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January 9, 2019

Mr. Matt Thompson  
Wisconsin Department of Natural Resources  
1300 W. Clairemont Avenue  
Eau Claire, WI 54701

Subject: 2018 Fourth Quarterly Report - Wauleco, Inc., Wausau, Wisconsin  
BRRTS #02-37-000006

Dear Mr. Thompson:

On behalf of Wauleco, Inc., TRC is submitting a copy (enclosed) of the 2018 Fourth Quarterly Report for the Wauleco, Inc., site in Wausau, Wisconsin.

If you have any questions or comments regarding this information, please call me at (608) 826-3644.

Sincerely,

TRC Environmental Corporation

Bruce Iverson  
Project Manager

Attachments: 2018 Fourth Quarterly Report

cc: Evan Schreiner – Wauleco, Inc. (2 copies)  
David Crass – Michael Best & Friedrich, LLP (1 copy)  
Tom Dushek – TRC Wauleco (1 copy)  
Ken Quinn – TRC (1 copy)

**Wauleco, Inc. - Wausau, Wisconsin  
Quarterly Report  
Submitted January 2019**

**Summary of 2018 Fourth Quarter Activities**

**Groundwater Extraction and Treatment System Operation**

Tables 1a, b, and c summarize the extraction and treatment system performance data for this reporting period. The results of the water discharged to the municipal sewer during the fourth quarter of 2018 are summarized as follows:

- Pentachlorophenol (PCP) screening (on-site gas chromatograph) results for the system effluent samples, which represent the water discharged to the municipal sanitary sewer, averaged 4.65 µg/L in October, 10.21 µg/L in November, and 12.06 µg/L in December.
- Laboratory results for the sampling event conducted this quarter are included in Tables 1a, b, and c for each month. The laboratory results for PCP in the system effluent was <3.0 µg/L on October 17, 8.8 µg/L on November 14, and 4.9 µg/L December 12, 2018.
- Both laboratory and on-site screening results indicate that the effluent PCP concentrations were below the monthly average permit level of 150 µg/L and the daily maximum concentration of 300 µg/L.
- Total treatment system efficiency (including carbon polishing units) removed more than 99 percent of the PCP between the influent and the effluent.
- In late November, the treatment system was shutdown for replacement of the fluidized bed reactor (FBR) recirculation pump and motor, and a fixed film reactor (FFR) effluent pump.

On-site screening PCP influent concentrations ranged from 2,061 µg/L to 10,630 µg/L during the quarter (Tables 1a, b, and c). PCP influent and effluent concentrations in the FBR are presented graphically, both as individual data points and as moving averages, on Figure 1. FBR results included the following:

- As shown on Figure 1 and in Tables 1a, b, and c, PCP concentrations in the FBR influent fluctuated during the quarter, and generally remain within normal concentrations.
- The average PCP removal efficiency for the biological portion (*i.e.*, FBR influent to the FFR effluent) of the system during this quarter is compared to the following:

MONTH	AVERAGE PCP REMOVAL (%)	PREVIOUS 12 MONTH AVERAGE (%)	AVERAGE 1 YEAR AGO (%)
October 2018	89	86	91
November 2018	85	86	84
December 2018	76	85	83

- The dissolved oxygen concentration in the influent to the FBR averaged 2.6 mg/L in October, 2.4 mg/L in November, and 2.1 mg/L in December 2018.

Laboratory results for the mercury analysis of the system effluent samples are included in Tables 1a, b, and c. The mercury concentration in the system effluent sample (discharged to the sanitary sewer) was <0.02 µg/L on October 17, <0.02 µg/L on November 14, and 0.13 µg/L on December 12, which are below the permit discharge limit of 1.6 µg/L. The mass loading for mercury in October and November was calculated using half the detection limit of 0.01 µg/L, at 0.00000283 lb/24 hours in October, and 0.00000267 lb/24 hours in November, which are below the permit discharge limit of 0.00048 lb/24 hours. The mass loading for mercury in December was calculated at 0.0000397 lb/24 hours, which is below the permit discharge limit of 0.00048 lb/24 hours.

The daily groundwater flow of the effluent to the Wausau Wastewater Treatment Plant averaged 23.52 gpm for October, 22.20 gpm for November, and 25.41 gpm for December 2018 (Tables 2a, b, and c). Since June, 2012 the pumping rate has been operated at approximately 22 gpm.

Figure 2 shows the average groundwater flow extracted and the average daily flow discharged to the Wausau Wastewater Treatment Plant.

### **Groundwater Monitoring**

Water table elevations for the month of October 2018 are included in Table 3. Monthly water table elevations have been discontinued, with only quarterly elevations being measured, and semi-annual preparation of water table maps as discussed in the 2014 Annual Groundwater Monitoring Report dated April 16, 2015.

The product thickness data for October 2018 are summarized in Table 4. Measurements show a small amount of product present in October; one production well had free product, PW16 had 0.01 ft.

Enclosures: Tables 1a, b, and c – Above Ground Treatment System Data  
Tables 2a, b, and c – Treatment System Flows  
Table 3 – Groundwater Elevation Data  
Table 4 – Free Product Measurements  
Figure 1 – FBR Influent and Effluent PCP Concentrations  
Figure 2 – Average Groundwater Extraction Rates and Water Level Deviation Versus Time

