

**Table 1  
Comparison of 2005 Big Dry Creek Data to Stream Standards**

Parameter		Stream Standard	Unit	# of Instream Samples <sup>1</sup>	# of Exceedances <sup>3</sup>	Does 85th (or 50th) Percentile Value for 2005 Exceed Standard? <sup>4</sup>	% Occurrence of Exceedances	# Days Standard Exceeded	Comment
<b>Physical and Biological</b>									
DO		5	mg/L	95	0	no	0%	0	
pH		6.5-9.0	SU	95	0	no	0%	0	
Fecal Coliform	(Basic Standard, Rec. Class 1b)	325	#/100mL	95	50	no	53%	9	New stream classification assigned in 2004; however, temporary modification in place.
Fecal Coliform	(Temporary Mod)	380		95	48	no	51%	9	This is currently applicable standard through 2/28/2010.
E. Coli	(Basic Standard, Rec. Class 1b)	205	#/100mL	95	64	no	67%	9	New stream classification assigned in 2004; however, temporary modification in place.
E. Coli	(Temporary Mod)	401		95	43	no	45%	9	This is currently applicable standard through 2/28/2010.
Ammonia	acute	TVS	mg/L	95	0	no	0%	0	
Ammonia	chronic	0.1	mg/L	95	0	no	0%	0	
Chlorine	acute	0.019	mg/L	-	-	-	-	-	
Chlorine	chronic	0.011	mg/L	-	-	-	-	-	
Cyanide		0.005	mg/L	32	0	no	0%	0	All values below detection limits
Sulfide		0.002	mg/L	-	-	-	-	-	
Boron		0.75	mg/L	95	0	no	0%	0	
Nitrite		4.5	mg/L	95	0	no	0%	0	
<b>Metals (Dissolved unless otherwise noted)<sup>2</sup></b>									
Arsenic (Trec)	Acute	100	µg/L	32	0	no	0%	0	
Beryllium	chronic	100	µg/L	-	-	-	-	-	
Cadmium	Acute	12	µg/L	32	0	no	0%	0	All values below detection limits
Cadmium	Chronic	4.5	µg/L	32	0	no	0%	0	All values below detection limits
Chromium III	Acute	1230	µg/L	32	0	no	0%	0	All values below detection limits
Chromium III	Chronic	160	µg/L	32	0	no	0%	0	All values below detection limits
Chromium VI	Acute	16	µg/L	32	0	no	0%	0	All values below detection limits
Chromium VI	Chronic	11	µg/L	32	0	no	0%	0	All values below detection limits
Copper	Acute	33	µg/L	32	0	no	0%	0	
Copper	Chronic	20	µg/L	32	0	no	0%	0	
Iron (Trec)	Chronic	1000	µg/L	95	24	no	25%	5	Elevated concentrations associated with runoff events.
Lead	Acute	177	µg/L	32	0	no	0%	0	All values below detection limits
Lead	Chronic	6.9	µg/L	32	0	no	0%	0	All values below detection limits
Mercury (tot)	Acute	0.01	µg/L	32	0	no	0%	0	All values below detection limits
Manganese	Acute	4083	µg/L	32	0	no	0%	0	
Manganese	Chronic	2256	µg/L	32	0	no	0%	0	
Nickel	Acute	1037	µg/L	32	0	no	0%	0	
Nickel	Chronic	115	µg/L	32	0	no	0%	0	
Selenium	Acute	18	µg/L	95	2	yes	2%	2	@ bdc1.5 in Dec. and Feb.
Selenium	Chronic	4.6	µg/L	95	67	yes	71%	12	
Selenium	Chronic (Temp. Mod.)	11.0	µg/L	95	6	no	6%	5	This is currently applicable standard through 2/28/2010.
Silver	Acute	10	µg/L	32	0	no	0%	0	All values below detection limits
Silver	Chronic	1.6	µg/L	32	0	no	0%	0	All values below detection limits
Zinc	Acute	260	µg/L	32	0	no	0%	0	
Zinc	Chronic	262	µg/L	32	0	no	0%	0	

<sup>1</sup>Based on data collected at all in-stream sampling locations along Segment 1 of Big Dry Creek.

<sup>2</sup>Hardness value of 256 mg/L used to calculate table value standards based on the hardness value used by CDPHE in calculating effluent limits for the cities of Broomfield and Westminster. A hardness value of 337 mg/L was used by CDPHE for the city of Northglenn. Actual mean hardness for the stream during 2005 was 341 mg/L.

<sup>3</sup>Includes multiple exceedances that occurred on the same day at different stations for some parameters.

<sup>4</sup>The 85th percentile value is used by the CWQCD to assess whether streams attain most water quality standards. The 50th percentile value is used for metals with standards in the total form. Geometric means are used for e. coli/fecal coliform. For regulatory purposes, the last five years of data would be included in calculating the 85th and 50th percentile values.

Table 2. Summary Statistics for Big Dry Creek 2005 Data

Constituent	Units	Mean	Max	Min	St. Dev	N	50th %	15th %	85th %	Comment
Alkalinity, Total	mg/L	158.6	342.0	62.0	60.8	95	144.0	104.2	207.8	
Arsenic, dissolved (ICP)	mg/L	0.000	0.000	0.000	0.000	32	0.000	0.000	0.000	No values reported above detection limits.
Arsenic, total rec (GFAA)	µg/L	0.286	0.867	0.000	0.311	32	0.205	0.000	0.586	
Boron, Total (mg/l)	mg/L	0.320	0.570	0.000	0.102	95	0.320	0.210	0.428	
Cadmium, dissolved (ICP)	mg/L	0.000	0.000	0.000	0.000	32	0.000	0.000	0.000	No values reported above detection limits.
Calcium, (calc)	mg/L	95.3	192.4	20.8	35.6	95	92.4	62.1	130.9	
Carbon, Total Organic	mg/L	7.4	15.1	2.1	2.4	94	7.3	5.1	9.8	
Chloride	mg/L	110.9	386.2	22.0	70.7	95	99.2	54.2	148.5	
Chlorophyll-a	ug/L	7.3	42.4	0.0	6.8	95	5.5	2.9	12.4	
Chlorophyll-a, corrected	ug/L	5.2	32.8	0.0	5.2	95	3.6	1.6	9.3	
Chromium, dissolved (ICP)	mg/L	0.000	0.000	0.000	0.000	32	0.000	0.000	0.000	No values reported above detection limits.
Coliform, MF, Fecal (C/100mls)	cfu/100ml	232	3020	1	661	95	358	40	1117	Value in the Mean column is the geometric mean.
Conductivity	µS/cm-1	1229	2889	341	534	95	1196	733	1468	
Copper, dissolved (ICP)	mg/L	0.001	0.006	0.000	0.002	32	0.000	0.000	0.003	
Cyanide, Total	mg/L	0.000	0.000	0.000	0.000	32	0.000	0.000	0.000	No values reported above detection limits.
Demand, Bio_ Oxygen (mg/l)	mg/L	2.6	17.0	0.0	2.9	95	2.3	0.0	5.0	
E_ coli	#/100 mL	195	2419	1	664	95	326	19	1195	Value in the Mean column is the geometric mean.
Flow, Stream	cfs	13.6	70.0	0.0	16.4	60	9.4	0.0	26.1	
Fluoride	mg/L	1.431	1.860	0.917	0.296	8	1.460	1.152	1.629	
Hardness, Calcium (titra)	mg/L	239	481	90	88	95	231	155	327	
Hardness, Total (calc)	mg/L	341	717	92	134	95	329	214	450	
Iron, dissolved (FLAA)	mg/L	0.026	0.108	0.000	0.016	95	0.020	0.014	0.040	
Iron, total rec (FLAA)	mg/L	1.296	12.789	0.084	2.176	95	0.543	0.257	1.956	
Lead, dissolved (ICP)	mg/L	0.000	0.000	0.000	0.000	32	0.000	0.000	0.000	No values reported above detection limits.
Magnesium, (FLAA)	mg/L	25.09	61.80	6.70	11.35	95	24.56	14.20	31.66	
Manganese, dissolved (ICP)	mg/L	0.095	0.442	0.002	0.117	32	0.058	0.005	0.214	
Mercury, total-VW	mg/L	0.000	0.000	0.000	0.000	32	0.000	0.000	0.000	No values reported above detection limits.
Molybdenum, dissolved (ICP)	mg/L	0.003	0.020	0.000	0.005	32	0.000	0.000	0.009	
Nickel, dissolved (ICP)	mg/L	0.005	0.016	0.000	0.004	32	0.004	0.000	0.009	
Nitrite-FIA	mg/L	0.075	0.453	0.000	0.099	95	0.037	0.008	0.146	
Nitrogen, Ammonia (mg/l)	mg/L	0.176	1.760	0.000	0.327	95	0.060	0.000	0.328	
Nitrogen, NO3+NO2 (mg/l)	mg/L	5.326	14.700	0.090	4.453	95	4.050	0.583	10.690	
Oxygen, Dissolved	mg/L	9.98	16.26	7.05	1.81	95	9.47	8.39	11.68	
pH	SU	7.6	8.8	6.9	0.3	95	7.5	7.2	7.8	
Phosphorous, TPO4 (Hach)	mg/L	1.088	3.500	0.060	0.967	95	0.910	0.110	2.087	
Phosphorus, ortho	mg/L	0.829	4.168	0.000	0.906	95	0.526	0.005	1.766	
Potassium, (FLAA)	mg/L	6.1	11.4	2.2	2.6	95	5.5	3.5	9.6	
Selenium, dissolved (ICP)	mg/L	0.006	0.020	0.000	0.004	32	0.005	0.002	0.009	These data were not used in the data analysis. They provide analysis of a subset of the samples analyzed using ICP-MS below.
Selenium, dissolved (ICP-MS)	mg/L	0.006	0.020	0.000	0.003	95	0.006	0.003	0.008	
Silver, dissolved (ICP)	mg/L	0.000	0.000	0.000	0.000	32	0.000	0.000	0.000	No values reported above detection limits.
Sodium, (FLAA)	mg/L	147.7	375.1	19.9	79.4	95	148.0	77.0	179.4	
Solids, total dissolved	mg/L	801.8	1841.0	177.0	363.7	95	799.0	448.1	1020.1	
Solids, Total Suspended (mg/l)	mg/L	50.4	491.0	2.4	82.8	95	20.2	8.7	72.8	
Sulfate	mg/L	288.1	747.6	57.6	142.5	95	275.0	148.5	389.3	
Temperature	°C	11.4	25.5	-0.1	6.3	95	11.7	4.9	18.0	
Turbidity	NTU	27.75	243.00	1.87	36.18	95	13.50	6.38	48.38	
Unionized Ammonia Calc.	mg/L	0.002	0.018	0.000	0.003	95	0.000	0.000	0.003	
Zinc, dissolved (ICP)	mg/L	0.034	0.070	0.006	0.017	32	0.035	0.017	0.053	

**Table 3. 2005 Big Dry Creek Samples Exceeding Stream Standards**

Trip Start Date	Activity Category	Station ID	bdcCharacteristic	bdcResult Value
21-Apr-05		bdc0.5	E. coli	1986
21-Apr-05		bdc1.0	E. coli	1120
21-Apr-05		bdc1.5	E. coli	1120
21-Apr-05		bdc2.0	E. coli	816
21-Apr-05		bdc3.0	E. coli	687
21-Apr-05		bdc4.0	E. coli	1414
21-Apr-05		bdc5.0	E. coli	1120
21-Apr-05		bdc6.0	E. coli	2419
12-May-05		bdc0.5	E. coli	1203
12-May-05		bdc1.0	E. coli	548
12-May-05		bdc1.5	E. coli	921
12-May-05		bdc2.0	E. coli	980
12-May-05		bdc3.0	E. coli	727
12-May-05		bdc4.0	E. coli	770
12-May-05		bdc5.0	E. coli	1203
12-May-05		bdc6.0	E. coli	2419
09-Jun-05		bdc1.0	E. coli	770
09-Jun-05		bdc1.5	E. coli	517
09-Jun-05		bdc2.0	E. coli	488
09-Jun-05	Duplicate	bdc2.0	E. coli	461
09-Jun-05		bdc3.0	E. coli	240
09-Jun-05		bdc4.0	E. coli	488
09-Jun-05		bdc5.0	E. coli	326
09-Jun-05		bdc6.0	E. coli	548
14-Jul-05		bdc0.5	E. coli	488
14-Jul-05		bdc1.0	E. coli	613
14-Jul-05		bdc1.5	E. coli	1553
14-Jul-05		bdc11.0	E. coli	461
14-Jul-05		bdc2.0	E. coli	1986
14-Jul-05		bdc3.0	E. coli	579
14-Jul-05		bdc4.0	E. coli	248
14-Jul-05		bdc5.0	E. coli	365
14-Jul-05		bdc6.0	E. coli	866
18-Aug-05		bdc0.5	E. coli	365
18-Aug-05		bdc1.0	E. coli	613
18-Aug-05		bdc1.5	E. coli	2419
18-Aug-05		bdc11.0	E. coli	206
18-Aug-05		bdc2.0	E. coli	1553
18-Aug-05		bdc3.0	E. coli	517
18-Aug-05		bdc5.0	E. coli	225
18-Aug-05		bdc6.0	E. coli	435
15-Sep-05		bdc0.5	E. coli	281
15-Sep-05		bdc1.0	E. coli	365
15-Sep-05		bdc1.5	E. coli	1986
15-Sep-05		bdc11.0	E. coli	365
15-Sep-05		bdc2.0	E. coli	1300
15-Sep-05		bdc3.0	E. coli	727
15-Sep-05		bdc4.0	E. coli	770
15-Sep-05		bdc5.0	E. coli	1733
15-Sep-05	Duplicate	bdc5.0	E. coli	1120
15-Sep-05		bdc6.0	E. coli	2419
18-Oct-05		bdc1.0	E. coli	517
18-Oct-05		bdc1.5	E. coli	326
18-Oct-05		bdc2.0	E. coli	225
18-Oct-05		bdc4.0	E. coli	240
18-Oct-05		bdc5.0	E. coli	222
18-Oct-05		bdc6.0	E. coli	345
10-Nov-05		bdc1.0	E. coli	770
10-Nov-05		bdc1.5	E. coli	326
10-Nov-05		bdc10.0	E. coli	307
10-Nov-05		bdc11.0	E. coli	613
10-Nov-05		bdc2.0	E. coli	307
10-Nov-05		bdc3.0	E. coli	222
10-Nov-05		bdc5.0	E. coli	2419
10-Nov-05		bdc6.0	E. coli	276
08-Dec-05	Duplicate	bdc2.0	E. coli	206
08-Dec-05		bdc6.0	E. coli	261

