

# ICR TREATMENT STUDY ANALYSIS

## Base Analysis and Data Review Comments

<b>Treatment Study ID</b>	1036
<b>Study Protocol</b>	GAC bench-scale treatment study
<b>Plant ICR Number</b>	710
<b>PWS Name</b>	City of Sunrise
<b>City, State, Zip</b>	Sunrise, FL 33321

These are general comments that do not need to be responded to directly.

### Major comments:

(none)

### General Comments:

1. In-line filtration using a 0.2 µm pore size filter was performed; the *Treatment Studies Manual* recommended the use of a 1.0 µm pore size filter.

*Response: A 0.2-um in-line filter was incorporated for all RSSCT studies to minimize headloss formation and to render sample collection reasonable. High and frequent headloss formation were experienced in a previous study, even though the carbon fines were minimized with the rinsing process. No head-loss problems were experienced following this change.*

### Outlier Data:

No outliers were removed.

**Cell: A1**

**Comment:** Entered fixed curve fit parameters.

Fixed tmax for S=0.

1036-SAS.xls                    1/30/00 15:25

Curve fit review updated and approved. See below for log of refit datasets.

1036-SAS.xls                    2/2/00 15:50

Curve fit review updated and approved. See below for log of refit datasets.

**Cell: C5**

**Comment:** 1036-10-01 - Run 1 (CHBr3) 1/30/00 14:19

Original value (CoefA0) = -1.6857

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell: D5**

**Comment:** 1036-10-01 - Run 1 (CHBr3) 1/30/00 14:19

Original value (CoefAf) = 2817.5037

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell: E5**

**Comment:** 1036-10-01 - Run 1 (CHBr3) 1/30/00 14:19

Original value (CoefB) = 3734.28

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell: F5**

**Comment:** 1036-10-01 - Run 1 (CHBr3) 1/30/00 14:19

Original value (CoefD) = 0.6297

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell: J5**

**Comment:** 1036-10-01 - Run 1 (CHBr3) 1/30/00 14:19

Original value (S) = -1.4521

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell: C15**

**Comment:** 1036-10-01 - Run 1 (MBAA) 1/30/00 14:12

Original value (CoefA0) = 0.0823

Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell: D15**

**Comment:** 1036-10-01 - Run 1 (MBAA) 1/30/00 14:12

Original value (CoefAf) = 2.55

Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell: E15**

**Comment:** 1036-10-01 - Run 1 (MBAA) 1/30/00 14:12

Original value (CoefB) = 2209.0824

Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell: F15**

**Comment:** 1036-10-01 - Run 1 (MBAA) 1/30/00 14:12

Original value (CoefD) = 0.7574

Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell: J15**

**Comment:** 1036-10-01 - Run 1 (MBAA) 1/30/00 14:12

Original value (S) = -0.0006

Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell:** C16

**Comment:** 1036-10-01 - Run 1 (MCAA) 2/2/00 15:27

Original value (CoefA0) = 0 New value = 2.85

Fewer than 6 points above MRL, average above 1/2 MRL. Step function applied.

**Cell:** D16

**Comment:** 1036-10-01 - Run 1 (MCAA) 2/2/00 15:27

Original value (CoefAf) = 0 New value = 0

Fewer than 6 points above MRL, average above 1/2 MRL. Step function applied.

**Cell:** E16

**Comment:** 1036-10-01 - Run 1 (MCAA) 2/2/00 15:27

Original value (CoefB) = 0 New value = 0

Fewer than 6 points above MRL, average above 1/2 MRL. Step function applied.

**Cell:** F16

**Comment:** 1036-10-01 - Run 1 (MCAA) 2/2/00 15:27

Original value (CoefD) = 0 New value = 0

Fewer than 6 points above MRL, average above 1/2 MRL. Step function applied.

**Cell:** J16

**Comment:** 1036-10-01 - Run 1 (MCAA) 2/2/00 15:27

Original value (S) = 0 New value = 0

Fewer than 6 points above MRL, average above 1/2 MRL. Step function applied.

**Cell:** K16

**Comment:** 1036-10-01 - Run 1 (MCAA) 2/2/00 15:27

Original value (t0) = 0 New value = 17.5222

Fewer than 6 points above MRL, average above 1/2 MRL. Step function applied.

**Cell:** C49

**Comment:** 1036-10-03 - Run 5 (CHBr3) 1/30/00 15:00

Original value (CoefA0) = -0.1871

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** D49

**Comment:** 1036-10-03 - Run 5 (CHBr3) 1/30/00 15:00

Original value (CoefAf) = 21.2748

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** E49

**Comment:** 1036-10-03 - Run 5 (CHBr3) 1/30/00 15:00

Original value (CoefB) = 6262.7527

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** F49

**Comment:** 1036-10-03 - Run 5 (CHBr3) 1/30/00 15:00

Original value (CoefD) = 1.0663

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** J49

**Comment:** 1036-10-03 - Run 5 (CHBr3) 1/30/00 15:00

Original value (S) = -0.4952

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** C59

**Comment:** 1036-10-03 - Run 5 (MBAA) 1/30/00 15:04

Original value (CoefA0) = -0.6354

Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

1036-10-03 - Run 5 (MBAA) 2/2/00 15:35  
 Original value (CoefA0) = -0.3956 New value = 0  
 Step function applied.

**Cell:** D59

**Comment:** 1036-10-03 - Run 5 (MBAA) 1/30/00 15:04  
 Original value (CoefAf) = 1.95  
 Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

1036-10-03 - Run 5 (MBAA) 2/2/00 15:35  
 Original value (CoefAf) = 1.7907 New value = 1.2  
 Step function applied.

**Cell:** E59

**Comment:** 1036-10-03 - Run 5 (MBAA) 1/30/00 15:04  
 Original value (CoefB) = 3.5759  
 Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

1036-10-03 - Run 5 (MBAA) 2/2/00 15:35  
 Original value (CoefB) = 5.0118 New value = 0  
 Step function applied.

**Cell:** F59

**Comment:** 1036-10-03 - Run 5 (MBAA) 1/30/00 15:04  
 Original value (CoefD) = 0.0609  
 Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

1036-10-03 - Run 5 (MBAA) 2/2/00 15:35  
 Original value (CoefD) = 0.0599 New value = 0  
 Step function applied.

