

# Chapter 6 – Commonly Used Parameter Codes

The most common parameter codes reported for various types of sampling are provided in this chapter. Due to the evolving nature of SWQM, the parameter codes listed are subject to change. Any entity collecting or submitting data to the TCEQ must verify they are using the most current [TCEQ parameter collecting codes](#).

## Field Data

Refer to the [SWQM Procedures Manual, Volume I: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue \(most current version\), Chapter 3](#), for the procedures specific to collecting field and flow data.

**Table 1: Field parameters and Parameter Codes**

FIELD	Parameter Code
WATER TEMPERATURE (°C)	00010
PH (standard units)	00400
DISSOLVED OXYGEN (mg/L)	00300
SPECIFIC CONDUCTANCE (µmhos/cm @ 25 °C)	00094
TRANSPARENCY, SECCHI DISC (meters) <b>**Important parameter for reservoir ranking</b>	00078
DAYS SINCE PRECIPITATION EVENT (days)	72053
SALINITY - ppt (tidal waters only)	00480
CHLORINE, TOTAL RESIDUAL (mg/L) (downstream of WWTPs)	50060
FLOW SEVERITY:1=No Flow, 2=Low, 3=Normal, 4=Flood, 5=High, 6=Dry	01351
INSTANTANEOUS STREAM FLOW (cfs)	00061
FLOW METHOD 1=Flow Gage, 2=Electronic, 3=Mechanical, 4=Weir/Flume, 5=Doppler	89835
RESERVOIR STAGE (feet above mean sea level)	00052
RESERVOIR PERCENT FULL (%)	00053

## Bacteria Data

Refer to the [SWQM Procedures Manual, Volume I, Chapter 4](#), for the procedures specific to bacteria data.

**Table 2: Bacteria Parameters and Parameter Codes**

BACTERIA	Parameter Code
FECAL COLIFORM (colonies/100 mL)	31613
FECAL COLIFORM, MEMBR FILTER, M-FC BROTH, (#/100ML)	31616
E. COLI, mTec ( #/100 mL) (freshwater only)	31648
E. COLI, IDEXX-Colilert (MPN/100 mL) Note: If reporting 31699, also report value for 31704	31699
E. COLI, COLILERT, IDEXX, HOLDING TIME (hours)	31704
E. COLI, NA + MUG OR EA + MUG, 24 HRS, 35 DEGREE ( #/100 mL) (freshwater only)	31700
ENTEROCOCCI (#/100 mL) (marine only)	31649
ENTEROCOCCI, IDEXX-Enterolert (MPN/100 mL)	31701

## 24 Hour Field Data

Refer to the [SWQM Procedures Manual, Volume I, Chapter 3](#), for the procedures specific to 24-hour field data.

**Table 3: 24 Hour Field Parameters and Parameter Codes**

24HR	Parameter Code
DISSOLVED OXYGEN, 24-HOUR AVG (mg/L)	89857
DISSOLVED OXYGEN, # MEASUREMENTS DURING 24-HR	89858
DISSOLVED OXYGEN, 24-HOUR MAX.(mg/L)	89856
DISSOLVED OXYGEN, 24-HOUR MIN. (mg/L)	89855
WATER TEMPERATURE, 24-HR AVERAGE (°C)	00209
WATER TEMPERATURE, # OF MEASUREMENTS DURING 24-HRS	00221
WATER TEMPERATURE, MAXIMUM 24-HR (°C)	00210
WATER TEMPERATURE, MINIMUM 24-HR (°C)	00211
SPECIFIC CONDUCTANCE, 24-HR AVERAGE (µS/cm)	00212
SPECIFIC CONDUCTANCE, # OF MEASUREMENTS DURING 24-HRS	00222
SPECIFIC CONDUCTANCE, MAXIMUM 24-HR (µS/cm)	00213
SPECIFIC CONDUCTANCE, MINIMUM 24-HR (µS/cm)	00214

**Table 3: 24 Hour Field Parameters and Parameter Codes (continued)**

24HR	Parameter Code
pH, # OF MEASUREMENTS DURING 24-HRS	00223
pH, MAXIMUM 24-HR (s.u.)	00215
pH, MINIMUM 24-HR (s.u.)	00216
SALINITY, 24-HR AVERAGE (ppt)	00218
SALINITY, # OF MEASUREMENTS DURING 24-HRS	00220
SALINITY, MAXIMUM 24-HR (ppt)	00217
SALINITY, MINIMUM 24-HR (ppt)	00219

**Conventional Data (Inorganics and Nutrients)**

Refer to the [SWQM Procedures Manual, Volume I, Chapter 5](#), for the procedures specific to routine water chemistry data.

**Table 4: Conventional Parameters and Parameter Codes**

CONVENTIONAL PARAMETERS - INORGANIC	Parameter Code
ALKALINITY, TOTAL (mg/L as CaCO <sub>3</sub> )	00410
RESIDUE, TOTAL NONFILTRABLE (mg/L)	00530
RESIDUE, VOLATILE NONFILTRABLE (mg/L)	00535
RESIDUE, TOTAL FILTRABLE (DRIED AT 180° C) (mg/L)	70300
CHLORIDE (mg/L as Cl)	00940
SULFATE (mg/L as SO <sub>4</sub> )	00945
TOTAL ORGANIC CARBON(mg/L as C)	00680
CONVENTIONAL PARAMETERS - NUTRIENTS	Parameter Code
NITRATE NITROGEN, TOTAL (mg/L as N)	00620
NITRITE NITROGEN, TOTAL (mg/L as N)	00615
NITRITE + NITRATE, TOTAL ONE LAB DETERMINED VALUE (mg/L as N)	00630
AMMONIA-NITROGEN TOTAL (mg/L as N)	00610
ORTHOPHOSPHATE PHOSPHORUS FLDFLT <15MIN (mg/L as P)	00671
ORTHOPHOSPHATE PHOSPHORUS FILTER >15MIN (mg/L as P)	70507
TOTAL PHOSPHORUS (mg/L as P)	00665
TOTAL KJELDAHL NITROGEN (mg/L as N)	00625
CHLOROPHYLL-A, SPECTROPHOTOMETRIC (µg/L)	32211

**Table 4: Conventional Parameters and Parameter Codes (continued)**

CONVENTIONAL PARAMETERS – NUTRIENTS	Parameter Code
CHLOROPHYLL-A, FLUOROMETRIC (µg/L)	70953
PHEOPHYTIN-A, SPECTROPHOTOMETRIC (µg/L)	32218
PHEOPHYTIN-A, FLUOROMETRIC (µg/L)	32213

**Routine Metals in Water Data**

Refer to the [SWQM Procedures Manual, Volume I, Chapter 5](#), for the procedures specific to metals in water data.

**Table 5: Routine Metals in Water Parameters and Parameter Codes**

METALS IN WATER ( <b>Dissolved</b> )	Parameter Code
ALUMINUM, DISSOLVED (µg/L as Al)	01106
ARSENIC, DISSOLVED (µg/L as As)	01000
CADMIUM , DISSOLVED (µg/L as Cd)	01025
CALCIUM, DISSOLVED (µg/L as Ca)	00915
CHROMIUM, DISSOLVED (µg/L as Cr)	01030
COPPER, DISSOLVED (µg/L as Cu)	01040
DISSOLVED HARDNESS, calc. (mg/L as CaCO <sub>3</sub> )	46570
IRON, DISSOLVED (µg/L as Fe)	01046
LEAD, DISSOLVED (µg/L as Pb)	01049
MAGNESIUM, DISSOLVED (µg/L as Mg)	00925
MANGANESE, DISSOLVED (µg/L as Mn)	01056
NICKEL, DISSOLVED (µg/L as Ni)	01065
POTASSIUM, DISSOLVED (µg/L as K)	00935
SILVER, DISSOLVED (µg/L as Ag)	01075
SODIUM, DISSOLVED (mg/L as Na)	00930
ZINC, DISSOLVED (µg/L as Zn)	01090
METALS IN WATER ( <b>Total</b> )	Parameter Code
ALUMINUM, TOTAL (µg/L as Al)Total	01105
ARSENIC, TOTAL (µg/L as As)Total	01002
CADMIUM, TOTAL (µg/L as Cd)	01027
CALCIUM, TOTAL (mg/L as Ca)	00916

**Table 5: Routine Metals in Water Parameters and Parameter Codes (continued)**

METALS IN WATER (Total)	Parameter Code
CHROMIUM, TOTAL ( $\mu\text{g/L}$ as Cr)	01034
COPPER, TOTAL ( $\mu\text{g/L}$ as Cu)	01042
IRON, TOTAL ( $\mu\text{g/L}$ as Fe)	01045
LEAD, TOTAL ( $\mu\text{g/L}$ as Pb)	01051
MAGNESIUM, TOTAL (mg/L as Mg)	00927
MANGANESE, TOTAL ( $\mu\text{g/L}$ as Mn)	01055
MERCURY, TOTAL, EPA 1631 ( $\mu\text{g/L}$ as Hg)	71959
NICKEL, TOTAL ( $\mu\text{g/L}$ as Ni)	01067
POTASSIUM, TOTAL ( $\mu\text{g/L}$ as K)	00937
SELENIUM, TOTAL ( $\mu\text{g/L}$ as Se)	01147
SILVER, TOTAL ( $\mu\text{g/L}$ as Ag)	01077
SODIUM, TOTAL (mg/L as Na)	00929
TOTAL HARDNESS, calc. (mg/L as $\text{CaCO}_3$ )	82394
TOTAL HARDNESS, by titration (mg/L as $\text{CaCO}_3$ )	00900
ZINC, TOTAL ( $\mu\text{g/L}$ as Zn)	01092

### Organics in Water Data

Refer to the [SWQM Procedures Manual, Volume I, Chapter 5](#), for the procedures specific to organics in water data.

