

George DeRuyter Dairy

Station Location	Sample Number	Analysis Type	Analyte	Result	Qualifier	Units
SO-03	10154233		Ammonia Solid	1470		mg/Kg
			NO3N/Total Solid	32.8		mg/Kg
			Total Nitrogen/Solid	9210		mg/Kg
		<i>Pesticides</i>	2,3,4,5-Tetrachlorophenol	45	U	ug/Kg
			2,3,4,6-Tetrachlorophenol	45	U	ug/Kg
			2,4,5-T	45	U	ug/Kg
			2,4,5-Trichlorophenol	45	U	ug/Kg
			2,4,6-Trichlorophenol	45	UJ	ug/Kg
			2,4-D	45	U	ug/Kg
			2,4-DB	45	U	ug/Kg
			3,5-Dichlorobenzoic acid	45	U	ug/Kg
			4-Nitrophenol	31	J	ug/Kg
			Acifluorfen	45	U	ug/Kg
			Alachlor	71	U	ug/Kg
			Atrazine	71	U	ug/Kg
			Azinphos-methyl	71	UJ	ug/Kg
			Bentazon	45	U	ug/Kg
			Benzonitrile, 2,6-dichloro-	71	U	ug/Kg
			Bromoxynil	45	U	ug/Kg
			Chloramben	45	UJ	ug/Kg
			Chlorpyrifos, Ethyl	11	J	ug/Kg
			Clopyralid	45	U	ug/Kg
			DACTHAL-DCPA	9	J	ug/Kg
			Diazinon	71	U	ug/Kg
			Dicamba	4.1	J	ug/Kg
			Dichlorprop	45	U	ug/Kg
			Diclofop, Methyl	45	UJ	ug/Kg
			Dinoseb	45	UJ	ug/Kg
			Diuron	71	UJ	ug/Kg
			Endosulfan I	71	U	ug/Kg
			Endosulfan II	71	U	ug/Kg
			Endosulfan Sulfate	71	U	ug/Kg
			Fenhexamid	71	UJ	ug/Kg
			Fenpropathrin	71	U	ug/Kg
			Imidan	71	UJ	ug/Kg
			Ioxynil	45	U	ug/Kg
			Kresoxim-methyl	71	U	ug/Kg
			MCPA	45	U	ug/Kg
			MCPP	45	U	ug/Kg
			Metribuzin	71	UJ	ug/Kg
			Myclobutanil	71	U	ug/Kg
			Oxyfluorfen	71	U	ug/Kg
			Pendimethalin	71	U	ug/Kg
			Pentachlorophenol	0.9	J	ug/Kg
			Picloram	45	U	ug/Kg
			Propargite	71	U	ug/Kg
			Silvex	45	U	ug/Kg
			Simazine	71	U	ug/Kg
			SURFLAN	140	UJ	ug/Kg
			Terbacil	71	U	ug/Kg
			Trichlorpyr	45	U	ug/Kg
			Triflumizole	71	U	ug/Kg
			Trifluralin	71	U	ug/Kg

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<i>Steroids / Hormones</i>	11-Keto Testosterone	0.1	U	ug/Kg
	17a-Hydroxyprogesterone	1.94		ug/Kg
	17alpha-trenbolone	0.1	U	ug/Kg
	17beta-estradiol	12.4		ug/Kg
	17beta-trenbolone	0.1	U	ug/Kg
	4-Androstenedione	33.2		ug/Kg
	a-Estradiol	34.7		ug/Kg
	Androstenedione	29.4		ug/Kg
	Androsterone	0.1	U	ug/Kg
	a-Zearalanol	0.1	U	ug/Kg
	a-Zearalenol	0.1	U	ug/Kg
	b-Zearalanol	0.1	U	ug/Kg
	b-Zearalenol	0.1	U	ug/Kg
	Epitestosterone	8.47		ug/Kg
	Estriol	0.1	U	ug/Kg
	Estrone	0.1	U	ug/Kg
	Ethynyl Estradiol	4.22		ug/Kg
	Melengesterol Acetate	0.1	U	ug/Kg
	Progesterone	70.4		ug/Kg
	Testosterone	2.95		ug/Kg
<i>Veterinary Pharmaceuticals</i>	Chlortetracycline(total)	0.7		mg/Kg
	Erythromycin	2.1		mg/Kg
	Lincomycin	1.5		mg/Kg
	Monensin	109		mg/Kg
	Oxytetracycline	251		mg/Kg
	Ractopamine	0.5	U	mg/Kg
	Sulfachloropyridazine	0.5	U	mg/Kg
	Sulfadimethoxine	0.5	U	mg/Kg
	Sulfamerazine	0.5	U	mg/Kg
	Sulfamethazine	0.5	U	mg/Kg
	Sulfamethazole	0.5	U	mg/Kg
	Sulfamethoxazole	0.5	U	mg/Kg
	Sulfathiazole	0.5	U	mg/Kg
	Tetracycline	954		mg/Kg
	Tiamulin	0.5	U	mg/Kg
	Tylosin	14.8		mg/Kg
	Virginiamycin	0.5	U	mg/Kg
<i>Wastewater Pharmaceuticals</i>	Acetaminophen	100	U	ug/Kg
	Amphetamine	50	U	ug/Kg
	Azithromycin	NR		ug/Kg
	Caffeine	50	U	ug/Kg
	Carbamazepine	50	U	ug/Kg
	Cotinine	50	U	ug/Kg
	DEET	50	U	ug/Kg
	Diphenhydramine	50	U	ug/Kg
	Ibuprofen	50	U	ug/Kg
	Methamphetamine	50	U	ug/Kg
	Naproxen	50	U	ug/Kg
	Paraxanthine	50	U	ug/Kg
	Thiabendazole	50	U	ug/Kg
	Triclosan	50	U	ug/Kg
SO-04 10154234	Ammonium-N	7.3		mg/Kg

