

Memo

Ohio River Valley Water Sanitation Commission

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DATE: September 13, 2013

TO: Technical Committee

Stuart Bruny, Chairman
Marcia Willhite, IL
Shivi Selvaratnam, IN
Randy Payne, KY
Jeff Konsella, NY
George Elmaraghy, OH
Ronald Schwartz, PA
Melanie Davenport, VA
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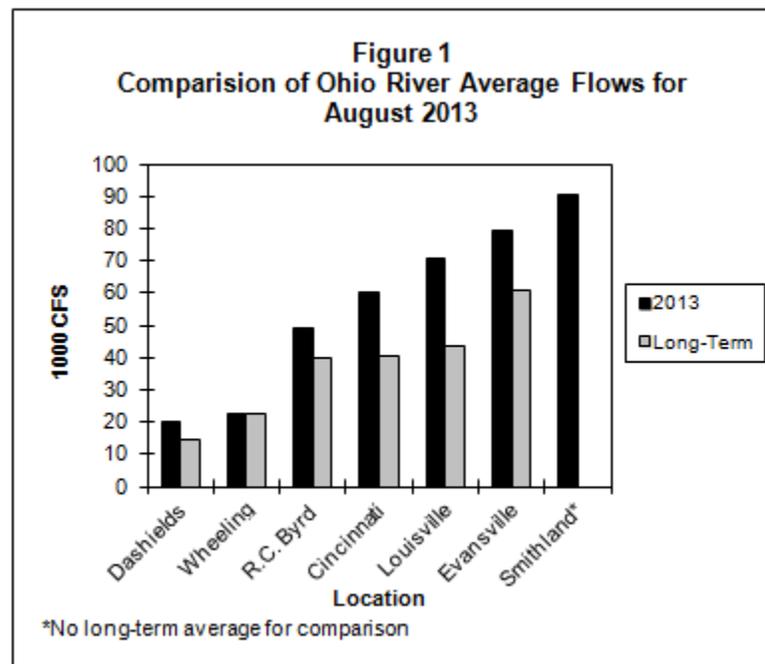
Erich Emery, USACE
Thomas Kaminski, USCG
Ed Ambrogio, USEPA
William Guertal, USGS
Ex Officio¹
Rob Reash, Chairman, PIAC
Eriks Janelsins, Chairman, PIACO
MaryLynn Lodor, Chairman, POTW
Ron Bargiel, Chairman, WUAC

FROM: Peter Tennant, Chief Engineer
Stacey Cochran

SUBJECT: Quality Update –August 2013 Conditions

Flows

Average flows at seven Ohio River locations are displayed below. At each location the August 2013 average flow (black bar) is contrasted with the long-term average monthly flow (gray bar). The average flow for August 2013 is above the long-term monthly flow at every location.



Bacteria

The bacteria monitoring results from six Ohio River locations in August 2013 are in the attached graphs. Beginning with the 2013 Contact Recreation season (April through October), there are thirteen sites being sampled. ORSANCO's water quality criteria for the protection of human health during the contact recreation season are:

- *E. coli* count is not to exceed 240 CFU/100mL in more than 25 percent of samples. (*E. coli* is shown with a red line on the graph.)
- *E. coli* shall not exceed 130 CFU/100mL as a 90-day geometric mean, based on not less than five samples per month.

ORSANCO's water quality criteria for the protection of public water supply year round are:

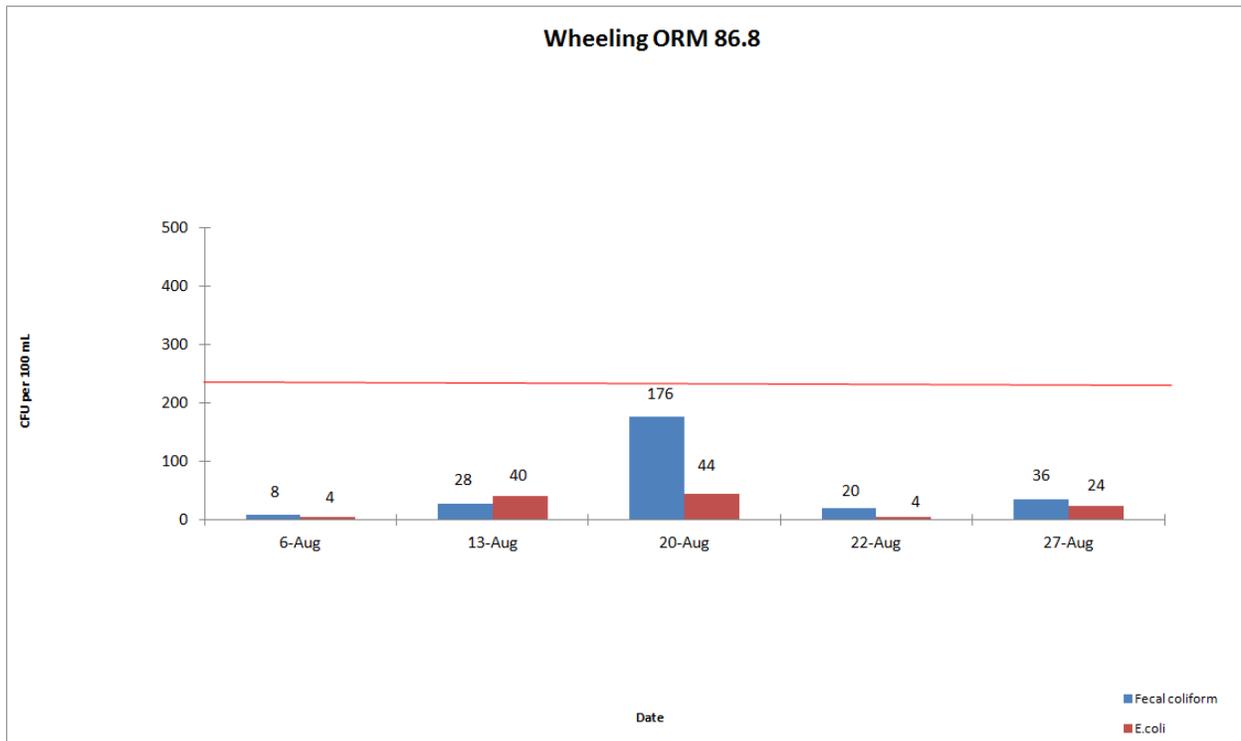
- Fecal Coliform shall not exceed 2,000/100mL as a monthly geometric mean based on not less than five samples per month.