**Table 6: Organics in Water Parameters and Parameter Codes**

ORGANICS IN WATER ( $\mu\text{g/L}$ ) - (Semivolatile)	Parameter Code
PHENOL ( $\text{C}_6\text{H}_5\text{OH}$ )-SINGLE COMPOUND	34694
2-CHLOROPHENOL	34586
2-NITROPHENOL	34591
2,4-DICHLOROPHENOL	34601
PARACHLOROMETA CRESOL	34452
2,4,5-TRICHLOROPHENOL	77687
2,4,6-TRICHLOROPHENOL	34621
2,4-DIMETHYLPHENOL	34606

**Table 6: Organics in Water Parameters and Parameter Codes (continued)**

ORGANICS IN WATER ( $\mu\text{g/L}$ ) - (Semivolatile cont.)	Parameter Code
2,4-DINITROPHENOL	34616
4-NITROPHENOL	34646
DNOC (4,6-DINITRO-ORTHO-CRESOL)	34657
PCP (PENTACHLOROPHENOL)	39032
N-NITROSODIMETHYLAMINE	34438
BIS (2-CHLOROETHYL) ETHER	34273
1,3-DICHLOROBENZENE	34566
1,4-DICHLOROBENZENE	34571
1,2-DICHLOROBENZENE	34536
BIS (2-CHLOROISOPROPYL) ETHER	34283
HEXACHLOROETHANE	34396
N-NITroso-DI-N-PROPYLAMINE	34428
NITROBENZENE	34447
ISOPHORONE	34408
BIS (2-CHLOROETHOXY) METHANE	34278
1,2,4-TRICHLOROBENZENE	34551
NAPHTHALENE	34696
HEXACHLOROBUTADIENE	34391
HEXACHLOROCYCLOPENTADIENE	34386
2-CHLORONAPHTHALENE	34581
ACENAPHTHYLENE	34200
DIMETHYL PHTHALATE	34341
2,6-DINITROTOLUENE	34626
ACENAPHTHENE	34205
2,4-DINITROTOLUENE	34611
FLUORENE	34381
4-CHLOROPHENYL PHENYL ETHER	34641
DIETHYL PHTHALATE	34336
N-NITROSODIPHENYLAMINE	34433

**Table 6: Organics in Water Parameters and Parameter Codes (continued)**

ORGANICS IN WATER ( $\mu\text{g/L}$ ) – (Semivolatile)	Parameter Code
1,2-DIPHENYLHYDRAZINE	34346
4-BROMOPHENYL PHENYL ETHER	34636
PHENANTHRENE	34461
ANTHRACENE	34220
DI-N-BUTYL PHTHALATE	39110
FLUORANTHENE	34376
PYRENE	34469
BENZIDINE	39120
N-BUTYL BENZYL PHTHALATE	34292
CHRYSENE	34320
BENZO(A)ANTHRACENE (1,2-BENZANTHRACENE)	34526
3,3'-DICHLOROBENZIDINE	34631
BIS(2-ETHYLHEXYL) PHTHALATE	39100
DI-N-OCTYL PHTHALATE	34596
BENZO(B)FLUORANTHENE	34230
BENZO(K)FLUORANTHENE	34242
BENZO-A-PYRENE	34247
INDENO (1,2,3-CD) PYRENE	34403
1,2,5,6-DIBENZANTHRACENE	34556
BENZO(GHI)PERYLENE (1,12-BENZOPERYLENE)	34521
CRESOL	79778
HEXACHLOROPHENE	88813
ETHANAMINE (N-ETHYL-N-NITROSO)	73611
N-NITROSODI-N-BUTYL AMINE	73609
PYRIDINE	77045
1,2,4,5-TETRACHLOROBENZENE	77734
ORGANICS IN WATER ( $\mu\text{g/L}$ ) – (Volatile)	Parameter Code
CHLOROMETHANE	30201
BROMOMETHANE	30202

**Table 6: Organics in Water Parameters and Parameter Codes (continued)**

ORGANICS IN WATER ( $\mu\text{g/L}$ ) – (Volatile)	Parameter Code
VINYL CHLORIDE	39175
CHLOROETHANE	34311
ACRYLONITRILE	34215
CHLOROFORM	32106
METHYLENE CHLORIDE	34423
1,1-DICHLOROETHYLENE	34501
1,1-DICHLOROETHANE	34496
TRANS-1,2-DICHLOROETHENE	34546
1,2-DICHLOROETHANE	34531
CARBON TETRACHLORIDE	32102
BROMODICHLOROMETHANE	32101
BENZENE , HEXADECONE EXTR.	34030
DIBROMOCHLOROMETHANE	32105
1,1,1-TRICHLOROETHANE	34506
1,2-DICHLOROPROPANE	34541
TRANS-1,3-DICHLOROPROPENE	34699
CIS-1,3-DICHLOROPROPENE	34704
1,1,2-TRICHLOROETHANE	34511
2-CHLOROETHYL VINYL ETHER	34576
TRICHLOROETHYLENE	39180
BROMOFORM	32104
TOLUENE, HEXADECONE EXTR.	34010
ETHYLBENZENE	34371
1,1,2,2-TETRACHLOROETHANE	34516
TETRACHLOROETHYLENE	34475
CHLOROBENZENE	34301
XYLENE	81551
BIS (CHLOROMETHYL) ETHER	34268
1,2-DIBROMOETHANE	77651



**Table 6: Organics in Water Parameters and Parameter Codes (continued)**

ORGANICS IN WATER ( $\mu\text{g/L}$ ) – (Volatile)	Parameter Code
METHYL-TERT-BUTYL ETHER (MTBE)	46491
ORGANICS IN WATER ( $\mu\text{g/L}$ ) – Pesticides (In whole water)	Parameter Code
DDT	39370
DDD	39360
DDE	39365
ALDRIN	39330
DIELDRIN	39380
ENDRIN	39390
CHLORDANE, (TECH MIX & METABS)	39350
ALACHLOR	77825
HEPTACHLOR	39410
HEPTACHLOR EPOXIDE	39420
METHOXYCHLOR	39480
METOLACHLOR	82612
GAMMA-BHC (LINDANE)	39782
TOXAPHENE	39400
SIMAZINE	39055
ATRAZINE (AA TREX)	39630
CYANAZINE (dissolved)	04041
HEXACHLOROBENZENE	39700
ALPHA BENZENE HEXACHLORIDE (ALPHA-BHC)	39337
BETA BENZENE HEXACHLORIDE (BETA-BHC)	39338
DELTA BENZENE HEXACHLORIDE (DELTA-BHC)	34259
DICOFOL (KELTHANE)	39780
MIREX	39755
PENTACHLOROBENZENE	77793
MALATHION	39530
PARATHION	39540
DIAZINON	39570

**Table 6: Organics in Water Parameters and Parameter Codes (continued)**

ORGANICS IN WATER ( $\mu\text{g/L}$ ) - Pesticides (In whole water)	Parameter Code
2,4-D	39730
2,4,5-T	39740
SILVEX	39760
DIURON (KARMEX)	39650
DURSBAN (CHLOROPYRIFOS)	81403
ENDOSULFAN (ALPHA)	34361
ENDOSULFAN (BETA)	34356
ENDOSULFAN SULFATE	34351
DEMETON	39560
GUTHION	39580
SEVIN	39750
PCB-1242	39496
PCB-1254	39504
PCB-1221	39488
PCB-1232	39492
PCB-1248	39500
PCB-1260	39508
PCB-1016	34671
TOTAL PCBS	39516
BENZENE HEXACHLORIDE (BHC)	20464

### Metals in Sediment Data

Refer to the [SWQM Procedures Manual, Volume I, Chapter 6](#), for the procedures specific to metals in sediment data.

