Drinking Water Project – Bulk File Transfer via ftp – May 27th, 2003

Information for **Operators** and Labs

The following information deals with the codes that are required in the fixed format file to be able to send bulk data by ftp into AENV's EMS system.

File Format Document – LAB/DWQ DATA FILE FORMAT

This document stipulates the correct format that must be adhered to so that data can be loaded into the EMS system and can be found at the Alberta Environment web site, in the Water, Drinking Water Quality section: http://www3.gov.ab.ca/env/water/dwq/index.cfm

The following are codes that are required for the fixed format to load into EMS; they are divided up as to the type of record that they belong in. Please refer to the – LAB/DWQ DATA FILE FORMAT document to help understand where these codes belong. The document's page number is after the type of record and the code has the Field Number on that page, preceded by the record type code (descriptions of record type are found on pg 2 of the format document)

F (File Header) Record – **required for operators**, not applicable for labs (pg 5)

1. The approval number MUST be a valid AENV approval number

T (Station Status) Record – this record is **optional for operators** (only need to use if station status has changed) and not applicable for labs (pg 6)

1. Station Number (T3)
    a. exact codes assigned by AENV as per individual approval
2. Status Indicator (T5)
    a. OPR - operating (default in DWQ system)
    b. SHD – shut down (if a station/location is shutdown, the compliance process will not raise an incident for missing measurements)

S (Sample Header) Record – required for all types of files (pg 7)

1. Lab Code (S9)
    a. Contract Labs
        i. Alberta Research Council – Inorganics = 026
        ii. Alberta Research Council – Organics = 035
        iii. Envirotest = 034
        iv. Maxxam = 023
        v. Norwest = 063
        vi. EPCOR Water Services, QA Section, Water Lab = 118
        vii. EPCOR Water Services, Operation Lab = 037
    b. Provincial Laboratory for Public Health (Microbiology)
        i. South Lab = 106
        ii. North Lab = 069
    c. Operators
        i. From Operation
    d. On behalf of another operation (like a contract lab)
    e. Additional from Envirodat – see Appendix

2. Stations No. (S11)
   - can include (exact codes assigned by AENV as per individual approval and in conjunction with operator)
      a. OPERATIONAL
         i. Raw (Entering Plant)
         ii. Within Plant
         iii. Entering Distribution
      b. DISTRIBUTION
         i. Reservoirs (away from plant)
         ii. Within Distribution Chemical
         iii. Bacti (within distribution)

   The station number is a combination of the province, river sub basin and (usually) 4 digits eg., AB05EB9999.

   When the operator needs to send a sample to a contract lab, ie monthly fluoride or annual sample, the operator will need to supply the contract lab with the correct station number and other codes. The following is a DRAFT of what the label may look like, with the final version being sent out to all operations as they start to participate in the program.

   Annual/Semi-annual sampling for AENV Approval/Registration No: _____ (S20) NEW
   Facility Name: _____ (C4)
   at Station No: _____(S11) Station Name: _____(C4)
   Sample Matrix Code: Treated - 10; Raw - 6; Partially Treated – 24; (Circle one) (S14)
   Sample Frequency: Annual - ANNUL (S25) NEW
   Sample Date & Time: _____ (S4)
   Further Comments: _____
   _____(C4)

   Send results to AENV electronically: YES (Must have Approval/Registration No. filled in); NO

3. Project No. (S12) – groups together data of a specific type for a specific purpose
   a. For ANY Alberta Environment collected samples or ANY samples collected for inclusion into EMS database, usually begin with AB and is 6 characters long. This MUST be a valid code, includes (but not limited to)
   b. **ABMDWQ** – default project for the drinking water initiative for water operations.
   c. ABMTWS – AENV Treated Water Survey samples (taken by inspectors)
   d. ABI001 - AENV Industrial sampling (taken by inspectors)
   e. ABS*** - AENV Surface water monitoring projects
   f. ABG*** - AENV Ground water monitoring projects
   g. INVEST – AENV Investigative samples DO NOT SEND ELECTRONICALLY