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	Nitrate-N/Nitrite	247		mg/Kg
	Total Nitrogen/Solid	2110		mg/Kg
<i>Pesticides</i>	2,3,4,5-Tetrachlorophenol	22	U	ug/Kg
	2,3,4,6-Tetrachlorophenol	22	U	ug/Kg
	2,4,5-T	22	U	ug/Kg
	2,4,5-Trichlorophenol	22	U	ug/Kg
	2,4,6-Trichlorophenol	22	UJ	ug/Kg
	2,4-D	22	U	ug/Kg
	2,4-DB	22	U	ug/Kg
	3,5-Dichlorobenzoic acid	22	U	ug/Kg
	4-Nitrophenol	1800	J	ug/Kg
	Acifluorfen	22	UJ	ug/Kg
	Alachlor	19	U	ug/Kg
	Atrazine	19	U	ug/Kg
	Azinphos-methyl	19	UJ	ug/Kg
	Bentazon	22	U	ug/Kg
	Benzonitrile, 2,6-dichloro-	19	U	ug/Kg
	Bromoxynil	22	U	ug/Kg
	Chloramben	22	UJ	ug/Kg
	Chlorpyrifos, Ethyl	1.7	J	ug/Kg
	Clopyralid	22	U	ug/Kg
	DACTHAL-DCPA	22	U	ug/Kg
	Diazinon	19	U	ug/Kg
	Dicamba	22	U	ug/Kg
	Dichlorprop	22	U	ug/Kg
	Diclofop, Methyl	22	U	ug/Kg
	Dinoseb	22	UJ	ug/Kg
	Diuron	2.1	J	ug/Kg
	Endosulfan I	19	U	ug/Kg
	Endosulfan II	19	U	ug/Kg
	Endosulfan Sulfate	1.1	J	ug/Kg
	Fenhexamid	19	UJ	ug/Kg
	Fenpropathrin	19	U	ug/Kg
	Imidan	19	UJ	ug/Kg
	Ioxynil	22	U	ug/Kg
	Kresoxim-methyl	19	U	ug/Kg
	MCPA	22	U	ug/Kg
	MCPP	22	U	ug/Kg
	Metribuzin	19	UJ	ug/Kg
	Myclobutanil	19	U	ug/Kg
	Oxyfluorfen	19	U	ug/Kg
	Pendimethalin	5.7	J	ug/Kg
	Pentachlorophenol	4.2	J	ug/Kg
	Picloram	22	U	ug/Kg
	Propargite	19	U	ug/Kg
	Silvex	22	U	ug/Kg
	Simazine	19	U	ug/Kg
	SURFLAN	37	UJ	ug/Kg
	Terbacil	19	U	ug/Kg
	Trichlorpyr	22	U	ug/Kg
	Triflumizole	19	U	ug/Kg
	Trifluralin	19	U	ug/Kg
<i>Steroids / Hormones</i>	11-Keto Testosterone	0.1	U	ug/Kg
	17a-Hydroxyprogesterone	0.1	U	ug/Kg

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	17alpha-trenbolone	0.1	U	ug/Kg	
	17beta-estradiol	0.1	U	ug/Kg	
	17beta-trenbolone	0.1	U	ug/Kg	
	4-Androstenedione	0.1	U	ug/Kg	
	a-Estradiol	0.1	U	ug/Kg	
	Androstenedienedione	0.1	U	ug/Kg	
	Androsterone	0.1	U	ug/Kg	
	a-Zearalanol	0.1	U	ug/Kg	
	a-Zearalenol	0.1	U	ug/Kg	
	b-Zearalanol	0.1	U	ug/Kg	
	b-Zearalenol	0.1	U	ug/Kg	
	Epitestosterone	0.1	U	ug/Kg	
	Estriol	0.1	U	ug/Kg	
	Estrone	0.1	U	ug/Kg	
	Ethynyl Estradiol	0.1	U	ug/Kg	
	Melengesterol Acetate	0.1	U	ug/Kg	
	Progesterone	0.25		ug/Kg	
	Testosterone	0.1	U	ug/Kg	
<i>Veterinary Pharmaceuticals</i>	Chlortetracycline(total)	0.6		mg/Kg	
	Erythromycin	0.5	U	mg/Kg	
	Lincomycin	0.5	U	mg/Kg	
	Monensin	5.1		mg/Kg	
	Oxytetracycline	3.2		mg/Kg	
	Ractopamine	0.5	U	mg/Kg	
	Sulfachloropyridazine	0.5	U	mg/Kg	
	Sulfadimethoxine	0.5	U	mg/Kg	
	Sulfamerazine	0.5	U	mg/Kg	
	Sulfamethazine	0.9		mg/Kg	
	Sulfamethazole	0.5	U	mg/Kg	
	Sulfamethoxazole	0.5	U	mg/Kg	
	Sulfathiazole	0.5	U	mg/Kg	
	Tetracycline	27.4		mg/Kg	
	Tiamulin	0.5	U	mg/Kg	
	Tylosin	2.1		mg/Kg	
	Virginiamycin	0.5	U	mg/Kg	
<i>Wastewater Pharmaceuticals</i>	Acetaminophen	100	U	ug/Kg	
	Amphetamine	50	U	ug/Kg	
	Azithromycin	NR		ug/Kg	
	Caffeine	50	U	ug/Kg	
	Carbamazepine	50	U	ug/Kg	
	Cotinine	50	U	ug/Kg	
	DEET	50	U	ug/Kg	
	Diphenhydramine	50	U	ug/Kg	
	Ibuprofen	50	U	ug/Kg	
	Methamphetamine	50	U	ug/Kg	
	Naproxen	50	U	ug/Kg	
	Paraxanthine	50	U	ug/Kg	
	Thiabendazole	50	U	ug/Kg	
	Triclosan	50	U	ug/Kg	
LG-04	10154254	Ammonia (NH3+NH4) as N	920	J	mg/L
		Nitrate+Nitrite as N	1	UJ	mg/L
		Total Kjeldahl Nitrogen	1600	J	mg/L