Pittsburgh

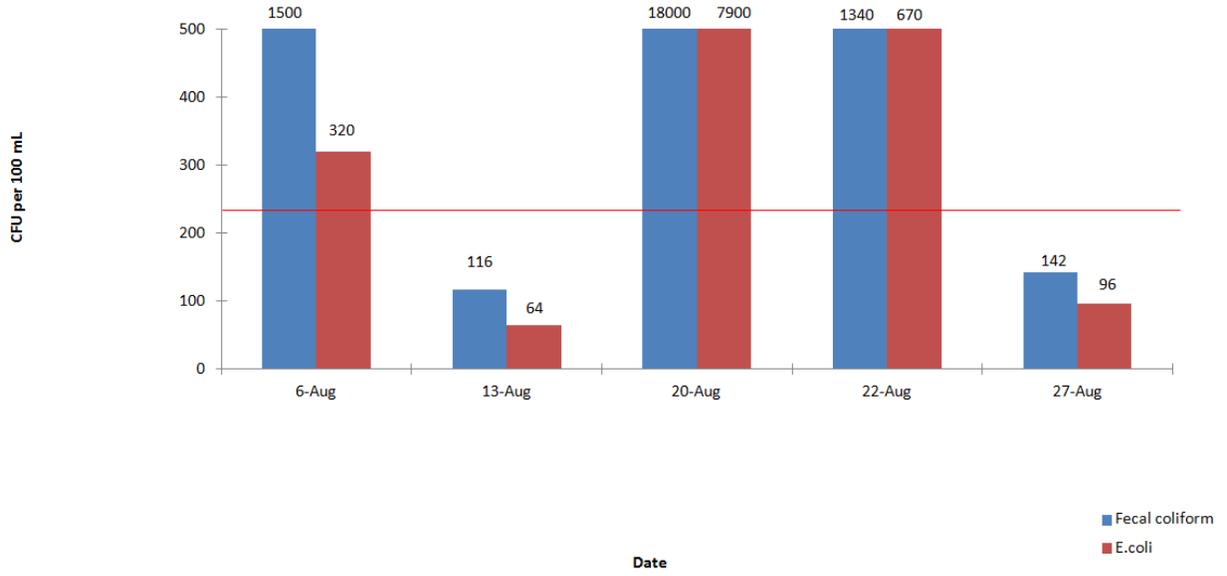
No data for September is available due to ALCOSAN having boat engine issues.

Wheeling

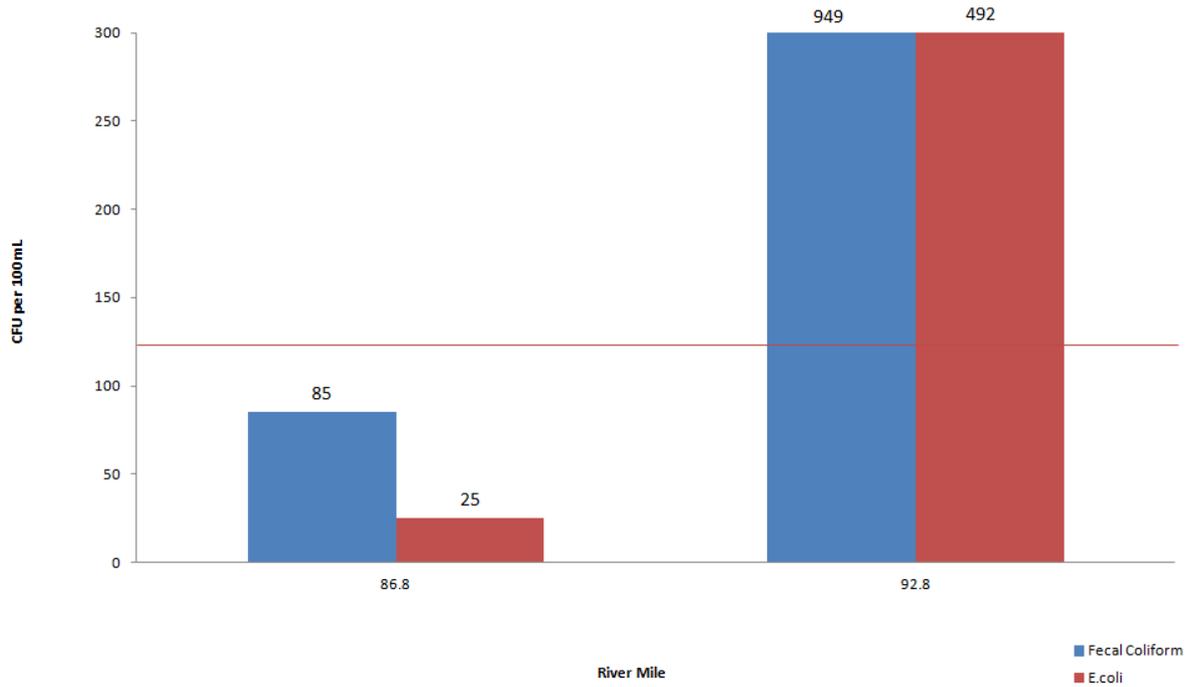
In Wheeling, ORM 86.8 did not exceed the *E. coli* criteria. ORM 92.8 had three individual exceedances for *E. coli*. The 90 day geometric mean for *E. coli* was exceeded at ORM 92.8.