**Table 7: Metals in Sediment Parameters and Parameter Codes**

METALS IN SEDIMENT (mg/kg-dry weight)	Parameter Code
ALUMINUM (Al)	01108
ARSENIC (As)	01003
BARIUM (Ba)	01008
CADMIUM (Ca)	01028
CHROMIUM (Cr)	01029
COPPER (Cu)	01043
LEAD (Pb)	01052
MANGANESE (Mn)	01053
MERCURY (Hg)	71921
NICKEL (Ni)	01068
SELENIUM (Se)	01148
SILVER (Ag)	01078
ZINC (Zn)	01093
METALS IN SEDIMENT (mg/kg-dry weight) - <b>Sediment Conventionals</b>	Parameter Code
OIL & GREASE, FREON EXTR-GRAV METH (mg/kg)	00557
OIL & GREASE, FREON EXTR-IR METH (mg/kg)	00561
PERCENT SOLIDS IN SEDIMENT, DRY WEIGHT	81373
TOTAL ORGANIC CARBON, DRY WEIGHT (mg/kg)	81951
SEDIMENT PARTICLE SIZE <0.0039 CLAY % DRY WT	82009
SEDIMENT PARTICLE SIZE 0.0039-0.0625 SILT % DRY WT	82008
SEDIMENT PARTICLE SIZE 0.0625-2MM SAND % DRY WT	89991
SEDIMENT PARTICLE SIZE >2.0MM GRAVEL % DRY WT	80256

**Organics in Sediment Data**

Refer to the [SWQM Procedures Manual, Volume I, Chapter 6](#), for the procedures specific to organics-in-sediment data.

**Table 8: Organics in Sediment Parameters and Parameter Codes**

ORGANICS IN SEDIMENT ( $\mu\text{g}/\text{kg}$ -dry weight) – (Semivolatile)	Parameter Code
PHENOL(C <sub>6</sub> H <sub>5</sub> OH)-SINGLE COMPOUND	34695
2-CHLOROPHENOL	34589
2-NITROPHENOL	34594
2,4-DICHLOROPHENOL	34604
PARACHLOROMETA CRESOL	34455
2,4,5-TRICHLOROPHENOL	78401
2,4,6-TRICHLOROPHENOL	34624
2,4-DIMETHYLPHENOL	34609
2,4-DINITROPHENOL	34619
4-NITROPHENOL	34649
DNOC (4,6-DINITRO-ORTHO-CRESOL)	34660
PCP (PENTACHLOROPHENOL )	39061
N-NITROSODIMETHYLAMINE	34441
BIS (2-CHLOROETHYL) ETHER	34276
1,3-DICHLOROBENZENE	34569
1,4-DICHLOROBENZENE	34574
1,2-DICHLOROBENZENE	34539
BIS (2-CHLOROISOPROPYL) ETHER	34286
HEXACHLOROETHANE	34399
N-NITROSODI-N-PROPYLAMINE	34431
NITROBENZENE	34450
ISOPHORONE	34411
BIS (2-CHLOROETHOXY) METHANE	34281
1,2,4-TRICHLOROBENZENE	34554
NAPHTHALENE	34445
HEXACHLOROBUTADIENE	39705
HEXACHLOROCYCLOPENTADIENE	34389
2-CHLORONAPHTHALENE	34584
ACENAPHTYLENE	34203
DIMETHYL PHTHALATE	34344

**Table 8: Organics in Sediment Parameters and Parameter Codes (continued)**

ORGANICS IN SEDIMENT ( $\mu\text{g}/\text{kg}$ -dry weight) – (Semivolatile)	Parameter Code
2,6-DINITROTOLUENE	34629
ACENAPHTHENE	34208
2,4-DINITROTOLUENE	34614
FLUORENE	34384
4-CHLOROPHENYL PHENYL ETHER	34644
DIETHYL PHTHALATE	34339
N-NITROSODIPHENYLAMINE	34436
1,2-DIPHENYLHYDRAZINE	34349
4-BROMOPHENYL PHENYL ETHER	34639
PHENANTHRENE	34464
ANTHRACENE	34223
DI-N-BUTYL PHTHALATE	39112
FLUORANTHENE	34379
PYRENE	34472
BENZIDINE	39121
N-BUTYL BENZYL PHTHALATE	34295
CHRYSENE	34323
BENZO(A)ANTHRACENE (1,2-BENZANTHRACENE)	34529
3,3'-DICHLOROBENZIDINE	34634
BIS(2-ETHYLHEXYL) PHTHALATE	39102
DI-N-OCTYL PHTHALATE	34599
BENZO(B)FLUORANTHENE	34233
BENZO(K)FLUORANTHENE	34245
BENZO-A-PYRENE	34250
INDENO (1,2,3-CD) PYRENE	34406
1,2,5,6-DIBENZANTHRACENE	34559
BENZO(GHI)PERYLENE (1,12-BENZOPERYLENE)	34524
CRESOL	88811
HEXACHLOROPHENE	73120

**Table 8: Organics in Sediment Parameters and Parameter Codes (continued)**

ORGANICS IN SEDIMENT ( $\mu\text{g}/\text{kg}$ -dry weight) – (Semivolatile)	Parameter Code
N-NITROSODIETHYLAMINE	88817
N-NITROSO-DI-N-BUTYLAMINE	73159
PYRIDINE	88823
1,2,4,5-TETRACHLOROBENZENE	88826
ORGANICS IN SEDIMENT ( $\mu\text{g}/\text{kg}$ -dry weight) – Pesticides (In bottom deposits)	Parameter Code
DDT	39373
DDD	39363
DDE	39368
ALDRIN	39333
DIELDRIN	39383
ENDRIN	39393
CHLORDANE (TECH MIX & METABS)	39351
ALACHLOR	75050
HEPTACHLOR EPOXIDE	39413
METHOXYCHLOR	39481
GAMMA-BHC (LINDANE)	39783
TOXAPHENE	39403
HEXACHLOROBENZENE	39701
BHC, ALPHA ISOMER	39076
B-BHC-BETA	34257
DELTA BENZENE HEXACHLORIDE (DELTA-BHC)	34262
DICOFOL (KELTHANE)	79799
MIREX	79800
PENTACHLOROBENZENE	39118
MALATHION	39531
PARATHION	39541
DIAZINON	39571
2,4-D	39731
2,4,5-T	39741

**Table 8: Organics in Sediment Parameters and Parameter Codes (continued)**

ORGANICS IN SEDIMENT ( $\mu\text{g}/\text{kg}$ -dry weight) – <b>Pesticides (In bottom deposits)</b>	Parameter Code
SILVEX	39761
DIURON (KARMEX)	73030
DURSBAN	81404
ENDOSULFAN (ALPHA)	34364
ENDOSULFAN (BETA)	34359
ENDOSULFAN SULFATE	34354
DEMETON (SYSTOX)	82400
GUTHION	39581
SEVIN	81818
PCB-1242	39499
PCB-1254	39507
PCB-1221	39491
PCB-1232	39495
PCB-1248	39503
PCB-1260	39511
PCB-1016	39514
TOTAL PCBS	39519
BENZENE HEXACHLORIDE (BHC)	81323

**Fish Tissue Analysis Data**

Refer to the [SWQM Procedures Manual, Volume I, Chapter 7](#), for the procedures specific to fish tissue analysis data.