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<i>Bacteria</i>	Escherichia coli	>1600000	J	per 100ml
	Fecal Coliform	>1600000		per 100ml
	BAC32		Present	
	<i>Bacteroides</i> PCR (ruminant)	CF 128	Present	
	<i>Bacteroides</i> PCR (ruminant)	CF 193	ND	
	<i>Bacteroides</i> PCR (human)	HF 134	Absent	
	<i>Bacteroides</i> PCR (human)	HF 183	Absent	
<i>General Chemistry</i>	Alkalinity as CaCO3	6110		mg/L
	Bromide	10	U	mg/L
	Chloride	684		mg/L
	Fluoride	2	U	mg/L
	Phosphorus, total	354		mg/L
	Sulfate	286		mg/L
<i>Metals</i>	Arsenic	170	U	ug/L
	Barium	2480		ug/L
	Cadmium	12	U	ug/L
	Calcium	1010000		ug/L
	Chromium	203		ug/L
	Copper	3110		ug/L
	Iron	205000		ug/L
	Lead	97	U	ug/L
	Magnesium	514000		ug/L
	Manganese	14800		ug/L
	Mercury	0.387	J	ug/L
	Potassium	2160000		ug/L
	Selenium	190	U	ug/L
	Silver	39	U	ug/L
	Sodium	517000		ug/L
	Zinc	11000		ug/L
<i>Wastewater Organics</i>	1,4-dichlorobenzene	2	UJ	ug/L
	1-methylnaphthalene	2	R	ug/L
	2,2',4,4'-tetrabromodiphenyl ether	2	UJ	ug/L
	2,6-dimethylnaphthalene	2	R	ug/L
	2-methylnaphthalene	2	R	ug/L
	3,4-dichlorophenyl isocyanate	2	UJ	ug/L
	3-beta-coprostanol	23.1	J	ug/L
	3-methyl-1h-indole (skatol)	24.2	J	ug/L
	3-tert-butyl-4-hydroxyanisole (bha)	2	UJ	ug/L
	4-cumylphenol	2	R	ug/L
	4-n-octylphenol	2	R	ug/L
	4-nonylphenol monoethoxylate - total (np1eo)	2.32	J	ug/L
	4-octylphenol diethoxylate (op2eo)	2	R	ug/L
	4-octylphenol monoethoxylate (op1eo)	0.697	J	ug/L
	4-tert-octylphenol	2	R	ug/L
	5-methyl-1h-benzotriazole	2	UJ	ug/L
	acetophenone	2	R	ug/L
	acetyl-hexamethyl-tetrahydro-naphthalene (ahtn)	2	UJ	ug/L
	anthracene	2	R	ug/L
	anthraquinone	2	UJ	ug/L
	atrazine	2	UJ	ug/L
	benz[a]pyrene	2	R	ug/L
	benzophenone	2	R	ug/L
	beta-sitosterol	43.5	J	ug/L

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beta-stigmastanol	34.1	J	ug/L
bis-(2-ethylhexyl) phthalate (dehp)	2	UJ	ug/L
bisphenol a	2	R	ug/L
bromacil	2	UJ	ug/L
bromoform	2	UJ	ug/L
caffeine	2	R	ug/L
camphor	2	UJ	ug/L
carbaryl	2	UJ	ug/L
carbazole	2	UJ	ug/L
chlorpyrifos	2	UJ	ug/L
cholesterol	59.6	J	ug/L
cotinine	0.8	UJ	ug/L
diazinon	2	UJ	ug/L
dichlorvos	2	UJ	ug/L
diethoxynonylphenols- total (np2eo)	2.16	J	ug/L
diethyl phthalate	2	UJ	ug/L
d-limonene	2	UJ	ug/L
fluoranthene	2	R	ug/L
hexahydrohexamethyl cyclopentabenzopyran (hhcb)	2	UJ	ug/L
indole	25.6	J	ug/L
isoborneol	2	UJ	ug/L
isophorone	2	UJ	ug/L
isopropylbenzene (cumene)	2	UJ	ug/L
isoquinoline	2	UJ	ug/L
menthol	2	UJ	ug/L
metalaxyl	2	UJ	ug/L
methyl salicylate	2	UJ	ug/L
metolachlor	2	UJ	ug/L
n,n-diethyl-meta-toluamide (deet)	2	UJ	ug/L
naphthalene	2	R	ug/L
para-nonylphenol total	2	UJ	ug/L
p-cresol	1110	J	ug/L
pentachlorophenol	2	R	ug/L
phenanthrene	2	R	ug/L
phenol	147	J	ug/L
prometon	2	UJ	ug/L
pyrene	2	R	ug/L
tetrachloroethylene	2	UJ	ug/L
tri(2-butoxyethyl) phosphate	2	UJ	ug/L
tri(2-chloroethyl) phosphate	2	UJ	ug/L
tri(dichloroisopropyl) phosphate	2	UJ	ug/L
tributyl phosphate	2	UJ	ug/L
triclosan	2	UJ	ug/L
triethyl citrate (ethyl citrate)	2	UJ	ug/L
triphenyl phosphate	2	UJ	ug/L

Pesticides Due to matrix interference the laboratory could not provide quantitative results for the pesticide analysis of the lagoon sludge samples.

<i>Hormones</i> 17-a-estradiol	3430		ng/L
17-a-ethynyl-estradiol	20	U	ng/L
17-b-estradiol	555		ng/L
Estriol	8.8	U	ng/L
Estrone	1100		ng/L