**Cell:** J59

**Comment:** 1036-10-03 - Run 5 (MBAA) 1/30/00 15:04  
 Original value (S) = 0  
 Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

1036-10-03 - Run 5 (MBAA) 2/2/00 15:35  
 Original value (S) = 0 New value = 0  
 Step function applied.

**Cell:** K59

**Comment:** 1036-10-03 - Run 5 (MBAA) 2/2/00 15:35  
 Original value (t0) = 0 New value = 20.8226  
 Step function applied.

**Cell:** C60

**Comment:** 1036-10-03 - Run 5 (MCAA) 2/2/00 15:30  
 Original value (CoefA0) = 0 New value = -0.12  
 Fewer than 6 points above MRL, average above 1/2 MRL. Logistic function (type 1) applied.

**Cell:** D60

**Comment:** 1036-10-03 - Run 5 (MCAA) 2/2/00 15:30  
 Original value (CoefAf) = 0 New value = 3.269  
 Fewer than 6 points above MRL, average above 1/2 MRL. Logistic function (type 1) applied.

**Cell:** E60

**Comment:** 1036-10-03 - Run 5 (MCAA) 2/2/00 15:31  
 Original value (CoefB) = 0 New value = 48.2447  
 Fewer than 6 points above MRL, average above 1/2 MRL. Logistic function (type 1) applied.

**Cell:** F60

**Comment:** 1036-10-03 - Run 5 (MCAA) 2/2/00 15:31  
Original value (CoefD) = 0 New value = 0.1155  
Fewer than 6 points above MRL, average above 1/2 MRL. Logistic function (type 1) applied.

**Cell:** J60

**Comment:** 1036-10-03 - Run 5 (MCAA) 2/2/00 15:31  
Original value (S) = 0 New value = 0  
Fewer than 6 points above MRL, average above 1/2 MRL. Logistic function (type 1) applied.

**Cell:** C93

**Comment:** 1036-20-01 - Run 2 (CHBr3) 1/30/00 14:32  
Original value (CoefA0) = -2.0457  
Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** D93

**Comment:** 1036-20-01 - Run 2 (CHBr3) 1/30/00 14:32  
Original value (CoefAf) = 1815.9283  
Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** E93

**Comment:** 1036-20-01 - Run 2 (CHBr3) 1/30/00 14:32  
Original value (CoefB) = 2031.0444  
Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** F93

**Comment:** 1036-20-01 - Run 2 (CHBr3) 1/30/00 14:32  
Original value (CoefD) = 0.2448  
Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** J93

**Comment:** 1036-20-01 - Run 2 (CHBr3) 1/30/00 14:32  
Original value (S) = -0.6367  
Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** C95

**Comment:** 1036-20-01 - Run 2 (Cl2-D) 1/30/00 14:26  
Original value (CoefA0) = 2.5131  
Poor peak curve fit. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell:** D95

**Comment:** 1036-20-01 - Run 2 (Cl2-D) 1/30/00 14:26  
Original value (CoefAf) = 3.0419  
Poor peak curve fit. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell:** E95

**Comment:** 1036-20-01 - Run 2 (Cl2-D) 1/30/00 14:26  
Original value (CoefB) = 63.8601  
Poor peak curve fit. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell:** F95

**Comment:** 1036-20-01 - Run 2 (Cl2-D) 1/30/00 14:26  
Original value (CoefD) = 0.2751  
Poor peak curve fit. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell:** J95

**Comment:** 1036-20-01 - Run 2 (Cl2-D) 1/30/00 14:26  
Original value (S) = -0.0951  
Poor peak curve fit. Refit to type 1 curve fit by iterative curve fit procedure.

**Cell:** C114

**Comment:** 1036-20-02 - Run 4 (CDBAA) 1/30/00 14:38  
Original value (CoefA0) = -0.1269

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** D114

**Comment:** 1036-20-02 - Run 4 (CDBAA) 1/30/00 14:38

Original value (CoefAf) = 3.8602

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** E114

**Comment:** 1036-20-02 - Run 4 (CDBAA) 1/30/00 14:38

Original value (CoefB) = 408812507.75363

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** F114

**Comment:** 1036-20-02 - Run 4 (CDBAA) 1/30/00 14:38

Original value (CoefD) = 0.4993

Poor peak curve fit. Data was refit by iterative curve fit procedure.

**Cell:** J114

**Comment:** 1036-20-02 - Run 4 (CDBAA) 1/30/00 14:38

Original value (S) = 0

Poor peak curve fit. Data was refit by iterative curve fit procedure.

# SAS Curve Fit Review Document

Treatment Study ID 1036

Run 1 (Quarter 1, 10 min. EBCT)

7 DBCM Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = 0.205	A = 25.01	B = 16815.8	D = 2.135	S = -0.854
------------	-----------	-------------	-----------	------------

8 CHBr3 Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -1.686	A = 2817.5	B = 3734.3	D = 0.63	S = -1.452
-------------	------------	------------	----------	------------

14 DBAA Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -0.015	A = 6.26	B = 144697.8	D = 2.669	S = -0.252
-------------	----------	--------------	-----------	------------

Run 2 (Quarter 1, 20 min. EBCT)

8 CHBr3 Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -2.046	A = 1815.93	B = 2031	D = 0.245	S = -0.637
-------------	-------------	----------	-----------	------------

14 DBAA Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -1.555	A = 6869.31	B = 9664.2	D = 0.183	S = -0.111
-------------	-------------	------------	-----------	------------

Run 3 (Quarter 2, 10 min. EBCT)

8 CHBr3 Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = 2.663	A = 16.1	B = 12672.3	D = 0.793	S = -0.524
------------	----------	-------------	-----------	------------

12 TCAA < 6 points, SAS did not perform curve fit. Effluent levels increase to > 10 µg/L, mean effluent level is only 2.4 µg/L. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -0.11	A = 11.88	B = 1472.8	D = 0.205	
------------	-----------	------------	-----------	--

16 CDBAA Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -0.091	A = 3.84	B = 49267.9	D = 0.617	S = -0.03
-------------	----------	-------------	-----------	-----------

Run 4 (Quarter 2, 20 min. EBCT)