Trip Start Date	Activity Category	Station ID	bdcCharacteristic	bdcResult Value
21-Apr-05		bdc0.5	Coliform, MF, Fecal (C/100mls)	1315
21-Apr-05		bdc1.0	Coliform, MF, Fecal (C/100mls)	581
21-Apr-05		bdc1.5	Coliform, MF, Fecal (C/100mls)	2015
21-Apr-05		bdc2.0	Coliform, MF, Fecal (C/100mls)	980
21-Apr-05		bdc3.0	Coliform, MF, Fecal (C/100mls)	507
21-Apr-05		bdc4.0	Coliform, MF, Fecal (C/100mls)	792
21-Apr-05		bdc5.0	Coliform, MF, Fecal (C/100mls)	852
21-Apr-05		bdc6.0	Coliform, MF, Fecal (C/100mls)	2170
12-May-05		bdc0.5	Coliform, MF, Fecal (C/100mls)	1520
12-May-05		bdc1.5	Coliform, MF, Fecal (C/100mls)	525
12-May-05		bdc2.0	Coliform, MF, Fecal (C/100mls)	740
12-May-05		bdc3.0	Coliform, MF, Fecal (C/100mls)	755
12-May-05		bdc4.0	Coliform, MF, Fecal (C/100mls)	840
12-May-05		bdc5.0	Coliform, MF, Fecal (C/100mls)	825
12-May-05		bdc6.0	Coliform, MF, Fecal (C/100mls)	2750
09-Jun-05		bdc1.0	Coliform, MF, Fecal (C/100mls)	575
09-Jun-05		bdc5.0	Coliform, MF, Fecal (C/100mls)	430
09-Jun-05		bdc6.0	Coliform, MF, Fecal (C/100mls)	420
14-Jul-05		bdc1.0	Coliform, MF, Fecal (C/100mls)	810
14-Jul-05		bdc1.5	Coliform, MF, Fecal (C/100mls)	1330
14-Jul-05		bdc2.0	Coliform, MF, Fecal (C/100mls)	1120
14-Jul-05		bdc3.0	Coliform, MF, Fecal (C/100mls)	960
14-Jul-05		bdc4.0	Coliform, MF, Fecal (C/100mls)	760
14-Jul-05		bdc6.0	Coliform, MF, Fecal (C/100mls)	640
18-Aug-05		bdc0.5	Coliform, MF, Fecal (C/100mls)	460
18-Aug-05		bdc1.0	Coliform, MF, Fecal (C/100mls)	1840
18-Aug-05		bdc1.5	Coliform, MF, Fecal (C/100mls)	2690
18-Aug-05		bdc10.0	Coliform, MF, Fecal (C/100mls)	480
18-Aug-05		bdc11.0	Coliform, MF, Fecal (C/100mls)	630
18-Aug-05		bdc2.0	Coliform, MF, Fecal (C/100mls)	1090
18-Aug-05		bdc3.0	Coliform, MF, Fecal (C/100mls)	550
18-Aug-05		bdc5.0	Coliform, MF, Fecal (C/100mls)	1080
18-Aug-05		bdc6.0	Coliform, MF, Fecal (C/100mls)	790
15-Sep-05		bdc0.5	Coliform, MF, Fecal (C/100mls)	730
15-Sep-05		bdc1.0	Coliform, MF, Fecal (C/100mls)	1120
15-Sep-05		bdc1.5	Coliform, MF, Fecal (C/100mls)	3020
15-Sep-05		bdc2.0	Coliform, MF, Fecal (C/100mls)	1330
15-Sep-05		bdc3.0	Coliform, MF, Fecal (C/100mls)	480
15-Sep-05		bdc4.0	Coliform, MF, Fecal (C/100mls)	560
15-Sep-05		bdc5.0	Coliform, MF, Fecal (C/100mls)	1180
15-Sep-05	Duplicate	bdc5.0	Coliform, MF, Fecal (C/100mls)	1130
15-Sep-05		bdc6.0	Coliform, MF, Fecal (C/100mls)	2470
18-Oct-05		bdc1.0	Coliform, MF, Fecal (C/100mls)	660
18-Oct-05		bdc1.5	Coliform, MF, Fecal (C/100mls)	530
18-Oct-05		bdc2.0	Coliform, MF, Fecal (C/100mls)	820
18-Oct-05		bdc4.0	Coliform, MF, Fecal (C/100mls)	380
18-Oct-05		bdc5.0	Coliform, MF, Fecal (C/100mls)	600
18-Oct-05		bdc6.0	Coliform, MF, Fecal (C/100mls)	530
10-Nov-05		bdc1.0	Coliform, MF, Fecal (C/100mls)	690
10-Nov-05		bdc5.0	Coliform, MF, Fecal (C/100mls)	1175
08-Dec-05		bdc2.0	Coliform, MF, Fecal (C/100mls)	358

**Table 3. 2005 Big Dry Creek Samples Exceeding Stream Standards**

Trip Start Date	Activity Category	Station ID	bdcCharacteristic	bdcResult Value
20-Jan-05		bdc1.0	Selenium (ICP-MS)	0.01
20-Jan-05		bdc1.5	Selenium (ICP-MS)	0.015
20-Jan-05		bdc2.0	Selenium (ICP-MS)	0.007
20-Jan-05		bdc3.0	Selenium (ICP-MS)	0.007
20-Jan-05		bdc4.0	Selenium (ICP-MS)	0.007
20-Jan-05		bdc5.0	Selenium (ICP-MS)	0.007
20-Jan-05		bdc6.0	Selenium (ICP-MS)	0.007
10-Feb-05		bdc0.5	Selenium (ICP-MS)	0.013
10-Feb-05		bdc1.0	Selenium (ICP-MS)	0.01
10-Feb-05		bdc1.5	Selenium (ICP-MS)	0.019
10-Feb-05		bdc10.0	Selenium (ICP-MS)	0.006
10-Feb-05		bdc11.0	Selenium (ICP-MS)	0.005
10-Feb-05		bdc2.0	Selenium (ICP-MS)	0.007
10-Feb-05		bdc3.0	Selenium (ICP-MS)	0.005
10-Feb-05		bdc4.0	Selenium (ICP-MS)	0.007
10-Feb-05		bdc5.0	Selenium (ICP-MS)	0.007
10-Feb-05		bdc6.0	Selenium (ICP-MS)	0.009
17-Mar-05		bdc0.5	Selenium (ICP-MS)	0.006
17-Mar-05		bdc1.0	Selenium (ICP-MS)	0.006
17-Mar-05		bdc1.5	Selenium (ICP-MS)	0.012
17-Mar-05		bdc2.0	Selenium (ICP-MS)	0.006
17-Mar-05		bdc3.0	Selenium (ICP-MS)	0.005
17-Mar-05		bdc4.0	Selenium (ICP-MS)	0.005
17-Mar-05		bdc5.0	Selenium (ICP-MS)	0.005
21-Apr-05		bdc1.0	Selenium (ICP-MS)	0.005
21-Apr-05		bdc1.5	Selenium (ICP-MS)	0.007
21-Apr-05		bdc10.0	Selenium (ICP-MS)	0.006
21-Apr-05		bdc11.0	Selenium (ICP-MS)	0.006
21-Apr-05		bdc2.0	Selenium (ICP-MS)	0.005
21-Apr-05		bdc3.0	Selenium (ICP-MS)	0.005
21-Apr-05		bdc4.0	Selenium (ICP-MS)	0.005
21-Apr-05		bdc5.0	Selenium (ICP-MS)	0.007
21-Apr-05		bdc6.0	Selenium (ICP-MS)	0.006
12-May-05		bdc0.5	Selenium (ICP-MS)	0.005
12-May-05		bdc10.0	Selenium (ICP-MS)	0.005
12-May-05		bdc3.0	Selenium (ICP-MS)	0.005
09-Jun-05		bdc10.0	Selenium (ICP-MS)	0.005
14-Jul-05		bdc4.0	Selenium (ICP-MS)	0.006
14-Jul-05		bdc5.0	Selenium (ICP-MS)	0.006
14-Jul-05		bdc6.0	Selenium (ICP-MS)	0.005
18-Aug-05		bdc1.5	Selenium (ICP-MS)	0.007
18-Aug-05		bdc2.0	Selenium (ICP-MS)	0.006
18-Aug-05		bdc3.0	Selenium (ICP-MS)	0.006
18-Aug-05		bdc4.0	Selenium (ICP-MS)	0.007
18-Aug-05		bdc5.0	Selenium (ICP-MS)	0.007
18-Aug-05		bdc6.0	Selenium (ICP-MS)	0.006
15-Sep-05		bdc1.5	Selenium (ICP-MS)	0.006
15-Sep-05		bdc2.0	Selenium (ICP-MS)	0.005
15-Sep-05		bdc4.0	Selenium (ICP-MS)	0.005
15-Sep-05	Duplicate	bdc5.0	Selenium (ICP-MS)	0.005
15-Sep-05		bdc5.0	Selenium (ICP-MS)	0.005
15-Sep-05		bdc6.0	Selenium (ICP-MS)	0.006
18-Oct-05		bdc0.5	Selenium (ICP-MS)	0.006
18-Oct-05		bdc1.0	Selenium (ICP-MS)	0.008
18-Oct-05		bdc1.5	Selenium (ICP-MS)	0.015
18-Oct-05		bdc10.0	Selenium (ICP-MS)	0.005
18-Oct-05		bdc2.0	Selenium (ICP-MS)	0.009
18-Oct-05		bdc4.0	Selenium (ICP-MS)	0.007
18-Oct-05		bdc5.0	Selenium (ICP-MS)	0.008
18-Oct-05		bdc6.0	Selenium (ICP-MS)	0.006
10-Nov-05		bdc1.0	Selenium (ICP-MS)	0.005
10-Nov-05		bdc1.5	Selenium (ICP-MS)	0.009
10-Nov-05		bdc2.0	Selenium (ICP-MS)	0.008
10-Nov-05		bdc3.0	Selenium (ICP-MS)	0.005
10-Nov-05		bdc4.0	Selenium (ICP-MS)	0.006
10-Nov-05		bdc5.0	Selenium (ICP-MS)	0.006
10-Nov-05		bdc6.0	Selenium (ICP-MS)	0.005
08-Dec-05		bdc0.5	Selenium (ICP-MS)	0.007
08-Dec-05		bdc1.0	Selenium (ICP-MS)	0.011
08-Dec-05		bdc1.5	Selenium (ICP-MS)	0.02
08-Dec-05	Duplicate	bdc1.5	Selenium (ICP-MS)	0.02
08-Dec-05		bdc2.0	Selenium (ICP-MS)	0.007
08-Dec-05		bdc3.0	Selenium (ICP-MS)	0.005
08-Dec-05		bdc4.0	Selenium (ICP-MS)	0.007
08-Dec-05		bdc5.0	Selenium (ICP-MS)	0.007
08-Dec-05		bdc6.0	Selenium (ICP-MS)	0.007

Trip Start Date	Activity Category	Station ID	bdcCharacteristic	bdcResult Value
17-Mar-05		bdc0.5	Iron, total rec (FLAA)	1.0015
21-Apr-05		bdc1.0	Iron, total rec (FLAA)	1.5006
21-Apr-05		bdc1.5	Iron, total rec (FLAA)	1.9421
21-Apr-05		bdc2.0	Iron, total rec (FLAA)	1.756
21-Apr-05		bdc3.0	Iron, total rec (FLAA)	2.0763
21-Apr-05		bdc4.0	Iron, total rec (FLAA)	4.887
21-Apr-05		bdc5.0	Iron, total rec (FLAA)	8.3584
21-Apr-05		bdc6.0	Iron, total rec (FLAA)	12.789
12-May-05		bdc1.0	Iron, total rec (FLAA)	2.6564
12-May-05		bdc1.5	Iron, total rec (FLAA)	2.3571
12-May-05		bdc2.0	Iron, total rec (FLAA)	1.958
12-May-05		bdc3.0	Iron, total rec (FLAA)	2.0209
12-May-05		bdc4.0	Iron, total rec (FLAA)	3.9778
12-May-05		bdc5.0	Iron, total rec (FLAA)	7.824
12-May-05		bdc6.0	Iron, total rec (FLAA)	10.894
09-Jun-05		bdc1.0	Iron, total rec (FLAA)	1.8466
09-Jun-05		bdc1.5	Iron, total rec (FLAA)	2.3581
09-Jun-05		bdc2.0	Iron, total rec (FLAA)	1.8311
09-Jun-05		bdc3.0	Iron, total rec (FLAA)	1.6192
09-Jun-05		bdc4.0	Iron, total rec (FLAA)	2.766
09-Jun-05		bdc5.0	Iron, total rec (FLAA)	4.788
09-Jun-05		bdc6.0	Iron, total rec (FLAA)	7.04
15-Sep-05	Duplicate	bdc5.0	Iron, total rec (FLAA)	1.1715
15-Sep-05		bdc5.0	Iron, total rec (FLAA)	1.2258
15-Sep-05		bdc6.0	Iron, total rec (FLAA)	1.2449

