

ICR TREATMENT STUDY ANALYSIS

Base Analysis and Data Review Comments

Treatment Study ID	1019
Study Protocol	GAC RSSCT treatment study
Plant ICR Number	447
PWS Name	City of Greensboro
City, State, Zip	Brown Summit, NC 27214

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

Major comments:

None

General Comments:

1. Note that the Session numbers in the Summary Report do not correlate with the quarters in the Data Collection Spreadsheets: Session 1 (Winter/January) = Quarter 4; Session 2 (Spring/April) = Quarter 1; Session 3 (Summer/June) = Quarter 2, and Session 4 (Autumn/October) = Quarter 3.
2. During Session 1 (January), extensive headloss buildup occurred and the columns had to be backwashed to various degrees of GAC bed disturbance throughout the run. The 10-minute EBCT column was backwashed 29 times and the 20-minute EBCT was backwashed 34 times. These backwashing events are summarized in Table 18 of the Summary Report.
3. During all sessions, 10- and 20-minute EBCTs were targeted. In the first three sessions, these targets were achieved; however, during the fourth session (October) EBCTs of 7.2 and 14.4 minutes were evaluated due to a calculation error.
4. Measured dry bed density showed some variability over the four sessions, 0.439 to 0.510 g/cm³. The lowest densities were observed in January (0.468 g/cm³) and October (0.439 g/cm³).
5. The MRL for UV-254 is reported at 0.009 1/cm, but values as low as 0.001 1/cm are reported in the Data Collection Spreadsheets. The MRL for TOC is reported as 0.5 mg/L, but values as low as 0.25 are reported in Data Collection Spreadsheets. The MRL for TOX is reported as 25 ug/L, but values as low as 13 ug/L are reported in Data Collection Spreadsheets. It is

acceptable to use these measured values below the MRL, but comments should be included that indicate these values are BMRL. Alternatively, the MRL could be revised if it was determined according to acceptable procedures.

Response: Values below the MRL in the Data Collection Spreadsheets are estimates. A comment indicating this has been added to the Data Collection Spreadsheets.

Outlier Data:

No outliers removed.

Cell: A1

Comment: 1019-SAS.xls 2/8/00 15:29

All curve fits reviewed and approved. See below for log of refit datasets.

Cell: C2

Comment: 1019-10-01 - Run 1 (BCAA) 2/8/00 12:59
Original value (CoefA0) = 0 New value = -0.1526
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: D2

Comment: 1019-10-01 - Run 1 (BCAA) 2/8/00 12:59
Original value (CoefAf) = 0 New value = 1.8564
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: E2

Comment: 1019-10-01 - Run 1 (BCAA) 2/8/00 12:59
Original value (CoefB) = 0 New value = 1318.3868
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: F2

Comment: 1019-10-01 - Run 1 (BCAA) 2/8/00 12:59
Original value (CoefD) = 0 New value = 0.0948
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: J2

Comment: 1019-10-01 - Run 1 (BCAA) 2/8/00 13:00
Original value (S) = 0 New value = 0
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: C11

Comment: 1019-10-01 - Run 1 (DCBAA) 2/8/00 13:01
Original value (CoefA0) = 0 New value = -0.1598
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: D11

Comment: 1019-10-01 - Run 1 (DCBAA) 2/8/00 13:01
Original value (CoefAf) = 0 New value = 1.8119
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: E11

Comment: 1019-10-01 - Run 1 (DCBAA) 2/8/00 13:01
Original value (CoefB) = 0 New value = 1096.7585
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: F11

Comment: 1019-10-01 - Run 1 (DCBAA) 2/8/00 13:01
Original value (CoefD) = 0 New value = 0.0922
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: J11

Comment: 1019-10-01 - Run 1 (DCBAA) 2/8/00 13:01
Original value (S) = 0 New value = 0
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: C18

Comment: 1019-10-01 - Run 1 (TCAA) 2/8/00 13:03
Original value (CoefA0) = 0 New value = -0.3397
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: D18

Comment: 1019-10-01 - Run 1 (TCAA) 2/8/00 13:03
Original value (CoefAf) = 0 New value = 4.0039
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: E18

Comment: 1019-10-01 - Run 1 (TCAA) 2/8/00 13:03
Original value (CoefB) = 0 New value = 238.6615
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: F18

Comment: 1019-10-01 - Run 1 (TCAA) 2/8/00 13:03
Original value (CoefD) = 0 New value = 0.063
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: J18

Comment: 1019-10-01 - Run 1 (TCAA) 2/8/00 13:03
Original value (S) = 0 New value = 0
Fewer than 6 points above MRL. Logistic function (type 1) applied.

Cell: C22

Comment: 1019-10-01 - Run 1 (TSUVA) 2/8/00 11:32
Original value (CoefA0) = 0 New value = 1.4708
Fewer than 6 points. Step function applied.

Cell: D22

Comment: 1019-10-01 - Run 1 (TSUVA) 2/8/00 11:32
Original value (CoefAf) = 0 New value = 0
Fewer than 6 points. Step function applied.

Cell: E22

Comment: 1019-10-01 - Run 1 (TSUVA) 2/8/00 11:32
Original value (CoefB) = 0 New value = 0
Fewer than 6 points. Step function applied.

Cell: F22

Comment: 1019-10-01 - Run 1 (TSUVA) 2/8/00 11:32
Original value (CoefD) = 0 New value = 0
Fewer than 6 points. Step function applied.

Cell: J22

Comment: 1019-10-01 - Run 1 (TSUVA) 2/8/00 11:32
Original value (S) = 0 New value = 0
Fewer than 6 points. Step function applied.

Cell: K22

Comment: 1019-10-01 - Run 1 (TSUVA) 2/8/00 11:32
Original value (t0) = 0 New value = 96.2041
Fewer than 6 points. Step function applied.

Cell: C25

Comment: 1019-10-02 - Run 3 (BDCM) 2/8/00 13:11
Original value (CoefA0) = 0.0702 New value = -0.2951
Poor peak curve fit. Data was refit by iterative curve fit procedure.

Cell: D25

Comment: 1019-10-02 - Run 3 (BDCM) 2/8/00 13:11
Original value (CoefAf) = 2.5889 New value = 3.4825
Poor peak curve fit. Data was refit by iterative curve fit procedure.

Cell: E25

Comment: 1019-10-02 - Run 3 (BDCM) 2/8/00 13:11
Original value (CoefB) = 51.2457 New value = 414.6931
Poor peak curve fit. Data was refit by iterative curve fit procedure.

Cell: F25

Comment: 1019-10-02 - Run 3 (BDCM) 2/8/00 13:11
Original value (CoefD) = 0.0858 New value = 0.1229
Poor peak curve fit. Data was refit by iterative curve fit procedure.

Cell: J25

Comment: 1019-10-02 - Run 3 (BDCM) 2/8/00 13:11
Original value (S) = -0.0056 New value = -0.0092
Poor peak curve fit. Data was refit by iterative curve fit procedure.