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<i>Steroids / Hormones</i>	11-Keto Testosterone	0.002	U	ug/L	
	17a-Hydroxyprogesterone	0.002	U	ug/L	
	17alpha-trenbolone	0.002	U	ug/L	
	17beta-estradiol	0.002	U	ug/L	
	17beta-trenbolone	0.002	U	ug/L	
	4-Androstenedione	0.002	U	ug/L	
	a-Estradiol	0.002	U	ug/L	
	Androstanedienedione	0.002	U	ug/L	
	Androsterone	0.002	U	ug/L	
	a-Zearalanol	13.9		ug/L	
	a-Zearalenol	0.002	U	ug/L	
	b-Zearalanol	0.002	U	ug/L	
	b-Zearalenol	0.002	U	ug/L	
	Epitestosterone	0.181		ug/L	
	Estriol	0.002	U	ug/L	
	Estrone	0.002	U	ug/L	
	Ethynyl Estradiol	0.002	U	ug/L	
	Melengesterol Acetate	0.002	U	ug/L	
	Progesterone	0.002	U	ug/L	
	Testosterone	0.002	U	ug/L	
	<i>Veterinary Pharmaceuticals</i>	Chlortetracycline(total)	0.02	UJ	ug/L
		Erythromycin	0.02	UJ	ug/L
		Lincomycin	0.02	UJ	ug/L
		Monensin	0.02	UJ	ug/L
		Oxytetracycline	0.02	UJ	ug/L
		Ractopamine	0.02	UJ	ug/L
		Sulfachloropyridazine	0.02	UJ	ug/L
Sulfadimethoxine		0.02	UJ	ug/L	
Sulfamerazine		0.02	UJ	ug/L	
Sulfamethazine		0.02	UJ	ug/L	
Sulfamethazole		0.02	UJ	ug/L	
Sulfamethoxazole		0.02	UJ	ug/L	
Sulfathiazole		0.02	UJ	ug/L	
Tetracycline		0.02	UJ	ug/L	
Tiamulin		0.02	UJ	ug/L	
Tylosin		0.02	UJ	ug/L	
Virginiamycin		0.02	UJ	ug/L	
<i>Wastewater Pharmaceuticals</i>	Acetaminophen	0.2	U	ug/L	
	Amphetamine	0.2	U	ug/L	
	Azithromycin	0.2	U	ug/L	
	Caffeine	0.2	U	ug/L	
	Carbamazepine	0.2	U	ug/L	
	Cotinine	0.2	U	ug/L	
	DEET	0.36		ug/L	
	Diphenhydramine	0.2	U	ug/L	
	Ibuprofen	0.2	U	ug/L	
	Methamphetamine	0.2	U	ug/L	
	Naproxen	0.2	U	ug/L	
	Paraxanthine	0.2	U	ug/L	
	Thiabendazole	0.2	U	ug/L	
	Triclosan	0.2	U	ug/L	
<i>Isotopes</i>	Nitrate	NM		mg/L	
	δ15N-NO3	NM		‰	

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		Ammonia	899		mg/L
		δ15N-NH4	6.69		‰
		δ18O-NO3	NM		‰ SMOW
LG-05	10154255	Ammonia (NH3+NH4) as N	1200	J	mg/L
		Nitrate+Nitrite as N	1	UJ	mg/L
		Total Kjeldahl Nitrogen	1600	J	mg/L
		<i>Bacteria</i> Escherichia coli	2000	J	per100ml
		Fecal Coliform	2000		per100ml
		BAC32		Present	
		<i>Bacteroides</i> PCR (ruminant)	CF 128	Present	
		<i>Bacteroides</i> PCR (ruminant)	CF 193	ND	
		<i>Bacteroides</i> PCR (human)	HF 134	Absent	
		<i>Bacteroides</i> PCR (human)	HF 183	Absent	
		<i>General Chemistry</i> Alkalinity as CaCO3	8920		mg/L
		Bromide	10	U	mg/L
		Chloride	1140		mg/L
		Fluoride	2	U	mg/L
		Phosphorus, total	103		mg/L
		Sulfate	15	U	mg/L
		<i>Metals</i> Arsenic	180	U	ug/L
		Barium	722		ug/L
		Cadmium	12	U	ug/L
		Calcium	351000		ug/L
		Chromium	44		ug/L
		Copper	1030		ug/L
		Iron	15500		ug/L
		Lead	99	U	ug/L
		Magnesium	281000		ug/L
		Manganese	4420		ug/L
		Mercury	0.25	UJ	ug/L
		Potassium	2590000		ug/L
		Selenium	200	U	ug/L
		Silver	40	U	ug/L
		Sodium	751000		ug/L
		Zinc	3720		ug/L
		<i>Wastewater Organics</i> 1,4-dichlorobenzene	2	UJ	ug/L
		1-methylnaphthalene	2	R	ug/L
		2,2',4,4'-tetrabromodiphenyl ether	2	UJ	ug/L
		2,6-dimethylnaphthalene	2	R	ug/L
		2-methylnaphthalene	2	R	ug/L
		3,4-dichlorophenyl isocyanate	1.6	UJ	ug/L
		3-beta-coprostanol	4.22	J	ug/L
		3-methyl-1h-indole (skatol)	3.56	J	ug/L
		3-tert-butyl-4-hydroxyanisole (bha)	2	UJ	ug/L
		4-cumylphenol	2	R	ug/L
		4-n-octylphenol	2	R	ug/L
		4-nonylphenol monoethoxylate - total (np1eo)	1.48	J	ug/L
		4-octylphenol diethoxylate (op2eo)	2	R	ug/L
		4-octylphenol monoethoxylate (op1eo)	2	R	ug/L
		4-tert-octylphenol	2	R	ug/L

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5-methyl-1h-benzotriazole	2	UJ	ug/L
acetophenone	2	R	ug/L
acetyl-hexamethyl-tetrahydro- naphthalene (ahtn)	2	UJ	ug/L
anthracene	2	R	ug/L
anthraquinone	2	UJ	ug/L
atrazine	2	UJ	ug/L
benz[a]pyrene	2	R	ug/L
benzophenone	2	R	ug/L
beta-sitosterol	7.07	J	ug/L
beta-stigmastanol	4.38	J	ug/L
bis-(2-ethylhexyl) phthalate (dehp)	2	UJ	ug/L
bisphenol a	2	R	ug/L
bromacil	2	UJ	ug/L
bromoform	2	UJ	ug/L
caffeine	1.02	J	ug/L
camphor	2	UJ	ug/L
carbaryl	2	UJ	ug/L
carbazole	2	UJ	ug/L
chlorpyrifos	2	UJ	ug/L
cholesterol	12.3	J	ug/L
cotinine	2	UJ	ug/L
diazinon	2	UJ	ug/L
dichlorvos	2	UJ	ug/L
diethoxynonylphenols- total (np2eo)	2	UJ	ug/L
diethyl phthalate	2	UJ	ug/L
d-limonene	2	UJ	ug/L
fluoranthene	2	R	ug/L
hexahydrohexamethyl cyclopentabenzopyran (hhcb)	2	UJ	ug/L
indole	2	U	ug/L
isoborneol	2	UJ	ug/L
isophorone	2	UJ	ug/L
isopropylbenzene (cumene)	2	UJ	ug/L
isoquinoline	2	UJ	ug/L
menthol	2	UJ	ug/L
metalaxyl	2	UJ	ug/L
methyl salicylate	2	UJ	ug/L
metolachlor	2	UJ	ug/L
n,n-diethyl-meta-toluamide (deet)	2	UJ	ug/L
naphthalene	2	R	ug/L
para-nonylphenol total	3.17	J	ug/L
p-cresol	14.7	J	ug/L
pentachlorophenol	2	R	ug/L
phenanthrene	2	R	ug/L
phenol	3.85	J	ug/L
prometon	2	UJ	ug/L
pyrene	2	R	ug/L
tetrachloroethylene	2	UJ	ug/L
tri(2-butoxyethyl) phosphate	2	UJ	ug/L
tri(2-chloroethyl) phosphate	2	UJ	ug/L
tri(dichloroisopropyl) phosphate	2	UJ	ug/L
tributyl phosphate	2	UJ	ug/L
triclosan	2	U	ug/L
triethyl citrate (ethyl citrate)	2	UJ	ug/L
triphenyl phosphate	2	UJ	ug/L

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Pesticides Due to matrix interference the laboratory could not provide quantitative results for the pesticide analysis of the lagoon sludge samples.

