22 5/31/22 12/26/22	N/A	8/8/22 8/22/22 4/17/23	5/31/22	5/31/22 10/17/22	5/31/22 10/17/22 12/26/22	N/A	3/6/23 4/17/23
Morphine	5/31/22	N/A	5/31/22 8/8/22 12/26/22	5/31/22 7/11/22 12/26/22	5/31/22	N/A	N/A	11/28/22 12/26/22 1/9/23
Oxycodone	5/2/22	N/A	8/8/22 8/22/22	N/A	5/31/22	N/A	N/A	10/17/22
THC[a]	5/2/22 12/26/22	N/A	8/22/22	7/11/22	8/8/22	10/3/22 1/9/23	N/A	1/9/23 2/21/23
Tramadol	5/2/22 5/31/22 11/14/22 12/26/22 1/23/23	N/A	8/8/22 8/22/22	5/31/22	N/A	N/A	N/A	N/A

[a]Surrogate compounds: cocaine = benzoylecgonine, fentanyl = norfentanyl, heroin = acetylmorphine, methadone = EDDP, THC = THC-COOH.

Table S6. Dates associated with low outliers. Red font and orange font indicate sucralose-normalized outliers that may be driven by high sucralose concentrations (true outliers or noticeably higher than average) rather than a true drop in the target compound.

Compound/Sewershed	1	2	3	4	4A	4B	5	6
Cocaine[a]	9/6/22	N/A	9/6/22	11/14/22	N/A	N/A	N/A	N/A
Codeine	8/22/22 9/6/22	N/A	9/6/22	1/23/23	N/A	N/A	N/A	N/A
Fentanyl[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heroin[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydrocodone	9/6/22	N/A	9/6/22	N/A	N/A	N/A	N/A	N/A
MDMA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methadone	N/A	N/A	9/6/22	N/A	N/A	N/A	N/A	N/A
Methamphetamine	9/6/22	N/A	9/6/22	N/A	N/A	N/A	N/A	8/22/22
Morphine	N/A	N/A	7/25/22[b]	N/A	N/A	N/A	N/A	N/A
Oxycodone	N/A	N/A	9/6/22	1/23/23	N/A	N/A	N/A	N/A
THC[a]	9/6/22	N/A	9/6/22 2/21/23	N/A	1/23/23	7/11/22	N/A	8/22/22
Tramadol	8/22/22 9/6/22	N/A	9/6/22	N/A	N/A	N/A	N/A	N/A

[a]Surrogate compounds: cocaine = benzoylecgonine, fentanyl = norfentanyl, heroin = acetylmorphine, methadone = EDDP, THC = THC-COOH.

[b]High acetylmorphine concentration coupled with low morphine concentration resulted in erroneous (negative) estimate for direct morphine consumption.

Table S7. Population-normalized consumption estimates ($\log_{10}$ mg/day per 1,000 people). Estimates represent averages (±1 standard deviation) over 26 biweekly sample events. Observed concentrations of parent compounds or surrogate metabolites were adjusted for metabolism and/or mass equivalence when estimating consumption (see main text for details). For sewersheds 1 and 4A, consumption estimates were normalized based on actual sewershed populations and sucralose-adjusted sewershed populations.

Compound/Sewershed	1	1 (Adj.)	2	3	4	4A	4A (Adj.)	4B	5	6
Caffeine	6.25±0.07	5.97±0.07	5.98±0.10	5.85±0.10	6.01±0.07	6.14±0.12	5.85±0.12	5.84±0.11	5.85±0.08	6.04±0.24
Cocaine	3.40±0.08	3.12±0.08	2.84±0.08	3.16±0.07	3.09±0.09	3.23±0.13	2.94±0.13	2.88±0.22	3.23±0.08	2.53±0.35
Codeine	2.05±0.07	1.77±0.07	1.74±0.09	1.78±0.05	1.91±0.12	2.02±0.10	1.73±0.10	1.84±0.23	1.84±0.04	1.82±0.23
Fentanyl[a]	1.86±0.25	1.58±0.25	N/A[b]	1.57±0.26	1.72±0.23	1.84±0.25	1.56±0.25	N/A[b]	1.66±0.21	N/A[b]
Heroin[a]	2.55±0.19	2.27±0.19	N/A[b]	2.58±0.22	2.53±0.19	N/A[b]	N/A[b]	N/A[b]	N/A[b]	N/A[b]
Hydrocodone	2.99±0.07	2.71±0.07	2.76±0.06	2.75±0.05	2.97±0.06	3.10±0.07	2.82±0.07	2.89±0.12	2.85±0.07	2.93±0.19
MDMA[a]	2.46±0.19	2.18±0.19	N/A[b]	N/A[b]	N/A[b]	N/A[b]	N/A[b]	N/A[b]	N/A[b]	N/A[b]
Methadone	2.73±0.07	2.45±0.07	2.23±0.08	2.37±0.03	2.71±0.09	2.79±0.12	2.51±0.12	2.60±0.13	2.46±0.05	2.61±0.21
Methamphetamine	4.07±0.06	3.79±0.06	3.21±0.11	3.92±0.05	3.91±0.04	3.99±0.09	3.70±0.09	3.78±0.11	3.89±0.06	3.76±0.12
Morphine[c]	3.39±0.15	3.10±0.15	2.98±0.15	3.05±0.21	3.24±0.15	3.43±0.30	3.14±0.30	3.30±0.30	3.16±0.12	3.40±0.35
Oxycodone	2.69±0.06	2.41±0.06	2.51±0.10	2.52±0.05	2.69±0.05	2.83±0.08	2.55±0.08	2.52±0.10	2.59±0.05	2.63±0.15
Sucralose	4.68±0.10	4.40±0.10	4.38±0.16	4.21±0.12	4.49±0.10	4.68±0.13	4.39±0.13	4.37±0.11	4.46±0.12	4.27±0.25
THC	5.08±0.04	4.80±0.04	4.54±0.12	4.57±0.06	4.74±0.08	5.05±0.14	4.76±0.14	4.81±0.10	4.71±0.05	4.80±0.13
Tramadol	2.79±0.07	2.51±0.07	2.64±0.05	2.51±0.03	2.78±0.08	2.88±0.10	2.59±0.10	2.59±0.12	2.68±0.03	2.81±0.13

[a]1/2×MRL substituted for any value <MRL.
[b]<50% of samples were >MRL so estimate is omitted.
[c]Estimated direct morphine consumption (i.e., adjusted to omit morphine from heroin consumption).

Figure S14. Observed concentrations (i.e., no adjustments for metabolism or degradation) of parent compounds or metabolites (log$_{10}$ ng/L). For any concentrations that were <MRL (i.e., acetylmorphine, MDMA, and norfentanyl), 1/2×MRL was substituted for the left-censored data. Sewershed-specific concentrations for all compounds and sampling dates are provided in Tables S8-S33.
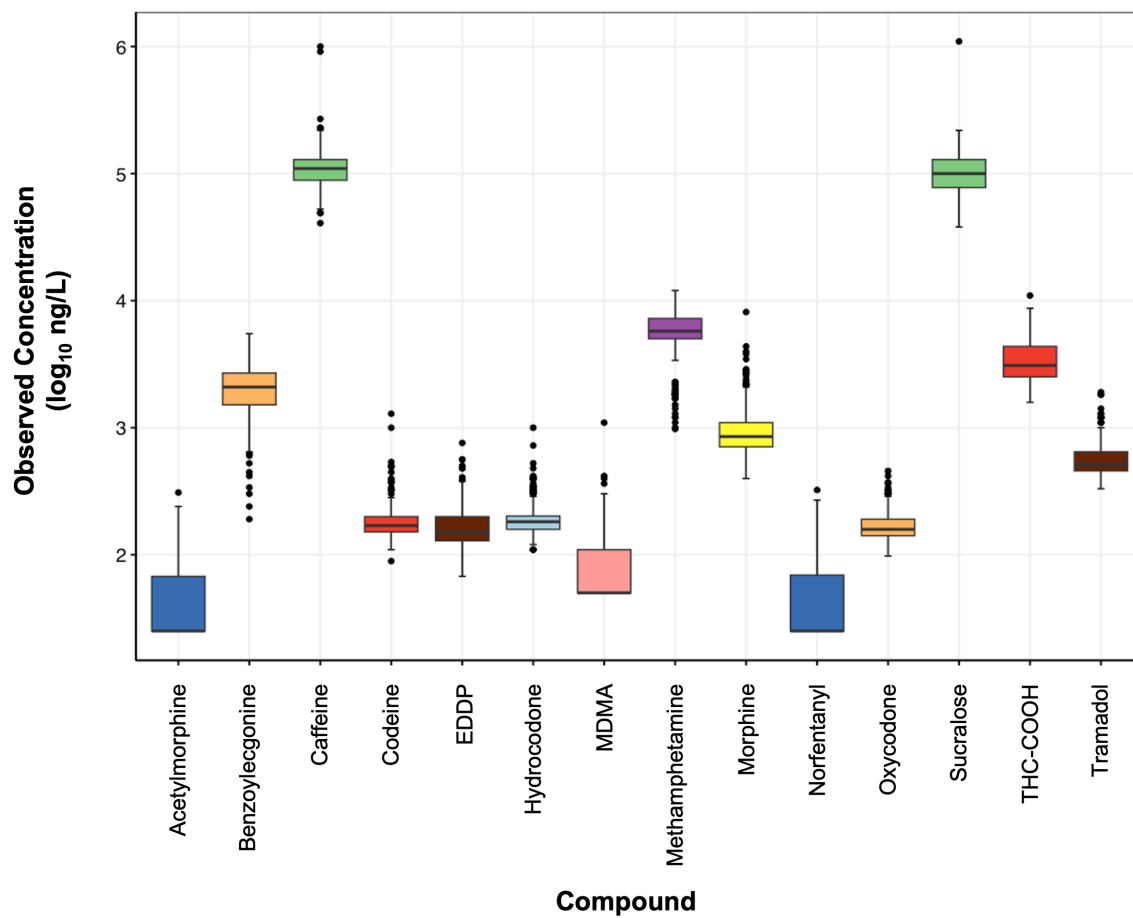
Table S8. Trace organic compound (TOrC) concentrations for Sample Event 1.