Wheeling ORM 92.8

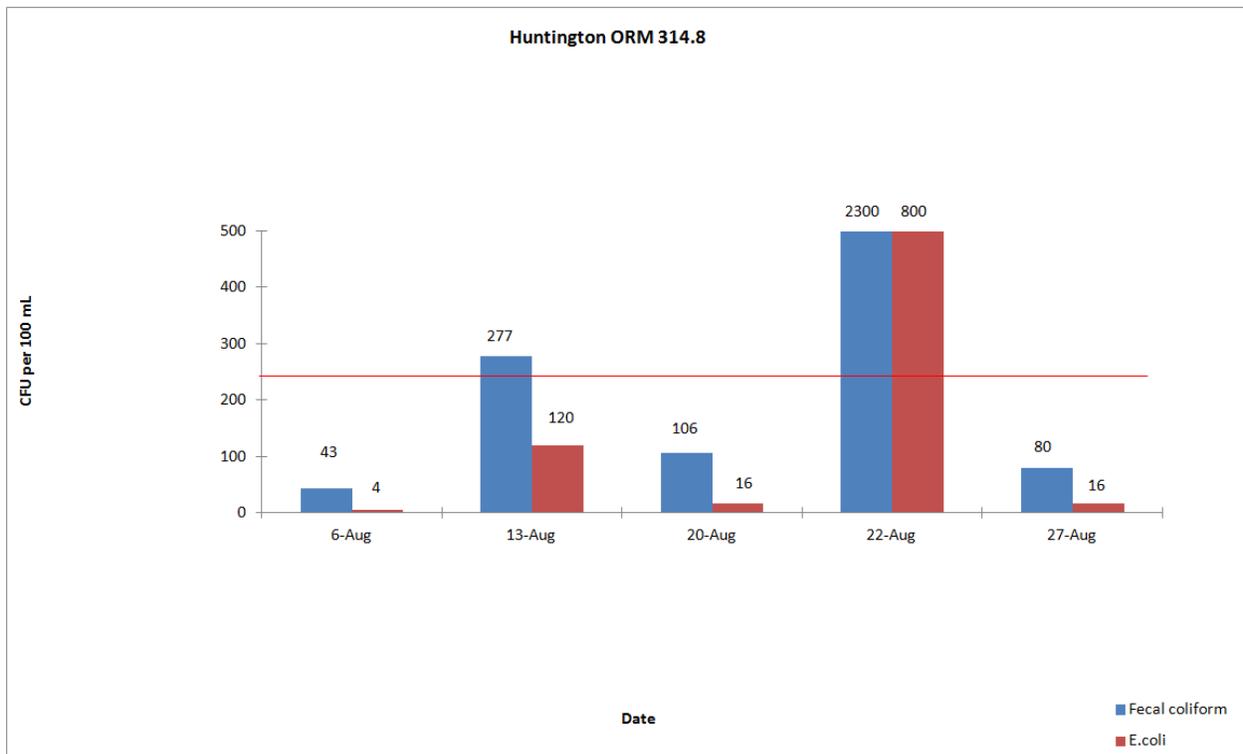
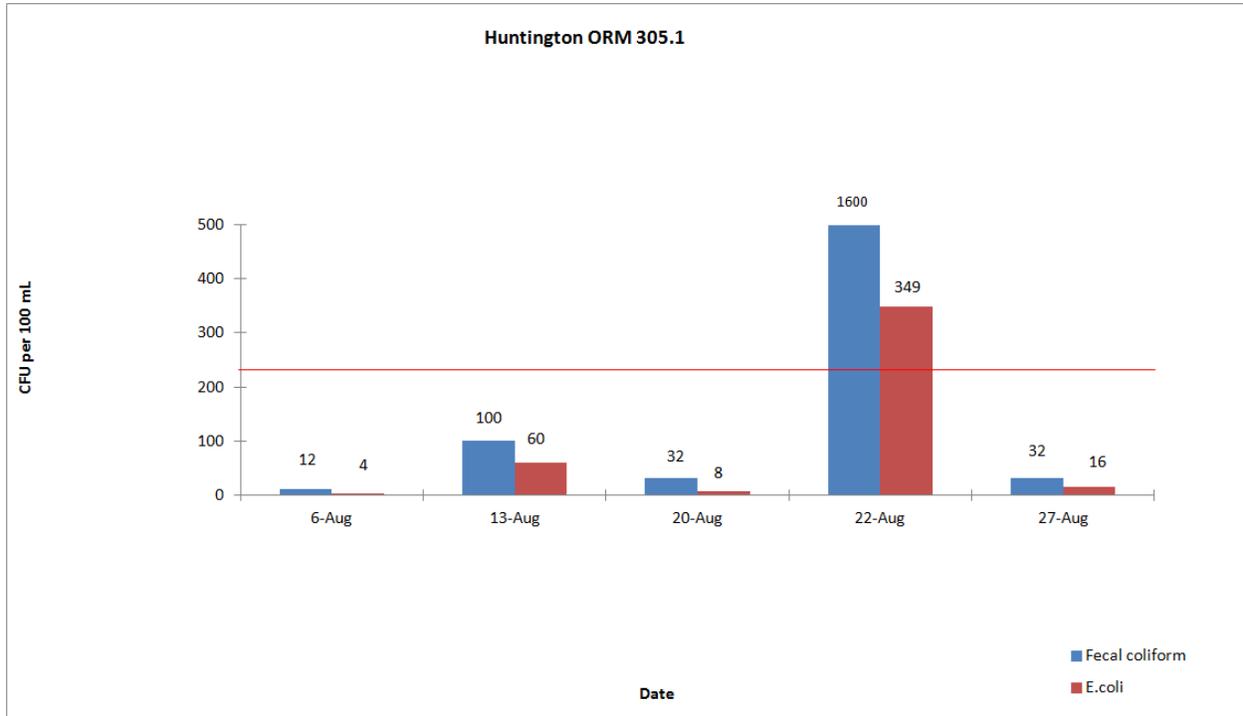


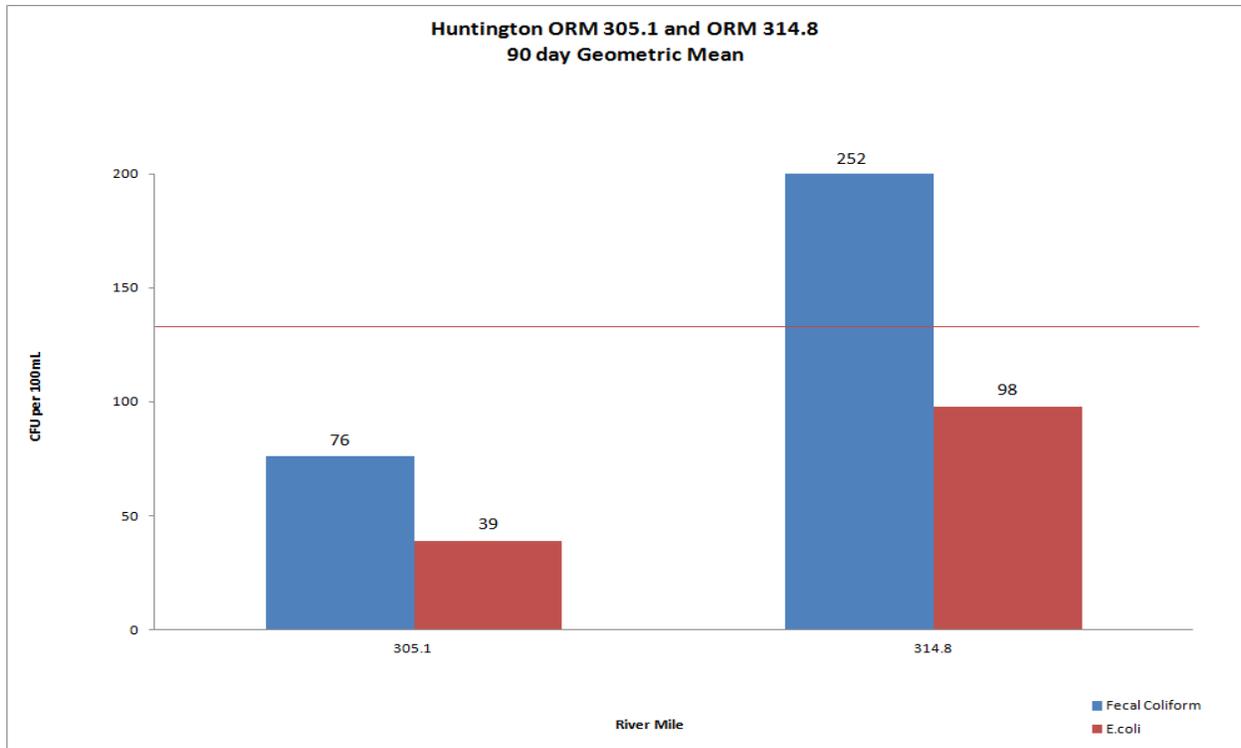
Wheeling ORM 86.8 and ORM 92.8 90 day Geometric Mean