8 CHBr3 Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = 2.744	A = 15.69	B = 33968.3	D = 0.35	S = -0.207
------------	-----------	-------------	----------	------------

Run 5 (Quarter 3, 10 min. EBCT)

7 DBCM Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -0.65	A = 31.54	B = 1822.9	D = 0.657	S = -0.285
------------	-----------	------------	-----------	------------

8 CHBr3 Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -0.187	A = 21.27	B = 6262.8	D = 1.066	S = -0.495
-------------	-----------	------------	-----------	------------

14 DBAA Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -0.041	A = 11.26	B = 835.8	D = 0.804	S = -0.186
-------------	-----------	-----------	-----------	------------

16 CDBAA Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -0.523	A = 9.58	B = 65.2	D = 0.287	S = -0.116
-------------	----------	----------	-----------	------------

Run 6 (Quarter 3, 20 min. EBCT)

8 CHBr3 Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -2.542	A = 11819.06	B = 12912.1	D = 0.131	S = -0.449
-------------	--------------	-------------	-----------	------------

14 DBAA Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -0.181	A = 11.81	B = 786.4	D = 0.307	S = -0.141
-------------	-----------	-----------	-----------	------------

Run 7 (Quarter 4, 10 min. EBCT)

8 CHBr3 Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = -1.416	A = 2858.94	B = 3419.6	D = 0.355	S = -1.104
-------------	-------------	------------	-----------	------------

Run 8 (Quarter 4, 20 min. EBCT)

8 CHBr3 Poor peak curve fit. Curve was refit successfully by iterative curve fit procedure to following parameters. Done.

Ao = 1.018	A = 27.04	B = 29032.8	D = 0.575	S = -0.37
------------	-----------	-------------	-----------	-----------



## ICR Information

ID / ICR#: FL4061410 / 710  
 ICR Contact: Stan Cerwinski  
 Phone No.: (954)-846-7425  
 Period: 3/9/98 - 3/13/98 (4 B-S days)

## Design Information

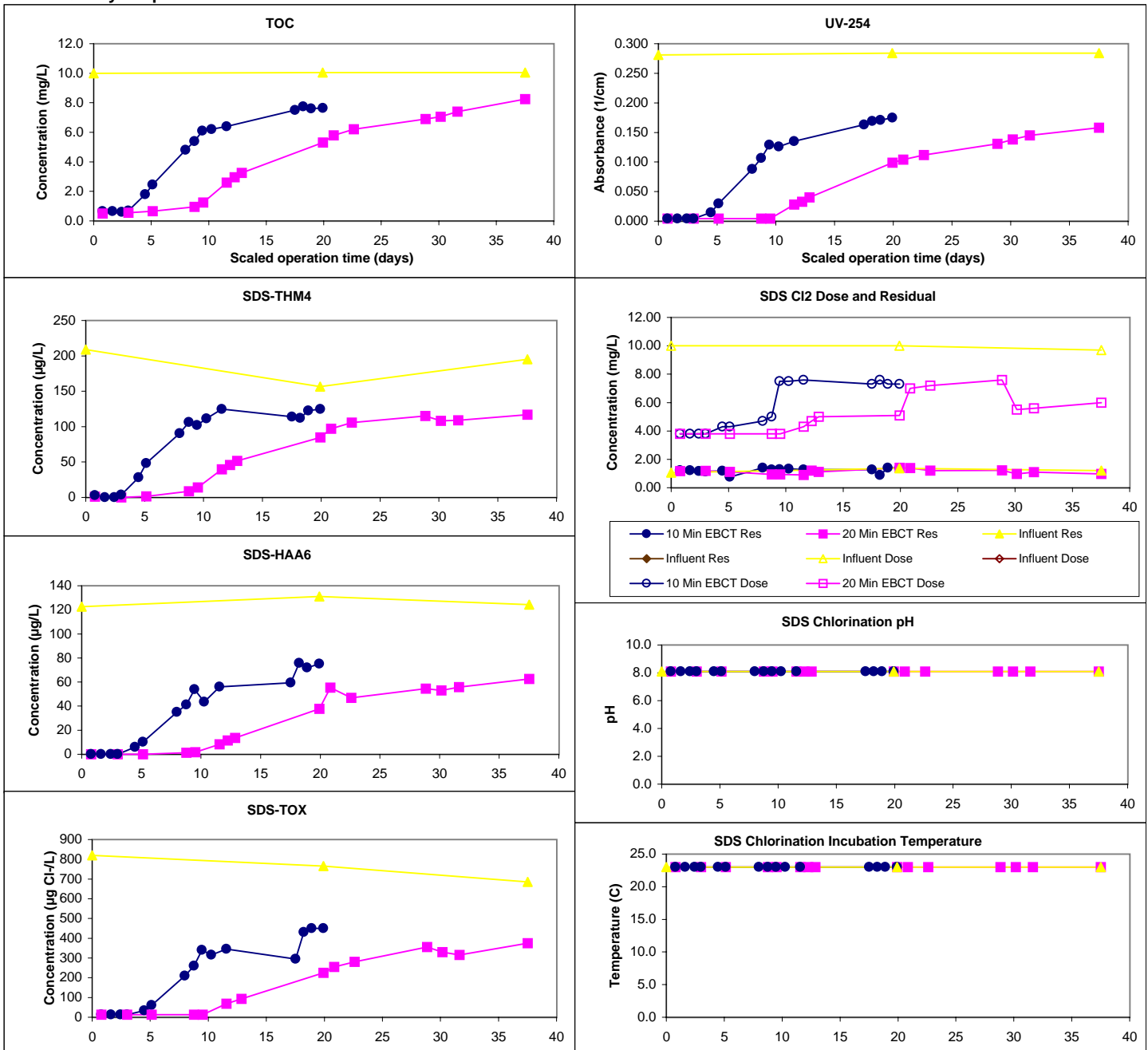
Design TOC: 10.0 mg/L  
 Col Diameter: 15.0 mm  
 Min Reynolds#: 0.56  
 Full-Scale Temp: 25.0 C

Full-Scale GAC Size: 12x40 Bituminous coal  
 Bench-Scale GAC Size: 100x200  
 Scaling Factor: 9.36  
 Meas Dry Bed Density: 0.50 g/cm3

