POLLUTION CONTROL HEARINGS BOARD
FOR THE STATE OF WASHINGTON

SIERRA CLUB; and CENTER FOR ENVIRONMENTAL LAW & POLICY, Petitioner, v. DEPARTMENT OF ECOLOGY, and SPOKANE COUNTY, Respondents,	No. NOTICE OF APPEAL

1. Identity of appealing parties and representative.

The appealing parties are

Sierra Club
85 Second Street, 2nd Floor
San Francisco, CA 94105

Center for Environmental Law & Policy
25 W. Main, Suite 234
Spokane, WA 99201

The representatives of the appealing party are

Richard A. Smith
Marc A. R. Zemel
Smith & Lowney, PLLC
2317 East John Street
Seattle, WA 98112
(206) 860-2883
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2. Identification of other parties.

The respondents in this appeal are the Washington State Department of Ecology ("Ecology") and Spokane County.

3. The decision under appeal.

This is an appeal of Spokane County Regional Water Reclamation Facility ("SCRWRF") NPDES Permit No. WA-0093317, issued by respondent Ecology to respondent Spokane County on November 29, 2011. A copy of this permit is attached.

4. Short and plain statement showing grounds for appeal.

The NPDES permit is unlawful and invalid because it does not meet the requirements or intent of the federal Clean Water Act, applicable regulations promulgated by the Environmental Protection Agency ("EPA"), and Washington State water pollution control law. In violation of these various laws and regulations, the SCRWRF Permit fails to ensure compliance with water quality standards for the Spokane River.

The Spokane River is already in excess of water quality standards for polychlorinated biphenyls ("PCBs") and included on the state's 303(d)-list. Permitting new discharges of PCBs to the Spokane River, as the SCRWRF Permit does, violates the intent, purpose, and specific requirements of the Clean Water Act.

5. Statement of facts.

It is the stated objectives of the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." 33 U.S.C. § 1251(a) (1987). The Act prohibits the discharge of any pollutant from any point source to navigable waters unless that

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discharge complies with the requirements of the Clean Water Act. *Id.* at §§ 1311(a) and 1362(12).

The NPDES permit authorizes the discharge of municipal wastewater to the Spokane River. The SCRWRF will discharge an initial 8 million gallons per day, with an ability to expand to 24 million gallons per day. PCBs, a toxic chemical and known carcinogen, are among the pollutants that will discharge from the SCRWRF to the Spokane River. The SCRWRF is a new source and new discharger of PCBs to the Spokane River.

The Spokane River does not meet water quality standards for PCBs. Fifteen water body segments of the Spokane River and Lake Spokane (also known as Long Lake), and one segment of the Little Spokane River are included on Washington's § 303(d) list of impaired water bodies for failure to attain Washington State or Spokane Tribal PCB water quality criteria. Under § 303 of the Clean Water Act, 33 U.S.C. § 1313, for impaired waters identified in the § 303(d) list, the states must establish a total maximum daily load ("TMDL") for pollutants identified by the EPA. TMDLs establish the maximum amount of a pollutant the water body can receive daily without violating applicable water quality standards. Despite the statutory requirement, Washington has not established a TMDL for PCBs in the Spokane River watershed. Therefore, there remains no TMDL against which the SCRWRF's PCB discharges can be measured and accounted for. Petitioners in this appeal have brought suit to compel the EPA to reject Ecology's constructive submission of no TMDL for the Spokane watershed, and establish its own TMDL, pursuant to 33 U.S.C. § 1313(d)(2). *Sierra Club v. Dennis McLerran*, No. 2:11-cv-01759 (W.D. Wash. Filed Oct. 21, 2011). The SCRWRF's discharge will contribute to the PCB impairment of the 303(d)-listed segments of the Spokane River and Lake Spokane.

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40 C.F.R. § 122.4(i) governs the SCRWRF's ability to discharge PCBs into a river already exceeding its water quality standards for that pollutant. The regulations state: "No permit may be issued . . . [t]o a new source or a new discharger if the discharge from its construction or operation will cause or contribute to the violation of water quality standards." 40 C.F.R. § 122.4(i) (2000). The SCRWRF is such a discharger, for which no permit may be issued. *See Friends of Pinto Creek v. United States Environmental Protection Agency*, 504 F.3d 1007, 1011 (9th Cir. 2007). Although § 122.4(i) provides two opportunities for a new source to receive a permit in certain circumstances, because there is no TMDL for PCBs in the Spokane River, neither are applicable here. In issuing the Permit, Ecology violated applicable law.

7. Relief requested.

Appellant requests that the Board find invalid, vacate, and/or order Ecology to modify or reissue to make consistent with law, SCRWRF's NPDES Permit, No. WA-0093317.

Dated this 28th day of December, 2011.

SMITH & LOWNEY, PLLC

By: _____
Richard A. Smith, WSBA #21788
Marc A. R. Zemel, WSBA #44325
Attorneys for Petitioner

CERTIFICATE OF SERVICE

I, Lonnie Lopez, declare that I had this Notice Of Appeal served by legal messenger service on the Department of Ecology, 300 Desmond Drive, Lacey, WA 98503, and by Certified mail on Bruce Rawls, Director of Utilities, Spokane County, 1026 W. Broadway Avenue, Spokane, WA 99260 on December 28, 2011.

_____
Lonnie Lopez

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Issuance Date: November 29, 2011
Effective Date: December 1, 2011
Expiration Date: November 31, 2016

National Pollutant Discharge Elimination System
Waste Discharge Permit No. WA-0093317

State of Washington
DEPARTMENT OF ECOLOGY
Olympia, Washington 98504-7600

Eastern Regional Office
4601 North Monroe Street
Spokane, WA 99205-1295

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1342 et seq.

Spokane County Division of Utilities
1026 W. Broadway Ave.
Spokane, WA 99260-0430

is authorized to discharge in accordance with the Special and General Conditions that follow.

Plant Location: Spokane County Regional Water Reclamation Facility, 1004 North Freya Street, Spokane, WA 99202	Receiving Water: Spokane River Latitude: 47.675833° N Longitude: 117.3446944° W
Treatment Type: Step-feed nitrification/denitrification membrane bioreactor	

James M. Bellatty
Water Quality Section Manager
Eastern Regional Office
Washington State Department of Ecology

Table of Contents

Summary of Permit Report Submittals

Refer to the Special and General Conditions of this permit for additional submittal requirements.

Permit Section	Submittal	Frequency	First Submittal Date
S3.A	Discharge Monitoring Report	Monthly	January 15, 2012
S3.E	Reporting Permit Violations	As necessary	---
S3.E.a	Reporting Permit Violations – Immediate Reporting	As necessary	---
S3.E.b	Reporting Permit Violations – 24-Hour Reporting	As necessary	---
S3.E.c	Reporting Permit Violations – Report within Five Days	As necessary	---
S3.E.e	Reporting Permit Violations – All Other Reporting	Monthly as necessary	---
S3.F	Other Reporting	As necessary	---
S4.B	Plans for Maintaining Adequate Capacity	As necessary	---
S4.D	Notification of New or Altered Sources	As necessary	---
S4.F	Wasteload Assessment	Annually	March 1, 2013
S5.F	Bypass Notification	As necessary	---
S5.G	Operations and Maintenance Manual Update or Review Confirmation Letter	Annually	April 15, 2013
S6.D	Local Limits Update		August 15, 2013
S6.E	Annual List of Industrial Users	Annually	
S6.E	Industrial User Survey Submittal	1/permit cycle	
S6.E	Industrial User Survey Update		
S6.A.2	Accidental Spill Plan Submittal	1/permit cycle	October 1, 2014
S6.A.5	Pretreatment Report	Annually	May 1, 2012
S8	Application for Permit Renewal	1/permit cycle	October 1, 2015
S9.A	Receiving Water Study of Temperature – Quality Assurance Plan	1/permit cycle	March 1, 2012
S9.A	Receiving Water Study of Temperature Results	Annually	December 31, 2012
S9.B	Receiving Water Study – Quality Assurance Plan	1/permit cycle	March 1, 2012
S9.B	Receiving Water Study Results	1/permit cycle	March 15, 2013
S9.C	Toxics Quality Assurance Plan (QAPP)	1/permit cycle	March 15, 2012
S10A	First Acute Toxicity Characterization Data Report	See Section S10.A	April 30, 2014
S10.D	First Acute Toxicity Compliance Monitoring Reports	See Section S10.D	April 30, 2014
S10.E	Acute Toxicity TI/TRE Plan	As necessary	---

Permit Section	Submittal	Frequency	First Submittal Date
S11.A	First Chronic Toxicity Characterization Data Report	See Section S11.A	April 30, 2014
S11.D	First Chronic Toxicity Compliance Monitoring Reports	See Section S11.D	April 30, 2014
S11.D	Chronic Toxicity TI/TRE Plan	As necessary	
S12.	Annual Toxics Management Report	Annually	April 15, 2013
S13.	Regional Toxics Task Force organizational and governing documents.	1/permit cycle	November 30, 2011
G1.	Notice of Change in Authorization	As necessary	---
G4.	Reporting Planned Changes	As necessary	---
G5.	Engineering Report for Construction or Modification Activities	As necessary	---
G7.	Notice of Permit Transfer	As necessary	---
G10.	Duty to Provide Information	As necessary	---
G13.	Payment of Fees	As assessed	---
G20.	Compliance Schedules	As necessary	---
G21.	Contract Submittal	As necessary	---

Special Conditions

S1. Discharge limits

All discharges and activities authorized by this permit must comply with the terms and conditions of this permit. The discharge of any of the following pollutants more frequently than, or at a level in excess of, that identified and authorized by this permit violates the terms and conditions of this permit.

Beginning on the effective date of this permit and lasting through the expiration date, the Permittee is authorized to municipal wastewater to the Spokane River at the permitted location subject to compliance with the following limits:

S1.A. Effluent limits for the oxygen consuming pollutants implementing the Spokane River and Lake Spokane DO TMDL (as the DO TMDL was submitted & approved).

Effluent Limits: Outfall # 001 **Latitude 47.675833 N Longitude -117.3469444 W**		
Parameter	**Seasonal Limit Applies March 1 to October 31** **See notes f and g**	
Carbonaceous Biochemical Oxygen Demand (5-day) ($CBOD_5$)	280 pounds/day (lbs/day)	
Total Phosphorus (as P) March 1 to Oct. 31	2.80 lbs/day	
Total Ammonia (as NH_3-N)	**Seasonal Limit**	**Maximum Daily Limit**
For "season" of March 1 to May 31	55.4 lbs/day	16 mg/L
For "season" of June 1 to Sept. 30	14.0 lbs/day	8.0 mg/L
For "season" of Oct. 1 to Oct. 31	55.4 lbs/day	16 mg/L
Parameter	**Average Monthly [a]**	**Average Weekly [b]**
Carbonaceous Biochemical Oxygen Demand (5-day) ($CBOD_5$), November 1 through February 29	4.2 milligrams/liter (mg/L); 280 lbs/day	6.3 mg/L; 420 lbs/day

S1.B Alternate effluent limits for oxygen consuming pollutants demonstrated to be equivalent to DO TMDL baseline effluent limits in S1.A

During the start up period, 2011, 2012 and 2013, the Permittee may use the "offset" total phosphorus from septic tank eliminations identified in the approved wastewater facilities plan as amended in November 2011, to offset the DO depleting value of CBOD5, total ammonia, or total phosphorus up to the value of the total phosphorus used in the approved offset scenario submitted to and approved by Ecology. The amount of offset used for this is to be identified in the transmittal letter accompanying the monthly discharge report, DMR.

The transmittal letter will maintain a running total of offsets used through the applicable "season." A report summarizing the offsets used from March 1 to October 31 must accompany the submission of the October DMR.

Effluent Limits: Outfall # 001 Latitude 47.675833 N Longitude -117.3469444 W		
Parameter	**Seasonal Limit Applies March 1 to October 31 See notes f and g**	
Carbonaceous Biochemical Oxygen Demand (5-day) ($CBOD_5$)	133.4 pounds/day (lbs/day) average	
Total Phosphorus (as P) March 1 to Oct. 31	3.34 lbs/day average	
Total Ammonia (as NH_3-N)	**Seasonal Limit**	**Maximum Daily Limit [d]**
For "season" of March 1 to March 31	1067.5 lbs/day average	16mg/L
For "season" of April 1 to May 31	66.7 lbs/day average	16 mg/L
For "season" of June 1 to Sept. 30	16.7 lbs/day average	8.0 mg/L
For "season" of Oct. 1 to Oct. 31	66.7 lbs/day average	16 mg/L
Parameter	**Average Monthly [a]**	**Average Weekly [b]**
Carbonaceous Biochemical Oxygen Demand (5-day) ($CBOD_5$), November 1 through February 29	2.0 milligrams/liter (mg/L) 133 pounds/day (lbs/day)	---

S1.C. Effluent limits for remaining permitted pollutants

Effluent Limits: Outfall # 001 Latitude 47.675833 N Longitude -117.3469444 W		
Parameter	**Average Monthly [a]**	**Average Weekly [b]**
Total Suspended Solids (TSS)	5 mg/L; 334 lbs/day	7.5 mg/L; 500 lbs/day
Total PCBs see section **S9.C, S12, S13** and footnote **h**		
Parameter	**Daily Minimum**	**Daily Maximum [d]**
pH [e]	7.0 standard units	9.0 standard units
Parameter	**Monthly Geometric Mean**	**Weekly Geometric Mean**
Fecal Coliform Bacteria [c]	200/100 milliliter (mL)	400/100 mL
Parameter	**Average Monthly**	**Daily Maximum [d,i]**
Cadmium (total)	0.076 ug/L	0.233 ug/L
Lead (total)	0.772 ug/L	1.34 ug/L

Effluent Limits: Outfall # 001 Latitude 47.675833 N Longitude -117.3469444 W		
Zinc (total)	53.8 µg/L	72.6 µg/L
Total Residual Chlorine	16.8 ug/L	33.6 ug/L

a	Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured. See footnote c for fecal coliform calculations.
b	Average weekly discharge limitation means the highest allowable average of ``daily discharges" over a calendar week, calculated as the sum of all ``daily discharges" measured during a calendar week divided by the number of ``daily discharges" measured during that week. See footnote c for fecal coliform calculations.
c	Ecology provides directions to calculate the monthly and the 7-day geometric mean in publication No. 04-10-020, Information Manual for Treatment Plant Operators available at: http://www.ecy.wa.gov/pubs/0410020.pdf
d	The Daily Maximum effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. For pollutants with limits expressed in units of mass, calculate the daily discharge as the total mass of the pollutant discharged over the day. This does not apply to pH or temperature.
e	Indicates the range of permitted values. When pH is continuously monitored, excursions between 6.0 and 7.0, or 9.0 and 10.0 shall not be considered violations provided no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month. Any excursions below 6.0 and above 10.0 are violations. The instantaneous maximum and minimum pH shall be reported monthly.
f	Compliance with the effluent limitations for CBOD5, NH3-N and TP will be based on: 1) a seasonal average with the running seasonal average for the season reported monthly for tracking compliance with the allowable mass limitation, and 2) a combination of reported effluent quality, pollutant equivalencies in term of oxygen depletion and pollutant credits earned from Septic Tank Eliminations and approved by Ecology, following a revised run of the current, 2011, CE-QUAL-W2 model demonstrating compliance with DO TMDL wasteload allocation and permit conditions. The model run results and accompanying documentation will be submitted to the DO TMDL advisory committee for review and to Ecology for review, comment (if needed) and Ecology approval.
g	Future adjustments to the final effluent limitations based on demonstrated pollutant equivalencies or non-bioavailable P will be implemented as major permit modifications requiring public notice and comment.
h	The effluent monitoring results for PCBs will be compiled and analyzed by Ecology for the

Effluent Limits: Outfall # 001 Latitude 47.675833 N Longitude -117.3469444 W	
	purpose of establishing a performance based PCB effluent limitation for the following permit cycle.
i	The Permittee can request a recalculation of the performance based metals effluent limits after 2 years.

S1.D. Mixing zone authorization

Mixing zone for Outfall No. 001

The following table defines the maximum boundaries of the mixing zones:

Season	Distance to mixing zone boundary		Dilution at mixing zone boundary		Plume Width at chronic mixing zone boundary
	Acute (ft.)	Chronic (ft.)	Acute (ft.)	Chronic (ft.)	
Summer	4.7	47	1.4	8.6	21
Winter	12	118	2.6	15	18

Seasonal Dilution Factors for the mixing zone for Outfall No. 001

	Summer		Winter	
Criteria	Acute	Chronic	Acute	Chronic
Aquatic Life	1.77	11.89	2.41	20.90
Human Health, Carcinogen		35.72		64.44
Human Health, Non-carcinogen		16.78		28.86

S2. Monitoring requirements

S2.A. Monitoring Schedule

Parameter	Units	Minimum Sampling Frequency	Sample Type
(1) Wastewater Influent			
Wastewater Influent means the raw sewage flow from the collection system into the treatment facility. Sample the wastewater entering the headworks of the treatment plant excluding any side-stream returns from inside the plant.			

Parameter	Units	Minimum Sampling Frequency	Sample Type
Flow (average, maximum)	MGD	Continuous[1]	Metered
pH (min, max) [4]	s.u.	Continuous[1]	Metered
Temperature	°C	Daily	Grab[7 & 13]
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	mg/L, lbs/day[9]	Daily	24-Hour Composite[2]
Total Suspended Solids (TSS)	mg/L, lbs/day[9]	Daily	24-Hour Composite[2]
Total Nitrogen (TN as N)	mg/L, lbs/day[9]	1 per week	24-Hour Composite[2]
Nitrate + Nitrite (NO_3+NO_2 as N)	mg/L	1 per week	24-Hour Composite[2]
Total Ammonia (NH_3 as N),	mg/L, lbs/day[9]	3 per week[8]	24-Hour Composite[2]
Total Phosphorus (as P)	µg/L, lbs/day[9]	Daily	24-Hour Composite[2]
Arsenic (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Cadmium (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Copper (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Lead (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Zinc (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Mercury (Total Recoverable)	µg/L	monthly[10]	24-Hour Composite[2]
Silver (Total Recoverable)	µg/L	monthly[10]	24-Hour Composite[2]
Total PCBs [12, 15 & 16] In each influent trunk line	ng/L	Bi-monthly (6/year)	24-Hour Composite[2]
2,3,7,8, TCDDs [12, 15 &16] In each influent trunk line	ng/L	Bi-monthly (6/year)	24-Hour Composite[2]
PBDE [12, 15 & 16] (polybrominated diphenyl ethers) In each influent trunk line	ng/L	1 per quarter	24-Hour Composite[2]
(2) Final Wastewater Effluent			
Final Wastewater Effluent means wastewater exiting the last treatment process or operation.			

Parameter	Units	Minimum Sampling Frequency	Sample Type
Typically, this is after or at the exit from the chlorine contact chamber or other disinfection process. The Permittee may take effluent samples for the $CBOD_5$ analysis before or after the disinfection process. If taken after, the Permittee must dechlorinate and reseed the sample.			
Flow (average, maximum)	MGD	Continuous[1]	Metered
pH (min, max)[4]	s.u.	Continuous[1]	Metered
Temperature, daily	°C	Continuous[1 & 13]	Metered
Temperature, 7-DAD Max Temperature	°C		Calculated[14]
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)[6 & 18]	mg/L, lbs/day[9]	Daily	24-Hour Composite[2]
Total Suspended Solids (TSS)	mg/L, lbs/day[9] % removal[3]	Daily	24-Hour Composite[2]
Fecal Coliform[5]	cfu/100 mL	3 per week[8]	Grab[7]
Dissolved Oxygen	mg/L	Daily	Grab[7]
Total Nitrogen (TN as N)	mg/L, lbs/d[9]	1 per week	24-Hour Composite[2]
Nitrate + Nitrite (NO_3+NO_2 as N)	mg/L, lbs/day[9]	1 per week	24-Hour Composite[2]
Total Ammonia (NH_3 as N)[18 & 19]	mg/L as N, lbs/d[9]	Daily	24-Hour Composite[2]
Total Phosphorus (as P)[18 & 20]	µg/L, lbs/day[9]	Daily	24-Hour Composite[2]
Alkalinity (total as $CaCO_3$)	mg/L	3 per week[8]	Grab[7]
Hardness	mg/L	1 per week	Grab[7]
Arsenic (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Cadmium (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Copper (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Lead (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Zinc (Total Recoverable)	µg/L	Once every 2 weeks	24-Hour Composite[2]
Mercury (Total Recoverable)	µg/L	monthly[10]	24-Hour Composite[2]
Silver (Total Recoverable)	µg/L	monthly[10]	24-Hour Composite[2]
Total PCBs[12, 15 & 16]	ng/L	1 per quarter[11]	See footnote 22

Parameter	Units	Minimum Sampling Frequency	Sample Type
2,3,7,8, TCDDs [12 & 16]	ng/L	1 per quarter[11]	See footnote 22
PBDE [12, 16 &17] (polybrominated diphenyl ethers)	ng/L	1 per quarter[11]	See footnote 22
Total Residual Chlorine	µg/L	Twice per day	Grab[7]
(3) Whole Effluent Toxicity Testing – Final Wastewater Effluent			
Acute Toxicity Testing	---	Quarterly[11] in 2014	24-Hour Composite[2]
Chronic Toxicity Testing	---	Quarterly[11] in 2014	24-Hour Composite[2]
Additional requirements specified in Permit Condition S10 and S11.			
(4) Pretreatment			
As specified in Permit Condition S6.			
(5) Permit Renewal Application Requirements – Final Wastewater Effluent			
Beginning in 2012, the Permittee must record and report the wastewater treatment plant flow discharged on the day it collects the sample for priority pollutant testing with the discharge monitoring report.			
Temperature	°C	Once/July Once/December	Measurement
$CBOD_5$[6]	mg/L	Once per year	24-Hour Composite[2]
Fecal Coliform[5]	Organisms/100 mL	Once per year	Grab[7]
Dissolved Oxygen	mg/L	Once per year	Grab[7]
Total Kjeldahl Nitrogen	mg/L as N	Once per year	24-Hour Composite[2]
Total Ammonia[19]	mg/L as N	Once per year	24-Hour Composite[2]
Nitrate plus Nitrite	mg/L as N	Once per year	24-Hour Composite[2]
Oil and Grease	mg/L	Once per year	Grab[7]
Phosphorus (Total)[20]	mg/L as P	Once per year	24-Hour Composite[2]
Total Dissolved Solids	mg/L	Once per year	24-Hour Composite[2]
Total Hardness	mg/L	Once per year	24-Hour Composite[2]
Cyanide	µg/L	Once per year	Grab[7]
Total Phenolic Compounds	µg/L	Once per year	Grab[7]
Priority Pollutants (PP) –	µg/L; nanograms	Once per year	24-Hour

Parameter	Units	Minimum Sampling Frequency	Sample Type
Total Metals	(ng/L) for mercury		Composite[2] Grab[7] for mercury
PP – Volatile Organic Compounds	µg/L	Once per year	Grab[7]
PP – Acid-extractable Compounds	µg/L	Once per year	24-Hour Composite[2]
PP – Base-neutral Compounds	µg/L	Once per year	24-Hour Composite[2]
(6) Receiving Water Temperature Study			
As specified in Section S9.			
(7) Receiving Water Study			
As specified in Permit Condition S9.A & S9.B.			

1	Continuous means uninterrupted except for brief lengths of time for calibration, for power failure, or for unanticipated equipment repair or maintenance.
2	24-hour composite means a series of individual samples collected over a 24-hour period into a single container, and analyzed as one sample.
3	% removal = $\frac{\text{(Influent concentration (mg/L) – Effluent concentration (mg/L)}}{\text{Influent } CBOD_5 \text{ (mg/L) or TSS}} \times 100$ Calculate the percent (%) removal of TSS using the above equation.
4	The Permittee must report the instantaneous maximum and minimum pH daily. Do not average pH values.
5	Report a numerical value for fecal coliforms following the procedures in Ecology's *Information Manual for Wastewater Treatment Plant Operators*, Publication Number 04-10-020 available at: http://www.ecy.wa.gov/programs/wq/permits/guidance.html . Do not report a result as too numerous to count (TNTC).
6	Take effluent samples for the $CBOD_5$ analysis before or after the disinfection process. If taken after, dechlorinate and reseed the sample.
7	Grab means an individual sample collected over a fifteen (15) minute, or less, period.
8	3/week means three (3) times during each calendar week and on a rotational basis throughout the days of the week, except weekends and holidays.
9	Calculation means figured concurrently with the respective sample, using the following formula: Concentration (in mg/L) X Flow (in MGD) X Conversion Factor (8.34) = lbs/day
10	Monthly means once every calendar month during alternate weeks.
11	Quarterly sampling periods are January through March, April through June, July through September, and October through December.
12	Sampling shall begin after approval of the QAPP required in S9.C.
13	Temperature grab sampling must occur when the effluent is at or near its daily maximum

Parameter	Units	Minimum Sampling Frequency	Sample Type
	temperature, which usually occurs in the late afternoon. If measuring temperature continuously, the Permittee must determine and report a daily maximum from half-hour measurements in a 24-hour period. Continuous monitoring instruments must achieve an accuracy of 0.2 degrees C and the Permittee must verify accuracy annually.		
14	Calculate a 7-DAD Max for each day by averaging each days maximum temperature value with the values from the six (6) preceding days.		
15	For PCBs use EPA method 1668 with a reporting limit or quantitation limit of 10 pg/L per congener. For influent monitoring and source tracing a higher limit can be proposed to Ecology in the QAPP if the higher reporting limit still provides adequate source tracing and identification.		
16	See permit section S13.		
17	For PBDEs use draft EPA method 1641 with a reporting limit or quantitation limit of 5 pg/L per congener. For influent monitoring and source tracing a higher limit can be proposed to Ecology in the QAPP if the higher reporting limit still provides adequate source tracing and identification.		
18	Beginning March 1, 2018; for the 3 parameters ($CBOD_5$, NH_3 and TP) with WLAs established by the Spokane River and Lake Spokane DO TMDL, the monthly discharge monitoring report must provide the following information for the "ten year assessment" monitoring and future compliance projections: monthly average, daily maximum, running total for the "season," running average for the "season," projected trend of total lbs. and average concentration and average daily lbs. for remainder of the "season" with future compliance target indicated. If the trend projection indicates a significant potential for noncompliance with the allowable mass limitations to be in effect once the period of formal compliance begins in 2021, the Permittee is to communicate the anticipated result of the projection to the Department with appropriate recommendations to correct any trend potentially resulting in noncompliance.		
19	The reporting limit for Total Ammonia (as N) is 50 ug/L, the analytical protocol is listed in Appendix A of this permit.		
20	The reporting limit for Total Phosphorus is 5 ug/L, the analytical protocol is listed in Appendix A of this permit.		
21	See Appendix A for the required detection (DL) or quantitation (QL) levels. Report single analytical values below detection as "less than (detection level)" where (detection level) is the numeric value specified in attachment A. Report single analytical values between the agency-required detection and quantitation levels with qualifier code of j following the value. To calculate the average value (monthly average): • Use the reported numeric value for all parameters measured between the agency-		

	Parameter	Units	Minimum Sampling Frequency	Sample Type
	required detection value and the agency-required quantitation value. • For values reported below detection, use one-half the detection value if the lab detected the parameter in another sample for the reporting period. • For values reported below detection, use zero if the lab did not detect the parameter in another sample for the reporting period. If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.			
22	The sample type is to be established in the QAPP see S12.			