4. Agency Code (S13) – another type of grouping of data, based on the AENV department that oversees that data
   a. 201 – Industrial Monitoring
   b. 202 – Municipal Monitoring
   c. 209 – Pesticide Monitoring/Applications
   d. 211 – Surface Water Monitoring

5. Sample Matrix (S14) – indicates the state, or at what part of a process, that the sample is at
    - **a. For DWQ**
        - **i. Raw water (prior to any treatment) = 6**
        - **ii. Partially treated (within operation) = 24**
        - **iii. Treated water (for / in distribution) = 10**
    - b. For Industrial / wastewater :
        - i. Wastewater (unknown if raw or treated) = 20
        - ii. Raw Wastewater (prior to treatment) = 21
        - iii. Treated Wastewater (at discharge) = 22
    - c. For Surface Water
        - i. Water (their idea of raw) = 0
    - d. Additional from Envirodat – see Appendix

6. Sample Type (S17) – indicates the type / quality / mathematical aspects of a sample.
    - **a. Discrete / Grab = 1**
    - **b. Calculated (eg. Ave, Max, Min) = 19**
        - **i. Reading type (S26) (only calculated sample types have a reading type):**
            1. **Average = AVG**
            2. **Consecutive = CON**
            3. **Cumulative = CML**
            4. **Maximum = MAX**
            5. **Minimum = MIN**
            6. **Sum (Total) = TOT**
    - **c. Continuous = 96**
    - **d. Bacti Resample for Protocol (high value that triggered the protocol) = 32**
    - **e. Bacti Resample NOT for Protocol (eg. broken sample) = 33**
    - **f. Sample NOT for Compliance (extra Bacti data, eg. Main Breaks) = 35**
    - g. Additional from Envirodat – see Appendix

7. Sample Frequency (S25) – indicates in what time frame a sample is to be taken, eg. Free Chlorine Residual testing is a daily and weekly monitoring requirement.
    - **a. Annual = ANNUL (annual or semi annual chemistry samples)**
    - **b. Daily = DAILY**
    - **c. Monthly = MONTH (calendar month)**
    - **d. Weekly = WEEK (usually a 7 day week)**
    - **e. Weekly (except Statutory holidays) = WKGW (this typically for small groundwater operations that can have a 5 day week)**

M (Measurement Detail) Record (pg 8)

1. Measurement Flag (M10) - to indicate whether the value in M9 is less than the MDL (method detection limit) or greater than the highest range possible for a method.
    - a. Greater Than the value = G
    - b. Less Than the value = L

2. VMV Codes (M8) – a VMV is a specific variable, with a specific method, with a specific unit Eg: for total or free chlorine (and we would choose which were applicable to Alberta – as shown in **bold** below. New VMVs are obtained from Envirodat (Canada) and existing VMVs can be obtained from AENV until Envirodat is updated …. Send an email to dwq.datacoord@gov.ab.ca

VMV_CODE	VARIABLE_CODE	VARIABLE_NAME	METHOD_CODE	E_DESCRIPTION	UNIT_CODE
98274	**2804**	**CHLORINE, TOTAL**	**1929**	**TOTAL, FREE AND/OR COMBINED CHLORINE METHOD USED BY OPERATORS**	**mg/L**
101193	2804	CHLORINE, TOTAL	2768	CHLORINE, FREE & TOTAL: ANALYSIS DONE IN THE FIELD BY HACH TEST KIT.	mg/L
910167	**2804**	**CHLORINE, TOTAL**	**9100**	**UNKNOWN METHOD - USED FOR THIRD-PARTY REPORTED MEASUREMENTS**	**mg/L**
910168	2804	CHLORINE, TOTAL	9100	UNKNOWN METHOD - USED FOR THIRD-PARTY REPORTED MEASUREMENTS	ppm