**TABLE 1a  
OCTOBER 2018**

**Above Ground Treatment System Data  
Wauleco, Inc.  
Wausau, Wisconsin**

<u>Parameter</u>	<u>UNIT</u>	<u>DATE</u>	<u>FBR Influent</u>	<u>FBR Effluent</u>	<u>FFR Effluent</u>	<u>Bag Filter Effluent</u>	<u>Filters1+2 Effluent</u>	<u>System Effluent</u>	<u>System Eff Dup</u>
Biological Oxygen Demand	mg/L	10/17/2018	7.8	2.4				<	
Chemical Oxygen Demand	mg/L	10/17/2018	30	<				<	
Chloride	mg/L	10/17/2018	190	180				190	
Dissolved Oxygen	mg/L	10/4/2018	3.3	1.8	7				
	mg/L	10/11/2018	2.2	0.8	6.2				
	mg/L	10/17/2018	2.3	1	6				
	mg/L	10/25/2018	2.4	1	6				
Nitrogen, Ammonia	mg/L	10/4/2018	1	0.8	0.8				
	mg/L	10/11/2018	1.1	1	1.1				
	mg/L	10/17/2018	1	1	0.9				
	mg/L	10/25/2018	1	1.2	1				
Nitrogen, Nitrate	mg/L	10/4/2018	<	<	<				
	mg/L	10/11/2018	<	<	<				
	mg/L	10/17/2018	<	<	<				
	mg/L	10/25/2018	<	<	<				
Nitrogen, Nitrate + Nitrite	mg/L	10/17/2018	<	<			<		
Nitrogen, Total Kjeldahl	mg/L	10/17/2018	<	<			<		
Pentachlorophenol-Screen	µg/L	10/1/2018						1	
	µg/L	10/2/2018						4	
	µg/L	10/3/2018						5	
	µg/L	10/4/2018	5957	842	735			3	
	µg/L	10/5/2018						10	
	µg/L	10/6/2018						4	
	µg/L	10/7/2018						4	
	µg/L	10/8/2018						4	
	µg/L	10/9/2018						3	
	µg/L	10/10/2018						4	
	µg/L	10/11/2018	6016	616	665			5	
	µg/L	10/12/2018						4	
	µg/L	10/13/2018						3	
	µg/L	10/14/2018						3	
	µg/L	10/15/2018						3	
	µg/L	10/16/2018						4	
	µg/L	10/17/2018	3534	353	431		162	4	
	µg/L	10/18/2018						4	
	µg/L	10/19/2018						2	
	µg/L	10/20/2018						2	
	µg/L	10/21/2018						2	
	µg/L	10/22/2018						2	
	µg/L	10/23/2018						4	
	µg/L	10/24/2018						5	
µg/L	10/25/2018	2061	286	199			3		
µg/L	10/26/2018						14		
µg/L	10/27/2018						6		
µg/L	10/28/2018						6		

**TABLE 1a  
OCTOBER 2018**

**Above Ground Treatment System Data  
Wauleco, Inc.  
Wausau, Wisconsin**

<u>Parameter</u>	<u>UNIT</u>	<u>DATE</u>	<u>FBR Influent</u>	<u>FBR Effluent</u>	<u>FFR Effluent</u>	<u>Bag Filter Effluent</u>	<u>Filters1+2 Effluent</u>	<u>System Effluent</u>	<u>System Eff Dup</u>
Pentachlorophenol-Screen	µg/L	10/29/2018						6	
	µg/L	10/30/2018						10	
	µg/L	10/31/2018						10	
pH	S.U.	10/4/2018	6.7	6.7	6.75				
	S.U.	10/11/2018	6.85	6.8	6.8				
	S.U.	10/17/2018	6.85	6.75	6.75				
	S.U.	10/25/2018	6.75	6.75	6.8				
Phosphorus, Ortho	mg/L	10/17/2018	<	<				<	
Phosphorus, Phosphate	mg/L	10/4/2018	0.9	1.5	1.7				
	mg/L	10/11/2018	0.9	1.5	1.1				
	mg/L	10/17/2018	0.7	1.4	1.2				
	mg/L	10/25/2018	0.9	1.3	1.5				
Solids, Total Suspended	mg/L	10/17/2018	12	23				6.0	
Mercury	µg/L	10/17/2018	0.088					<	
<b>Phenol</b>									
2,3,4,6-Tetrachlorophenol	µg/L	10/17/2018	230		17		17	<	<
2,4,5-Trichlorophenol	µg/L	10/17/2018	<		<		<	<	<
2,4,6-Trichlorophenol	µg/L	10/17/2018	<		<		<	<	<
2,4-Dichlorophenol	µg/L	10/17/2018	<		<		<	<	<
2,4-Dimethylphenol	µg/L	10/17/2018	<		<		<	<	<
2,4-Dinitrophenol	µg/L	10/17/2018	<		<		<	<	<
2,6-Dichlorophenol	µg/L	10/17/2018	<		<		<	<	<
2-Chlorophenol	µg/L	10/17/2018	<		<		<	<	<
2-Methylphenol	µg/L	10/17/2018	<		<		<	<	<
2-Nitrophenol	µg/L	10/17/2018	<		<		<	<	<
3&4-Methylphenol	µg/L	10/17/2018	<		<		<	<	<
4,6-Dinitro-2-Methylphenol	µg/L	10/17/2018	<		<		<	<	<
4-Chloro-3-Methylphenol	µg/L	10/17/2018	<		<		<	<	<
4-Nitrophenol	µg/L	10/17/2018	<		<		<	<	<
Pentachlorophenol	µg/L	10/17/2018	2900		160		150	<	<
Phenol	µg/L	10/17/2018	<		<		<	<	<