<i>Hormones</i>	17-a-estradiol	1100		ng/L
	17-a-ethynyl-estradiol	20	U	ng/L
	17-b-estradiol	44		ng/L
	Estriol	8.8	U	ng/L
	Estrone	3180		ng/L
<i>Steroids / Hormones</i>	11-Keto Testosterone	0.002	U	ug/L
	17a-Hydroxyprogesterone	0.131		ug/L
	17alpha-trenbolone	0.002	U	ug/L
	17beta-estradiol	0.002	U	ug/L
	17beta-trenbolone	0.002	U	ug/L
	4-Androstenedione	0.5		ug/L
	a-Estradiol	0.002	U	ug/L
	Androstenedione	3.504		ug/L
	Androsterone	0.002	U	ug/L
	a-Zearalanol	11.9		ug/L
	a-Zearalenol	0.002	U	ug/L
	b-Zearalanol	0.002	U	ug/L
	b-Zearalenol	0.002	U	ug/L
	Epitestosterone	0.002	U	ug/L
	Estriol	0.002	U	ug/L
	Estrone	1.945		ug/L
	Ethynyl Estradiol	0.002	U	ug/L
	Melengesterol Acetate	0.002	U	ug/L
	Progesterone	0.912		ug/L
	Testosterone	0.193		ug/L
<i>Veterinary Pharmaceuticals</i>	Chlortetracycline(total)	0.075	J	ug/L
	Erythromycin	0.916	J	ug/L
	Lincomycin	3.55	J	ug/L
	Monensin	430.2	J	ug/L
	Oxytetracycline	1.24	J	ug/L
	Ractopamine	0.04	J	ug/L
	Sulfachloropyridazine	1.21	J	ug/L
	Sulfadimethoxine	0.322	J	ug/L
	Sulfamerazine	0.068	J	ug/L
	Sulfamethazine	1.5	J	ug/L
	Sulfamethazole	0.02	R	ug/L
	Sulfamethoxazole	0.02	R	ug/L
	Sulfathiazole	0.137	J	ug/L
	Tetracycline	4.48	J	ug/L
	Tiamulin	0.02	R	ug/L
	Tylosin	1.7	J	ug/L
	Virginiamycin	0.334	J	ug/L
<i>Wastewater Pharmaceuticals</i>	Acetaminophen	0.2	U	ug/L
	Amphetamine	0.2	U	ug/L
	Azithromycin	0.2	U	ug/L
	Caffeine	0.2	U	ug/L
	Carbamazepine	0.2	U	ug/L
	Cotinine	0.2	U	ug/L
	DEET	0.2	U	ug/L

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		Diphenhydramine	0.2	U	ug/L
		Ibuprofen	0.2	U	ug/L
		Methamphetamine	0.2	U	ug/L
		Naproxen	0.2	U	ug/L
		Paraxanthine	0.2	U	ug/L
		Thiabendazole	0.2	U	ug/L
		Triclosan	0.2	U	ug/L
	<i>Isotopes</i>	Nitrate	NM		mg/L
		δ15N-NO3	NM		‰
		Ammonia	1151		mg/L
		δ15N-NH4	10.63		‰
		δ18O-NO3	NM		‰ SMOW
LG-06	10154256	Ammonia (NH3+NH4) as N	1200	J	mg/L
		Nitrate+Nitrite as N	1	UJ	mg/L
		Total Kjeldahl Nitrogen	1800	J	mg/L
	<i>Bacteria</i>	Escherichia coli	1800	J	per100ml
		Fecal Coliform	1800		per100ml
		BAC32		Present	
		<i>Bacteroides</i> PCR (ruminant)	CF 128	Present	
		<i>Bacteroides</i> PCR (ruminant)	CF 193	ND	
		<i>Bacteroides</i> PCR (human)	HF 134	Absent	
		<i>Bacteroides</i> PCR (human)	HF 183	Absent	
	<i>General Chemistry</i>	Alkalinity as CaCO3	8700		mg/L
		Bromide	10	U	mg/L
		Chloride	1140		mg/L
		Fluoride	2	U	mg/L
		Phosphorus, total	111		mg/L
		Sulfate	15	U	mg/L
	<i>Metals</i>	Arsenic	160	U	ug/L
		Barium	683		ug/L
		Cadmium	10	U	ug/L
		Calcium	323000		ug/L
		Chromium	46		ug/L
		Copper	989		ug/L
		Iron	13900		ug/L
		Lead	86	U	ug/L
		Magnesium	274000		ug/L
		Manganese	4070		ug/L
		Mercury	0.25	UJ	ug/L
		Potassium	2600000		ug/L
		Selenium	170	U	ug/L
		Silver	34	U	ug/L
		Sodium	753000		ug/L
		Zinc	3470		ug/L
	<i>Wastewater Organics</i>	1,4-dichlorobenzene	2	UJ	ug/L
		1-methylnaphthalene	2	R	ug/L
		2,2',4,4'-tetrabromodiphenyl ether	2	UJ	ug/L
		2,6-dimethylnaphthalene	2	R	ug/L
		2-methylnaphthalene	2	R	ug/L
		3,4-dichlorophenyl isocyanate	2	UJ	ug/L