**Table 9: Fish Tissue Analysis Parameters and Parameter Codes**

FISH TISSUE ANALYSIS (mg/kg-wet weight) – <b>(Tissue)</b>	Parameter Code
FISH SPECIES, USE EPA 3-DIGIT SPECIES CODE	74990
ANATOMICAL PART, EPA STORET NUMERIC CODE	74995
NUMBER OF INDIVIDUALS IN COMPOSITE TISSUE SAMPLE	81614
NUMBER OF SPECIES IN COMPOSITE TISSUE SAMPLE (ALWAYS REPORT A 1)	81615
MINIMUM SAMPLE LENGTH IN A COMPOSITE, MILLIMETERS	00280
MAXIMUM SAMPLE LENGTH IN A COMPOSITE, MILLIMETERS	00281
SAMPLE LENGTH IN MILLIMETERS (IF ONE FISH)	00039
SAMPLE WEIGHT IN GRAMS (IF ONE FISH)	00019
SEX (1-MALE, 2-FEMALE, 3-MIXED, 4-UNKNOWN)	84100
FISH TISSUE ANALYSIS (mg/kg-wet weight) – <b>(Metals in Tissue)</b>	Parameter Code
ARSENIC	01004
CADMIUM	71940
CHROMIUM	71939
COPPER	71937
LEAD	71936
MERCURY	71930
SELENIUM	01149
FISH TISSUE ANALYSIS (mg/kg-wet weight) – <b>(Semivolatile Organics in Tissue)</b>	Parameter Code
PERCENT FAT HEXANE EXTRACTION (LIPIDS)	39105
PHENOL	34468
2-CHLOROPHENOL	34590
2-NITROPHENOL	34595
2,4-DICHLOROPHENOL	34605
PARACHLOROMETA CRESOL	34456
2,4,5,-TRICHLOROPHENOL	88809
2,4,6-TRICHLOROPHENOL	34625
2,4-DIMETHYLPHENOL	34610
2,4-DINITROPHENOL	34620
4-NITROPHENOL	34650



**Table 9: Fish Tissue Analysis Parameters and Parameter Codes (continued)**

FISH TISSUE ANALYSIS (mg/kg-wet weight) – (Semivolatile Organics in Tissue)	Parameter Code
DNOC (4,6-DINITRO-ORTHO-CRESOL)	34661
PCP (PENTACHLOROPHENOL)	39060
N-NITROSODIMETHYLAMINE	34442
BIS (2-CHLOROETHYL) ETHER	34277
1,3-DICHLOROBENZENE	34570
1,4-DICHLOROBENZENE	34575
1,2-DICHLOROBENZENE	34540
BIS (2-CHLOROISOPROPYL) ETHER	34287
HEXACHLOROETHANE	34400
N-NITROSODI-N-PROPYLAMINE	34432
NITROBENZENE	34451
ISOPHORONE	34412
BIS (2-CHLOROETHOXY) METHANE	34282
1,2,4-TRICHLOROBENZENE	34555
NAPHTHALENE	34446
HEXACHLOROBUTADIENE	34395
HEXACHLOROCYCLOPENTADIENE	34390
2-CHLORONAPHTHALENE	34585
ACENAPHTHYLENE	34204
DIMETHYL PHTHALATE	34345
2,6-DINITROTOLUENE	34630
ACENAPHTHENE	34209
2,4-DINITROTOLUENE	34615
FLUORENE	34385
4-CHLOROPHENYL PHENYL ETHER	34645
DIETHYL PHTHALATE	34340
N-NITROSODIPHENYLAMINE	34437
1,2-DIPHENYLHYDRAZINE	34350
4-BROMOPHENYL PHENYL ETHER	34640

**Table 9: Fish Tissue Analysis Parameters and Parameter Codes (continued)**

FISH TISSUE ANALYSIS (mg/kg-wet weight) – (Semivolatile Organics in Tissue)	Parameter Code
PHENANTHRENE	34465
ANTHRACENE	34224
DI-N-BUTYL PHTHALATE	34683
FLUORANTHENE	34380
PYRENE	34473
BENZIDINE	34241
N-BUTYL BENZYL PHTHALATE	34296
CHRYSENE	34324
BENZO(A)ANTHRACENE (1,2-BENZANTHRACENE)	34530
3,3'-DICHLOROBENZIDINE	34635
BIS(2-ETHYLHEXYL)PHTHALATE	39099
DI-N-OCTYL PHTHALATE	34600
BENZO(B)FLUORANTHENE	34234
BENZO(K)FLUORANTHENE	34246
BENZO-A-PYRENE	34251
INDENO(1,2,3-CD) PYRENE	34407
1,2,5,6-DIBENZANTHRACENE	34560
BENZO(GHI)PERYLENE (1,12-BENZOPERYLENE)	34525
CRESOL	88812
HEXACHLOROPHENE	88815
N-NITROSODIETHYLAMINE	88818
N-NITROSO-DI-N-BUTYLAMINE	88821
PYRIDINE	88824
1,2,4,5-TETRACHLOROBENZENE	88827
DIOXINS/FURANS TOTAL TEC	20463
BROMOCHLOROMETHANE	20465
DIBROMOMETHANE	20466
FISH TISSUE ANALYSIS (mg/kg-wet weight) – (Pesticides in Tissue)	Parameter Code
DDT, SUM ANALOGS IN TISSUE	39376
DDD	81897

**Table 9: Fish Tissue Analysis Parameters and Parameter Codes (continued)**

FISH TISSUE ANALYSIS (mg/kg-wet weight) – (Pesticides in Tissue)	Parameter Code
DDE	81896
ALDRIN	34680
DIELDRIN	39406
ENDRIN	34685
CHLORDANE (TECH MIX & METABS)	34682
HEPTACHLOR	34687
HEPTACHLOR EPOXIDE	34686
METHOXYCHLOR (UG/G)	81644
GAMMA-BHC (LINDANE)	39785
TOXAPHENE	34691
HEXACHLOROBENZENE	34688
BHC-ALPHA ISOMER (UG/G)	39074
B-BHC-BETA	34258
DELTA BENZENE HEXACHLORIDE	34263
DICOFOL (KELTHANE)	85684
MIREX	81645
PENTACHLOROBENZENE	85679
MALATHION	39534
PARATHION	81810
DIAZINON	81806
2,4-D	88830
2,4,5-T	88833
SILVEX (2,4,5-TP)	39764
DIURON (KARMEX)	88844
DURSBAN	81807
ENDOSULFAN, ALPHA	34365
ENDOSULFAN SULFATE	34355
DEMETON (SYSTOX)	82401
GUTHION	81802

**Table 9: Fish Tissue Analysis Parameters and Parameter Codes (continued)**

FISH TISSUE ANALYSIS (mg/kg-wet weight) - <b>Pesticides in Tissue</b>	Parameter Code
SEVIN (CARBARYL)	81899
PCB-1242	34689
PCB-1254	34690
PCB-1221	34664
PCB-1232	34667
PCB-1248	34669
PCB-1260	34670
PCB-1016	34674
TOTAL PCBs	39515
PCB-1268	20467
BENZENE HEXACHLORIDE (BHC)	81826

**EPA Species Numeric Code**

For use with parameter code 74990, Fish Species: enter the EPA Species Code as the value.

**Table 10: EPA Species Names, Code, and TCEQ Parameter Code**

Common Name	Scientific Name	EPA Species Code	TCEQ Parameter Code
Alligator gar	<i>Lepisosteus spatula</i>	1	98344
American eel	<i>Anguilla rostrata</i>	76	98361
Arkansas River shiner	<i>Notropis girardi</i>	361	98472
Atlantic stingray	<i>Dasyatis sabina</i>	144	98318
Banded pygmy sunfish	<i>Elassoma zonatum</i>	418	99113
Bantam sunfish	<i>Lepomis symmetricus</i>	416	99102
Bay anchovy	<i>Anchoa mitchilli</i>	166	98412
Bayou killifish	<i>Fundulus pulvereus</i>	682	98699
Bigmouth buffalo	<i>Ictiobus cyprinella</i>	3	98508
Bigscale log perch	<i>Percina macrolepida</i>	580	99069
Black buffalo	<i>Ictiobus niger</i>	105	98509
Black bullhead	<i>Ameiurus melas</i>	4	98563
Black crappie	<i>Pomoxis nigromaculatus</i>	5	99109
Black drum	<i>Pogonias cromis</i>	199	98970

**Table 10: EPA Species Names, Code, and TCEQ Parameter Code (continued)**

Common Name	Scientific Name	EPA Species Code	TCEQ Parameter Code
Blackside darter	<i>Percina maculata</i>	436	98540
Blackspot shiner	<i>Notropis atrocaudalis</i>	451	98462
Blackspotted topminnow	<i>Fundulus olivaceus</i>	406	98678
Blackstripe topminnow	<i>Fundulus notatus</i>	404	98677
Blacktail redhorse	<i>Moxostoma poecilurum</i>	391	98515
Blacktail shiner	<i>Cyprinella venustus</i>	377	98487
Blue catfish	<i>Ictalurus furcatus</i>	67	98562
Bluegill sunfish	<i>Lepomis macrochirus</i>	8	99097
Blue sucker	<i>Cycleptus elongatus</i>	386	98505
Bluntnose darter	<i>Etheostoma chlorosomum</i>	547	99075
Bowfin	<i>Amia calva</i>	68	98347
Brook silverside	<i>Labidesthes sicculus</i>	88	98734
Bullhead minnow	<i>Pimephales vigilax</i>	384	98498
Chain pickerel	<i>Esox niger</i>	14	98405
Channel catfish	<i>Ictalurus punctatus</i>	16	98561
Chesnut lamprey	<i>Icthyomyzon castaneus</i>	330	99297
Common carp	<i>Cyprinus carpio</i>	12	98437
Common shiner	<i>Notropis cornutus</i>	89	98470
Common stoneroller	<i>Campostoma anomalum</i>	335	98502
Creek chub	<i>Semotilus atromaculatus</i>	90	98443
Creek chubsucker	<i>Erimyzon oblongus</i>	387	98519
Cypress darter	<i>Etheostoma proeliare</i>	426	99083
Cypress minnow	<i>Hybognathus hayi</i>	339	98493
Dollar sunfish	<i>Lepomis marginatus</i>	414	99098
Dusky darter	<i>Percina sciera</i>	440	98541
Emerald shiner	<i>Notropis atherinoides</i>	77	98461
Fathead minnow	<i>Pimephales promelas</i>	382	98497
Flathead catfish	<i>Pylodictus olivaris</i>	489	98570
Flathead chub	<i>Platygobio gracilis</i>	345	98447
Flier	<i>Centrarchus macropterus</i>	412	99111