S2.B. Sampling and analytical procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters. The Permittee must conduct representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions that may affect effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136.

S2.C. Flow measurement, field measurement and continuous monitoring devices

The Permittee must:

1. Select and use appropriate flow measurement, field measurement, and continuous monitoring devices and methods consistent with accepted scientific practices.
2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard and the manufacturer's recommendation for that type of device.
3. Calibrate continuous monitoring instruments weekly unless it can demonstrate a longer period is sufficient based on monitoring records. The Permittee:
   a. May calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.
   b. Must calibrate continuous pH measurement instruments using a grab sample analyzed in the lab with a pH meter calibrated with standard buffers and analyzed within 15 minutes of sampling.

c. Must calibrate continuous chlorine measurement instruments using a grab sample analyzed in the laboratory within 15 minutes of sampling.

4. Calibrate micro-recording temperature devices, known as thermistors, using protocols from Ecology's Quality Assurance Project Plan Development Tool (Continuous Temperature Sampling Protocols for the Environmental Monitoring and Trends). This document is available online at: http://www.ecy.wa.gov/programs/eap/qa/docs/QAPPtool/Mod6%20Ecology%20SOPs/Protocols/ContinuousTemperatureSampling.pdf
Calibration as specified in this document is not required if the Permittee uses recording devices certified by the manufacturer.
5. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
6. Calibrate flow monitoring devices at a minimum frequency of at least one calibration per year.
7. Maintain calibration records for at least three years.

S2.D. Laboratory accreditation

The Permittee must ensure that all monitoring data required by Ecology is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, Accreditation of Environmental Laboratories. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement.

The Permittee must obtain accreditation for conductivity and pH if it must receive accreditation or registration for other parameters.

S2.E. Request for reduction in monitoring

The Permittee may request a reduction of the sampling frequency after twelve (12) months of monitoring. Ecology will review each request and at its discretion grant the request when it reissues the permit or by a permit modification.

The Permittee must:

1. Provide a written request.
2. Clearly state the parameters for which it is requesting reduced monitoring.
3. Clearly state the justification for the reduction.

S3. Reporting and recording requirements

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Ecology is a violation of the terms and conditions of this permit.

S3.A. Reporting

The first monitoring period begins on the effective date of the permit. The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by Ecology. Include a summary listing daily results for the parameters tabulated in Special Condition S2, including MDLs and QLs or reporting limits (when applicable). If submitting DMRs electronically, report a value for each day sampling occurred and for the summary values (when applicable) included on the form.
2. Submit the form as required with the words "no discharge" entered in place of the monitoring results, if the facility did not discharge during a given monitoring period. If submitting DMRs electronically, you must enter "no discharge" for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate.
3. Report the test method, the reporting limit, or the DL and the QL on the discharge monitoring report or in the required report, if the Permittee used an alternative method not specified in the permit and as allowed in Appendix A.
4. Include the following information (for priority pollutant organic and metal parameters lab reports): sampling date, sample location, date of analysis, parameter name, CAS number, analytical method/number, method detection limit (MDL), laboratory practical quantitation limit (PQL), reporting units, and concentration detected. The Permittee must submit a copy of the contract laboratory report to provide this information.

   Analytical results from samples sent to a contract laboratory must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter. If the Permittee submits electronic DMRs, then it must attach an electronic file of the lab report to the electronic DMR.
5. Ensure that DMR forms are postmarked or received by Ecology no later than the dates specified below, unless otherwise specified in this permit. If submitting DMRS electronically, submit the DMR no later than the dates specified below, unless otherwise specified in this permit.
6. Submit DMRs for parameters with the monitoring frequencies specified in S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must submit **monthly** DMRs by the 15th day of the following month.
7. Submit reports to Ecology online using Ecology's electronic DMR submittal forms or send reports to Ecology at:

   Water Quality Permit Coordinator
   Department of Ecology
   Eastern Regional Office
   4601 North Monroe Street
   Spokane, WA 99205-1295

S3.B. Records retention

The Permittee must retain records of all monitoring information for a minimum of three (3) years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by Ecology.

S3.C. Recording of results

For each measurement or sample taken, the Permittee must record the following information:

1. The date, exact place, method, and time of sampling or measurement
2. The individual who performed the sampling or measurement
3. The dates the analyses were performed
4. The individual who performed the analyses
5. The analytical techniques or methods used
6. The results of all analyses

S3.D. Additional monitoring by the Permittee

If the Permittee monitors any pollutant listed in Section S2 of this permit more frequently than required by Section S2 of this permit, using test procedures approved under 40 CFR part 136, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR. Monitoring using test methods not consistent or capable of producing equivalent representative results to methods listed in S2 and Appendix A should not be in calculation and monitoring results.

S3.E. Reporting permit violations

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
2. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to Ecology within thirty (30) days of sampling.

a. Immediate reporting

The Permittee must immediately report to Ecology, the Department of Health, Drinking Water Program, and Spokane Regional Health District (at the numbers listed below), all:

- Failures of the disinfection system.

- Collection system overflows discharging to a water body that may be used for drinking water.
- Plant bypasses discharging to a water body used as a source of drinking water.
- Any other failures of the sewage system (pipe breaks, etc)

Eastern Regional Office Department of Health, Drinking Water Program Spokane Regional Health District	509-329-3400 800-521-0323 (business hours) 877-481-4901 (after business hours) (509) 324-1500 for general information or Environmental Public Health at (509) 324-1560

b. Twenty-four-hour reporting

The Permittee must report the following occurrences of non-compliance by telephone to Ecology at (509)329-3400, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

1. Any non-compliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.

2. Any unanticipated bypass that causes an exceedance of an effluent limit in the permit (See Part S5.F, "Bypass Procedures").
3. Any upset that causes an exceedance of an effluent limit in the permit (See G.15, "Upset").
4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Section S1.A of this permit.
5. Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit.

c. Report within five days

The Permittee must also provide a written submission within five days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above. The written submission must contain:

1. A description of the non-compliance and its cause.
2. The period of non-compliance, including exact dates and times.
3. The estimated time the Permittee expects the non-compliance to continue if not yet corrected.
4. Steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

5. If the non-compliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

d. Waiver of written reports

Ecology may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

e. All other permit violation reporting

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in subpart c, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

f. Report submittal

The Permittee must submit reports to the address listed in S3.A.

S3.F. Other reporting

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of RCW 90.56.280 and chapter 173-303-145. You can obtain further instructions at the following website: http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm.

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to Ecology, it must submit such facts or information promptly.

S3.G. Maintaining a copy of this permit

The Permittee must keep a copy of this permit at the facility and make it available upon request to Ecology inspectors.

S4. Facility loading

S4.A. Design criteria

The flows or waste loads for the permitted facility must not exceed the following design criteria:

Parameter	Design Quantity
Monthly Average Flow	8.0 MGD
Maximum Month Design Flow (MMDF)	8.5 MGD
Peak Design Flow (PDF)	12.1 MGD

BOD_5 loading for maximum month	18,270lb/day
TSS loading for maximum month	20,080 lb/day
Orthophosphate PO_4-P	281 lb/day
Total Phosphorus TP	603.1 lb/day
Ammonia NH_4-N	1,967 lb/day
Total Nitrogen TN	2,978 lb/day

S4.B. Plans for maintaining adequate capacity

a. Conditions triggering plan submittal

The Permittee must submit a plan and a schedule for continuing to maintain capacity to Ecology when:

1. The actual flow or waste load reaches 85 percent of any one of the design criteria in S4.A for three consecutive months. If flow, then an additional criterion is: is there any further capacity at the City's Riverside Park Water Reclamation Facility available for diversion of wastewater to the interceptors?
2. The projected plant flow or loading would reach design capacity within five years. And, there is no further capacity at the City's Riverside Park Water Reclamation Facility available for diversion of wastewater to the interceptors.

Design capacity is defined by the table above in combination with the City County agreement for 10 MGD from the County service area to go to the City's Riverside Park Water Reclamation Facility.

b. Plan and schedule content

The plan and schedule must identify the actions necessary to maintain adequate capacity for the expected population growth and to meet the limits and requirements of the permit. The Permittee must consider the following topics and actions in its plan.

1. Analysis of the present design and proposed process modifications
2. Reduction or elimination of excessive infiltration and inflow of uncontaminated ground and surface water into the sewer system
3. Limits on future sewer extensions or connections or additional waste loads
4. Modification or expansion of facilities
5. Reduction of industrial or commercial flows or waste loads

Engineering documents associated with the plan must meet the requirements of WAC 173-240-060, "Engineering Report," and be approved by Ecology prior to any construction.

If the Permittee intends to apply for state or federal funding for the design or construction of a facility project, the plan may also need to meet the environmental review requirements as described in 40 CFR 35.3040 and 40 CFR 35.3045, and it may also need to demonstrate cost effectiveness as required by WAC 173-95-730. The plan must specify any contracts, ordinances, methods for financing, or other arrangements necessary to achieve this objective.

S4.C. Duty to mitigate

The Permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

S4.D. Notification of new or altered sources

1. The Permittee must submit written notice to Ecology whenever any new discharge or a substantial change in volume or character of an existing discharge into the wastewater treatment plant is proposed which:
   a. Would interfere with the operation of, or exceed the design capacity of, any portion of the wastewater treatment plant.
   b. Is not part of an approved general sewer plan or approved plans and specifications.
   c. Is subject to pretreatment standards under 40 CFR Part 403 and Section 307(b) of the Clean Water Act.
2. This notice must include an evaluation of the wastewater treatment plant's ability to adequately transport and treat the added flow and/or waste load, the quality and volume of effluent to be discharged to the treatment plant, and the anticipated impact on the Permittee's effluent [40 CFR 122.42(b)].

S4.E. Wasteload assessment

The Permittee must conduct an annual assessment of its influent flow and waste load and submit a report to Ecology by March 1, 2013, and annually thereafter. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).

The report must contain:

1. A description of compliance or non-compliance with the permit effluent limits.
2. A comparison between the existing and design:
   a. Monthly average flows
   b. Peak flows
   c. $CBOD_5$ loading
   d. Total suspended solids loadings

e. Nitrogen loading

f. Total Phosphorus loading

3. The percent change in the above parameters since the previous report (except for the first report).
4. The present and design population or population equivalent.
5. The projected population growth rate.
6. The estimated date upon which the Permittee expects the wastewater treatment plant to reach design capacity and if appropriate when the combined capacity of the treatment plant and flow splitting agreement with the City will be reached, according to the most restrictive of the parameters above.

Ecology may modify the interval for review and reporting if it determines that a different frequency is sufficient.

S5. Operation and maintenance

The Permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed to achieve compliance with the terms and conditions of this permit.

Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

S5.A. Certified operator

This permitted facility must be operated by an operator certified by the state of Washington for at least a Class IV plant. This operator must be in responsible charge of the day-to-day operation of the wastewater treatment plant. An operator certified for at least a Class III plant must be in charge during all regularly scheduled shifts.

S5.B. Operation and maintenance program

The Permittee must:

1. Institute an adequate operation and maintenance program for the entire sewage system.
2. Keep maintenance records on all major electrical and mechanical components of the treatment plant, as well as the sewage system and pumping stations. Such records must clearly specify the frequency and type of maintenance recommended by the manufacturer and must show the frequency and type of maintenance performed.
3. Make maintenance records available for inspection at all times.

S5.C. Short-term reduction

The Permittee must schedule any facility maintenance, which might require interruption of wastewater treatment and degrade effluent quality, during non-critical water quality periods and carry this maintenance out in a manner approved by Ecology.

If a Permittee contemplates a reduction in the level of treatment that would cause a violation of permit discharge limits on a short-term basis for any reason, and such reduction cannot be avoided, the Permittee must:

1. Give written notification to Ecology, if possible, thirty (30) days prior to such activities.
2. Detail the reasons for, length of time of, and the potential effects of the reduced level of treatment.

This notification does not relieve the Permittee of its obligations under this permit.

S5.D. Electrical power failure

The Permittee must ensure that adequate safeguards prevent the discharge of untreated wastes or wastes not treated in accordance with the requirements of this permit during electrical power failure at the treatment plant and/or sewage lift stations. Adequate safeguards include, but are not limited to, alternate power sources, standby generator(s), or retention of inadequately treated wastes.

The Permittee must maintain Reliability Class I (EPA 430/9-74-001) at the wastewater treatment plant. Reliability Class I requires a backup power source sufficient to operate all vital components and critical lighting and ventilation during peak wastewater flow conditions.

S5.E. Prevent connection of inflow

The Permittee must strictly enforce its sewer ordinances and not allow the connection of inflow (roof drains, foundation drains, etc.) to the sanitary sewer system.

S5.F. Bypass procedures

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility. Ecology may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

2. This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by Ecology prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10) days before the date of the bypass.
3. Bypass which is unavoidable, unanticipated, and results in non-compliance of this permit.

   This permit authorizes such a bypass only if:

   a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

   b. No feasible alternatives to the bypass exist, such as:

      - The use of auxiliary treatment facilities.
      - Retention of untreated wastes.
      - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
      - Transport of untreated wastes to another treatment facility or preventative maintenance), or transport of untreated wastes to another treatment facility.

   c. Ecology is properly notified of the bypass as required in Condition S3.E of this permit.

4. If bypass is anticipated and has the potential to result in non-compliance of this permit.

   a. The Permittee must notify Ecology at least thirty (30) days before the planned date of bypass. The notice must contain:

      - A description of the bypass and its cause.
      - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
      - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
      - The minimum and maximum duration of bypass under each alternative.
      - A recommendation as to the preferred alternative for conducting the bypass.
      - The projected date of bypass initiation.
      - A statement of compliance with SEPA.

- A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
- Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

b. For probable construction bypasses, the Permittee must notify Ecology of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of the engineering report or facilities plan and plans and specifications and must include these to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.

c. Ecology will consider the following prior to issuing an administrative order for this type of bypass:

- If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, Ecology will approve or deny the request. Ecology will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. Ecology will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

S5.G. Operations and maintenance (O&M) manual

a. O&M manual submittal and requirements

The Permittee must:

1. Review the O&M Manual at least annually and confirm this review **by letter to Ecology by April 15, 2013** of each year.
2. Submit to Ecology for review and approval substantial changes or updates to the O&M Manual whenever it incorporates them into the manual. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
3. Keep the approved O&M Manual at the permitted facility.
4. Follow the instructions and procedures of this manual.

b. O&M manual components

In addition to the requirements of WAC 173-240-080 (1) through (5), the O&M Manual must include:

1. Emergency procedures for cleanup in the event of wastewater system upset or failure.
2. Wastewater system maintenance procedures that contribute to the generation of process wastewater.
3. Reporting protocols for submitting reports to Ecology to comply with the reporting requirements in the discharge permit.
4. Any directions to maintenance staff when cleaning or maintaining other equipment or performing other tasks which are necessary to protect the operation of the wastewater system (for example, defining maximum allowable discharge rate for draining a tank, blocking all floor drains before beginning the overhaul of a stationary engine).
5. The treatment plant process control monitoring schedule.
6. Minimum staffing adequate to operate and maintain the treatment processes and carry out compliance monitoring required by the permit.
7. Specify other items on case-by-case basis such as O&M for collection systems pump stations, lagoon liners, etc.

S6. Pretreatment

S6.A. General Requirements

1. The Permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the Permittee's approved pretreatment program submittal entitled "Industrial Pretreatment Program" and updated on February 5, 2001; any approved revisions thereto; and the General Pretreatment Regulations (40 CFR Part 403). The Ordinance section containing the local limits was last updated October 1, 2009.

   A meeting was held on October 20, 2004 at the Department of Ecology Eastern Regional Office on the subject of Spokane-area pretreatment. The Department of Ecology, City of Spokane, Spokane County, and the City of Spokane Valley agreed that Spokane County has the authority to administer its Delegated Pretreatment Program to their present and future sewer customers located within their designated sewer service areas in Spokane County and in the City of Spokane Valley. For the purpose of this permit and pretreatment program delegation, this applies to customers who contribute wastewater into the Spokane County sewer collection system and are located outside of the corporate limits of the City of Spokane and within the City of Spokane Valley and Spokane County.

Existing permitted facilities that this applies to, Ecolite, Galaxy Compound Semiconductors, Lloyd Industries, Honeywell, Kemira Water Solutions, American On-Site Services and Novation in the City of Spokane Valley, and the Mica Landfill in Spokane County. The County acknowledges that as owner and operator of a wastewater collection system it is their responsibility to protect their infrastructure, and by agreement the infrastructure of the downstream POTWs, and accepts the obligations of a Delegated Pretreatment Program.

Both the City of Spokane and Spokane County, as the control authority for their Delegated Pretreatment Programs, will continue to enforce and update, if necessary and appropriate, their interlocal agreements and/or multijurisdictional pretreatment agreement with "contributing" jurisdictions such as Millwood, the City of Spokane Valley and the City of Spokane. Some of these actions will include conducting Industrial User Surveys, monitoring, and permitting commercial and/or industrial users.

At a minimum, the following pretreatment implementation activities shall be undertaken by the Permittee:

a. Enforce categorical pretreatment standards promulgated pursuant to Section 307(b) and (c) of the Federal Clean Water Act (hereinafter, the Act), prohibited discharge standards as set forth in 40 CFR 403.5, local limitations specified in Section 08.03A.0204 of Ordinance 8.03A, or state standards, which ever are most stringent or apply at the time of issuance or modification of a local industrial waste discharge permit. Locally derived limitations shall be defined as pretreatment standards under Section 307(d) of the Act and shall not be limited to categorical industrial facilities.

b. Issue industrial waste discharge permits to all significant industrial users [SIUs, as defined in 40 CFR 403.3(v)] contributing to the treatment system, including those from other jurisdictions. Industrial waste discharge permits shall contain as a minimum, all the requirements of 40 CFR 403.8 (f)(l)(iii). The Permittee shall coordinate the permitting process with the Department regarding any industrial facility, which may possess a state waste discharge permit issued by the Department. Once issued, an industrial waste discharge permit will take precedence over a state-issued waste discharge permit.

c. Maintain and update, as necessary, records identifying the nature, character, and volume of pollutants contributed by industrial users to the POTW. Records shall be maintained for at least a three-year period.

d. Perform inspections, surveillance, and monitoring activities on industrial users to determine and/or confirm compliance with applicable pretreatment standards and requirements. A thorough inspection of SIUs shall be conducted annually.

Frequency of regular local monitoring of SIU wastewaters shall normally be commensurate with the character and volume of the wastewater but shall not be less than once per year. Sample collection and analysis shall be performed in accordance with 40 CFR Part 403.12(b)(5)(ii)-(v) and 40 CFR Part 136.

e. Enforce and obtain remedies for noncompliance by any industrial users with applicable pretreatment standards and requirements. Once violations have been identified, the Permittee shall take timely and appropriate enforcement action to address the noncompliance. The Permittee's action shall follow its enforcement response procedures and any amendments, thereof.

f. Publish, at least annually in a newspaper of general circulation in the Permittee's service area, a list of all nondomestic users which, at any time in the previous 12 months, were in significant noncompliance as defined in 40 CFR 403.8(f)(2)(viii) through 40 CFR 403.8(f)(2)(viii)(H).

g. If the Permittee elects to conduct sampling of an SIU's discharge in lieu of requiring user self-monitoring, it must satisfy all requirements of 40 CFR Part 403.12.
This includes monitoring and record keeping requirements of Sections 403.12(g) and (o). For SIUs subject to categorical standards (CIUs), the Permittee may either complete baseline and initial compliance reports for the CIU (when required by 403.12(b) and (d)) or require these of the CIU. The Permittee must ensure that it provides SIUs the results of sampling in a timely manner, inform SIUs of their right to sample, their obligations to report any sampling they do, to respond to non-compliance, and to submit other notifications. These include a slug load report (403.12(f)), notice of changed discharge (403.12(j)), and hazardous waste notifications (403.12(p)). If sampling for the SIU, the Permittee must not sample less than once in every six-month period unless the Permittee's approved program includes procedures for reduction of monitoring for Middle-Tier or Non-Significant Categorical Users per 403.12(e)(2) and (3) and those procedures have been followed.

h. Develop and maintain a data management system designed to track the status of the Permittee's industrial user inventory, industrial user discharge characteristics, and compliance status.

i. Maintain adequate staff, funds, and equipment to implement its pretreatment program.

j. Establish, where necessary, legally binding agreements with contributing jurisdictions to ensure compliance with applicable pretreatment requirements by commercial or industrial users within these jurisdictions.

These agreements must identify the agency responsible to perform the various implementation and enforcement activities in the contributing jurisdiction. In addition, the Permittee must develop Multi-Jurisdictional Agreements that outlines the specific roles, responsibilities, and pretreatment activities of each jurisdiction.

2. The Permittee shall review, change if necessary, and submit to the Department for approval **by October 1, 2014**; an updated Accidental Spill Prevention Program. The program, as approved by the Department, shall include a schedule for implementation, and shall become an enforceable part of these permit conditions.

3. The Permittee must evaluate any new designated Significant Industrial User within one year of designation for a plan or other action to control Slug Discharges and also in accordance with 40 CFR 403.8(f)(1)(iii)(B)(6), 40 CFR 403.8(f)(2)(vi) and 40 CFR 403.8(f)(2)(vi)(A)-(D).

4. The Permittee must evaluate at a minimum whether or not each Significant Industrial User needs a plan to control slug discharges. For purposes of this section, a slug discharge is any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or non-customary batch discharge.

   The Permittee must make the results of this evaluation available to Ecology upon request. If the Permittee decides that a slug control plan is needed, the plan must contain, at a minimum, the following elements:

   a. Description of discharge practices, including non-routine batch discharges.

   b. Description of stored chemicals.

   c. Procedures for immediately notifying the Permittee of slug discharges, including any discharge that would violate a prohibition under 40 CFR 403.5(b), with procedures for follow-up written notification within five days.

   d. If necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment necessary for emergency response.

5. Pretreatment Report

   Each Pretreatment Program Permittee shall provide to the Department an annual report that briefly describes its program activities during the previous calendar year. This report shall be submitted no later than May 1 of each year to:

Washington Department of Ecology,
Eastern Regional Office,
4601 North Monroe Street,
Spokane, WA 99205-1295.

The report shall include the requirements listed in 40 CFR 403.12(h)(i)(1)-(5) and the following additional information:

a. An updated nondomestic inventory (Industrial User Survey).

b. Results of wastewater sampling at the treatment plant **as specified in S6.B.** The Permittee shall calculate removal rates for each pollutant and evaluate the adequacy of the existing local limitations in Section 8.03A.0204 of Ordinance 08.03A in prevention of treatment plant interference, pass through of pollutants that could affect receiving water quality, and sludge contamination.

c. Status of program implementation, including:

(1) Any substantial modifications to the pretreatment program as originally approved by the Department, including staffing and funding levels.

(2) Any interference, upset, or permit violations experienced at the POTW that are directly attributable to wastes from industrial users.

(3) Listing of industrial users inspected and/or monitored, and a summary of the results.

(4) Listing of industrial users scheduled for inspection and/or monitoring for the next year, and expected frequencies.

(5) Listing of industrial users notified of promulgated pretreatment standards and/or local standards. Indicate which industrial users are on compliance schedules and the final date of compliance for each.

(6) Listing of industrial users issued industrial waste discharge permits.

(7) Planned changes in the pretreatment program implementation plan. (See subsection S6.A.1)

d. Status of compliance activities, including:

(1) Listing of industrial users that failed to submit baseline monitoring reports or any other reports required under 40 CFR 403.12 and in accordance with the Permittee's current pretreatment program.

(2) Listing of industrial users that were at any time during the reporting period not complying with federal, state, or local pretreatment standards or with applicable compliance schedules for achieving those standards, and the duration of such non-compliance.

(3) Summary of enforcement activities and other corrective actions taken or planned against non-complying industrial users. The Permittee shall supply to the Department a copy of the public notice of facilities that were in significant noncompliance.

e. Local Limits updates and any updates specified in S6.C and S6.D.

S6.B. Monitoring Requirements

The Permittee must:

1. Monitor its influent, effluent, and sludge for the priority pollutants identified in Tables II and III of Appendix D of 40 CFR Part 122 as amended, any compounds identified because of Condition S6.B.4, and any other pollutants expected from non-domestic sources using U.S. EPA-approved procedures for collection, preservation, storage, and analysis. Section S2 (Monitoring Requirements) in a few instances requires a more sensitive quantitation or reporting limit than appendix A. When required the requirements of S2 are to control monitoring and reporting requirements.
2. Test influent, effluent, and sludge samples for the priority pollutant metals (Table III, 40 CFR 122, Appendix D) on a quarterly basis throughout the term of this permit.
3. Test influent, effluent, and sludge samples for the organic priority pollutants (Table II, 40 CFR 122, Appendix D) on an annual basis. The Permittee may use the data collected for application purposes using Appendix A test methods to meet this requirement.
4. Sample POTW influent and effluent on a day when industrial discharges are occurring at normal-to-maximum levels.
5. Obtain 24-hour composite samples for the analysis of acid and base/neutral extractable compounds and metals.
6. Collect grab samples at equal intervals for a total of four grab samples per day for the analysis of volatile organic compounds. The laboratory may run a single analysis for volatile pollutants (Method 624) for each monitoring day by compositing equal volumes of each grab sample directly in the GC purge and trap apparatus in the laboratory, with no less than 1 ml of each grab included in the composite.
7. Ensure that all reported test data for metals represents the total amount of the constituents present in all phases, whether solid, suspended, or dissolved elemental or combined, including all oxidation states unless otherwise indicated.

8. Handle, prepare, and analyze all wastewater samples taken for GC/MS analysis in accordance with the U.S. EPA Methods 624 and 625 (October 26, 1984).
9. Collect a sludge sample concurrently with a wastewater sample as a single grab of residual sludge. Sludge organic priority pollutant sampling and analysis must conform to U.S. EPA Methods 624 and 625 unless the Permittee requests an alternate method and Ecology has approved. Sludge metals priority pollutant sampling and analysis must conform to U.S. EPA SW 846 6000/7000 Series Methods unless the Permittee requests an alternate method and Ecology has approved.
10. Collect grab samples for cyanide, phenols, and oils. Measure hexane soluble oils (or equivalent) only in the influent and effluent.
11. Make a reasonable attempt to indentify all other substances and quantify all pollutants shown to be present by gas chromatograph/mass spectrometer (GC/MS) analysis per 40 CFR 136, Appendix A, Methods 624 and 625, in addition to quantifying pH, oil and grease, and all priority pollutants.