Huntington

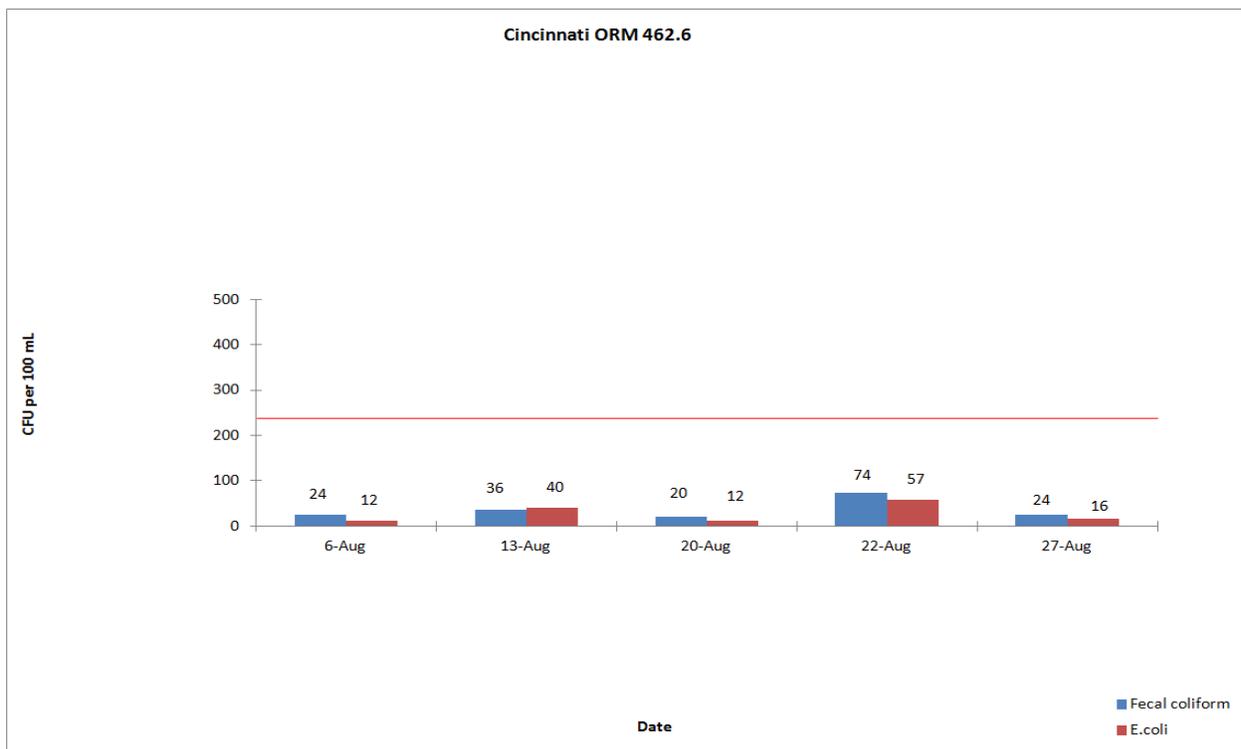
In Huntington, ORM 305.1 and ORM 314.8 had one individual exceedance for *E.coli*. The 90 day geometric mean for *E.coli* was not exceeded at either site.



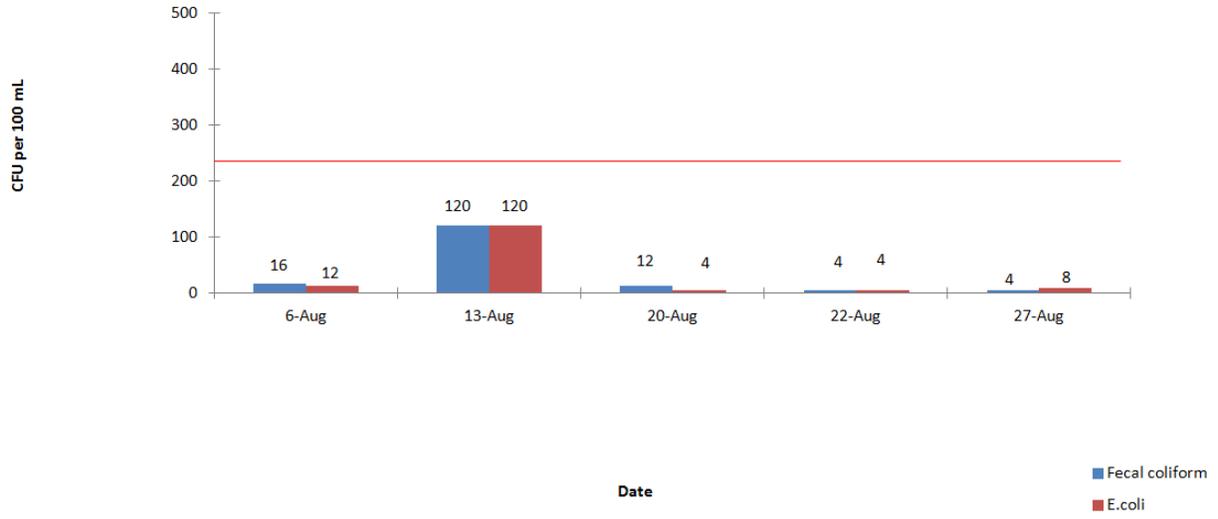


Cincinnati

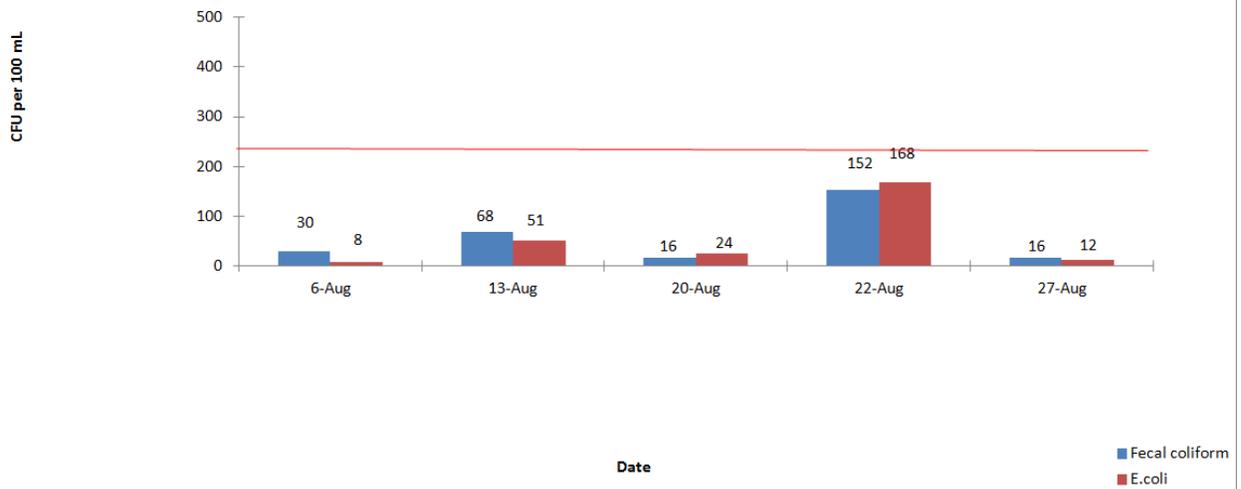
In Cincinnati, ORM 462.6, ORM 470.0 and ORM 477.5 did not exceed the *E.coli* criteria. The 90 day geometric mean for *E.coli* was exceeded at ORM 477.5.