Cell: C75

Comment: 1019-10-04 - Run 7 (DBCM) 2/8/00 13:18
Original value (CoefA0) = -1.2494 New value = -0.2998
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: D75

Comment: 1019-10-04 - Run 7 (DBCM) 2/8/00 13:18
Original value (CoefAf) = 9.711 New value = 6.1918
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: E75

Comment: 1019-10-04 - Run 7 (DBCM) 2/8/00 13:18
Original value (CoefB) = 8.3198 New value = 29.6494
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: F75

Comment: 1019-10-04 - Run 7 (DBCM) 2/8/00 13:18

Original value (CoefD) = 0.0189 New value = 0.0366
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: J75

Comment: 1019-10-04 - Run 7 (DBCM) 2/8/00 13:18
Original value (S) = 0 New value = 0
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: C90

Comment: 1019-20-01 - Run 2 (BCAA) 2/8/00 13:08
Original value (CoefA0) = -0.1359 New value = -0.4377
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: D90

Comment: 1019-20-01 - Run 2 (BCAA) 2/8/00 13:08
Original value (CoefAf) = 1.6702 New value = 2.1455
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: E90

Comment: 1019-20-01 - Run 2 (BCAA) 2/8/00 13:08
Original value (CoefB) = 935362.81023351 New value = 42.7742
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: F90

Comment: 1019-20-01 - Run 2 (BCAA) 2/8/00 13:08
Original value (CoefD) = 0.098 New value = 0.0265
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: J90

Comment: 1019-20-01 - Run 2 (BCAA) 2/8/00 13:08
Original value (S) = 0 New value = 0
Peak curve fit with S = 0. Refit to type 1 curve fit by iterative curve fit procedure.

Cell: C99

Comment: 1019-20-01 - Run 2 (DCBAA) 2/8/00 11:36
Original value (CoefA0) = 0 New value = 1.3058
Fewer than 6 points above MRL. Step function applied.

Cell: D99

Comment: 1019-20-01 - Run 2 (DCBAA) 2/8/00 11:36
Original value (CoefAf) = 0 New value = 0
Fewer than 6 points above MRL. Step function applied.

Cell: E99

Comment: 1019-20-01 - Run 2 (DCBAA) 2/8/00 11:36
Original value (CoefB) = 0 New value = 0
Fewer than 6 points above MRL. Step function applied.

Cell: F99

Comment: 1019-20-01 - Run 2 (DCBAA) 2/8/00 11:36
Original value (CoefD) = 0 New value = 0

Fewer than 6 points above MRL. Step function applied.

Cell: J99

Comment: 1019-20-01 - Run 2 (DCBAA) 2/8/00 11:36
Original value (S) = 0 New value = 0
Fewer than 6 points above MRL. Step function applied.

Cell: K99

Comment: 1019-20-01 - Run 2 (DCBAA) 2/8/00 11:36
Original value (t0) = 0 New value = 174.915
Fewer than 6 points above MRL. Step function applied.

Cell: C106

Comment: 1019-20-01 - Run 2 (TCAA) 2/8/00 13:07
Original value (CoefA0) = -2.2872 New value = -0.6131
Poor peak curve fit. Data was refit to type 1 curve fit by iterative curve fit procedure.

Cell: D106

Comment: 1019-20-01 - Run 2 (TCAA) 2/8/00 13:07
Original value (CoefAf) = 6.8615 New value = 4.0566
Poor peak curve fit. Data was refit to type 1 curve fit by iterative curve fit procedure.

Cell: E106

Comment: 1019-20-01 - Run 2 (TCAA) 2/8/00 13:07
Original value (CoefB) = 40.4471 New value = 84.9033
Poor peak curve fit. Data was refit to type 1 curve fit by iterative curve fit procedure.

Cell: F106

Comment: 1019-20-01 - Run 2 (TCAA) 2/8/00 13:07
Original value (CoefD) = 0.0208 New value = 0.0242
Poor peak curve fit. Data was refit to type 1 curve fit by iterative curve fit procedure.

Cell: J106

Comment: 1019-20-01 - Run 2 (TCAA) 2/8/00 13:07
Original value (S) = -0.0063 New value = 0
Poor peak curve fit. Data was refit to type 1 curve fit by iterative curve fit procedure.

Cell: C108

Comment: 1019-20-01 - Run 2 (TOC) 2/8/00 13:04
Original value (CoefA0) = 0 New value = 0.0584
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: D108

Comment: 1019-20-01 - Run 2 (TOC) 2/8/00 13:04
Original value (CoefAf) = 1.5825 New value = 1.0069
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: E108

Comment: 1019-20-01 - Run 2 (TOC) 2/8/00 13:04
Original value (CoefB) = 1.6249 New value = 29.7463
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: F108

Comment: 1019-20-01 - Run 2 (TOC) 2/8/00 13:04
Original value (CoefD) = 0 New value = 0.0196
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: J108

Comment: 1019-20-01 - Run 2 (TOC) 2/8/00 13:04
Original value (S) = 0 New value = 0
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: C110

Comment: 1019-20-01 - Run 2 (TSUVA) 2/8/00 13:05
Original value (CoefA0) = -0.4954 New value = -0.0962
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: D110

Comment: 1019-20-01 - Run 2 (TSUVA) 2/8/00 13:05
Original value (CoefAf) = 2.1936 New value = 1.5395
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: E110

Comment: 1019-20-01 - Run 2 (TSUVA) 2/8/00 13:05
Original value (CoefB) = 3.1941 New value = 19.9998
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: F110

Comment: 1019-20-01 - Run 2 (TSUVA) 2/8/00 13:05
Original value (CoefD) = 0.037 New value = 0.1239
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: J110

Comment: 1019-20-01 - Run 2 (TSUVA) 2/8/00 13:05
Original value (S) = 0 New value = 0
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: C111

Comment: 1019-20-01 - Run 2 (UV254) 2/8/00 13:06
Original value (CoefA0) = -0.0075 New value = 0.0017
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: D111

Comment: 1019-20-01 - Run 2 (UV254) 2/8/00 13:06
Original value (CoefAf) = 0.0226 New value = 0.0149
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: E111

Comment: 1019-20-01 - Run 2 (UV254) 2/8/00 13:06
Original value (CoefB) = 0.4364 New value = 20
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: F111

Comment: 1019-20-01 - Run 2 (UV254) 2/8/00 13:06
Original value (CoefD) = 0 New value = 0.0147
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: J111

Comment: 1019-20-01 - Run 2 (UV254) 2/8/00 13:06
Original value (S) = 0 New value = 0
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: C132

Comment: 1019-20-02 - Run 4 (TSUVA) 2/8/00 13:15
Original value (CoefA0) = -0.4633 New value = -0.0895
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: D132

Comment: 1019-20-02 - Run 4 (TSUVA) 2/8/00 13:15
Original value (CoefAf) = 1.9917 New value = 1.5903
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: E132

Comment: 1019-20-02 - Run 4 (TSUVA) 2/8/00 13:15
Original value (CoefB) = 3.0725 New value = 15.841
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: F132

Comment: 1019-20-02 - Run 4 (TSUVA) 2/8/00 13:15
Original value (CoefD) = 0.0352 New value = 0.0217
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: J132

Comment: 1019-20-02 - Run 4 (TSUVA) 2/8/00 13:15
Original value (S) = 0 New value = 0
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: C133

Comment: 1019-20-02 - Run 4 (UV254) 2/8/00 13:16
Original value (CoefA0) = -0.01 New value = 0.0013
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: D133