**TABLE 1b  
NOVEMBER 2018**

**Above Ground Treatment System Data  
Wauleco, Inc.  
Wausau, Wisconsin**

<u>Parameter</u>	<u>UNIT</u>	<u>DATE</u>	<u>FBR Influent</u>	<u>FBR Effluent</u>	<u>FFR Effluent</u>	<u>Bag Filter Effluent</u>	<u>Filters1+2 Effluent</u>	<u>System Effluent</u>	<u>System Eff Dup</u>
Biological Oxygen Demand	mg/L	11/14/2018	8.5	4.0				<	
Chemical Oxygen Demand	mg/L	11/14/2018	24	24				<	
Chloride	mg/L	11/14/2018	180	180				180	
Dissolved Oxygen	mg/L	11/1/2018	2.2	1.1	6				
	mg/L	11/8/2018	2.3	1.1	6				
	mg/L	11/14/2018	2.5	1.2	6.5				
	mg/L	11/21/2018	2.3	1.2	6.5				
	mg/L	11/30/2018	2.5	1.3	6.4				
Nitrogen, Ammonia	mg/L	11/1/2018	1.1	1.1	1.1				
	mg/L	11/8/2018	1.1	1	1.1				
	mg/L	11/14/2018	1	1	1.3				
	mg/L	11/21/2018	1	1.3	1.6				
	mg/L	11/30/2018	1.7	1.5	1.5				
Nitrogen, Nitrate	mg/L	11/1/2018	<	<	<				
	mg/L	11/8/2018	<	<	<				
	mg/L	11/14/2018	<	<	<				
	mg/L	11/21/2018	<	<	<				
	mg/L	11/30/2018	<	<	<				
Nitrogen, Total Kjeldahl	mg/L	11/14/2018	<	<				<	
Pentachlorophenol-Screen	µg/L	11/1/2018	8716	858	1520			20	
	µg/L	11/2/2018						22	
	µg/L	11/3/2018						6	
	µg/L	11/4/2018						6	
	µg/L	11/5/2018						6	
	µg/L	11/6/2018						10	
	µg/L	11/7/2018						10	
	µg/L	11/8/2018	6720	862	638			10	
	µg/L	11/9/2018						8	
	µg/L	11/10/2018						10	
	µg/L	11/11/2018						10	
	µg/L	11/12/2018						10	
	µg/L	11/13/2018						8	
	µg/L	11/14/2018	4264	526	419		364	11	
	µg/L	11/15/2018						17	
	µg/L	11/16/2018						20	
	µg/L	11/17/2018						12	
	µg/L	11/18/2018						12	
	µg/L	11/19/2018						15	
	µg/L	11/20/2018						15	
	µg/L	11/21/2018	5634	669	1586			5	
	µg/L	11/22/2018						9	
	µg/L	11/23/2018						9	
	µg/L	11/24/2018						9	

**TABLE 1b  
NOVEMBER 2018**

**Above Ground Treatment System Data  
Wauleco, Inc.  
Wausau, Wisconsin**

<u>Parameter</u>	<u>UNIT</u>	<u>DATE</u>	<u>FBR Influent</u>	<u>FBR Effluent</u>	<u>FFR Effluent</u>	<u>Bag Filter Effluent</u>	<u>Filters1+2 Effluent</u>	<u>System Effluent</u>	<u>System Eff Dup</u>
Pentachlorophenol-Screen	µg/L	11/25/2018						9	
	µg/L	11/26/2018						5	
	µg/L	11/27/2018						5	
	µg/L	11/28/2018						5	
	µg/L	11/30/2018	10630	746	899			2	
pH	S.U.	11/1/2018	6.8	6.75	6.8				
	S.U.	11/8/2018	6.9	6.8	6.8				
	S.U.	11/14/2018	6.9	6.8	6.85				
	S.U.	11/21/2018	6.8	6.75	6.75				
	S.U.	11/30/2018	6.7	6.7	6.7				
Phosphorus, Ortho	mg/L	11/14/2018	<	<				<	
Phosphorus, Phosphate	mg/L	11/1/2018	0.9	1.3	1.2				
	mg/L	11/8/2018	0.9	1.3	1.6				
	mg/L	11/14/2018	0.9	1.3	1.1				
	mg/L	11/21/2018	0.8	1.5	1.7				
	mg/L	11/30/2018	0.9	2.2	2.2				
Solids, Total Suspended	mg/L	11/14/2018	13	16				3.8	
Mercury	µg/L	11/14/2018						<	
<b>Phenol</b>									
2,3,4,6-Tetrachlorophenol	µg/L	11/14/2018	220	28	25			<	<
2,4,5-Trichlorophenol	µg/L	11/14/2018	<	<	<			<	<
2,4,6-Trichlorophenol	µg/L	11/14/2018	<	<	<			<	<
2,4-Dichlorophenol	µg/L	11/14/2018	<	<	<			<	<
2,4-Dimethylphenol	µg/L	11/14/2018	<	<	<			<	<
2,4-Dinitrophenol	µg/L	11/14/2018	<	<	<			<	<
2,6-Dichlorophenol	µg/L	11/14/2018	<	<	<			<	<
2-Chlorophenol	µg/L	11/14/2018	<	<	<			<	<
2-Methylphenol	µg/L	11/14/2018	<	<	<			<	<
2-Nitrophenol	µg/L	11/14/2018	<	<	<			<	<
3&4-Methylphenol	µg/L	11/14/2018	<	<	<			<	<
4,6-Dinitro-2-Methylphenol	µg/L	11/14/2018	<	<	<			<	<
4-Chloro-3-Methylphenol	µg/L	11/14/2018	<	<	<			<	<
4-Nitrophenol	µg/L	11/14/2018	<	<	<			<	<
Pentachlorophenol	µg/L	11/14/2018	2900	310	310			8.8	8.5
Phenol	µg/L	11/14/2018	<	<	<			<	<