**Table 10: EPA Species Names, Code, and TCEQ Parameter Code (continued)**

Common Name	Scientific Name	EPA Species Code	TCEQ Parameter Code
Freckled madtom	<i>Noturus nocturnus</i>	400	98575
Freshwater drum	<i>Aplodinotus grunniens</i>	20	98958
Gafftopsail catfish	<i>Bagre marinus</i>	200	98557
Ghost shiner	<i>Notropis buchanaui</i>	354	98467
Gizzard shad	<i>Dorosoma cepedianum</i>	21	98430
Golden redhorse	<i>Moxostoma erythrurum</i>	390	98514
Golden shiner	<i>Notemigonus crysoleucas</i>	22	98441
Golden topminnow	<i>Fundulus chrysotus</i>	403	98694
Goldfish	<i>Carassius auratus</i>	24	98439
Goldstripe darter	<i>Etheostoma parvipinne</i>	425	99082
Grass carp	<i>Ctenopharyngodon idellus</i>	337	98528
Green sunfish	<i>Lepomis cyanellus</i>	25	99094
Hardhead catfish	<i>Ariopsis felis</i>	136	98559
Harlequin darter	<i>Etheostoma histrio</i>	420	99080
Hogchoker	<i>Trinectes maculatus</i>	522	99218
Ironcolor shiner	<i>Notropis chalybaeus</i>	356	98468
Ladyfish	<i>Elops saurus</i>	486	98352
Lake chubsucker	<i>Erimyzon sucetta</i>	387	98520
Largemouth bass	<i>Micropterus salmoides</i>	31	99090
Log perch	<i>Percina caprodes</i>	433	99068
Longear sunfish	<i>Lepomis megalotis</i>	72	99099
Longnose dace	<i>Rhinichthys cataractae</i>	108	98455
Longnose gar	<i>Lepisosteus osseus</i>	32	98341
Mimic shiner	<i>Notropis volucellus</i>	378	98488
Mosquitofish	<i>Gambusia affinis</i>	407	98713
Mozambique tilapia	<i>Tilapia mossambica</i>	54	98565
Mud darter	<i>Etheostoma asprigene</i>	544	99074
Northern pike	<i>Esox lucius</i>	36	98406
Orangebelly darter	<i>Etheostoma radiosum</i>	428	99084
Orangespotted sunfish	<i>Lepomis humilus</i>	413	99096
Orangethroat darter	<i>Etheostoma spectabile</i>	429	99085

**Table 10: EPA Species Names, Code, and TCEQ Parameter Code (continued)**

Common Name	Scientific Name	EPA Species Code	TCEQ Parameter Code
Paddlefish	<i>Polyodon spathula</i>	106	98335
Pallid shiner	<i>Notropis amnis</i>	350	98460
Pinfish	<i>Lagodon rhomboides</i>	207	99153
Pirate perch	<i>Aphredoderus sayanus</i>	410	98773
Plains killifish	<i>Fundulus zebrinus</i>	455	98729
Plains minnow	<i>Hybognathus placitus</i>	341	98495
Pugnose minnow	<i>Opsopoeodus emiliae</i>	358	98452
Rainwater killifish	<i>Lucania parva</i>	539	98689
Redbreast sunfish	<i>Lepomis auritus</i>	70	99093
Red drum	<i>Sciaenops ocellata</i>	202	98962
Redear sunfish	<i>Lepomis microlophus</i>	40	99100
Redfin pickerel	<i>Esox americanus</i>	168	98404
Redfin shiner	<i>Lythrurus umbratilis</i>	376	98486
Red River shiner	<i>Notropis bairdi</i>	351	98463
Red shiner	<i>Cyprinella lutrensis</i>	363	98474
Redspotted sunfish	<i>Lepomis miniatus</i>		99101
Ribbon shiner	<i>Lythrurus fumeus</i>	359	98471
Rio Grande cichlid	<i>Cichlasoma cyanoguttatum</i>	686	98953
River carpsucker	<i>Carpionodes carpio</i>	42	98511
River darter	<i>Percina shumardi</i>	441	99168
River shiner	<i>Notropis blennioides</i>	352	98464
Rock bass	<i>Ambloplites rupestris</i>	43	99106
Sabine shiner	<i>Notropis sabinae</i>	371	98481
Sand seatrout	<i>Cynoscion arenarius</i>	134	98973
Sand shiner	<i>Notropis stramineus</i>	452	98484
Sauger	<i>Stizostedion canadense</i>	559	99057
Scaly sand darter	<i>Ammocrypta vivax</i>	542	99072
Sheepshead	<i>Archosargus probatocephalus</i>	78	99155
Shortnose gar	<i>Lepisosteus platostomus</i>	107	98342
Shovelnose sturgeon	<i>Scaphirynchus platyrhynchus</i>	102	98337
Silverband shiner	<i>Notropis shumardi</i>	372	98482

**Table 10: EPA Species Names, Code, and TCEQ Parameter Code (continued)**

Common Name	Scientific Name	EPA Species Code	TCEQ Parameter Code
Silver chub	<i>Macrhybopsis storeriana</i>	346	98448
Silver perch	<i>Bairdiella chrysoura</i>	485	98960
Silvery minnow	<i>Hybognathus nuchalis</i>	340	98494
Skipjack herring	<i>Alosa chrysochloris</i>	26	98418
Slough darter	<i>Etheostoma gracile</i>	176	99078
Smallmouth bass	<i>Micropterus dolomieu</i>	47	99091
Smallmouth buffalo	<i>Ictiobus bubalus</i>	48	98507
Southern flounder	<i>Paralichthys lethostigma</i>	201	99246
Speckled chub	<i>Macrhybopsis aestivalis</i>	342	98449
Spot	<i>Leiostomus xanthurus</i>	181	98964
Spotted bass	<i>Micropterus punctulatus</i>	49	99089
Spotted gar	<i>Lepisosteus oculatus</i>	50	98340
Spotted seatrout	<i>Cynoscion nebulosus</i>	142	98974
Spotted sunfish	<i>Lepomis miniatus</i>	415	99101
Spotted sucker	<i>Minytrema melanops</i>	51	98517
Starhead topminnow	<i>Fundulus dispar</i>	405	98693
Striped anchovy	<i>Anchoa hepsetus</i>	532	98410
Striped bass	<i>Morone saxatilis</i>	52	99165
Striped killifish	<i>Fundulus similis</i>	526	98700
Striped mullet	<i>Mugil cephalus</i>	53	98793
Suckermouth minnow	<i>Phenacobius mirabilis</i>	380	98457
Swamp darter	<i>Etheostoma fusiforme</i>	176	99077
Tadpole madtom	<i>Noturus gyrinus</i>	397	98574
Threadfin shad	<i>Dorosoma petenense</i>	333	98429
Walleye	<i>Stizostedion vitreum</i>	55	99058
Warmouth	<i>Lepomis gulosus</i>	56	99095
Weed shiner	<i>Notropis texanus</i>	375	98485
Western sand darter	<i>Ammocrypta clara</i>	542	99071
White bass	<i>Morone chrysops</i>	57	99163
White crappie	<i>Pomoxis annularis</i>	59	99108



**Table 10: EPA Species Names, Code, and TCEQ Parameter Code (continued)**

Common Name	Scientific Name	EPA Species Code	TCEQ Parameter Code
Yellow bass	Morone mississippiensis	93	99164
Yellow bullhead	Ameiurus natalis	62	98564
Yellow perch	Perca flavescens	63	99062

**EPA Anatomical Numeric Code**

For use with parameter code 74995, Anatomical Part: enter the EPA Anatomical Part Code as the value.