Comment: 1019-20-02 - Run 4 (UV254) 2/8/00 13:16
Original value (CoefAf) = 0.0299 New value = 0.0229
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: E133

Comment: 1019-20-02 - Run 4 (UV254) 2/8/00 13:16
Original value (CoefB) = 0.481 New value = 20
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: F133

Comment: 1019-20-02 - Run 4 (UV254) 2/8/00 13:16

Original value (CoefD) = 0 New value = 0.012
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: J133

Comment: 1019-20-02 - Run 4 (UV254) 2/8/00 13:16
Original value (S) = 0 New value = 0
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: C146

Comment: 1019-14-03 - Run 6 (HAA9) 2/8/00 13:17
Original value (CoefA0) = -2.1948 New value = -1.823
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: D146

Comment: 1019-14-03 - Run 6 (HAA9) 2/8/00 13:17
Original value (CoefAf) = 15.1419 New value = 19.4511
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: E146

Comment: 1019-14-03 - Run 6 (HAA9) 2/8/00 13:17
Original value (CoefB) = 1.9658 New value = 31.8253
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: F146

Comment: 1019-14-03 - Run 6 (HAA9) 2/8/00 13:17
Original value (CoefD) = 0.0018 New value = 0.0229
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: J146

Comment: 1019-14-03 - Run 6 (HAA9) 2/8/00 13:17
Original value (S) = 0 New value = 0
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: C157

Comment: 1019-20-04 - Run 8 (BDCM) 2/8/00 13:50
Original value (CoefA0) = -0.0002 New value = -0.2444
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: D157

Comment: 1019-20-04 - Run 8 (BDCM) 2/8/00 13:50
Original value (CoefAf) = 1.6506 New value = 2.2994
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: E157

Comment: 1019-20-04 - Run 8 (BDCM) 2/8/00 13:50
Original value (CoefB) = 26417.8497 New value = 144.0506
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: F157

Comment: 1019-20-04 - Run 8 (BDCM) 2/8/00 13:50
Original value (CoefD) = 0.2162 New value = 0.0299

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

Cell: J157

Comment: 1019-20-04 - Run 8 (BDCM) 2/8/00 13:50

Original value (S) = 0 New value = 0

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

Cell: C161

Comment: 1019-20-04 - Run 8 (CI2-D) 2/8/00 13:47

Original value (CoefA0) = 0.455 New value = 0.2

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

Cell: D161

Comment: 1019-20-04 - Run 8 (CI2-D) 2/8/00 13:47

Original value (CoefAf) = 0.3354 New value = 0.65

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

Cell: E161

Comment: 1019-20-04 - Run 8 (CI2-D) 2/8/00 13:47

Original value (CoefB) = 10 New value = 60

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

Cell: F161

Comment: 1019-20-04 - Run 8 (CI2-D) 2/8/00 13:47

Original value (CoefD) = 301.0876 New value = 0.029

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

Cell: J161

Comment: 1019-20-04 - Run 8 (CI2-D) 2/8/00 13:47

Original value (S) = 0 New value = 0

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

Cell: C165

Comment: 1019-20-04 - Run 8 (DCBAA) 2/8/00 13:33

Original value (CoefA0) = -0.0002 New value = -0.096

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

Cell: D165

Comment: 1019-20-04 - Run 8 (DCBAA) 2/8/00 13:33

Original value (CoefAf) = 1.3543 New value = 1.9

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

Cell: E165

Comment: 1019-20-04 - Run 8 (DCBAA) 2/8/00 13:33

Original value (CoefB) = 17933.6008 New value = 39.8

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

Cell: F165

Comment: 1019-20-04 - Run 8 (DCBAA) 2/8/00 13:33

Original value (CoefD) = 0.3793 New value = 0.0202

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

Cell: J165

Comment: 1019-20-04 - Run 8 (DCBAA) 2/8/00 13:33
Original value (S) = 0 New value = 0
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: C176

Comment: 1019-20-04 - Run 8 (TSUVA) 2/8/00 13:21
Original value (CoefA0) = 0 New value = -0.0714
Fewer than 6 points. Logistic function (type 1) applied.

Cell: D176

Comment: 1019-20-04 - Run 8 (TSUVA) 2/8/00 13:21
Original value (CoefAf) = 0 New value = 1.35
Fewer than 6 points. Logistic function (type 1) applied.

Cell: E176

Comment: 1019-20-04 - Run 8 (TSUVA) 2/8/00 13:21
Original value (CoefB) = 0 New value = 12
Fewer than 6 points. Logistic function (type 1) applied.

Cell: F176

Comment: 1019-20-04 - Run 8 (TSUVA) 2/8/00 13:21
Original value (CoefD) = 0 New value = 0.0148
Fewer than 6 points. Logistic function (type 1) applied.

Cell: J176

Comment: 1019-20-04 - Run 8 (TSUVA) 2/8/00 13:21
Original value (S) = 0 New value = 0
Fewer than 6 points. Logistic function (type 1) applied.

Cell: C177

Comment: 1019-20-04 - Run 8 (UV254) 2/8/00 13:45
Original value (CoefA0) = 0.004 New value = 0.0015
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: D177

Comment: 1019-20-04 - Run 8 (UV254) 2/8/00 13:45
Original value (CoefAf) = 0.0043 New value = 0.03
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: E177

Comment: 1019-20-04 - Run 8 (UV254) 2/8/00 13:45
Original value (CoefB) = 10 New value = 25
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: F177

Comment: 1019-20-04 - Run 8 (UV254) 2/8/00 13:45
Original value (CoefD) = 0.15 New value = 0.008
Poor type -1 or 1 curve fit. Data was refit by iterative curve fit procedure.

Cell: J177

Comment: 1019-20-04 - Run 8 (UV254) 2/8/00 13:45

Original value (S) = 0 New value = 0

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

ICR Information

ID / ICR#: NC0241010 / 447
 ICR Contact: Doug Robbins, Laboratory Supervisor
 Phone No.: (336) 375-2227
 Period: 4/22/98 - 5/21/98 (29 B-S days)