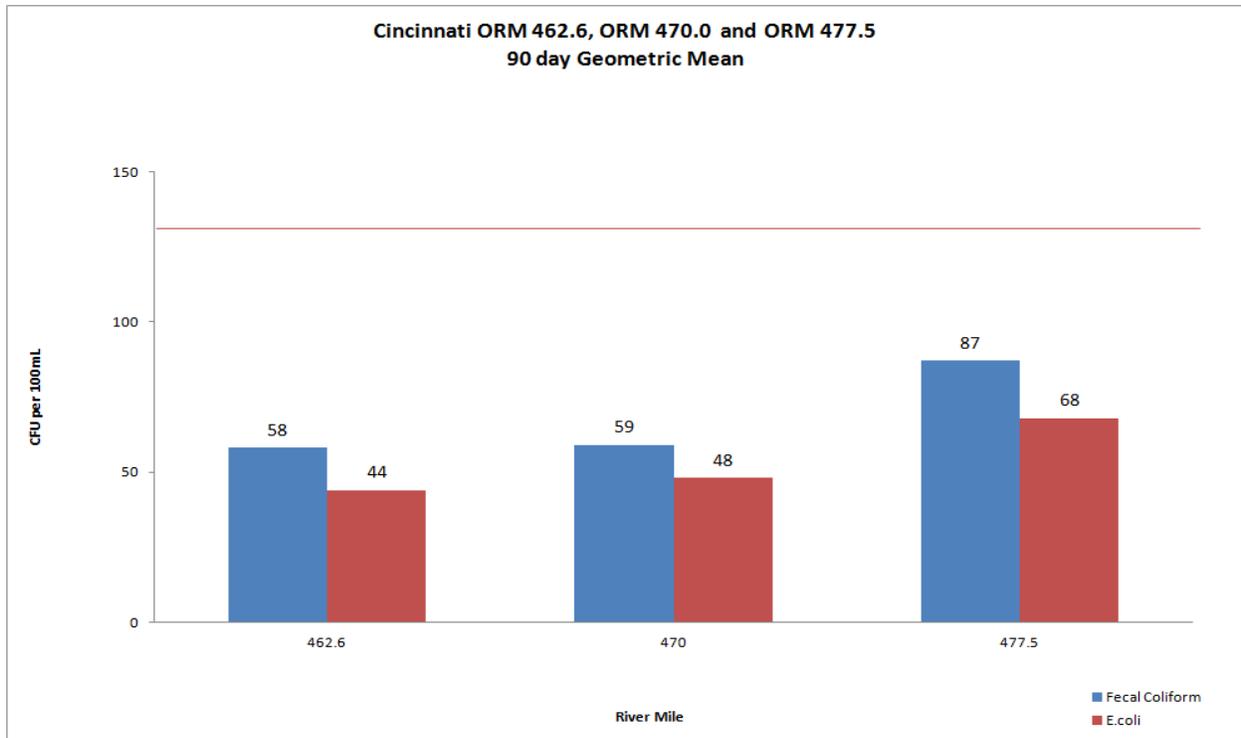


Cincinnati ORM 470.0



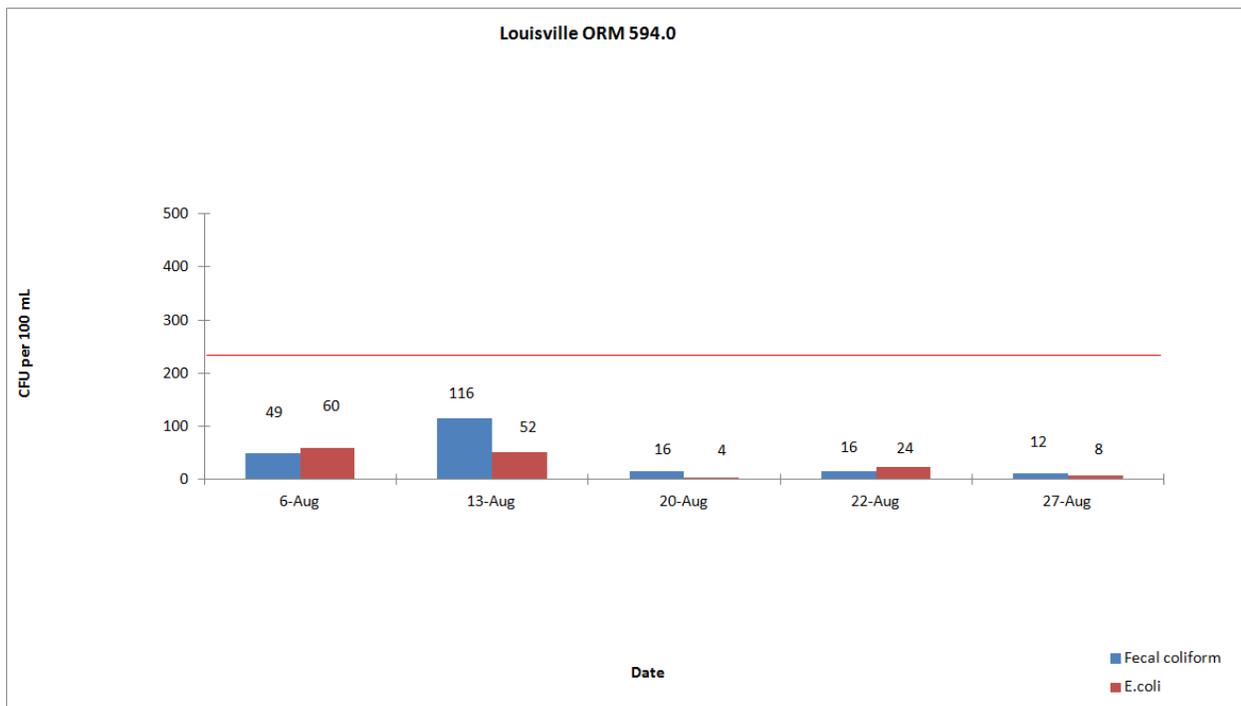
Cincinnati ORM 477.5

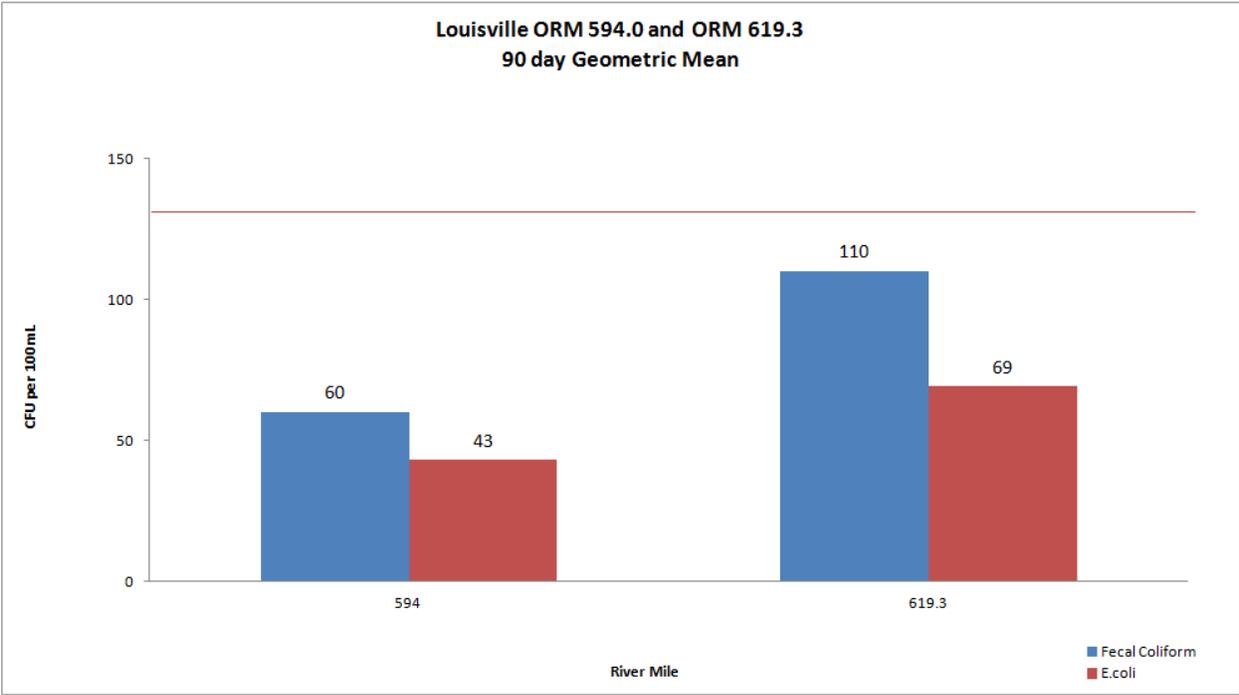
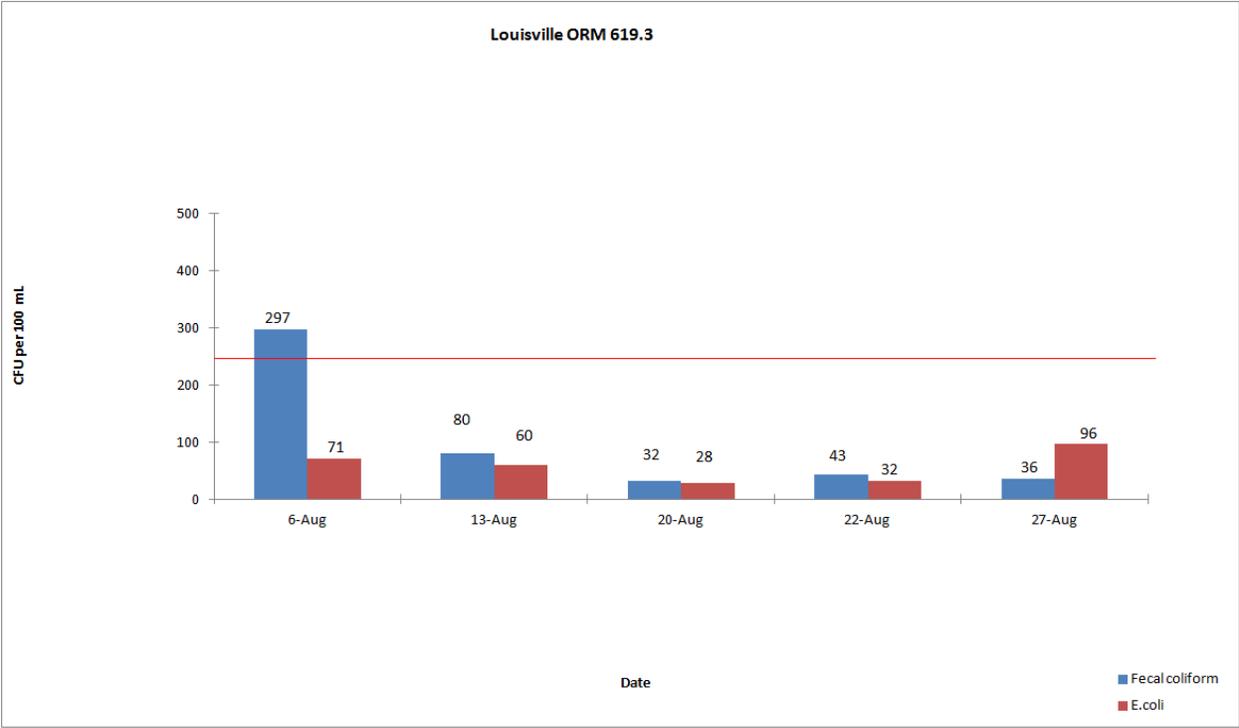




Louisville