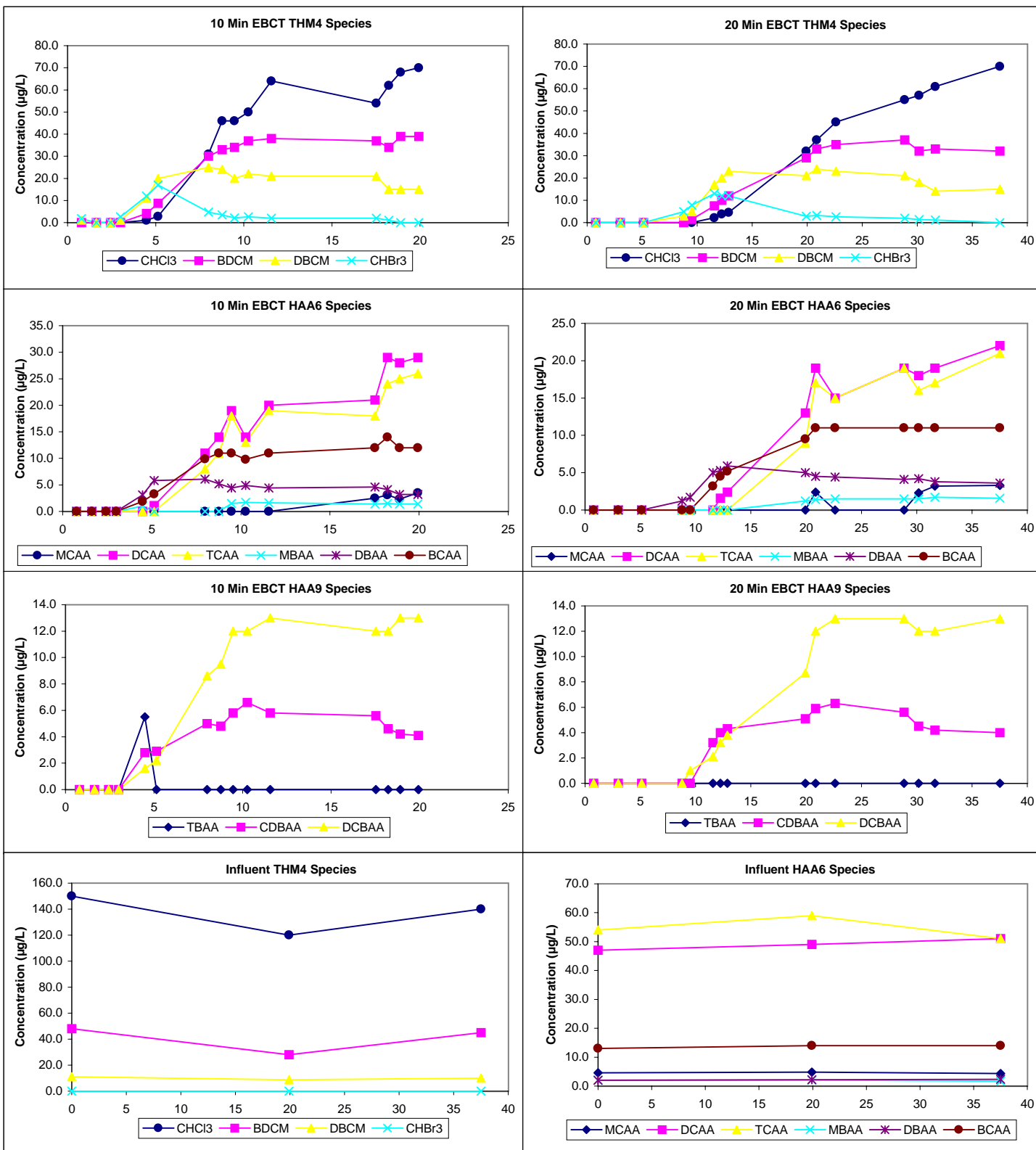
## Water Quality Summary

Influent	Influent				Influent												
	Mean	SD/RD	Count	Min/Max	Mean	SD/RD	Count	Min/Max		Mean	SD	Count	Min/Max				
TOC	10.0	0.0	3	10.0 - 10.1					Res (0)	1.17	0.17	33	0.76 - 1.40				
pH	7.9	0.0	3	7.9 - 7.9					Temp	23.0	0.0	33	23.0 - 23.0				
UV254	0.283	0.002	3	0.281 - 0.284					pH	8.1	0.0	33	8.1 - 8.1				
SUVA	2.82	0.01	3	2.81 - 2.83					Time	24.0	0.0	33	24.0 - 24.0				
Bromide	140	0	2	140 - 140					Comments:								
SDS-TOX	757	68	3	685 - 820													
SDS-THM4	187	27	3	157 - 209													
SDS-HAA6	126	4	3	123 - 131					<div><div><div></div><div>10 Min EBCT</div></div><div><div></div><div>20 Min EBCT</div></div><div><div></div><div>Influent</div></div><div><div></div><div>Influent</div></div></div>								
Effluent	10 Min EBCT (2 B-S days)																
Effluent pH	8.0	0.1	15	7.7 - 8.1	7.9	0.1	15	7.7 - 8.0									
Effluent Temp	23.0	0.0	15	23.0 - 23.0	23.0	0.0	15	23.0 - 23.0	Chart Legend:								

## Water Quality Graphs



## Water Quality Graphs (Continued)



## ICR Information

ID / ICR#: FL4061410 / 710  
 ICR Contact: Stan Cerwinski  
 Phone No.: (954)-846-7425  
 Period: 6/29/98 - 7/13/98 (14 B-S days)