Design Information

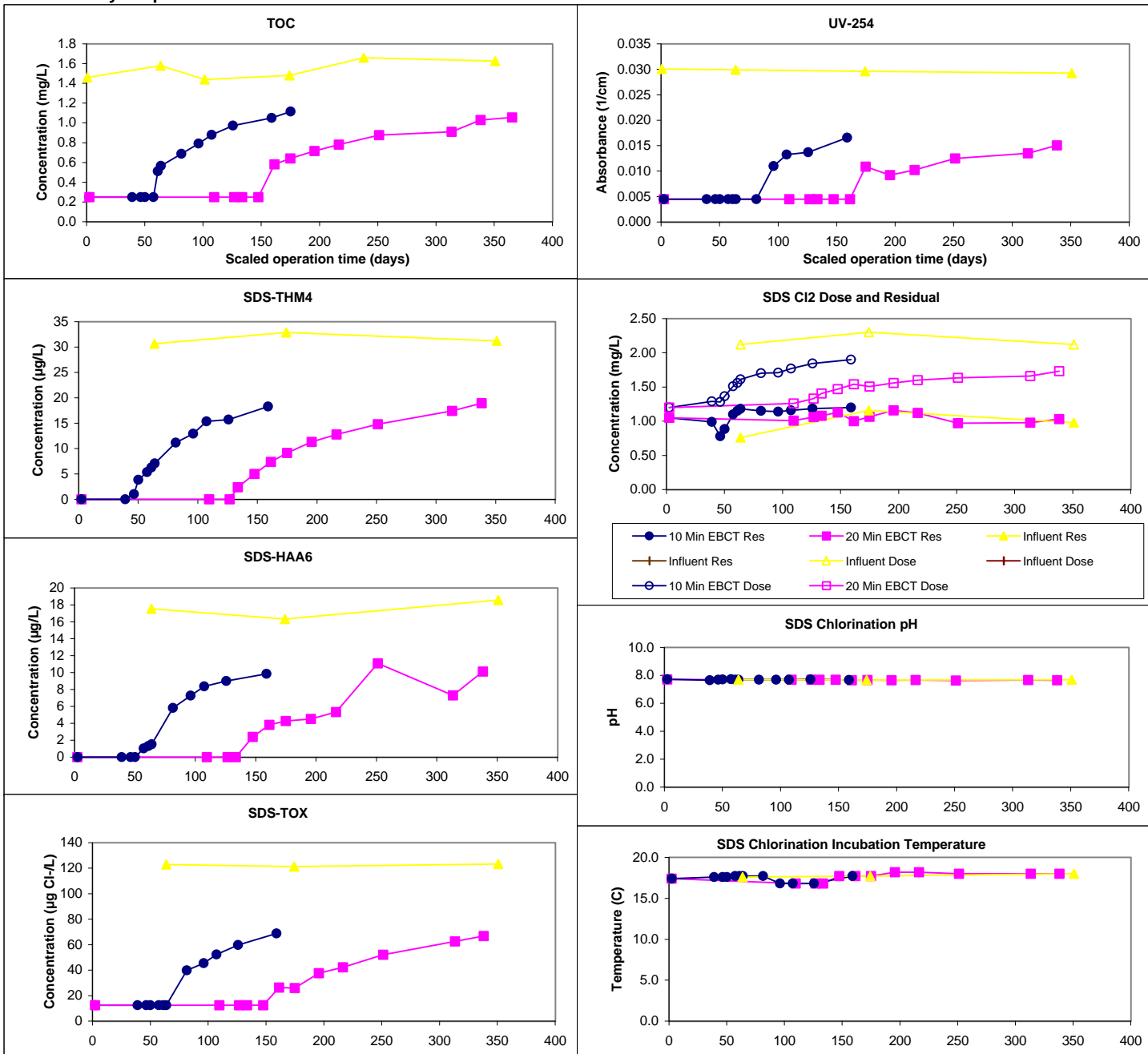
Design TOC: 2.1 mg/L
 Col Diameter: 8.0 mm
 Min Reynolds#: 0.46
 Full-Scale Temp: 17.0 C

Full-Scale GAC Size: 12x40 Bituminous
 Bench-Scale GAC Size: 140x230
 Scaling Factor: 12.57
 Meas Dry Bed Density: 0.51 g/cm3

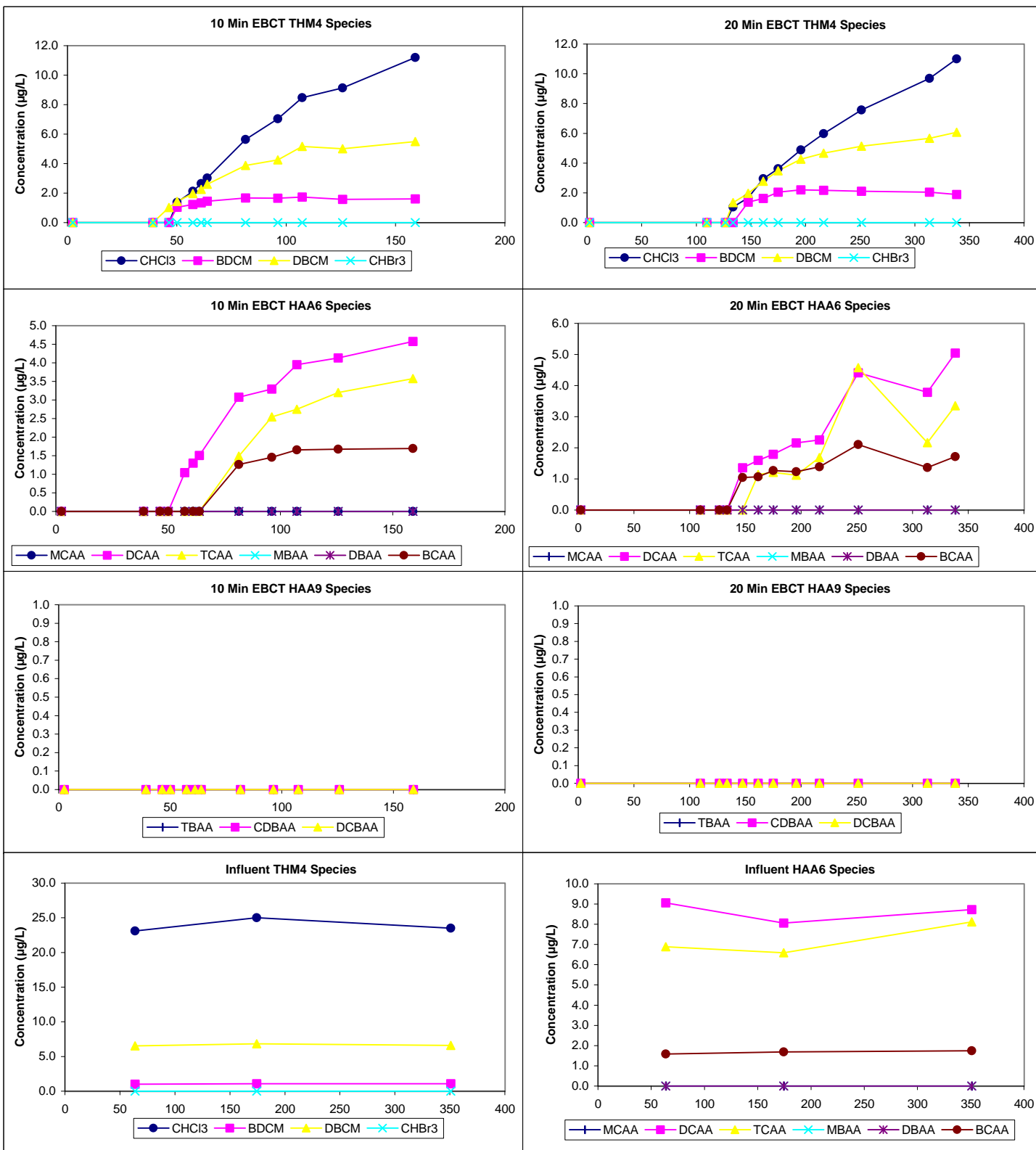
Water Quality Summary

Influent	Influent				Influent				Res (0)	Mean	SD	Count	Min/Max
	Mean	SD/RD	Count	Min/Max	Mean	SD/RD	Count	Min/Max					
TOC	1.5	0.1	6	1.4 - 1.7									
pH	7.7	0.0	7	7.7 - 7.8									
UV254	0.030	0.000	4	0.029 - 0.030									
SUVA	1.94	0.11	4	1.80 - 2.06									
Bromide	10	0	2	10 - 10									
SDS-TOX	123	1	3	121 - 123									
SDS-THM4	32	1	3	31 - 33									
SDS-HAA6	17	1	3	16 - 19									
Comments:													
Chart Legend:													
10 Min EBCT													
20 Min EBCT													
Influent													
Influent													