    The Permittee should attempt to make determinations of pollutants for each fraction, which produces identifiable spectra on total ion plots (reconstructed gas chromatograms). The Permittee should attempt to make determinations from all peaks with responses 5% or greater than the nearest internal standard. The 5% value is based on internal standard concentrations of 30 µg/l, and must be adjusted downward if higher internal standard concentrations are used or adjusted upward if lower internal standard concentrations are used. The Permittee may express results for non-substituted aliphatic compounds as total hydrocarbon content.
12. Use a laboratory whose computer data processing programs are capable of comparing sample mass spectra to a computerized library of mass spectra, with visual confirmation by an experienced analyst.
13. Conduct additional sampling and appropriate testing to determine concentration and variability, and to evaluate trends for all detected substances determined to be pollutants.

S6.C. Reporting of Monitoring Results

The Permittee shall include a summary of monitoring results in the Annual Pretreatment Report.

S6.D. Local Limit Update

By August 15, 2013, the Permittee shall, in consultation with the Department, reevaluate and update their local limits in order to prevent pass through or interference. The Permittee should refer to EPA's Local Limits Development Guidance dated July 2004.

The Permittee should also consider Total Toxic Organics, Phosphorus, metals, and conventional pollutants in their revise local limits. Upon determination by the Department that any pollutant present causes pass through or interference, or exceeds established sludge standards, the Permittee shall establish new local limits or revise existing local limits as required by 40 CFR 403.5. In addition, the Department may require revision or establishment of local limits for any pollutant discharged from the POTW that has a reasonable potential to exceed the Water Quality Standards, Sediment Standards, or established effluent limits, or causes whole effluent toxicity. The determination by the Department shall be in the form of an Administrative Order.

The Department may modify this permit to incorporate additional requirements relating to the establishment and enforcement of local limits for pollutants of concern. Any permit modification is subject to formal due process procedures pursuant to state and federal law and regulation.

S6.E. Mercury Abatement and Control Plan

The Permittee shall revise and submit to the Department of Ecology an updated Mercury abatement and control plan. The plan shall be expanded as the Department of Ecology develops and releases further guidance. The Mercury Control Plan shall be submitted to the Department of Ecology **by February 15, 2016.**

Mercury Plan development guidance can be found at the following locations:

Ecology Mercury Website http://www.ecy.wa.gov/mercury/
For Dental Plan Guidance http://www.ecy.wa.gov/dentalbmps/index.html
Reduction Plan Guidance http://www.ecy.wa.gov/biblio/0303001.html

S7. Solid wastes

S7.A. Solid waste handling

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

S7.B. Leachate

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC.

S8. Application for permit renewal or modification for facility changes

The Permittee must submit an application for renewal of this permit **by October 1, 2015.** The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

The Permittee must also submit a new application or supplement at least one hundred eighty (180) days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

S9. Receiving Water Study

The Permittee must collect information on the effluent and receiving water, upstream and downstream to determine if the effluent has impacted beneficial uses or water quality standards.

S9.A Temperature Monitoring

For temperature monitoring the Permittee must:

1. Submit a Sampling Quality Assurance Project Plan for Ecology review and approval by March 1, 2012. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
2. Conduct all sampling and analysis in accordance with the guidelines given in *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*, Ecology Publication 04-03-030 (http://www.ecy.wa.gov/pubs/0403030.pdf). A model Quality Assurance Plan specific for temperature is available at http://www.ecy.wa.gov/programs/wq/permits/guidance.html.
3. Measure temperature in the ambient water upstream and downstream of the outfall during the months of June through October of each year.
4. Use micro-recording temperature devices known as thermistors to measure temperature. Ecology's Quality Assurance Project Plan Development Tool *(Continuous Temperature Sampling Protocols for the Environmental Monitoring and Trends)* contains protocols for continuous temperature sampling. This document is available online at http://www.ecy.wa.gov/programs/eap/qa/docs/QAPPtool/Mod6%20Ecology%20SOPs/Protocols/ContinuousTemperatureSampling.pdf .
5. Calibrate the devices as specified in this document unless using recording devices certified by the manufacturer. Ecology does not require manufacture-specific equipment as given in this document; however, if the Permittee wishes to use measuring devices from another company, it must demonstrate the accuracy is equivalent.
6. Set the recording devices to record at one-half-hour intervals.
7. Report temperature monitoring data as: daily maximum, seven-day running average of the daily maximums, and the monthly maximum of the seven-day running average. The model Quality Assurance Plan shows an example of these calculations.

8. Use the temperature device manufacturer's software to generate (export) an Excel text file of the temperature data for each June-October period. Send this file and placement logs to Ecology by December 31 of the monitoring year. The placement logs should include the following information for both thermistor deployment and retrieval: date, time, temperature device manufacturer ID, location, depth, whether it measured air or water temperature, and any other details that may explain data anomalies. An example of a placement log is shown in Appendix F of the document referenced in item D above.
9. Submit the temperature data for the season (June through October) at end of the year with the placement logs.

S9.B Conventional Parameters

For other conventional parameters listed in S2, the permittee must:

1. Submit a Sampling Quality Assurance Project Plan for Ecology review and approval **by March 1, 2012**. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
2. Conduct all sampling and analysis in accordance with the guidelines given in *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*, Ecology Publication 04-03-030 (http://www.ecy.wa.gov/pubs/0403030.pdf).

   Follow the clean sampling techniques (Method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, EPA Publication No. 821-R-95-034, April 1995).
3. For conventional parameters, collect at least ten receiving water samples and analyze the samples in the 2nd and 4th year of the permit for:

   Hardness, alkalinity, pH, NH_3-N, $NO_2 + NO_3$, .dissolved oxygen, total phosphorus, and total reactive phosphorus.
4. In addition, analyze the samples for both the total and dissolved fractions for the following metals in the 2nd and 4th year of the permit:
   zinc, lead, and cadmium.
5. Conduct all chemical analysis using the methods and the detection levels identified in Appendix A.
6. Submit the results of the study to Ecology by March 15 of the following year. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
7. The Receiving Water Data Report must also include electronic copies of the chemical data formatted according to Ecology's Environmental Information (EIM) System templates available at the link below.
   http://www.ecy.wa.gov/eim/MyEIM.htm

Any subsequent sampling and analysis must also meet these requirements. The Permittee may conduct a cooperative receiving water study with other NPDES Permittees discharging in the same vicinity.

S9.C. Toxic Parameters

For toxic parameters listed in S2, the Permittee must:

Conduct analyses of the wastewater facility's influent and effluent samples for PCBs, 2,3,7,8 TCDDs and PBDE at the locations and at the minimum frequencies listed in the schedule in and collected in accordance with protocols, monitoring requirements and QA/QC procedures specified in the Ecology approve quality assurance plan (QAPP). The QAPP shall include the uses of estimated values for source identification and prioritization. The QAPP shall be submitted for Ecology approval **by March 15, 2012.**

A report of the results with attached laboratory data sheets shall be submitted to Ecology (The Annual Toxics Management Report, see S12).

S10. Acute toxicity

S10.A. Effluent characterization

The Permittee must:

1. Conduct quarterly acute toxicity testing on the final effluent for one year. Testing must begin **by March 30, 2014.** Quarters mean January through March, April through June, July through September, and October through December.
2. Submit 4 quarterly reports to Ecology within 45 days of each sampling event preferably, but no later than 30 days after the end of each quarter.
    a. October 30
    b. January 30
    c. April 30
    d. July 30.

    Further instructions on testing conditions and test report content are in Section F below.
3. Use a dilution series consisting of a minimum of five concentrations and a control. The five concentrations should include the ACEC of 56.5 % effluent.
4. Conduct the following two acute toxicity tests on each sample:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	*Pimephales promelas*	EPA-821-R-02-012
Daphnid 48-hour static test	*Ceriodaphnia dubia, Daphnia pulex,* or *Daphnia magna*	EPA-821-R-02-012

5. The effluent limit for acute toxicity listed in Section B below applies if after one year of effluent characterization:

- The median survival of any species in 100% effluent is below 80%.
- Any one test of any species exhibits less than 65% survival in 100% effluent.

If the limit applies, then the Permittee must immediately follow the instructions in Sections B, C, D, E, and F.

S10.B. Effluent limit for acute toxicity

The effluent limit for acute toxicity is, **no acute toxicity** detected in a test concentration representing the acute critical effluent concentration (ACEC).

The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the acute mixing zone, defined in Section S1.D of this permit. The ACEC equals 56.5 % effluent.

S10.C. Compliance with the effluent limit for acute toxicity

Compliance with the effluent limit for acute toxicity means the results of the testing specified in Section D show no statistically significant difference in survival between the control and the ACEC.

If the test results show a statistically significant difference in survival between the control and the ACEC, the test does not comply with the effluent limit for acute toxicity. The Permittee must then immediately conduct the additional testing described in Section E. The Permittee will comply with the requirements of this section by meeting the requirements of Section E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

S10.D. Compliance testing for acute toxicity

The Permittee must:

1. Perform the acute toxicity tests with 100% effluent, the ACEC, and a control, or with a full dilution series.
2. Conduct quarterly acute toxicity testing on the final effluent if characterization determines that the effluent limit for acute toxicity is applicable. Testing must begin **by April 30, 2014**. Quarters mean January through March, April through June, July through September, and October through December.
3. Submit 4 quarterly reports to Ecology within 45 days of each sampling event preferably but no later than 30 days after the end of each quarter. Further instructions on testing conditions and test report content are in Section F below.
4. The Permittee must perform compliance tests using each of the species and protocols listed below on a rotating basis:

Acute Toxicity Tests	Species	Method

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	*Pimephales promelas*	EPA-821-R-02-012
Daphnid 48-hour static test	*Ceriodaphnia dubia*, *Daphnia pulex*, or *Daphnia magna*	EPA-821-R-02-012

S10.E. Response to non-compliance with the effluent limit for acute toxicity

If a toxicity test conducted under Section D determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Section C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Test at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the ACEC. The results of the test at the ACEC will determine compliance with the effluent limit for acute toxicity as described in Section C.
2. Return to the original monitoring frequency in Section D after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Section D indicates non-compliance with the acute toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing in this section complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records

- Spill reports
- Weather records
- Pretreatment records, etc.

If the additional testing in this section shows another violation of the acute toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within sixty (60) days after the sample date (WAC 173-205-100(2)).

S10.F. Sampling and reporting requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.
2. The Permittee must collect 24-hour composite effluent samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.*
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Subsection C and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Section A or pristine natural water of sufficient quality for good control performance.
6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.

S11. Chronic toxicity

S11.A. Effluent characterization

The Permittee must:

1. Conduct quarterly chronic toxicity testing on the final effluent for one year. Testing must begin **by March 30, 2014**. Quarters mean January through March, April through June, July through September, and October through December.
2. Submit 4 quarterly reports to Ecology within 45 days of each sampling event preferably but no later than 30 days after the end of the each quarter:
    a. October 30
    b. January 30
    c. April 30
    d. July 30.

    Further instructions on testing conditions and test report content are in Section F below.
3. Conduct chronic toxicity testing during effluent characterization on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 56.5 % effluent. The series of dilutions should also contain the CCEC of 8.4 % effluent.
4. Conduct the following three chronic toxicity tests on each sample:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	*Pimephales promelas*	EPA-821-R-02-013
Water flea survival and reproduction	*Ceriodaphnia dubia*	EPA-821-R-02-013
Alga	*Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum*)	EPA-821-R-02-013

5. The effluent limit for chronic toxicity listed in Section B below applies if after one year of effluent characterization any test shows a significant difference between the control and the ACEC at the 0.05 level of significance using hypothesis testing (Appendix H, EPA/600/4-89/001).
    - If the limit applies, then the Permittee must immediately follow the instructions in Sections B, C, D, E, and F.

S11.B. Effluent limit for chronic toxicity

The effluent limit for chronic toxicity is: no toxicity detected in a test concentration representing the chronic critical effluent concentration (CCEC).

The CCEC means the maximum concentration of effluent during critical conditions at the boundary of the mixing zone, defined in Section S1.D of this permit. The CCEC equals 8.4 % effluent.

S11.C. Compliance with the effluent limit for chronic toxicity

Compliance with the effluent limit for chronic toxicity means the results of the testing specified in Subsection D. show no statistically significant difference in response between the control and the CCEC.

If the test results show a statistically significant difference in response between the control and the CCEC, the test does not comply with the effluent limit for chronic toxicity. The Permittee must then immediately conduct the additional testing described in Subsection E. The Permittee will comply with the requirements of this section by meeting the requirements of Subsection E.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in response between the control and the CCEC is less than 20%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

Ecology will reevaluate the need for the chronic toxicity limit in future permits. Therefore, the Permittee must also conduct this same hypothesis test (Appendix H, EPA/600/4-89/001) to determine whether a statistically significant difference in response exists between the acute critical effluent concentration (ACEC) and the control.

S11.D. Compliance testing for chronic toxicity

The Permittee must:

1. Perform the chronic toxicity tests using the CCEC, the ACEC, and a control, or with a full dilution series.
2. Conduct quarterly chronic toxicity testing on the final effluent if characterization determines that the effluent limit for chronic toxicity is applicable. Testing must begin by **April 30, 2014.** Quarters mean January through March, April through June, July through September, and October through December.
3. Submit 4 quarterly reports to Ecology within 45 days of each sampling event preferably but no later than 30 days after the end of the each quarter:
    a. October 30
    b. January 30
    c. April 30
    d. July 30.

    This written report must include the results of hypothesis testing conducted as described in Subsection C. using both the ACEC and CCEC versus the control. Further instructions on testing conditions and test report content are in Section F below.
4. Perform compliance tests using the following species on a rotating basis and the most recent version of the following protocols:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	*Pimephales promelas*	EPA-821-R-02-013
Water flea survival and reproduction	*Ceriodaphnia dubia*	EPA-821-R-02-013
Alga	*Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum*)	EPA-821-R-02-013

S11.E. Response to non-compliance with the effluent limit for chronic toxicity

If a toxicity test conducted under Subsection D determines a statistically significant difference in response between the CCEC and the control using the statistical test described in Subsection C, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct additional testing each month for three consecutive months using the same test and species as the failed compliance test.
2. Use a series of at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the CCEC. The results of the test at the CCEC will determine compliance with the effluent limit for chronic toxicity as described in Subsection B.
3. Return to the original monitoring frequency in Subsection C after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Subsection D indicates noncompliance with the chronic toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify Ecology that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from Ecology before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If Ecology determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for chronic toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If Ecology determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing required by this section complies with the permit limit, the Permittee must submit a report to Ecology on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

- Operating records
- Monitoring results
- Inspection records
- Spill reports
- Weather records
- Pretreatment records, etc.

If the additional testing required by this section shows another violation of the chronic toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to Ecology within 60 days after the sample date (WAC 173-205-100(2)).

S11.F. Sampling and reporting requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

2. The Permittee must collect 24-hour composite effluent samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion.

   The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.

3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.*

4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Section C. and the Ecology Publication no. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.

5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Subsection C. or pristine natural water of sufficient quality for good control performance.

6. The Permittee must conduct whole effluent toxicity tests on an unmodified sample of final effluent.
7. The Permittee may choose to conduct a full dilution series test during compliance testing in order to determine dose response. In this case, the series must have a minimum of five effluent concentrations and a control. The series of concentrations must include the CCEC and the ACEC. The CCEC and the ACEC may either substitute for the effluent concentrations that are closest to them in the dilution series or be extra effluent concentrations. The CCEC equals 8.4 % effluent. The ACEC equals 56.5 % effluent.
8. All whole effluent toxicity tests that involve hypothesis testing must comply with the chronic statistical power standard of 39% as defined in WAC 173-205-020. If the test does not meet the power standard, the Permittee must repeat the test on a fresh sample with an increased number of replicates to increase the power.

S12. Toxics Source Control Action Plan

A. An Annual Toxics Management Report shall be prepared by the County and submitted to Ecology on an annual basis for review and evaluation on the toxics management effort. The Report shall be submitted **by April 15**. Activities planned for toxics reduction in the subsequent year of operation shall be jointly reviewed and agreed upon. The toxics of specific concern for this report are PCBs; 2,3,7,8 TCDDs and PBDE.

The Toxics Management Report shall include the toxics monitoring results with attached laboratory data sheets shall be submitted to Ecology (ERO Water Quality Program permit manager and the urban waters staff) annually.

After each year of sampling for PCBs; 2,3,7,8 TCDDs and PBDE; the Permittee and Ecology (ERO Water Quality Program Permit Manager and the urban waters staff) will review the data, including pattern analysis of homologs, detection limits, QA/QC procedures and a draft action plan listing identified sources, potential sources suggested by data analysis and future source identification activities. Annually the Permittee and Ecology will confer and revise the locations and frequency of the raw sewage sampling in the collection system for these pollutants.

The Toxics Management Plan must address source control and elimination of PCBs from:

- Contaminated soils and sediments,
- Storm water entering the wastewater collection system,
- Industrial and commercial sources,

As an element of the pretreatment program the City and County will expand the scope of their inspections and monitoring to include PCBs and other toxics as appropriate. The PCB monitoring must follow an Ecology approved QAPP.

A model QAPP has been published by Ecology and is available at http://www.ecy.wa.gov/biblio/eap.html.

The action is to address of eliminating active sources such as,

- Older mechanical machinery
- Older electrical equipment and components,
- Construction material content such as paints and caulking
- Commercial materials such as ink and dyes,

The Permittee is to consider changes in procurement practices and ordinances control and minimize toxics, including preferential use of PCB free substitutes for those products containing PCBs below the regulated level of 5 ppm, in sources such as:

- Construction material content such as paints and caulking
- Commercial materials such as ink and dyes,
- Soaps and cleaners,

The Permittee (individually or in collaboration with other dischargers) must also prepare public media educating the public about the difference between products free of PCBs and those labeled non-PCB but which contain PCBs below the TOSCA regulatory threshold of 5 ppm.

The effluent monitoring results shall be compiled and analyzed by Ecology for the purpose of establishing a performance based PCB effluent limitation for the following permit cycle.

The goals of the Toxics Management Plan are:

- To reduce toxicant loadings, including PCBs, to the Spokane River to the maximum extent practicable realizing statistically significant reductions in the influent concentration of toxicants to the SCRWRF over the next 10 years.
- Reduce PCBs in the effluent to the maximum extent practicable so that in time the effluent does not contribute to PCBs in the Spokane River exceeding applicable water quality standards.

S13. Regional Toxics Task Force

The Permittee shall participate in a cooperative effort to create a Regional Toxics Task Force and participate in the functions of the Task Force. The Task Force membership should include the NPDES Permittees in the Spokane River basin, conservation and environmental interests, the Spokane Tribe, Spokane Regional Health District, Ecology, and other appropriate interests. The goal of the Task Force will be to develop a comprehensive plan to bring the Spokane River into compliance with applicable water quality standards for PCBs.

To accomplish that goal it is anticipated that the Task Force functions will include:

(1) Identify data gaps and collect necessary data on PCBs and other toxics on the 2008 year 303(d) list for the Spokane River;
(2) Further analyze the existing and future data to better characterize the amounts, sources, and locations of PCBs and other toxics on the 2008 year 303(d) list for the Spokane River;
(3) Prepare recommendations for controlling and reducing the sources of listed toxics in the Spokane River;
(4) Review proposed Toxic Management Plans, Source Management Plans, and BMPs;
(5) Monitor and assess the effectiveness of toxic reduction measures;
(6) Identify a mutually agreeable entity to serve as the clearinghouse for data, reports, minutes, and other information gathered or developed by the Task Force and its members. This information shall be made publicly available by means of a website and other appropriate means;

To discharge these functions the Task Force may:

Provide for an independent community technical advisor(s) funded by the permittees, who shall assist in review of data, studies, and control measures, as well as assist in providing technical education information to the public;

By November 30, 2011, the Task Force shall provide Ecology with the details of the organizational structure, specific goals, funding and the governing documents of the Regional Toxics Task Force.

If Ecology determines the Task Force is failing to make measurable progress toward meeting applicable water quality criteria for PCBs, Ecology would be obligated to proceed with development of a TMDL in the Spokane River for PCBs or determine an alternative to ensure water quality standards are met.

GENERAL CONDITIONS

G1. Signatory requirements

1. All applications, reports, or information submitted to Ecology must be signed and certified.

   a. In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

   - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
   - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
   - In the case of a partnership, by a general partner.
   - In the case of sole proprietorship, by the proprietor.
   - In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

   Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

2. All reports required by this permit and other information requested by Ecology must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to Ecology.

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to authorization. If an authorization under paragraph B.2, above, is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph B.2, above, must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section must make the following certification:

   "I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

G2. Right of inspection and entry

The Permittee must allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law:

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. Permit actions

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the Permittee) or upon Ecology's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 40 CFR 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
   a. Violation of any permit term or condition.
   b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.

c. A material change in quantity or type of waste disposal.

d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.

e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.

f. Nonpayment of fees assessed pursuant to RCW 90.48.465.

g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.

2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:

a. A material change in the condition of the waters of the state.

b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.

c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.

d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.

e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.

f. Ecology has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.

g. Incorporation of an approved local pretreatment program into a municipality's permit.

3. The following are causes for modification or alternatively revocation and reissuance:

a. When cause exists for termination for reasons listed in A1 through A7 of this section, and Ecology determines that modification or revocation and reissuance is appropriate.

b. When Ecology has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

G4. Reporting planned changes

The Permittee must, as soon as possible, but no later than sixty (60) days prior to the proposed changes, give notice to Ecology of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

1. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b)
2. A significant change in the nature or an increase in quantity of pollutants discharged.
3. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G5. Plan review required

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to Ecology for approval in accordance with chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by Ecology. Facilities must be constructed and operated in accordance with the approved plans.

G6. Compliance with other laws and statutes

Nothing in this permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. Transfer of this permit

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to Ecology.

1. Transfers by Modification
   Except as provided in paragraph (B) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.
2. Automatic Transfers
   This permit may be automatically transferred to a new Permittee if:
   a. The Permittee notifies Ecology at least thirty (30) days in advance of the proposed transfer date.

b. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.

c. Ecology does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G8. Reduced production for compliance

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G9. Removed substances

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G10. Duty to provide information

The Permittee must submit to Ecology, within a reasonable time, all information which Ecology may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to Ecology upon request, copies of records required to be kept by this permit.

G11. Other requirements of 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. Additional monitoring

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. Payment of fees

The Permittee must submit payment of fees associated with this permit as assessed by Ecology.

G14. Penalties for violating permit conditions

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof must be punished by a fine of up to ten thousand dollars ($10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars ($10,000) for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is deemed to be a separate and distinct violation.

G15. Upset

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary non-compliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset.
2. The permitted facility was being properly operated at the time of the upset.
3. The Permittee submitted notice of the upset as required in Condition S3.E.
4. The Permittee complied with any remedial measures required under S4.C of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. Property rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. Duty to comply

The Permittee must comply with all conditions of this permit. Any permit non-compliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. Toxic pollutants

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. Penalties for tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit must, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment must be a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

G20. Compliance schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than fourteen (14) days following each schedule date.

G21. Contract review

The Permittee must submit to Ecology any proposed contract for the operation of any wastewater treatment facility covered by this permit. The review is to ensure consistency with chapters 90.46 and 90.48 RCW. In the event that Ecology does not comment within a thirty (30)-day period, the Permittee may assume consistency and proceed with the contract.

Appendix A

LIST OF POLLUTANTS WITH ANALYTICAL METHODS, DETECTION LIMITS AND QUANTITATION LEVELS

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and application required monitoring unless:

- Another permit condition specifies other methods, detection levels, or quantitation levels.
- The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136..

If the Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology's Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix A that did not increase the overall cost of analysis unreasonably.