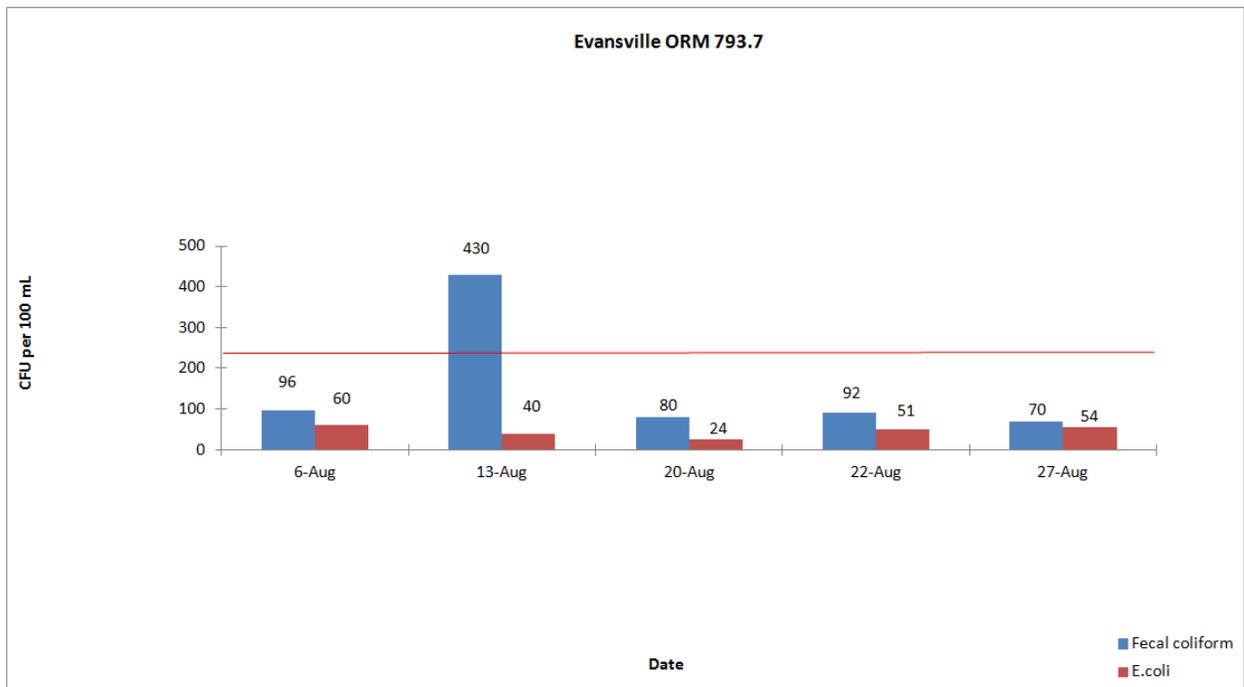
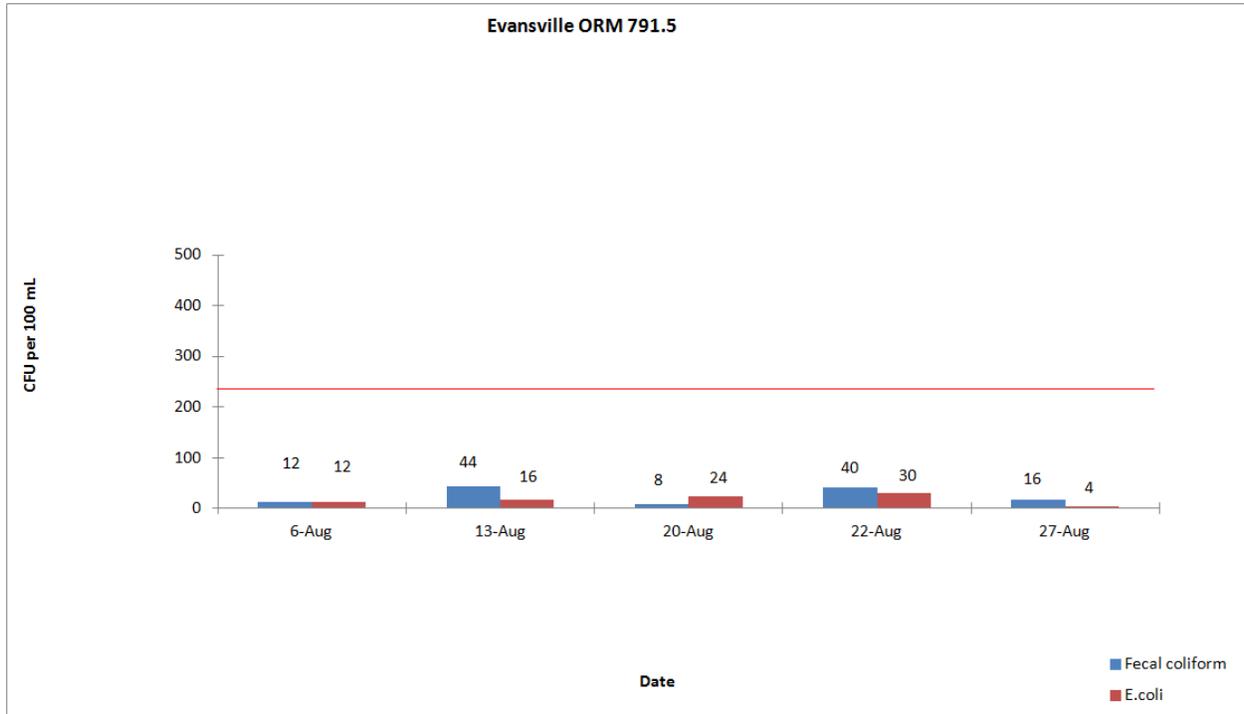
In Louisville, ORM 594.0 and ORM 619.3 did not exceed the *E.coli* criteria. The 90 day geometric mean for *E.coli* was not exceeded at either site.