Date		5/2/22	5/2/22	5/2/22	5/2/22	5/2/22	5/2/22	5/2/22	5/2/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	180,000	160,000	130,000	160,000	240,000	320,000	91,000	210,000
Acetylmorphine	ng/L	63	73	100	68	<50	<50	54	<50
Amphetamine	ng/L	870	520	770	590	710	830	490	1,000
Atenolol	ng/L	1,300	3,500	1,200	1,300	2,000	1,900	1,200	940
Benzoylecgonine	ng/L	2,500	1,100	2,800	1,400	1,400	920	2,500	450
Caffeine	ng/L	98,000	130,000	87,000	99,000	110,000	130,000	77,000	180,000
Carbamazepine	ng/L	110	120	130	94	72	45	110	1,700
Cocaine	ng/L	710	470	1,300	610	470	160	1,400	150
Codeine	ng/L	110	120	160	140	110	160	150	240
DEET	ng/L	150	130	650	350	130	82	810	120
EDDP	ng/L	210	82	130	170	220	240	120	220
Ecgonine	ng/L	230	<100	250	120	110	<100	290	<100
Ecgonine methyl ester	ng/L	760	330	890	500	420	190	750	110
Fluoxetine	ng/L	33	86	57	61	110	100	72	130
Gemfibrozil	ng/L	860	1,700	1,200	1,200	3,200	1,900	990	970
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	140	130	160	180	170	240	150	300
Ibuprofen	ng/L	28,000	30,000	26,000	30,000	35,000	47,000	18,000	33,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	120	<100	<100	<100	<100	<100	<100	<100
Meprobamate	ng/L	82	150	160	170	120	200	120	220
Methadone	ng/L	58	<50	51	66	79	66	51	82
Methamphetamine	ng/L	9,300	2,200	8,100	4,700	5,000	5,200	5,800	5,000
Morphine	ng/L	1,000	590	1,200	880	930	850	740	1,100
Naproxen	ng/L	20,000	18,000	16,000	18,000	25,000	31,000	16,000	37,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	150	150	160	140	170	220	130	230
Primidone	ng/L	160	370	270	300	510	160	210	86
Sucralose	ng/L	71,000	140,000	70,000	79,000	130,000	120,000	77,000	120,000
Sulfamethoxazole	ng/L	520	1,600	1,200	1,000	1,400	1,600	810	12,000
TCEP	ng/L	<200	<200	280	200	<200	<200	220	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,500	3,000	2,900	2,400	5,100	4,800	3,000	5,800
THC-OH	ng/L	1,900	1,200	1,200	<1000	1,400	1,500	1,200	1,600
Tramadol	ng/L	610	610	470	440	420	510	450	910
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	31	39	25	<20	23	<20	21	<20
Trimethoprim	ng/L	320	940	520	490	780	680	430	3,600

Table S9. Trace organic compound (TOrC) concentrations for Sample Event 2.

Date		5/16/22	5/16/22	5/16/22	5/16/22	5/16/22	5/16/22	5/16/22	5/16/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	200,000	180,000	130,000	150,000	260,000	260,000	85,000	250,000
Acetylmorphine	ng/L	<50	<50	110	50	51	<50	<50	<50
Amphetamine	ng/L	730	450	840	730	840	680	490	1,100
Atenolol	ng/L	1,300	3,200	1,100	1,300	2,100	1,600	1,200	1,000
Benzoylecgonine	ng/L	2,400	1,500	2,600	1,600	2,000	3,000	2,400	1,700
Caffeine	ng/L	140,000	140,000	110,000	110,000	100,000	110,000	95,000	140,000
Carbamazepine	ng/L	220	180	110	160	63	59	99	70
Cocaine	ng/L	900	530	1,300	660	700	330	1,100	190
Codeine	ng/L	160	200	180	150	120	160	150	540
DEET	ng/L	350	200	670	600	150	100	560	210
EDDP	ng/L	240	91	130	170	170	250	120	230
Ecgonine	ng/L	260	140	300	170	240	360	360	210
Ecgonine methyl ester	ng/L	730	390	830	610	570	980	700	550
Fluoxetine	ng/L	53	70	93	68	91	53	45	72
Gemfibrozil	ng/L	1,100	1,600	1,500	3,400	1,500	3,800	900	2,200
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	140	140	150	160	170	300	150	190
Ibuprofen	ng/L	32,000	50,000	27,000	30,000	41,000	48,000	24,000	82,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	250	110	130	<100	110	<100	<100	<100
Meprobamate	ng/L	140	230	150	180	220	120	110	230
Methadone	ng/L	57	<50	58	74	75	95	<50	100
Methamphetamine	ng/L	6,900	980	8,300	5,500	4,900	4,900	5,900	4,300
Morphine	ng/L	900	560	1,100	900	1,100	2,300	770	1,800
Naproxen	ng/L	21,000	21,000	19,000	17,000	22,000	22,000	19,000	22,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	110	110	150	140	140	170	140	320
Primidone	ng/L	170	360	220	320	280	350	200	280
Sucralose	ng/L	110,000	150,000	81,000	100,000	100,000	130,000	99,000	82,000
Sulfamethoxazole	ng/L	910	2,300	1,800	1,300	840	1,700	1,000	710
TCEP	ng/L	<200	<200	390	<200	<200	<200	300	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,600	2,900	2,700	2,400	3,300	4,700	2,400	4,400
THC-OH	ng/L	1,900	1,200	1,100	<1000	<1000	1,400	1,100	1,700
Tramadol	ng/L	420	540	460	490	600	640	470	1,100
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	68	83	86	84	210	140	250	130
Trimethoprim	ng/L	450	900	620	550	360	900	460	200

Table S10. Trace organic compound (TOrC) concentrations for Sample Event 3.

| Date | | 5/31/22 | 5/31/22 | 5/31/22 | 5/30/22 | 5/30/22 | 5/30/22 | 5/31/22 | 5/31/22 |
| Location | | Facility 1 | Facility 2 | Facility 3 | Facility 4 | Facility 4A | Facility 4B | Facility 5 | Facility 6 |
Parameter	Units								
Acetaminophen	ng/L	250,000	200,000	140,000	180,000	130,000	310,000	92,000	250,000
Acetylmorphine	ng/L	<50	<50	<50	61	<50	170	<50	<50
Amphetamine	ng/L	740	460	810	830	680	1,300	520	860
Atenolol	ng/L	1,500	3,400	1,100	1,400	910	1,900	990	3,400
Benzoylecgonine	ng/L	2,400	1,600	2,400	2,600	1,700	2,500	2,100	650
Caffeine	ng/L	100,000	180,000	130,000	64,000	56,000	90,000	81,000	140,000
Carbamazepine	ng/L	140	200	120	100	77	66	170	20
Cocaine	ng/L	660	240	1,100	700	360	290	740	82
Codeine	ng/L	200	140	180	180	160	340	140	190
DEET	ng/L	970	210	1,200	340	360	120	940	130
EDDP	ng/L	180	68	130	250	120	410	110	100
Ecgonine	ng/L	270	180	260	330	250	310	360	110
Ecgonine methyl ester	ng/L	620	390	620	730	450	530	470	140
Fluoxetine	ng/L	53	100	63	79	76	96	43	86
Gemfibrozil	ng/L	1,300	1,600	1,500	1,300	680	2,000	2,500	2,100
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	130	150	140	190	140	260	140	400
Ibuprofen	ng/L	36,000	36,000	28,000	36,000	31,000	47,000	21,000	41,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	160	110	<100	140	360	<100	<100	<100
Meprobamate	ng/L	150	240	160	280	150	260	120	2,100
Methadone	ng/L	58	<50	52	98	76	170	<50	<50
Methamphetamine	ng/L	7,000	1,200	7,700	6,300	5,500	12,000	5,600	6,200
Morphine	ng/L	980	570	1,200	1,200	1,000	2,600	700	850
Naproxen	ng/L	26,000	22,000	20,000	21,000	19,000	41,000	16,000	32,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	180	<50	<50	<50
Oxycodone	ng/L	120	120	150	170	160	160	130	110
Primidone	ng/L	190	480	250	410	200	460	190	1,400
Sucralose	ng/L	72,000	180,000	73,000	65,000	45,000	63,000	160,000	74,000
Sulfamethoxazole	ng/L	1,300	2,000	1,200	1,800	1,300	7,400	1,400	1,700
TCEP	ng/L	<200	<200	<200	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	3,100	3,000	2,700	2,000	1,800	2,800	2,300	3,400
THC-OH	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Tramadol	ng/L	520	660	450	590	490	480	460	1,200
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	29	58	52	<20	22	22	79	25
Trimethoprim	ng/L	780	940	600	910	650	2,800	570	500

Table S11. Trace organic compound (TOrC) concentrations for Sample Event 4.

Date		6/13/22	6/13/22	6/13/22	6/13/22	6/13/22	6/13/22	6/13/22	6/13/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	190,000	190,000	120,000	140,000	240,000	280,000	58,000	230,000
Acetylmorphine	ng/L	<50	<50	90	67	110	<50	55	<50
Amphetamine	ng/L	620	470	740	610	880	720	490	760
Atenolol	ng/L	1,400	3,500	1,100	1,200	2,200	1,800	880	2,800
Benzoylecgonine	ng/L	2,600	1,100	2,900	1,600	970	1,600	2,200	190
Caffeine	ng/L	120,000	150,000	110,000	100,000	120,000	120,000	69,000	150,000
Carbamazepine	ng/L	140	50	120	120	49	150	110	33
Cocaine	ng/L	980	410	1,200	640	300	360	820	56
Codeine	ng/L	170	160	190	150	270	450	170	150
DEET	ng/L	360	720	1,400	1,000	220	520	1,000	110
EDDP	ng/L	140	90	130	200	110	340	120	150
Ecgonine	ng/L	300	120	320	160	120	200	320	<100
Ecgonine methyl ester	ng/L	770	280	840	500	220	520	730	63
Fluoxetine	ng/L	55	97	65	77	100	75	61	110
Gemfibrozil	ng/L	1,300	2,500	1,800	6,800	1,200	2,400	950	2,500
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	140	160	160	160	240	180	150	260
Ibuprofen	ng/L	31,000	34,000	25,000	23,000	39,000	40,000	19,000	45,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	130	<100	<100	<100	<100	150	<100	<100
Meprobamate	ng/L	150	270	150	170	120	250	140	520
Methadone	ng/L	54	<50	57	79	63	120	<50	71
Methamphetamine	ng/L	5,500	1,300	8,000	5,000	6,300	6,700	5,100	4,500
Morphine	ng/L	980	430	1,100	890	800	1,600	730	980
Naproxen	ng/L	23,000	24,000	16,000	13,000	37,000	26,000	15,000	33,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	110	130	140	150	140	160	120	110
Primidone	ng/L	210	520	220	260	130	430	230	280
Sucralose	ng/L	130,000	160,000	75,000	79,000	130,000	100,000	100,000	69,000
Sulfamethoxazole	ng/L	880	1,400	970	880	1,400	1,300	900	3,700
TCEP	ng/L	<200	<200	370	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	3,600	3,000	2,700	2,300	5,200	4,000	2,400	4,200
THC-OH	ng/L	1,200	1,100	1,000	<1000	1,700	1,000	<1000	1,200
Tramadol	ng/L	500	680	450	490	840	670	470	1,200
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	66	30	37	32	33	30	54	28
Trimethoprim	ng/L	520	730	520	450	700	570	420	1,400

Table S12. Trace organic compound (TOrC) concentrations for Sample Event 5.