Ecology added this appendix to the permit in order to reduce the number of analytical "non-detects" in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

CONVENTIONAL PARAMETERS

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
CONVENTIONAL PARAMETERS			
Biochemical Oxygen Demand (5 day)	SM5210-B		2 mg/L
Chemical Oxygen Demand	SM5220-D		10 mg/L

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
Total Organic Carbon	SM5310-B/C/D		1 mg/L
Total Suspended Solids	SM2540-D		5 mg/L
Total Ammonia (as N)	SM4500-NH3- GH		20
Flow	Calibrated device		
Dissolved oxygen	SM4500-OC/OG		0.2 mg/L
Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C
pH	SM4500-H^+ B	N/A	N/A

NONCONVENTIONAL PARAMETERS

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
NONCONVENTIONAL PARAMETERS			
Total Alkalinity	SM2320-B		5 mg/L as CaCO3
Chlorine, Total Residual	SM4500 Cl G		50.0
Color	SM2120 B/C/E		10 color units
Fecal Coliform	SM 9221D/E,9222	N/A	N/A

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
Fluoride (16984-48-8)	SM4500-F E	25	100
Nitrate-Nitrite (as N)	SM4500-NO3-E/F/H		100
Nitrogen, Total Kjeldahl (as N)	SM4500-NH3-C/E/FG		300
Ortho-Phosphate (PO_4 as P)	SM4500- PE/PF	3	10
Phosphorus, Total (as P)	SM4500-PE/PF	3	10
Oil and Grease (HEM)	1664A	1,400	5,000
Salinity	SM2520-B		3 PSS
Settleable Solids	SM2540 -F		100
Sulfate (as mg/L SO_4)	SM4110-B		200
Sulfide (as mg/L S)	SM4500-S^2F/D/E/G		200
Sulfite (as mg/L SO_3)	SM4500-SO3B		2000
Total Coliform	SM 9221B, 9222B, 9223B	N/A	N/A
Total dissolved solids	SM2540 C		20 mg/L
Total Hardness	SM2340B		200 as CaCO3
Aluminum, Total (7429-90-5)	200.8	2.0	10
Barium Total (7440-39-3)	200.8	0.5	2.0
BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes)	EPA SW 846 8021/8260	1	2
Boron Total (7440-42-8)	200.8	2.0	10.0

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
Cobalt, Total (7440-48-4)	200.8	0.05	0.25
Iron, Total (7439-89-6)	200.7	12.5	50
Magnesium, Total (7439-95-4)	200.7	10	50
Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
Manganese, Total (7439-96-5)	200.8	0.1	0.5
NWTPH Dx	Ecology NWTPH Dx	250	250
NWTPH Gx	Ecology NWTPH Gx	250	250
Tin, Total (7440-31-5)	200.8	0.3	1.5
Titanium, Total (7440-32-6)	200.8	0.5	2.5

PRIORITY POLLUTANTS

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
METALS, CYANIDE & TOTAL PHENOLS			
Antimony, Total (7440-36-0)	200.8	0.3	1.0
Arsenic, Total (7440-38-2)	200.8	0.1	0.5
Beryllium, Total (7440-41-7)	200.8	0.1	0.5
Cadmium, Total (7440-43-9)	200.8	0.05	0.25

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
METALS, CYANIDE & TOTAL PHENOLS			
Chromium (hex) dissolved (18540-29-9)	SM3500-Cr EC	0.3	1.2
Chromium, Total (7440-47-3)	200.8	0.2	1.0
Copper, Total (7440-50-8)	200.8	0.4	2.0
Lead, Total (7439-92-1)	200.8	0.1	0.5
Mercury, Total (7439-97-6)	1631E	0.0002	0.0005
Nickel, Total (7440-02-0)	200.8	0.1	0.5
Selenium, Total (7782-49-2)	200.8	1.0	1.0
Silver, Total (7440-22-4)	200.8	0.04	0.2
Thallium, Total (7440-28-0)	200.8	0.09	0.36
Zinc, Total (7440-66-6)	200.8	0.5	2.5
Cyanide, Total (57-12-5)	335.4	5	10
Cyanide, Weak Acid Dissociable	SM4500-CN I	5	10
Cyanide, Free Amenable to Chlorination (Available Cyanide)	SM4500-CN G	5	10
Phenols, Total	EPA 420.1		50

Pollutant & CAS No *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
ACID COMPOUNDS			
2-Chlorophenol (95-57-8)	625	1.0	2.0
2,4-Dichlorophenol (120-83-2)	625	0.5	1.0
2,4-Dimethylphenol (105-67-9)	625	0.5	1.0
4,6-dinitro-o-cresol (534-52-1) (2-methyl-4,6,-dinitrophenol)	625/1625B	1.0	2.0
2,4 dinitrophenol (51-28-5)	625	1.0	2.0
2-Nitrophenol (88-75-5)	625	0.5	1.0
4-nitrophenol (100-02-7)	625	0.5	1.0
Parachlorometa cresol (59-50-7) (4-chloro-3-methylphenol)	625	1.0	2.0
Pentachlorophenol (87-86-5)	625	0.5	1.0
Phenol (108-95-2)	625	2.0	4.0
2,4,6-Trichlorophenol (88-06-2)	625	2.0	4.0

PRIORITY POLLUTANTS (continued)

Pollutant & CAS No *(if available)*	Recommended Analytical Protocol	Detection (DL) *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
VOLATILE COMPOUNDS			
Acrolein (107-02-8)	624	5	10

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
VOLATILE COMPOUNDS			
Acrylonitrile (107-13-1)	624	1.0	2.0
Benzene (71-43-2)	624	1.0	2.0
Bromoform (75-25-2)	624	1.0	2.0
Carbon tetrachloride (56-23-5)	624/601 or SM6230B	1.0	2.0
Chlorobenzene (108-90-7)	624	1.0	2.0
Chloroethane (75-00-3)	624/601	1.0	2.0
2-Chloroethylvinyl Ether (110-75-8)	624	1.0	2.0
Chloroform (67-66-3)	624 or SM6210B	1.0	2.0
Dibromochloromethane (124-48-1)	624	1.0	2.0
1,2-Dichlorobenzene (95-50-1)	624	1.9	7.6
1,3-Dichlorobenzene (541-73-1)	624	1.9	7.6
1,4-Dichlorobenzene (106-46-7)	624	4.4	17.6
Dichlorobromomethane (75-27-4)	624	1.0	2.0
1,1-Dichloroethane (75-34-3)	624	1.0	2.0
1,2-Dichloroethane (107-06-2)	624	1.0	2.0
1,1-Dichloroethylene (75-35-4)	624	1.0	2.0
1,2-Dichloropropane (78-87-5)	624	1.0	2.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-	624	1.0	2.0

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
VOLATILE COMPOUNDS			
6)[3]			
Ethylbenzene (100-41-4)	624	1.0	2.0
Methyl bromide (74-83-9) (Bromomethane)	624/601	5.0	10.0
Methyl chloride (74-87-3) (Chloromethane)	624	1.0	2.0
Methylene chloride (75-09-2)	624	5.0	10.0
1,1,2,2-Tetrachloroethane (79-34-5)	624	1.9	2.0
Tetrachloroethylene (127-18-4)	624	1.0	2.0
Toluene (108-88-3)	624	1.0	2.0
1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride)	624	1.0	2.0
1,1,1-Trichloroethane (71-55-6)	624	1.0	2.0
1,1,2-Trichloroethane (79-00-5)	624	1.0	2.0
Trichloroethylene (79-01-6)	624	1.0	2.0
Vinyl chloride (75-01-4)	624/SM6200B	1.0	2.0

PRIORITY POLLUTANTS (continued)

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Acenaphthene (83-32-9)	625	0.2	0.4
Acenaphthylene (208-96-8)	625	0.3	0.6
Anthracene (120-12-7)	625	0.3	0.6
Benzidine (92-87-5)	625	12	24
Benzyl butyl phthalate (85-68-7)	625	0.3	0.6
Benzo(*a*)anthracene (56-55-3)	625	0.3	0.6
Benzo(b)fluoranthene (3,4-benzofluoranthene) (205-99-2)[4]	610/625	0.8	1.6
Benzo(j)fluoranthene (205-82-3)[4]	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) (207-08-9)[4]	610/625	0.8	1.6
Benzo(r,s,t)pentaphene (189-55-9)	625	0.5	1.0
Benzo(*a*)pyrene (50-32-8)	610/625	0.5	1.0
Benzo(*ghi*)Perylene (191-24-2)	610/625	0.5	1.0
Bis(2-*chloroethoxy*)methane (111-91-1)	625	5.3	21.2
Bis(2-*chloroethyl*)ether (111-44-4)	611/625	0.3	1.0
Bis(2-*chloroisopropyl*)ether (39638-32-9)	625	0.3	0.6
Bis(2-*ethylhexyl*)phthalate	625	0.1	0.5

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
(117-81-7)			
4-Bromophenyl phenyl ether (101-55-3)	625	0.2	0.4
2-Chloronaphthalene (91-58-7)	625	0.3	0.6
4-Chlorophenyl phenyl ether (7005-72-3)	625	0.3	0.5
Chrysene (218-01-9)	610/625	0.3	0.6
Dibenzo (a,j)acridine (224-42-0)	610M/625M	2.5	10.0
Dibenzo (a,h)acridine (226-36-8)	610M/625M	2.5	10.0
Dibenzo(a-*h*)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)	625	0.8	1.6
Dibenzo(a,e)pyrene (192-65-4)	610M/625M	2.5	10.0
Dibenzo(a,h)pyrene (189-64-0)	625M	2.5	10.0
3,3-Dichlorobenzidine (91-94-1)	605/625	0.5	1.0
Diethyl phthalate (84-66-2)	625	1.9	7.6
Dimethyl phthalate (131-11-3)	625	1.6	6.4
Di-n-butyl phthalate (84-74-2)	625	0.5	1.0
2,4-dinitrotoluene (121-14-2)	609/625	0.2	0.4
2,6-dinitrotoluene (606-20-2)	609/625	0.2	0.4

PRIORITY POLLUTANTS (continued)

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Di-n-octyl phthalate (117-84-0)	625	0.3	0.6
1,2-Diphenylhydrazine (*as Azobenzene*) (122-66-7)	1625B	5.0	20
Fluoranthene (206-44-0)	625	0.3	0.6
Fluorene (86-73-7)	625	0.3	0.6
Hexachlorobenzene (118-74-1)	612/625	0.3	0.6
Hexachlorobutadiene (87-68-3)	625	0.5	1.0
Hexachlorocyclopentadiene (77-47-4)	1625B/625	0.5	1.0
Hexachloroethane (67-72-1)	625	0.5	1.0
Indeno(*1,2,3-cd*)Pyrene (193-39-5)	610/625	0.5	1.0
Isophorone (78-59-1)	625	0.5	1.0
3-Methyl cholanthrene (56-49-5)	625	2.0	8.0
Naphthalene (91-20-3)	625	0.3	0.6
Nitrobenzene (98-95-3)	625	0.5	1.0
N-Nitrosodimethylamine (62-75-9)	607/625	2.0	4.0
N-Nitrosodi-n-propylamine (621-64-7)	607/625	0.5	1.0
N-Nitrosodiphenylamine (86-30-6)	625	0.5	1.0

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Perylene (198-55-0)	625	1.9	7.6
Phenanthrene (85-01-8)	625	0.3	0.6
Pyrene (129-00-0)	625	0.3	0.6
1,2,4-Trichlorobenzene (120-82-1)	625	0.3	0.6

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
DIOXIN			
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (1746-01-6)	1613B	1.3 pg/L	5 pg/L

PRIORITY POLLUTANTS (continued)

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
PESTICIDES/PCBs			
Aldrin (309-00-2)	608	0.028	0.05
alpha-BHC (319-84-6)	608	0.025	0.05

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
PESTICIDES/PCBs			
beta-BHC (319-85-7)	608	0.025	0.05
gamma-BHC (58-89-9)	608	0.025	0.05
delta-BHC (319-86-8)	608	0.025	0.05
Chlordane (57-74-9) [5]	608	0.025	0.05
4,4'-DDT (50-29-3)	608	0.025	0.05
4,4'-DDE (72-55-9)	608	0.025	0.05[10]
4,4' DDD (72-54-8)	608	0.025	0.05
Dieldrin (60-57-1)	608	0.025	0.05
alpha-Endosulfan (959-98-8)	608	0.025	0.05
beta-Endosulfan (33213-65-9)	608	0.025	0.05
Endosulfan Sulfate (1031-07-8)	608	0.025	0.05
Endrin (72-20-8)	608	0.025	0.05
Endrin Aldehyde (7421-93-4)	608	0.025	0.05
Heptachlor (76-44-8)	608	0.025	0.05
Heptachlor Epoxide (1024-57-3)	608	0.025	0.05
PCB-1242 (53469-21-9) [6]	608	0.25	0.5
PCB-1254 (11097-69-1)	608	0.25	0.5
PCB-1221 (11104-28-2)	608	0.25	0.5
PCB-1232 (11141-16-5)	608	0.25	0.5
PCB-1248 (12672-29-6)	608	0.25	0.5

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
PESTICIDES/PCBs			
PCB-1260 (11096-82-5)	608	0.13	0.5
PCB-1016 (12674-11-2) [6]	608	0.13	0.5
Toxaphene (8001-35-2)	608	0.24	0.5

1. Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.

2. Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to (1, 2, or 5) x 10^n, where n is an integer. (64 FR 30417).
   ALSO GIVEN AS:
   The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).

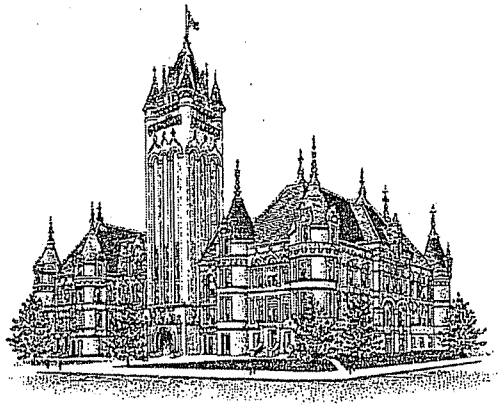
3. 1, 3-dichloroproylene (mixed isomers) - You may report this parameter as two separate parameters: cis-1, 3-dichlorpropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).

4. Total Benzofluoranthenes - Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzofluoranthenes.

5. Chlordane – You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 0.025/0.050.

6. PCB 1016 & PCB 1242 – You may report these two PCB compounds as one parameter called PCB 1016/1242.

SPOKANE COUNTY REGIONAL WATER RECLAMATION FACILITY



SPOKANE COUNTY

APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

EPA FORMS 1, 2A AND 2D

September 30, 2010

Table of Contents

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S		T/A	C
F			D
1	2 13	14	15

LABEL ITEMS

- I. EPA I.D. NUMBER
- II. FACILITY NAME
- III. FACILITY MAILING ADDRESS
- IV. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI(except VI-B which must be completed regardless). Complete all items if no label has been proved. Refer to the instructions for detailed item descriptions and for the legal authorization under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental from listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms.**

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.?** (FORM 2A)	☒ 16	☐ 17	☒ 18
B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.?** (FORM 2B)	☐ 19	☒ 20	☐ 21
C. Is this facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	☐ 22	☒ 23	☐ 24
D. Is this proposal facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.?** (FORM 2D)	☒ 25	☐ 26	☒ 27
E. Does or will this facility treat, store, or dispose of **hazardous wastes?** (FORM 3)	☐ 28	☒ 29	☐ 30
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	☐ 31	☒ 32	☐ 33
G. Do you or will you inject at this facility any produced water other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)	☐ 34	☒ 35	☐ 36
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfer by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	☐ 37	☒ 38	☐ 39
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area?** (FORM 5)	☐ 40	☒ 41	☐ 42
J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment are?** (FORM 5)	☐ 43	☒ 44	☐ 45

III. NAME OF FACILITY

C 1 | SKIP | Spokane County Regional Water Reclamation Facility

15 | 16-29 | 30 69

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
C 2 Moss, David, Water Reclamation Manager	509 477 7268
15 16 45	46 48 49 51 52 55

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

C 3 1026 West Broadway

15 16 45

B. CITY OR TOWN	C. STATE	D. ZIP CODE
C 4 Spokane	WA	99260
15 16 40	41 42	47 51

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

C 5 1004 North Freya Street

15 16 45

B. COUNTY NAME

Spokane

46 70

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE
C 6 Spokane	WA	99202	
15 16 40	41 42	47 51	52 54

CONTINUED ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST		B. SECOND	
4953	*(specify)* Refuse Systems (Sewage Treatment Facility)	4952	*(specify)* Sewerage Systems
C. THIRD		**D. FOURTH**	
1623	*(specify)* Sewer Lines	1629	*(specify)* Heavy Construction (Wastewater & STP Construction)

VIII. OPERATOR INFORMATION

A. NAME	B. Is the name listed in Item VIII-A also the owner?
CH2M Hill	☐ YES ☒ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box; if "Other," specify.)*

F = FEDERAL M = PUBLIC (other than federal or state)
S = STATE O = OTHER (specify)
P = PRIVATE

P — *(specify)* CH2M Hill

D. PHONE *(area code & no.)* — 509 568 0965

E. STREET OR PO BOX: 1004 North Freya Street

F. CITY OR TOWN	G. STATE	H. ZIP CODE
Spokane	WA	99202

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*: WA-002447-3 (with Spokane)	D. PSD *(Air Emissions from Proposed Sources)*: NA	
B. UIC (Underground Injection of Fluids): NA	E. OTHER *(specify)*: WA-R04-6506	*(Specify)* Stormwater NPDES - Phase II
C. RCRA (Hazardous Wastes): NA	E. OTHER *(specify)*: Waste Discharge Permits	*(Specify)* ST8045, BT8045, BT0508

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

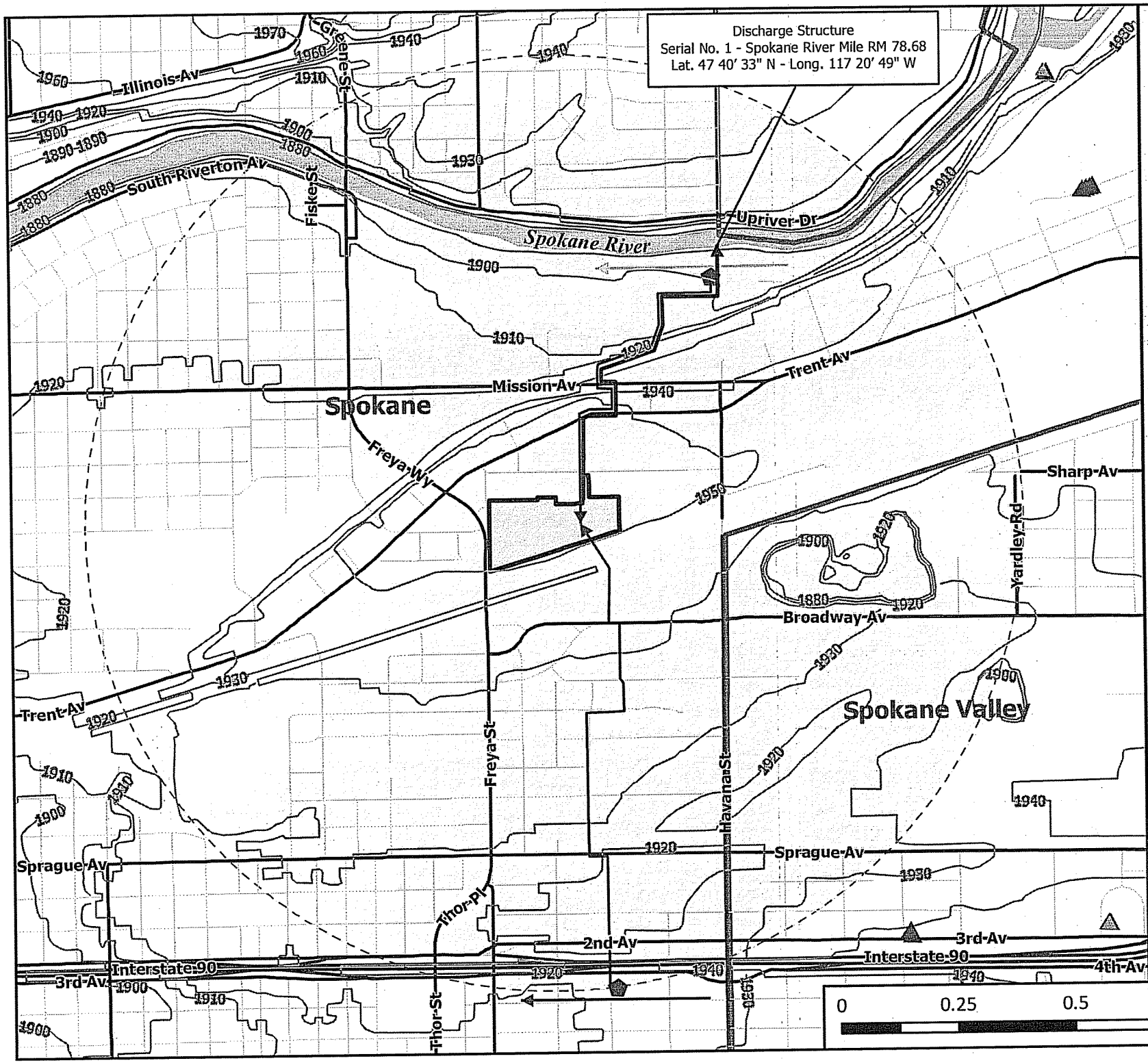
The Spokane County Regional Water Reclamation Facility (SCRWRF) will be an advanced wastewater treatment plant. It will provide an initial 8 mgd of capacity (for a typical residential and commercial/industrial service area) with an ability to expand capacity in phases up to 12 mgd. Spokane County will own and finance the Facility. CH2M Hill Constructors, Inc. will design and build the Facility, and will operate, maintain, and repair the Facility for an initial 20-year period. CH2M Hill Constructors, Inc. will also participate in the County's Industrial Pretreatment Program and will be responsible for biosolids treatment. The County will construct improvements to the conveyance system, including the force mains, pump stations and the outfall for the Facility, as separate public works projects. The Facility will include a treatment process incorporating step-feed nitrification/denitrification membrane bioreactor with the following key components: fine screening, grit removal, primary clarification, sodium hypochlorite disinfection, gravity belt thickening for primary and waste activated slduge, anaerobic digestion, aerobic digestion/solid storage, centrifuge dewatering, and chemical feed systems.Other facilities include odor control, an administration building with a laboratory, a water resource center, and a maintenance building.

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
N. Bruce Rawls, Utilities Director, Spokane County Division of Utilties		

COMMENTS FOR OFFICIAL USE ONLY



Site Plan
Spokane County Regional Water Reclamation Facility

- Group A Wells
- Group B Wells
- Pump Station (P.S.)
- P.S. Force Mains
- Outfall Pipe
- North Valley Interceptor
- Spokane Valley Interceptor
- Contours
- Roads
- Major Roads
- Municipal Boundaries
- Reclamation Facility Site
- Spokane River
- 1 Mile Radius Zone

Map & Data: Spokane County Water Resources Division
Spokane County GIS
September 1, 2010

0 0.25 0.5 0.75 1 Miles

FACILITY NAME AND PERMIT NUMBER:

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

FORM 2A NPDES

NPDES FORM 2A APPLICATION OVERVIEW

APPLICATION OVERVIEW

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

BASIC APPLICATION INFORMATION:

A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.

B. **Additional Application Information for Applicants with a Design Flow ≥ 0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.

C. **Certification.** All applicants must complete Part C (Certification).

SUPPLEMENTAL APPLICATION INFORMATION:

D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):

1. Has a design flow rate greater than or equal to 1mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to provide the information.

E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to submit results of toxicity testing.

F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:

1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
2. Any other industrial user that:
   a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
   b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
   c. Is designated as an SIU by the control authority.

G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)

FACILITY NAME AND PERMIT NUMBER:

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

BASIC APPLICATION INFORMATION

PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:

All treatment works must complete questions A.1 through A.8 of this Basic Application Information Packet.

A.1. Facility Information.

Facility Name: Spokane County Regional Water Reclamation Facility

Mailing Address: 1026 West Broadway
Spokane, WA 99260

Contact Person: David Moss

Title: Water Reclamation Manager

Telephone Number: (509) 477-7268

Facility Address (not P.O. Box): 1004 North Freya Street
Spokane, WA 99202

A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant Name: _____

Mailing Address: _____

Contact Person: _____

Title: _____

Telephone Number: ( )

Is the applicant the owner or operator (or both) of the treatment works?

☒ owner ☐ operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

☒ facility ☐ applicant

A.3. Existing Environmental Permits. Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES	WA-002447-3 (with Spokane)	PSD	NA
UIC	NA	Other	WA-R04-6506 (Stormwater Ph. II)
RCRA	NA	Other	ST8045, BT8045, BT0508

A.4. Collection System Information. Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
Spokane County	13,663	separate sanitary	County municipal
Spokane Valley	85,010	separate sanitary	County municipal
Millwood	1,645	separate sanitary	County municipal
Total population served	100,318 (2005 est.)		

A.5. Indian Country.

a. Is the treatment works located in Indian Country?

☐ Yes ☒ No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

☒ Yes ☐ No

A.6. Flow. Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate 8.0 mgd

		Two Years Ago	Last Year	This Year
b.	Annual average daily flow rate	0	0	0
c.	Maximum daily flow rate	0	0	0

A.7. Collection System. Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

☒ Separate sanitary sewer 100 %

☐ Combined storm and sanitary sewer 0 %

A.8. Discharges and Other Disposal Methods.

a. Does the treatment works discharge effluent to waters of the U.S.? ☒ Yes ☐ No

If yes, list how many of each of the following types of discharge points the treatment works uses:

i. Discharges of treated effluent 1

ii. Discharges of untreated or partially treated effluent 0

iii. Combined sewer overflow points 0

iv. Constructed emergency overflows (prior to the headworks) 0

v. Other _____ 0

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.? ☐ Yes ☒ No

If yes, provide the following for each surface impoundment:

Location: _____

Annual average daily volume discharge to surface impoundment(s) _____ mgd

Is discharge ☐ continuous or ☐ intermittent?

c. Does the treatment works land-apply treated wastewater? ☐ Yes ☒ No

If yes, provide the following for each land application site:

Location: _____

Number of acres: _____

Annual average daily volume applied to site: _____ mgd

Is land application ☐ continuous or ☐ intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works? ☒ Yes ☐ No

If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

The County collection system is connected to the City of Spokane collection system and Riverside Park Water Reclamation Facility. Wastewater that is not diverted into the Spokane County Regional Water Reclamation Facility will flow to the Riverside Park Water Reclamation Facility. Additionally, provision has been made to allow effluent discharge from the Spokane County Regional Water Reclamation Facility to be routed back to the collection system and the Riverside Park Reclamation Facility. It is anticipated that this arrangement may be used during commissioning and startup of the Spokane County Regional Water Reclamation Facility. The County's North Spokane Interceptor also flows to the Riverside Park Water Reclamation Facility.

If transport is by a party other than the applicant, provide:

Transporter Name _____

Mailing Address _____

_____

Contact Person _____

Title _____

Telephone Number ( ) _____

For each treatment works that receives this discharge, provide the following:

Name **Riverside Park Water Reclamation Facility**

Mailing Address **909 E Sprague Avenue, Spokane, WA 99202-2127**

_____

Contact Person **Mike Coster**

Title _____

Telephone Number **(509) 625-4640**

If known, provide the NPDES permit number of the treatment works that receives this discharge **WA-002447-3**

Provide the average daily flow rate from the treatment works into the receiving facility. **Variable; 0-10** mgd

e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8. through A.8.d above (e.g., underground percolation, well injection): ☐ Yes ☒ No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

_____

Annual daily volume disposed by this method: _____

Is disposal through this method ☐ continuous or ☐ intermittent?

WASTEWATER DISCHARGES:

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 **once for each outfall** (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. **If you answered "no" to question A.8.a,** go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.

a. Outfall number: 1

b. Location: Spokane (City or town, if applicable) 99202 (Zip Code)

Spokane (County) WA (State)

47°40'33"N (Lattitutde) 117°20'49"W (Longitude)

c. Distance from shore (if applicable): Varies: ~200 ft.

d. Depth below surface (if applicable): Varies: ~9-35 (see outfall permit application) ft.

e. Average daily flow rate: 8.0 mgd

f. Does this outfall have either an intermittent or a periodic discharge? ☐ Yes ☒ No (go to A.9.g.)

If yes, provide the following information:

Number f times per year discharge occurs: _____

Average duration of each discharge: _____

Average flow per discharge: _____ mgd

Months in which discharge occurs: _____

g. Is outfall equipped with a diffuser? ☒ Yes ☐ No

A.10. Description of Receiving Waters.

a. Name of receiving water: Spokane River

b. Name of watershed (if known): Spokane River Basin

United States Soil Conservation Service 14-digit watershed code (if known): _____

c. Name of State Management/River Basin (if known): WRIA 57 Middle Spokane

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): 170103050402 Upper Spokane

d. Critical low flow of receiving stream (if applicable)

The Spokane River Dissolved Oxygen TMDL uses 2001 flows as the basis for water quality modeling and the median Spokane River flow for April through October 2001 wa 1,925 cfs.

acute 7Q20: summer 593; winter 1047 cfs

(Seasonal 7Q20 flows were determined from interpolation between Upriver Dam and the Spokane gage from flows presented by Pelletier (Pelletier, 1997) – see Appendix D to the 2006 Wastewater Facilities Plan Amendment, Mixing Zone Study Report, LTI, June 21, 2004).

chronic 7Q20: summer 593; winter 1047 cfs

e. Total hardness of receiving stream at critical low flow (if applicable):

Ambient summer and winter hardness values of 95 and 74 mg/l as $CaCO_3$ respectively from flow based regression developed by CH2M-Hill (CH2M, 1997) (see Appendix D to the 2006 Wastewater Facilities Plan Amendment, Mixing Zone Study Report, LTI, June 21, 2004). mg/l of $CaCO_3$

FACILITY NAME AND PERMIT NUMBER:

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

A.11. Description of Treatment

a. What levels of treatment are provided? Check all that apply.