**TABLE 1c  
DECEMBER 2018**

**Above Ground Treatment System Data  
Wauleco, Inc.  
Wausau, Wisconsin**

<u>Parameter</u>	<u>UNIT</u>	<u>DATE</u>	<u>FBR Influent</u>	<u>FBR Effluent</u>	<u>FFR Effluent</u>	<u>Bag Filter Effluent</u>	<u>Filters1+2 Effluent</u>	<u>System Effluent</u>	<u>System Eff Dup</u>
Biological Oxygen Demand	mg/L	12/12/2018	9.9	3.4				16	
Chemical Oxygen Demand	mg/L	12/12/2018	47	52				25	
Chloride	mg/L	12/12/2018	170	170				170	
Dissolved Oxygen	mg/L	12/6/2018	2.4	1.1	6.4				
	mg/L	12/12/2018	2	1	6.7				
	mg/L	12/19/2018	2	1	6.4				
	mg/L	12/27/2018	2.1	1	6.5				
Nitrogen, Ammonia	mg/L	12/6/2018	1	1.1	0.9				
	mg/L	12/12/2018	1.3	1.1	1.2				
	mg/L	12/19/2018	1.1	1	1				
	mg/L	12/27/2018	1.1	1.3	1.1				
Nitrogen, Nitrate	mg/L	12/6/2018	<	<	<				
	mg/L	12/12/2018	<	<	<				
	mg/L	12/19/2018	<	<	<				
	mg/L	12/27/2018	<	<	<				
Nitrogen, Total Kjeldahl	mg/L	12/12/2018	<	<				<	
Pentachlorophenol-Screen	µg/L	12/1/2018						6	
	µg/L	12/2/2018						6	
	µg/L	12/3/2018						7	
	µg/L	12/4/2018						7	
	µg/L	12/5/2018						4	
	µg/L	12/6/2018	4744	661	1735			7	
	µg/L	12/7/2018						5	
	µg/L	12/8/2018						2	
	µg/L	12/9/2018						2	
	µg/L	12/10/2018						2	
	µg/L	12/11/2018						2	
	µg/L	12/12/2018	3059	392	493			2	
	µg/L	12/13/2018						13	
	µg/L	12/14/2018						13	
	µg/L	12/15/2018						21	
	µg/L	12/16/2018						21	
	µg/L	12/17/2018						21	
	µg/L	12/18/2018						38	
	µg/L	12/19/2018	3329	807	945			36	
	µg/L	12/20/2018						31	
	µg/L	12/21/2018						17	
	µg/L	12/22/2018						22	
	µg/L	12/23/2018						22	
	µg/L	12/24/2018						22	
	µg/L	12/25/2018						4	
	µg/L	12/26/2018						4	
	µg/L	12/27/2018	4790	1344	660			3	
	µg/L	12/28/2018						10	



**TABLE 1c  
DECEMBER 2018**

**Above Ground Treatment System Data  
Wauleco, Inc.  
Wausau, Wisconsin**

<u>Parameter</u>	<u>UNIT</u>	<u>DATE</u>	<u>FBR Influent</u>	<u>FBR Effluent</u>	<u>FFR Effluent</u>	<u>Bag Filter Effluent</u>	<u>Filters1+2 Effluent</u>	<u>System Effluent</u>	<u>System Eff Dup</u>
Pentachlorophenol-Screen	µg/L	12/29/2018						8	
	µg/L	12/30/2018						8	
	µg/L	12/31/2018						8	
pH	S.U.	12/6/2018	6.7	6.7	6.75				
	S.U.	12/12/2018	6.8	6.7	6.75				
	S.U.	12/19/2018	6.75	6.7	6.75				
	S.U.	12/27/2018	6.8	6.75	6.8				
Phosphorus, Ortho	mg/L	12/12/2018	<	<				<	
Phosphorus, Phosphate	mg/L	12/6/2018	0.9	1.3	1.2				
	mg/L	12/12/2018	0.8	1.4	1.2				
	mg/L	12/19/2018	1.3	1.1	1.1				
	mg/L	12/27/2018	0.9	1.2	1.1				
Solids, Total Suspended	mg/L	12/12/2018	13	19				<	
Mercury	µg/L	12/12/2018						0.13	
<b>Phenol</b>									
2,3,4,6-Tetrachlorophenol	µg/L	12/12/2018	300		44			<	<
2,4,5-Trichlorophenol	µg/L	12/12/2018	<		<			<	<
2,4,6-Trichlorophenol	µg/L	12/12/2018	<		<			<	<
2,4-Dichlorophenol	µg/L	12/12/2018	<		<			<	<
2,4-Dimethylphenol	µg/L	12/12/2018	<		<			<	<
2,4-Dinitrophenol	µg/L	12/12/2018	<		<			<	<
2,6-Dichlorophenol	µg/L	12/12/2018	<		<			<	<
2-Chlorophenol	µg/L	12/12/2018	<		<			<	<
2-Methylphenol	µg/L	12/12/2018	<		<			<	<
2-Nitrophenol	µg/L	12/12/2018	<		<			<	<
3&4-Methylphenol	µg/L	12/12/2018	<		<			<	<
4,6-Dinitro-2-Methylphenol	µg/L	12/12/2018	<		<			<	<
4-Chloro-3-Methylphenol	µg/L	12/12/2018	<		<			<	<
4-Nitrophenol	µg/L	12/12/2018	<		<			<	<
Pentachlorophenol	µg/L	12/12/2018	3900		430			4.9	4.7
Phenol	µg/L	12/12/2018	<		<			<	<