Water Quality Graphs



Water Quality Graphs (Continued)



ICR Information

ID / ICR#: NC0241010 / 447
 ICR Contact: Doug Robbins, Laboratory Supervisor
 Phone No.: (336) 375-2227
 Period: 6/20/98 - 7/20/98 (30 B-S days)

Design Information

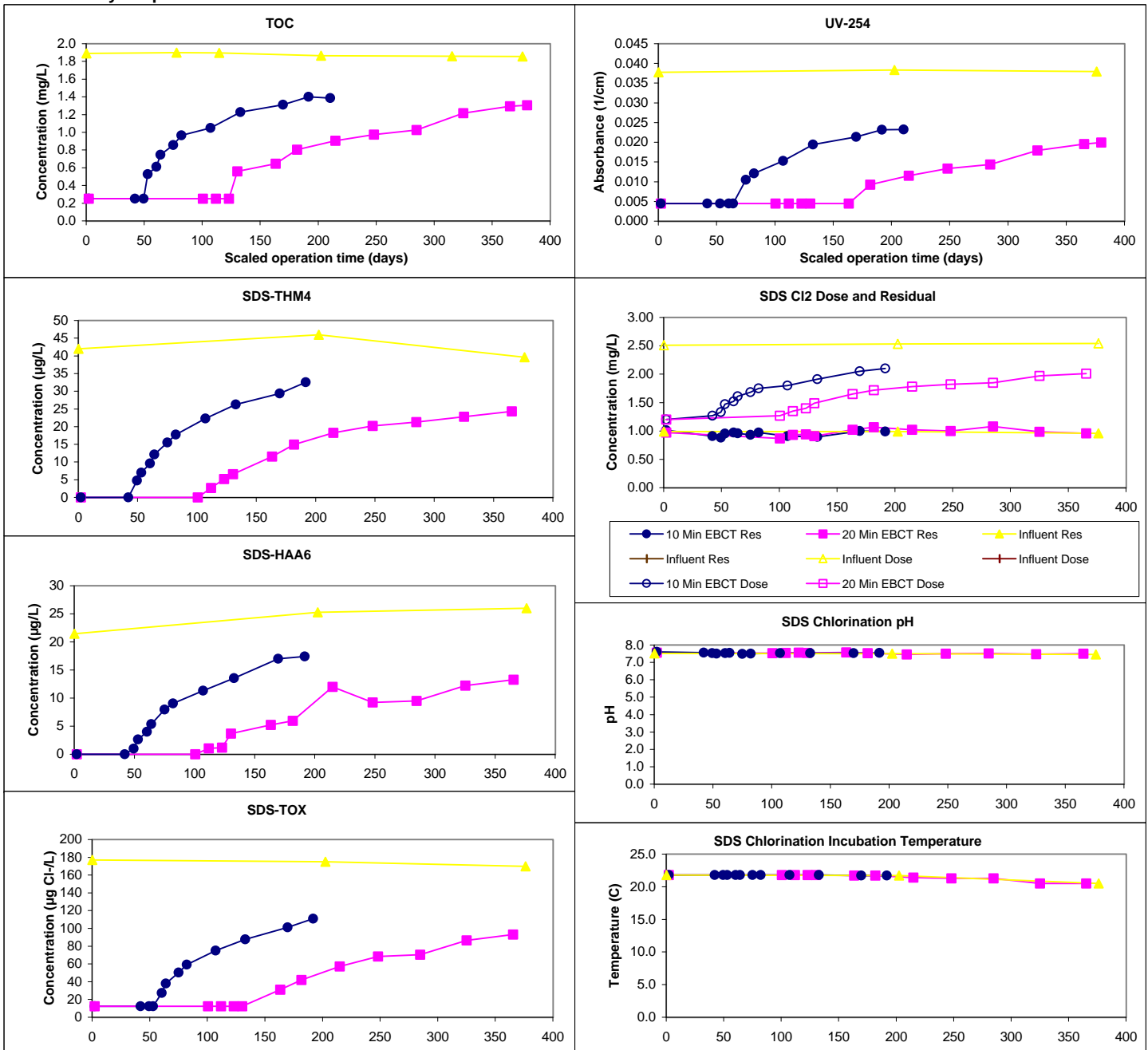
Design TOC: 1.9 mg/L
 Col Diameter: 8.0 mm
 Min Reynolds#: 0.50
 Full-Scale Temp: 22.0 C

Full-Scale GAC Size: 12x40 Bituminous
 Bench-Scale GAC Size: 140x230
 Scaling Factor: 12.57
 Meas Dry Bed Density: 0.48 g/cm3