VMV_CODE	VARIABLE_CODE	VARIABLE_NAME	METHOD_CODE	E_DESCRIPTION	UNIT_CODE
98273	**2803**	**CHLORINE, FREE**	**1929**	**TOTAL, FREE AND/OR COMBINED CHLORINE METHOD USED BY OPERATORS**	**mg/L**
101192	2803	CHLORINE, FREE	2768	CHLORINE, FREE & TOTAL: ANALYSIS DONE IN THE FIELD BY HACH TEST KIT.	mg/L
104724	2803	CHLORINE, FREE	3169	CHLORINE-FREE:HACH KIT, CHLORINE-TOTAL:HACH KIT	mg/L
910165	**2803**	**CHLORINE, FREE**	**9100**	**UNKNOWN METHOD - USED FOR THIRD-PARTY REPORTED MEASUREMENTS**	**mg/L**
910166	2803	CHLORINE, FREE	9100	UNKNOWN METHOD - USED FOR THIRD-PARTY REPORTED MEASUREMENTS	ppm
910385	2803	CHLORINE, FREE	9100	UNKNOWN METHOD - USED FOR THIRD-PARTY REPORTED MEASUREMENTS	kg/d
910386	2803	CHLORINE, FREE	9100	UNKNOWN METHOD - USED FOR THIRD-PARTY REPORTED MEASUREMENTS	kg/d net

3. Qualifiers (M14 to M20) - there is room for 7 qualifiers per measurement; they are listed below. If there is not a qualifier that matches what you need to explain, use a K record (next page)

CODE	E_DESCRIPTION
<RDL	LESS THAN RELIABLE DETECTION LIMIT
>MRV	VALUE IS GREATER THAN MRV BUT LESS THAN MDL
B	ANALYTE FOUND IN BLANK AND SAMPLE. BLANK VALUE SUBRACTED
BNS	ANALYTE FOUND IN BLANK AND SAMPLE(BLANK NOT SUBRACTED)
CG	CONFLUENT GROWTH
CR	CORRECTED FOR RECOVERY
DR	DILUTION REQUIRED TO ANALYZE THE SAMPLE AND MDL ADJUSTED ACCORDINGLY
E	ESTIMATE - LESS THAN MDL
FSE	FALLS WITHIN STANDARD ERROR
HT	HOLDING TIME EXCEEDED
HTA	ANALYSIS TIME EXCEEDED (21 DAYS)
HTE	EXTRACTION TIME EXCEEDED (7 DAYS)
I	ALL CONFORMATION IONS NOT PRESENT
ISB	INAPPROPRIATE SAMPLE AMOUNT OR BROKEN
ISH	INSUFFICIENT HEAD SPACE
IST	INAPPROPRIATE SAMPLE TEMPERATURE
M	CALCULATED BY AN ALTERNATE RAW DATA SET
QIR	QUALIFYING IONS PRESENT BUT FAILED THE ION RATIO LIMITS
R	REPLICATE CRITERIA NOT MET
RER	RERUN/RECHECK OF MEASUREMENT
SPK	VARIABLE HAS BEEN SPIKED
SPNF	STANDARD PROCEDURE NOT FOLLOWED
SUS	VALUE IS SUSPECT
TAM	TEMPORARY ALTERNATE METHOD
VER	VALUE HAS BEEN VERIFIED

4. Missing Measurement Codes (M21) - when a measurement value cannot be assigned for a specific reason:
    a. Analyzer Broken = ANB
    b. Laboratory Error = LBE
    c. Transposing Error = TPE
    d. Either / Or Missing Measurement (re; Chlorine Residual) = EIO

C (Sample Header Comment) Record (pg 9) – this record is required for lab files and optional for DWQ files but we would prefer that all operations would utilize this as a place to be more specific:

1. About where the sample was taken: could include an address (NOT a person's name) eg. "99999-999 st" or "Taken 500 feet from reservoir at hydrant X" or a GIS location
2. Any particulars about a sample, eg. "After running the tap for 10 minutes, the sample was cloudy and did not clear."

K (Measurement Comment) Record (pg 10) – this record is optional for all files but should be used if there are comments to be made about a measurement or analysis that cannot be covered by a qualifier or a missing measurement code. eg. "third re-run of selenium, first two were out of range". This comment field is used often for Bacti results if the sample could not be run for any reason, and specifies the reason.