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3-beta-coprostanol	16.7	J	ug/L
3-methyl-1h-indole (skatol)	22.5	J	ug/L
3-tert-butyl-4-hydroxyanisole (bha)	2	UJ	ug/L
4-cumylphenol	2	R	ug/L
4-n-octylphenol	2	R	ug/L
4-nonylphenol monoethoxylate - total (np1eo)	10.1	J	ug/L
4-octylphenol diethoxylate (op2eo)	2	R	ug/L
4-octylphenol monoethoxylate (op1eo)	2	R	ug/L
4-tert-octylphenol	2	R	ug/L
5-methyl-1h-benzotriazole	2	UJ	ug/L
acetophenone	2	R	ug/L
acetyl-hexamethyl-tetrahydro-naphthalene (ahtn)	2	UJ	ug/L
anthracene	2	R	ug/L
anthraquinone	2	UJ	ug/L
atrazine	2	UJ	ug/L
benz[a]pyrene	2	R	ug/L
benzophenone	2	R	ug/L
beta-sitosterol	15.2	J	ug/L
beta-stigmastanol	15.6	J	ug/L
bis-(2-ethylhexyl) phthalate (dehp)	2	UJ	ug/L
bisphenol a	2	R	ug/L
bromacil	0.8	UJ	ug/L
bromoform	2	UJ	ug/L
caffeine	2	UJ	ug/L
camphor	2	UJ	ug/L
carbaryl	2	UJ	ug/L
carbazole	2	UJ	ug/L
chlorpyrifos	2	UJ	ug/L
cholesterol	25.9	J	ug/L
cotinine	2	UJ	ug/L
diazinon	2	UJ	ug/L
dichlorvos	2	UJ	ug/L
diethoxynonylphenols- total (np2eo)	2	UJ	ug/L
diethyl phthalate	2	UJ	ug/L
d-limonene	2	UJ	ug/L
fluoranthene	2	R	ug/L
hexahydrohexamethyl cyclopentabenzopyran (hhcb)	2	UJ	ug/L
indole	1.17	J	ug/L
isoborneol	2	UJ	ug/L
isophorone	2	UJ	ug/L
isopropylbenzene (cumene)	2	UJ	ug/L
isoquinoline	2	UJ	ug/L
menthol	2	UJ	ug/L
metalaxyl	2	UJ	ug/L
methyl salicylate	2	UJ	ug/L
metolachlor	2	UJ	ug/L
n,n-diethyl-meta-toluamide (deet)	2	UJ	ug/L
naphthalene	2	R	ug/L
para-nonylphenol total	17.9	J	ug/L
p-cresol	112	J	ug/L
pentachlorophenol	2	R	ug/L
phenanthrene	2	R	ug/L
phenol	31.3	J	ug/L
prometon	2	UJ	ug/L
pyrene	2	R	ug/L
tetrachloroethylene	2	UJ	ug/L

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	tri(2-butoxyethyl) phosphate	2	UJ	ug/L
	tri(2-chloroethyl) phosphate	2	UJ	ug/L
	tri(dichloroisopropyl) phosphate	2	UJ	ug/L
	tributyl phosphate	2	UJ	ug/L
	triclosan	2	UJ	ug/L
	triethyl citrate (ethyl citrate)	2	UJ	ug/L
	triphenyl phosphate	2	UJ	ug/L
<i>Pesticides</i> Due to matrix interference the laboratory could not provide quantitative results for the pesticide analysis of the lagoon sludge samples.				
<i>Hormones</i>	17-a-estradiol	1190		ng/L
	17-a-ethynyl-estradiol	20	U	ng/L
	17-b-estradiol	38.5		ng/L
	Estriol	8.8	U	ng/L
	Estrone	3300		ng/L
<i>Steroids / Hormones</i>	11-Keto Testosterone	0.857		ug/L
	17a-Hydroxyprogesterone	0.038		ug/L
	17alpha-trenbolone	0.002	U	ug/L
	17beta-estradiol	0.002	U	ug/L
	17beta-trenbolone	0.002	U	ug/L
	4-Androstenedione	0.101		ug/L
	a-Estradiol	0.002	U	ug/L
	Androstenedione	0.002	U	ug/L
	Androsterone	0.002	U	ug/L
	a-Zearalanol	12.6		ug/L
	a-Zearalenol	0.002	U	ug/L
	b-Zearalanol	0.002	U	ug/L
	b-Zearalenol	0.002	U	ug/L
	Epitestosterone	0.002	U	ug/L
	Estriol	0.002	U	ug/L
	Estrone	1.666		ug/L
	Ethynyl Estradiol	0.002	U	ug/L
	Melengesterol Acetate	0.002	U	ug/L
	Progesterone	0.185		ug/L
	Testosterone	0.195		ug/L
<i>Veterinary Pharmaceuticals</i>	Chlortetracycline(total)	0.02	UJ	ug/L
	Erythromycin	0.02	UJ	ug/L
	Lincomycin	8.5	J	ug/L
	Monensin	463.8	J	ug/L
	Oxytetracycline	4.49	J	ug/L
	Ractopamine	0.02	R	ug/L
	Sulfachloropyridazine	0.157	J	ug/L
	Sulfadimethoxine	0.02	R	ug/L
	Sulfamerazine	0.02	R	ug/L
	Sulfamethazine	0.17	J	ug/L
	Sulfamethazole	0.02	R	ug/L
	Sulfamethoxazole	0.02	R	ug/L
	Sulfathiazole	0.829	J	ug/L
	Tetracycline	5.41	J	ug/L
	Tiamulin	0.02	R	ug/L
	Tylosin	10.22	J	ug/L
	Virginiamycin	0.02	R	ug/L