Table 4. Quality Control Sample Analysis

Trip Start Date	Station ID	Activity Category	Arsenic, dissolved (ICP)	Arsenic, total rec (GFAA)	Boron, Total (mg/l)	Cadmium, dissolved (ICP)	Calcium, (calc)	Carbon, Total Organic	Chloride	Chromium, dissolved (ICP)	Coliform, MF, Fecal (C/100mls)	Conductivity	Copper, dissolved (ICP)	Demand, Bio-Oxygen (mg/l)	Dissolved Oxygen	E_coli	Hardness, Calcium (titra)	Hardness, total-WW	Iron, dissolved (FLAA)	Iron, total rec (FLAA)	Lead, dissolved (ICP)	Magnesium, (FLAA)
3/17/2005	Field Blank	Field Blank	<0.004	0.187	0.330	<0.0003	<0.1	0.5066	0.62	<0.003	<2	2	<0.002	<2	6.97	<1	<0.3		<0.0041	<0.017	<0.003	-0.084
9/15/2005	bdc5.0	Duplicate	<0.004	0.331	0.250	<0.0003	67.6		53.52	<0.003	1130	842	0.002	3	9.1	1120	169	232	0.029	1.172	<0.003	18.108
9/15/2005	bdc5.0		<0.004	0.317	0.280	<0.0003	66.4		54.53	<0.003	1180	842	0.003	3.1	9.10	1733	166	245	0.028	1.226	<0.003	18.201
<b>Relative % Difference</b>			<b>0%</b>	<b>4%</b>	<b>11%</b>	<b>0%</b>	<b>2%</b>		<b>2%</b>	<b>0%</b>	<b>4%</b>	<b>0%</b>	<b>40%</b>	<b>3%</b>	<b>0%</b>	<b>43%</b>	<b>2%</b>	<b>5%</b>	<b>4%</b>	<b>5%</b>	<b>0%</b>	<b>1%</b>

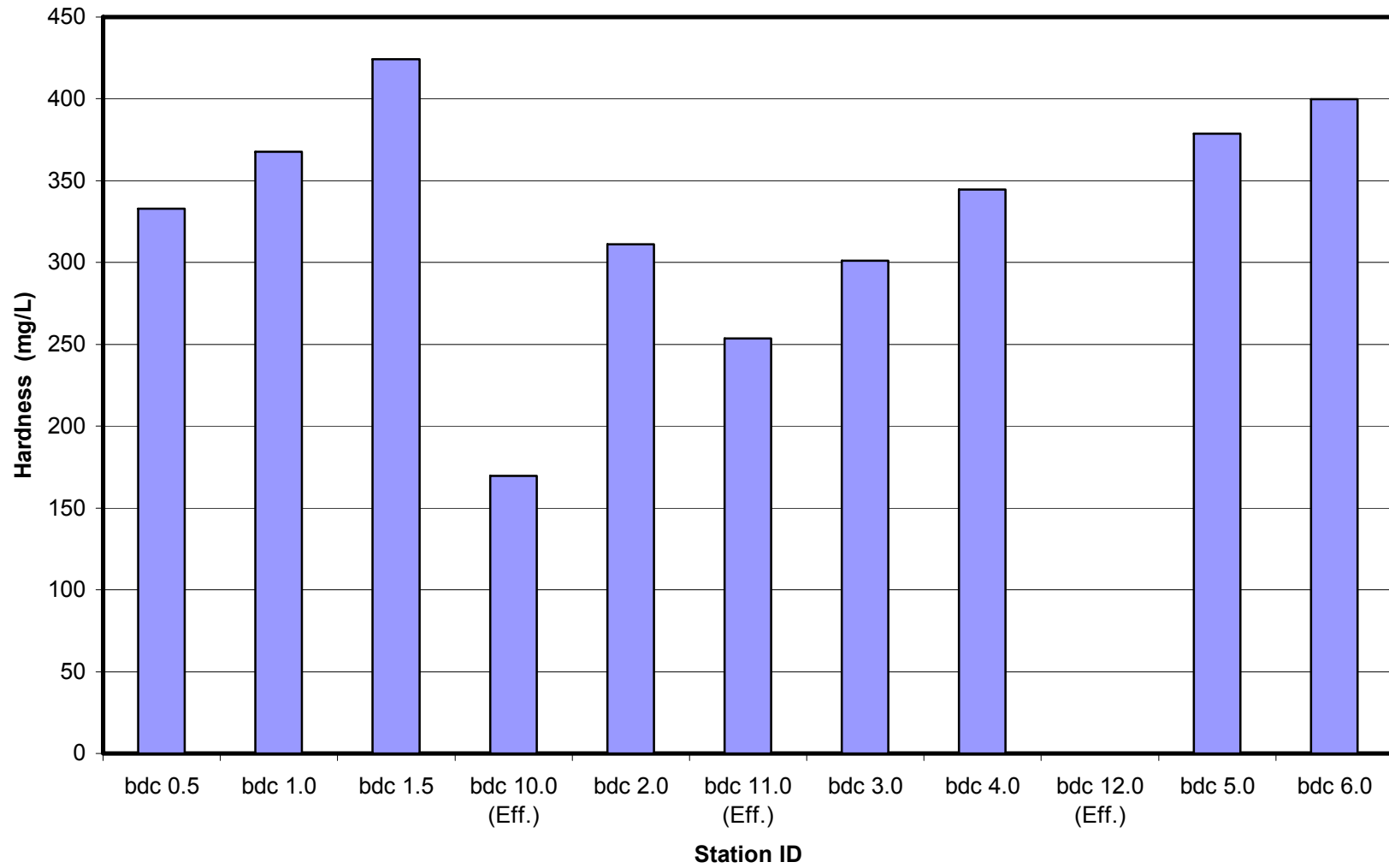
Trip Start Date	Station ID	Activity Category	Manganese, dissolved (ICP)	Mercury, total-WW	Molybdenum, dissolved (ICP)	Nickel, dissolved (ICP)	Nitrite-FIA	Nitrogen, Ammonia (mg/l)	Nitrogen, NO3+NO2 (mg/l)	pH	Phosphorus, ortho	Potassium, (FLAA)	Selenium (ICP-MS)	Selenium, dissolved (ICP)	Silver, dissolved (ICP)	Sodium, (FLAA)	Solids, total dissolved	Solids, Total Suspended (mg/l)	Sulfate	Temperature	Turbidity	Zinc, dissolved (ICP)
3/17/2005	Field Blank	Field Blank	<0.001	<0.0002	<0.002	<0.004	<0	<0.01	0.1	8.82	0.0038	<0.071	<0	<0.003	<0.003	<0.023	10	<2	<0.92	17.99	0.55	0.028
9/15/2005	bdc5.0	Duplicate	0.014	<0.0002	0.008	0.013	0.0178	0.040	5.1	7.39	0.7020	5.275	0.005	0.0042	<0.003	86.694	534	109	210.70	17.62	45.90	0.025
9/15/2005	bdc5.0		0.010	<0.0002	0.008	0.009	0.020	0.040	5.1	7.39	0.7170	5.291	0.005	0.0039	<0.003	88.144	534	116.0	210.70	17.62	49.80	0.064
<b>Relative % Difference</b>			<b>33%</b>	<b>0%</b>	<b>0%</b>	<b>36%</b>	<b>10%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>7%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>6%</b>	<b>0%</b>	<b>0%</b>	<b>8%</b>	<b>88%</b>

Duplicate Analyses: Semi-Annual Constituents of Concern

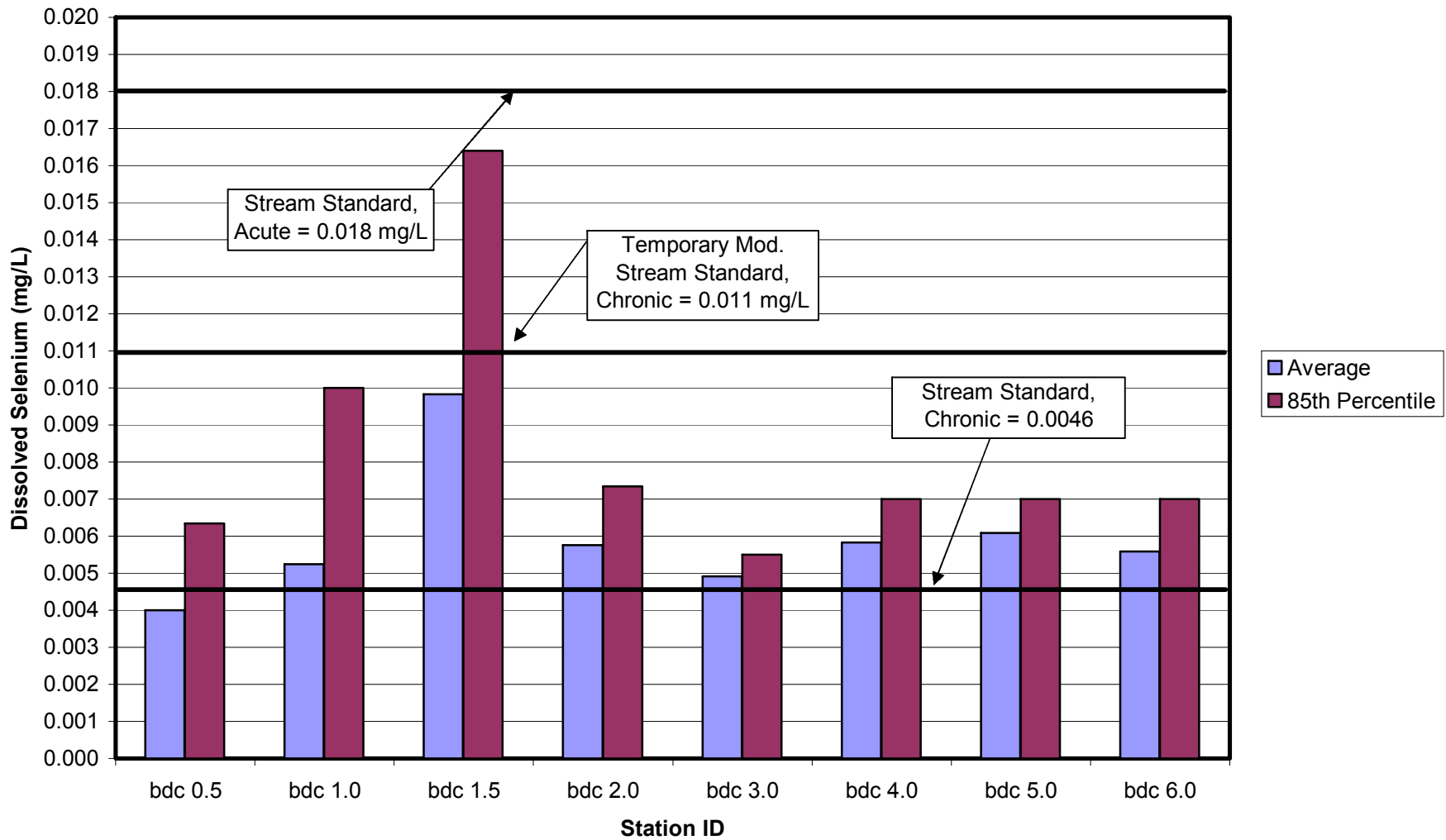
Trip Start Date	Station ID	Activity Category	E_coli	Iron, dissolved (FLAA)	Iron, total rec (FLAA)	Nitrogen, Ammonia (mg/l)	Nitrogen, NO3+NO2 (mg/l)	Selenium (ICP-MS)
6/9/2005	bdc2.0	Duplicate	461					
6/9/2005	bdc2.0		488					
<b>Relative % Difference</b>			<b>6%</b>					
12/8/2005	bdc2.0	Duplicate	206					
12/8/2005	bdc2.0		158					
<b>Relative % Difference</b>			<b>26%</b>					
7/14/2005	bdc1.5	Duplicate					0.003	
7/14/2005	bdc1.5						0.003	
<b>Relative % Difference</b>							<b>0%</b>	
12/8/2005	bdc1.5	Duplicate					0.020	
12/8/2005	bdc1.5						0.020	
<b>Relative % Difference</b>							<b>0%</b>	
7/14/2005	bdc5.0	Duplicate		0.009	0.900			
7/14/2005	bdc5.0			0.008	0.931			
<b>Relative % Difference</b>				<b>8%</b>	<b>3%</b>			
12/8/2005	bdc5.0	Duplicate			0.723			
12/8/2005	bdc5.0				0.586			
<b>Relative % Difference</b>					<b>21%</b>			
7/14/2005	bdc3.0	Duplicate				0.160	10.4	
7/14/2005	bdc3.0					0.150	10.0	
<b>Relative % Difference</b>						<b>6%</b>	<b>4%</b>	
12/8/2005	bdc3.0	Duplicate				0.190	13.6	
12/8/2005	bdc3.0					0.180	13.4	
<b>Relative % Difference</b>						<b>5%</b>	<b>1%</b>	