THE ORDER OF THE RECORDS WITHIN A FILE ARE IMPORTANT
– THE TYPE CAN BE DEPENDANT ON EACH OTHER:

the C record always follows the S record and if there is a K record, it must follow the M record it relates to.

The order for OPR files:

F, (T), S,(C), M, (K), M, M, S,(C), M, M, M .. etc

The order for Lab-AENV or Lab-Opr:

S, C, M, (K), M, M, M, S, C, M, M, M, M, (K) .. etc

SAMPLE FIXED FILE FORMATS:

EXAMPLE OF FIXED FORMAT FILE for OPERATORS: (file name must exactly match file name in F record)
(due to page and font size, the data positions in these examples are NOT exact)

File Name: 00001311-20030409-A-6.034

```
F    10000131120030408kathleen.pongar@gov.ab.ca                 20021200001311-20030409-A-6.034TEST MULTIPLE STATIONS SAMPLES AND COMMENTS AND KOMMENTS
S    2        20021201000000200212010000002002120100000020021201000000200212090000000 34000050          AB07BB0715ABMDWQ202 10        1                                    WEEK AVG
C    3000050          duplicate chlorines - different times
M    4000050               1ABMDWQ     200212011000009101650.2
M    5000050               2ABMDWQ     200212011000009101670.3
S    6        20021202000000200212020000002002120200000020021202000000200212090000000 34000051          AB07BB0714ABMDWQ202  6        1                                    WEEK AVG
C    7000051          RAW WATER VALUES
M    8000051               1ABMDWQ     200212101000009100530.5
K    9000050          M       1Komment after first meas 910053
M    10000051              2ABMDWQ     200212101000009101370.5
```

EXAMPLE OF FIXED FORMAT FILE for LAB-OPR: (one approval per file; approval number is written to field S20)

```
S    1        20021201000000200212010000002002120100000020021201000000200212090000000 34000050          AB07BB0715ABMDWQ202 10        1        1311                        MONTH
C    2000050          duplicate chlorines - different times
M    3000050               1ABMDWQ     200212011000009101650.2
M    4000050               2ABMDWQ     200212011000009101670.3
S    5        20021202000000200212020000002002120200000020021202000000200212090000000 34000051          AB07BB0714ABMDWQ202  6        1        1311                        ANNUL
C    6000051          RAW WATER VALUES
M    7000051               1ABMDWQ     200212101000009100530.5
K    8000050          M       1Komment after first meas 910053
M    9000051               2ABMDWQ     200212101000009101370.5
```

EXAMPLE OF FIXED FORMAT FILE for LAB-AENV:

```
S    1        20021201000000200212010000002002120100000020021201000000200212090000000 34000050          AB07BB0715ABMTWS202 10        1
C    2000050          duplicate chlorines - different times
M    3000050               1ABMDWQ     200212011000009101650.2
M    4000050               2ABMDWQ     200212011000009101670.3
S    5        20021202000000200212020000002002120200000020021202000000200212090000000 34000051          AB07BB0714ABS999211  6        1
C    6000051          RAW WATER VALUES
M    7000051               1ABMDWQ     200212101000009100530.5
K    8000050          M       1Komment after first meas 910053
M    9000051               2ABMDWQ     200212101000009101370.5
```

Appendix:

