D Supplemental Application Information

FACILITY NAME AND PERMIT NUMBER:

Form Approved 1/14/99
OMB Number 2040-0086

SUPPLEMENTAL APPLICATION INFORMATION

PART D. EXPANDED EFFLUENT TESTING DATA

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: _____ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.											
ANTIMONY	See attached Water Chemistry										
ARSENIC											
BERYLLIUM											
CADMIUM											
CHROMIUM											
COPPER											
LEAD											
MERCURY											
NICKEL											
SELENIUM											
SILVER											
THALLIUM											
ZINC											
CYANIDE											
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (AS $CaCO_3$)											
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.											

Expanded Effluent Data

GILBERT BAY GREAT SALT LAKE OUTF

Outfall # 1

Southwest Jordan Valley Groundwater Project

Jordan Valley Water Conservancy District

Parameter	Maximum Daily Concentration @ 1.0 MGD (d,f)					Co
	Concentration	Units	Note	Load (e)	Mass/Day	
Temperature	16	oC	(a)			
pH	7	pH	(a)			
Alkalinity	2,985	mg/L as CaCO3	(a)	11,291	kg	
Total Hardness	6,471	mg/L as CaCO3	(a)	24,479	kg	
Calcium Hardness	3,881	mg/L as CaCO3	(a)	14,678	kg	
Total Dissolved Solids	10,746	mg/L	(a)	40,648	kg	
Total Suspended Solids	18	mg/l	(a)	68	kg	
Total Organic Carbon	6.0	mg/L	(a)	23	kg	
Aluminum	0	mg/L	(a)	1	g	
Antimony	1.5	ug/l	(a)	6	g	
Arsenic	36	ug/l	(b)	135	g	
Barium	418	ug/l	(a)	1,581	g	
Beryllium	2.99	ug/l	(b)	11	g	
Bicarbonate	3,636	mg/L	(a)	13,752	kg	
Cadmium	1.49	ug/l	(b)	6	g	
Calcium	1,552	mg/L	(a)	5,871	kg	
Carbon Dioxide	137	mg/L	(a)	519	kg	
Carbonate	3.6	mg/L	(a)	14	kg	
Chloride	1,373	mg/L	(a)	5,194	kg	
Chromium, Hexavalent	36	ug/l	(b)	135	g	
Chromium, Trivalent	14.925	ug/l	(b)	56	g	
Copper	0.015	ug/l	(b)	0	g	
Cyanide	0.030	ug/l	(b)	0	g	
Fluoride	3.5	mg/L	(a)	13	kg	
Hydrogen Sulfide	NA	mg/L	(a)	NA	kg	
Iron	1.0	mg/L	(a)	4	kg	
Lead	3.6	ug/l	(b)	14	g	
Magnesium	597	mg/L	(a)	2,258	kg	
Manganese	11.9	ug/l	(a)	45	g	
Mercury (total)	0.07	ug/l	(b)	0.265	g	
Nickel	14.9	ug/l	(b)	56	g	
Phenolic Compounds (Total)	ND	ug/l	(b)	NA	g	
Potassium	78	mg/L	(a)	294	kg	
Selenium	55.0	ug/l	(b)	208	g	
Silica (Total)	155	mg/L as SiO2	(a)	587	kg	
Silver	1.49	ug/l	(b)	6	g	
Sodium	1,254	mg/L	(a)	4,742	kg	
Strontium	555	ug/l	(a)	2,100	g	
Sulfate	4,537	mg/L	(a)	17,162	kg	
Thallium	1.49	ug/l	(b)	6	mg	
Zinc	30	ug/l	(b)	113	g	
Acid-Extractable Compounds	ND	mg/L	(b)	0	kg	
Base-Neutral Compounds	ND	mg/L	(b)	0	kg	
Volatile Organic Compounds	ND	mg/L	(b)	0	kg	

Notes:

(a) Unless otherwise noted, the source of information is design documents for the SWGWTP drawing G-10. Worst case source

(b) Values are from water quality sampling during well pump testing. Samples measuring below the detection limit (i.e. Non-De

(c) NA=Not Available ND=Non Detect

(d) Maximum daily concentrations calculated from worst case by-product discharges with all shallow RO trains off. Maximum d
are fully operating.

(e) Daily mass calculations assume flow weighted average among four shallow well RO trains and two deep well RO trains.

(f) Concentration and mass values assume a 99.5% membrane rejection and a 1.2 engineering factor.

(g) Multiply kg/day by 2.0 to obtain lbs/day.