## Design Information

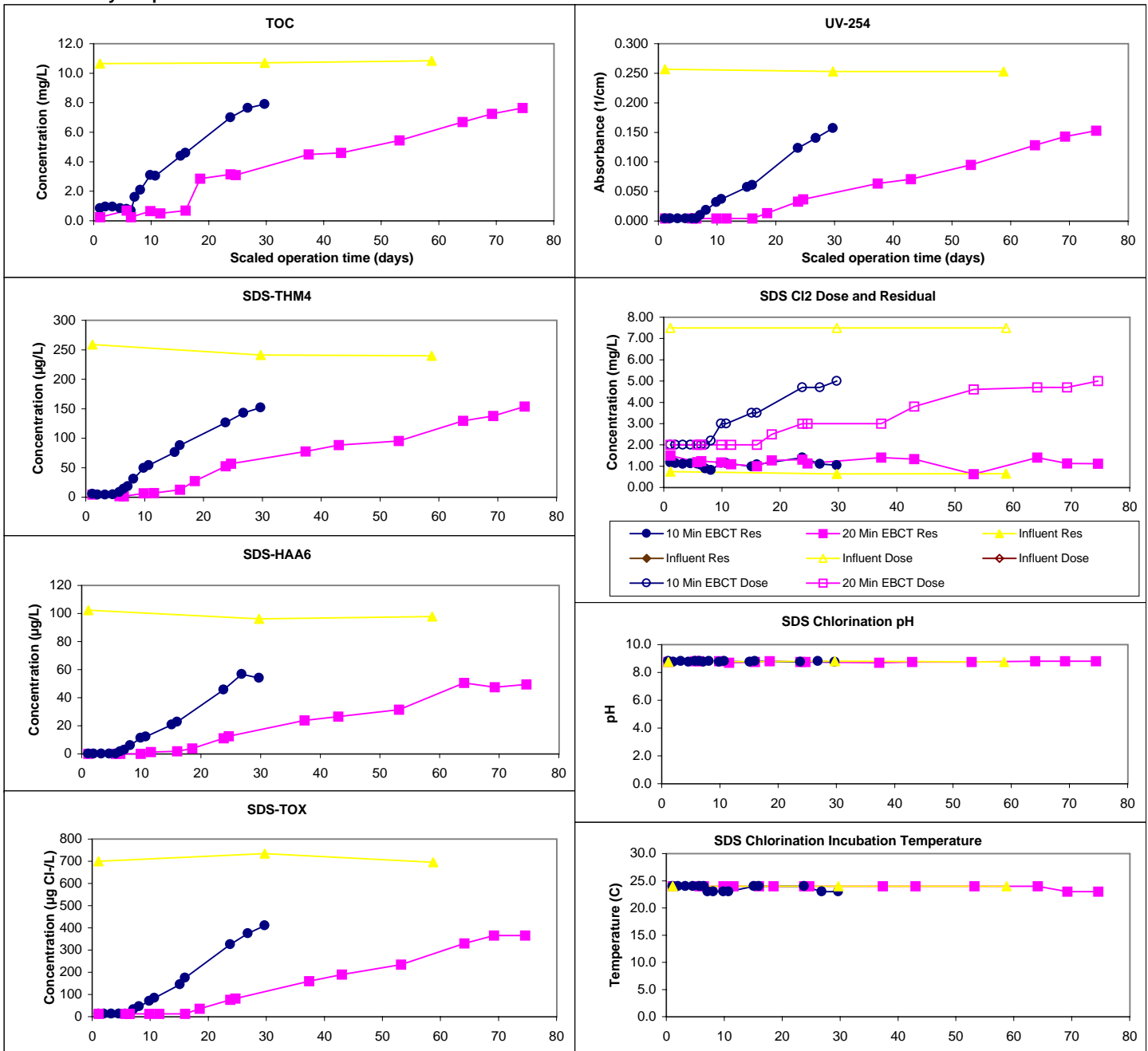
Design TOC: 10.7 mg/L  
 Col Diameter: 15.0 mm  
 Min Reynolds#: 0.59  
 Full-Scale Temp: 26.6 C

Full-Scale GAC Size: 12x40 Bituminous coal  
 Bench-Scale GAC Size: 60x100  
 Scaling Factor: 5.26  
 Meas Dry Bed Density: 0.50 g/cm3