LAB_CODE

CODE	E_DESCRIPTION
120	AEP - CALGARY MONITORING BRANCH LAB CALGARY,ALBERTA
121	AEP - LETBRIDGE MONITORING BRANCH LAB LETHBRIDGE, ALBERTA
26	ALBERTA ENVIRONMENTAL CENTRE, INORGANIC ANALYSIS LABORATORY.
35	ALBERTA ENVIRONMENTAL CENTRE, ORGANIC ANALYSIS LABORATORY.
5	ALBERTA ENVIRONMENTAL PROTECTION MONITORING BRANCH LAB., EDMONTON.
33	ASL;VANCOUVER B.C.
82	AUTOMATIC MONITOR
28	B. A. R. ENVIRONMENTAL, GUELPH, ONTARIO.
117	BILL MORTON (INVERTEBRATE TAXONOMIST; GUELPH)
116	BOHDAN BILYJ (INVERTEBRATE TAXONOMIST; WINNIPEG)
87	BONDAR - CLEGG LTD.; NORTH VANCOUVER. (U IN WATERS)
30	BRITISH COLUMBIA; PROVINCIAL LABORATORY
79	BUFFALO POUND LABORATORY
43	CANADA CENTRE FOR INLAND WATERS (CCIW); BURLINGTON
123	CANTEST LTD., 4606 CANADA WAY, BURNABY, B.C., V5G 1 K5
124	CANTEST LTD., 675 BERRY ST. WINNIPEG,MAMITOBA, R3E 3L5
29	CHEMEX LABS ALBERTA INC., EDMONTON, ALBERTA.
40	CITY OF EDMONTON DRAINAGE LAB, EDMONTON,ALBERTA
74	CLIENT LABORATORY
36	CONSERVATION AND PROTECTION SERVICE LABORATORY; VANCOUVER
7	CONTRACTOR(B.ANDERSON) INVERTEBRATE TAXONOMIST, SPRUCE GROVE, ALBERTA.
103	DFO; GREAT LAKES LABORATORY; FISHERIES & AQUATIC SCI.; SAULT STE MARIE
113	DFO; INISTITUTE MAURICE-LAMONTANGE; FISH HABITAT LABORATORY
104	DFO; TURKEY LAKES LABORATORY; ALGOMA
102	DFO;EXPERIMENTAL LAKES AREA; KENORA
19	DORSET RESEARCH CENTRE - WATER RESOURCES BRANCH - MOE
90	ELEMENTAL RESEARCH INC. 309-267 W ESPLANADE NORTH VANCOUVER, B.C.
34	ENVIRO-TEST LABORATORIES, EDMONTON, ALBERTA. (403) 413-5241.
92	ENVIRONMENT LAB; NEWFOUNDLAND
51	ENVIRONMENTAL CHEM. LAB; DIV. OF CLINICAL CHEM.; VICTORIA GENERAL HOSP
65	ENVIRONMENTAL PROTECTION BRANCH - MICROBIOLOGY LABORATORY, HALIFAX.
64	ENVIRONMENTAL PROTECTION SERVICE; DOE; HALIFAX
125	ENVIROTEST LABORATORIES LTD., 745 LOGAN AVE. WINNIPEG, MANITOBA,
37	EPCOR WATER SERVICES OPERATION LAB, EDMONTON ALBERTA
118	EPCOR WATER SERVICES,QUALITY ASSURANCE SECTION,WATER LAB,EDMONTON,ALTA
80	FIELD
42	FISHERIES AND MARINE SERVICE; DOE; YELLOWKNIFE LABORATORY
41	FRESHWATER INSTITUTE; WINNIPEG
45	G & S ANALYTICAL LABORATORIES, TORONTO, ONTARIO.
91	GEO-SEA CONSULTANTS LTD. P. O. BOX 310 CAMBRIDGE U. K. CB4 3TH.
24	GEOCHEMICAL LAB; DEPT OF MINES AND ENERGY; ST. JOHN'S; NFLD
44	GREAT LAKES FOREST RESEARCH CENTRE; SAULT STE. MARIE
119	HYPERION RESEARCH LTD. MEDICINE HAT,ALBERTA
81	IN SITU
88	IN SITU METER.
112	INRS-EAU; STE-FOY
100	INRS-OCEANOLOGIE; RIMOUSKI
109	KEN NEIL (INVERTRABRATE TAXONOMY ADVISOR)
39	KORAB MARINE LTD.; LACHINE; P.Q.
0	LAB NOT SPECIFIED