**Figure 1**  
**Sampling Location Map**

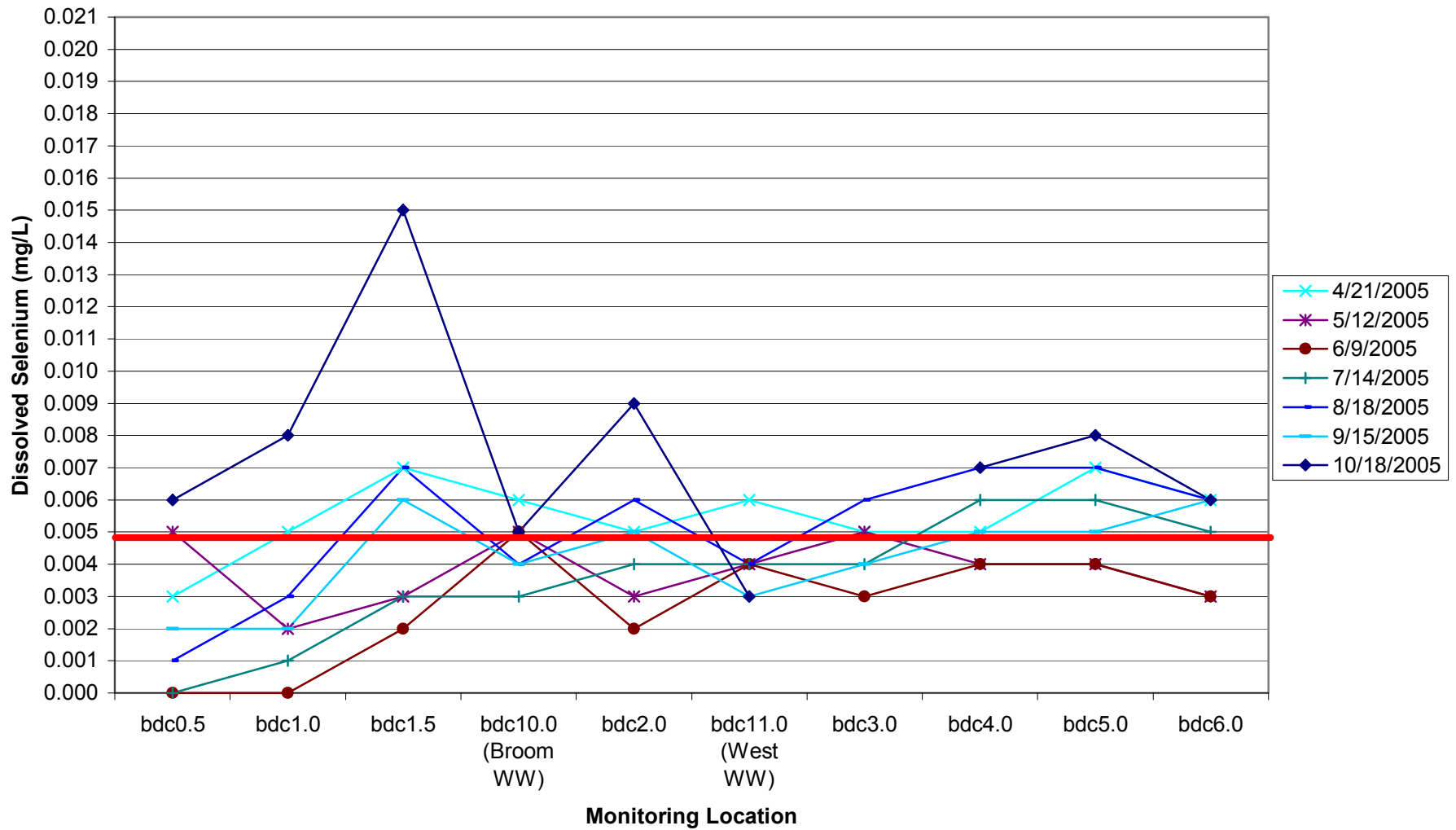
**Figure 2**  
**Big Dry Creek Average Hardness 2005**



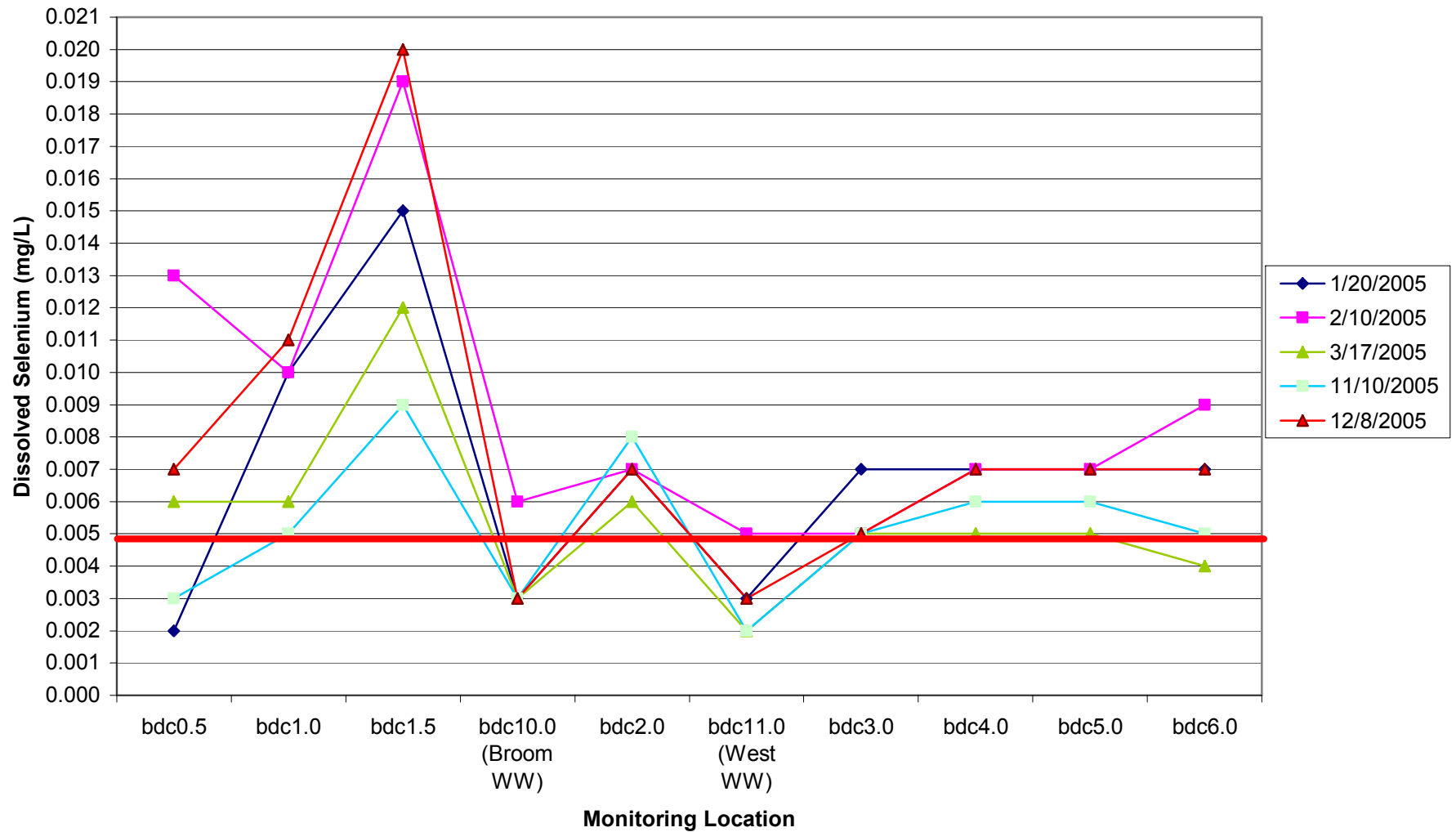
**Figure 3**  
**Big Dry Creek Average and 85th Percentile Values for Dissolved Selenium 2005**



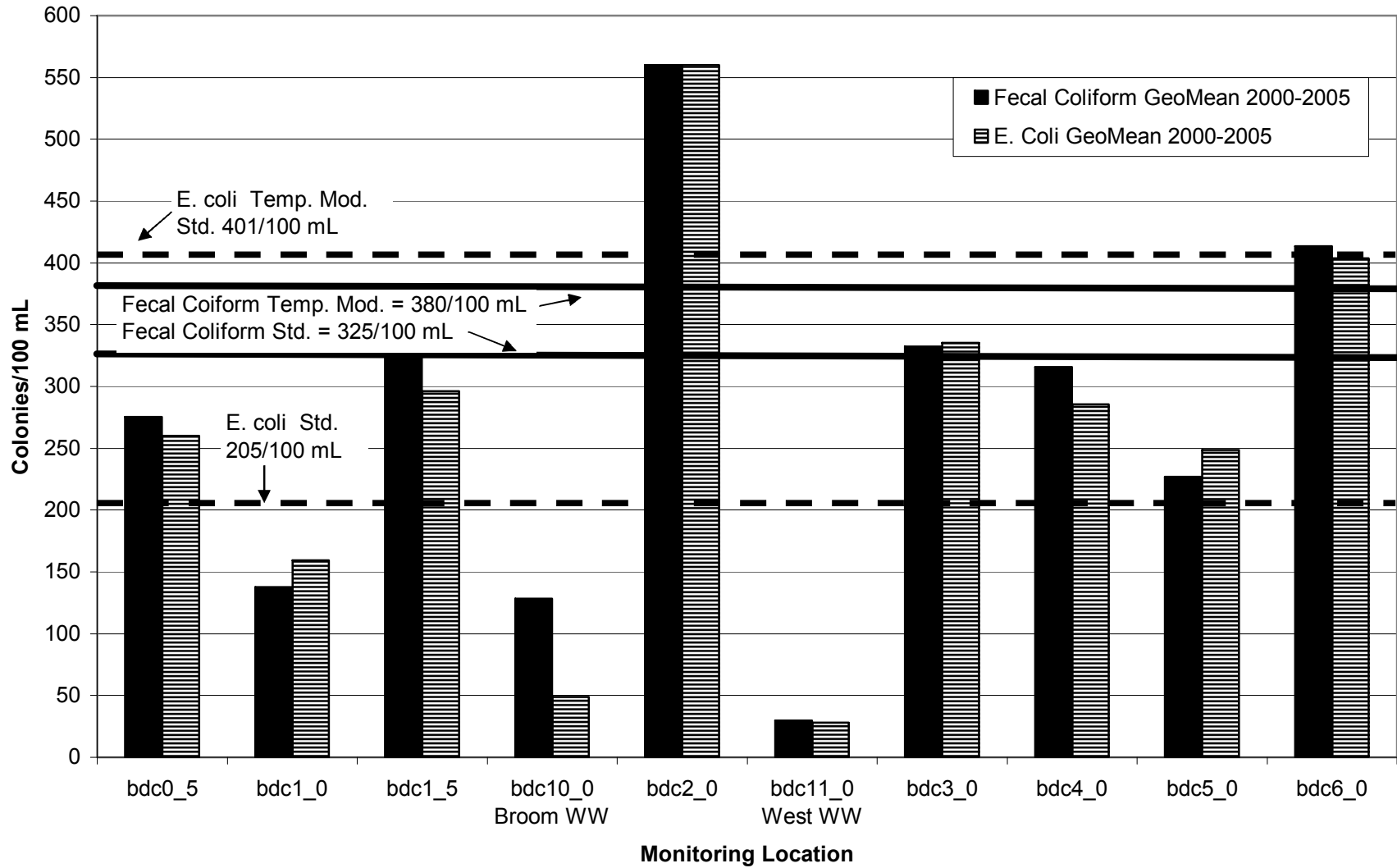
**Figure 4a**  
**2005 Dissolved Selenium (mg/L) During the Irrigation Season**



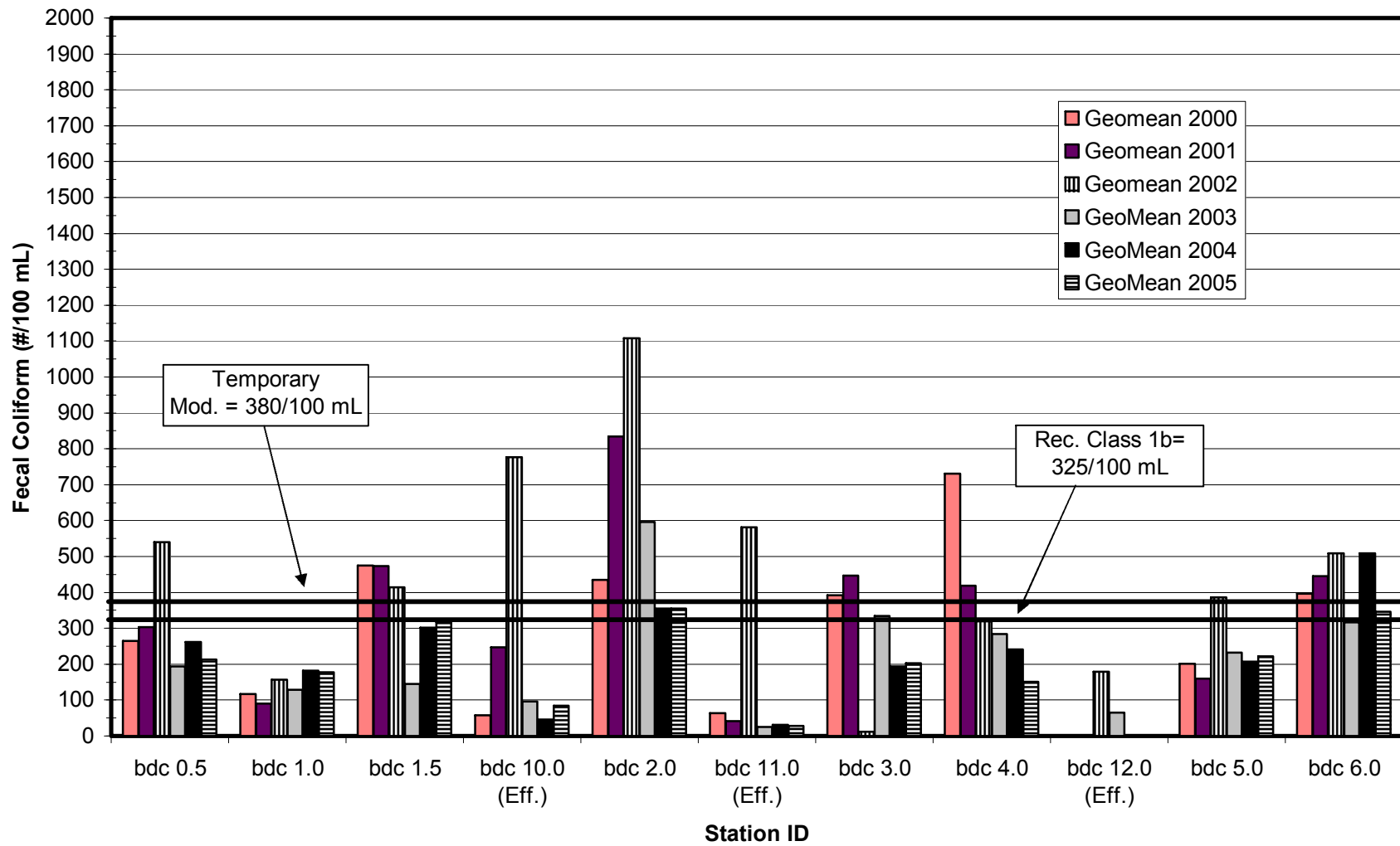
**Figure 4b**  
**2005 Dissolved Selenium (mg/L) During the Non-Irrigation Season**