☒ Primary ☒ Secondary

☒ Advanced ☐ Other. Describe: _____

b. Indicate the following removal rates (as applicable):

Design BOD5 removal or Design CBOD5 removal	BOD: 17,200 to 133 lbs/d = 99.2%
Design SS removal	TSS: 19,000 to 334 lbs/d = 98.2%
Design P removal	TP: 530 to 3.3 lbs/d = 99.4%
Design N removal	TN: 2,840 to 667 lbs/d = 76.5%
Other _____	_____ %

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe:

chlorination

If disinfection is by chlorination is dechlorination used for this outfall? ☒ Yes ☐ No

d. Does the treatment plant have post aeration? ☐ Yes ☒ No

A.12 Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing 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 analysis conducted using 40 CFR Part 136 methods. In addition, this 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. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 1 – Chapter 2 of the 2010 Amendment to the 2006 Wastewater Facilities Plan provides anticipated effluent limits based on the treatment technology.

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)		s.u.			
pH (Maximum)		s.u.			
Flow Rate					
Temperature (Winter)					
Temperature (Summer)					

* For pH please report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
		Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NON CONVENTIONAL COMPOUNDS								
BIOCHEMICAL OXYGEN DEMAND (Report one)	BOD5							
	CBOD5							
FECAL COLIFORM								
TOTAL SUSPENDED SOLIDS (TSS)								

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

BASIC APPLICATION INFORMATION

PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).

All applicants with a design flow rate ≥ 0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

B.1. Inflow and Infiltration. **Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.**

negligible gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

Chapter 2 of the Final 2006 Spokane County Wastewater Facilities Plan Amendment (July 2007) describes the minimal impact of inflow and infiltration

B.2. Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

a. The area surrounding the treatment plant, including all unit processes.

b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.

c. Each well where wastewater from the treatment plant is injected underground.

d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.

e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.

f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where the hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

B.3. Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g., chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.

B.4. Operation/Maintenance Performed by Contractor(s).

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? ☒ Yes ☐ No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: CH2M Hill, Inc.: John Keady

Mailing Address: 1004 N Freya Street
Spokane, WA 99202

Telephone Number: (509) 568-0965

Responsibilities of Contractor: The responsibilities of the contractor are provided in the service contract between the County of Spokane, Washington and CH2M Hill Constructors, Inc. dated January 13, 2009.

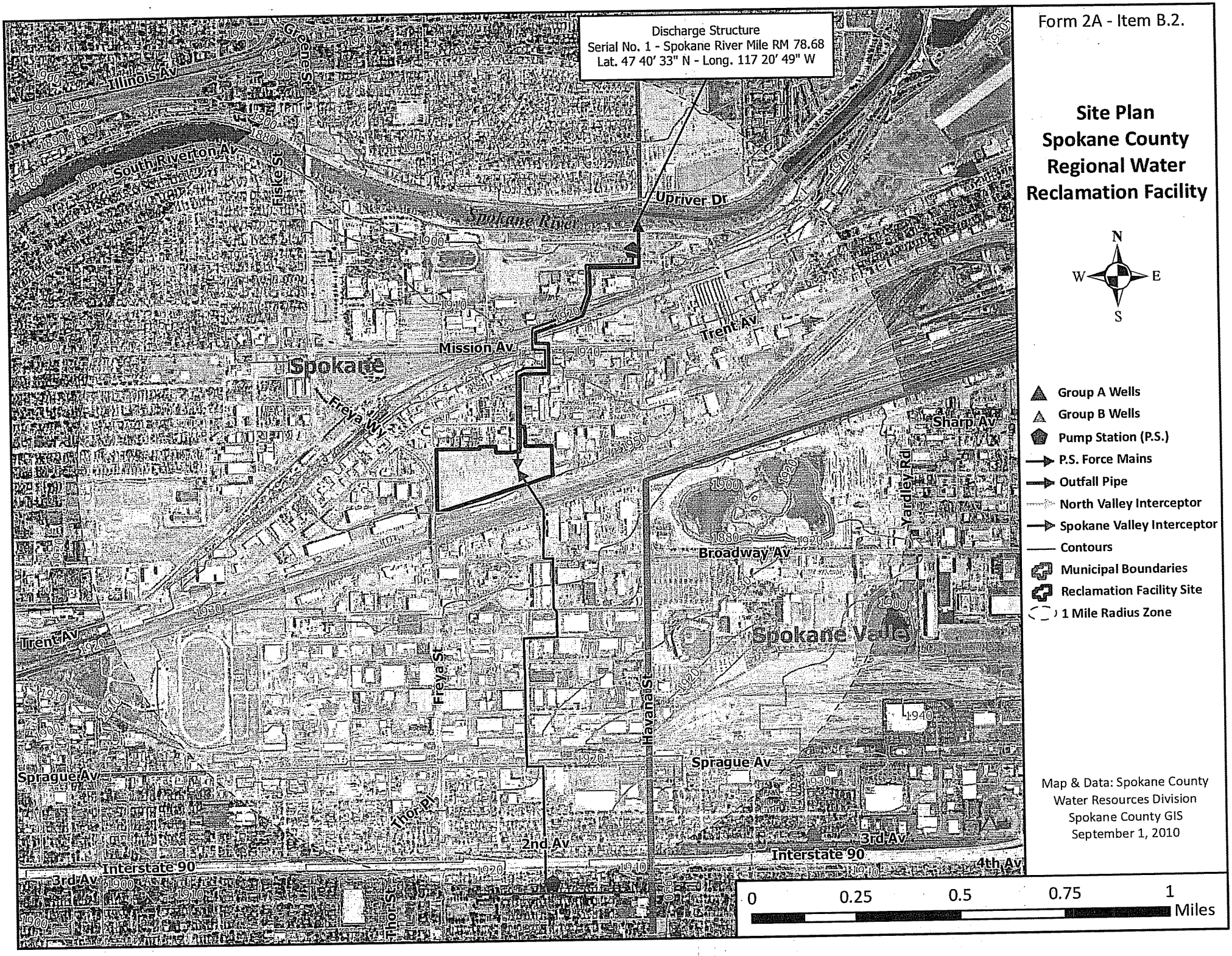
B.5. Scheduled improvements and Schedules of Implementation. Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

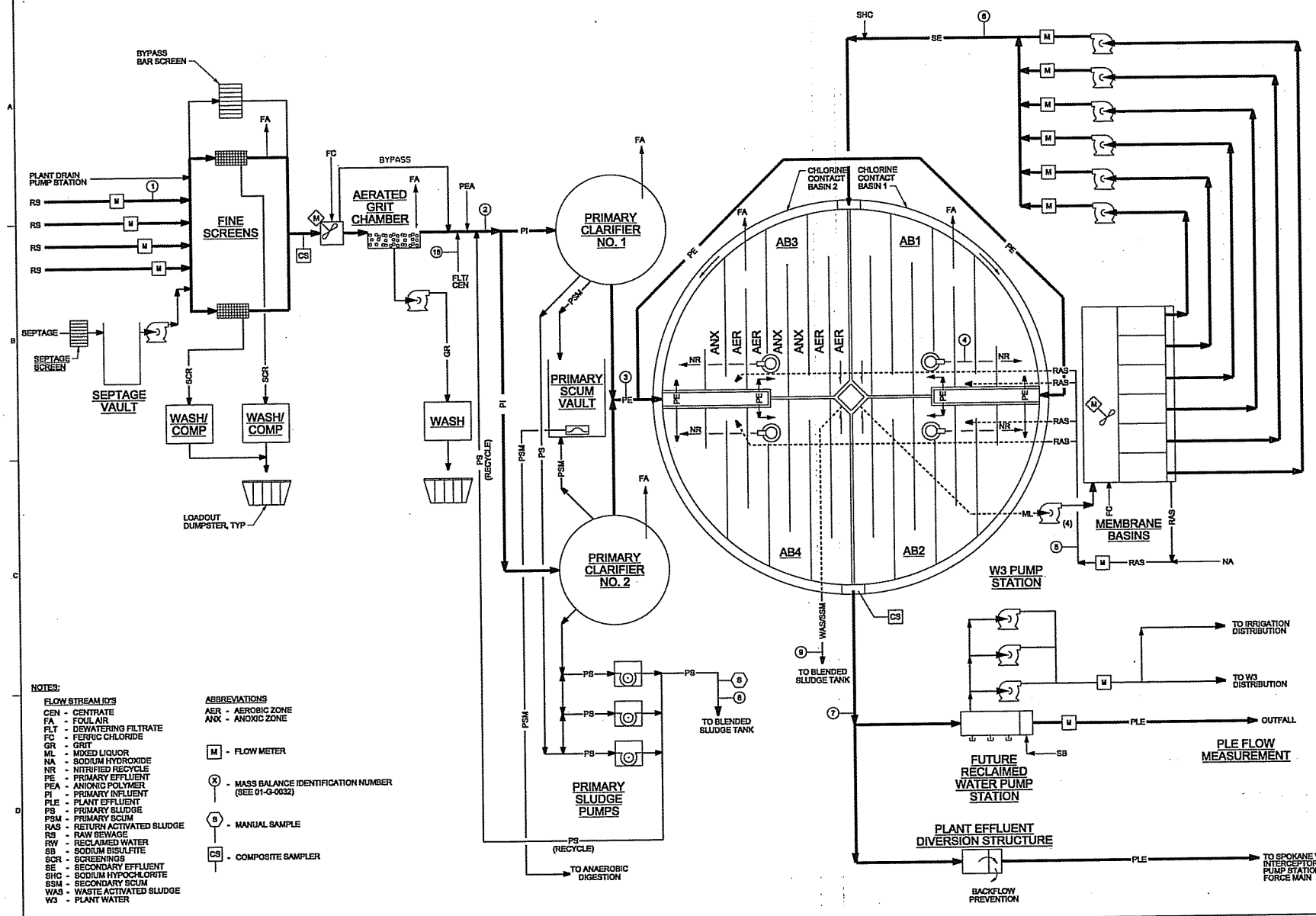
a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

1

b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

☐ Yes ☒ No


Discharge Structure
Serial No. 1 - Spokane River Mile RM 78.68
Lat. 47 40' 33" N - Long. 117 20' 49" W
Site Plan
Spokane County
Regional Water
Reclamation Facility
N
W
E
S
Group A Wells
Group B Wells
Pump Station (P.S.)
P.S. Force Mains
Outfall Pipe
North Valley Interceptor
Spokane Valley Interceptor
Contours
Municipal Boundaries
Reclamation Facility Site
1 Mile Radius Zone
Map & Data: Spokane County
Water Resources Division
Spokane County GIS
September 1, 2010
0
0.25
0.5
0.75
1
Miles
Spokane River
Upriver Dr
Mission Av
Trent Av
Spokane
Freya Wy
Sharp Av
Yardley Rd
Broadway Av
Spokane Valley
Freya St
Havana St
Sprague Av
Thor St
Thor Pl
2nd Av
3rd Av
Interstate 90
4th Av
Illinois Av
South Riverton Av
Grove St
Fisk St



NOTES:

FLOW STREAM ID'S

- CEN - CENTRATE
- FA - FOUL AIR
- FLT - DEWATERING FILTRATE
- FC - FERRIC CHLORIDE
- GR - GRIT
- ML - MIXED LIQUOR
- NA - SODIUM HYDROXIDE
- NR - NITRIFIED RECYCLE
- PE - PRIMARY EFFLUENT
- PEA - ANIONIC POLYMER
- PI - PRIMARY INFLUENT
- PLE - PLANT EFFLUENT
- PS - PRIMARY SLUDGE
- PSM - PRIMARY SCUM
- RAS - RETURN ACTIVATED SLUDGE
- RS - RAW SEWAGE
- RW - RECLAIMED WATER
- SB - SODIUM BISULFITE
- SCR - SCREENINGS
- SE - SECONDARY EFFLUENT
- SHC - SODIUM HYPOCHLORITE
- SSM - SECONDARY SCUM
- WAS - WASTE ACTIVATED SLUDGE
- W3 - PLANT WATER

ABBREVIATIONS

- AER - AEROBIC ZONE
- ANX - ANOXIC ZONE

- M - FLOW METER
- X - MASS BALANCE IDENTIFICATION NUMBER (SEE 01-G-0032)
- S - MANUAL SAMPLE
- CS - COMPOSITE SAMPLER

NO.	DATE	DSGN	DR	CHK	APVD	BY	REVISION
		DJ CHADWICK	PM HAMLIN	BA YOUKER		DJ GRIGSBY	

CH2MHILL

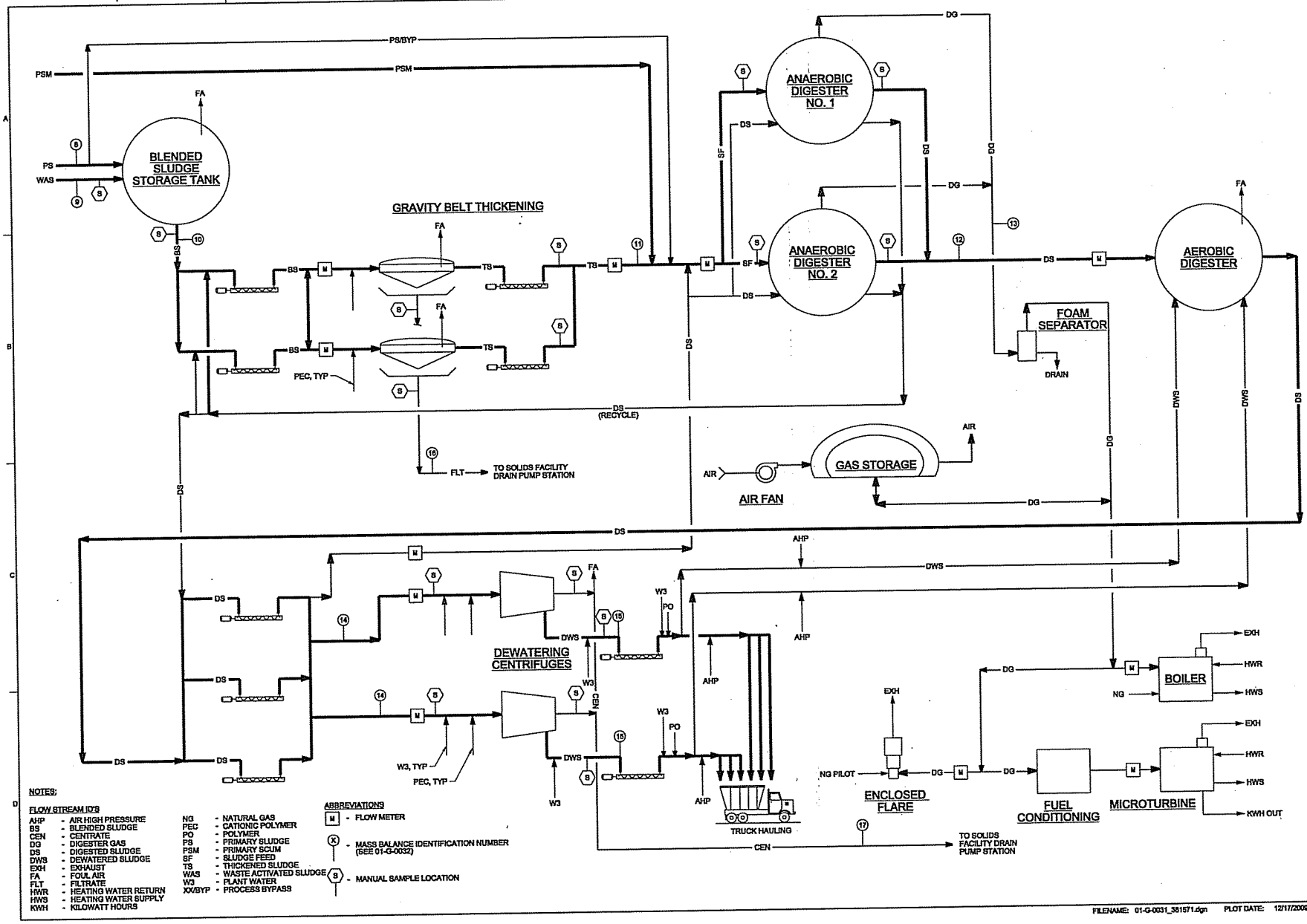
SPOKANE COUNTY
REGIONAL WATER RECLAMATION FACILITY

GENERAL
LIQUIDS
PROCESS FLOW DIAGRAM

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

DATE	JANUARY 2010
PROJ	381571
DWG	01-G-0030
SHEET	25

FILENAME: 01-G-0030_381571.dgn PLOT DATE: 12/17/2009 PLOT TIME: 8:04:17 AM



NOTES:

FLOW STREAM ID'S

AHP	- AIR HIGH PRESSURE	NG	- NATURAL GAS
BS	- BLENDED SLUDGE	PEC	- CATIONIC POLYMER
CEN	- CENTRATE	PO	- POLYMER
DG	- DIGESTER GAS	PS	- PRIMARY SLUDGE
DS	- DIGESTED SLUDGE	PSM	- PRIMARY SCUM
DWS	- DEWATERED SLUDGE	SF	- SLUDGE FEED
EXH	- EXHAUST	TS	- THICKENED SLUDGE
FA	- FOUL AIR	WAS	- WASTE ACTIVATED SLUDGE
FLT	- FILTRATE	W3	- PLANT WATER
HWR	- HEATING WATER RETURN	XX/BYP	- PROCESS BYPASS
HWS	- HEATING WATER SUPPLY		
KWH	- KILOWATT HOURS		

ABBREVIATIONS

- M - FLOW METER
- X - MASS BALANCE IDENTIFICATION NUMBER (SEE 01-G-0032)
- S - MANUAL SAMPLE LOCATION

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
		DJ CHADWICK		PM HAMLIN	BA YOUNGER	DJ GROSSBY	

REVISION

CH2MHILL

SPOKANE COUNTY
REGIONAL WATER RECLAMATION FACILITY

GENERAL
SOLIDS
PROCESS FLOW DIAGRAM

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

DATE	JANUARY 2010
PROJ	381571
DWG	01-G-0031
SHEET	29

FILENAME: 01-G-0031_381571.dgn PLOT DATE: 12/17/2009 PLOT TIME: 8:06:15 AM

Form 2A – Part B.3: Process Mass Balance

LIQUIDS MASS BALANCE: AVERAGE DAY (ALL UNITS IN SERVICE)													
ID	FLOWSTREAM	FROM	TO	Flow	BOD_5		TSS		TKN		TP	
				(mgd)	(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)
1	RS	Influent PS	Headworks (Note 2)	8.0	240	16,000	240	16,000	40	2700	7	480
2	PI	Headworks	Primary Clarifiers	8.6	250	17,900	290	20,900	40	2900	8	590
3	PE	Primary Clarifiers	Aeration Basins	8.4	150	10,600	120	8,400	40	2900	3	590
4	NR	Bioreactor Pass 4	Bioreactor Pass 1	20.8	---	---	7,700		---	---	---	---
5	RAS	Membrane Tanks	Bioreactor Pass 3	32.0	---	---	9,100		---	---	---	---
6	SE	Membrane Tanks	Chlorine Contact Basins	8.3	1	90	1	70	2	110	0.04	3
7	PLE	Chlorine Contact Basins	Outfall	8.3	1	90	1	70	2	110	0.04	3
		Septage	Fine Screen Inlet Channel	24,000 (gpd)	6,000	1,200	15,000	3,000	700	140	250	50
	SCR	Fine Screens	Screen Washer/Compactor	50 (ft^3/d)	---	---	---	---	---	---	---	---
	GR	Grit Basin	Grit Washer/Compactor	30 (ft^3/d)	---	---	---	---	---	---	---	---
	PSM	Primary Clarifiers	Anaerobic Digester	2000 (gpd)	---	---	---	---	---	---	---	---
	PD	Plant Drain Pump Station	Headworks	450 (gpm)	---	---	---	---	---	---	---	---

SOLIDS MASS BALANCE: AVERAGE DAY (ALL UNITS IN SERVICE)												
ID	FLOWSTREAM	FROM	TO	Flow			TSS		TKN		TP	
				(gpd)			(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)
8	PS	Primary Clarifiers	Blended Sludge Storage Tank	196,200			10,000	16,400	170	280	220	370
9	WAS	Bioreactors	Blended Sludge Storage Tank	148,200			7,000	8,700	300	370	180	220
10	BS	Blended Sludge Storage Tank	Gravity Belt Thickener	344,400			8,700	25,000	220	360	200	590
11	TS	Gravity Belt Thickener	Anaerobic Digester	57,100			50,000	23,800	1,200	560	1,170	560
12	DS	Anaerobic Digester	Aerobic Digester	57,100			29,200	13,900	1,000	480	1,170	560
13	DG	Anaerobic Digester	Co-Generation	90 (cfm)			---	---	---	---	---	---
14	DS	Aerobic Digester	Dewatering Centrifuges (Note 5)	57,100			26,800	12,800	310	150	1,170	560
15	DWS	Dewatering Centrifuges	Truck for Off-Site Hauling (Note 5)	7,300			200,000	12,100	2,200	130	8,700	530
16	FLT	Gravity Belt Thickener	Solids Facility Manhole	503,300			300	1,300	20	80	7	30
17	CEN	Dewatering Centrifuges	Solids Facility Manhole	84,100			910	640	25	20	40	30
18	FLT/CEN	Solids Facility Pump Station	Headworks	587,400			390	1,900	20	100	10	60

LIQUIDS MASS BALANCE: MAX MONTH (ALL UNITS IN SERVICE)												
ID	FLOWSTREAM	FROM	TO	Flow	BOD_5		TSS		TKN		TP	
				(mgd)	(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)

1	RS	Influent PS	Headworks (Note 2)	8.5	240	17,000	240	17,000	40	2,800	7	510
2	PI	Headworks	Primary Clarifiers	9.1	250	18,900	290	22,000	40	3,000	8	620
3	PE	Primary Clarifiers	Aeration Basins	8.9	150	11,200	120	8,800	37	3,000	3	240
4	NR	Bioreactor Pass 4	Bioreactor Pass 1	22.0	---	---	7,700		---	---	---	---
5	RAS	Membrane Tanks	Bioreactor Pass 3	31.5	---	---	9,500		---	---	---	---
6	SE	Membrane Tanks	Chlorine Contact Basins	8.8	1	100	1	70	2	120	0.04	3
7	PLE	Chlorine Contact Basins	Outfall	8.8	1	100	1	70	2	120	0.04	3
		Septage	Fine Screen Inlet Channel	24,000 (gpd)	6,000	1,200	15,000	3,000	700	140	250	50
	SCR	Fine Screens	Screen Washer/Compactor	60 (ft^3/d)	---	---	---	---	---	---	---	---
	GR	Grit Basin	Grit Washer/Compactor	35 (ft^3/d)	---	---	---	---	---	---	---	---
	PSM	Primary Clarifiers	Anaerobic Digester	2125 (gpd)	---	---	---	---	---	---	---	---
	PD	Plant Drain Pump Station	Headworks	450 (gpm)	---	---	---	---	---	---	---	---

SOLIDS MASS BALANCE: MAX MONTH (ALL UNITS IN SERVICE)

							TSS		TKN		TP	
ID	FLOWSTREAM	FROM	TO	Flow								
				(gpd)			(mg/L)	(lb/d)	(mg/L)	(lb/d)	(mg/L)	(lb/d)
8	PS	Primary Clarifiers	Blended Sludge Storage Tank	206,700			10,000	17,250	170	280	220	390
9	WAS	Bioreactors	Blended Sludge Storage Tank	160,100			6,800	7,100	290	390	170	230
10	BS	Blended Sludge Storage Tank	Gravity Belt Thickener	366,800			8,600	26,400	220	670	200	620
11	TS	Gravity Belt Thickener	Anaerobic Digester	60,100			50,000	25,100	1,180	590	1,200	590
12	DS	Anaerobic Digester	Aerobic Digester	60,100			29,100	14,600	1,000	500	1,200	590
13	DG	Anaerobic Digester	Co-Generation	95 (cfm)			---	---	---	---	---	---
14	DS	Aerobic Digester	Dewatering Centrifuges (Note 5)	60,100			26,700	13,400	310	160	1,200	590
15	DWS	Dewatering Centrifuges	Truck for Off-Site Hauling (Note 5)	7,600			200,000	12,700	2,200	140	8,800	590
16	FLT	Gravity Belt Thickener	Solids Facility Manhole	522,800			300	1,300	20	80	7	30
17	CEN	Dewatering Centrifuges	Solids Facility Manhole	86,700			920	770	25	20	40	30
18	FLT/CEN	Solids Facility Manhole	Headworks	609,500			400	2,000	20	100	10	60

[1] Mass balance information is from DBO Contractor's 100 percent design drawings (CH2M Hill, 2009)
[2] Note 2: Raw sewage flow and characteristics are listed for total flowstream pumped to the fine screens at the Headworks Facility.
[3] The TKN and TP values are estimates for solids processes. Industry experience and data on the operation of anaerobic digestion and aerobic digestion in series are limited.
[4] Solids mass balance values assume 7-day per week operation of thickening processes and 5-day per week operation of dewatering processes.
[5] Total for unit process

ATTACHMENT A: INITIAL SCRWRF OPERATIONAL PERFORMANCE

The Spokane County *2010 Wastewater Facilities Plan Amendment* addresses the changes that are necessary to demonstrate compliance with the *Spokane River and Lake Spokane Dissolved Oxygen TMDL Water Quality Improvement Report (Final TMDL)* and the wasteload allocation for the Spokane County Regional Water Reclamation Facility (SCRWRF) based on an effluent phosphorus seasonal average of 0.042 mg/L (March-October). The *2010 Amendment* is a supplement to the *2006 Wastewater Facilities Plan Amendment* and includes Chapter 12 Dissolved Oxygen TMDL Parameters which addresses initial operation of the facility.

INTERIM PERFORMANCE-BASED LIMITS

The Final TMDL (Final TMDL, page 63) recognizes that when new treatment technology is installed, attaining optimal performance will be challenging and that achieving normal and routine operation may require two years, or more, assuming average seasonal conditions. During this period, Ecology will recognize these conditions with interim discharge limits based on actual performance of the technology installed and operated at optimum efficiency. Final water quality based effluent limits will be based on effluent data combined with offsets from the Delta Elimination Plan.

Phosphorus Offset for Initial Operation and Optimization Period

To comply with the TMDL, Spokane County will utilize water quality offsets, if necessary, to make up the difference between effluent phosphorus performance and the Final TMDL wasteload allocations during the interim operational period while optimizing SCRWRF performance. The attached CH2M-Hill Memorandum titled "*Two Year Start-up Period For the Spokane County WRF,*" June 29, 2010 (CH2M, 2010) describes the expected performance of the facility during the optimization period.

For phosphorus, a total offset of up to 229 pounds of phosphorus per season (equivalent to 0.93 lbs P/day) is expected to be required during the first two years of treatment process optimization based on the following assumptions:

- Dissolved oxygen TMDL season from March 1st to October 31st for a duration of 245 days
- Dissolved oxygen TMDL wasteload allocation for Spokane County based on effluent total phosphorus of 0.042 mg/L
    - Seasonal wasteload allocation 687 lbs of phosphorus
        - Equivalent to 2.8 lbs/day
- Wastewater flows of 8 mgd
    - Note that actual wastewater flows may be lower during the initial two years of operation and may reduce the phosphorus offset requirement
- Expected effluent total phosphorus concentration of 0.056 mg/L based on projected average initial treatment performance (CH2M, 2010)

- Seasonal discharge of 915 lbs of phosphorus
  - Equivalent to 3.74 lbs/day

Ammonia Offset for Initial Operation and Optimization Period

Effluent ammonia nitrogen performance during the initial operating period may vary with excursions that periodically exceed the TMDL targets as characterized in the attachment (CH2M, 2010). Interim maximum monthly ammonia nitrogen of 1.25 mg/L during the April through May and October months of the TMDL season (CH2M, 2010) compares to the TMDL wasteload allocation based on 1 mg/l. Interim maximum monthly ammonia nitrogen of 0.4 mg/L during the June through September months (CH2M, 2010) compares to the TMDL wasteload allocation based on 0.25 mg/L. These excursions are expected to occur periodically and would not be expected to be sustained for the entire season.