Date		6/27/22	6/27/22	6/27/22	6/27/22	6/27/22	6/27/22	6/27/22	6/27/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	180,000	180,000	110,000	140,000	200,000	200,000	53,000	300,000
Acetylmorphine	ng/L	58	<50	64	<50	<50	<50	51	<50
Amphetamine	ng/L	670	520	760	620	590	960	380	1,300
Atenolol	ng/L	1,400	2,700	1,100	1,200	1,500	1,400	1,000	1,800
Benzoylecgonine	ng/L	2,300	1,500	2,900	1,600	1,800	1,500	2,200	610
Caffeine	ng/L	100,000	160,000	99,000	100,000	140,000	150,000	75,000	230,000
Carbamazepine	ng/L	110	71	130	100	200	67	98	130
Cocaine	ng/L	790	440	1,300	620	390	310	810	73
Codeine	ng/L	160	130	190	160	140	1,300	170	130
DEET	ng/L	380	1,400	1,400	1,000	340	2,200	1,100	380
EDDP	ng/L	160	94	130	190	120	160	110	120
Ecgonine	ng/L	260	160	320	180	200	190	370	<100
Ecgonine methyl ester	ng/L	620	430	810	500	480	350	690	130
Fluoxetine	ng/L	50	91	94	81	100	97	87	150
Gemfibrozil	ng/L	1,500	2,000	1,100	1,100	2,600	2,100	1,500	3,900
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	110	140	150	150	140	180	120	230
Ibuprofen	ng/L	27,000	32,000	24,000	23,000	30,000	45,000	16,000	48,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	160	<100	120	<100	100	<100	140	<100
Meprobamate	ng/L	140	250	140	170	100	170	140	170
Methadone	ng/L	54	<50	56	77	54	56	<50	73
Methamphetamine	ng/L	5,800	1,400	8,200	5,000	3,400	9,000	5,500	9,200
Morphine	ng/L	890	570	1,100	910	1,000	3,500	710	760
Naproxen	ng/L	21,000	20,000	15,000	15,000	19,000	32,000	13,000	30,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	110	100	150	140	130	160	120	280
Primidone	ng/L	170	450	240	290	400	740	250	1,500
Sucralose	ng/L	100,000	150,000	80,000	84,000	120,000	150,000	92,000	130,000
Sulfamethoxazole	ng/L	970	2,300	1,100	920	1,200	1,500	770	1,300
TCEP	ng/L	<200	<200	380	300	<200	<200	280	<200
THC	ng/L	<1000	<1000	<1000	<1000	1,700	<1000	<1000	<1000
THC-COOH	ng/L	3,800	3,000	2,500	2,400	4,400	5,600	2,300	4,600
THC-OH	ng/L	1,200	<1000	<1000	<1000	1,300	1,700	<1000	1,100
Tramadol	ng/L	410	550	460	470	570	570	460	1,900
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	<20	<20	<20	<20	<20	<20
Trimethoprim	ng/L	570	960	500	460	640	510	380	280

Table S13. Trace organic compound (TOrC) concentrations for Sample Event 6.

Date		7/11/22	7/11/22	7/11/22	7/11/22	7/11/22	7/11/22	7/11/22	7/11/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	150,000	170,000	100,000	130,000	190,000	270,000	64,000	260,000
Acetylmorphine	ng/L	72	<50	90	<50	<50	<50	<50	54
Amphetamine	ng/L	690	550	820	710	880	970	520	740
Atenolol	ng/L	1,300	2,900	1,100	1,100	2,200	1,400	1,000	3,700
Benzoylecgonine	ng/L	2,400	1,500	2,800	1,700	1,400	1,400	2,500	240
Caffeine	ng/L	110,000	160,000	97,000	100,000	87,000	91,000	67,000	230,000
Carbamazepine	ng/L	140	110	100	140	96	43	110	230
Cocaine	ng/L	820	350	1,200	570	380	380	920	90
Codeine	ng/L	200	240	180	210	210	260	170	270
DEET	ng/L	740	820	1,400	1,200	520	4,200	1,500	190
EDDP	ng/L	160	89	140	200	170	270	110	270
Ecgonine	ng/L	270	170	300	410	160	160	360	<100
Ecgonine methyl ester	ng/L	630	460	790	600	420	340	750	61
Fluoxetine	ng/L	46	60	63	54	41	58	58	89
Gemfibrozil	ng/L	800	1,800	1,200	1,100	1,200	1,600	780	510
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	120	150	140	210	130	210	110	210
Ibuprofen	ng/L	25,000	31,000	20,000	23,000	26,000	44,000	19,000	41,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	150	<100	<100	<100	<100	<100	<100	<100
Meprobamate	ng/L	170	280	180	200	260	490	120	1,400
Methadone	ng/L	50	<50	57	92	96	100	52	90
Methamphetamine	ng/L	5,400	1,800	8,500	5,700	6,100	9,000	5,600	4,500
Morphine	ng/L	870	650	1,000	1,000	710	1,600	720	1,300
Naproxen	ng/L	18,000	23,000	16,000	15,000	23,000	30,000	14,000	44,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	120	130	150	180	120	240	160	360
Primidone	ng/L	270	220	230	320	220	400	<1000	<1000
Sucralose	ng/L	110,000	160,000	71,000	71,000	140,000	160,000	78,000	69,000
Sulfamethoxazole	ng/L	620	890	1,000	880	1,200	930	710	3,500
TCEP	ng/L	250	<200	290	<200	<200	<200	260	<200
THC	ng/L	<1000	<1000	<1000	1,000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,000	3,200	2,700	3,400	4,200	4,600	2,600	3,700
THC-OH	ng/L	1,400	1,000	<1000	1,100	1,200	1,100	<1000	1,100
Tramadol	ng/L	450	680	470	550	570	670	580	1,800
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	<20	<20	<20	<20	<20	<20
Trimethoprim	ng/L	470	440	500	420	710	480	350	1,000

Table S14. Trace organic compound (TOrC) concentrations for Sample Event 7.

Date		7/25/22	7/25/22	7/25/22	7/25/22	7/25/22	7/25/22	7/25/22	7/25/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	160,000	160,000	110,000	150,000	220,000	180,000	42,000	210,000
Acetylmorphine	ng/L	50	76	310	70	<50	<50	<50	<50
Amphetamine	ng/L	680	590	790	650	800	860	440	1,300
Atenolol	ng/L	1,300	3,600	1,000	1,300	1,500	4,300	540	<2000
Benzoylecgonine	ng/L	3,000	1,700	2,700	1,400	1,400	1,000	2,200	300
Caffeine	ng/L	110,000	140,000	100,000	99,000	110,000	110,000	68,000	200,000
Carbamazepine	ng/L	81	67	110	110	56	41	130	540
Cocaine	ng/L	2,100	310	1,100	630	330	310	820	120
Codeine	ng/L	170	270	210	160	150	190	160	120
DEET	ng/L	520	710	1,400	1,500	260	400	1,600	430
EDDP	ng/L	150	110	140	170	190	260	120	300
Ecgonine	ng/L	280	180	290	120	170	130	330	<100
Ecgonine methyl ester	ng/L	840	420	840	490	440	330	740	110
Fluoxetine	ng/L	51	91	55	67	57	87	40	99
Gemfibrozil	ng/L	1,200	2,500	980	1,200	1,100	2,900	1,000	640
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	120	160	170	190	200	250	130	1,000
Ibuprofen	ng/L	31,000	36,000	25,000	25,000	37,000	59,000	18,000	32,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	150	120	<100	<100	<100	<100	<100	<100
Meprobamate	ng/L	150	190	180	200	160	370	140	380
Methadone	ng/L	64	<50	61	73	96	71	<50	97
Methamphetamine	ng/L	5,900	2,300	8,800	5,700	6,200	6,900	5,300	7,000
Morphine	ng/L	870	850	1,300	960	850	2,900	710	1,700
Naproxen	ng/L	18,000	25,000	17,000	19,000	23,000	30,000	14,000	33,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	120	160	180	150	140	230	150	300
Primidone	ng/L	140	550	220	310	890	720	210	150
Sucralose	ng/L	100,000	160,000	83,000	98,000	87,000	110,000	110,000	130,000
Sulfamethoxazole	ng/L	1,300	2,700	1,500	1,400	3,700	1,000	960	560
TCEP	ng/L	<200	<200	300	320	3,000	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	3,800	3,200	2,700	2,500	4,300	5,000	2,400	5,200
THC-OH	ng/L	1,300	<1000	<1000	<1000	1,100	1,300	<1000	1,800
Tramadol	ng/L	450	670	520	770	630	400	480	1,100
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	45	67	49	41	39	33	46	41
Trimethoprim	ng/L	610	750	540	540	3,000	410	310	200

Table S15. Trace organic compound (TOrC) concentrations for Sample Event 8.

Date		8/8/22	8/8/22	8/8/22	8/8/22	8/8/22	8/8/22	8/8/22	8/8/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	150,000	170,000	110,000	140,000	240,000	220,000	46,000	250,000
Acetylmorphine	ng/L	<50	<50	81	<50	<50	<50	<50	<50
Amphetamine	ng/L	700	450	1,100	610	670	790	410	1,200
Atenolol	ng/L	1,300	3,100	790	1,300	1,100	1,500	930	<2000
Benzoylecgonine	ng/L	2,500	1,600	3,500	1,600	2,400	950	2,500	5,500
Caffeine	ng/L	110,000	150,000	53,000	83,000	84,000	75,000	68,000	89,000
Carbamazepine	ng/L	100	80	97	140	69	84	120	120
Cocaine	ng/L	550	360	740	540	250	88	640	210
Codeine	ng/L	190	230	230	160	150	240	140	190
DEET	ng/L	820	400	830	1,400	720	300	1,600	500
EDDP	ng/L	120	91	150	190	180	320	110	370
Ecgonine	ng/L	370	230	540	200	350	180	400	690
Ecgonine methyl ester	ng/L	620	430	840	540	500	160	630	770
Fluoxetine	ng/L	50	93	52	62	61	96	53	76
Gemfibrozil	ng/L	1,000	2,600	1,500	1,100	2,400	1,300	870	1,400
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	140	160	170	160	210	190	140	190
Ibuprofen	ng/L	27,000	32,000	22,000	23,000	33,000	47,000	15,000	36,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	150	<100	<100	<100	<100	170	<100	<100
Meprobamate	ng/L	97	190	120	2,000	290	170	130	370
Methadone	ng/L	<50	<50	72	72	71	100	<50	120
Methamphetamine	ng/L	5,800	1,100	12,000	5,800	3,800	5,400	5,100	8,300
Morphine	ng/L	970	680	1,700	910	980	570	660	1,200
Naproxen	ng/L	18,000	22,000	14,000	16,000	22,000	19,000	14,000	33,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	100	130	170	150	170	120	120	290
Primidone	ng/L	200	480	300	340	490	320	280	270
Sucralose	ng/L	110,000	170,000	44,000	84,000	78,000	110,000	77,000	77,000
Sulfamethoxazole	ng/L	970	2,100	980	1,000	930	560	870	910
TCEP	ng/L	<200	<200	<200	270	<200	<200	230	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	3,800	2,900	1,800	2,400	4,400	4,700	2,000	4,400
THC-OH	ng/L	1,200	<1000	<1000	<1000	1,200	1,300	<1000	<1000
Tramadol	ng/L	380	620	370	480	580	660	470	1,100
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	25	46	38	31	30	26	44	27
Trimethoprim	ng/L	520	960	470	500	750	320	360	320

Table S16. Trace organic compound (TOrC) concentrations for Sample Event 9.