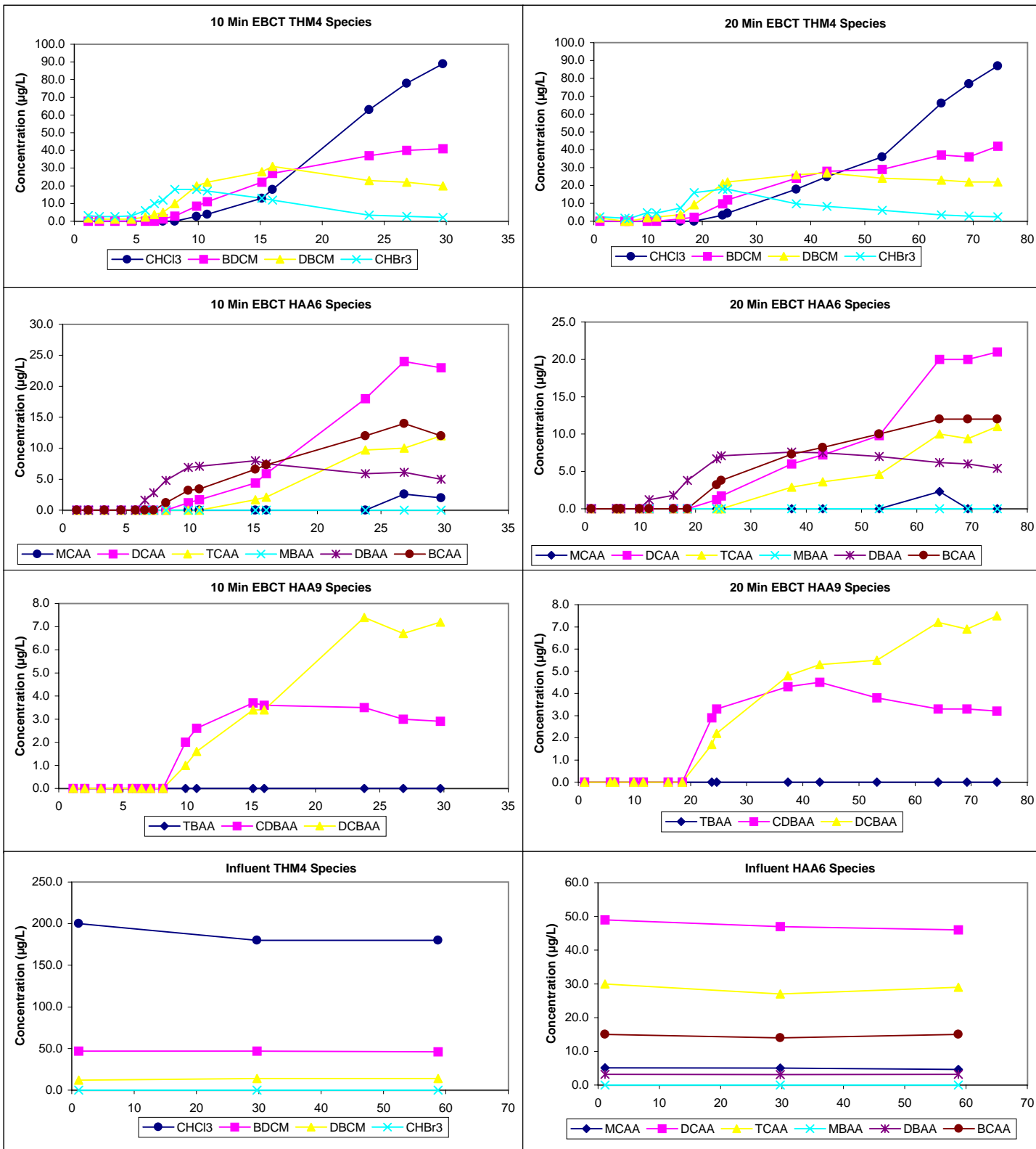
## Water Quality Summary

Influent	Influent				Influent									
	Mean	SD/RD	Count	Min/Max	Mean	SD/RD	Count	Min/Max		Mean	SD	Count	Min/Max	
TOC	10.7	0.1	3	10.7 - 10.9						Res (0)	1.10	0.22	33	0.62 - 1.50
pH	8.0	0.1	3	7.9 - 8.0						Temp	23.8	0.4	33	23.0 - 24.0
UV254	0.254	0.002	3	0.253 - 0.257						pH	8.8	0.0	33	8.7 - 8.8
SUVA	2.37	0.04	3	2.33 - 2.41						Time	24.2	0.2	33	23.7 - 24.5
Bromide	180	0	2	180 - 180		Comments:								
SDS-TOX	710	22	3	695 - 735		<div><div><div></div><div>10 Min EBCT</div></div><div><div></div><div>20 Min EBCT</div></div><div><div></div><div>Influent</div></div><div><div></div><div>Influent</div></div></div>								
SDS-THM4	247	11	3	240 - 259										
SDS-HAA6	99	3	3	96 - 102										
Effluent	10 Min EBCT (6 B-S days)				20 Min EBCT (14 B-S days)				Chart Legend:					
Effluent pH	8.2	0.2	15	8.0 - 8.7	8.2	0.3	15	8.0 - 9.3						
Effluent Temp	23.0	0.0	15	23.0 - 23.0	23.0	0.0	15	23.0 - 23.0						

## Water Quality Graphs



## Water Quality Graphs (Continued)



## ICR Information

ID / ICR#: FL4061410 / 710  
 ICR Contact: Stan Cerwinski  
 Phone No.: (954)-846-7425  
 Period: 9/1/98 - 9/11/98 (10 B-S days)

## Design Information

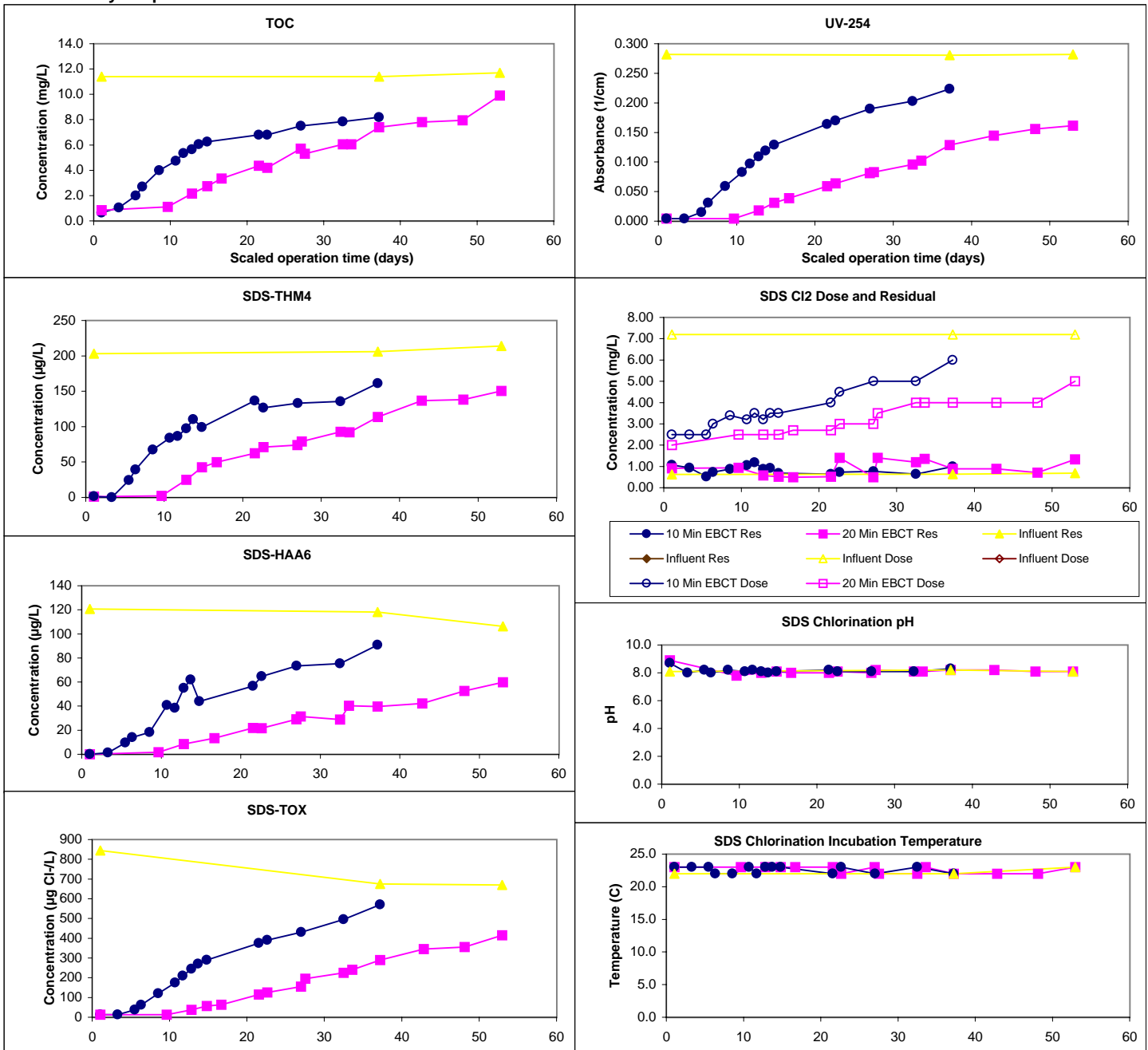
Design TOC: 11.6 mg/L  
 Col Diameter: 15.0 mm  
 Min Reynolds#: 0.58  
 Full-Scale Temp: 26.3 C