**TABLE 2a**  
**OCTOBER 2018**

**Treatment System Flows**  
**Wauleco, Inc.**  
**Wausau, Wisconsin**

Date	Influent Groundwater Flow Rate <sup>(1)(3)</sup> (gpm)	POTW Discharge Flow Rate <sup>(1)(4)</sup> (gpm)	POTW Totalized Discharge <sup>(3)</sup> (gal)
10/1/2018	15.46	19.70	69606666
10/2/2018	15.36	19.61	69634905
10/3/2018	20.21	23.32	69668492
10/4/2018	21.07	25.28	69704895
10/5/2018	21.05	25.26	69741266
10/6/2018	22.19	25.25	69777631
10/7/2018	22.53	25.02	69813658
10/8/2018	22.56	25.05	69849725
10/9/2018	22.73	25.67	69886691
10/10/2018	22.86	25.97	69924094
10/11/2018	23.01	25.81	69961266
10/12/2018	23.23	25.74	69998335
10/13/2018	23.29	25.28	70034739
10/14/2018	23.48	25.24	70071084
10/15/2018	24.10	24.77	70106757
10/16/2018	24.50	24.73	70142365
10/17/2018	24.83	24.12	70177093
10/18/2018	24.31	23.65	70211153
10/19/2018	23.47	22.79	70243973
10/20/2018	23.68	22.70	70276667
10/21/2018	23.76	22.39	70308905
10/22/2018	23.47	21.84	70340358
10/23/2018	23.00	21.12	70370766
10/24/2018	22.57	21.50	70401731
10/25/2018	23.63	22.99	70434831
10/26/2018	23.60	23.06	70468031
10/27/2018	23.75	22.93	70501056
10/28/2018	23.72	22.85	70533956
10/29/2018	22.34	22.00	70565643
10/30/2018	20.57	20.84	70595648
10/31/2018	23.49	22.75	70628412
Monthly Average	22.51	23.52	
Total <sup>(2)</sup> :			1,050,110

Footnotes:

- <sup>(1)</sup> Influent and POTW discharge flow rates are daily averages. These may not be equal due to balancing in the treatment system and calibration of individual flowmeters. The influent groundwater flow rate is calculated by adding the instantaneous flow rate from each pumping well (i.e., 16 meters). The POTW discharge flow rate is recorded directly from the effluent meter.
- <sup>(2)</sup> Total is the cumulative gallons discharged to the POTW during the reporting period. This number is calculated by subtracting the total of the previous month's last day from the total of the current month's last day, see previous month's report for the number used. The total from the first day of the current month is not used in the calculation.
- <sup>(3)</sup> Totalizers were reset to 0 on August 23, 2012 during the system shutdown for maintenance.
- <sup>(4)</sup> A new effluent meter was installed in April, 2017 during the system shutdown for maintenance.

**TABLE 2b**  
**NOVEMBER 2018**

**Treatment System Flows**  
**Wauleco, Inc.**  
**Wausau, Wisconsin**

Date	Influent Groundwater Flow Rate <sup>(1)(3)</sup> (gpm)	POTW Discharge Flow Rate <sup>(1)(4)</sup> (gpm)	POTW Totalized Discharge <sup>(3)</sup> (gal)
11/1/2018	22.84	22.47	70660773
11/2/2018	22.79	22.69	70693445
11/3/2018	22.77	22.18	70725380
11/4/2018	22.94	23.23	70758830
11/5/2018	21.81	22.55	70791296
11/6/2018	21.23	22.46	70823642
11/7/2018	22.00	23.33	70857232
11/8/2018	21.99	23.47	70891033
11/9/2018	21.99	23.58	70924992
11/10/2018	22.05	23.54	70958895
11/11/2018	22.16	23.55	70992804
11/12/2018	22.13	23.70	71026931
11/13/2018	21.88	23.57	71060871
11/14/2018	21.88	23.90	71095286
11/15/2018	21.71	23.61	71129291
11/16/2018	22.07	23.92	71163729
11/17/2018	22.00	24.06	71198371
11/18/2018	21.98	24.23	71233256
11/19/2018	22.08	24.37	71268345
11/20/2018	22.11	24.40	71303475
11/21/2018	22.05	24.45	71338688
11/22/2018	22.04	24.40	71373830
11/23/2018	22.08	24.49	71409101
11/24/2018	22.05	24.66	71444614
11/25/2018	22.02	24.75	71480254
11/26/2018	22.10	24.87	71516069
11/27/2018	22.11	24.74	71551691
11/28/2018	5.26	7.37	71562310
11/29/2018	0.00	0.00	71562310
11/30/2018	15.58	17.38	71587337
Average For The Month	20.59	22.20	
Total <sup>(2)</sup> :			958,925

Footnotes:

- (1) Influent and POTW discharge flow rates are daily averages. These may not be equal due to balancing in the treatment system and calibration of individual flowmeters. The influent groundwater flow rate is calculated by adding the instantaneous flow rate from each pumping well (i.e., 16 meters). The POTW discharge flow rate is recorded directly from the effluent meter.
- (2) Total is the cumulative gallons discharged to the POTW during the reporting period. This number is calculated by subtracting the total of the previous month's last day from the total of the current month's last day, see previous month's report for the number used. The total from the first day of the current month is not used in the calculation.
- (3) Totalizers were reset to 0 on August 23, 2012 during the system shutdown for maintenance.
- (4) A new effluent meter was installed in April, 2017 during the system shutdown for maintenance.

**TABLE 2c**  
**DECEMBER 2018**

**Treatment System Flows**  
**Wauleco, Inc.**  
**Wausau, Wisconsin**

<u>Date</u>	<u>Influent Groundwater Flow Rate <sup>(1) (3)</sup> (gpm)</u>	<u>POTW Discharge Flow Rate <sup>(1) (4)</sup> (gpm)</u>	<u>POTW Totalized Discharge <sup>(3)</sup> (gal)</u>
12/1/2018	22.62	28.46	71628323
12/2/2018	22.43	28.60	71669504
12/3/2018	22.53	29.18	71711529
12/4/2018	22.79	28.47	71752529
12/5/2018	22.93	27.84	71792612
12/6/2018	22.74	27.06	71831582
12/7/2018	22.63	26.97	71870419
12/8/2018	21.27	24.47	71905657
12/9/2018	20.60	23.77	71939892
12/10/2018	19.82	23.09	71973143
12/11/2018	19.98	23.14	72006467
12/12/2018	19.84	23.05	72039666
12/13/2018	19.94	22.87	72072592
12/14/2018	19.88	22.99	72105700
12/15/2018	19.73	22.98	72138794
12/16/2018	19.74	23.22	72172237
12/17/2018	19.69	23.38	72205904
12/18/2018	19.67	23.86	72240260
12/19/2018	20.83	25.33	72276732
12/20/2018	21.17	25.82	72313917
12/21/2018	21.29	25.43	72350541
12/22/2018	21.24	25.37	72387072
12/23/2018	21.24	25.73	72424121
12/24/2018	21.25	25.86	72461365
12/25/2018	21.29	25.08	72497476
12/26/2018	21.27	25.82	72534659
12/27/2018	21.26	25.95	72572020
12/28/2018	21.29	25.60	72608885
12/29/2018	21.35	25.99	72646309
12/30/2018	21.40	26.06	72683841
12/31/2018	21.42	26.18	72721535
Average	21.13	25.41	
Total <sup>(2)</sup> :			1,134,198