Date		8/22/22	8/22/22	8/22/22	8/22/22	8/22/22	8/22/22	8/22/22	8/22/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	130,000	140,000	120,000	96,000	190,000	240,000	65,000	210,000
Acetylmorphine	ng/L	<50	<50	200	<50	<50	<50	56	<50
Amphetamine	ng/L	600	480	1,100	630	540	760	440	950
Atenolol	ng/L	900	2,100	770	970	1,200	1,400	790	830
Benzoylecgonine	ng/L	2,500	1,800	3,500	1,500	1,700	1,700	2,300	3,000
Caffeine	ng/L	150,000	140,000	59,000	68,000	49,000	58,000	41,000	1,000,000
Carbamazepine	ng/L	140	160	56	190	100	38	84	280
Cocaine	ng/L	1,000	400	1,200	600	380	310	930	320
Codeine	ng/L	170	140	260	140	120	130	140	1,000
DEET	ng/L	440	1,200	560	900	190	160	1,200	410
EDDP	ng/L	150	110	130	170	260	240	120	560
Ecgonine	ng/L	290	190	420	180	230	270	380	340
Ecgonine methyl ester	ng/L	710	460	990	540	460	480	690	880
Fluoxetine	ng/L	38	43	27	33	39	47	24	42
Gemfibrozil	ng/L	790	1,800	1,000	870	1,000	1,300	610	1,700
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	120	140	170	150	160	180	130	160
Ibuprofen	ng/L	26,000	27,000	25,000	18,000	29,000	44,000	20,000	30,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	200	<100	<100	<100	<100	240	<100	<100
Meprobamate	ng/L	150	120	170	140	90	190	97	370
Methadone	ng/L	53	<50	64	75	100	99	<50	130
Methamphetamine	ng/L	5,400	990	12,000	5,400	3,400	4,100	4,900	5,500
Morphine	ng/L	790	580	1,500	820	620	540	700	2,000
Naproxen	ng/L	17,000	16,000	16,000	10,000	21,000	22,000	16,000	47,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	98	160	190	150	170	150	130	280
Primidone	ng/L	160	390	160	280	160	130	210	2,000
Sucralose	ng/L	140,000	140,000	38,000	73,000	96,000	150,000	66,000	1,100,000
Sulfamethoxazole	ng/L	1,100	3,700	1,400	930	1,200	640	1,100	1,100
TCEP	ng/L	330	<200	<200	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,000	3,000	1,900	2,300	3,700	4,900	2,500	5,800
THC-OH	ng/L	1,500	<1000	<1000	<1000	<1000	1,300	<1000	1,700
Tramadol	ng/L	340	520	480	500	420	650	480	790
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	<20	<20	<20	<20	<20	<20
Trimethoprim	ng/L	460	930	530	340	500	260	350	330

Table S17. Trace organic compound (TOrC) concentrations for Sample Event 10.

Date		9/6/22	9/6/22	9/6/22	9/6/22	9/6/22	9/6/22	9/6/22	9/6/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	180,000	170,000	120,000	150,000	280,000	300,000	59,000	260,000
Acetylmorphine	ng/L	51	<50	82	51	<50	<50	<50	<50
Amphetamine	ng/L	580	450	780	620	780	820	400	1,500
Atenolol	ng/L	1,300	1,700	1,400	1,300	1,700	1,700	970	1,000
Benzoylecgonine	ng/L	2,100	1,200	2,900	1,500	2,000	1,400	2,100	660
Caffeine	ng/L	110,000	82,000	120,000	100,000	150,000	150,000	69,000	150,000
Carbamazepine	ng/L	64	190	140	100	67	73	110	270
Cocaine	ng/L	760	490	1,200	670	350	180	860	74
Codeine	ng/L	170	150	200	160	200	130	140	140
DEET	ng/L	880	790	2,100	1,800	580	620	1,700	650
EDDP	ng/L	140	68	140	170	300	200	120	360
Ecgonine	ng/L	250	140	340	170	290	210	370	<100
Ecgonine methyl ester	ng/L	520	350	810	480	410	280	580	190
Fluoxetine	ng/L	41	73	48	93	70	94	53	99
Gemfibrozil	ng/L	1,100	1,900	1,100	1,600	1,400	1,700	670	1,200
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	110	150	160	150	150	240	120	210
Ibuprofen	ng/L	31,000	33,000	28,000	24,000	41,000	54,000	20,000	59,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	140	<100	110	<100	<100	<100	<100	<100
Meprobamate	ng/L	180	220	170	190	83	240	130	130
Methadone	ng/L	<50	<50	55	70	93	87	<50	120
Methamphetamine	ng/L	5,200	1,800	8,100	5,300	5,100	6,900	5,100	10,000
Morphine	ng/L	730	560	1,100	850	1,100	920	620	1,300
Naproxen	ng/L	20,000	18,000	19,000	15,000	24,000	28,000	13,000	36,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Oxycodone	ng/L	110	150	160	150	170	170	130	460
Primidone	ng/L	<1000	<1000	<1000	380	610	<1000	<1000	530
Sucralose	ng/L	210,000	65,000	170,000	110,000	150,000	160,000	72,000	130,000
Sulfamethoxazole	ng/L	940	2,000	1,900	1,300	1,400	1,800	1,000	1,300
TCEP	ng/L	<200	<200	350	290	<200	<200	250	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,000	1,700	3,400	2,400	4,800	6,000	2,500	8,000
THC-OH	ng/L	1,400	<1000	1,200	<1000	1,400	1,600	<1000	2,000
Tramadol	ng/L	380	500	470	470	480	600	480	730
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	37	<20	25	26	<20	<20	<20	44
Trimethoprim	ng/L	490	640	640	570	660	730	370	360

Table S18. Trace organic compound (TOrC) concentrations for Sample Event 11.

| Date | | 9/19/22 | 9/19/22 | 9/19/22 | 9/19/22 | 9/19/22 | 9/19/22 | 9/19/22 | 9/19/22 |
| Location | | Facility 1 | Facility 2 | Facility 3 | Facility 4 | Facility 4A | Facility 4B | Facility 5 | Facility 6 |
Parameter	Units								
Acetaminophen	ng/L	170,000	150,000	97,000	160,000	250,000	240,000	51,000	330,000
Acetylmorphine	ng/L	<50	<50	80	62	77	<50	<50	<50
Amphetamine	ng/L	660	500	800	690	590	910	420	1,400
Atenolol	ng/L	1,600	2,200	1,400	1,500	1,800	2,200	1,100	3,700
Benzoylecgonine	ng/L	2,700	1,700	3,800	1,800	2,100	4,800	2,500	1,500
Caffeine	ng/L	160,000	91,000	110,000	110,000	120,000	120,000	65,000	200,000
Carbamazepine	ng/L	150	130	130	110	130	60	150	310
Cocaine	ng/L	1,100	1,000	1,400	690	480	430	950	150
Codeine	ng/L	160	190	200	170	220	370	130	140
DEET	ng/L	410	540	1,300	1,100	580	230	1,100	170
EDDP	ng/L	140	82	140	190	130	310	120	760
Ecgonine	ng/L	360	190	440	180	330	570	450	210
Ecgonine methyl ester	ng/L	830	500	1,200	560	660	1,000	740	280
Fluoxetine	ng/L	43	65	49	63	67	100	41	58
Gemfibrozil	ng/L	1,200	1,800	890	1,000	810	5,100	710	15,000
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	130	170	160	150	180	170	130	360
Ibuprofen	ng/L	28,000	26,000	25,000	25,000	40,000	56,000	17,000	34,000
MDA	ng/L	<100	<100	140	<100	<100	<100	<100	<100
MDMA	ng/L	400	290	1,100	180	420	<100	<100	<100
Meprobamate	ng/L	130	270	180	190	140	170	120	510
Methadone	ng/L	<50	<50	54	75	62	130	50	160
Methamphetamine	ng/L	5,100	1,900	8,400	5,500	3,800	6,800	5,400	8,500
Morphine	ng/L	760	530	1,000	850	820	850	630	2,200
Naproxen	ng/L	20,000	16,000	17,000	18,000	24,000	34,000	13,000	29,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	<50	<50	<50	<50	53	<50	<50	<50
Oxycodone	ng/L	110	200	160	160	160	160	130	300
Primidone	ng/L	160	370	320	340	160	1,100	290	320
Sucralose	ng/L	110,000	85,000	97,000	99,000	110,000	120,000	110,000	120,000
Sulfamethoxazole	ng/L	1,200	2,800	2,100	1,400	1,200	1,800	1,100	410
TCEP	ng/L	<200	<200	230	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,100	1,800	3,000	2,400	3,700	4,600	2,600	4,400
THC-OH	ng/L	1,300	<1000	<1000	<1000	1,000	1,300	<1000	1,200
Tramadol	ng/L	410	590	480	510	330	750	510	1,200
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	31	29	34	22	<20	21	32	<20
Trimethoprim	ng/L	600	960	730	690	440	410	480	200

Table S19. Trace organic compound (TOrC) concentrations for Sample Event 12.

Date		10/3/22	10/3/22	10/3/22	10/3/22	10/3/22	10/3/22	10/3/22	10/3/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	190,000	220,000	130,000	230,000	230,000	220,000	50,000	180,000
Acetylmorphine	ng/L	53	<50	96	53	64	<50	68	<50
Amphetamine	ng/L	710	470	890	700	810	1,000	470	770
Atenolol	ng/L	1,700	4,700	1,300	1,500	1,700	1,400	1,200	2,800
Benzoylecgonine	ng/L	2,700	1,400	3,200	1,700	1,300	1,400	2,600	680
Caffeine	ng/L	120,000	170,000	99,000	69,000	110,000	110,000	59,000	120,000
Carbamazepine	ng/L	100	130	110	150	44	66	110	81
Cocaine	ng/L	1,100	380	1,400	470	420	310	1,000	190
Codeine	ng/L	160	160	190	180	210	200	170	120
DEET	ng/L	400	240	1,400	430	230	200	2,100	380
EDDP	ng/L	150	100	140	200	150	150	140	240
Ecgonine	ng/L	410	170	390	270	190	240	460	160
Ecgonine methyl ester	ng/L	880	400	1,000	600	410	420	800	200
Fluoxetine	ng/L	60	110	69	65	96	100	65	130
Gemfibrozil	ng/L	1,100	1,100	980	1,300	1,400	2,200	750	1,400
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	180	190	180	200	200	420	170	290
Ibuprofen	ng/L	29,000	33,000	24,000	30,000	38,000	42,000	15,000	43,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	260	110	280	100	110	<100	190	<100
Meprobamate	ng/L	160	220	140	250	200	180	150	160
Methadone	ng/L	53	<50	62	87	76	77	57	120
Methamphetamine	ng/L	5,600	1,200	9,100	5,400	6,000	7,900	5,400	5,500
Morphine	ng/L	870	610	1,100	960	1,100	1,500	720	930
Naproxen	ng/L	20,000	24,000	16,000	22,000	21,000	20,000	13,000	27,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	67	<50	71	83	78	68	54	140
Oxycodone	ng/L	150	170	190	180	270	140	150	240
Primidone	ng/L	290	760	280	440	580	550	270	230
Sucralose	ng/L	110,000	150,000	81,000	87,000	130,000	130,000	82,000	100,000
Sulfamethoxazole	ng/L	1,500	1,400	1,600	1,800	1,200	4,800	1,200	2,500
TCEP	ng/L	<200	<200	270	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,200	3,100	2,700	2,500	4,000	8,300	2,300	4,500
THC-OH	ng/L	1,400	<1000	<1000	<1000	1,100	2,000	<1000	1,400
Tramadol	ng/L	400	490	460	580	340	520	470	1,300
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	21	31	40	<20	<20	24	30	30
Trimethoprim	ng/L	700	550	620	930	640	770	450	800

Table S20. Trace organic compound (TOrC) concentrations for Sample Event 13.