CODE	E_DESCRIPTION
114	LABORATOIRE SAB INC. (INVERTEBRATE TAXONOMY CONTRACTOR)
57	LETHBRIDGE ALBERTA; PROVINCIAL LABORATORY
10	LIMNOLOGY LAB - UNIVERSITY OF ALBERTA
93	LORING LABORATORY
20	MANITOBA; PROVINCIAL LABORATORY.(PRIVATIZED 1996.06.01 TO ENVIROTEST)
27	MANN TESTING LABORATORIES; MISSISSAUGA; ONTARIO
108	MARITIME TESTING & HARDEY ASSOC. (ZOOPLANKTON ID & ENUMERATION)
23	MAXXAM (CHEMEX) LABS ALBERTA INC., CALGARY, ALBERTA.
115	MICHEL BILODEAU (INVERTEBRATE TAXONOMY CONTRACTOR)
11	MINES BRANCH WATER ANALYSIS LABORATORY; OTTAWA
101	MINISTERE DE L'AGRICULTURE DES PECHERIES ET DE L'ALIMENTATION DU GASPE
75	MOBILE LABORATORY
94	MONENCO CALGARY
12	NEW BRUNSWICK; PROVINCIAL LABORATORY
4	NEWFOUNDLAND; PROVINCIAL LABORATORY
63	NORWEST LABS, EDMONTON, ALBERTA.
110	NOVA SCOTIA MUSEUM (INVERTRABRATE TAXONOMY ADVISOR)
66	NOVA SCOTIA TECHNICAL COLLEGE; HALIFAX
8	NOVA SCOTIA; PROVINCIAL LABORATORY
25	NUCLEAR ACTIVATION SERVICES LTD.; HAMILTON; ONTARIO
68	ONTARIO REGION LABORATORY SERVICES; EPS; DOE; OTTAWA
17	ONTARIO; PROVINCIAL LABORATORY
89	PACIFIC SOIL ANALYSIS INC. 5-11720 VOYAGEUR ROAD, RICHMOND, B.C.
105	PATHOLOGY LAB; DICKSON BUILDING (WATER CHEMISTRY)
107	PAUL MANDELL (WATER CHENISTRY CONTRACTOR)
122	PRAIRIE BIOLOGICAL LABORATORIES INC.
6	PRINCE EDWARD ISLAND; PROVINCIAL LABORATORY
106	PROVINCIAL LABORATORY OF PUBLIC HEALTH FOR SOUTHERN ALBERTA, CALGARY.
69	PROVINCIAL LABORATORY OF PUBLIC HEALTH, EDMONTON, ALBERTA.
76	QUANTA-TRACE LABORATORY
14	QUEBEC; PROVINCIAL LABORATORY
111	ROYAL ONTARIO MUSEUM (INVERTRABRATE TAXONOMY ADVISOR)
83	SAMPLES WERE ANALYZED AT 2 LABS - SEE DESCRIPTIONS TABLE
84	SAMPLES WERE ANALYZED AT 5 LABS - SEE DESCRIPTIONS TABLE
86	SAMPLES WERE ANALYZED AT 5 LABS - SEE DESCRIPTIONS TABLE
85	SAMPLES WERE ANALYZED AT 6 LABS - SEE DESCRIPTIONS TABLE
21	SAMPLES WERE PREPARED/ANALYZED AT 4 LABS- SEE DESCRIPTIONS TABLE
77	SASKATCHEWAN ENVIRONMENT FISHERIES(SASKATOON)
73	SASKATCHEWAN RESEARCH COUNCIL
22	SASKATCHEWAN; PROVINCIAL LABORATORY
71	SODEXEN INC.; 2870 BLVD. INDUSTRIEL; LAVAL; QUEBEC
15	TOXICOLOGY LAB.; VETERINARY DIAGNOSTICS BRANCH;ALBERTA AGRICULTURE
126	UNIV. OF ALBERTA, PROTEIN PHOSPHOTASE BIOASSAY LAB., DEPT OF BIOCHEM
38	UNIVERSITY OF QUEBEC LAB
78	UNIVERSITY OF SASKATCHEWAN ENG LAB(SASKATOON)
72	WATER POLLUTION LABORATORY(U OF S-SASKATOON)
1	WATER QUALITY BRANCH; BURLINGTON (NWQL)
3	WATER QUALITY BRANCH; CALGARY
70	WATER QUALITY BRANCH; LONGUEIL
2	WATER QUALITY BRANCH; MONCTON
9	WATER QUALITY BRANCH; YELLOWKNIFE
32	WELLINGTON LABORATORIES, GUELPH, ONTARIO.
31	ZENON;BURNABY B.C.