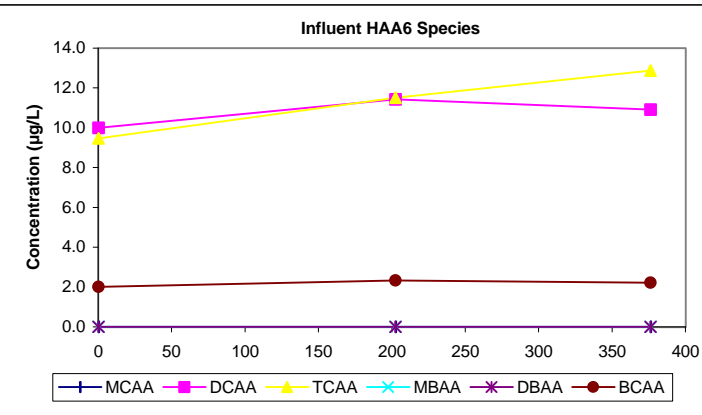
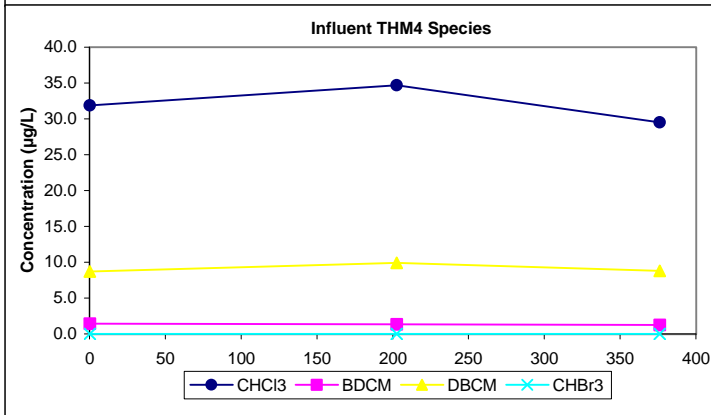
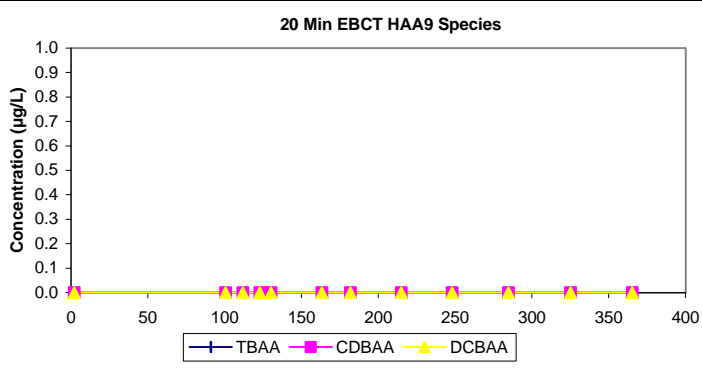
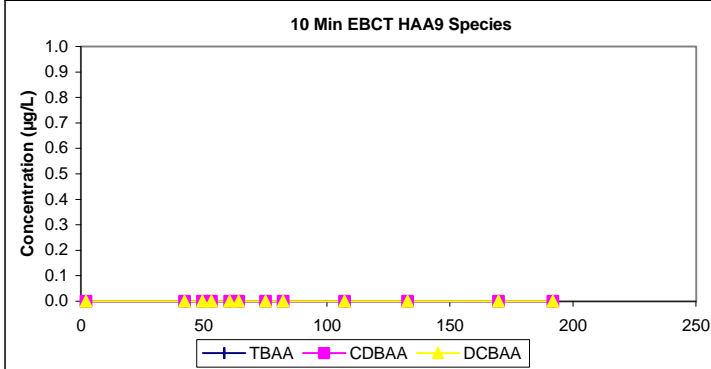
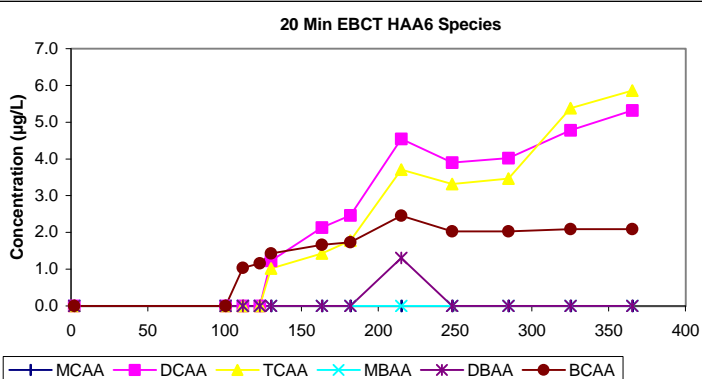
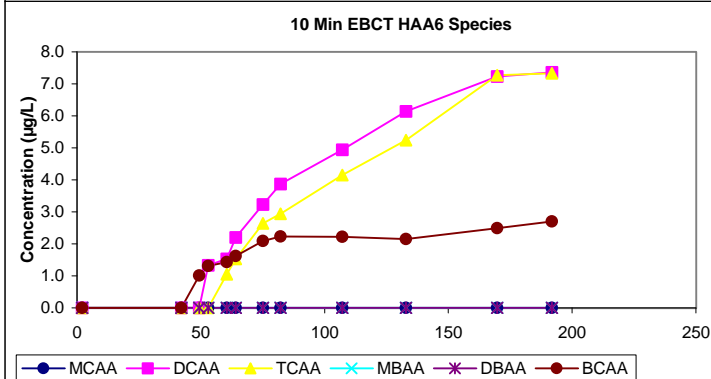
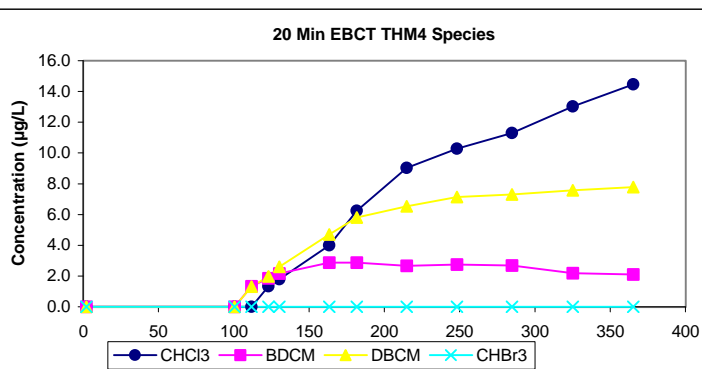
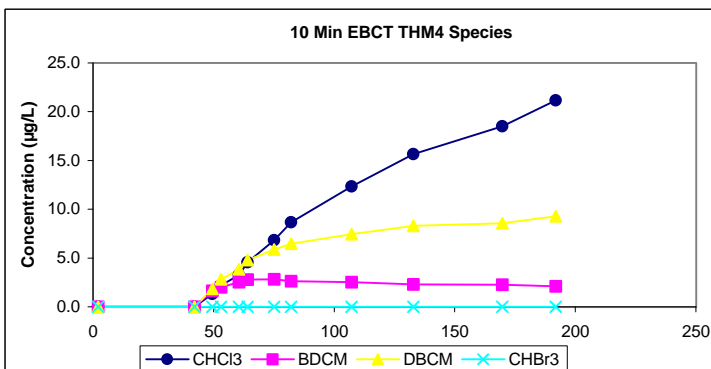
Water Quality Summary

Influent	Influent				Influent				Res (0)	Mean	SD	Count	Min/Max	
	Mean	SD/RD	Count	Min/Max	Mean	SD/RD	Count	Min/Max						
TOC	1.9	0.0	6	1.9 - 1.9								27	0.87 - 1.08	
pH	7.6	0.0	3	7.6 - 7.6							21.6	0.4	27	20.5 - 21.8
UV254	0.038	0.000	3	0.038 - 0.038							7.5	0.0	27	7.5 - 7.6
SUVA	2.03	0.03	3	2.00 - 2.05							24.2	0.2	27	23.9 - 24.5
Bromide	22	1	2	21 - 22		Comments:								
SDS-TOX	174	4	3	170 - 177		<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	43	3	3	40 - 46										
SDS-HAA6	24	2	3	21 - 26										
Effluent	10 Min EBCT (17 B-S days)				20 Min EBCT (30 B-S days)				Chart Legend:					
Effluent pH	7.9	0.2	13	7.7 - 8.6	8.0	0.3	13	7.6 - 8.4						
Effluent Temp	24.2	1.3	13	22.4 - 25.8	23.9	0.9	13	22.6 - 25.6						

Water Quality Graphs



Water Quality Graphs (Continued)



ICR Information

ID / ICR#: NC0241010 / 447
 ICR Contact: Doug Robbins, Laboratory Supervisor
 Phone No.: (336) 375-2227
 Period: 10/8/98 - 10/29/98 (20 B-S days)