Full-Scale GAC Size: 12x40 Bituminous coal  
 Bench-Scale GAC Size: 60x100  
 Scaling Factor: 5.26  
 Meas Dry Bed Density: 0.50 g/cm3

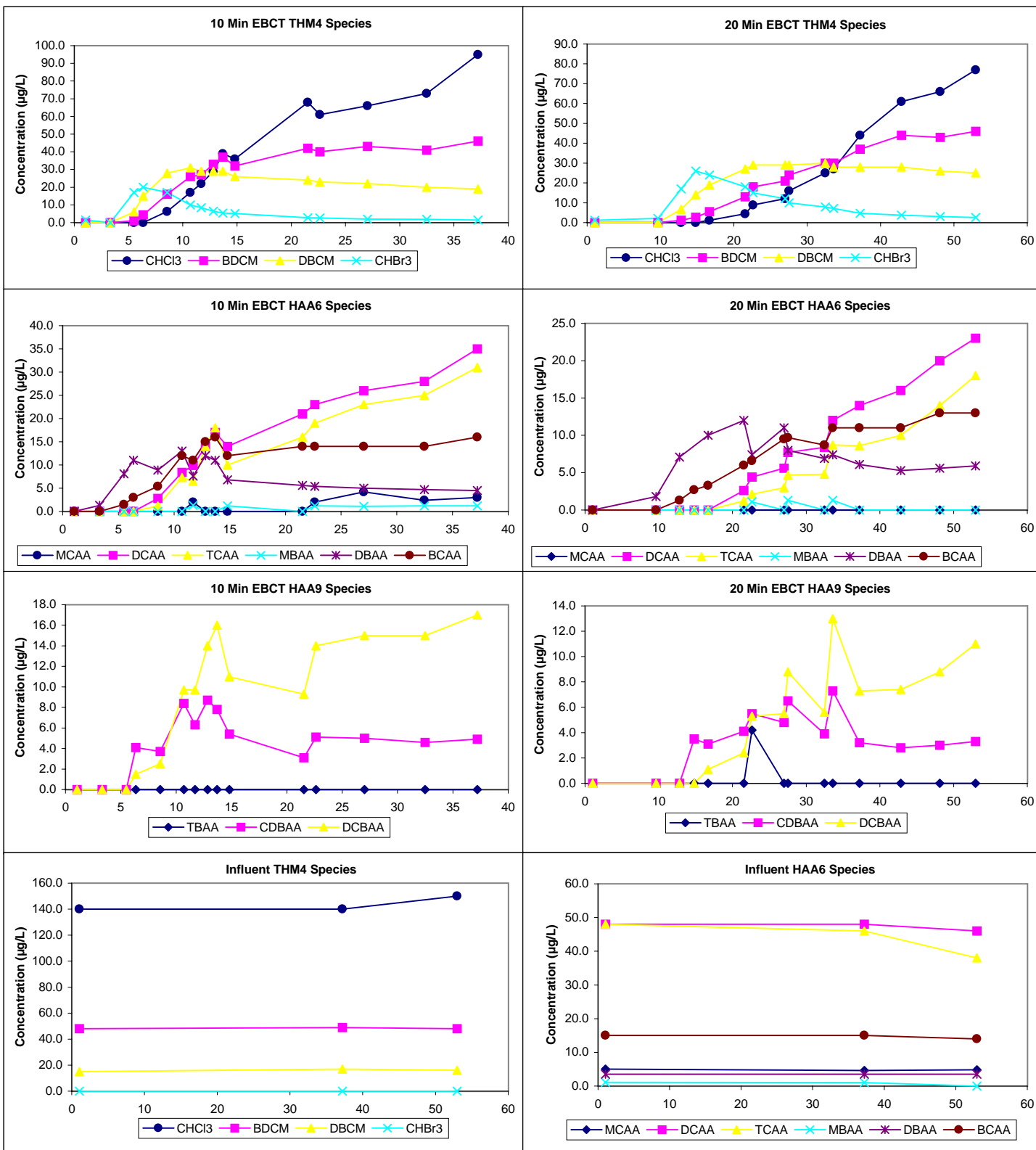
## Water Quality Summary

Influent	Influent				Influent				<div><div><div></div><div></div><div></div><div></div></div><div><div>10 Min EBCT</div><div>20 Min EBCT</div><div>Influent</div><div>Influent</div></div></div>				
	Mean	SD/RD	Count	Min/Max	Mean	SD/RD	Count	Min/Max					
TOC	11.5	0.2	3	11.4 - 11.7					Res (0)	0.85	0.28	33	0.49 - 1.40
pH	7.7	0.2	3	7.5 - 7.9					Temp	22.6	0.5	33	22.0 - 23.0
UV254	0.282	0.001	3	0.281 - 0.282					pH	8.1	0.2	33	7.8 - 8.9
SUVA	2.45	0.03	3	2.41 - 2.47					Time	23.7	0.3	33	23.3 - 24.4
Bromide	190	0	2	190 - 190					Comments:				
SDS-TOX	730	100	3	670 - 845									
SDS-THM4	208	6	3	203 - 214									
SDS-HAA6	115	8	3	106 - 121									
<b>Effluent</b>	<b>10 Min EBCT</b> (7 B-S days)				<b>20 Min EBCT</b> (10 B-S days)				<b>Chart Legend:</b>				
Effluent pH	8.1	0.2	15	8.0 - 8.8	8.2	0.3	15	8.0 - 9.2					
Effluent Temp	23.3	0.9	15	22.0 - 25.0	23.3	0.9	15	22.0 - 25.0					