Footnotes:

- (1) Influent and POTW discharge flow rates are daily averages. These may not be equal due to balancing in the treatment system and calibration of individual flowmeters. The influent groundwater flow rate is calculated by adding the instantaneous flow rate from each pumping well (i.e., 16 meters). The POTW discharge flow rate is recorded directly from the effluent meter.
- (2) Total is the cumulative gallons discharged to the POTW during the reporting period. This number is calculated by subtracting the total of the previous month's last day from the total of the current month's last day, see previous month's report for the number used. The total from the first day of the current month is not used in the calculation.
- (3) Totalizers were reset to 0 on August 23, 2012 during the system shutdown for maintenance.
- (4) A new effluent meter was installed in April, 2017 during the system shutdown for maintenance.

TABLE 3

**Groundwater Elevation Data  
Wauleco, Inc.  
Wausau, Wisconsin**

<u>Well</u>	<u>October 18, 2018 (ft msl)</u>	<u>November 2018</u>	<u>December 2018</u>
PW01	1164.76	----	----
PW02	Abandoned	----	----
PW03	1164.72	----	----
PW3S	1164.43	----	----
PW04	1164.23	----	----
PW05	1164.11	----	----
PW06	1164.2	----	----
PW07	1164.11	----	----
PW08	1164.94	----	----
PW09I	----	----	----
PW09O	1164.28	----	----
PW10	1164.37	----	----
PW11	1163.26	----	----
PW12	1164.66	----	----
PW13	1164.33	----	----
PW14	1164.68	----	----
PW15	1164.72	----	----
PW16	1163.62	----	----
PW17	1162.95	----	----
PW18	1164.49	----	----
PW19	1163.67	----	----
PW20	1163.48	----	----
PW21	1163.27	----	----
PW22	1164.13	----	----
PW23	1164.1	----	----
PW24	1163	----	----
PW25	1162.56	----	----
PW26	1162.26	----	----
PW27	1162.99	----	----
PW28	1164.6	----	----
PW29	1164.65	----	----
P01	1164.24	----	----
OW01	1165.79	----	----
W01A	1164.9	----	----
W01B	1164.93	----	----
W02	1164.37	----	----
W03A	1164	----	----
W03B	1163.12	----	----
W04A	1164.18	----	----
W04B	1164.09	----	----
W05	1164.22	----	----
W06R	1164.83	----	----
W07	1164.80	----	----
W08	1174.69	----	----
W09	1163.18	----	----
W10A	1161.9	----	----
W10B	1161.9	----	----
W11	1161.81	----	----
W12	1161.3	----	----
W13	1163.13	----	----
W14	1161.53	----	----
W16	1163.42	----	----
W17	1164.37	----	----
W18	1161.79	----	----
W19	1164.4	----	----

TABLE 3 (continued)

Groundwater Elevation Data  
 Wauleco, Inc.  
 Wausau, Wisconsin

Well	October 18, 2018 (ft msl)	November 2018	December 2018
W21	1161.42	----	----
W22	1163.6	----	----
W23	1161.64	----	----
W24A	1161.61	----	----
W25	1164.93	----	----
W26	1161.81	----	----
W27	1162.96	----	----
W28	1161.73	----	----
W29	1161.46	----	----
W30	1164.24	----	----
W31	1161.32	----	----
W32	1161.33	----	----
W33	1164.12	----	----
W34	1164.06	----	----
W35	1164.31	----	----
W36	1164.59	----	----
W39	1164.04	----	----
W40	1163.22	----	----
W41	1163.85	----	----
W42	1164.47	----	----
W44	1164.17	----	----
W45	1164.46	----	----
W46	1164.08	----	----
W47	1163.34	----	----
W48	1164.15	----	----
W49	1164.84	----	----
W66	1164.7	----	----
W67	1164.66	----	----
W68A	1164.77	----	----
W68B	1164.61	----	----
W69	1164.6	----	----
W70B	Abandoned	----	----
River	-----	----	----
IW01	1164.29	----	----
IW01A	1164.25	----	----
FP01	1163.05	----	----
FP02	1162.92	----	----
FP03	1161.71	----	----
FP04	1163.14	----	----
3M Basin	Both Basins Dry	----	----
DFOWM 5	-----	----	----
DFOWM 9	Abandoned	----	----
DFOWM 10A	Abandoned	----	----
DFOWM 11	-----	----	----
DFOWM 12	-----	----	----
W71	1166.47	----	----
W72	1165.18	----	----
W73	1164.3	----	----
W74	1163.86	----	----

Notes:

1. ft msl = feet mean sea level
2. PW09O denotes the outer well and PW09I denotes the inner well
3. ----- = Well not measured
4. Groundwater elevations have been adjusted for product thickness.
5. Top of casing elevations were resurveyed for the on-site wells on December 4, 2009 . Use of the new data began in January 2010.