Date		10/17/22	10/17/22	10/17/22	10/17/22	10/17/22	10/17/22	10/17/22	10/17/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	170,000	410,000	120,000	150,000	300,000	210,000	55,000	370,000
Acetylmorphine	ng/L	<50	<50	120	68	100	<50	<50	<50
Amphetamine	ng/L	670	490	820	650	1,000	920	450	940
Atenolol	ng/L	1,500	1,800	1,300	1,300	1,900	1,900	1,100	1,300
Benzoylecgonine	ng/L	2,400	1,300	2,900	1,700	2,400	1,600	2,400	1,100
Caffeine	ng/L	110,000	200,000	100,000	96,000	84,000	64,000	60,000	130,000
Carbamazepine	ng/L	120	150	110	110	49	61	120	140
Cocaine	ng/L	900	640	1,500	680	350	330	960	180
Codeine	ng/L	180	260	190	170	140	120	150	240
DEET	ng/L	390	760	1,700	920	280	170	1,600	230
EDDP	ng/L	140	93	130	170	230	150	120	280
Ecgonine	ng/L	320	150	360	200	320	250	290	150
Ecgonine methyl ester	ng/L	740	430	960	630	810	530	750	220
Fluoxetine	ng/L	57	66	59	60	80	70	65	110
Gemfibrozil	ng/L	1,500	1,500	1,000	880	2,600	850	760	1,700
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	160	180	190	180	230	210	160	720
Ibuprofen	ng/L	31,000	89,000	26,000	26,000	40,000	32,000	18,000	39,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	110	<100	<100	<100	<100	300	<100	160
Meprobamate	ng/L	170	220	130	160	150	360	97	470
Methadone	ng/L	52	<50	55	73	120	77	52	98
Methamphetamine	ng/L	5,700	2,000	8,700	5,800	7,400	7,100	5,500	5,600
Morphine	ng/L	770	600	1,100	840	770	620	640	2,100
Naproxen	ng/L	20,000	47,000	16,000	17,000	29,000	22,000	13,000	47,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	58	57	71	63	51	<50	61	240
Oxycodone	ng/L	150	270	180	170	220	180	140	420
Primidone	ng/L	240	400	300	380	320	430	300	370
Sucralose	ng/L	110,000	67,000	71,000	74,000	79,000	57,000	220,000	65,000
Sulfamethoxazole	ng/L	1,300	2,100	1,300	1,500	780	3,200	1,000	6,200
TCEP	ng/L	<200	<380	290	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,100	1,700	2,900	2,400	4,000	2,400	2,400	4,200
THC-OH	ng/L	1,500	<1000	1,100	<1000	<1000	<1000	<1000	1,200
Tramadol	ng/L	430	550	450	520	740	340	480	660
Triclocarban	ng/L	<40	<77	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<38	<20	<20	<20	<20	<20	<20
Trimethoprim	ng/L	680	890	610	690	370	1,200	470	3,000

Table S21. Trace organic compound (TOrC) concentrations for Sample Event 14.

Date		10/31/22	10/31/22	10/31/22	10/31/22	10/31/22	10/31/22	10/31/22	10/31/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	230,000	160,000	140,000	140,000	230,000	230,000	59,000	160,000
Acetylmorphine	ng/L	<50	<50	78	59	<50	54	<50	<50
Amphetamine	ng/L	800	480	910	610	640	860	440	920
Atenolol	ng/L	1,700	2,000	1,300	1,200	1,300	1,300	1,000	<2000
Benzoylecgonine	ng/L	2,800	1,400	3,100	1,400	1,800	1,200	2,300	600
Caffeine	ng/L	130,000	100,000	100,000	87,000	84,000	71,000	61,000	110,000
Carbamazepine	ng/L	140	90	99	87	81	66	96	110
Cocaine	ng/L	920	650	1,500	610	630	220	1,100	130
Codeine	ng/L	170	160	190	120	150	320	160	150
DEET	ng/L	890	560	950	640	270	260	850	290
EDDP	ng/L	140	85	140	160	180	200	110	200
Ecgonine	ng/L	370	150	340	160	250	180	380	<100
Ecgonine methyl ester	ng/L	870	510	1,000	540	520	390	780	150
Fluoxetine	ng/L	95	81	65	72	64	87	77	76
Gemfibrozil	ng/L	1,300	1,400	1,000	930	800	1,400	800	980
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	160	180	200	180	190	240	160	320
Ibuprofen	ng/L	32,000	29,000	26,000	23,000	34,000	40,000	16,000	40,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	210	120	150	<100	<100	<100	<100	<100
Meprobamate	ng/L	99	200	150	170	140	180	140	500
Methadone	ng/L	55	<50	62	73	94	83	52	110
Methamphetamine	ng/L	6,000	1,900	8,600	4,600	4,200	6,200	5,500	6,000
Morphine	ng/L	750	590	1,100	750	670	680	740	1,200
Naproxen	ng/L	22,000	17,000	17,000	13,000	19,000	30,000	13,000	39,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	55	<50	59	58	51	<50	54	<50
Oxycodone	ng/L	150	190	190	170	160	170	140	220
Primidone	ng/L	190	450	300	360	210	320	260	1,100
Sucralose	ng/L	120,000	91,000	84,000	84,000	110,000	120,000	82,000	70,000
Sulfamethoxazole	ng/L	1,200	2,800	1,400	1,100	1,000	710	1,000	3,900
TCEP	ng/L	<200	220	270	310	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	1,100	<1000	<1000	<1000
THC-COOH	ng/L	4,100	1,700	2,500	1,900	3,600	4,900	2,200	3,800
THC-OH	ng/L	1,200	<1000	<1000	<1000	<1000	1,600	<1000	1,100
Tramadol	ng/L	360	520	460	480	470	540	500	1,400
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	29	35	46	25	22	22	36	21
Trimethoprim	ng/L	580	820	580	470	590	330	370	1,200

Table S22. Trace organic compound (TOrC) concentrations for Sample Event 15.

Date		11/14/22	11/14/22	11/14/22	11/14/22	11/14/22	11/14/22	11/14/22	11/14/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	180,000	160,000	150,000	310,000	130,000	250,000	65,000	210,000
Acetylmorphine	ng/L	54	<50	98	<50	53	<50	<50	<50
Amphetamine	ng/L	720	420	800	910	600	680	480	1,200
Atenolol	ng/L	1,500	1,900	1,200	2,000	1,700	1,300	1,000	2,700
Benzoylecgonine	ng/L	2,600	1,300	2,800	1,100	1,300	1,700	2,200	1,000
Caffeine	ng/L	120,000	99,000	96,000	91,000	73,000	82,000	56,000	160,000
Carbamazepine	ng/L	110	73	110	32	110	75	110	130
Cocaine	ng/L	870	640	1,400	370	580	380	900	250
Codeine	ng/L	160	140	190	500	150	180	160	230
DEET	ng/L	280	240	620	100	370	79	650	570
EDDP	ng/L	140	110	140	480	170	250	120	240
Ecgonine	ng/L	360	160	330	150	160	250	400	180
Ecgonine methyl ester	ng/L	860	450	960	260	480	620	780	330
Fluoxetine	ng/L	39	55	45	76	63	61	40	120
Gemfibrozil	ng/L	1,300	1,500	950	4,700	1,500	1,400	750	1,100
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	160	170	180	250	180	200	180	400
Ibuprofen	ng/L	24,000	22,000	24,000	40,000	18,000	29,000	15,000	34,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	180	<100	<100	170	<100	<100	<100	<100
Meprobamate	ng/L	170	180	170	320	180	160	140	250
Methadone	ng/L	<50	<50	58	100	72	79	55	93
Methamphetamine	ng/L	5,600	1,800	8,800	7,000	4,800	5,000	5,900	7,500
Morphine	ng/L	920	660	1,100	560	770	670	730	760
Naproxen	ng/L	18,000	13,000	15,000	24,000	12,000	18,000	10,000	39,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	64	<50	71	<50	50	190	54	320
Oxycodone	ng/L	130	160	180	180	150	170	160	250
Primidone	ng/L	210	290	270	500	300	230	260	210
Sucralose	ng/L	90,000	70,000	70,000	180,000	89,000	100,000	75,000	120,000
Sulfamethoxazole	ng/L	970	1,700	1,300	1,700	1,100	1,700	1,200	2,400
TCEP	ng/L	<200	<200	310	<200	220	<200	<200	480
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	1,800
THC-COOH	ng/L	4,100	1,600	2,600	4,700	2,000	4,000	2,300	3,700
THC-OH	ng/L	1,400	<1000	1,100	1,500	<1000	1,100	1,000	1,300
Tramadol	ng/L	500	510	460	1,000	440	380	440	940
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	23	22	<20	<20	<20	37
Trimethoprim	ng/L	600	610	530	760	440	1,100	390	760

Table S23. Trace organic compound (TOrC) concentrations for Sample Event 16.

Date		11/28/22	11/28/22	11/28/22	11/28/22	11/28/22	11/28/22	11/28/22	11/28/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	220,000	220,000	190,000	180,000	340,000	410,000	160,000	400,000
Acetylmorphine	ng/L	62	<50	81	85	<50	<50	54	50
Amphetamine	ng/L	680	480	760	600	620	740	510	1,500
Atenolol	ng/L	1,300	2,100	1,100	1,100	1,300	1,900	1,000	2,200
Benzoylecgonine	ng/L	2,500	1,100	2,700	1,200	1,000	2,600	2,100	1,200
Caffeine	ng/L	110,000	130,000	110,000	99,000	120,000	150,000	93,000	130,000
Carbamazepine	ng/L	140	110	160	110	83	67	83	75
Cocaine	ng/L	820	590	1,400	620	340	550	1,200	870
Codeine	ng/L	160	160	160	150	110	370	150	400
DEET	ng/L	160	370	600	310	97	320	460	170
EDDP	ng/L	140	100	140	170	300	330	120	390
Ecgonine	ng/L	370	150	360	160	210	330	350	220
Ecgonine methyl ester	ng/L	810	390	900	490	390	840	810	460
Fluoxetine	ng/L	46	73	67	61	69	110	53	77
Gemfibrozil	ng/L	1,000	1,600	1,000	1,000	1,500	6,200	740	610
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	160	190	180	200	200	270	170	220
Ibuprofen	ng/L	30,000	29,000	25,000	25,000	42,000	52,000	27,000	48,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	<100	<100	<100	<100	130	<100	<100	<100
Meprobamate	ng/L	160	220	160	160	220	220	74	300
Methadone	ng/L	52	<50	61	72	110	100	53	150
Methamphetamine	ng/L	6,500	1,700	8,400	5,500	3,800	4,900	6,400	11,000
Morphine	ng/L	800	600	1,000	800	410	2,800	740	8,200
Naproxen	ng/L	20,000	19,000	19,000	15,000	26,000	31,000	19,000	49,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	74	<50	65	55	69	<50	62	58
Oxycodone	ng/L	120	180	200	180	180	200	160	370
Primidone	ng/L	250	360	260	340	220	460	250	920
Sucralose	ng/L	100,000	84,000	79,000	90,000	130,000	140,000	120,000	140,000
Sulfamethoxazole	ng/L	800	1,400	1,100	880	1,000	890	870	650
TCEP	ng/L	<200	<200	<200	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	3,900	1,900	2,600	2,200	4,100	5,400	2,600	4,300
THC-OH	ng/L	1,500	<1000	1,200	<1000	1,200	1,900	1,000	1,400
Tramadol	ng/L	390	530	450	470	540	870	420	700
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	<20	<20	<20	<20	<20	<20
Trimethoprim	ng/L	570	690	540	490	610	590	420	320

Table S24. Trace organic compound (TOrC) concentrations for Sample Event 17.