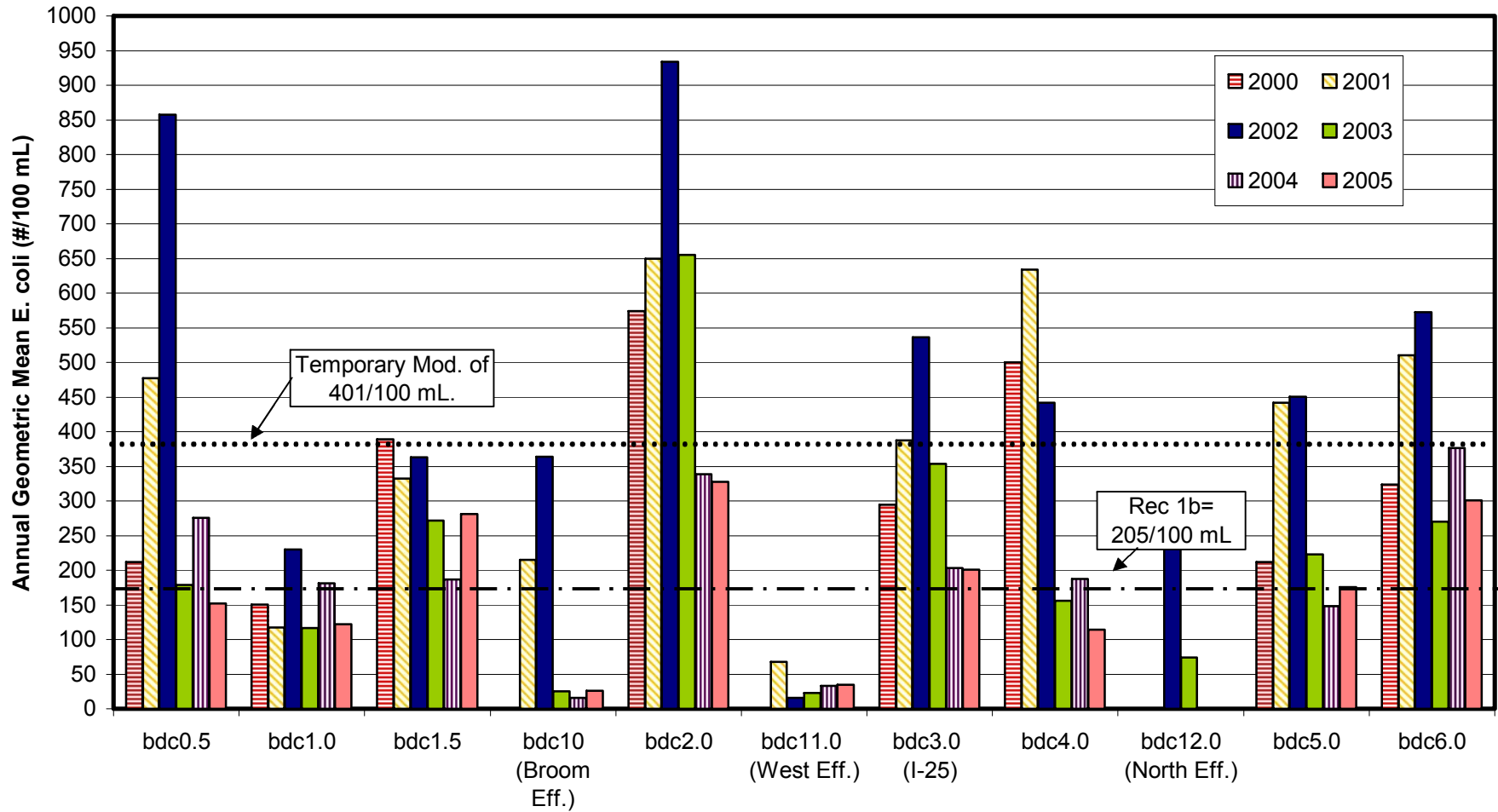
**Figure 5**  
**Big Dry Creek Bacteria 2000-2005**



**Figure 6**  
**Big Dry Creek Geometric Mean Fecal Coliform 2000 Through 2005**

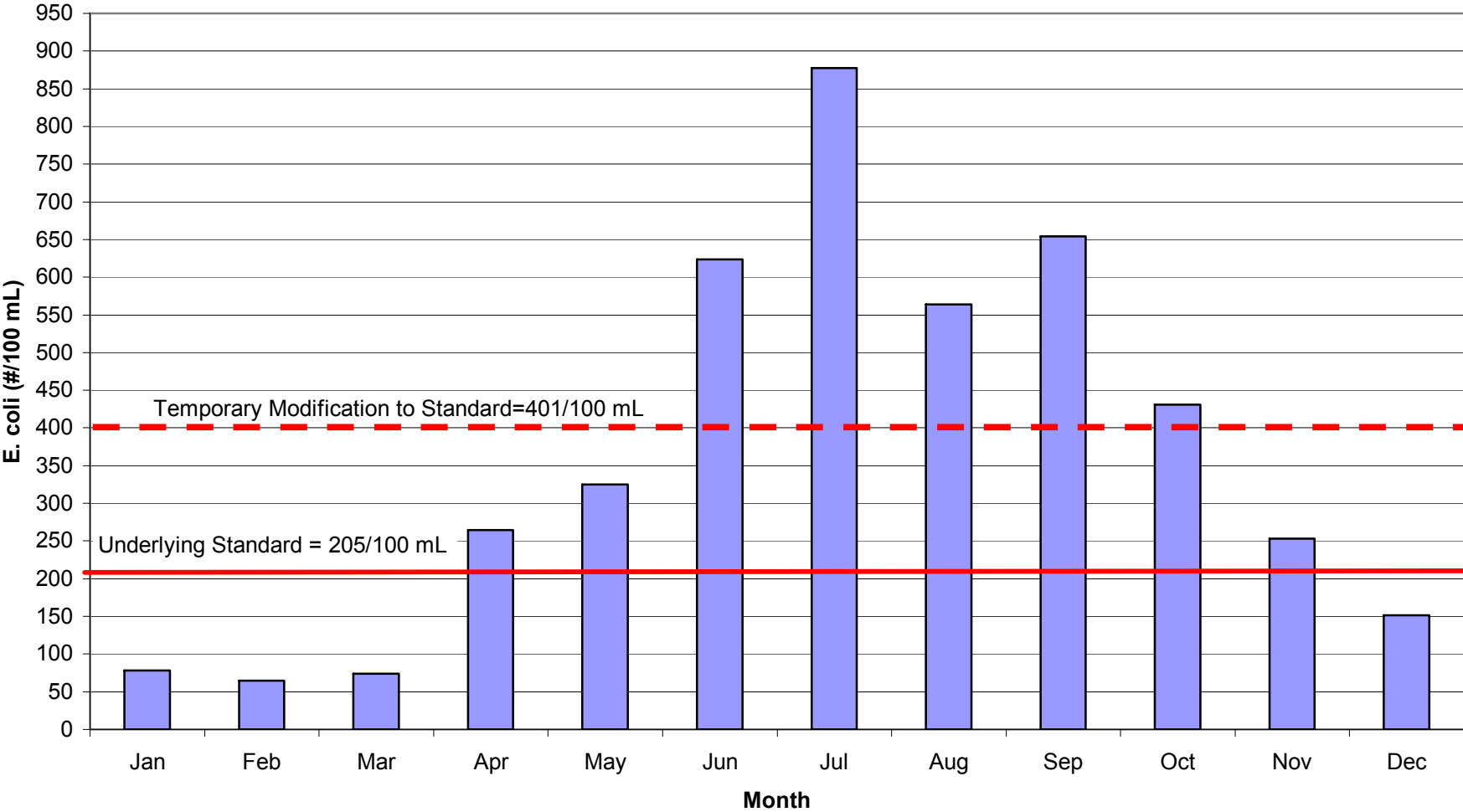


**Figure 7**  
**Big Dry Creek E. coli Geometric Means (2000-2005)**

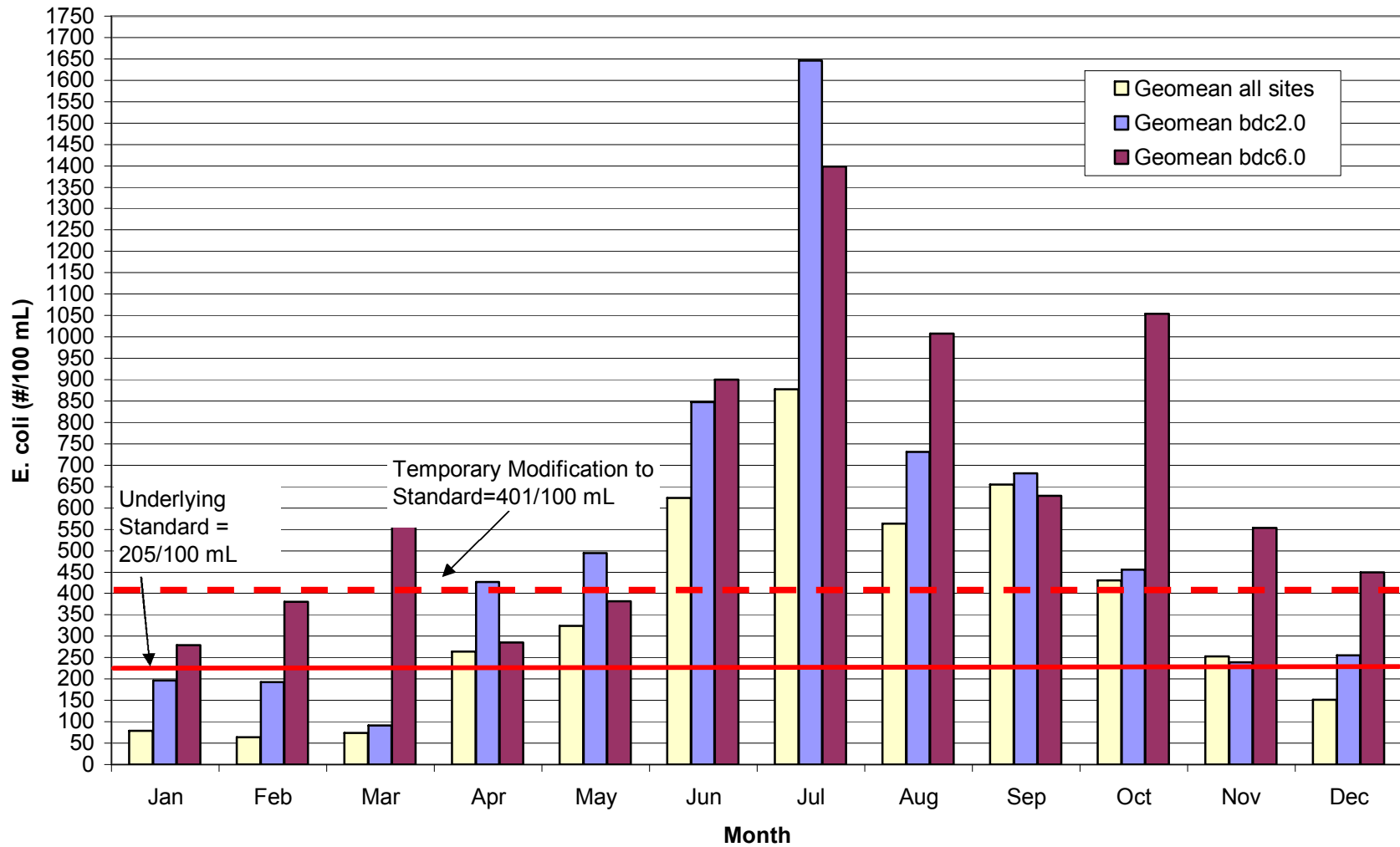


Notes: Sample sizes vary by location and by year. Samples collected on a monthly basis at most locations beginning April 2000. Samples collected on weekly basis during February - January 2004 with the exception of monthly sampling at sites 1.0, 4.0, 6.0 and 12.0. Few samples were analyzed from Northglenn effluent due to infrequent discharges to Big Dry Creek.