Table 4

Free Product Measurements  
 Wauleco, Inc.  
 Wausau, Wisconsin

Well	October 18, 2018 (ft)	November 2018	December 2018
PW01	0.00	----	----
PW02	----	----	----
PW03	0.00	----	----
PW3S	0.00	----	----
PW04	0.00	----	----
PW05	0.00	----	----
PW06	0.00	----	----
PW07	0.00	----	----
PW08	0.00	----	----
PW09I	----	----	----
PW09O	0.00	----	----
PW10	0.00	----	----
PW11	0.00	----	----
PW12	0.00	----	----
PW13	0.00	----	----
PW14	0.00	----	----
PW15	0.00	----	----
PW16	0.01	----	----
PW17	0.00	----	----
PW18	0.00	----	----
PW19	0.00	----	----
PW20	0.00	----	----
PW21	0.00	----	----
PW22	0.00	----	----
PW23	0.00	----	----
PW24	0.00	----	----
PW25	0.00	----	----
PW26	0.00	----	----
PW27	0.00	----	----
PW28	0.00	----	----
PW29	0.00	----	----
P01	0.00	----	----
OW01	0.00	----	----
W01A	0.00	----	----
W01B	0.00	----	----
W02	0.00	----	----
W03A	0.00	----	----
W03B	0.00	----	----
W04A	0.00	----	----
W04B	0.00	----	----
W05	0.00	----	----
W06R	0.00	----	----
W07	0.00	----	----
W08	0.00	----	----
W09	0.00	----	----
W10A	0.00	----	----
W10B	0.00	----	----
W11	0.00	----	----
W12	0.00	----	----
W13	0.00	----	----
W14	0.00	----	----
W16	0.00	----	----
W17	0.00	----	----

**Free Product Measurements  
Wauleco, Inc.  
Wausau, Wisconsin**

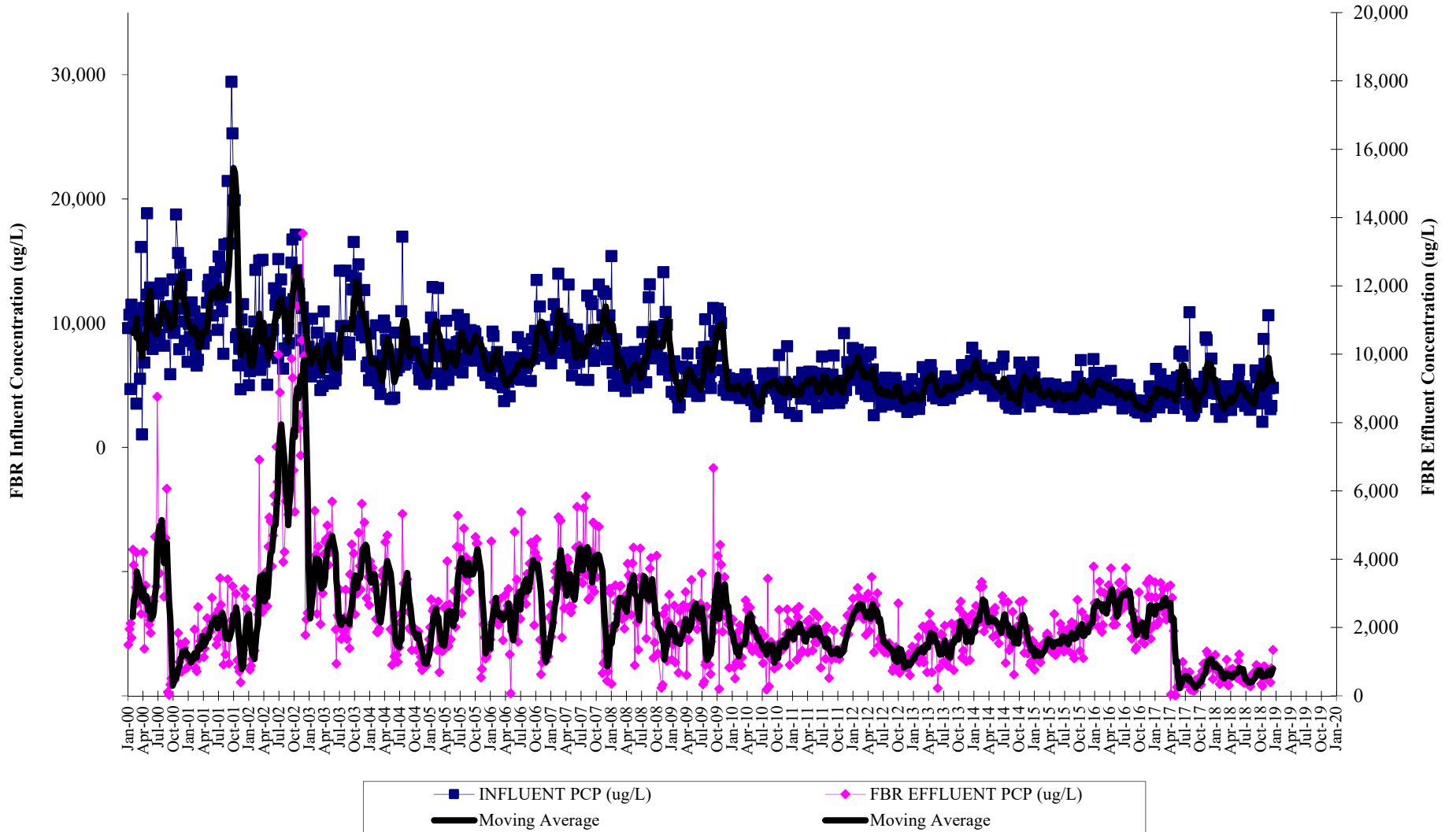
<u>Well</u>	<u>October 18, 2018 (ft)</u>	<u>November 2018</u>	<u>December 2018</u>
W18	0.00	----	----
W19	0.00	----	----
W21	0.00	----	----
W22	0.00	----	----
W23	0.00	----	----
W24A	0.00	----	----
W25	0.00	----	----
W26	0.00	----	----
W27	0.00	----	----
W28	0.00	----	----
W29	0.00	----	----
W30	0.00	----	----
W31	0.00	----	----
W32	0.00	----	----
W33	0.00	----	----
W34	0.00	----	----
W35	0.00	----	----
W36	0.00	----	----
W39	0.00	----	----
W40	0.00	----	----
W41	0.00	----	----
W42	0.00	----	----
W44	0.00	----	----
W45	0.00	----	----
W46	0.00	----	----
W47	0.00	----	----
W48	0.00	----	----
W49	0.00	----	----
W66	0.00	----	----
W67	0.00	----	----
W68A	0.00	----	----
W68B	0.00	----	----
W69	0.00	----	----
W70B	Abandoned	----	----
River	-----	----	----
IW01	0.00	----	----
IW01A	0.00	----	----
FP01	0.00	----	----
FP02	0.00	----	----
FP03	0.00	----	----
FP04	0.00	----	----
3M Basin	0.00	----	----
DFOWM 5	-----	----	----
DFOWM 9	Abandoned	----	----
DFOWM 10A	Abandoned	----	----
DFOWM 11	-----	----	----
DFOWM 12	-----	----	----
W71	0.00	----	----
W72	0.00	----	----
W73	0.00	----	----
W74	0.00	----	----