**Table 11: EPA Anatomical Parts, Codes, and Alpha Codes**

Anatomy	Anatomical Part Code	EPA Alpha Code (84007)
Stomach	5	STOM
Liver	6	LIVER
Intestine	7	INTST
Gall Bladder	8	GLBDR
Heart	11	HEART
Kidney	32	KIDNY
Bladder	37	BLADR
Spleen	43	SLPN
Scales	57	SCALE
Skin	58	SKIN
Whole Organism	59	WHORG
Brain	61	BRAIN
Male	68	MALE
Female	69	FMALE
Ovary	70	OVARY
Gills	72	GILLS
Filet	86	FILET
Edible Portion	87	EAT
Headless Whole Fish	88	HDLS
Eviscerated Whole Fish	89	EVISC
Lipid Tissue	91	LIPID
Eggs	93	EGGS
Larvae	115	LARVA

## Biological Data

Refer to the [SWQM Procedures, Volume II](#), for the procedures specific to biological monitoring. Parenthetical information for each sampling category below dictates how to report the biological data as a composite record as well as the composite category, composite type, and parameter code that the composite should be based on when possible.

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values**

<b>BIOLOGICAL - Nekton Texas Regional Index Summary &amp; Metadata (Composite, Both, CN)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 1011 for Nekton Texas Regional Index Summary &amp; Metadata)</b>	89888
ECOREGION LEVEL III (TEXAS ECOREGION CODE)	89961
NEKTON ORGANISMS-NONE PRESENT	98005
NUMBER OF SPECIES, FISH	98003
TOTAL NUMBER OF NATIVE CYPRINID SPECIES	98032
TOTAL NUMBER OF BENTHIC INVERTIVORE SPECIES	98052
TOTAL NUMBER OF BENTHIC FISH SPECIES	98053
TOTAL NUMBER OF SUNFISH SPECIES	98008
TOTAL NUMBER OF INTOLERANT SPECIES, FISH	98010
PERCENT INDIVIDUALS AS TOLERANT FISH SPECIES(EXCLUDING WESTERN MOSQUITOFISH)	98070
PERCENT OF INDIVIDUALS AS OMNIVORES, FISH	98017
PERCENT OF INDIVIDUALS AS INVERTIVORES, FISH	98021
PERCENT OF INDIVIDUALS AS PISCIVORES, FISH	98022
TOTAL NUMBER OF INDIVIDUALS SEINING	98039
TOTAL NUMBER OF INDIVIDUALS ELECTROFISHING	98040
NUMBER OF INDIVIDUALS PER SEINE HAUL	98062
NUMBER OF INDIVIDUALS PER MINUTE ELECTROFISHING	98069

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values (continued)**

BIOLOGICAL - Nekton Electrofishing (Composite, Both, CN 89944)	Parameter Code
<b>BIOLOGICAL DATA (report value of 1012 for Nekton Electrofishing)</b>	89888
NEKTON ORGANISMS-NONE PRESENT	98005
ELECTROFISHING METHOD 1=BOAT 2=BACKPACK 3=TOTEBARGE	89943
ELECTROFISH EFFORT, DURATION OF SHOCKING (SEC)	89944
BIOLOGICAL - Nekton Seining (Composite, Both, CN 89947)	Parameter Code
<b>BIOLOGICAL DATA (report value of 1013 for Nekton Seining)</b>	89888
NEKTON ORGANISMS-NONE PRESENT	98005
SEINING EFFORT (# OF SEINE HAULS)	89947
COMBINED LENGTH OF SEINE HAULS (METERS)	89948
SEINING EFFORT, DURATION (MINUTES)	89949
AREA SEINED (SQ METERS)	89976
SEINE, MINIMUM MESH SIZE, AVERAGE BAR, NEKTON,IN	89930
SEINE, MAXIMUM MESH SIZE, AVG BAR, NEKTON,INCH	89931
NET LENGTH (METERS)	89941
BIOLOGICAL - Nekton Observation Not Captured (Composite, Both, CN)	Parameter Code
<b>BIOLOGICAL DATA (report value of 1014 for Nekton Observation Not Captured)</b>	89888
NUMBER OF SPECIES, FISH	98003

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values (continued)**

<b>BIOLOGICAL - Nekton Hoop Net (Composite, Both, CN, 98077)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 1015 for Nekton Hoop Net)</b>	89888
NEKTON ORGANISMS-NONE PRESENT	98005
DURATION OF DEPLOYMENT (HRS)	98077
NUMBER OF SPECIES, FISH	98003
HOOP NET WIDTH (METERS)	98124
<b>BIOLOGICAL - Nekton Hook and Line (Composite, Both, CN, 89942)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 1016 for Nekton Hook and Line)</b>	89888
NEKTON ORGANISMS-NONE PRESENT	98005
NET OR HOOKLINE EFFORT,DURATION IN WATER (HRS)	89942
NUMBER OF SPECIES, FISH	98003
<b>BIOLOGICAL - Nekton Castnet (Composite, Both, CN, 89945)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 1017 for Nekton Castnet)</b>	89888
NEKTON ORGANISMS-NONE PRESENT	98005
CASTNETTING EFFORT (# OF CASTS)	89945
NUMBER OF SPECIES, FISH	98003
<b>BIOLOGICAL - Nekton Trawl (Composite, Both, CN, 89907)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 1018 for Nekton Trawl)</b>	89888
NEKTON ORGANISMS-NONE PRESENT	98005
TRAWL, OTTER, DURATION (MINUTES)	89907
TRAWL, OTTER, WIDTH (M)	89953
NUMBER OF SPECIES, FISH	98003
<b>BIOLOGICAL - Nekton Water Intake Screen (Composite, Both, CN, 89940)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 1019 for Nekton Water Intake Screen)</b>	89888
NEKTON ORGANISMS-NONE PRESENT	98005

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values (continued)**

<b>BIOLOGICAL - Nekton Water Intake Screen (Composite, Both, CN, 89940)</b>	Parameter Code
INTAKE SCREEN COLLECTION, DURATION IN MINUTES	89940
COOLING WATER INTAKE SCREEN(1=REVOLVNG,2=STATIC)	89951
NUMBER OF SPECIES, FISH	98003
<b>BIOLOGICAL - Nekton Gill Net (Composite, Both, CN, 98077)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 10111 for Nekton Gill Net)</b>	89888
NEKTON ORGANISMS-NONE PRESENT	98005
DURATION OF DEPLOYMENT (HRS)	98077
NUMBER OF SPECIES, FISH	98003
GILL NET MESH SIZE (INCHES)	98078
<b>BIOLOGICAL - Benthic Macroinvertebrates Rapid Bioassessment Qualitative (Composite, Both, CN, 89904)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 2011 for Benthic Macroinvertebrates Rapid Bioassessment Qualitative)</b>	89888
BENTHIC DATA REPORTING UNITS (1=NUMBER OF INDIVIDUALS IN SUB-SAMPLE, 2=NUMBER OF INDIVIDUALS/FT2, 3=NUMBER OF INDIVIDUALS/M2, 4=TOTAL NUMBER OF INDIVIDUALS IN SAMPLE)	89899
BENTHIC SAMPLE COLLECTION METHOD (1=SURBER, 2=EKMAN, 3=KICKNET, 4=PETERSON, 5=HESTER DENDY, 6=SNAG, 7=HESS)	89950
MESH SIZE, ANY NET OR SIEVE, AVERAGE BAR (CM)	89946
KICKNET EFFORT, AREA KICKED (SQ.METER)	89903
KICKNET EFFORT, MINUTES KICKED (MIN.)	89904
DIP NET EFFORT, AREA SWEEPED (SQ.METER)	89902
NUMBER OF INDIVIDUALS IN BENTHIC SAMPLE	89906
DEBRIS/SHORELINE SAMPLING EFFORT, MINUTES	89905
ECOREGION LEVEL III (TEXAS ECOREGION CODE)	89961
BENTHOS ORGANISMS -NONE PRESENT	90005
TOTAL TAXA RICHNESS, BENTHOS	90055
NUMBER OF EPT INDEX	90008
HILSENHOFF BIOTIC INDEX (HBI)	90007