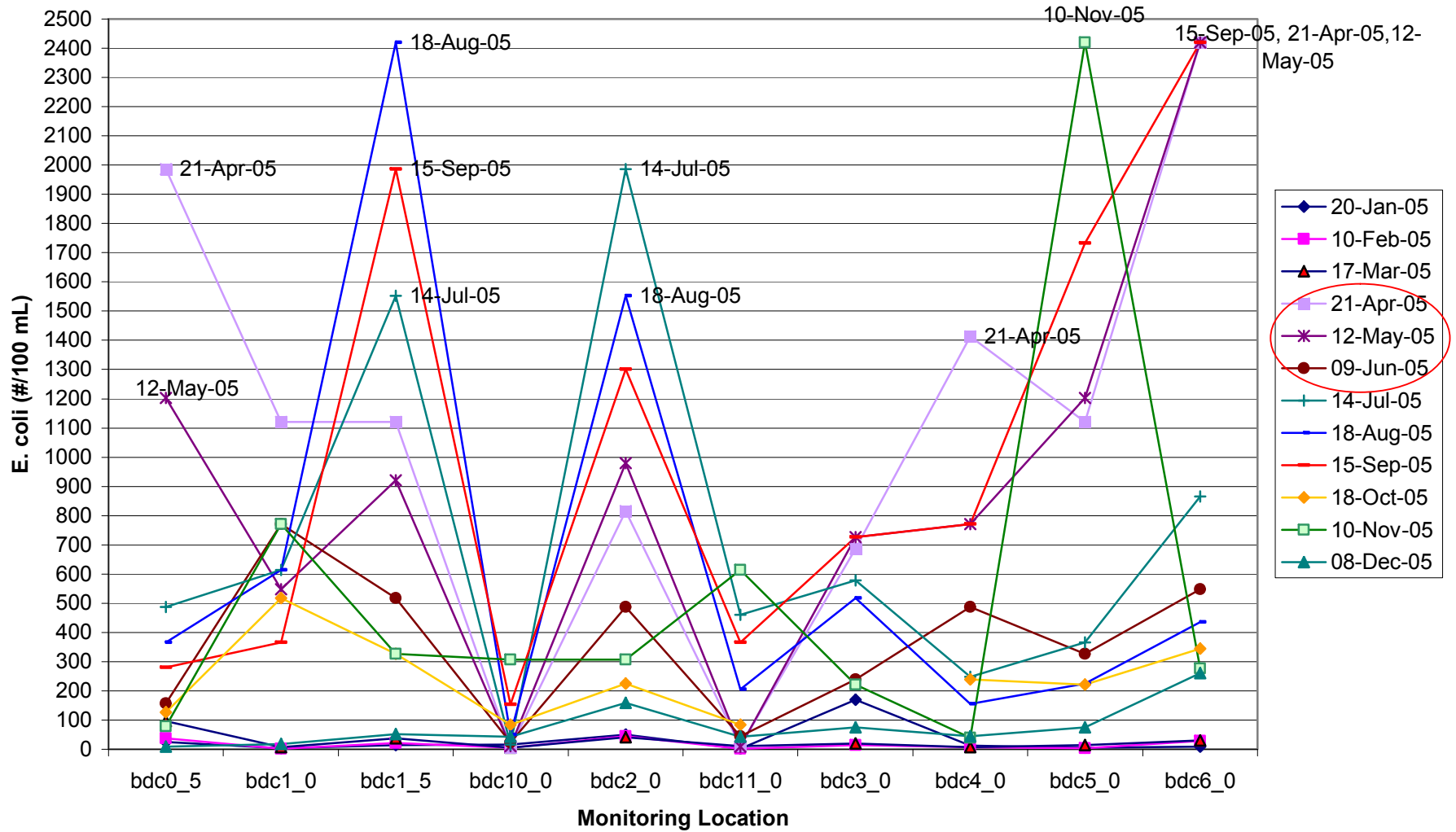
**Figure 8**  
**Seasonal Variation in Geometric Mean E. coli Concentrations (2000-2005)**  
**Big Dry Creek Instream Monitoring Locations**



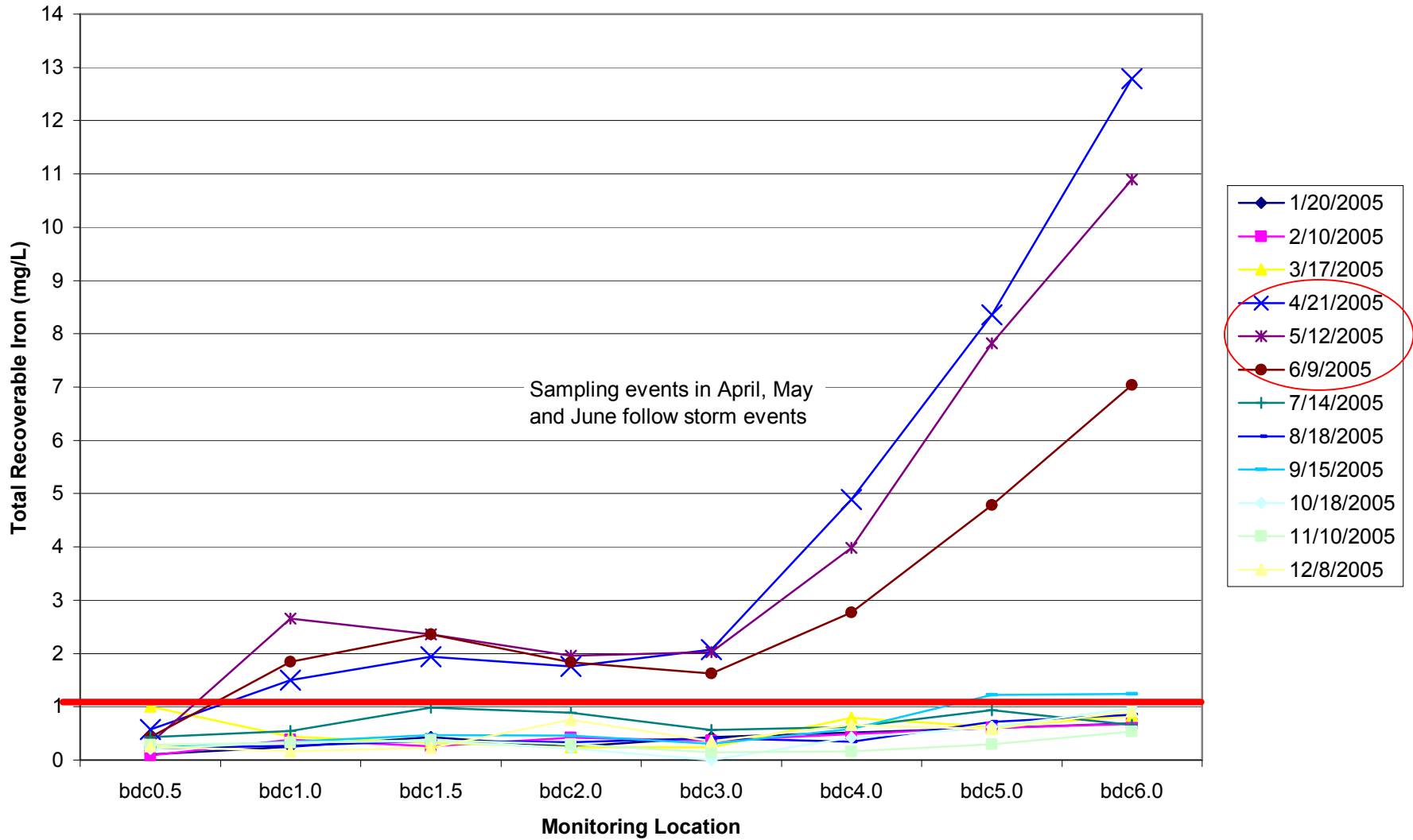
**Figure 9**  
**Seasonal Variation in Geometric Mean E. coli Concentrations (2000-2005)**  
**Comparison of Overall Stream, bdc2.0 and bdc6.0**



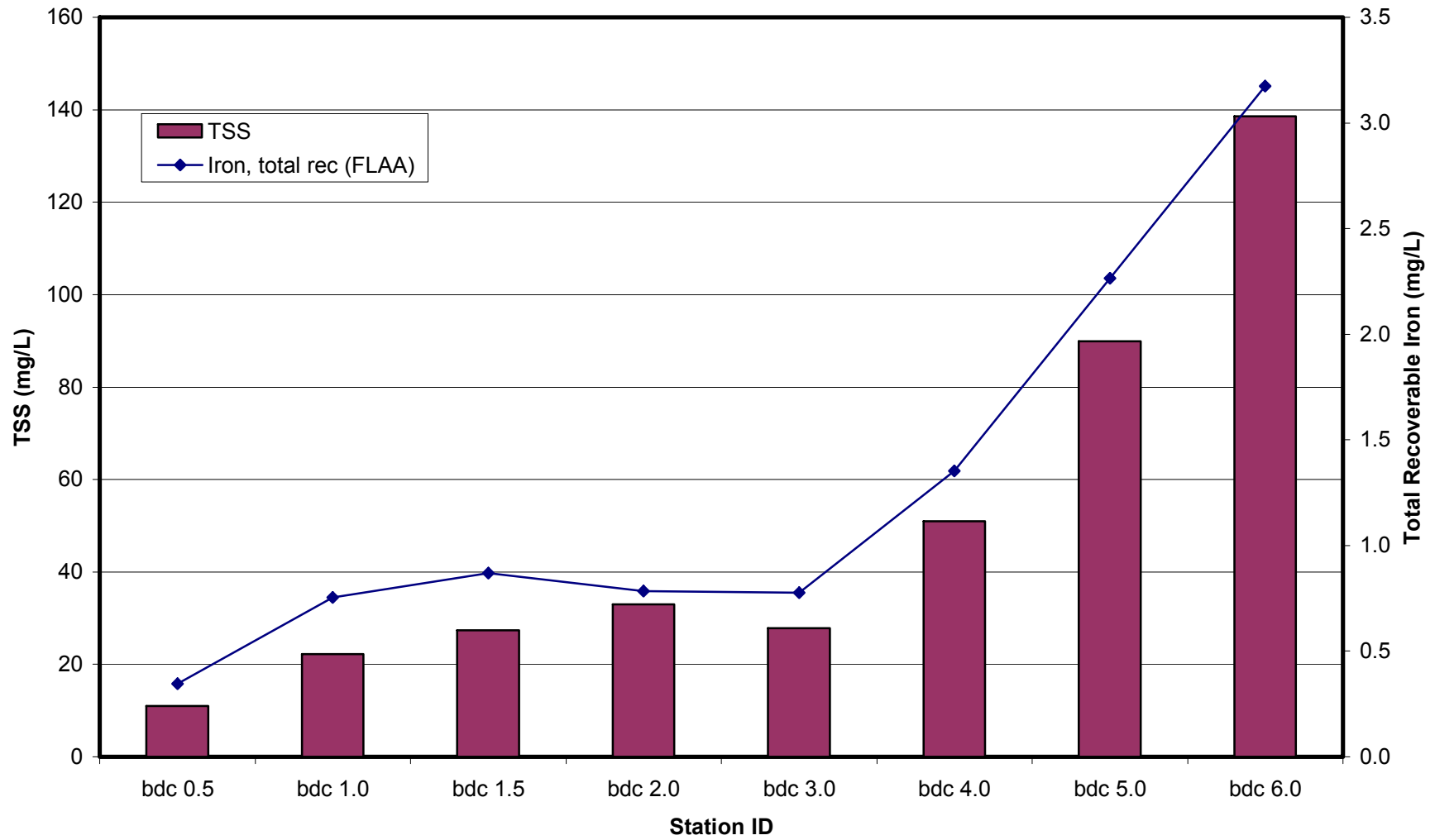
**Figure 10**  
**Monthly E. coli During 2005**