**Notes:**

1. PW09O denotes the outer well and PW09I denotes the inner well
2. ----- = Well not measured

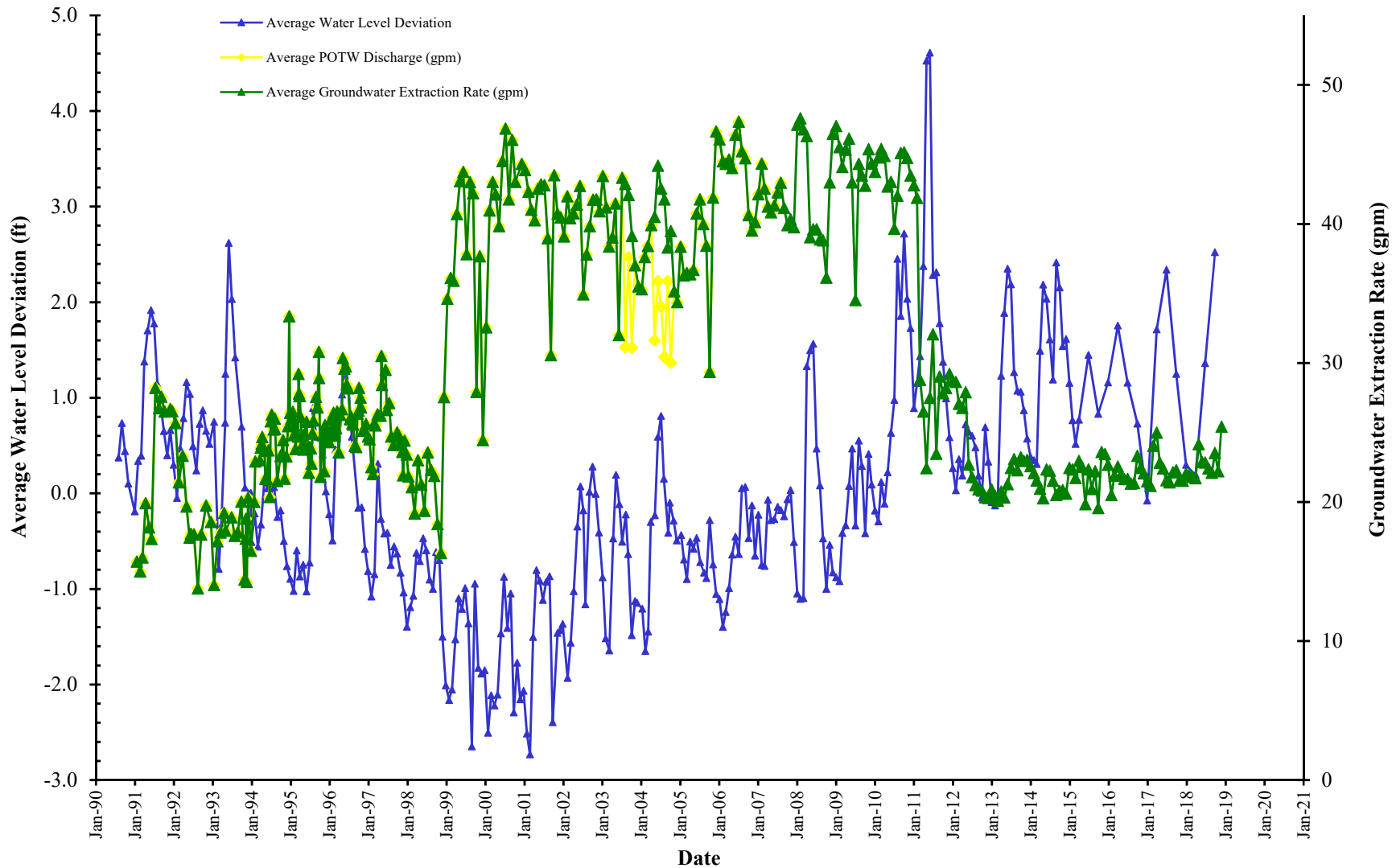


**FIGURE 1**  
**FBR Influent and Effluent PCP Concentrations**  
**Wauleco, Inc.**  
**Wausau, WI**



**FIGURE 2**

**Average Groundwater Extraction Rates and Water Level Deviation Versus Time  
Wauleco, Inc.  
Wausau, WI**



**Note:** The Average Groundwater Extraction Rate is a monthly average of the flow into the treatment system. The monthly average POTW discharge is less than the total extraction rate during the PPT pilot test due to the injection of treated water into IW01.