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values  
(continued)**

<b>BIOLOGICAL - Benthic Macroinvertebrates Rapid Bioassessment Qualitative (Composite, Both, CN, 89904)</b>	Parameter Code
CHIRONOMIDAE, PERCENT OF INDIVIDUALS	90062
DOMINANT TAXON, BENTHOS PERCENT OF INDIVIDUALS	90042
DOMINANT BENTHIC FUNCTIONAL FEEDING GRP, % OF INDIVIDUALS	90010
BENTHIC PREDATORS, PERCENT OF INDIVIDUALS	90036
RATIO OF INTOLERANT TO TOLERANT TAXA, BENTHOS	90050
PERCENT OF TOTAL TRICHOPTERA INDIVIDUALS AS HYDROPSYCHIDAE	90069
NUMBER OF NON-INSECT TAXA	90052
BENTHIC GATHERERS, PERCENT OF INDIVIDUALS	90025
ELMIDAE, PERCENT OF INDIVIDUALS	90054
RAPID BIOASSESSMENT PROTOCOLS BENTHIC MACROINVERTEBRATE IBI SCORE	90081
BENTHIC DATA REPORTING UNITS (1=NUMBER OF INDIVIDUALS IN SUB-SAMPLE, 2=NUMBER OF INDIVIDUALS/FT2, 3=NUMBER OF INDIVIDUALS/M2, 4=TOTAL NUMBER OF INDIVIDUALS IN SAMPLE)	89899
<b>BIOLOGICAL - Benthic Macroinvertebrates Quantitative Protocol (Composite, Both, CN, 89934, 89901, or 89935)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 2012 for Benthic Macroinvertebrates Quantitative Protocol)</b>	89888
BENTHIC DATA REPORTING UNITS (1=NUMBER OF INDIVIDUALS IN SUB-SAMPLE, 2=NUMBER OF INDIVIDUALS/FT2, 3=NUMBER OF INDIVIDUALS/M2, 4=TOTAL NUMBER OF INDIVIDUALS IN SAMPLE)	89899
BENTHIC SAMPLE COLLECTION METHOD (1=SURBER, 2=EKMAN, 3=KICKNET, 4=PETERSON, 5=HESTER DENDY, 6=SNAG, 7=HESS)	89950
MESH SIZE, ANY NET OR SIEVE, AVERAGE BAR (CM)	89946
AREA OF SNAG SURFACE SAMPLED (SQ.MT)	89975
HESTER-DENDY DURATION (DAYS)	89933
PETERSEN SAMPLER EFFORT, AREA SAMPLED (SQ. MTR.)	89934
EKMAN SAMPLER EFFORT, AREA SAMPLED (SQ.METER)	89935

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values  
(continued)**

<b>BIOLOGICAL - Benthic Macroinvertebrates Quantitative Protocol (Composite, Both, CN, 89934, 89901, or 89935)</b>	Parameter Code
SURBER SAMPLER EFFORT, AREA SAMPLED (SQ. METER)	89901
ECOREGION LEVEL III (TEXAS ECOREGION CODE)	89961
BENTHOS ORGANISMS -NONE PRESENT	90005
TOTAL TAXA RICHNESS, BENTHOS	90055
NUMBER OF DIPTERA TAXA	90056
NUMBER OF EPHEMEROPTERA TAXA	90057
TOTAL NUMBER OF INTOLERANT TAXA, BENTHOS	90058
EPT, PERCENT OF INDIVIDUALS	90060
CHIRONOMIDAE, PERCENT OF INDIVIDUALS	90062
TOLERANT BENTHOS, PERCENT OF INDIVIDUALS	90066
BENTHIC GRAZERS, PERCENT OF INDIVIDUALS	90020
BENTHIC GATHERERS, PERCENT OF INDIVIDUALS	90025
BENTHIC FILTERERS, PERCENT OF INDIVIDUALS	90030
DOMINANT 3 TAXA, PERCENT OF INDIVIDUALS	90067
QUANTITATIVE PROTOCOLS REGIONAL BENTHIC MACROINVERTEBRATE IBI SCORE	90085
<b>BIOLOGICAL - Benthic Macroinvertebrates Other Protocol (Composite, Both, CN, 89904)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 2013 for Benthic Macroinvertebrates Other Protocol)</b>	89888
DEBRIS/SHORELINE SAMPLING EFFORT, MINUTES	89905
BENTHIC SAMPLE COLLECTION METHOD (1=SURBER, 2=EKMAN, 3=KICKNET, 4=PETERSON, 5=HESTER DENDY, 6=SNAG, 7=HESS)	89950
KICKNET EFFORT, MINUTES KICKED (MIN.)	89904
ECOREGION LEVEL III (TEXAS ECOREGION CODE)	89961
BENTHOS ORGANISMS -NONE PRESENT	90005

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values  
(continued)**

BIOLOGICAL - Habitat TCEQ Parts 1, 2, and 3 Protocol (Composite, Both, CN)	Parameter Code
<b>BIOLOGICAL DATA (report value of 3011 for Habitat TCEQ Parts 1, 2, and 3 Protocol)</b>	89888
STREAM TYPE; 1=PERENNIAL 2=INTERMITTENT S/PERENNIAL POOLS 3=INTERMITTENT 4=UNKNOWN	89821
STREAMBED SLOPE (M/KM)	72051
DRAINAGE AREA ABOVE MOST DOWNSTREAM TRANSECT	89859
STREAM ORDER	84161
REACH LENGTH OF STREAM EVALUATED (M)	89884
NUMBER OF LATERAL TRANSECTS MADE	89832
AVERAGE STREAM WIDTH (METERS)	89861
AVERAGE STREAM DEPTH (METERS)	89862
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SEC)	00061
FLOW MTH 1=GAGE 2=ELEC 3=MECH 4=WEIR/FLU 5=DOPPLER	89835
HABITAT FLOW STATUS, 1=NO FLOW, 2=LOW,3=MOD,4=HIGH	89848
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)	89864
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)	89865
TOTAL NUMBER OF STREAM BENDS	89839
NUMBER OF WELL DEFINED STREAM BENDS	89840
NUMBER OF MODERATELY DEFINED STREAM BENDS	89841
NUMBER OF POORLY DEFINED STREAM BENDS	89842
TOTAL NUMBER OF RIFFLES	89843
DOMINANT SUBSTRATE TYPE(1=CLAY,2=SILT,3=SAND,4=GRAVEL,5=COBBLE,6=BOULDER,7=BEDROCK,8=OTHER)	89844
AVERAGE PERCENT OF SUBSTRATE GRAVEL SIZE OR LARGER	89845
AVERAGE PERCENTAGE INSTREAM COVER	84159
NUMBER OF STREAM COVER TYPES	89929
AVERAGE STREAM BANK EROSION (%)	89846
AVERAGE STREAM BANK SLOPE (DEGREES)	89847



**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values  
(continued)**

BIOLOGICAL - Habitat TCEQ Parts 1, 2, and 3 Protocol (Composite, Both, CN)	Parameter Code
AVERAGE WIDTH OF NATURAL RIPARIAN VEGETATION (M)	89866
AVERAGE WIDTH OF NATURAL RIPARIAN BUFFER ON LEFT BANK (M)	89872
AVERAGE WIDTH OF NATURAL RIPARIAN BUFFER ON RIGHT BANK (M)	89873
AVERAGE PERCENT TREES AS RIPARIAN VEGETATION	89849
AVERAGE PERCENT SHRUBS AS RIPARIAN VEGETATION	89850
AVERAGE PERCENT GRASS AS RIPARIAN VEGETATION	89851
AVERAGE PERCENT CULTIVATED FIELDS AS RIPARIAN VEGETATION	89852
AVERAGE PERCENT OTHER AS RIPARIAN VEGETATION	89853
AVERAGE PERCENTAGE OF TREE CANOPY COVERAGE	89854
AESTHETICS OF REACH (1=WILD 2=NAT. 3=COMM. 4=OFF.)	89867
LAND DEVELOP IMPACT (1=UNIMP,2=LOW,3=MOD,4=HIGH)	89962
RIPARIAN VEGETATION %; LEFT BANK - TREES	89822
RIPARIAN VEGETATION %; RIGHT BANK - TREES	89823
RIPARIAN VEGETATION %; LEFT BANK SHRUBS	89824
RIPARIAN VEGETATION %; RIGHT BANK - SHRUBS	89825
RIPARIAN VEGETATION %: LEFT BANK - GRASSES OR FORBS	89826
RIPARIAN VEGETATION %; RIGHT BANK - GRASSES OR FORBS	89827
RIPARIAN VEGETATION %: LEFT BANK - CULTIVATED FIELDS	89828
RIPARIAN VEGETATION %: RIGHT BANK - CULTIVATED FIELDS	89829
RIPARIAN VEGETATION %: LEFT BANK - OTHER	89830
RIPARIAN VEGETATION %: RIGHT BANK - OTHER	89871
AVAILABLE INSTREAM COVER HQI SCORE: 4=ABUNDANT 3=COMMON 2=RARE 1=ABSENT	89874
BOTTOM SUBSTRATE STABILITY HQI SCORE: 4=STABLE 3=MODERATELY STABLE 2=MODERATELY UNSTABLE 1=UNSTABLE	89875