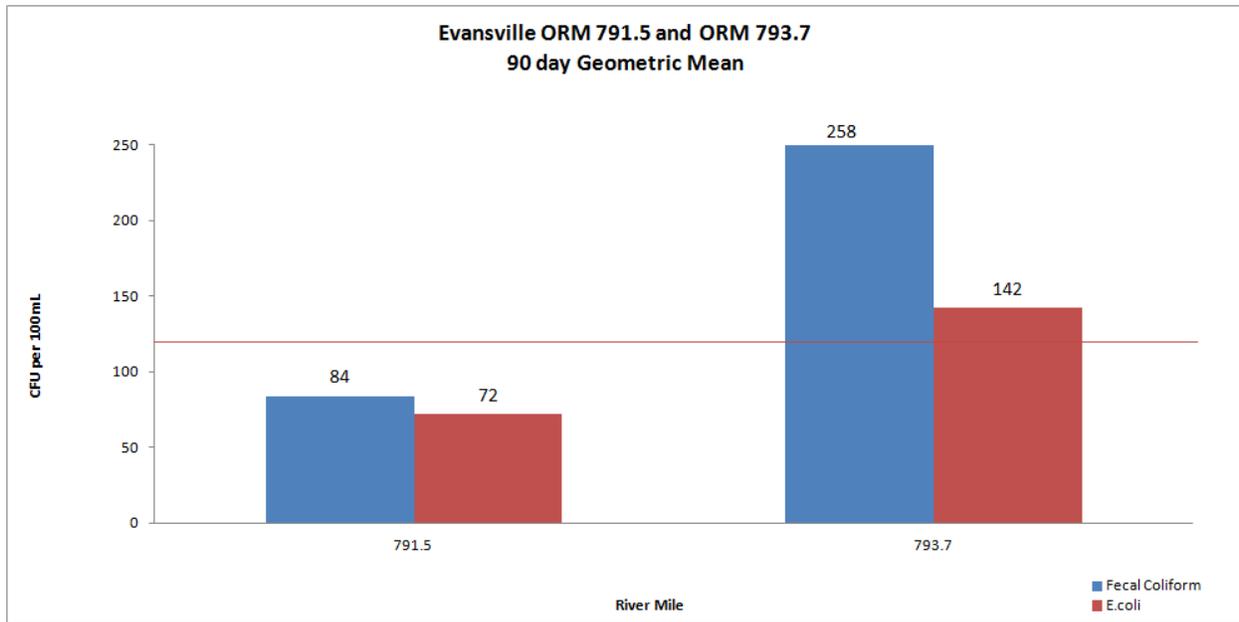




Evansville

In Evansville, ORM 791.5 and ORM 793.7 did not exceed the *E.coli* criteria. The 90 day geometric mean for *E.coli* was exceeded at ORM 793.7.





Dissolved Oxygen and Temperature

A summary of the dissolved oxygen and temperature readings collected in August 2013 are displayed in the attached tables. During the months of May through October, ORSANCO interrogates nine stations for dissolved oxygen (D.O.) and temperature data once per day, Monday through Friday, for the previous 24-hour period. This data is compiled in-house to produce a report showing the minimum, maximum and average of the acquired D.O. and temperature readings. ORSANCO’s water quality criteria for the protection of warm water aquatic life habitat are:

- The minimum D.O. concentration shall not be less than 4.0 mg/L at any time.
- Average D.O. concentration shall be at least 5.0 mg/L for each calendar day.
- During the April 15 – June 15 spawning season, a minimum D.O. concentration of 5.0 mg/L shall be maintained at all times.
- The temperature period average for August 1-31 is 84°F and the maximum is 89°F.

There were no D.O. criteria violations or period average temperature violations for the month of August.