## Water Quality Graphs



## Water Quality Graphs (Continued)



## ICR Information





ID / ICR#: FL4061410 / 710  
 ICR Contact: Stan Cerwinski  
 Phone No.: (954)-846-7425  
 Period: 1/11/99 - 1/22/99 (11 B-S days)

## Design Information

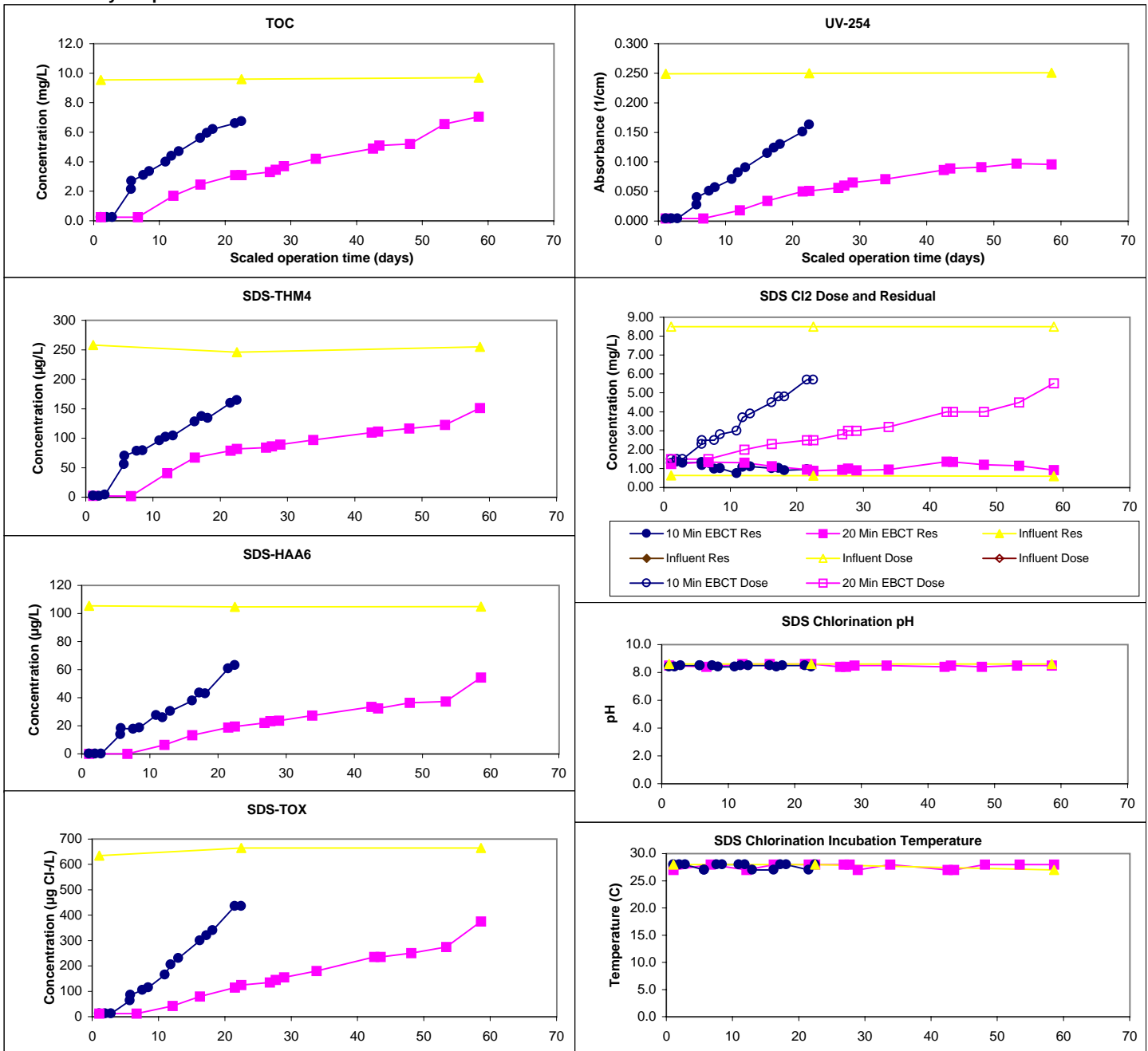
Design TOC: 9.7 mg/L  
 Col Diameter: 15.0 mm  
 Min Reynolds#: 0.60  
 Full-Scale Temp: 27.3 C

Full-Scale GAC Size: 12x40 Bituminous coal  
 Bench-Scale GAC Size: 60x100  
 Scaling Factor: 5.26  
 Meas Dry Bed Density: 0.50 g/cm3

## Water Quality Summary

Influent	Influent				Influent				Res (0)	Mean	SD	Count	Min/Max		
	Mean	SD/RD	Count	Min/Max	Mean	SD/RD	Count	Min/Max							
TOC	9.6	0.1	3	9.6 - 9.7											
pH	9.0	0.2	3	8.9 - 9.2											
UV254	0.250	0.001	3	0.249 - 0.251											
SUVA	2.60	0.01	3	2.59 - 2.61											
Bromide	170	0	2	170 - 170											
SDS-TOX	655	17	3	635 - 665											
SDS-THM4	253	6	3	246 - 258											
SDS-HAA6	105	0	3	105 - 105											
Effluent	10 Min EBCT (4 B-S days)				20 Min EBCT (11 B-S days)				Chart Legend:						
Effluent pH	9.0	0.2	15	8.4 - 9.3	8.8	0.4	15	8.2 - 9.6			10 Min EBCT		20 Min EBCT		Influent
Effluent Temp	22.3	0.5	15	22.0 - 23.0	22.4	0.5	15	22.0 - 23.0			Influent				

## Water Quality Graphs



## Water Quality Graphs (Continued)