Calculating the offset required to compensate for effluent ammonia nitrogen during the initial operational period is complicated by the lack of a direct relationship between the dissolved oxygen TMDL parameters (Chapter 12, 2010 Wastewater Facilities Plan Amendment). Trial and error model simulations changing the relative levels of ammonia and phosphorus in the Spokane River CE-QUAL-W2 model may be required to estimate the phosphorus offset required.

As a worst case estimation of the phosphorus reduction required to offset ammonia, the ammonia oxygen demand could be assumed to be exerted in Lake Spokane. In reality, this would not occur because essentially all of the ammonia discharged from the Spokane County Regional Water Reclamation Facility will be nitrified in the flowing river far upstream of Lake Spokane, as the CE-QUAL-W2 model demonstrates. However, for an initial estimation of offsets, the oxygen demand from ammonia can be linked to the modeling scenarios presented in Chapter 12, 2010 Wastewater Facilities Plan Amendment where enhanced effluent CBOD was demonstrated to offset phosphorus loadings. For a worst case analysis, the following assumptions have been made:

- Ammonia excursions are assumed to occur throughout the dissolved oxygen TMDL season as a worst case scenario:
  - Interim maximum monthly ammonia nitrogen of 1.25 mg/L from April through May and October, and 0.4 mg/L during June through September months was assumed (CH2M, 2010) and exceeds the TMDL wasteload allocation levels 1.0 mg/L and 0.25 mg/L for 214 days for a total of 2,760 lbs of additional ammonia loading
  - Water quality modeling has shown that enhanced effluent BOD performance will offset March ammonia discharges (Chapter 12, 2010 Wastewater Facilities Plan Amendment)
- As a surrogate for the CE-QUAL-W2 model simulation of ammonia reductions in the Spokane River, a 90 percent reduction of ammonia by nitrification upstream of Lake Spokane is assumed for this initial offset calculation

  - The additional 2,760 lbs of ammonia loading is reduced to 270 lbs of ammonia at Lake Spokane
- A series of assumptions is required to relate the additional ammonia loading at the lake with a compensating phosphorus load reduction
  - A conversion factor of 4.6 lbs of oxygen required to nitrify a 1 lb of ammonia nitrogen has been assumed to relate ammonia to CBOD
  - Enhanced CBOD performance was demonstrated to offset both March ammonia discharges and the difference between the expected capability of treatment technology for phosphorus at 0.050 mg/l and the TMDL wasteload allocation based on 0.042 mg/L
    - Enhanced treatment performance reduced 34,300 lbs of CBOD (2 mg/L v. 4.1 mg/L) throughout the 245 day TMDL season to offset an increased 1,310 lbs loading of phosphorus (0.050 mg/L v. 0.042 mg/L) (Chapter 12, 2010 Wastewater Facilities Plan Amendment)
- Offsetting 270 lbs of ammonia at Lake Spokane is equivalent to the oxygen demand of approximately 1,240 lbs CBOD, which is equivalent to approximately 47 lbs of phosphorus
  - This is equivalent to approximately 0.22 lbs/day of phosphorus over the 214 day period of potential ammonia excursions

MEMORANDUM CH2MHILL

Two Year Start-Up Period For the Spokane County WRF

TO: Spokane County

COPIES: Rick Smith/CH2M HILL
Dennis Burrel/CH2M HILL
Gary Young/CH2M HILL
John Keady/CH2M HILL

FROM: Johnson, Bruce/CH2M HILL

DATE: June 29, 2010

This period would be used by the County and CH2M HILL to optimize the operation of the new Spokane County WRF with respect to the very low effluent requirements expected in the NPDES permit. The three parameters of concern are Total Phosphorus (TP), BOD_5, and Ammonia. The following sections describe our requested allowances during this period and the rationale behind them.

It is understood that these values are related to the period once the plant starts discharging to the river.

Total Phosphorus

It is unclear whether the permit will be based upon a mass load or a concentration basis (or a combination of the two. In either case, the first couple of years will be used to optimize the target metal salt dosage and control system to minimize the nutrient limitation impacts of operating at very low phosphorus on the biomass. As such, we expect to be able to attain the contract value of 50 ug/L from the time discharging starts. However, due to control and operational issues it is expected that there will be occasional excursions above the limit. Ideally, we would like to have a 50 ug/L MEDIAN limit (i.e. 50th percentile). Since that is unlikely at this point, we would like to have our allowances based upon 2 excursions per month at up to 0.2 mg/L TP in the plant effluent. If we normally average 0.045 mg/L in the effluent, this would result in a seasonal average concentration of 0.056 mg/L.

On that same basis, at 50 ug/L mass load limit at 8 mgd seasonal average flow would result in a limit of 814 lbs from March 1 to October 31. At 42 ug/L this would be 684 lbs per season. If the same allowances are used, as in the concentration basis, this would mean we would produce a seasonal mass load number of 899 lbs per season. If the plant average flow during this period was only 7 MGD, this same excursion pattern would result in a mass discharge of 786 lbs per season.

BOD_5

The contract currently calls for a maximum monthly average effluent BOD_5 of 2.0 mg/L. Since this value is at the detection limit of the analysis, it is not possible for our facility to meet this value, if it is assumed that the detection limit values are registered as 2.0 mg/L. This is a result of the normal variation in the BOD_5 test results causing some results to register above 2.0 with the remainder at 2.0. As discussed, on solution to this would be to register the detection limit values as zero.

Our plant will always produce average effluent BOD values of less than the detection limit, so no startup period adjustments are needed, as long as the detection limit issues are addressed.

Ammonia

Plant effluent ammonia levels are primarily controlled by the plant loading rate and the water temperature coming into the facility. During the startup period operations staff will be adjusting feed splits and operating SRTs to determine the optimum parameters for achieving the effluent ammonia goals. As such, it would not be unexpected if effluent excursions of up to 1 mg/L (0.25 limit) and 2 mg/L (1 mg/L limt) over the effluent target occurred. These excursions would not be spike (single day events) but would build up over a few days, and then recover over a few more days as operations got the system back in shape. This might happen once per month on average during the startup period. The following excursion profile is suggested to be applied to the monthly limit (0.25/1.0.

- Day 1: 0.1/0.2 mg/L ammonia over limit
- Day 2: 0.5/1.0 mg/L ammonia over limit
- Day 3: 1/2 mg/L ammonia over limit
- Day 4: 1/2 mg/L ammonia over limit
- Day 5: 0.5/1.0 mg/L ammonia over limit
- Day 6: 0.1/0.2 mg/L ammonia over limit

For the 0.25 mg/l limit:

At 8 MGD, this would result in one excursion event adding 215 lbs of ammonia to the plant effluent during that month. At 7 MGD, this is 190 lbs per excursion event. On a concentration basis at 8 mgd, if it is assumed that the plant effluent will normally be 0.2 for the 0.25 permit level, this results in monthly average concentration of 0.31 mg Ammonia N/L. We would therefore request an interim monthly maximum limit of 0.4 mg/L ammonia.

For the 1 mg/l limit:

At 8 MGD, this would result in one excursion event adding 430 lbs of ammonia to the plant effluent during that month. At 7 MGD, this is 375 lbs per excursion event. On a concentration basis at 8 mgd, if it is assumed that the plant effluent will normally be 0.9 for the 1 permit level, this results in monthly average concentration of 1.1 mg Ammonia N/L. We would therefore request an interim monthly maximum limit of 1.25 mg/L ammonia.

c. If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule MM/DD/YYYY	Actual Completion MM/DD/YYYY
- Begin Construction	02/20/2009	02/20/2009
- End Construction	03/02/2012	/ /
- Begin Discharge	October 2011 Startup & March 2012 Construction Completion	
- Attain Operational Level	2014 (See Attachment A for discussion of initial operational performance)	/ /

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? ☒ Yes ☐ No

Describe briefly: Joint Aquatic Resources Permit Application (JARPA), Building Permits, Air Quality

B.6. EFFLUENT TESTING DATA (GREATER THAN 0.1 MGD ONLY).

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide effluent testing for the following listed parameters and those 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 analysis conducted using 40 CFR Part 136 methods. In addition, this 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. At a minimum effluent testing data must be based on at least three pollutant scans, preferably represent several seasons, and must be no more than four and on-half years old.

Outfall Number: 1 – Chapter 2 of the 2010 Amendment to the 2006 Wastewater Facilities Plan provides anticipated effluent limits based on the treatment technology.

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NON CONVENTIONAL COMPOUNDS							
AMMONIA (as N)							
CHLORINE (TOTAL RESIDUAL, TRC)							
DISSOLVED OXYGEN							
TOTAL KJELDAHL NITROGEN (TKN)							
NITRATE PLUS NITRITE NITROGEN							
OIL and GREASE							
PHOSPHORUS (Total)							
TOTAL DISSOLVED SOLIDS (TDS)							
OTHER							

END OF PART B.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:

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BASIC APPLICATION INFORMATION

PART C. CERTIFICATION

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

☒ Basic Application Information packet

Supplemental Application Information packet:

☒ Part D (Expanded Effluent Testing Data)

☐ Part E (Toxicity Testing: Biomonitoring Data)

☒ Part F (Industrial User Discharges and RCRA/CERCLA Wastes)

☐ Part G (Combined Sewer Systems)

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title: Bruce Rawls, Utilities Director, Spokane County Division of Utilities

Signature: _____

Telephone number: (509) 477-3604

Date signed: _____

Upon request of the permitting authority, you must submit any other information necessary to assure wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

FACILITY NAME AND PERMIT NUMBER:

Form Approved 1/14/99
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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 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: **1 – Chapter 2 of the 2010 Amendment to the 2006 Wastewater Facilities Plan provides anticipated effluent limits based on the treatment technology.** (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											
ARSENIC											
BERYLLIUM											
CADMIUM											
CHROMIUM											
COPPER											
LEAD											
MERCURY											
NICKEL											
SELENIUM											
SILVER											
THALLIUM											
ZINC											
CYANIDE											
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (AS CaCO3)											
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer											

FACILITY NAME AND PERMIT NUMBER:

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Outfall number: 1 (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		
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN											
ACRYLONITRILE											
BENZENE											
BROMOFORM											
CARBON TETRACHLORIDE											
COLORBENZENE											
CHLOROBIDBROMO-METHANE											
CHLOROETHANE											
2-CHLORO-ETHYLVINYL ETHER											
CHOLOROFORM											
DICHLOROBROMO-METHANE											
1,1-DICHLOROETHANE											
TRANS-1,2-DICHLORO-ETHYLENE											
1,1-DICHLOROPROPANE											
ETHYLBENZENE											
METHYL BROMIDE											
METHYL CHLORIDE											
METHYLENE CHLORIDE											
1,1,2,2-TETRACHLORO-ETHANE											
TETRACHLORO-ETHYLENE											
TOLUENE											

FACILITY NAME AND PERMIT NUMBER:

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Outfall number: 1 (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		
1,1,1-TRICHLOROETHANE											
1,1,2-TRICHLOROETHANE											
TRICHLOROETHYLENE											
VINYL CHLORIDE											
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer											
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL											
2-CHLOROPHENOL											
2,4-DIMETHYLPHENOL											
4,6-DINITRO-O-CRESOL											
2,4-DINITROPHENOL											
2-NITROPHENOL											
4-NITROPHENOL											
PENTA CHLOROPHENOL											
PHENOL											
2,4,6-TRICHLORO PHENOL											
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer											
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE											
ACENAPHTYLENE											
ANTHRACENE											
BENZIDINE											
BENZO(A) ANTHRACENE											
BENZO(A)PYRENE											

FACILITY NAME AND PERMIT NUMBER:

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Outfall number: 1 (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		
3.4 BENZO-FLUORANTHENE											
BENZO(GHI)PERYLENE											
BENZO(K)FLUORANTHENE											
BIS (2-CHLORO ETHOXY) METHANE											
BIS (2-CHLOROETHYL)-ETHER											
BIS (2-CHLOROISO-PROPYL) ETHER											
BIS (2-ETHYLHEXYL) PHTHALATE											
4-BROMOPHENYL PHENYL ETHER											
BUTYL BENZYL PHTHALATE											
2-CHLORO NAPHTHALENE											
4-CHLORPHENYL PHENYL ETHER											
CHRYSENE											
DI-N-BUTYL PHTHALATE											
DI-N-OCTYL PHTHALATE											
DIBENZO(A,H) ANTHRACENE											
1,2-DICHLORO BENZENE											
1,3-DICHLORO BENZENE											
1,4-DICHLORO BENZENE											
3,3-DICHLORO BENZIDINE											
DIETHYL PHTHALATE											
DIMETHYL PHTHALATE											
2,4-DINITROTOLUENE											
2,6-DINITROTOLUENE											
1,2-DIPHENYLHYDRAZINE											

FACILITY NAME AND PERMIT NUMBER:

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Outfall number: 1 (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		
FLUORANTHENE											
FLUORENE											
HEXACHLORO BENZENE											
HEXACHLOROBUT ADIENE											
HEXACHLOROCYCLO-PENTADIENE											
HEXA CHLOROETHANE											
INDENO(1,2,3-CD) PYRENE											
ISOPHORONE											
NAPHTHALENE											
NITROBENZENE											
N-NITROSODI-N-PROPYLAMINE											
N-NITROSODI-METHYLAMINE											
N-NITROSODI-PHENYLAMINE											
PHENANTHRENE											
PYRENE											
1,2,4-TRICHLOROBENZENE											
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer											
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer											

END OF PART D.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:

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SUPPLEMENTAL APPLICATION INFORMATION

PART E. TOXICITY TESTING DATA

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this 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.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

E.1. Required Tests.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

Chapter 2 of the 2010 Amendment to the 2006 Wastewater Facilities Plan provides anticipated effluent limits based on the treatment technology.

☐ chronic ☐ acute

E.2. Individual Test Data. Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

Test number: _____ Test number: _____ Test number: _____

a. Test information.			
Test Species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			
b. Give toxicity test methods followed.			
Manual title			
Edition number and year of publication			
Page number(s)			
c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.			
24-Hour composite			
Grab			
d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each.			
Before disinfection			
After disinfection			
After dechlorination			

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	Test number: _____	Test number: _____	Test number: _____
e. Describe the point in the treatment process at which the sample was collected.			
Sample was collected:			
f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic toxicity			
Acute toxicity			
g. Provide the type of test performed.			
Static			
Static-renewal			
Flow-through			
h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.			
Laboratory water			
Receiving water			
i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh water			
Salt water			
j. Give the percentage effluent used for all concentrations in the test series.			
k. Parameters measured during the test. (State whether parameter meets test method specifications)			
pH			
Salinity			
Temperature			
Ammonia			
Dissolved oxygen			
l. Test Results.			
Acute:			
Percent survival in 100% effluent	%	%	%
LC_{50}			
95% C.I.	%	%	%
Control percent survival	%	%	%
Other (describe)			

Chronic:			
NOEC	%	%	%
IC_{25}	%	%	%
Control percent survival	%	%	%
Other (describe)			
m. Quality Control/Quality Assurance.			
Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?	/ /	/ /	/ /
Other (describe)			

E.3. Toxicity Reduction Evaluation. Is the treatment works involved in a Toxicity Reduction Evaluation?

☐ Yes ☐ No If yes, describe: _____

E.4. Summary of Submitted Biomonitoring Test Information. If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: ____/____/____ (MM/DD/YYYY)

Summary of results: (see instructions)

END OF PART E.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

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SUPPLEMENTAL APPLICATION INFORMATION

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA,CERCLA, or other remedial wastes must complete part F.

GENERAL INFORMATION:

F.1. Pretreatment program. Does the treatment works have, or is subject ot, an approved pretreatment program?

☒ Yes ☐ No

F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. 2

b. Number of CIUs. 6

SIGNIFICANT INDUSTRIAL USER INFORMATION::

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

NO. 1

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: Galaxy Compound Semiconductors, Inc.

Mailing Address: 9922 E. Montgomery Ave, Suites 6, 7, & 8

Spokane Valley, WA 99206

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

Electric and electronic components manufacturing and metal finishing

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): Galium Antimonide and Indium Antimonide semiconductor wafers

Raw material(s): metals

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

700 gpd (____ continuous or X intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

2,500 gpd (____ continuous or X intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☒ Yes ☐ No

b. Categorical pretreatment standards ☒ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory?

40 CFR 433 – Metal Finishing; 40 CFR 469

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F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No If yes, describe each episode.

NO. 2

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: Honeywell Electronic Materials, LLC.

Mailing Address: 15128 E. Euclid Ave

Spokane Valley, WA 99216

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

Aluminum forming, electroplating, inorganic chemicals, metal finishing, nonferrous metals forming and metal powders, nonferrous metals manufacturing

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): High purity metals production, discrete products (fine wire, ribbon, soft solder parts, spheres, slugs), plated parts (semiconductor sealing lids, heat spreaders)

Raw material(s):

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

27,100 gpd (____ continuous or X intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

555,000 gpd (____ continuous or X intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☒ Yes ☐ No

b. Categorical pretreatment standards ☒ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory?

40 CFR 433.17; 40 CFR 421.265 (c), (d), (e), and (h) Secondary Recovery of Precious Metals; 40 CFR 467 (a) and (d), Aluminum Forming; 40 CFR 471.44 (k), (p), and (q), Precious Metals Forming

F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No

If yes, describe each episode.

NO. 3

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: Kemira Water Solutions, Inc.

Mailing Address: 2315 N. Sullivan Rd.

Spokane Valley, WA 99216

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

Inorganic chemicals

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): Aluminum sulfate, polyaluminum chloride (PAX)

Raw material(s): Sulfuric acid, aluminum hydrate, aluminum, acid

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

9,480 gpd (____ continuous or X intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

3,440 gpd (____ continuous or X intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☒ Yes ☐ No

b. Categorical pretreatment standards ☒ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory?

40 CFR 415: Inorganic chemicals manufacturing

F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No

If yes, describe each episode.

NO. 4

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: Lloyd Industries, LLC

Mailing Address: 3808 N. Sullivan Rd, Bldg 25E

Spokane Valley, WA 99216

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

Aluminum forming and metal finishing

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): Pizza pans, bake ware, cook ware

Raw material(s): metals

F.6. Flow Rate.

c. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

9,750 gpd (X continuous or _____ intermittent)

d. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

330 gpd (X continuous or _____ intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☒ Yes ☐ No

b. Categorical pretreatment standards ☒ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory?

40 CFR 467; Aluminum Forming; 40 CFR 433: Metal Finishing

F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No

If yes, describe each episode.

NO. 5

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: Spokane County Utilities – Mica Landfill

Mailing Address: 1026 W. Broadway

Spokane, WA 99207

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

Landfill – Leachate

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): _____

Raw material(s): _____

F.6. Flow Rate.

e. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

0 gpd (X continuous or _____ intermittent)

f. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

10 gpd (X continuous or _____ intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☒ Yes ☐ No

b. Categorical pretreatment standards ☐ Yes ☒ No

If subject to categorical pretreatment standards, which category and subcategory?

_____

F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No

If yes, describe each episode.

NO. 6

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: Novation, Inc.

Mailing Address: N. 2616 Locust Road

Spokane Valley, WA 99206

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

Electroplating, metal finishing

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): Zinc, Anodize, Nickel, PM

Raw material(s): Chromium, copper, nickel, silver, zinc, cyanide, lead, ethylbenzene, toluene

F.6. Flow Rate.

g. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

2,900 gpd (____ continuous or X intermittent)

h. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

600 gpd (____ continuous or X intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☒ Yes ☐ No

b. Categorical pretreatment standards ☒ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory?

40 CFR 433: Metal Finishing; 40 CFR 413: Electroplating

F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No

If yes, describe each episode.

NO. 7

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: American On-Site Services

Mailing Address: 3808 N. Sullivan Rd. Bldg. 107

Spokane Valley, WA 99216

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

Portable Chemical Toilet Service

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): _____

Raw material(s): _____

F.6. Flow Rate.

i. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____ continuous or X intermittent)

j. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

600 gpd (_____ continuous or X intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☒ Yes ☐ No

b. Categorical pretreatment standards ☐ Yes ☒ No

If subject to categorical pretreatment standards, which category and subcategory?

_____

F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No

If yes, describe each episode.

_____

NO. 8

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: Ecolite Manufacturing, Co.

Mailing Address: 9919 E. Montgomery Drive

Spokane Valley, WA 99206

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

Aluminum and sheet steel fabrication

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): Steel light housing

Raw material(s):

F.6. Flow Rate.

k. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

130 gpd (____ continuous or X intermittent)

l. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

4,690 gpd (____ continuous or X intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ☒ Yes ☐ No

b. Categorical pretreatment standards ☒ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory?

Metal Finishing, 40 CFR 433

F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No

If yes, describe each episode.

RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:

F.9. RCRA Waste. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe?

☐ **Yes** ☒ **No (go to F.12)**

F.10 Waste transport. Method by which RCRA waste is received (check all that apply):

☐ Truck ☐ Rail ☐ Dedicated Pipe

F.11 Waste Description. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA Hazardous Waste Number	Amount	Units

CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:

F.12 **Remediation Waste.** Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

☐ Yes (complete F.13 through F.15.) ☒ No

F.13 **Waste Origin.** Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is excepted to originate in the next five years).

F.14 **Pollutants.** List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary.)

F.15 **Waste Treatment.**

a. Is this waste treated (or will be treated) prior to entering the treatment works?

☐ Yes ☐ No

If yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?

☐ Continuous ☐ Intermittent If intermittent, describe discharge schedule.

END OF PART F.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:

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

SUPPLEMENTAL APPLICATION INFORMATION

PART G. COMBINED SEWER SYSTEMS

If the treatment works has a combined sewer system, complete Part G.

G.1. System Map. Provide a map indicating the following: (may be included with Basic Application Information)

a. All CSO discharge points.

b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).

c. Waters that support threatened and endangered species potentially affected by CSOs.

G.2. System Diagram. Provide a diagram, either in the map provided in G.1 or on a separate drawing, of the combined sewer collection system that includes the following information.

a. Location of major sewer trunk lines, both combined and separate sanitary.

b. Locations of points where separate sanitary sewers feed into the combined sewer system.

c. Locations of in-line and off-line storage structures.

d. Locations of flow-regulating devices.

e. Locations of pump stations.

CSO OUTFALLS:

Complete questions G.3 through G.6 once for each CSO discharge point.

G.3 Description of Outfall.

a. Outfall number _____

b. Location _____
(city or town, if applicable) (Zip Code)

_____
(County) (State)

_____
(Latitude) (Longitude)

c. Distance from shore (if applicable) _____ ft.

d. Depth below surface (if applicable) _____ ft.

e. Which of the following were monitored during the last year for this CSO?

☐ Rainfall ☐ CSO pollutant concentrations ☐ CSO frequency

☐ CSO flow volume ☐ Receiving water quality

f. How many storm events were monitored during the last year? _____

G.4. CSO Events.

a. Give the number of CSO events in the last year.

_____ events (☐ actual.or ☐ approx.)

b. Give the average duration per CSO event.

_____ hours (☐ actual or ☐ approx.)

c. Give the average volume per CSO event.

_____ million gallons (☐ actual or ☐ approx.)

d. Give the minimum rainfall that caused a CSO event in the last year

_____ Inches of rainfall

G.5. Description of Receiving Waters.

a. Name of receiving water: _____

b. Name of watershed/river/stream system: _____

United State Soil Conservation Service 14-digit watershed code (if known): _____

c. Name of State Management/River Basin: _____

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): _____

G.6. CSO Operations.

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

_____

_____

END OF PART G.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

Please type or print in the unshaded areas only	EPA ID Number *(Copy from Item 1 of Form 1)*	*Form Approved OMB No. 2040-0086 Approval expires 7-31-88*

Form **2D** NPDES

EPA

New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

I. Outfall Location

For this outfall, list the latitude and longitude, and name of the receiving water(s)

Outfall Number *(list)*	Latitude			Longitude			Receiving Water *(name)*
	Deg	Min	Sec	Deg	Min	Sec	
1	*47*	*40*	*33N*	*117*	*20*	*49W*	*Spokane River*

II. Discharge Date *(When do you expect to begin discharging?)*

October 2011 Startup and March 2012 Completion

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of (1) all operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) the average flow contributed by each operation; and (3) the treatment received by the wastewater. Continue on additional sheets if necessary.

Outfall Number	1. Operations Contributing Flow *(list)*	2. Average Flow *(include units)*	3. Treatment *(Description of list Codes from Table 2D-1)*
1	***Advanced Wastewater Treatment Plant (Spokane County Regional Water Reclamation Facility)***	***8 mgd***	***1–G/H/M/N/O/T/U/X 2–C/E/F 3–A/D 4–A/C 5–A/B/D/E/L/P***
	NOTE: for influent characteristics see Final 2006 Wastewater Facilities Plan Amendment (July 2007), Section 2.4.5 Also, the attached mass balance includes process flows throughout the facility	***NOTE: for influent flow estimates see 2006 WWFP, Section 2.4.3***	***NOTE: for treatment components see 2010 Amendment to the 2006 WWFP, Chapter 6***

B. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item III-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. ***See the attached line drawing and mass balance.***

C. Except for storm runoff, leaks, or spills, will any of the discharges described in Item III-A be intermittent or seasonal? ***Discharge is continuous; however, some treatment processes and disposal processes may vary seasonally.***

☐ Yes *(complete the following table)* ☒ No *(go to Item IV)*

Outfall Number	1. Frequency		2. Flow		
	a. Days Per Week *(specify average)*	b. Months Per Year *(specify) average)*	a. Maximum Daily Flow Rate *(in mgd)*	b. Maximum Total Volume *(specify with units)*	c. Duration *(in days)*

IV. Production

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not designed), expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet).