Design Information

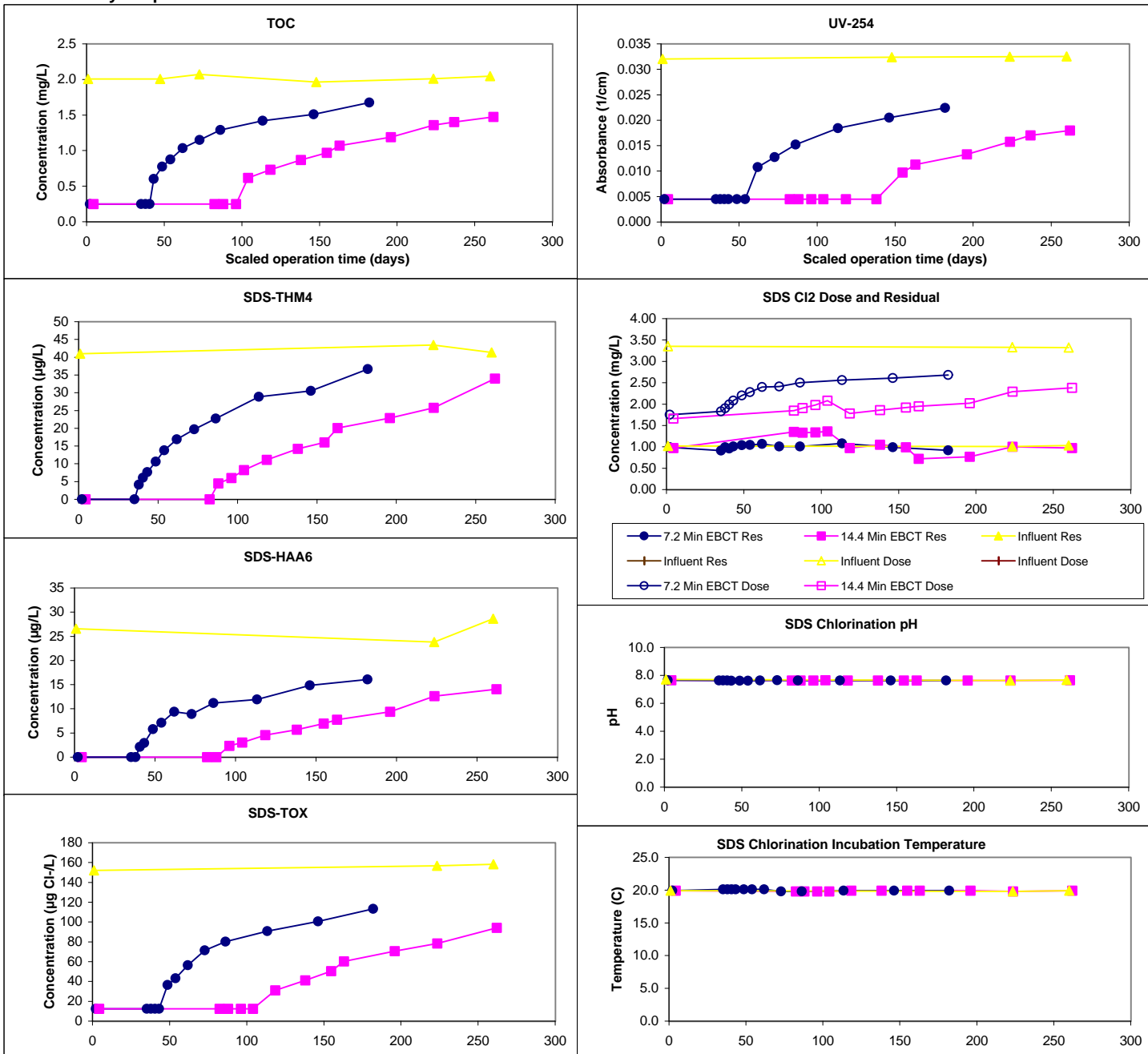
Design TOC: 1.8 mg/L
 Col Diameter: 9.0 mm
 Min Reynolds#: 0.50
 Full-Scale Temp: 20.0 C

Full-Scale GAC Size: 12x40 Bituminous
 Bench-Scale GAC Size: 140x230
 Scaling Factor: 12.57
 Meas Dry Bed Density: 0.44 g/cm3