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<i>Wastewater Pharmaceuticals</i>		Acetaminophen	0.2	U	ug/L
		Amphetamine	0.2	U	ug/L
		Azithromycin	0.2	U	ug/L
		Caffeine	0.2	U	ug/L
		Carbamazepine	0.2	U	ug/L
		Cotinine	0.2	U	ug/L
		DEET	0.2	U	ug/L
		Diphenhydramine	0.2	U	ug/L
		Ibuprofen	0.2	U	ug/L
		Methamphetamine	0.2	U	ug/L
		Naproxen	0.2	U	ug/L
		Paraxanthine	0.2	U	ug/L
		Thiabendazole	0.2	U	ug/L
		Triclosan	0.2	U	ug/L
<i>Isotopes</i>		Nitrate	NM		mg/L
		δ15N-NO3	NM		‰
		Ammonia	1293		mg/L
		δ15N-NH4	10.25		‰
		δ18O-NO3	NM		‰ SMOW
WW-07	10154207	Ammonia (NH3+NH4) as N	0.05	U	mg/L
		Nitrate - Field Test	2		mg/l
		Nitrate+Nitrite as N	1.19		mg/L
		Nitrate-N	1.02		mg/l
		Total Kjeldahl Nitrogen	0.51	U	mg/L
<i>Bacteria</i>		Escherichia coli	<1		per 100ml
		Fecal Coliform	< 1		per 100ml
		Total Coliform	< 1		per 100ml
<i>General Chemistry</i>		Alkalinity as CaCO3	129		mg/L
		Bromide	0.2	U	mg/L
		Chloride	8.04		mg/L
		Fluoride	0.298		mg/L
		Phosphorus, total	0.0299		mg/L
		Sulfate	27.8		mg/L
<i>Metals</i>		Arsenic	45	U	ug/L
		Barium	10		ug/L
		Cadmium	3	U	ug/L
		Calcium	28300		ug/L
		Chromium	10	U	ug/L
		Copper	5	U	ug/L
		Iron	20	U	ug/L
		Lead	25	U	ug/L
		Magnesium	12300		ug/L
		Manganese	3.4		ug/L
		Mercury	0.05	U	ug/L
		Potassium	6830		ug/L
		Selenium	50	U	ug/L
		Silver	10	U	ug/L
		Sodium	15100		ug/L
		Zinc	5	U	ug/L

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<i>Perchlorate</i>	Perchlorate	231		ng/l
<i>Wastewater Organics</i>	1,4-dichlorobenzene	0.2	U	ug/L
	1-methylnaphthalene	0.2	U	ug/L
	2,2',4,4'-tetrabromodiphenyl ether	0.3	U	ug/L
	2,6-dimethylnaphthalene	0.2	U	ug/L
	2-methylnaphthalene	0.2	U	ug/L
	3,4-dichlorophenyl isocyanate	1.6	U	ug/L
	3-beta-coprostanol	1.6	U	ug/L
	3-methyl-1h-indole (skatol)	0.2	U	ug/L
	3-tert-butyl-4-hydroxyanisole (bha)	0.2	UJ	ug/L
	4-cumylphenol	0.2	U	ug/L
	4-n-octylphenol	0.2	U	ug/L
	4-nonylphenol monoethoxylate - total (np1eo)	1.6	U	ug/L
	4-octylphenol diethoxylate (op2eo)	0.5	UJ	ug/L
	4-octylphenol monoethoxylate (op1eo)	1	U	ug/L
	4-tert-octylphenol	0.4	U	ug/L
	5-methyl-1h-benzotriazole	0.2	UJ	ug/L
	acetophenone	0.4	U	ug/L
	acetyl-hexamethyl-tetrahydro-naphthalene (ahtn)	0.2	U	ug/L
	anthracene	0.2	U	ug/L
	anthraquinone	0.2	U	ug/L
	atrazine	0.2	U	ug/L
	benz[a]pyrene	0.2	U	ug/L
	benzophenone	0.2	U	ug/L
	beta-sitosterol	0.2	U	ug/L
	beta-stigmastanol	0.2	U	ug/L
	bis-(2-ethylhexyl) phthalate (dehp)	0.2	U	ug/L
	bisphenol a	0.2	UJ	ug/L
	bromacil	0.2	U	ug/L
	bromoform	0.2	U	ug/L
	caffeine	0.2	U	ug/L
	camphor	0.2	U	ug/L
	carbaryl	0.2	U	ug/L
	carbazole	0.2	U	ug/L
	chlorpyrifos	0.2	U	ug/L
	cholesterol	0.2	U	ug/L
	cotinine	0.2	U	ug/L
	diazinon	0.2	U	ug/L
	dichlorvos	0.2	U	ug/L
	diethoxynonylphenols- total (np2eo)	0.2	U	ug/L
	diethyl phthalate	0.2	U	ug/L
	d-limonene	0.2	U	ug/L
	fluoranthene	0.2	U	ug/L
	hexahydrohexamethyl cyclopentabenzopyran (hhcb)	0.2	U	ug/L
	indole	0.2	U	ug/L
	isoborneol	0.2	U	ug/L
	isophorone	0.2	U	ug/L
	isopropylbenzene (cumene)	0.2	U	ug/L
	isoquinoline	0.2	U	ug/L
	menthol	0.2	U	ug/L
	metalaxyl	0.2	U	ug/L
	methyl salicylate	0.2	U	ug/L
	metolachlor	0.2	U	ug/L
	n,n-diethyl-meta-toluamide (deet)	0.2	U	ug/L
	naphthalene	0.242		ug/L

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	para-nonylphenol total	0.2	U	ug/L
	p-cresol	0.2	U	ug/L
	pentachlorophenol	1.6	U	ug/L
	phenanthrene	0.2	U	ug/L
	phenol	0.2	U	ug/L
	prometon	0.2	U	ug/L
	pyrene	0.2	U	ug/L
	tetrachloroethylene	0.175	J	ug/L
	tri(2-butoxyethyl) phosphate	0.2	U	ug/L
	tri(2-chloroethyl) phosphate	0.2	U	ug/L
	tri(dichloroisopropyl) phosphate	0.2	U	ug/L
	tributyl phosphate	0.2	U	ug/L
	triclosan	0.2	U	ug/L
	triethyl citrate (ethyl citrate)	0.2	U	ug/L
	triphenyl phosphate	0.2	U	ug/L
<i>Pesticides</i>	2,3,4,5-Tetrachlorophenol	0.19	U	ug/L
	2,3,4,6-Tetrachlorophenol	0.1	U	ug/L
	2,4,5-T	0.48	U	ug/L
	2,4,5-Trichlorophenol	0.19	U	ug/L
	2,4,6-Trichlorophenol	0.48	UJ	ug/L
	2,4-D	0.48	UJ	ug/L
	2,4-DB	0.1	U	ug/L
	3,5-Dichlorobenzoic acid	0.1	U	ug/L
	4-Nitrophenol	0.48	UJ	ug/L
	Acifluorfen	0.48	U	ug/L
	Alachlor	0.1	UJ	ug/L
	Atrazine	0.1	UJ	ug/L
	Azinphos-methyl	0.1	UJ	ug/L
	Bentazon	0.012	NJ	ug/L
	Benzonitrile, 2,6-dichloro-	0.1	UJ	ug/L
	Bromoxynil	0.1	U	ug/L
	Chloramben	0.19	UJ	ug/L
	Chlorpyrifos, Ethyl	0.1	UJ	ug/L
	Clopyralid	0.96	UJ	ug/L
	DACTHAL-DCPA	0.48	UJ	ug/L
	Diazinon	0.1	UJ	ug/L
	Dicamba	0.1	UJ	ug/L
	Dichlorprop	0.48	U	ug/L
	Diclofop, Methyl	0.1	U	ug/L
	Dinoseb	0.48	U	ug/L
	Diuron	0.1	UJ	ug/L
	Endosulfan I	0.1	UJ	ug/L
	Endosulfan II	0.096	UJ	ug/L
	Endosulfan Sulfate	0.1	UJ	ug/L
	Fenhexamid	0.96	UJ	ug/L
	Fenpropathrin	0.1	UJ	ug/L
	Imidan	0.19	UJ	ug/L
	Ioxynil	0.1	U	ug/L
	Kresoxim-methyl	0.1	UJ	ug/L
	MCPA	0.19	U	ug/L
	MCPP	0.1	U	ug/L
	Metribuzin	0.1	UJ	ug/L
	Myclobutanil	0.1	UJ	ug/L
	Oxyfluorfen	0.1	UJ	ug/L
	Pendimethalin	0.1	UJ	ug/L