Daily D.O. Readings for August 2013

CALENDAR DAY JULIAN DAY		1-Aug 213	5-Aug 217	6-Aug 218	7-Aug 219	8-Aug 220	9-Aug 221	12-Aug 224	13-Aug 225	14-Aug 226	15-Aug 227	16-Aug 228	19-Aug 231	20-Aug 232	21-Aug 233	22-Aug 234	23-Aug 235	26-Aug 238	27-Aug 239	28-Aug 240	29-Aug 241	30-Aug 242	
MONTGOMERY MP 31.7	MAX	8.50	7.80	9.00	10.30	9.50	9.00	8.10	8.00	8.40	8.70	8.50	8.50	9.40	9.40	9.90	9.40	8.70	8.70	8.60	8.50	8.70	
	MIN	7.70	7.60	7.70	8.10	8.10	8.00	7.60	7.40	7.60	8.10	8.10	8.00	8.10	8.20	8.30	8.40	8.00	7.90	7.90	8.00	7.90	
	AVG	8.00	7.70	8.20	8.80	8.60	8.40	7.80	7.70	8.00	8.30	8.30	8.20	8.40	8.60	8.70	8.90	8.30	8.20	8.30	8.00	8.10	
HANNIBAL*** MP 126.4 UPSTREAM	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
BELLEVILLE MP 203.9	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
RACINE*** MP 237.5	MAX	*	*	*	*	*	*	*	*	*	5.80	5.58	5.74	5.72	5.54	5.93	5.74	5.58	5.43	5.39	5.32	6.40	
	MIN	*	*	*	*	*	*	*	*	*	5.36	5.30	5.51	5.06	5.59	5.35	5.31	5.20	5.20	5.12	5.04		
	AVG	*	*	*	*	*	*	*	*	*	5.60	5.43	5.59	5.49	5.34	5.75	5.52	5.43	5.32	5.28	5.18	5.79	
KYGER MP 260.0	MAX	6.53	6.76	6.73	6.85	6.66	6.30	5.76	5.57	5.80	6.03	5.89	5.15	5.51	5.55	5.76	5.61	5.76	5.87	5.85	5.85	5.45	
	MIN	6.33	6.61	6.46	6.35	6.16	6.16	5.56	5.27	5.54	5.59	5.97	5.08	5.25	5.41	5.51	5.49	5.69	5.79	5.79	Data	5.39	
	AVG	6.44	6.66	6.64	6.51	6.36	6.23	5.66	5.42	5.70	5.85	5.59	5.13	5.40	5.46	5.65	5.54	5.71	5.83	5.82	Available	5.41	
GREENUP*** MP 341.0 UPSTREAM	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
DOWNSTREAM	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
MELDAHL MP 436.2	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
MARKLAND*** MP 531.5 D.O. #1	US-Lock	6.70	6.70	6.70	6.70	7.00	7.10	6.70	6.60	6.70	6.80	6.80	6.20	7.10	6.90	6.80	6.60	7.00	7.00	6.70	6.70	6.20	
	DS-Lock	6.50	6.70	6.80	7.00	6.80	6.50	7.10	7.00	6.90	6.90	6.90	7.10	6.90	6.80	6.50	6.50	6.70	6.70	6.40	6.40	6.50	
	US-Hydro	6.50	6.30	6.40	*	7.00	7.20	6.90	6.90	7.00	6.90	7.00	6.60	*	*	7.10	7.30	7.50	7.50	7.60	7.70	6.60	
	DS-Hydro	7.50	7.50	7.60	7.80	7.80	7.90	8.30	8.20	8.20	7.90	7.60	7.70	7.70	6.20	6.30	6.50	6.50	6.70	6.70	6.80	6.90	6.80
	AVG	6.48	6.08	7.37	6.97	6.88	7.05	6.51	6.41	6.47	6.84	6.95	7.49	7.08	6.89	6.81	6.64	6.40	6.44	6.62	6.67	6.53	
MCALPINE*** MP 606.8	MAX	6.19	8.04	6.99	6.63	6.48	6.64	5.40	6.11	6.12	6.46	6.77	6.93	6.78	6.72	6.22	6.31	6.24	6.13	6.24	6.07	6.22	
	MIN	6.34	7.37	7.14	6.75	6.71	6.82	6.25	6.29	6.28	6.65	6.86	7.11	6.96	6.78	6.60	6.43	6.33	6.23	6.31	6.42	6.41	
	AVG	6.34	7.37	7.14	6.75	6.71	6.82	6.25	6.29	6.28	6.65	6.86	7.11	6.96	6.78	6.60	6.43	6.33	6.23	6.31	6.42	6.41	

Daily Temperature Readings for August 2013

CALENDAR DAY JULIAN DAY		1-Aug 213	5-Aug 217	6-Aug 218	7-Aug 219	8-Aug 220	9-Aug 221	12-Aug 224	13-Aug 225	14-Aug 226	15-Aug 227	16-Aug 228	19-Aug 231	20-Aug 232	21-Aug 233	22-Aug 234	23-Aug 235	26-Aug 238	27-Aug 239	28-Aug 240	29-Aug 241	30-Aug 242	Period Average August 1-31 84°
MONTGOMERY MP 31.7	MAX	76.28	76.46	76.10	76.64	76.10	76.28	77.54	76.82	77.90	76.28	75.38	74.30	74.84	74.84	76.10	75.74	76.64	76.82	76.64	76.10	77.18	75.58
	MIN	75.56	75.74	75.74	75.38	75.56	75.38	76.82	75.56	32.00	75.38	74.66	73.94	73.76	73.76	74.12	74.82	75.92	76.10	75.92	75.56	75.92	
	AVG	75.74	75.92	75.92	75.74	75.74	75.74	77.18	76.10	75.20	75.74	74.84	74.12	73.94	74.12	74.66	75.20	76.28	76.46	76.28	75.74	76.46	
HANNIBAL*** MP 126.4 UPSTREAM	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data						
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
BELLEVILLE MP 203.9	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
RACINE*** MP 237.5	MAX	75.59	75.70	74.88	No Data	76.59	76.67	76.29	No Data	No Data	75.59	74.11	73.60	73.98	75.90	76.88	77.26	76.35	77.18	77.10	77.26	77.77	75.37
	MIN	72.76	74.76	74.43	Data	74.70	75.47	75.66	Data	Data	74.07	72.97	72.99	73.21	75.88	75.57	75.70	75.49	76.27	76.75	76.67		
	AVG	74.34	75.10	74.67	Available	75.66	76.11	75.98	Available	Available	74.81	73.43	73.44	73.50	74.34	76.20	76.21	75.97	76.33	76.51	77.02	77.12	
KYGER MP 260.0	MAX	76.23	76.71	76.98	77.14	77.26	77.24	77.26	77.83	78.24	77.57	76.78	74.56	74.74	74.74	75.78	75.45	75.15	76.63	76.45	No Data	75.94	
	MIN	75.66	76.35	75.92	76.23	76.69	77.02	76.82	77.41	77.71	75.61	75.15	74.21	74.03	74.33	74.84	74.92	74.94	75.53	76.20	Data	75.63	
	AVG	75.91	76.51	76.54	76.63	76.99	77.12	76.99	77.62	77.86	77.01	75.72	74.39	74.38	74.44	75.11	75.08	75.01	75.91	76.34	Available	75.76	
GREENUP*** MP 341.0 UPSTREAM	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
DOWNSTREAM	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
MELDAHL MP 436.2	MAX	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data							
	MIN	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
	AVG	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available							
MARKLAND*** MP 531.5 D.O. #1	US-Lock	78.62	78.44	78.62	78.98	79.34	79.52	80.06	80.06	80.24	79.52	78.62	78.98	78.98	79.34	79.16	79.70	80.42	80.42	80.60	80.96	80.78	79.59
	DS-Lock	78.62	78.44	78.98	78.98	79.34	79.70	80.42	80.24	80.24	79.52	78.80	78.98										