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Southwest Jord
Jordan Valle

Parameter	Jordan River 80th Percentile Ambient Concentration	Maximum Daily D		
		Concentration	Units	Note
Temperature	17	16	oC	(a)
pH	8	7	pH	(a)
Alkalinity	308	302	mg/L as CaCO3	(a)
Total Hardness	665	634	mg/L as CaCO3	(a)
Calcium Hardness	n/a	378	mg/L as CaCO3	(a)
Total Dissolved Solids	1,406	1,100	mg/L	(a)
Total Suspended Solids	78	4	mg/l	(a)
Total Organic Carbon	n/a	1.2	mg/L	(a)
Aluminum	0.015	0.06	mg/L	(h)
Antimony	n/a	0.3	ug/l	(a)
Arsenic	13	7	ug/l	(a)
Barium	63	24	ug/l	(a)
Beryllium	n/a	0.60	ug/l	(a)
Bicarbonate	364	368	mg/L	(a)
Cadmium	0.50	0.30	ug/l	(a)
Calcium	151	151	mg/L	(a)
Carbon Dioxide	4	22	mg/L	(a)
Carbonate	8.0	0.2	mg/L	(a)
Chloride	301	262	mg/L	(a)
Chromium, Hexavalent	3	3.0	ug/l	(a)
Chromium, Trivalent	n/a	3.0	ug/l	(a)
Copper	6.000	0.003	ug/l	(a)
Cyanide	n/a	0.006	ug/l	(a)
Fluoride	n/a	0.7	mg/L	(a)
Hydrogen Sulfide	n/a	0.000	mg/L	(a)
Iron	10.0	0.1	mg/L	(a)
Lead	1.5	0.3	ug/l	(a)
Magnesium	70	59	mg/L	(a)
Manganese	29.7	2.4	ug/l	(a)
Mercury (total)	0.1	0.008	ug/l	(a)
Nickel	5.0	3.0	ug/l	(a)
Phenolic Compounds (Total)	n/a	0.000	ug/l	(a)
Potassium	17	8	mg/L	(a)
Selenium	4.5	7.9	ug/l	(a)
Silver	1.00	0.30	ug/l	(a)
Sodium	223	143	mg/L	(a)
Strontium	n/a	95	ug/l	(a)
Sulfate	377	322	mg/L	(a)
Thallium	n/a	0.30	ug/l	(a)
Zinc	n/a	6	ug/l	(a)
Acid-Extractable Compounds	n/a	0	mg/L	(a)
Base-Neutral Compounds	n/a	0	mg/L	(a)
Volatile Organic Compounds	n/a	0	mg/L	(a)

(a) Unless otherwise noted, the source of information is design documents for the SWGWTP drawing G-10. Worst
(b) Values are from water quality sampling during well pump testing. Samples measuring below the detection limit
(c) NA=Not Available ND=Non Detect
(d) Maximum discharge is during a power failure with plant off line and all wells continueing to operate.
(e) Daily mass calculations assume shallow well feed only to this outfall.
(f) Concentration and mass values assume a 99.5% membrane rejection and a 1.2 engineering factor.

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E Jordan River Discharge Flow Scenarios

Jordan Valley Water Conservancy District

Jordan River Discharge

Flow Scenarios

Scenario	Objective	Strategy	Frequency	Flow Rate (MGD)	Duration (hours)
Normal Operation	Optimize the life of the reverse osmosis membranes through a best management practice of maintaining a constant feed flow rate to each train of membranes. Maintain the wells in good operating condition through a best management practice of rotating well operation on a regular frequency.	This project includes more wells than required for the treatment process; the additional wells provide redundancy for anticipated pump and motor maintainance. Operation of the wells will rotate monthly to meet the well operation objective. Selecting a combination of wells which will result in a feed flow rate slightly higher than necessary will meet the membrane treatment objective.	365	1.0	24.0
Well Start-up	Prevent particles found in the water during well start-up from damaging the treatment plant membranes.	The wells are to be pumped to storm drain systems during initial start-up to purge the well casings of suspended solids.	monthly	3.6	2.0
Treatment Plant Membrane Cleaning	Maintain the membranes through a best management practice of cleaning at a regular frequency to prevent formation of irreversible scale or fouling.	The membranes will be cleaned at a regular frequency which is estimated to vary between monthly to every four months. The cleaning will typically be completed through a soak and flush process using a weak acid.	one to six times per month	3.6	30.0
Treatment Plant Maintenance	Maintain the treatment and instrumentation equipment to ensure consistent production of high quality drinking water on a continual basis.	During reactive maintenance work which requires shutting down the treatment process for a duration of less than two hours the the wells continue to operate. Scheduled preventive maintenance work will be completed during a membrane cleaning event.	estimated to occur four times per year	3.6	2.0