Date		12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22	12/12/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	290,000	230,000	190,000	160,000	210,000	290,000	130,000	550,000
Acetylmorphine	ng/L	54	<50	86	68	61	50	<50	240
Amphetamine	ng/L	690	480	790	550	590	1,200	540	1,600
Atenolol	ng/L	1,700	2,100	1,200	1,300	870	1,900	1,100	1,000
Benzoylecgonine	ng/L	2,600	1,200	3,000	1,500	1,500	2,500	2,600	520
Caffeine	ng/L	130,000	130,000	120,000	97,000	66,000	110,000	82,000	270,000
Carbamazepine	ng/L	120	130	97	94	57	60	130	350
Cocaine	ng/L	970	640	1,500	610	410	450	1,300	140
Codeine	ng/L	160	160	180	140	110	300	140	500
DEET	ng/L	360	290	620	300	110	55	410	86
EDDP	ng/L	160	87	150	180	150	320	130	210
Ecgonine	ng/L	320	150	370	180	230	340	360	100
Ecgonine methyl ester	ng/L	880	480	1,100	590	630	940	940	190
Fluoxetine	ng/L	54	82	70	70	68	97	52	98
Gemfibrozil	ng/L	1,300	1,800	1,100	920	570	2,300	900	2,300
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	140	190	170	160	200	310	160	520
Ibuprofen	ng/L	38,000	29,000	30,000	27,000	29,000	40,000	26,000	62,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	120	<100	<100	<100	<100	<100	<100	<100
Meprobamate	ng/L	150	210	170	210	400	150	100	1,000
Methadone	ng/L	54	<50	60	72	68	120	56	120
Methamphetamine	ng/L	6,300	1,700	8,900	4,800	4,700	8,300	6,500	7,100
Morphine	ng/L	830	630	1,200	840	1,000	2,200	740	3,800
Naproxen	ng/L	24,000	19,000	22,000	16,000	18,000	30,000	17,000	33,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	61	<50	67	61	60	58	66	<50
Oxycodone	ng/L	140	180	190	170	160	260	150	190
Primidone	ng/L	250	420	260	380	360	250	280	340
Sucralose	ng/L	110,000	76,000	66,000	79,000	60,000	130,000	130,000	120,000
Sulfamethoxazole	ng/L	760	2,200	1,300	1,100	970	2,700	1,000	2,200
TCEP	ng/L	<200	<200	<200	270	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,100	1,700	2,500	2,000	2,300	5,400	2,600	5,000
THC-OH	ng/L	1,500	<1000	1,100	<1000	<1000	1,600	<1000	1,400
Tramadol	ng/L	460	590	490	490	400	550	500	740
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	35	26	24	<20	28	<20	21
Trimethoprim	ng/L	500	880	610	540	450	970	460	610

Table S25. Trace organic compound (TOrC) concentrations for Sample Event 18.

Date		12/26/22	12/26/22	12/26/22	12/26/22	12/26/22	12/26/22	12/26/22	12/27/22
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	430,000	220,000	190,000	180,000	170,000	400,000	120,000	230,000
Acetylmorphine	ng/L	<50	<50	<50	<50	<50	52	<50	130
Amphetamine	ng/L	710	470	850	650	550	1,300	660	1,100
Atenolol	ng/L	1,400	1,700	1,200	1,300	1,200	1,200	1,100	<2000
Benzoylecgonine	ng/L	2,700	1,400	3,500	1,900	2,300	5,400	3,500	4,700
Caffeine	ng/L	200,000	120,000	110,000	91,000	49,000	93,000	80,000	160,000
Carbamazepine	ng/L	70	94	110	170	54	150	200	99
Cocaine	ng/L	800	600	1,400	670	460	1,000	1,200	320
Codeine	ng/L	250	190	230	200	150	320	200	240
DEET	ng/L	140	180	330	270	100	64	340	3,700
EDDP	ng/L	140	110	150	190	160	210	140	260
Ecgonine	ng/L	430	190	420	230	320	830	570	680
Ecgonine methyl ester	ng/L	820	520	1,200	700	750	1,800	1,200	910
Fluoxetine	ng/L	39	57	51	67	63	87	45	100
Gemfibrozil	ng/L	1,400	1,500	920	1,000	460	1,000	840	2,200
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	160	180	190	200	160	280	200	310
Ibuprofen	ng/L	47,000	27,000	29,000	25,000	27,000	42,000	23,000	45,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	<100	<100	<100	<100	<100	<100	<100	170
Meprobamate	ng/L	130	150	160	180	180	150	140	730
Methadone	ng/L	50	<50	64	77	74	95	56	82
Methamphetamine	ng/L	6,600	2,000	9,200	5,600	5,000	11,000	7,200	8,200
Morphine	ng/L	860	710	1,200	1,100	890	2,400	830	4,400
Naproxen	ng/L	26,000	19,000	18,000	15,000	18,000	24,000	19,000	40,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	86	<50	88	81	<50	270	71	83
Oxycodone	ng/L	130	200	210	180	230	200	190	320
Primidone	ng/L	310	350	290	400	300	430	290	3,700
Sucralose	ng/L	75,000	67,000	78,000	83,000	86,000	91,000	78,000	63,000
Sulfamethoxazole	ng/L	1,000	1,300	1,300	900	2,000	3,000	1,400	1,700
TCEP	ng/L	<200	<200	<200	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,100	1,900	2,700	2,300	2,600	4,200	3,100	4,400
THC-OH	ng/L	1,300	<1000	1,000	<1000	<1000	1,100	<1000	1,000
Tramadol	ng/L	390	580	470	540	570	720	520	1,200
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	<20	22	<20	<20	<20	<20
Trimethoprim	ng/L	580	550	580	590	940	820	510	450

Table S26. Trace organic compound (TOrC) concentrations for Sample Event 19.

Date		1/9/23	1/9/23	1/9/23	1/9/23	1/9/23	1/9/23	1/9/23	1/9/23
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	230,000	170,000	150,000	140,000	220,000	310,000	94,000	380,000
Acetylmorphine	ng/L	63	<50	120	66	63	120	75	52
Amphetamine	ng/L	790	450	730	590	620	860	550	800
Atenolol	ng/L	1,400	2,300	1,400	1,300	1,400	2,400	1,400	1,000
Benzoylecgonine	ng/L	2,900	1,400	3,100	1,400	2,400	4,100	2,800	810
Caffeine	ng/L	130,000	110,000	100,000	110,000	86,000	87,000	74,000	140,000
Carbamazepine	ng/L	84	120	110	95	60	64	93	230
Cocaine	ng/L	1,200	1,300	1,600	690	610	830	1,400	320
Codeine	ng/L	140	150	190	150	130	230	160	240
DEET	ng/L	170	220	360	330	80	72	410	79
EDDP	ng/L	190	92	150	170	230	340	130	220
Ecgonine	ng/L	390	150	330	140	270	820	450	110
Ecgonine methyl ester	ng/L	990	510	1,100	560	820	2,400	1,100	310
Fluoxetine	ng/L	57	78	70	87	89	330	52	110
Gemfibrozil	ng/L	1,500	1,800	1,000	1,000	900	4,400	1,000	2,500
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	150	170	170	160	150	350	170	410
Ibuprofen	ng/L	33,000	25,000	23,000	26,000	33,000	47,000	21,000	70,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	120	<100	<100	<100	<100	<100	<100	<100
Meprobamate	ng/L	97	180	170	190	150	180	130	220
Methadone	ng/L	93	<50	59	70	130	150	53	110
Methamphetamine	ng/L	7,000	2,100	8,400	4,900	5,200	5,900	7,100	5,800
Morphine	ng/L	780	570	1,000	740	800	1,200	730	4,000
Naproxen	ng/L	22,000	16,000	14,000	17,000	20,000	26,000	14,000	20,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	57	<50	74	58	<50	60	59	60
Oxycodone	ng/L	120	190	180	160	150	240	140	300
Primidone	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Sucralose	ng/L	120,000	70,000	75,000	71,000	110,000	95,000	78,000	67,000
Sulfamethoxazole	ng/L	870	1,300	1,200	780	2,100	4,000	1,300	1,600
TCEP	ng/L	<200	<200	<200	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,300	1,800	2,400	2,100	3,500	5,300	2,800	8,800
THC-OH	ng/L	1,500	<1000	1,100	<1000	1,000	1,700	1,100	1,800
Tramadol	ng/L	420	550	410	510	540	790	470	1,300
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	82	<20	<20	<20	<20	27	<20	25
Trimethoprim	ng/L	700	640	580	470	920	1,800	510	1,000

Table S27. Trace organic compound (TOrC) concentrations for Sample Event 20.

Date		1/23/23	1/23/23	1/23/23	1/23/23	1/23/23	1/23/23	1/23/23	1/23/23
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	220,000	310,000	220,000	270,000	170,000	330,000	110,000	390,000
Acetylmorphine	ng/L	74	<50	100	<50	73	<50	54	<50
Amphetamine	ng/L	690	520	760	700	590	1,000	540	960
Atenolol	ng/L	1,500	3,500	1,200	2,000	1,200	1,800	1,100	1,600
Benzoylecgonine	ng/L	2,700	1,500	3,200	2,700	1,500	3,600	2,800	340
Caffeine	ng/L	140,000	150,000	120,000	99,000	100,000	140,000	91,000	170,000
Carbamazepine	ng/L	140	51	97	64	130	27	100	190
Cocaine	ng/L	1,000	920	1,600	720	770	1,200	1,400	140
Codeine	ng/L	180	140	160	89	150	260	170	320
DEET	ng/L	230	88	500	64	210	68	380	79
EDDP	ng/L	180	120	150	240	200	380	120	180
Ecgonine	ng/L	340	210	310	270	150	450	420	<100
Ecgonine methyl ester	ng/L	970	520	1,200	990	580	1,200	1,000	120
Fluoxetine	ng/L	64	96	74	90	74	120	52	120
Gemfibrozil	ng/L	1,500	1,700	1,100	3,800	1,100	1,800	1,000	1,200
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	200	200	180	160	170	390	190	320
Ibuprofen	ng/L	33,000	36,000	29,000	37,000	25,000	44,000	23,000	54,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	220	<100	100	<100	<100	<100	<100	<100
Meprobamate	ng/L	140	250	180	330	210	180	130	360
Methadone	ng/L	58	<50	58	140	75	85	<50	84
Methamphetamine	ng/L	7,400	1,800	9,600	5,600	5,100	9,300	7,400	8,100
Morphine	ng/L	840	400	1,100	540	850	1,100	780	1,300
Naproxen	ng/L	19,000	24,000	19,000	31,000	13,000	33,000	15,000	40,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	76	<50	71	69	72	<50	59	<50
Oxycodone	ng/L	130	170	170	120	170	140	140	280
Primidone	ng/L	220	440	270	380	390	180	300	120
Sucralose	ng/L	120,000	150,000	77,000	150,000	150,000	130,000	110,000	64,000
Sulfamethoxazole	ng/L	1,100	1,300	1,400	1,100	720	2,000	1,200	1,300
TCEP	ng/L	<200	480	310	<200	<200	<200	<200	<200
THC	ng/L	1,200	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,300	3,000	2,600	2,900	2,000	5,300	2,700	3,300
THC-OH	ng/L	1,600	<1000	1,100	<1000	<1000	1,500	<1000	<1000
Tramadol	ng/L	690	620	440	700	420	440	450	1,000
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	35	34	47	27	38	40	65	43
Trimethoprim	ng/L	740	930	760	760	500	960	540	830

Table S28. Trace organic compound (TOrC) concentrations for Sample Event 21.