**Figure 11**  
**2005 Total Recoverable Iron by Date and Location**



**Figure 12**  
**Big Dry Creek Average TSS and Total Recoverable Iron 2005**



**Figure 13**  
**50th Percentile Values for Total Recoverable Iron (2001-2005)**

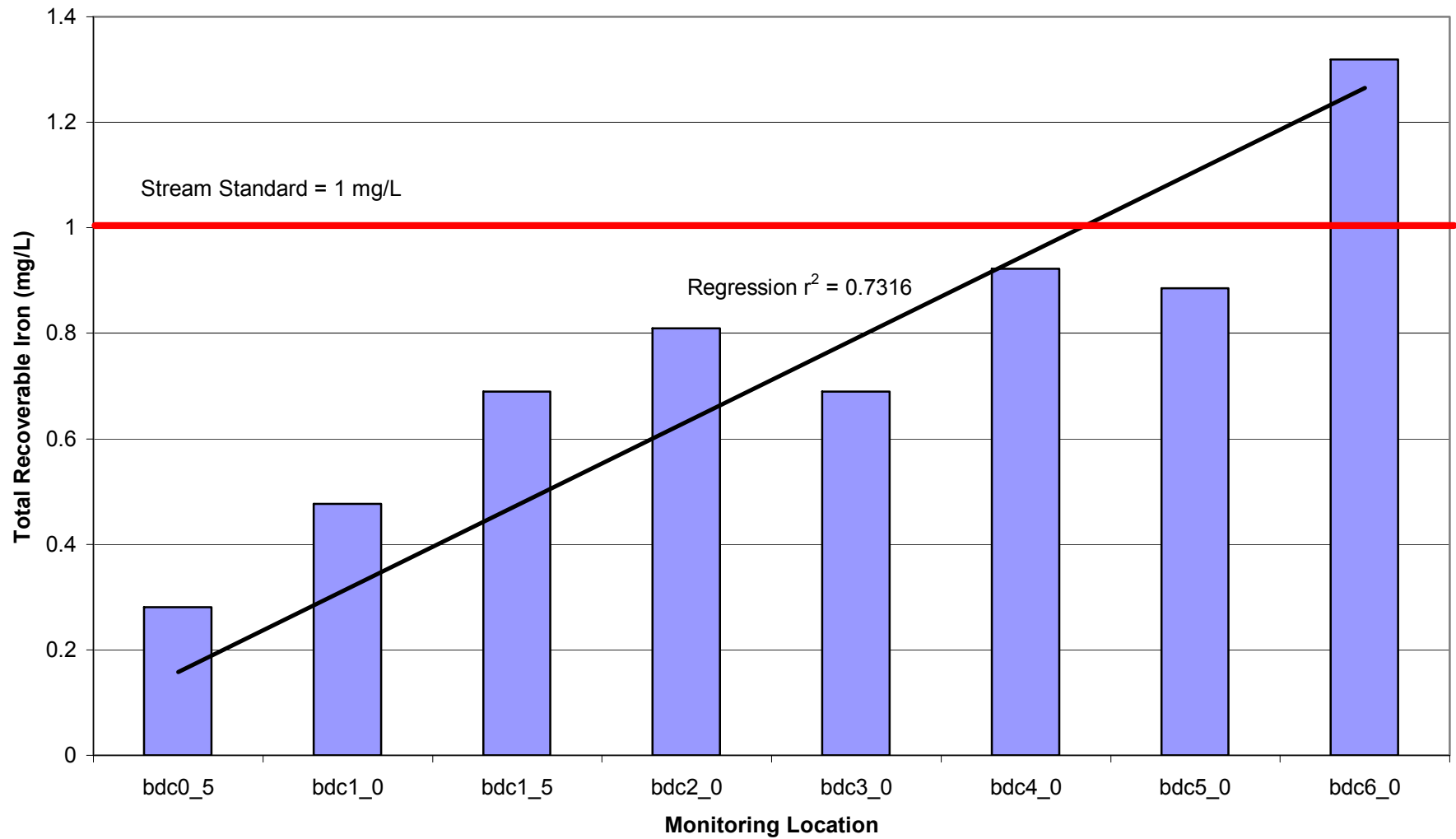
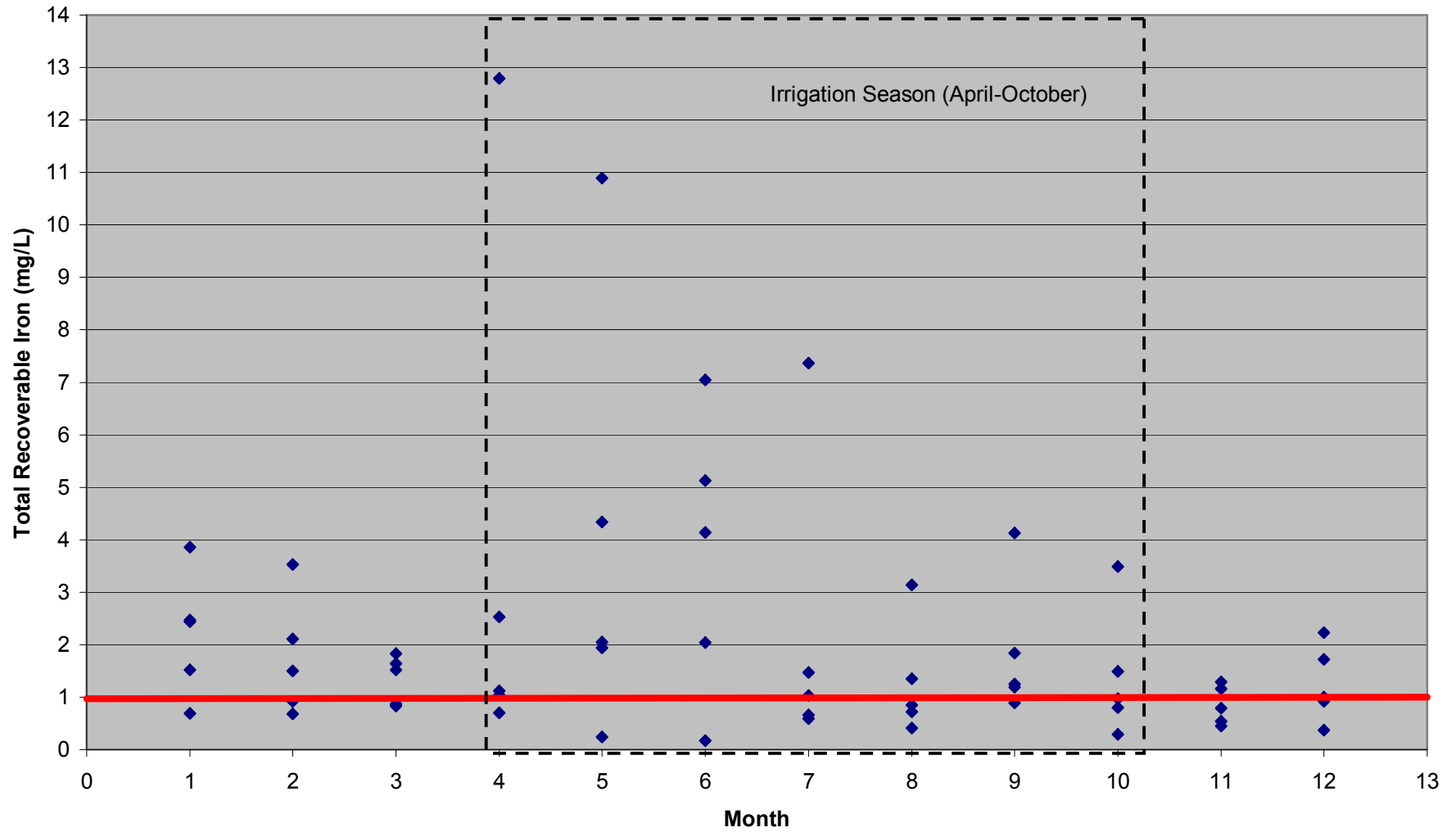
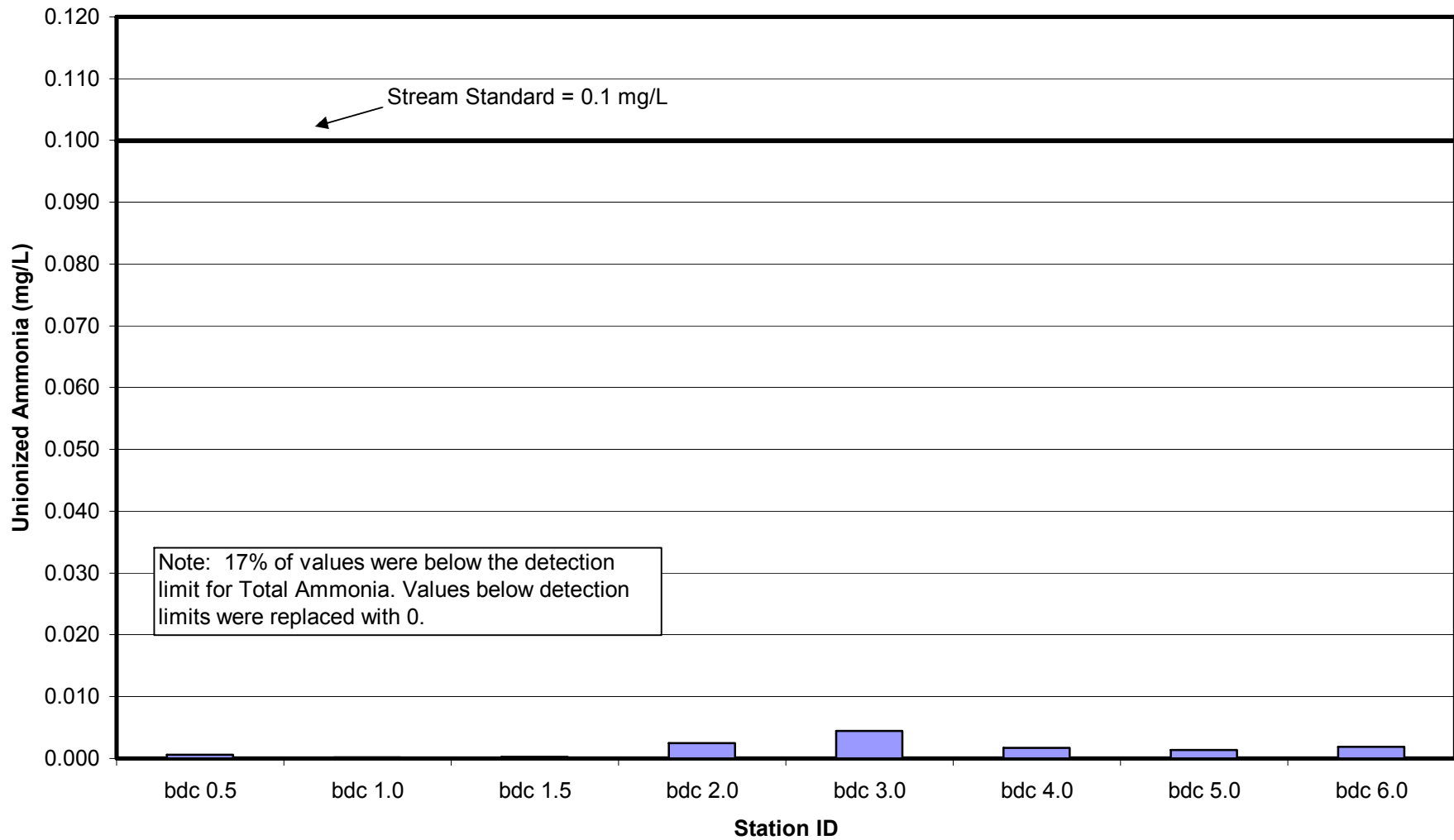


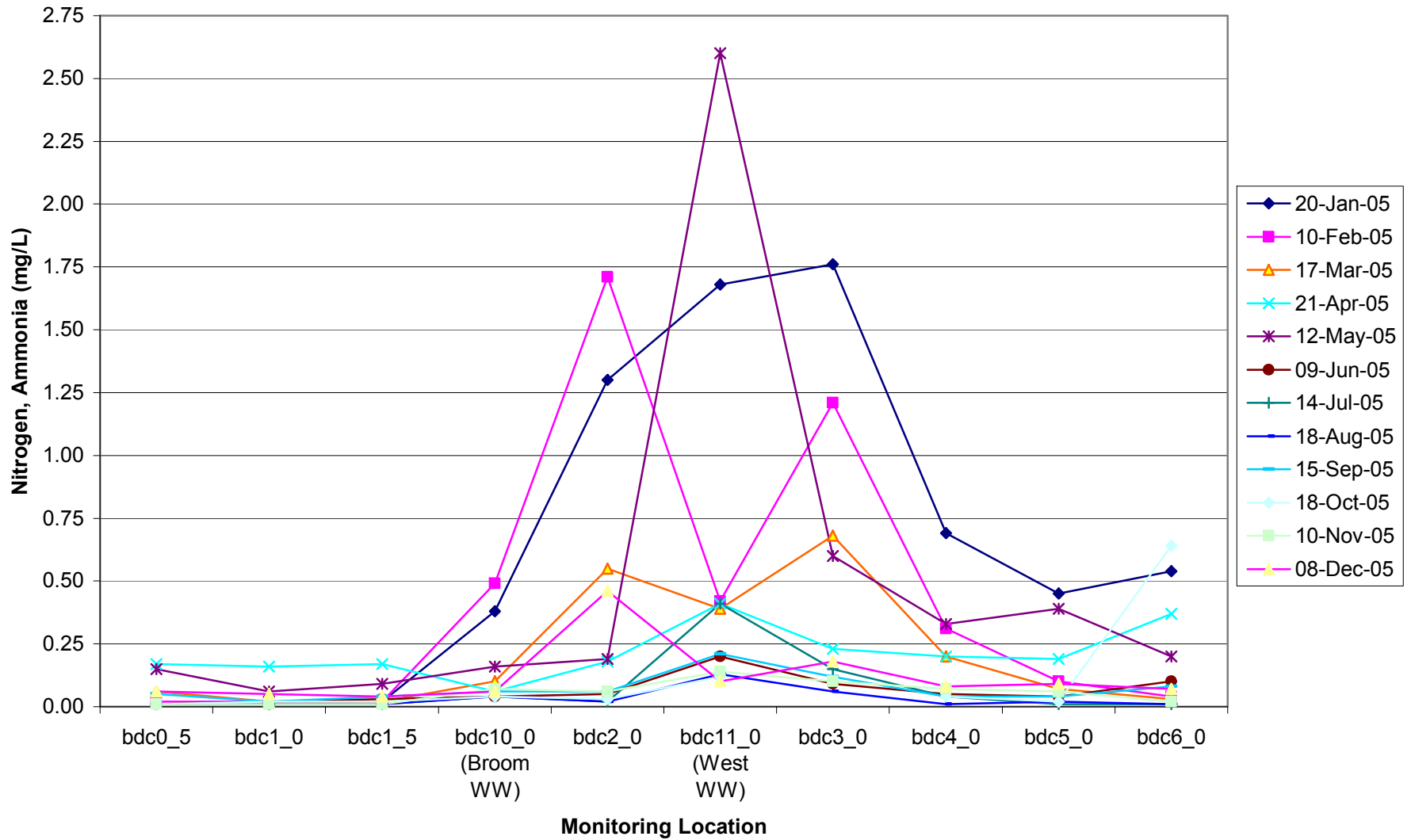
Figure 14  
Monthly Total Recoverable Iron Scatter Plot at bdc6.0 (2001-2005)



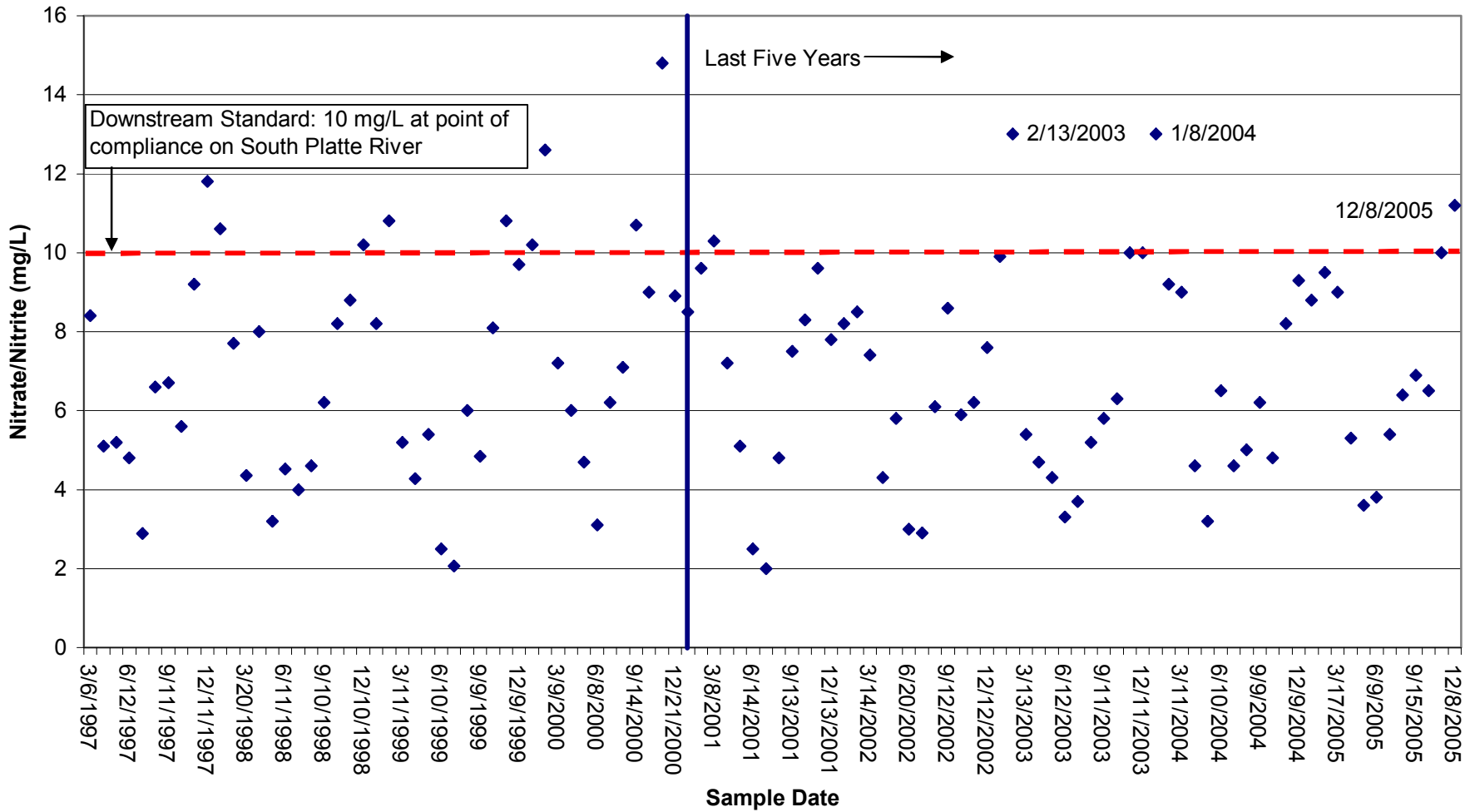
**Figure 15**  
**Big Dry Creek Average Unionized Ammonia 2005**