Year	a. Quantity Per Day	b. Units of Measure	c. Operation, Product, Material, etc *(specify)*
NA	***NA***	***NA***	***NA***

CONTINUED FROM THE FRONT	EPA ID Number *(cop from Item 1 of Form 1)*	Outfall Number *1*

V. Effluent Characteristics

A and B: These items require you to report estimated amounts *(both concentration and mass)* of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instruction for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions *(See Table 2D-2 for Pollutants)*

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value *(include units)*	3. Average Daily Value *(include units)*	4. Source *(see instructions)*
$CBOD_5$	***Not Applicable***	***Seasonal Average Mass (lbs)***	[1] ***See Table A2-8 in 2010 Amendment to the 2006 WWFP Amendment, June 2010 (pg. A2-10)*** [2] ***See Attachment B: Dissolved Oxygen TMDL Parameters***
TSS		1	1
Ammonia (as N)	1, 2	***Seasonal Average Mass (lbs)***	1, 2
Total Phosphorus	***Not Applicable***	***Seasonal Average Mass (lbs)***	1, 2
Dissolved Oxygen			1
Fecal Coliform		1	1
pH		1	1
Chlorine Residual	1	1	1
Lead	3	3	[3] ***Performance based treatment standards to comply with Cadmium, Lead, and Zinc TMDL (Ecology, 1998). Ecology calls for a minimum of ten representative low-level metals analyses to be required of dischargers where adequate metals data does not exist to develop performance based limits. This is a new facility and effluent testing information is not yet available. Estimated values presented in Chapter 2 of the 2006 WWFP Amendment were based upon the Riverside Park Water Reclamation Facility permit.***
Zinc	3	3	3
Cadmium	3	3	3

CONTINUED FROM THE FRONT	EPA ID Number *(cop from Item 1 of Form 1)*	

C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge
Unknown at this time. This is a new facility and effluent testing information is not yet available. Most, if not all, parameters listed in Table 2D-3 may be undetectable, although it is possible that some trace constituents may be detected.	***NA***

VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

☒ Report Available ☐ No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location
To the best of our knowledge, there is no existing facility that consistently treats to the very low phosphorus level of 50 ug/L for the flows anticipated at start-up of 8 MGD.	***For information regarding advanced treatment technologies, see Appendix C in the Final 2006 WWFP Amendment, July 2007, titled "Advanced Wastewater Treatment Process Evaluation Workshop (August 16, 2006)."***

EPA ID Number *(cop from Item 1 of Form 1)*

VII. Other Information *(Optional)*

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

The treatment facility will be implemented using a Design-Build-Operate (DBO) procurement process. CH2M Hill Constructors, Inc. was selected for the DBO contract. The Service Contract for the Design, Construction, and Operation of the Spokane County Regional Water Reclamation Facility between the County of Spokane, Washington and CH2M Hill Constructors includes:

- ***general overview***
- ***detailed project description***
- ***goals, objectives, and responsibilities of CH2M Hill Constructors and the County***
- ***scope of services***
- ***business terms and conditions***
- ***potential facility performance requirements***
- ***County-implemented improvements***
- ***plant layout and aesthetic concept***
- ***project phasing plan***
- ***financing and payment of the design-build price***
- ***siting and site related information***
- ***permitting, and***
- ***operation and management***

This overall effort will result in the design, construction, operation and maintenance of the treatment facility to achieve NPDES permit compliance.

VIII. Certification

I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name and Official Title *(type or print)*	B. Phone No.
N. Bruce Rawls, Utilities Director, Spokane County Division of Utilities	***(509) 477-3604***
C. Signature	D. Date Signed

ATTACHMENT B: DISSOLVED OXYGEN TMDL PARAMETERS

The Spokane County *2010 Wastewater Facilities Plan Amendment* addresses the changes that are necessary to demonstrate compliance with the *Spokane River and Lake Spokane Dissolved Oxygen TMDL Water Quality Improvement Report (Final TMDL)* and the wasteload allocation for the Spokane County Regional Water Reclamation Facility (SCRWRF) based on an effluent phosphorus seasonal average of 0.042 mg/L (March-October). The *2010 Amendment* is a supplement to the *2006 Wastewater Facilities Plan Amendment* and includes Chapter 12 Dissolved Oxygen TMDL Parameters which addresses equivalency between phosphorus, CBOD and ammonia nitrogen parameters.

MODELING OF EQUIVALENT PARAMETERS

Chapter 12 includes a discussion of dissolved oxygen TMDL parameters with details regarding their interactions and how these parameters affect water quality in Lake Spokane. A discussion of alternative, yet equivalent, combinations of effluent CBOD, TP, and ammonia-nitrogen concentrations is presented. River modeling analysis is used to demonstrate the results of CBOD, TP and ammonia concentrations and their effects on water quality to demonstrate that effluent limits for Spokane County can be adjusted from the TMDL wasteload allocation while maintaining no net change in the TMDL dissolved oxygen concentrations.

There is no simple method or single equation that relates discharged parameters to waterbody dissolved oxygen impacts because dissolved oxygen concentrations are a result of a combination of factors. The Spokane River CE-QUAL-W2 water quality model reflects the interaction of constituents and the multiple potential combinations of different inputs that could generate similar dissolved oxygen results. The model is the best method to quantitatively demonstrate different combinations of inputs that can provide similar water quality results.

A2.1 BASIS OF PLANNING REPORT

The *2006 Wastewater Facilities Plan Amendment* included a summary of the updated *Final Basis of Planning Report*. Assumptions and data in the *2006 Wastewater Facilities Plan Amendment* were reviewed and updated where appropriate. The goals, objectives, and planning elements for each of the previous Facilities Plans have been similar. This 2010 Amendment to the *2006 Wastewater Facilities Plan Amendment* aligns with the previously established goals, including:

- Provide reliable wastewater service–both near- (20-years) and long-term (50-years)
- Protect public health
- Protect and improve the region's water resources – surface water and groundwater
- Provide cost-effective solutions for County ratepayers
- Provide for growth in concurrence with the Growth Management Act
- Ensure the County has the authority and control to meet future wastewater needs
- Gain approval by the public, elected officials and regulatory agencies

Changes to Chapter 2 - Basis of Planning Summary as a result of the February 2010 *Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load Water Quality Improvement Report (Final TMDL)* are as follows:

- Wasteload allocation and effluent phosphorus concentration values were changed throughout to reflect the 0.042 mg/L seasonal average target concentration
- Preliminary results of a water quality assessment have been presented. The modeling effort compared the TMDL limits with two alternative permit limits for Spokane County to quantify the effect on dissolved oxygen in the Spokane River and Lake Spokane
- Table A2-7 and Table A2-8 were updated to reflect the *Final TMDL* and a new table was added comparing the City of Spokane Draft NPDES Permit, the February 2010 TMDL information for Spokane County, and the DBO Performance Guarantee
- Spokane River TMDL Managed Implementation Plan section was updated
- Potential Spokane River effluent discharge requirements were updated to reflect the final discharge requirements per the *Final TMDL*
- Effluent Reuse section was updated based on the *Spokane County Reclaimed Water Use Study (June 2009)*

A2.5 WATER QUALITY AND WATER RESOURCE ISSUES

Chapter 4 of the Final Basis of Planning Report reviews the characteristics of key water resources that may be impacted by the County's wastewater management program – the Spokane Valley-Rathdrum Prairie Aquifer, the Spokane River, and Little Spokane River.

These water bodies comprise the major components of a large, hydraulically-interconnected water system in the Spokane region. As such, actions affecting one of the resources may have direct or indirect impacts on the other resources as well. Water quality issues and other factors that will shape quality requirements for discharge of effluent to receiving waters, beneficial reuse of effluent and beneficial reuse of biosolids are discussed in this section.

2.5.3 Dissolved Oxygen Total Maximum Daily Load (TMDL)

During the summer months, segments of the Spokane River and Lake Spokane exhibit low dissolved oxygen levels, and fail to meet Washington State water quality standards for dissolved oxygen. Phosphorus is understood to be the constituent that has the greatest effect on surface water dissolved oxygen levels and is the treatment focus for Spokane County. Other constituents of concern with regard to dissolved oxygen are ammonia-nitrogen and carbonaceous biochemical oxygen demand (CBOD). In response to the decreased water quality in Lake Spokane, Ecology initiated a TMDL process to assess water quality problems, define the sources of pollutants that cause the problems and determine the amounts of pollutants that can be discharged to the river while meeting water quality standards.

The Washington State Department of Ecology published a *Draft Total Maximum Daily Load to Restore and Maintain Dissolved Oxygen in the Spokane River and Lake Spokane (Draft DO TMDL)* in October 2004 and the *Foundational Concepts for the Spokane River TMDL Managed Implementation Plan (2006)*. The recently released *Spokane River and Lake Spokane Dissolved Oxygen TMDL Water Quality Improvement Report (Final TMDL)* describes the wasteload allocations for Washington Dischargers to the Spokane River. The wasteload allocation for Spokane County is located in Table 5 of the *Final TMDL*. This document also identifies target pursuit actions for a Spokane County facility to discharge to the Spokane River. The goal of the TMDL is to "prevent low dissolved oxygen, excessive algae blooms, and degradation of downstream water quality" (*Final TMDL*, 2010).

Ecology defined seasonal limitations for total phosphorus, ammonia-nitrogen, and CBOD. The critical period for phosphorus is defined as March 1 to October 31, during which Spokane County must discharge an average phosphorus concentration less than 0.042 mg/L. The seasonal limits for ammonia-nitrogen are between 0.21 and 0.83 mg/ L for March - September. The target effluent limit for CBOD during the permit season is 4.2 mg/L. A summary of the *Final TMDL* wasteload allocations can be found in Table A2-7.

2.5.4 Foundational Concepts for the Spokane River TMDL Managed Implementation Plan

The *Foundational Concepts* document was an appendix of the *2006 Wastewater Facilities Plan Amendment* and also used as a guiding document for the *Final TMDL*. The *Foundational Concepts* provided potential wasteload allocations and effluent phosphorus requirements for Spokane River dischargers under a previous draft version of the TMDL. The *Foundational Concepts* document is an aggressive, managed approach that removes phosphorous from a variety of sources through various methods and monitors and assesses the impacts of dissolved oxygen over the next 20 years in a reasonable way to maximize the effectiveness of the investments in actions taken to improve the Spokane River. The difference between what wastewater treatment technologies can achieve and the wasteload

allocation target is referred to as the "Delta". The *Foundational Concepts* document has been included as a part of the *Final TMDL* and designates the difference between what wastewater treatment technologies can achieve and the wasteload allocation target as the "Delta" to be achieved through the use of offsets. The *Foundational Concepts* document calls for a thorough reassessment of the TMDL after the 10th year of the Managed Implementation Plan (MIP) and anticipates that the second 10 years of the plan could include new actions, such as consideration of river oxygenation and/or reconsideration of water quality standards.

Waste Load Allocation Targets

The *Final TMDL* document presents a wasteload allocation for point source dischargers and is summarized in Table A2-7. Dischargers are to develop a combination of the most effective feasible phosphorus removal treatment technology and implementation of other phosphorus reduction efforts that together result in meeting the wasteload allocation. The County's new plant must achieve compliance with the TMDL phosphorous target through its wastewater treatment technology and offset actions at the time the plant begins normal, routine operations (*Final TMDL*, p. 62)

Table A2-7. Wasteload Allocation Table from Spokane River and Lake Spokane Dissolved Oxygen Water Quality Improvement Report (2010)

Point Source Discharge	2027 Projected Flow Rates (MGD)[1]	NH3-N		TP		$CBOD_5$[2]	
		mg/L	lbs/day (WLA)	mg/L	lbs/day (WLA)	mg/L	lbs/day (WLA)
Liberty Lake	1.5	variable[3]	variable[3]	0.036	0.45	3.6	45.1
Kaiser	15.4	0.07	9.0	0.025	3.21	3.6	462.7
Inland Empire Paper Company	4.1	0.71	24.29	0.036	1.23	3.6	123.2
City of Spokane	50.8	variable[3]	variable[3]	0.042	17.81	4.2	1780.6
Spokane County (new plant)	8	variable[3]	variable[3]	0.042	2.80	4.2	280.4
Stormwater[5]	2.36	0.05	0.98	0.310	6.1	3.0	59.1
CSO	0.12	1.0	1.0	0.95	0.95	30.0	30.0
1. Actual, not projected flows, will determine compliance with wasteload allocations in NPDES permits.							
2. NPDES permit limits will use $COBD_5$ (as shown) rather than $CBOD_{ult}$							
3. Ammonia wasteload allocations for these facilities very depending on the season based on the following effluent concentrations: City of Spokane and Spokane County: March to May, October: 0.83 mg/L June to September: 0.21 mg/L							
4. Wasteload allocations for Kaiser are lower than other dischargers due to non-contact groundwater, which is low in nutrients, comprising a significant portion of that facility's discharge.							
5. Stormwater wasteload allocation is for Washington sources only and is based on average existing flows, not 2027 projected flows.							

New Spokane County Treatment Plant

The *Foundational Concepts* document identifies the following requirements for a new Spokane County treatment plant discharge to the Spokane River:

- County will submit to Ecology for approval, the County's engineering report for the plant to show how the most effective, feasible phosphorus removal technology has been selected, and how the offsets will be timely developed.
- At the time the plant begins normal, routine operations, it is expected the combination of offset actions and the plant's treatment of water to be discharged in the River will together achieve compliance with a seasonal average 0.042 mg/L total phosphorus target from the TMDL, which was 0.01 mg/L and has now been established in the final TMDL as 0.042 mg/L for Spokane County.
- Consistent with NPDES requirements, the plant will be permitted by Ecology in order to enable rapid conversion of septic systems to sewers consistent with the approved septic tank elimination program prior to the completion of the County plant.
- The County will construct the plant within the first 6 years of the MIP as the County's offsets from the target pursuit actions are being developed and made operative.
- It is recognized that any phosphorus reduction actions selected by the County that rely on the plant achieving normal, routine operation for their full implementation (such as septic tank elimination and water reuse) can still contribute to the County's offsets.
- It is further recognized that, because modern phosphorus removal technology is challenging, achieving normal and routine operation may require two years, assuming average seasonal conditions (temperature and flow) during both years. During this period, Ecology will recognize these conditions and their effects on compliance with interim discharge limits.
- The County will also develop a comprehensive program for reclaimed water production, reuse and aquifer recharge of effluent. This reuse program will be subject to the same conditions described for other reuse target pursuit action plans.

2.5.5 Potential Spokane River Effluent Discharge Requirements

Effluent quality requirements for the Spokane County Regional Water Reclamation Facility (SCRWRF) will be based on the dissolved oxygen TMDL prepared by the Department of Ecology. The February 2010 *Final TMDL* identifies the effluent phosphorus requirements for the SCRWRF to discharge to the Spokane River with a combination of treatment technology and other offset actions to achieve compliance with the Final TMDL. The requirements for the National Pollutant Discharge Elimination System (NPDES) permit for effluent discharge will be based on the *Final TMDL*.

As the TMDL progressed from the original draft in 2004, lower ammonia limits were included in the wasteload allocation and the water quality season was extended earlier in the year to include the month of March. Spring season ammonia control is recognized as being especially challenging due to cooler wastewater temperatures which significantly reduces nitrification reaction rates. Adding ammonia control requirements as low as 1 mg/L or less in March would have an influence on the size of treatment facilities and result in unnecessary

over-sizing of the activated sludge reactors to compensate for cooler wastewater temperatures, without providing any additional protection of water quality.

For these reasons, Spokane County undertook a water quality modeling analysis to examine the potential impacts that different levels of ammonia nitrogen concentrations in March would have on Lake Spokane water quality. This water quality modeling analysis compared the TMDL scenario with alternative ammonia and CBOD effluent levels from the SCRWRF. Table A2-10 presents a comparison between the draft NPDES permit requirements for the City of Spokane's Riverside Park Water Reclamation Facility, the final TMDL wasteload allocation, and the DBO performance requirements for the SCRWRF. The DBO performance requirements include a November through March requirement limiting Maximum Daily effluent Ammonia to 16 mg/L. Water quality modeling analysis was conducted to compare alternative effluent ammonia limits for March of 1 mg/L and 16 mg/L, along with a lower CBOD effluent requirement of 2 mg/L (which is much lower than the final TMDL wasteload allocation), with the final TMDL scenario.

Table A2-10. Comparison of the City of Spokane NPDES Permit, the 2010 Lake Spokane TMDL, and the DBO Performance Guarantee

Parameter	Draft City of Spokane NPDES Permit for Riverside Park Facility		*Equivalent Concentration Used in Mass Calculation from Revised February 2010 TMDL Table 5 Wasteload Allocation*	DBO Performance Guarantee Appendix 10	
	Average Monthly	Daily Maximum		Table 10-1 Summer Season	
	March – October Effluent Limitations			Monthly Average	Maximum Daily
				April 1 to Oct 31	
CBOD	1,778 lbs/d	-	*4.2 mg/L*	-	2 mg/L
TP	17.8 lbs/d	-	*0.042 mg/L*		
TP, Seasonal Average		-		0.050 mg/L	-
Ammonia-N Mar – May, Oct	351 lbs/d	-	*0.83 mg/L*		
Ammonia N Apr, May, Oct				1 mg/l	16 mg/L
Ammonia-N Jun - Sept	89 lbs/d	7.5 mg/L	*0.21 mg/L*		
Ammonia N Jun - Sept				0.25 mg/L	8 mg/L
	November – February Effluent Limitations		*No Limits for Nov – Feb in Revised February 2010 TMDL Table 5 Wasteload Allocation*	Table 10-2 Winter Season	
				Nov 1 to Mar 31	
	Average Monthly	Average Weekly		Monthly Average	Maximum Daily
CBOD	30 mg/L	45 mg/L	-	-	2 mg/L
TP	-	-	-	-	-
Ammonia N Nov - Mar	-	-	-	-	16 mg/L

Water Quality Modeling Assessment of Alternate Spokane County Effluent Limits

Recent water quality modeling of the Spokane River using CE-QUAL-W2 conducted by LimnoTech for Spokane County investigated alternative SCRWRF ammonia discharges in March. The purpose of the modeling effort was to test ammonia sensitivity based on season and interaction with effluent CBOD. The results of the model indicated that higher ammonia limits paired with lower CBOD limits will achieve the same dissolved oxygen concentrations in the Spokane River and Lake Spokane as what is presented in the TMDL. Further, this analysis illustrates that the lower SCRWRF effluent CBOD coupled with a seasonal average effluent phosphorus at 0.050 mg/l meets the requirements of the *Final TMDL*.

Three different scenarios were considered for this water quality modeling analysis, one that represented the TMDL, with March effluent ammonia of 0.83 mg/L, and two alternatives. Alternative No. 1 applied varying ammonia levels (March – 16 mg/L, April to May – 1 mg/L, June to September – 0.25 mg/L), a year-round CBOD concentration of 2.0 mg/L, and a seasonal (March to October) total phosphorus concentration of 0.050 mg/L. Alternative No. 2 applied varying ammonia levels (March to May – 1 mg/L, June to September – 0.25 mg/L), a year-round CBOD concentration of 2.0 mg/L, and a seasonal (March to October) average total phosphorus concentration of 0.050 mg/L. The modeling effort was used to determine the effect of significantly lower ammonia limits in March on the dissolved oxygen concentration in the Spokane River and Lake Spokane and to quantify the relationship between decreased CBOD concentrations and increased ammonia concentrations.

The model was run based on areas of greatest significance as determined by TMDL scenarios (model segments 34 to 36) especially for the month of August. The model results showed that the dissolved oxygen impact for the critical segments and time were minimal. For Alternative No. 1 a dissolved oxygen increase was observed between 0.0099 and 0.012 mg/L. For Alternative No. 2 a dissolved oxygen increase was observed between 0.013 and 0.014 mg/L. These model results predict that increasing the ammonia limit in March to 16 mg/L, while decreasing the CBOD limit, will improve the water quality in the Spokane River and Lake Spokane.

The technical memorandum documenting the modeling analysis is included as an Appendix to this chapter and the modeling results are summarized in Table 2 of the March 10, 2010 Limnotech Memorandum (See Appendix – Section A2.9). The results show a water quality improvement over the TMDL scenario for dissolved oxygen concentrations in the Spokane River. The key factor that contributes to the improved water quality is the balance between CBOD and ammonia concentrations. Spokane County's effluent CBOD requirement as modeled is 2 mg/L, as compared to the 4.2 mg/L in the TMDL wasteload allocation. The lower CBOD partially offsets the increased ammonia discharge in March. The results from the CE-QUAL-W2 modeling of alternatives were post processed in the same manner as used in the TMDL for assessment of the impact on dissolved oxygen depression in Lake Spokane.

Since the SCRWRF membrane bioreactor (MBR) treatment process is capable of producing low effluent phosphorus concentrations (0.050 mg/l), as well as effluent CBOD at levels lower (2 mg/l) than called for in the TMDL wasteload allocation (4.2 mg/L) throughout the entire calendar year, the water quality modeling indicates that the SCRWRF discharge will meet the *Final TMDL* requirements for dissolved oxygen in Lake Spokane.

Proposed Spokane County Effluent Limits

Based on water quality analyses conducted to date, Spokane County requests that the Department of Ecology use the effluent quality limits listed in Table A2-8 be in the initial NPDES permit.

Proposed effluent discharge permit limits in Table A2-8 are based on the following:

- Compliance with the effluent phosphorus limits should be determined on a seasonal average basis in recognition of variability in treatment performance when achieving very low effluent phosphorus concentrations in accordance with the *Spokane County and Lake Spokane Dissolved Oxygen TMDL Water Quality Improvement Report* (February 2010).
- Lower SCRWRF effluent CBOD coupled with a seasonal average effluent phosphorus at 0.050 mg/l meets the requirements of the *Final TMDL*
- Effluent CBOD limits should be determined on a seasonal average basis in recognition of variability in treatment performance when achieving very low effluent concentrations.
- Peak ammonia-nitrogen discharge limits should be specific to the outfall location and based on either preventing reasonable potential for toxicity in the mixing zone or dissolved oxygen impacts in the river.
- Effluent mixing zone analysis was conducted to establish a basis for prevention of ammonia toxicity in the effluent mixing zone, as documented in Appendix D Mixing Zone Study Report (LimnoTech, 2004) of the *2006 Wastewater Facilities Plan Amendment.* At the time of the mixing zone analysis, effluent ammonia concentrations were expected to be 3 mg/L in the summer and 20 mg/L in the winter. Ambient ammonia concentrations in the Spokane River at the 90^{th}-percentile concentration were assumed to be 0.22 mg/L in the summer and 0.3 mg/L in the winter based on the NPDES Fact Sheet for the City of Spokane treatment plant. Ambient Spokane River pH was assumed to be 7.8 in both winter and summer based on EPA STORET and Ecology databases. Spokane River temperatures for the mixing zone analysis were 17.9 ^{0}C in the summer and 8.4 ^{0}C in the winter. The mixing zone analysis concluded that dilution sufficient to attain the acute and chronic water quality criteria in both summer and winter in the Spokane River would be met with a single port outfall diffuser located at mid-channel.
    - Potential effluent limits for peak day ammonia discharges were evaluated in September of 2007 based on CE-QUAL-W2 modeling of the river for dissolved oxygen impacts and effluent mixing zone analysis of the potential for toxicity (LimnoTech, 2007). Allowable peak day discharges from the Spokane County

Regional Water Reclamation Facility are approximately 8 mg/L based on dissolved oxygen in the river during June/July/August/September and approximately 16 mg/L based on potential toxicity. Further consideration of water reclamation facility ammonia discharges to the Spokane River included the potential for peak concentration events to coincide at more than one facility. It was concluded that this was a very remote possibility and it was unnecessary to base peak effluent ammonia discharge limits on river water quality modeling with multiple treatment plants having peak day discharges on the same day (HDR, 2007).

- Ammonia-nitrogen limits driven by the dissolved oxygen TMDL should be determined on a seasonal average basis in recognition of variability in treatment performance when achieving very low effluent concentrations. The water quality modeling analysis using CE-QUAL-W2 demonstrates that the following SCRWR effluent characteristics result in dissolved oxygen concentrations in Lake Spokane that are the same, or better than the TMDL wasteload allocation:

    - Effluent CBOD March – October: 2.0 mg/L
    - Effluent Phosphorus March – October: 0.050 mg/L
    - Effluent Ammonia
        - March: 16 mg/L
        - April and May, October: 1.0 mg/L
        - June – September: 0.25 mg/L

- The start of the summer permit season is determined to be from March 1 through October 31 based on the TMDL prepared by the Department of Ecology (*Final TMDL,* February 2010).
- During the winter permit season, instream dissolved oxygen levels greatly exceed the Class A criterion of 8 mg/L. Consequently, discharge of tertiary effluent would not cause an instream dissolved oxygen violation.
- Dilution studies and a mixing zone analysis indicate that there is not a reasonable potential for arsenic, copper, chromium, mercury, nickel and silver to exceed toxicity criteria. Consequently, numerical limits are not warranted for these constituents. The only metals requiring limits are lead, cadmium and zinc, which are governed by the Spokane River metals TMDL.
- The proposed discharge from the SCRWRF will not cause instream temperature to exceed the water quality standard of 20°C for the Middle Spokane River, and will not result in a temperature increase that exceeds the allowable incremental increases of 2.0°C and 1.3°C for winter and summer, respectively.[1]

[1] Based on equation $t = 34/(T + 9)$, where T = background temperature.

- It is expected that SCRWRF will pursue a treatment process optimization period of up to two years to fine-tune the phosphorus removal system for the best performance possible prior to final discharge permit compliance limits.

In addition to the anticipated limits presented in Table A2-8, the County has elected to reduce effluent nitrate-nitrogen levels during the summer permit season to a concentration of 10 mg/L or less. This measure is designed to minimize nitrate loadings to the Spokane Aquifer resulting from either reuse practices or groundwater recharge of treated effluent discharged to the Spokane River.

The County expects that the proposed membrane technology for the SCRWRF will provide a higher quality effluent than is required to meet the anticipated initial NPDES permit effluent limits. Based on typical membrane bioreactor performance in other locations, it is expected that effluent TSS will generally be less than 5 mg/L and BOD will be less than 5 mg/L year-round.

Table A2-8. Proposed Effluent Quality Limits for SCRWRF Discharge to the Spokane River

EFFLUENT LIMITATIONS (March – Oct) [a]		
Parameter	**Seasonal Average**	**Daily Maximum**
Carbonaceous Biochemical Oxygen Demand – 5 day ($CBOD_5$)[a] March 1 to Oct. 31	133.4 lbs/day[b]	
Total Phosphorus (as P) March 1 to Oct. 31[c]	3.34lbs/day[b]	
Total Ammonia (as NH_3-N)[d]		
March 1 to March 31	see footnote[b]	see footnote[d]
For "season" of April 1 to May 31	66.7 lbs/day	16 mg/L
For "season" of June 1 to Sept. 30[e]	16.7 lbs/day	7.5 mg/L
For "season" of Oct. 1 to Oct. 31	66.7 lbs/day	16 mg/L
EFFLUENT LIMITATIONS		
Parameter	**Average Monthly**	**Average Weekly**
Carbonaceous Biochemical Oxygen Demand – 5 day ($CBOD_5$) Nov. 1 thru Feb.	25 mg/L, 1668 lbs/day	45 mg/L, 3002 lbs/day
Total Suspended Solids, mg/L	<30	<45
Fecal Coliform Bacteria	200/100 mL	
pH	Daily minimum is equal to or greater than 6 and the daily maximum is less than or equal to 9	
Parameter	**Average Monthly**	**Maximum Daily**
Total Residual Chlorine		0.010 mg/L, 667 lbs/day
Nitrate Nitrogen, mg/L[f]		
Lead[g]	2 µg/L	3 µg/L
Zinc[g]	60 µg/L	82 µg/L
Cadmium[g]	0.2 µg/L	0.3 µg/L

[a]The Final TMDL includes as wasteload allocation for CBOD, ammonia nitrogen, and total phosphorus. Future discharge permit revisions are expected to include performance based limits. The Managed Implementation Plan (MIP) calls for NPDES limits based on seasonal average values and CBOD limits will be calculated on an average seasonal basis from March through October.