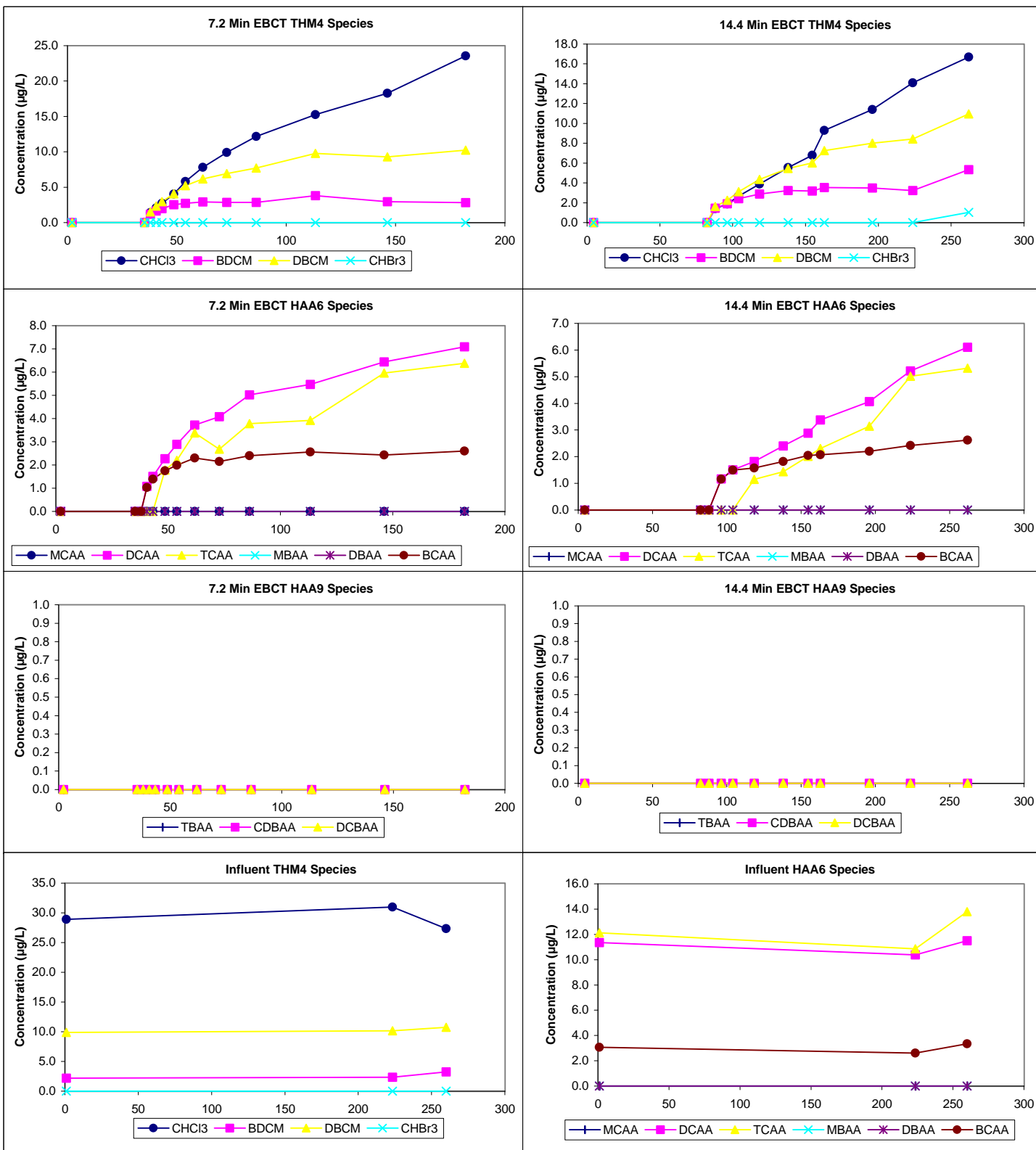
Water Quality Summary

Influent	Influent				Influent				Res (0)	Mean	SD	Count	Min/Max
	Mean	SD/RD	Count	Min/Max	Mean	SD/RD	Count	Min/Max					
TOC	2.0	0.0	6	2.0 - 2.1									
pH	7.7	0.1	6	7.6 - 7.7					Temp	19.9	0.1	28	19.8 - 20.1
UV254	0.032	0.000	4	0.032 - 0.033					pH	7.6	0.0	28	7.6 - 7.7
SUVA	1.61	0.03	4	1.59 - 1.65					Time	24.0	0.2	28	23.7 - 24.4
Bromide	28	0	2	28 - 28					Comments:				
SDS-TOX	156	3	3	152 - 158									
SDS-THM4	42	1	3	41 - 43									
SDS-HAA6	26	2	3	24 - 29									
Effluent	7.2 Min EBCT (15 B-S days)				14.4 Min EBCT (20 B-S days)				Chart Legend:	<div><div></div>7.2 Min EBCT</div> <div><div></div>14.4 Min EBCT</div> <div><div></div>Influent</div> <div><div></div>Influent</div>			
Effluent pH	7.7	0.1	13	7.6 - 8.0	7.8	0.1	11	7.7 - 8.0					
Effluent Temp	21.1	0.9	13	18.8 - 22.0	20.9	0.8	12	19.1 - 22.3					

Water Quality Graphs



Water Quality Graphs (Continued)



ICR Information

ID / ICR#: NC0241010 / 447
 ICR Contact: Doug Robbins, Laboratory Supervisor
 Phone No.: (336) 375-2227
 Period: 1/10/99 - 2/9/99 (29 B-S days)

Design Information

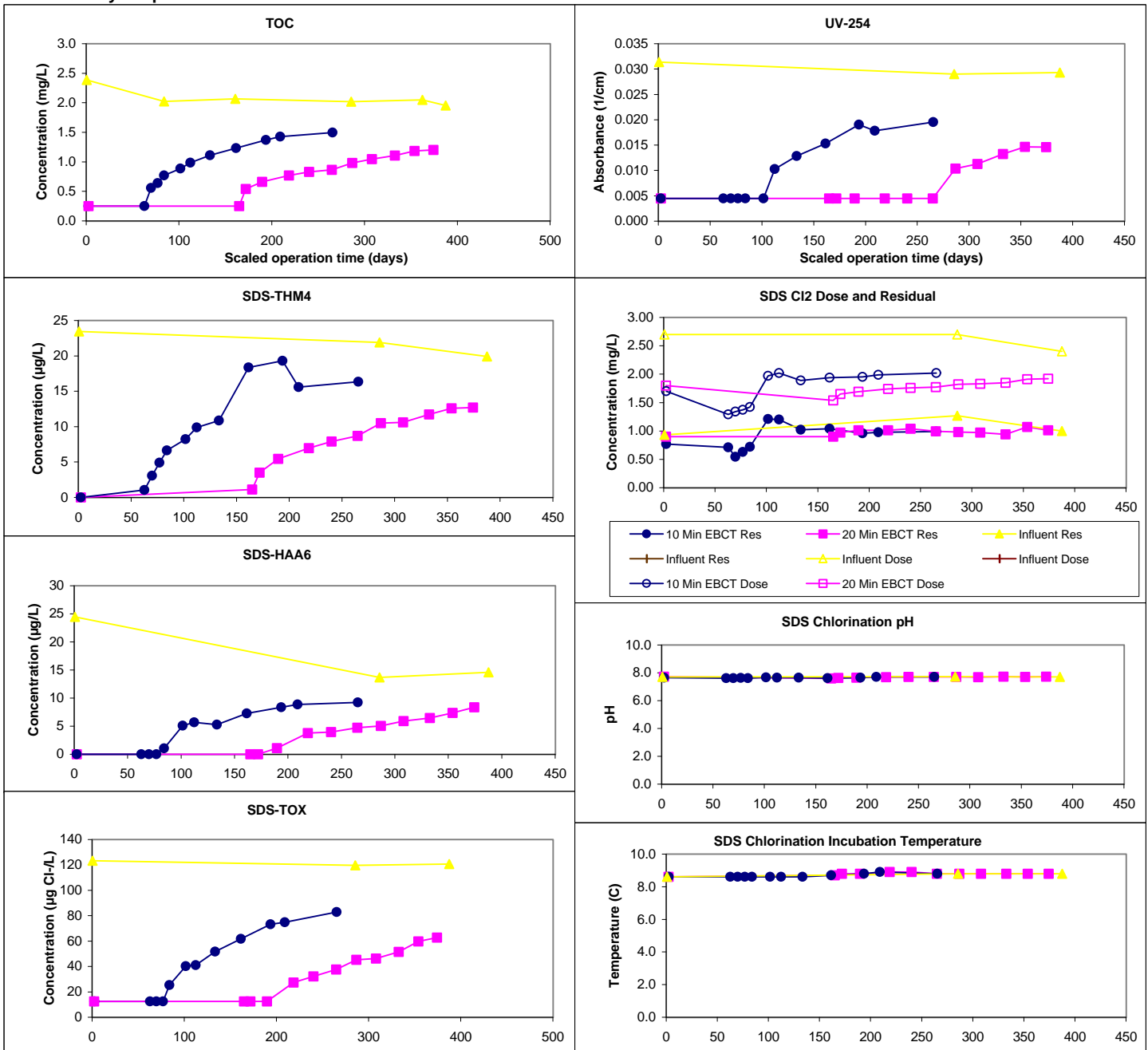
Design TOC: 2.1 mg/L
 Col Diameter: 8.0 mm
 Min Reynolds#: 0.36
 Full-Scale Temp: 8.0 C

Full-Scale GAC Size: 12x40 Bituminous
 Bench-Scale GAC Size: 140x230
 Scaling Factor: 12.57
 Meas Dry Bed Density: 0.47 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	2.1	0.2	6	2.0 - 2.4									
pH	7.8	0.1	6	7.8 - 7.9									
UV254	0.030	0.001	3	0.029 - 0.031									
SUVA	1.42	0.09	3	1.31 - 1.50									
Bromide	21	0	1	21 - 21									
SDS-TOX	121	2	3	120 - 123									
SDS-THM4	22	2	3	20 - 23									
SDS-HAA6	18	6	3	14 - 24									
Effluent	10 Min EBCT (21 B-S days)				20 Min EBCT (30 B-S days)				Chart Legend:				
Effluent pH	7.7	0.2	12	7.5 - 8.2	7.8	0.3	12	7.6 - 8.9					
Effluent Temp	21.9	0.3	12	21.4 - 22.4	22.6	0.3	12	22.4 - 23.3					

Water Quality Graphs



Water Quality Graphs (Continued)