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values  
(continued)**

<b>BIOLOGICAL - Habitat TCEQ Parts 1, 2, and 3 Protocol (Composite, Both, CN)</b>	Parameter Code
NUMBER OF RIFFLES HQI SCORE: 4=ABUNDANT 3=COMMON 2=RARE 1=ABSENT	89876
DIMENSIONS OF LARGEST POOL HQI SCORE: 4=LARGE 3=MODERATE 2=SMALL 1=ABSENT	89877
CHANNEL FLOW STATUS HQI SCORE: 3=HIGH 2=MODERATE 1=LOW 0=NO FLOW	89878
BANK STABILITY HQI SCORE: 3=STABLE 2=MODERATELY STABLE 1=MODERATELY UNSTABLE 0=UNSTABLE	89879
CHANNEL SINUOSITY HQI SCORE: 3=HIGH 2=MODERATE 1=LOW 0=NONE	89880
RIPARIAN BUFFER VEGETATION HQI SCORE: 3=EXTENSIVE 2=WIDE 1=MODERATE 0=NARROW	89881
AESTHETICS OF REACH HQI SCORE: 3=WILDERNESS 2=NATURAL AREA 1=COMMON SETTING 0=OFFENSIVE	89882
HQI TOTAL SCORE	89883
NO FLOW ISOLATED POOL: LARGEST POOL MAX WIDTH (METERS)	89908
NO FLOW ISOLATED POOL: LARGEST POOL MAX LENGTH (METERS)	89909
NO FLOW ISOLATED POOL: LARGEST POOL MAX DEPTH (METERS)	89910
NO FLOW ISOLATED POOL: SMALLEST POOL MAX DEPTH (METERS)	89911
NO FLOW ISOLATED POOL: SMALLEST POOL MAX WIDTH (METERS)	89912
NO FLOW ISOLATED POOL: SMALLEST POOL MAX LENGTH (METERS)	89913
NO FLOW ISOLATED POOLS: NUMBER OF POOLS EVALUATE	89914
<b>BIOLOGICAL - Habitat EPA EMAP Protocol (Composite, Both, CN)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 3012 for Habitat EPA EMAP Protocol)</b>	89888

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values  
(continued)**

<b>BIOLOGICAL - Algae Diatoms (Composite, Both, CN, 93308)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 4011 for Algae Diatoms)</b>	89888
ALGAE SUBSTRATE TYPE (1=ROCKY 2=WOODY 3=SILT/SAND 4=COMPOSITE 5=ARTIFICIAL 6=NUTRIENT DIFFUSING)	93304
ALGAE SAMPLE TYPE (1=QUALITATIVE SINGLE SUBSTRATE 2=QUALITATIVE COMPOSITE 3=QUANTITATIVE 4=PERCENT SUBSTRATE COVERAGE)	93303
ALGAE HABITAT TYPE SAMPLED (1=RIFFLE 2=RUN 3=GLIDE 4=POOL 5=MULTIPLE HABITAT TYPES SAMPLED)	93307
ALGAE AREA SAMPLED, QUANTITATIVE (M2)	93308
ALGAL DATA REPORTING UNITS (1=CELLS/ML 2=CELLS/M2 3=CELLS/SAMPLE 4=OBSERVED)	93314
NUMBER OF DIATOM AND SOFT ALGAE GENERA IN SAMPLE	93301
NUMBER OF ALGAL DIVISIONS IN SAMPLE	93302
NUMBER DIATOM VALVES COUNTED	93316
NUMBER DIATOM TAXA	93318
DIATOM SHANNON DIVERSITY	93320
DIATOM POLLUTION TOLERANCE INDEX	93323
DIATOM SENSITIVE/INTOLERANT, %	93343
ALGAE, DOMINANT 3 TAXA, %	93333
ALGAE MOTILE TAXA, %	93335
ALGAE TOLERANT TAXA, %	93337
CYMBELLA GROUP RICHNESS	93340
FRAGILARIA GROUP RICHNESS	93344
<b>BIOLOGICAL - Algae Soft Benthic Not Diatoms (Composite, Both, CN, 93308)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 4012 for Algae Soft Benthic Not Diatoms)</b>	89888
ALGAE SUBSTRATE TYPE (1=ROCKY 2=WOODY 3=SILT/SAND 4=COMPOSITE 5=ARTIFICIAL 6=NUTRIENT DIFFUSING)	93304
ALGAE SAMPLE TYPE (1=QUALITATIVE SINGLE SUBSTRATE 2=QUALITATIVE COMPOSITE 3=QUANTITATIVE 4=PERCENT SUBSTRATE COVERAGE)	93303

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values  
(continued)**

<b>BIOLOGICAL - Algae Soft Benthic Not Diatoms (Composite, Both, CN, 93308)</b>	Parameter Code
ALGAE HABITAT TYPE SAMPLED (1=RIFFLE 2=RUN 3=GLIDE 4=POOL 5=MULTIPLE HABITAT TYPES SAMPLED)	93307
ALGAE AREA SAMPLED, QUANTITATIVE (M2)	93308
ALGAL DATA REPORTING UNITS (1=CELLS/ML 2=CELLS/M2 3=CELLS/SAMPLE 4=OBSERVED)	93314
NUMBER OF DIATOM AND SOFT ALGAE GENERA IN SAMPLE	93301
NUMBER OF ALGAL DIVISIONS IN SAMPLE	93302
NUMBER OF CELLS/UNITS COUNTED, BENTHIC ALGAE	93346
CHLOROPHYLL A, BENTHIC	93347
ASH FREE DRY WEIGHT	93348
ALGAL CELL/UNIT DENSITY	93349
<b>BIOLOGICAL - Algae Phytoplankton (Composite, Both, CN, 93403, 93400)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 4013 for Algae Phytoplankton)</b>	89888
ALGAL DATA REPORTING UNITS (1=CELLS/ML 2=CELLS/M2 3=CELLS/SAMPLE 4=OBSERVED)	93314
NUMBER OF DIATOM AND SOFT ALGAE GENERA IN SAMPLE	93301
NUMBER OF ALGAL DIVISIONS IN SAMPLE	93302
PLANKTON SAMPLE TYPE (1=TOW 2=GRAB 3=DEPTH INTEGRATED)	93390
PLANKTON SAMPLE VOLUME COLLECTED	93392
TOW TYPE (1=VERT., 2=HORIZ.)	89938
PLANKTON SAMPLE TOW LENGTH (METERS)	93400
PLANKTON SAMPLE TOW TIME (MINUTES)	93403
PHYTOPLANKTON DENSITY, TOTAL (CELLS/ML)	95999
DIVERSITY--MACROPHYTES	99300
PHYTOPLANKTON SAMPLED--NO ORGANISMS PRESENT	93305
PHYTOPLANKTON--UNKNOWN ORGANISM (#/SAMPLE)	93306

**Table 12: Biological Parameters & Parameter Codes, Sampling Categories & Values  
(continued)**

<b>BIOLOGICAL - Algae Visual Algal Assessment (Composite, Both, CN)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 4014 for Algae Visual Algal Assessment)</b>	89888
ALGAE SUBSTRATE TYPE (1=ROCKY 2=WOODY 3=SILT/SAND 4=COMPOSITE 5=ARTIFICIAL 6=NUTRIENT DIFFUSING)	93304
ALGAE HABITAT TYPE SAMPLED (1=RIFFLE 2=RUN 3=GLIDE 4=POOL 5=MULTIPLE HABITAT TYPES SAMPLED)	93307
ALGAL DATA REPORTING UNITS (1=CELLS/ML 2=CELLS/M2 3=CELLS/SAMPLE 4=OBSERVED)	93314
ALGAL MAT (1=ABSENT 2=SLIME 3=VISIBLE 4=MEASUREABLE)	93405
ALGAL MAT THICKNESS	93407
BENTHIC ALGAE, PERCENT COVER	93409
GREEN FILAMENTOUS ALGAE, PERCENT COVER	93422
BLUEGREEN, PERCENT COVER	93424
DIATOM, PERCENT COVER	93426
RED ALGAE, PERCENT COVER	93429
FLOATING MAT/SCUM PERCENT COVER	93463
<b>BIOLOGICAL - Zooplankton (Composite, Both, CN, 93403, 93400)</b>	Parameter Code
<b>BIOLOGICAL DATA (report value of 501 for Zooplankton)</b>	89888
PLANKTON SAMPLE TYPE (1=TOW 2=GRAB 3=DEPTH INTEGRATED)	93390
PLANKTON SAMPLE VOLUME COLLECTED	93392
TOW TYPE (1=VERT., 2=HORIZ.)	89938
PLANKTON SAMPLE TOW LENGTH (METERS)	93400
PLANKTON SAMPLE TOW TIME (MINUTES)	93403