[b]The TMDL wasteload allocation for Spokane County for CBOD is 280.4 lb/d based on an effluent concentration of 4.2 mg/l. At effluent CBOD performance of 2 mg/l under the DBO performance contract, the SCRWRF loading is 133.4 lb/d which off-sets TMDL season effluent phosphorus of 0.050 mg/l (3.34 lbs/d) and March ammonia nitrogen discharge limited by the Maximum Day concentration of 16 mg/l.

[c]The Managed Implementation Plan (MIP) calls for NPDES limits based on seasonal average values. SCRWRF effluent mass loading limits for March-October are based on seasonal average effluent total phosphorus performance of 0.050 mg/L. SCRWRF effluent CBOD at 2 mg/l is lower than the Final TMDL wasteload allocation for Spokane County based on 4.2 mg/l and allows effluent phosphorus loadings based on 0.050 mg/l compared to the wasteload allocation target of 0.042 mg/l to meet the Final TMDL water quality requirements. The MIP projected flow for Spokane County for 2017 is 8 mgd and for 2027 is 8 mgd. Compliance in meeting the pounds of phosphorus target will be achieved by a combination of treatment technology and Delta Elimination. Other Delta Elimination phosphorus reduction actions that together result in same water quality conditions as required in the Final TMDL will

be implemented as necessary, for example to offset initial plant performance during the 2 year optimization period provided for in the TMDL.
[d]The Managed Implementation Plan (MIP) calls for NPDES limits based on seasonal average values and ammonia limits will be calculated based on the following: March/April/May (92 day average), June/July/August/September (122 day average), and October (31 day average). The maximum March effluent ammonia concentrations is based on the DBO guarantee (16 mg/L). The DBO concentration was established from previous modeling efforts that incorporated ambient river temperature and pH with expected effluent temperature and pH.
[e] The daily limits for ammonia are based on effluent mixing zone toxicity control, unless superseded by dissolved oxygen limitations at compliance locations in the Spokane River upstream of Lake Spokane.
[f]The County has elected to reduce effluent nitrate-nitrogen levels during the summer permit season to a concentration of 10 mg/L or less.
[g]Performance based limits are required by the metals TMDL. Estimated values are based on the RPWRF permit. Actual values for the SCRWRF must be established by monitoring effluent metals concentrations.

A2.7 EFFLUENT REUSE

With appropriate levels of treatment and system management, reclaimed water has been used successfully for many applications. Reclaimed water programs must consider the state's guidance provided in the Water Reclamation and Reuse Standards, which outline four classes of reclaimed water that can be used for different applications. These range from Class A water, which has the most stringent treatment requirements but minimal restrictions on use, to Class D water which has limited uses which must be accompanied by strict controls to minimize human contact. The June 30, 2006 *Foundational Concepts for the Spokane River TMDL Managed Implementation Plan* calls for Spokane County to produce Class A reclaimed water. Class A reclaimed water is suitable for use in urban irrigation, as industrial process water, aquifer recharge, and wetlands restoration. Spokane County published a *Reclaimed Water Use Study* (June 2009) that evaluated several options. The following three options are to be studied further for implementation:

- Aquifer recharge (report has been drafted and reviewed by DOH and Ecology)
- Industrial reuse
- Wetland restoration at Saltese Flats

Further detail on reclaimed water use can be found in Chapter 5 of the *2006 Wastewater Facilities Plan Amendment*, and in the *Reclaimed Water Use Study (June 2009).*

A2.8 BIOSOLIDS MANAGEMENT

Land application, composting and land filling are the biosolids management techniques typically used in Eastern Washington and Northern Idaho. These uses are regulated by Ecology using rules which closely follow those promulgated by the U.S. EPA under 40 CFR 503 ("Part 503 regulations"). These regulations use three measures to determine the level of restriction placed on the application practice: (1) concentration of trace elements; (2) quantity of pathogens; and (3) vector attraction. Two classes of pathogen reduction are recognized, with associated differences in the level of restriction placed on reuse of the treated biosolids.

Washington State includes a requirement for "significant removal of manufactured inerts," from biosolids before land application. The rule specifies that solids must be screened

"through a bar screen with a maximum aperture of 3/8-inch," or inerts must be removed using another method approved by Ecology. Grinding is not an acceptable option.

A2.9 APPENDIX

LimnoTech, Inc., "*Draft Water Quality Assessment of Alternate Spokane County Permit Limits*," March 11, 2010.

A2.10 REFERENCES

LimnoTech, Inc., "*Mixing Zone Study Report for the Proposed Spokane County Discharge to the Spokane River, Washington*," June 21, 2004.

LimnoTech, Inc., Powerpoint Presentation of Spokane River CE-QUAL-W2 Modeling Results to Washington Ecology, September 19, 2007.

HDR Engineering, Inc. "*Potential for Coincident Peak Day Ammonia Discharges*," e-mail correspondence to Spokane County and Washington Ecology, October 12, 2007.

A12.1 INTRODUCTION

The purpose of this chapter is to discuss effluent variability and how Spokane County proposes to comply with the *Final TMDL*. This is consistent with the statement in the *Final TMDL "Effluent limits that implement wasteload allocations in NPDES permits need not be identical to the wasteload allocations in order to be consistent with the wasteload allocations (EPA Environmental Appeals Board, 10 E.A.D. 135, 2001).* For the SCRWRF, Spokane County proposes to meet a lower CBOD limit than is specified in the *Final TMDL*, but meet a higher ammonia limit in March and a higher phosphorus limit throughout the TMDL season (March-October). As discussed below, the water quality model being used for the *Final TMDL* predicts that this adjustment will improve the dissolved oxygen in Long Lake.

Factors that influence dissolved oxygen in the Spokane River and Lake Spokane include carbonaceous biochemical oxygen demand (CBOD), ammonia nitrogen, and phosphorus. Each discharger to the Spokane River has a unique combination of existing or planned wastewater treatment facilities and resulting effluent characteristics. The municipal dischargers generally have similar influent wastewater characteristics but individual treatment processes may alter the site specific effluent parameters. Even if effluent phosphorus levels are very low (~0.050 mg/L), the effluent CBOD and ammonia may vary as a result of the treatment processes employed. Seasonal sensitivity to temperature effects on nitrification rates can impact effluent ammonia concentrations. Further, the geographic location of individual discharges to the Spokane River influences the resulting impact on water quality in Lake Spokane. Overall, effluent quality differences and discharge location combine to create a complex interaction between effluent quality and receiving water impact. For these reasons, simple computational relationships that translate equivalent combinations of CBOD, ammonia and phosphorus that meet the TMDL water quality requirements are difficult, if not impossible, to define.

Combinations of CBOD, ammonia and phosphorus can be varied, while still meeting dissolved oxygen requirements. Changes to the effluent parameters can be optimized for a specific discharger. However, there are no simple factors that can be used to exchange between CBOD, ammonia and phosphorus that fit all dischargers. The Spokane County Regional Water Reclamation Facility is an example of this. As discussed in Chapter 2, lower effluent CBOD concentrations can offset higher March ammonia nitrogen concentrations and achieve the same level of water quality protection for Lake Spokane. Water quality modeling of the Spokane River was used to demonstrate the equivalency of water quality impact to satisfy the TMDL requirements due to the complexity of interchanging parameters and the receiving waters.

This chapter presents a discussion of nutrient and dissolved oxygen TMDL parameters with details regarding their interactions, including Spokane County's dissolved oxygen parameters and how these parameters affect water quality in Lake Spokane. A discussion

of alternative, yet equivalent, combinations of effluent CBOD, phosphorus, and ammonia-nitrogen concentrations are also provided. River modeling efforts are discussed regarding changes to CBOD, TP and ammonia concentrations and their effects on water quality. Based on the information presented here and in Chapter 2, effluent limits for Spokane County can be adjusted from the TMDL wasteload allocation which will cause a net increase in the dissolved oxygen concentrations in Lake Spokane. Finally, the County's plan for "Delta management" under the TMDL is documented.

A12.2 SPOKANE COUNTY DISSOLVED OXYGEN PARAMETERS

Many parameters influence dissolved oxygen concentration. Dissolved oxygen in water is introduced primarily from aeration by the atmosphere; after dissolving at the air-water interface, oxygen is distributed by currents and turbulence into the water column. Water temperature, pressure, elevation, and salinity affect the dissolved oxygen capacity of the water. Dissolved oxygen in the water column is then affected by four processes:

- Respiration of algae, epiphyton, periphyton, macrophytes and other aquatic organisms
- Photosynthesis of the same organisms
- Decay of organic matter in the water and sediments
- Nitrification of ammonia nitrogen

An endless combination of these influences from multiple point and nonpoint sources under various conditions affect the resulting water column dissolved oxygen. The relationship between water temperature, elevation, and dissolved oxygen is relatively straightforward. For the other influences, the relationship is not as easily defined. There is no simple translation between individual parameters such as CBOD, ammonia, or phosphorus, and dissolved oxygen.

For aquatic organisms such as algae, growth and photosynthesis is driven by the availability of fundamental building blocks including phosphorus/phosphate, nitrogen/nitrate-nitrite/ammonium, carbon, and silica. The growth results in increased dissolved oxygen concentrations through photosynthesis (photosynthesis uses carbon dioxide and water, releasing oxygen) and the removal of dissolved oxygen through respiration (respiration requires oxygen in order to generate energy). As summarized in the TMDL, this results in dissolved oxygen levels that "*fluctuate over the day and night in response to changes in climatic conditions as well as the respiratory requirements of aquatic plants and algae.*" Aquatic organisms also excrete wastes and die, providing organic matter which then decays. The decay process consumes oxygen as the materials are converted to carbon dioxide and water by biological oxidation.

CBOD, ammonia nitrogen, and phosphorus all interact differently in aquatic systems and consume oxygen by different means. CBOD consumes oxygen through the decay process. For the Spokane River TMDL, individual CBOD levels were assigned to each

of the point sources. This allowed for varying decay rates and the separate tracking of each source. Nitrification is the biological oxidation of ammonia with oxygen into nitrite followed by the oxidation of nitrites into nitrates. This oxidation process requires oxygen and thus reduces the dissolved oxygen concentration. Phosphorus indirectly influences dissolved oxygen through the growth and decay of aquatic organisms. Phosphorus is a primary nutrient for algae growth and in many waters is considered to be limiting. Reducing phosphorus may reduce algae growth and decay (when it is the limiting factor) and thus decrease the oxygen consuming demand.

A12.3 CONNECTION BETWEEN SCRWRF AND LAKE SPOKANE

The February 2010 *Spokane River and Lake Spokane Dissolved Oxygen TMDL Water Quality Improvement Report (Final TMDL)* addresses low dissolved oxygen concentrations in Lake Spokane. The TMDL states the supporting model simulations "*confirmed that dissolved oxygen is significantly depleted by anthropogenic (human-caused) pollution sources.*" Pollution sources as well as impacts caused by Long Lake Dam affect water quality in Long Lake. "*Both point and nonpoint sources of pollutant loading contribute to violations of water quality criteria*" in the Spokane River watershed. Point sources, however, are regulated under NPDES and nonpoint source reductions are voluntary. The goal of the TMDL is to improve dissolved oxygen concentrations by reducing pollutant loadings.

Multiple parameters influence dissolved oxygen concentrations, including CBOD, ammonia nitrification, and indirectly, phosphorus. In the TMDL, Ecology states that "*phosphorus has the most significant impact on algal production...*" and that "*algal production significantly contributes to dissolved oxygen depletions.*" However, the TMDL also states that "*dissolved oxygen is also impacted by CBOD and ammonia.*"

These influences can be addressed through a combination of approaches that reduce sources and discharges. The TMDL examines a few of the potential combinations and defines a management alternative. Limited resources allowed the examination of only three TMDL scenarios. By implementing the selected alternative Ecology states that "*Management of these pollutants, according to this dissolved oxygen TMDL, will result in restoration and protection of existing and designated uses provided in Washington's water quality standards, and will also improve dissolved oxygen conditions downstream of Lake Spokane.*"

A12.4 WATER QUALITY COMPLEXTITY

There is no simple method or single equation that relates discharged parameters to dissolved oxygen impacts in a water body, because dissolved oxygen concentrations are a result of a combination of factors. There is a relationship between effluent CBOD, ammonia and phosphorus where there is some degree of interchangeability between parameters. Generalized trends between parameters and dissolved oxygen are known based on the physical, chemical, biological, and limnology of a system. This provides a

general sense of what combinations of parameters would equate to similar dissolved oxygen concentrations, but not quantitative equivalents. For example, the variability in individual dischargers along the Spokane River demonstrate this principle with the variety of inputs that were developed for the TMDL and no single set of effluent parameters was used to represent all dischargers. Furthermore, the CE-QUAL-W2 model code reflects the interaction of constituents and the multiple potential combinations of different inputs that could generate similar dissolved oxygen results. The model is the best method to quantitatively demonstrate different combinations of inputs that can provide similar water quality results.

A12.5 MODELING OF EQUIVALENT PARAMETERS

To reflect this complexity in water quality conditions and its effect on the Spokane River, a water quality model is required. The CE-QUAL-W2 model is capable of conducting this analysis allows these relationships to be analyzed in the same manner used to prepare the TMDL.

This model integrates multiple equations that represent the various processes and parameters that influence dissolved oxygen. For the TMDL, "*Ecology chose to use the capabilities of the CE-QUAL-W2 model developed by the U.S. Army Corps of Engineers. The CE-QUAL-W2 model was chosen because it is considered state-of-the-science, and it has been used to simulate many other reservoirs. In addition, the model is well documented, nonproprietary, and has technical support readily available.*" A dynamic tool, like CE-QUAL-W2, is also able to estimate dissolved oxygen concentrations given variable conditions and changing conditions over time. Dissolved oxygen concentrations vary across space and time in Lake Spokane.

Spokane County conducted a water quality modeling effort using the CE-QUAL-W2 model developed by Portland State University for Ecology to examine the effect of alternative Spokane County effluent limits on dissolved oxygen concentrations. The TMDL wasteload allocation assumes very low concentrations of effluent ammonia nitrogen (0.83 mg/L) in the month of March. From a wastewater treatment process standpoint, this may be difficult to achieve because the nitrification process is very sensitive to wastewater temperatures and reaction rates slow significantly with cooler temperature. Consequently, March ammonia limitations would control overall treatment process sizing and result in over-sizing of activated sludge reactors that provide no additional water quality benefit. For these reasons, higher March effluent ammonia limits for the SCRWRF may be more appropriate and provide the same level of water quality protection in the Spokane River and Lake Spokane.

To demonstrate this, two alternative scenarios were modeled to investigate the sensitivity of Lake Spokane dissolved oxygen concentrations to changes in March effluent ammonia discharges from the SCRWRF. One alternative used ammonia concentrations of 16 mg/L in March, 1.0 mg/L in April and May, and 0.25 mg/L in June through September. The

CBOD concentration for this alternative was set at 2.0 mg/L based on the expected performance of the SCRWRF membrane bioreactor treatment process, compared to the TMDL wasteload allocation for CBOD of 4.2 mg/L. The effluent phosphorus concentration was 0.050 mg/L based on the expected performance of the treatment technology, compared to the TMDL wasteload allocation concentration of 0.042 mg/L. The second alternative modeled an ammonia concentration of 1.0 mg/L in March through May and 0.25 mg/L in June through September. Again, the CBOD and phosphorus concentrations were of 2.0 mg/L and 0.050 mg/L respectively.

The modeling results presented in Chapter 2 and Appendix A2 indicate that the alternative discharge limits for Spokane County would not decrease dissolved oxygen in Long Lake, and would in fact cause a slight increase to oxygen in Long Lake. The reason for this water quality improvement is the significant decrease in CBOD concentration in the effluent from the SCRWRF (2.0 mg/L) compared to the TMDL wasteload allocation scenario (4.2 mg/L). The effect of lower CBOD concentration partially offsets the increased ammonia discharge in March. The reduction of CBOD, of which phosphorus is a fraction in the CE-QUAL-W2 model, also offsets the increased in orthophosphate. The water quality modeling analysis using CE-QUAL-W2 demonstrates that the following SCRWR effluent characteristics result in dissolved oxygen concentrations in Lake Spokane that are the same, or better than the TMDL wasteload allocation:

- Effluent CBOD March – October: 2.0 mg/L
- Effluent Phosphorus March – October: 0.050 mg/L
- Effluent Ammonia
    - March: 16 mg/L
    - April and May, October: 1.0 mg/L
    - June – September: 0.25 mg/L

The results of this modeling analysis concur with Ecology's findings that phosphorus has a greater impact on Lake Spokane water quality than CBOD and ammonia. Further, CBOD has a greater impact than ammonia because in the CE-QUAL-W2 model it includes a percentage of phosphorus and has a slower decay rate. In the future, water quality modeling analysis of tradeoffs between effluent parameters may be useful in investigating various combinations of phosphorus, CBOD, and ammonia to demonstrate equivalent protection of water quality in Lake Spokane for compliance with TMDL. Potential scenarios that may become important to consider in the future include revisions that reflect actual full-scale operating performance for CBOD and ammonia when operating the low effluent phosphorus treatment process, variability in effluent concentrations with time, improved science that enhances the understanding of phosphorus speciation, the results of phosphorus bioavailability studies, etc.

A12.5.1 Future Modeling of Equivalent Parameters

Although it would be convenient to define simple relationships between effluent discharge parameters and resulting impacts on Lake Spokane dissolved oxygen, it may not be possible without modeling the river system. The CE-QUAL-W2 water quality model of the Spokane River was the tool used to develop the Spokane River TMDL and determine the allowable loadings for the desired dissolved oxygen concentrations. The CE-QUAL-W2 model represents specific flows and other conditions, including discharge constituent concentrations from the Spokane County Water Reclamation Facility, that result in the predicted dissolved oxygen concentrations in Long Lake. The constituents in the discharge include specific concentrations of BOD, soluble reactive phosphorus (SRP), and ammonia nitrogen. Other combinations of different concentrations for these constituents exist that would result in an equivalent dissolved oxygen prediction in Lake Spokane. However, the single combination used in the TMDL cannot be extrapolated into a relational equation to know these alternative combinations. Attempting to simplify the complex equations in the CE-QUAL-W2 model that perform the fate, transport, and inter-mixing of these constituents into the resulting dissolved oxygen concentrations in Lake Spokane would likely not provide a reliable indication of the model's prediction results and circumvent the purpose of the tool. Instead, the water quality model would need to be use to simulate various concentrations of effluent parameter to search for equivalent combinations. Since a desired equivalent dissolved oxygen result in Lake Spokane is sought, multiple simulations would be required and many that are tested may not prove to be an equivalent combination. Combinations that were found to result in equivalent dissolved oxygen concentrations could potentially be used to develop a surface of points representing the equivalent combinations of constituent concentrations. Such a normalizing task could be a tedious and time consuming task. An alternative approach would be to simulate combinations that are preferable and attainable by the specific facility in consideration to determine if the dissolved oxygen predictions are equivalent.

A12.6 DELTA ELIMINATION PLAN

The February 2010 *Spokane River and Lake Spokane Dissolved Oxygen TMDL Water Quality Improvement Report* includes *Appendix D: 2007 Memorandum of Agreement and Foundational Concepts* (Final TMDL) describes "*target pursuit actions*" which include a combination of both treatment technology and "delta" elimination efforts to reduce Spokane County's phosphorus load to the Spokane River. The *Final TMDL* describes the "delta elimination plan" *(Final TMDL, page 37)* to bridge the gap between the 0.042 mg/L effluent total phosphorus target in the TMDL wasteload allocation *(Final TMDL, Table 5)* and the capabilities of treatment technology to meet a seasonal average of 0.050 mg/L effluent total phosphorus.

The wasteload allocation for Spokane County is based upon an annual average influent flow rate of 8 mgd and a seasonal average effluent concentration of 0.042 mg/L phosphorus for a 2.80 lbs/day loading. The difference between the effluent phosphorus

loading at 0.042 mg/L in the wasteload allocation and the capabilities of treatment technology at 0.050 mg/L is 0.53 lbs/day. The wasteload allocation for CBOD is based on an effluent concentration of 4.2 mg/L for a 280.4 lbs/day loading.

Spokane County's "delta elimination plan" includes a combination of both treatment technology and "delta" elimination efforts as described in the Foundational Concepts to satisfy the requirements of the *Final TMDL*. The following paragraphs describe the plan, as well as provision of an adequate margin of safety and reasonable assurance.

A12.6.1 Treatment Technology Selection

Spokane County has selected the membrane bioreactor (MBR) treatment process for the SCRWRF to satisfy the multiple objectives of the *Final TMDL*. This MBR process is capable of producing low effluent phosphorus concentrations, as well as effluent CBOD at levels lower than called for in the TMDL wasteload allocation. The effluent from the SCRWRF (2.0 mg/L CBOD) will be lower than the specified TMDL wasteload allocation scenario (4.2 mg/L CBOD) throughout the entire calendar year. As described in Section A12.5 above, the effect of the lower CBOD concentration is to offset both an increased ammonia discharge in March, as well as the difference between the SCRWRF effluent phosphorus at 0.050 mg/L and the wasteload allocation concentration of 0.042 mg/L. The water quality modeling results presented in Chapter 2 and Appendix A2 indicate that the SCRWRF discharge will meet the *Final TMDL* requirements for dissolved oxygen in Lake Spokane, and would in fact cause a slight increase to oxygen in Lake Spokane. Because the modeling demonstrates that the County's treatment technology provides effluent nutrient loading to the river that causes less impacts to DO than the wasteload allocations to the County, no offsets (delta elimination) will be required for the County to meet the wasteload allocation in the Final TMDL.

Margin of Safety and Reasonable Assurance

The water quality modeling analysis demonstrating compliance with the Final TMDL was conducted in the same manner as the analysis used for the TMDL scenarios and therefore includes the same margins of safety and the same provisions for reasonable assurance as the TMDL itself. The *Final TMDL* (Final TMDL, page 20) states that "*By using a representative critical low flow year, the water quality in Lake Spokane and the Spokane River should be adequately protected as further described below and in the Margin of Safety section.*" The *Final TMDL* (Final TMDL, 51) itemizes the specific factors contributing to the margin of safety as follows:

- *"Low flows (2001) were used as the baseline hydrologic condition*
- *For each tributary, the headwater phosphorus concentration has been used as the "natural background" concentration at the mouth of the tributary, even though natural phosphorus concentrations may increase between the headwaters and the mouth*
- *Stormwater flows from an "average" rainfall year have been assumed to occur during the 2001 low-flow year; similarly, groundwater flows have been assumed*

which are greater than those that would be expected to occur during a critical low flow year

- *All phosphorus is assumed to be bioavailable*
- *The top eight meters of the reservoir are not included in the vertical averaging because of amplified algal activity which increases daytime dissolved oxygen levels*
- *Conservative assumptions were used in assignment of a load allocation for groundwater and runoff directly entering Lake Spokane ("Lake Watershed")*

Therefore, Spokane County's treatment technology selection meets the water quality requirements for the Spokane River and provides the same margin of safety and reasonable assurance called for in the Final TMDL.

A12.6.2 Delta Elimination Plan for Phosphorus

The *Final TMDL* calls for dischargers to prepare and submit to Ecology a *Delta Elimination Plan* and schedule for other phosphorus removal actions including conservation, reuse, source control, and regional nonpoint source control efforts (Final TMDL, page 62). Spokane County has developed a robust plan for meeting the requirements of the *Final TMDL* that includes a combination of both treatment technology and "delta" elimination efforts to reduce Spokane County's phosphorus load to the Spokane River.

The County has two specific mechanisms in place to make up the difference, if necessary, between actual phosphorus performance and the TMDL wasteload allocations. First, better BOD removal than what is specified in the Final TMDL wasteload allocation compensates for ammonia and phosphorus concentrations higher than the TMDL wasteload allocation values. Second, the County's delta elimination plan provides alternative phosphorus removal actions that count towards the County's phosphorus removal requirement, including septic system elimination offsets.

Chapter 11 herein, Phosphorus Management Plan, documents the County's plan to address this requirement and it presents a number of actions to further reduce phosphorus loadings. The Phosphorus Management Plan, in combination with the phosphorus reduction from treatment technology, provides additional reasonable assurance of meeting Spokane County's phosphorus loading target when the new Spokane County Regional Water Reclamation Facility (SCRWRF) begins operation. As stated previously, the County's proposed effluent limits for CBOD, ammonia, and phosphorus are more protective of dissolved oxygen in Lake Spokane than the wasteload allocations in the Final TMDL, so no offsets are proposed to be used for normal routine operations after the initial two-year startup period.

Interim Performance-based Limits

The Final TMDL (Final TMDL, page 63) recognizes that when new treatment technology is installed, attaining optimal performance will be challenging and that achieving normal and routine operation may require two years, or more, assuming average seasonal conditions. During this period, Ecology will recognize these conditions with interim discharge limits based on actual performance of the technology installed and operated at optimum efficiency. Final water quality based effluent limits will be based on effluent data combined with offsets from the Delta Elimination Plan.

Spokane County will utilize water quality offsets, if necessary, to make up the difference between effluent phosphorus performance and the Final TMDL wasteload allocations during the interim operational period while optimizing SCRWRF performance. Spokane County has developed, and Ecology has reviewed, a nonpoint source phosphorus offset based on the Spokane County Septic Tank Elimination Program, as documented in Chapter 11 and the technical memorandum in Appendix B of the *2006 Wastewater Facilities Plan Amendment*. The range of annual total phosphorus load reduction to the Spokane River is summarized in Table A11-2. The lower range of annual total phosphorus load reduction to the Spokane River in 2015 is estimated to be 4,440 lbs (12.2 lbs/day). The upper range of annual total phosphorus load reduction to the Spokane River in 2015 is estimated to be 7,400 lbs (20.3 lbs/day). For comparison, if interim effluent phosphorus performance at the SCRWRF facility were hypothetically to be 0.100 mg/L at a flow of 8 mgd, the difference from effluent at 0.050 mg/L would be only 3.34 lbs/day.

The approach used in this analysis for estimating the septic system water quality offset provides a generous margin of safety in that it underestimates historic septic system phosphorus concentrations, underestimates historic hydraulic loadings, overestimates sorption capacity of soils, ignores phosphorus movement into the groundwater system prior to full sorption capacity of the soil being reached and includes a conservative assumption that the aquifer retains 50 to 75 percent of the phosphorus loading.

A12.7 REFERENCES

LimnoTech, Inc., "*Draft Water Quality Assessment of Alternate Spokane County Permit Limits*," March 11, 2010.

Washington Department of Ecology, "*Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load, Water Quality Improvement Report*," Publication No. 07-10-073, Revised February 2010.