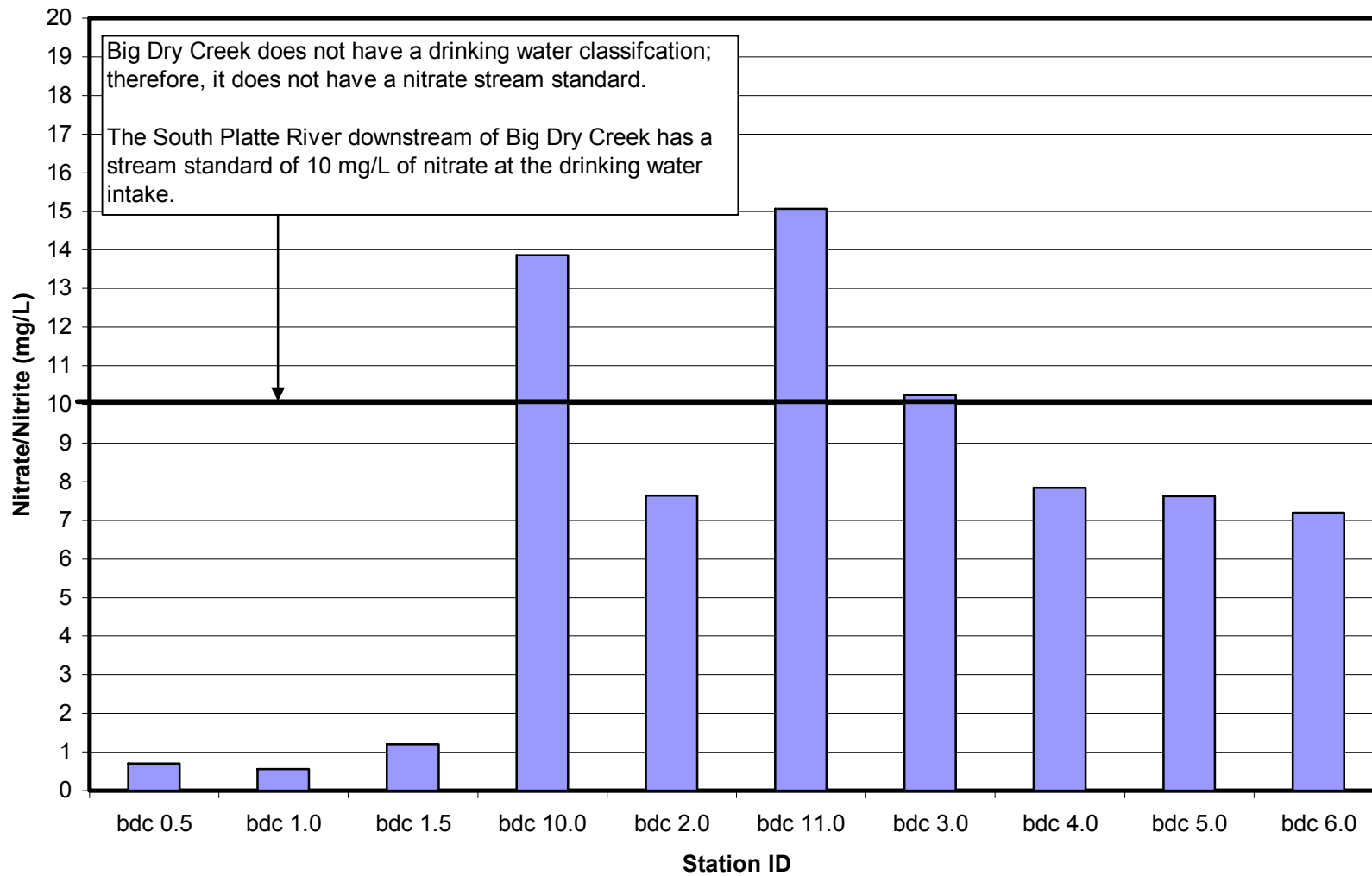
**Figure 16**  
**2005 Big Dry Creek Total Ammonia**



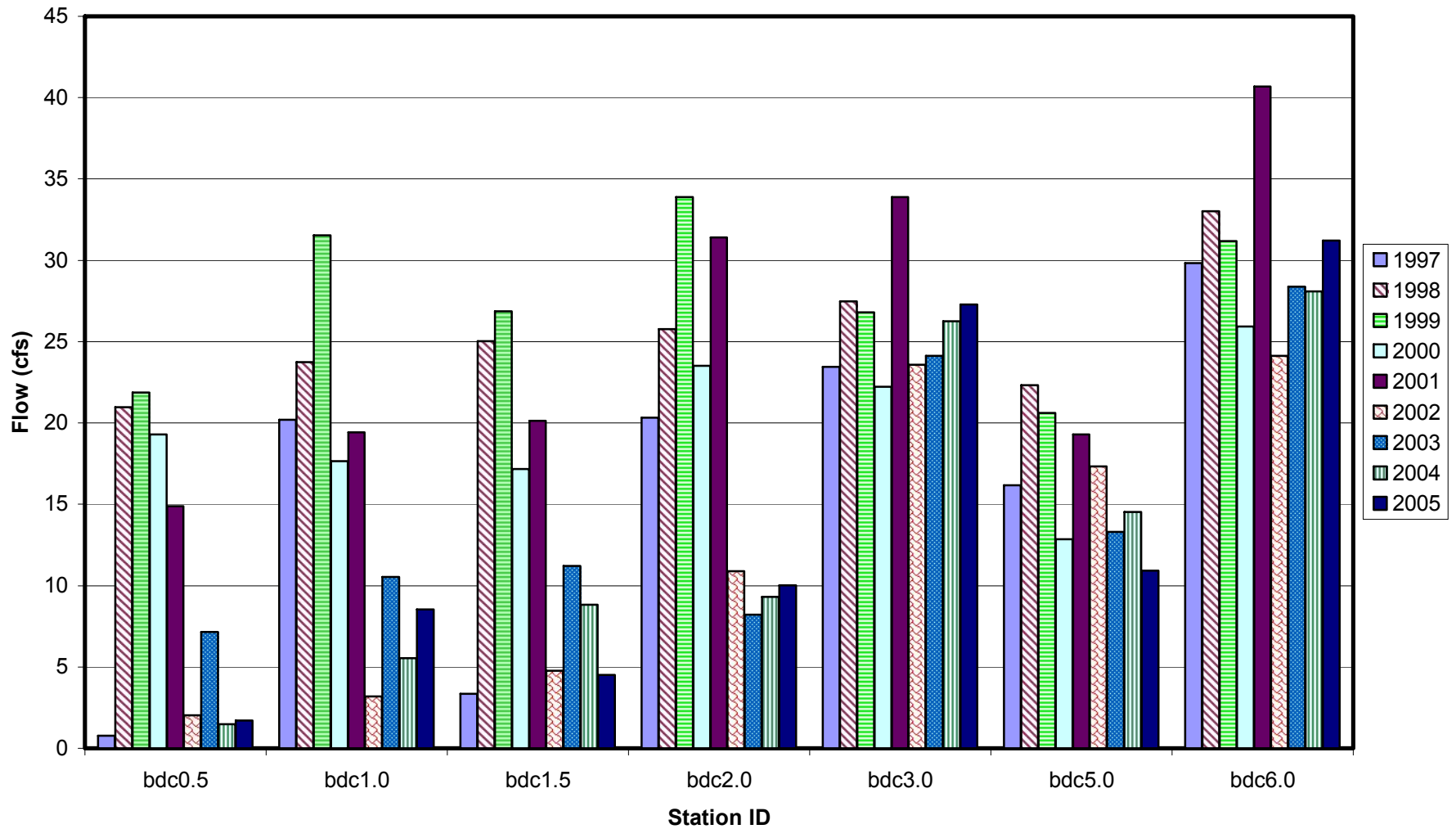
**Figure 17**  
**Nitrate/Nitrite Grab Samples at bdc6.0**  
**1997-2005**



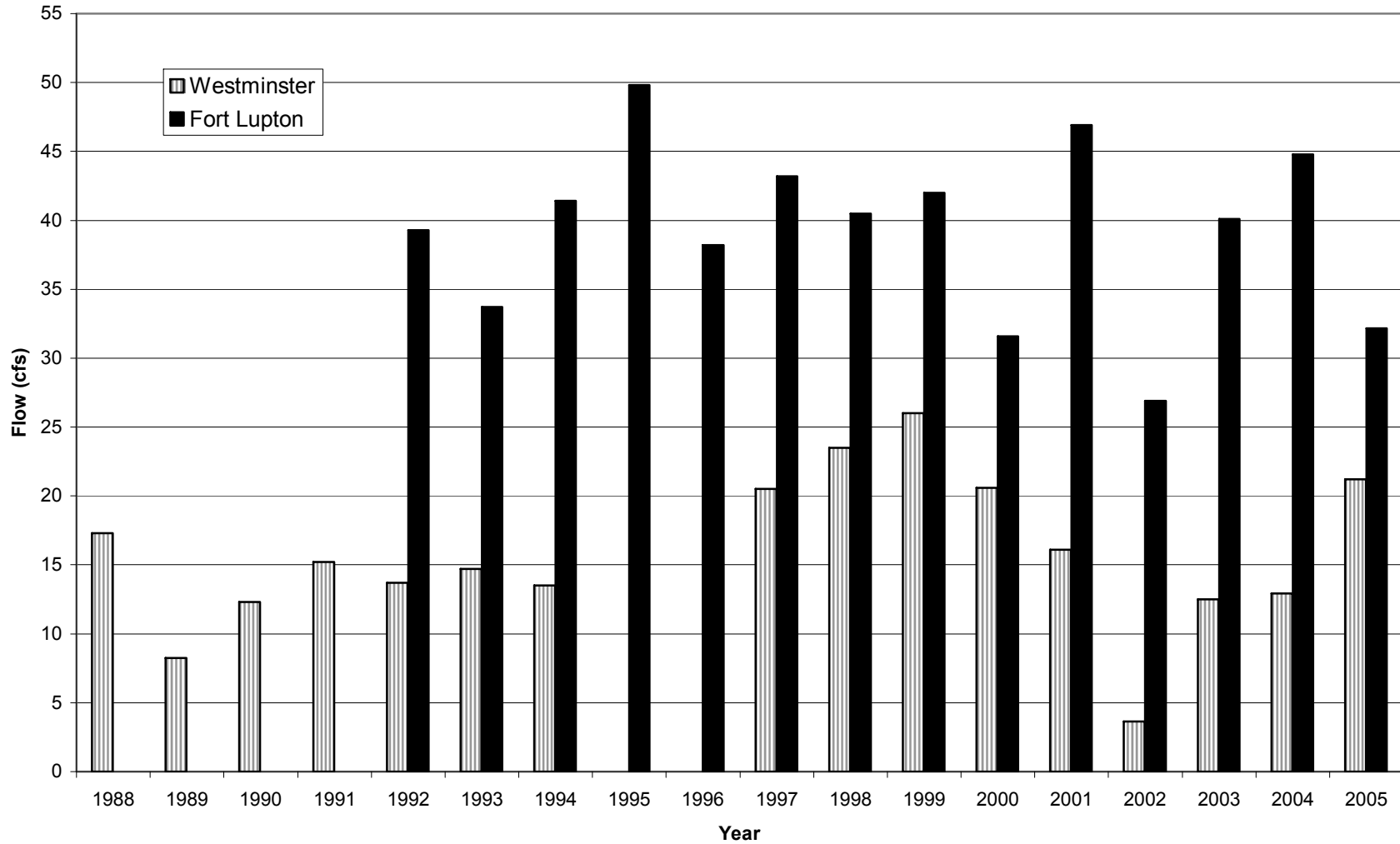
**Figure 18**  
**Big Dry Creek Average Nitrate 2005**



**Figure 19**  
**Big Dry Creek Average Streamflow (1997-2005)**



**Figure 20**  
**Westminster and Fort Lupton Average Daily Flows through 2005**  
**at the USGS Westminster and Fort Lupton Gages**



**Figure 21**  
**2005 Big Dry Creek Average Daily Flows at USGS Westminster and Fort Lupton Gages**