Date		2/6/23	2/6/23	2/6/23	2/6/23	2/6/23	2/6/23	2/6/23	2/6/23
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	200,000	240,000	150,000	130,000	180,000	360,000	75,000	310,000
Acetylmorphine	ng/L	50	<50	92	56	<50	<50	56	77
Amphetamine	ng/L	700	460	750	550	820	870	510	1,300
Atenolol	ng/L	1,400	3,400	1,300	1,200	1,500	1,100	1,300	3,400
Benzoylecgonine	ng/L	2,600	1,500	3,300	1,400	2,200	1,300	2,700	610
Caffeine	ng/L	110,000	150,000	99,000	73,000	76,000	91,000	59,000	98,000
Carbamazepine	ng/L	150	78	150	85	67	140	110	200
Cocaine	ng/L	1,100	670	1,900	820	580	320	1,400	190
Codeine	ng/L	170	200	160	140	160	210	160	390
DEET	ng/L	180	110	360	310	110	96	440	290
EDDP	ng/L	150	110	140	180	150	260	120	310
Ecgonine	ng/L	310	170	330	160	310	200	450	<100
Ecgonine methyl ester	ng/L	920	510	1,200	600	980	430	1,100	190
Fluoxetine	ng/L	63	81	59	66	61	83	49	82
Gemfibrozil	ng/L	1,400	1,100	850	810	1,000	2,100	760	3,000
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	140	200	180	180	170	340	160	260
Ibuprofen	ng/L	27,000	29,000	22,000	19,000	29,000	41,000	20,000	33,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	110	<100	<100	<100	<100	<100	<100	<100
Meprobamate	ng/L	130	210	150	180	150	80	160	260
Methadone	ng/L	<50	<50	60	74	62	100	50	140
Methamphetamine	ng/L	6,200	1,500	9,100	5,100	5,800	6,100	6,600	9,300
Morphine	ng/L	740	500	1,000	700	1,200	960	700	650
Naproxen	ng/L	18,000	20,000	15,000	11,000	18,000	30,000	12,000	44,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	50	<50
Norfentanyl	ng/L	95	<50	80	68	<50	110	57	59
Oxycodone	ng/L	130	140	180	160	210	190	160	220
Primidone	ng/L	230	420	290	320	240	240	260	260
Sucralose	ng/L	100,000	130,000	79,000	100,000	81,000	130,000	130,000	110,000
Sulfamethoxazole	ng/L	940	2,100	1,200	870	1,400	1,000	1,300	2,700
TCEP	ng/L	<200	<200	<200	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,500	3,000	2,600	2,000	3,000	5,100	3,000	5,800
THC-OH	ng/L	1,500	1,100	1,100	<1000	<1000	1,300	1,200	2,000
Tramadol	ng/L	360	670	440	460	740	660	440	900
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	<20	<20	<20	<20	<20	32
Trimethoprim	ng/L	520	1,000	580	470	700	620	410	640

Table S29. Trace organic compound (TOrC) concentrations for Sample Event 22.

| Date | | 2/13/23 | 2/13/23 | 2/21/23 | 2/21/23 | 2/21/23 | 2/21/23 | 2/21/23 | 2/21/23 |
| Location | | Facility 1 | Facility 2 | Facility 3 | Facility 4 | Facility 4A | Facility 4B | Facility 5 | Facility 6 |
Parameter	Units								
Acetaminophen	ng/L	200,000	250,000	180,000	170,000	280,000	360,000	97,000	300,000
Acetylmorphine	ng/L	<50	<50	90	65	75	<50	51	78
Amphetamine	ng/L	800	490	820	680	740	1,000	510	1,100
Atenolol	ng/L	1,600	4,600	1,200	1,600	2,400	3,700	1,200	2,300
Benzoylecgonine	ng/L	3,900	1,600	2,800	1,600	2,600	2,300	2,400	940
Caffeine	ng/L	120,000	160,000	110,000	100,000	94,000	110,000	76,000	910,000
Carbamazepine	ng/L	230	55	110	110	71	42	86	67
Cocaine	ng/L	1,300	500	1,800	820	600	660	1,300	790
Codeine	ng/L	210	150	160	160	140	160	150	280
DEET	ng/L	180	110	470	290	55	91	350	310
EDDP	ng/L	140	150	150	210	140	190	130	500
Ecgonine	ng/L	570	230	290	200	310	370	360	190
Ecgonine methyl ester	ng/L	1,400	530	1,000	630	870	720	870	220
Fluoxetine	ng/L	67	130	58	69	100	88	65	110
Gemfibrozil	ng/L	1,100	2,200	990	1,000	1,700	4,500	790	6,100
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	170	200	200	200	250	310	190	340
Ibuprofen	ng/L	30,000	36,000	24,000	24,000	43,000	51,000	25,000	39,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	160	<100	<100	<100	<100	<100	<100	<100
Meprobamate	ng/L	120	240	160	160	250	180	100	87
Methadone	ng/L	52	<50	60	88	78	88	52	120
Methamphetamine	ng/L	6,500	1,700	9,100	6,200	4,800	6,600	6,700	9,000
Morphine	ng/L	900	710	1,100	900	1,100	1,000	680	1,900
Naproxen	ng/L	21,000	22,000	17,000	15,000	24,000	36,000	16,000	24,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	90	<50	88	70	64	110	72	160
Oxycodone	ng/L	160	210	200	190	180	210	160	200
Primidone	ng/L	260	880	280	340	250	280	280	210
Sucralose	ng/L	130,000	180,000	110,000	110,000	120,000	140,000	72,000	78,000
Sulfamethoxazole	ng/L	1,200	2,100	1,200	930	1,800	3,000	1,200	3,200
TCEP	ng/L	<200	<200	<200	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,500	3,200	2,800	2,600	4,700	5,600	3,000	11,000
THC-OH	ng/L	1,600	1,100	1,200	<1000	1,300	1,700	1,100	3,400
Tramadol	ng/L	370	700	480	530	480	360	490	1,200
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	<20	<20	<20	<20	<20	24
Trimethoprim	ng/L	670	900	640	600	1,000	2,000	520	1,300

Table S30. Trace organic compound (TOrC) concentrations for Sample Event 23.

Date		3/6/23	3/6/23	3/6/23	3/6/23	3/6/23	3/6/23	3/6/23	3/6/23
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	210,000	190,000	160,000	150,000	260,000	320,000	130,000	260,000
Acetylmorphine	ng/L	54	<50	89	80	56	<50	52	<50
Amphetamine	ng/L	710	480	820	630	650	840	500	1,200
Atenolol	ng/L	1,800	2,000	1,200	1,200	1,600	1,500	1,200	2,600
Benzoylecgonine	ng/L	3,400	1,800	3,600	2,100	2,700	2,500	3,200	3,200
Caffeine	ng/L	130,000	98,000	100,000	96,000	96,000	120,000	88,000	130,000
Carbamazepine	ng/L	140	98	340	100	100	280	110	45
Cocaine	ng/L	1,500	820	1,800	970	580	440	1,600	600
Codeine	ng/L	170	170	190	150	180	370	150	490
DEET	ng/L	450	170	380	500	100	83	480	190
EDDP	ng/L	170	110	160	190	170	200	130	480
Ecgonine	ng/L	400	180	390	230	450	340	420	440
Ecgonine methyl ester	ng/L	1,200	740	1,400	860	730	800	1,100	760
Fluoxetine	ng/L	64	71	72	64	77	150	96	95
Gemfibrozil	ng/L	1,400	1,900	950	1,000	610	820	860	250
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	180	230	200	200	220	350	180	170
Ibuprofen	ng/L	31,000	28,000	26,000	23,000	36,000	39,000	20,000	44,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	170	<100	120	<100	<100	<100	<100	<100
Meprobamate	ng/L	180	220	150	150	280	130	100	570
Methadone	ng/L	56	<50	63	80	79	84	50	110
Methamphetamine	ng/L	6,400	2,300	9,600	6,200	4,100	7,000	6,900	9,200
Morphine	ng/L	580	690	1,000	820	1,000	650	640	1,200
Naproxen	ng/L	20,000	15,000	15,000	13,000	26,000	24,000	15,000	36,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	84	50	100	81	59	130	84	52
Oxycodone	ng/L	140	200	180	180	140	250	160	200
Primidone	ng/L	220	510	310	310	250	1,500	230	640
Sucralose	ng/L	130,000	88,000	78,000	88,000	110,000	130,000	99,000	65,000
Sulfamethoxazole	ng/L	1,100	1,700	1,400	920	3,900	2,200	850	1,600
TCEP	ng/L	<200	<200	270	<200	<200	<200	230	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	1,000
THC-COOH	ng/L	4,700	2,000	2,800	2,400	5,200	5,600	2,900	4,800
THC-OH	ng/L	1,800	<1000	1,200	<1000	1,500	1,800	1,300	1,600
Tramadol	ng/L	390	540	470	510	530	650	600	1,800
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	24	<20	<20	<20	<20	21
Trimethoprim	ng/L	520	840	530	430	1,200	580	390	490

Table S31. Trace organic compound (TOrC) concentrations for Sample Event 24.