SAMPLE_MATRIX:

CODE	E_DESCRIPTION
40	AEROSOLS
60	AIR
17	ANAEROBIC (LAGOON)
3	BIOFILM
99	BIOTA
95	BIRDS
41	BULK DEPOSITION (WET AND DRY)
80	DETERGENTS
5	DISTILLED (DEIONIZED) WATER FROM LAB (USED IN TRIP BLANK)
11	DRINKING WATER.
34	DRY FALLOUT (DEPOSITION)
27	EFFLUENT.
18	FACULATIVE (LAGOON)
98	FISH
7	GROUNDWATER
32	ICE (PRECIPITATED)
38	INFILTRATION GALLERY (SOURCE:SURFACE WATER)
97	INVERTEBRATES
26	LEACHATE
19	LIFT STATION
94	MAMMALS
33	MIXED PRECIPITATION
12	MUNICIPAL CHLORINATED WATER.
13	MUNICIPAL UNCHLORINATED WATER.
70	PAINT PIGMENT
24	PARTIALLY TREATED WATER
62	PETROLEUM PRODUCTS
35	PRIMARY CLARIFIER
71	PRODUCT PRODUCED: FINAL PRODUCT FROM ANY INDUSTRY.
30	RAIN
21	RAW WASTE WATER.
6	RAW WATER.
14	RESERVOIR
23	SANITARY SEWAGE
36	SECONDARY CLARIFIER
50	SEDIMENTS
25	SLUDGE
37	SLUDGE AEROBIC DIGESTION
39	SLUDGE ANAEROBIC DIGESTION
31	SNOW
59	SOIL
81	SPILL TREATING AGENT
2	SURFACE WATER
51	SUSPENDED SEDIMENTS
61	TRANSFORMER OIL
22	TREATED WASTE WATER.
10	TREATED WATER
90	UNKNOWN.
96	VEGETATION
20	WASTEWATER
0	WATER
15	WATER SUPPLY LINE
1	WATER SURFACE FILM
16	WATERING POINT

SAMPLE_TYPE:

CODE	E_DESCRIPTION
93	24 HOUR COMPOSITE
29	BIOTA SAMPLE IN CAGE LEFT ON SITE
20	BLANK
90	COMPOSITE
98	COMPOSITE OR CONTINUOUS
97	COMPOSITE OR GRAB
6	COMPOSITE SAMPLE
10	COMPOSITE SPLIT
96	CONTINUOUS
1	DISCRETE SAMPLE (GRAB)
99	DMA CONVERSION
3	DUPLICATE SAMPLE
18	EPLIMNETIC COMPOSITE
95	ESTIMATE
13	EUPHOTIC COMPOSITE
22	FIELD BLANK
26	FIELD DEIONIZED (DISTILLED)
24	FIELD SPIKE
17	FLOW_WEIGHTED_COMPOSITE (PROPORTIONAL TO FLOW)
94	GRAB
91	GRAB (REPRESENTATIVE)
30	INDIGENOUS BIOTA SAMPLE
2	INTEGRATED SAMPLE
23	LAB BLANK
27	LAB DEIONIZED (DISTILLED)
25	LAB SPIKE
9	MATRIX SPIKE
35	NOT FOR COMPLIANCE
11	POOLED SAMPLE
12	POOLED SPLIT
5	REPLICATE SAMPLE
33	RESAMPLE (NO COUNT)
32	RESAMPLE (PROTOCOL)
19	SAMPLE BASED ON CALCULATED VALUE(S) (EG. AVE, MAX, MIN)
31	SINGLE EUPHOTIC COMPOSITE
15	SPATIAL COMPOSITE.
21	SPIKED SAMPLE
16	TEMPORAL COMPOSITE.
8	TRIP BLANK
28	TRIP SPIKE
4	TRIPLICATE SAMPLE
7	TRUE SPLIT SAMPLE
89	UNKNOWN
14	VERTICAL INTEGRATED.
92	VISUAL CHECK