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	Pentachlorophenol	0.1	U	ug/L
	Picloram	0.96	UJ	ug/L
	Propargite	0.1	UJ	ug/L
	Silvex	0.19	U	ug/L
	Simazine	0.1	U	ug/L
	SURFLAN	1.9	UJ	ug/L
	Terbacil	1.9	UJ	ug/L
	Trichlorpyr	0.1	U	ug/L
	Triflumizole	0.39	UJ	ug/L
	Trifluralin	0.1	UJ	ug/L
<i>Hormones</i>	17-a-estradiol	0.21	U	ng/L
	17-a-ethynyl-estradiol	0.16	U	ng/L
	17-b-estradiol	0.14	U	ng/L
	Estriol	0.22	U	ng/L
	Estrone	0.21	U	ng/L
<i>Steroids / Hormones</i>	11-Keto Testosterone	0.002	U	ug/L
	17a-Hydroxyprogesterone	0.002	U	ug/L
	17alpha-trenbolone	0.002	U	ug/L
	17beta-estradiol	0.002	U	ug/L
	17beta-trenbolone	0.002	U	ug/L
	4-Androstenedione	0.002	U	ug/L
	a-Estradiol	0.002	U	ug/L
	Androstenedione	0.002	UJ	ug/L
	Androsterone	0.002	UJ	ug/L
	a-Zearalanol	0.005	J	ug/L
	a-Zearalenol	0.002	UJ	ug/L
	b-Zearalanol	0.002	UJ	ug/L
	b-Zearalenol	0.002	U	ug/L
	Epitestosterone	0.002	U	ug/L
	Estriol	0.002	U	ug/L
	Estrone	0.002	UJ	ug/L
	Ethynyl Estradiol	0.002	U	ug/L
	Melengesterol Acetate	0.002	U	ug/L
	Progesterone	0.004	UJ	ug/L
	Testosterone	0.002	U	ug/L
<i>Veterinary Pharmaceuticals</i>	Chlortetracycline(total)	0.02	U	ug/L
	Erythromycin	0.02	U	ug/L
	Lincomycin	0.04	U	ug/L
	Monensin	0.109		ug/L
	Oxytetracycline	0.02	U	ug/L
	Ractopamine	0.02	U	ug/L
	Sulfachloropyridazine	0.02	U	ug/L
	Sulfadimethoxine	0.2	U	ug/L
	Sulfamerazine	0.02	U	ug/L
	Sulfamethazine	0.02	U	ug/L
	Sulfamethazole	0.02	U	ug/L
	Sulfamethoxazole	0.02	U	ug/L
	Sulfathiazole	0.02	U	ug/L
	Tetracycline	0.041	J	ug/L
	Tiamulin	0.02	U	ug/L
	Tylosin	0.02	U	ug/L
	Virginiamycin	0.023	J	ug/L

George DeRuyter Dairy

<i>Wastewater Pharmaceuticals</i>	Acetaminophen	0.2	U	ug/L	
	Amphetamine	0.2	U	ug/L	
	Azithromycin	0.2	U	ug/L	
	Caffeine	0.2	U	ug/L	
	Carbamazepine	0.2	U	ug/L	
	Cotinine	0.2	U	ug/L	
	DEET	0.2	U	ug/L	
	Diphenhydramine	0.2	U	ug/L	
	Ibuprofen	0.2	U	ug/L	
	Methamphetamine	0.2	U	ug/L	
	Naproxen	0.2	U	ug/L	
	Paraxanthine	0.2	U	ug/L	
	Thiabendazole	0.2	U	ug/L	
	Triclosan	0.2	U	ug/L	
	<i>Isotopes</i>	Nitrate	1.1		mg/L
		$\delta^{15}\text{N-NO}_3$	-0.09		‰
Ammonia		<0.1		mg/L	
$\delta^{15}\text{N-NH}_4$		NM		‰	
$\delta^{18}\text{O-NO}_3$		NM		‰ SMOW	
<i>Age Dating</i>	Piston Flow Model SF6 Recharge Age	32.8-36.3		years	

Abbreviations

BAC32 - *Bacteroides*

ND - Analysis not done

NM - Not measured

PCR - Polymerase Chain Reaction

‰ = parts per thousand difference from the atmospheric standard

SMOW = standard mean of ocean water

TNTC - Too numerous to count

Units

CFU/100 ml = colony forming unit per 100 milliliters

MPN/100 ml = most probable number per 100 milliliters

ng/L = nanograms per liter

ug/L = micrograms per liter

mg/L = milligrams per liter

mg/Kg = milligrams per kilogram

ug/Kg = micrograms per kilogram

Data Qualifiers

< = less than

J = The analyte was positively identified. The associated numerical value is an estimate.

JN = There is evidence that the analyte is present. The associated numerical result is an estimate.

N = There is evidence the analyte is present in this sample.