Date		3/20/23	3/20/23	3/20/23	3/20/23	3/20/23	3/20/23	3/20/23	3/20/23
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	210,000	200,000	200,000	170,000	300,000	380,000	82,000	220,000
Acetylmorphine	ng/L	<50	52	160	70	70	<50	<50	67
Amphetamine	ng/L	720	470	850	640	600	910	470	1,100
Atenolol	ng/L	1,700	2,300	1,400	1,300	1,800	1,700	1,200	3,000
Benzoylecgonine	ng/L	4,000	1,900	4,000	2,100	3,000	2,800	3,000	1,800
Caffeine	ng/L	120,000	92,000	180,000	84,000	100,000	130,000	75,000	130,000
Carbamazepine	ng/L	69	170	140	100	78	96	220	130
Cocaine	ng/L	1,700	950	2,000	950	750	720	1,500	250
Codeine	ng/L	150	170	200	170	120	180	140	210
DEET	ng/L	170	300	450	410	81	120	640	83
EDDP	ng/L	170	130	150	180	200	150	190	220
Ecgonine	ng/L	490	200	450	220	470	450	500	260
Ecgonine methyl ester	ng/L	1,400	740	1,500	860	970	1,000	1,100	270
Fluoxetine	ng/L	58	70	63	68	72	97	50	85
Gemfibrozil	ng/L	1,400	1,800	1,100	880	1,700	2,200	850	2,400
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	170	200	190	200	210	310	190	200
Ibuprofen	ng/L	31,000	27,000	30,000	25,000	44,000	48,000	20,000	61,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	150	<100	<100	<100	<100	<100	<100	230
Meprobamate	ng/L	180	240	150	160	280	350	130	350
Methadone	ng/L	60	<50	64	76	73	81	62	74
Methamphetamine	ng/L	6,300	2,200	9,700	5,500	4,700	6,100	6,400	7,800
Morphine	ng/L	710	830	1,200	830	730	810	720	2,200
Naproxen	ng/L	21,000	19,000	18,000	15,000	26,000	25,000	14,000	34,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	110	<50	100	83	74	<50	76	51
Oxycodone	ng/L	150	190	190	170	210	310	170	340
Primidone	ng/L	290	470	370	370	470	760	300	340
Sucralose	ng/L	100,000	6,700	99,000	85,000	120,000	120,000	110,000	140,000
Sulfamethoxazole	ng/L	1,100	1,600	1,300	1,000	1,200	1,200	1,100	3,600
TCEP	ng/L	<200	<200	340	<200	360	560	230	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,500	1,800	3,000	2,300	5,000	4,900	2,800	6,900
THC-OH	ng/L	1,500	<1000	1,200	<1000	1,200	1,600	<1000	2,300
Tramadol	ng/L	390	640	490	480	440	660	480	830
Triclocarban	ng/L	<4000	<4000	<4000	<4000	<4000	<4000	<4000	<4000
Triclosan	ng/L	22	21	32	22	92	24	32	<20
Trimethoprim	ng/L	610	810	570	540	780	450	440	2,100

Table S32. Trace organic compound (TOrC) concentrations for Sample Event 25.

Date		4/3/23	4/3/23	4/3/23	4/3/23	4/3/23	4/3/23	4/3/23	4/3/23
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	210,000	190,000	170,000	170,000	260,000	240,000	110,000	400,000
Acetylmorphine	ng/L	65	56	77	78	<50	<50	56	170
Amphetamine	ng/L	710	450	870	660	540	930	590	930
Atenolol	ng/L	1,500	2,300	1,400	1,300	2,200	1,900	1,300	3,000
Benzoylecgonine	ng/L	3,100	1,600	4,200	2,100	1,900	1,800	3,300	420
Caffeine	ng/L	120,000	120,000	100,000	100,000	110,000	120,000	83,000	220,000
Carbamazepine	ng/L	74	140	200	82	59	35	96	36
Cocaine	ng/L	1,300	970	2,000	1,200	510	510	1,800	270
Codeine	ng/L	210	150	190	140	180	130	150	170
DEET	ng/L	250	230	400	360	130	87	1,000	95
EDDP	ng/L	160	93	150	180	140	380	120	270
Ecgonine	ng/L	380	200	490	230	260	260	420	100
Ecgonine methyl ester	ng/L	1,100	600	1,500	870	630	380	1,100	190
Fluoxetine	ng/L	66	76	72	76	91	120	53	110
Gemfibrozil	ng/L	1,200	1,600	1,000	1,000	1,500	8,700	830	1,400
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	150	160	180	170	200	190	170	270
Ibuprofen	ng/L	34,000	27,000	27,000	27,000	40,000	56,000	24,000	75,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	220	<100	120	<100	<100	<100	<100	150
Meprobamate	ng/L	180	200	180	230	210	84	140	480
Methadone	ng/L	59	<50	59	82	84	150	51	100
Methamphetamine	ng/L	6,500	1,900	9,900	5,900	4,400	7,300	7,100	6,300
Morphine	ng/L	670	600	1,100	820	2,700	640	710	1,400
Naproxen	ng/L	22,000	17,000	17,000	15,000	21,000	23,000	18,000	28,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	88	<50	98	72	76	50	71	50
Oxycodone	ng/L	140	190	200	200	180	210	170	280
Primidone	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Sucralose	ng/L	130,000	100,000	89,000	110,000	190,000	160,000	130,000	110,000
Sulfamethoxazole	ng/L	960	1,700	1,400	980	1,200	1,000	1,100	500
TCEP	ng/L	<200	<200	<200	<200	<200	<200	<200	<200
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,500	1,700	3,100	2,300	4,300	5,000	2,600	6,100
THC-OH	ng/L	1,600	<1000	1,300	<1000	1,300	1,800	1,100	1,700
Tramadol	ng/L	460	770	500	520	560	580	480	630
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	29	32	<20	21	<20	25	30
Trimethoprim	ng/L	3,300	820	660	680	750	370	530	250

Table S33. Trace organic compound (TOrC) concentrations for Sample Event 26.

Date		4/17/23	4/17/23	4/17/23	4/17/23	4/17/23	4/17/23	4/17/23	4/17/23
Location		Facility 1	Facility 2	Facility 3	Facility 4	Facility 4A	Facility 4B	Facility 5	Facility 6
Parameter	Units								
Acetaminophen	ng/L	190,000	180,000	170,000	160,000	220,000	300,000	100,000	270,000
Acetylmorphine	ng/L	58	<50	93	68	<50	<50	<50	59
Amphetamine	ng/L	660	440	1,000	670	680	1,200	600	1,200
Atenolol	ng/L	1,500	2,000	930	1,300	1,100	1,100	1,000	1,600
Benzoylecgonine	ng/L	2,800	1,500	4,300	1,900	2,700	1,700	3,200	2,900
Caffeine	ng/L	170,000	130,000	85,000	110,000	100,000	100,000	87,000	140,000
Carbamazepine	ng/L	84	98	91	72	88	33	110	87
Cocaine	ng/L	2,400	900	2,200	1,000	730	460	1,400	360
Codeine	ng/L	180	130	230	170	190	120	160	190
DEET	ng/L	220	370	240	380	100	110	570	170
EDDP	ng/L	140	98	130	180	120	280	120	560
Ecgonine	ng/L	510	260	690	310	590	370	620	580
Ecgonine methyl ester	ng/L	1,100	670	1,700	810	1,300	560	1,200	1,300
Fluoxetine	ng/L	57	88	63	84	73	93	51	99
Gemfibrozil	ng/L	1,300	1,900	1,200	1,300	1,000	1,600	1,300	7,500
Heroin	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
Hydrocodone	ng/L	190	210	230	220	200	320	200	480
Ibuprofen	ng/L	31,000	30,000	36,000	28,000	39,000	51,000	20,000	55,000
MDA	ng/L	<100	<100	<100	<100	<100	<100	<100	<100
MDMA	ng/L	180	<100	<100	<100	<100	<100	160	140
Meprobamate	ng/L	120	270	130	160	84	180	100	300
Methadone	ng/L	54	<50	61	83	72	120	62	80
Methamphetamine	ng/L	5,900	1,800	12,000	5,500	5,500	9,400	7,100	9,300
Morphine	ng/L	680	560	1,200	810	980	700	710	2,700
Naproxen	ng/L	21,000	18,000	19,000	18,000	21,000	28,000	18,000	31,000
Norcocaine	ng/L	<50	<50	<50	<50	<50	<50	<50	<50
Norfentanyl	ng/L	76	52	120	81	83	110	78	57
Oxycodone	ng/L	120	160	180	180	140	150	160	160
Primidone	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Sucralose	ng/L	120,000	100,000	70,000	110,000	92,000	140,000	73,000	70,000
Sulfamethoxazole	ng/L	740	1,600	1,500	1,100	570	1,200	1,300	2,200
TCEP	ng/L	<200	<200	<200	<200	<200	<200	<200	750
THC	ng/L	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
THC-COOH	ng/L	4,200	1,800	2,400	2,700	4,800	5,000	3,000	5,900
THC-OH	ng/L	1,200	<1000	<1000	<1000	1,200	1,400	<1000	1,800
Tramadol	ng/L	380	600	530	570	330	1,000	510	1,000
Triclocarban	ng/L	<40	<40	<40	<40	<40	<40	<40	<40
Triclosan	ng/L	<20	<20	<20	<20	<20	<20	<20	<20
Trimethoprim	ng/L	400	640	560	490	310	480	380	480

Table S34. Concentration comparison between primary effluent samples collected on two days in 2010 (Gerrity et al., 2011) vs. a grab primary effluent sample from 2022 (3/7/22) and the average of all grab influent samples collected in 2022-2023. All samples were collected from the sewershed 1 wastewater treatment plant. Gray font indicates target compounds that were not monitored in 2010 or compounds for which all samples contained concentrations below the indicated method reporting limit (MRL).

Location		Facility 1					
Date		2/7/10	3/7/10	2010	3/7/22	2022-2023	
Parameter	Units	PE Avg.	PE Avg.	Overall Avg.	PE Grab	Inf. Avg.	St Dev.
Acetaminophen	ng/L	--	--	--	33,000	204,615	56,937
Acetylmorphine	ng/L	25	25	25	91	59	8
Amphetamine	ng/L	299	319	309	980	704	62
Atenolol	ng/L	1,829	1,802	1,815	780	1,454	190
Benzoylecgonine	ng/L	1,870	1,275	1,573	2,700	2,735	446
Caffeine	ng/L	--	--	--	14,000	125,692	23,445
Carbamazepine	ng/L	98	98	98	96	122	41
Cocaine	ng/L	776	762	769	1,200	1,087	430
Codeine	ng/L	--	--	--	190	173	26
DEET	ng/L	170	183	177	110	403	253
EDDP	ng/L	--	--	--	120	158	26
Ecgonine	ng/L	705	684	695	340	350	84
Ecgonine methyl ester	ng/L	422	348	385	950	869	225
Fluoxetine	ng/L	--	--	--	30	54	13
Gemfibrozil	ng/L	--	--	--	960	1,225	212
Heroin	ng/L	25	25	25	100	100	--
Hydrocodone	ng/L	--	--	--	210	149	24
Ibuprofen	ng/L	--	--	--	5,100	30,885	4,607
MDA	ng/L	45	46	45	100	100	--
MDMA	ng/L	276	249	262	150	176	64
Meprobamate	ng/L	815	776	795	130	143	28
Methadone	ng/L	--	--	--	50	57	9
Methamphetamine	ng/L	2,110	2,386	2,248	8,400	6,223	867
Morphine	ng/L	600	694	647	1,200	825	106
Naproxen	ng/L	--	--	--	3,500	20,615	2,316
Norcocaine	ng/L	17	18	18	50	50	--
Norfentanyl	ng/L	--	--	--	50	76	16
Oxycodone	ng/L	--	--	--	150	128	17
Primidone	ng/L	175	107	141	130	218	48
Sucralose	ng/L	--	--	--	51,000	112,615	26,692
Sulfamethoxazole	ng/L	911	1,066	988	900	1,010	225
TCEP	ng/L	297	381	339	200	290	57
THC	ng/L	100	100	100	1,000	1,200	--
THC-COOH	ng/L	--	--	--	2,400	4,131	351
THC-OH	ng/L	100	100	100	1,000	1,456	204
Tramadol	ng/L	--	--	--	520	433	79
Triclocarban	ng/L	--	--	--	40	40	--
Triclosan	ng/L	--	--	--	20	40	20
Trimethoprim	ng/L	648	672	660	420	672	547

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