Tape Layout, Water Physics and Chemistry
80 Character Records

Record 1, File Header

Characters 1-3	"004"	Fixed-file type code
Characters 4-9	6 numeric	Date of file generation (year, month, day)
Character 10	"1"	Fixed-record type (denotes file header)
Characters 11-21	11 alpha	Vessel (left-justified)
Characters 22-27	6 alpha	Cruise number (left-justified)
Characters 28-44		Cruise date in form xx/xx/xx-xx/xx/xx
Characters 45-63	19 alpha	Senior scientist name (left-justified)
Characters 64-80	17 alpha	Investigator and institution responsible for data (left-justified)

Record 2, Station Header 1

Characters 1-3	"004"	Fixed-file type code
Characters 4-9	6 numeric	Date of file generation (year, month, day)
Character 10	"2"	Fixed-record type (denotes sample header)
Characters 11-13	"001"	Fixed-sequence number of record type *
Characters 19-25	6 numeric 1 alpha	Latitude (degrees, minutes, seconds, hemisphere -N or S)
Characters 26-33	7 numeric 1 alpha	Longitude (degrees, minutes, seconds, hemisphere -E or W)
Characters 34-36	3 numeric	Station Time (GMT to nearest tenth of an hour)
Characters 37-44		Sample date in form xx/xx/xx (year/month/day)
Characters 45-49	5 numeric	Water depth (to nearest tenth of a meter)
Characters 50-51	2 numeric	Navigation codes as follows: 01-Loran A 02-Loran C 03-Radar and/or Fixes 04-Raydist (w/o complications) 05-Raydist (with errors, drifting, etc.) 06-Satellite 07-Omega
Characters 52	1 numeric	Method: 1-STD 2-XBT
Characters 53-80	Blank	

* The last station header for each station is followed by a terminator record with characters 1-10 identical to the last station header, followed by 998 as character 11-13, and all other characters blank.

Record 3, Station Header 2

Characters 1-3	"004"	Fixed-file type
Characters 4-9	6 numeric	Date of file generation (year, month, day)
Character 10	"2"	Fixed-record type (denotes sample header)
Characters 11-13	"002"	Fixed-sequence number of record type*
Characters 14-18	5 alpha	Station number
Characters 19-21	3 numeric	Barometric pressure (in tens, units and tenths of millibars)
Characters 22-25	4 numeric	Dry-bulb air temperature (°C to nearest tenth)
Characters 26-29	4 numeric	Wet-bulb air temperature (°C to nearest tenth)

Characters 30-31	2 numeric	Wind direction (code indicating tens of degrees according to WMO Code 0877)
Characters 32-33	2 numeric	Wind Speed (to nearest knot)
Characters 34-35	2 numeric	Sea direction (code indicating tens of degrees according to WMO Code 0885)
Character 36	1 numeric	Sea height (code indicating height of waves according to WMO Code 1555)
Characters 37-38	2 numeric	Swell direction (code indicating tens of degrees according to WMO Code 0885)
Character 39	1 numeric	Swell height (code indicating height of swell according to WMO Code 1555)
Character 40	1 numeric	Weather (code indicating weather according to WMO Code 4501)
Character 41	1 numeric	Cloud type (code indicating cloud type, according to WMO Code 0500)
Character 42	1 numeric	Cloud cover (code indicating cloud cover according to WMO Code 2700)
Character 43	1 numeric	Visibility (code indicating visibility according to WMO Code 4300)
Characters 44-47	4 numeric	Secchi disk depth (to nearest tenth of a meter)
Character 48	1 numeric	Turbidity measurement technique: 1-Turbidometer, in JTU 2-Transmissometer, in % light transmission over 10cm path 3-Fluorometer, suspended solids calibration
Characters 49-80	Blank	

* The last station header for each station is followed by a terminator record with characters 1-10 identical to the last station header, followed by 998 as characters 11-13 and with all other characters blank.

Record 4, Data Record

Characters 1-3	"004"	Fixed-file type
Characters 4-9	6 numeric	Date of file generation (year, month, day)
Character 10	"3"	Fixed-record type
Characters 11-13	3 numeric	Sequence number of record type*
Characters 14-18	5 numeric	Station number
Characters 19-22	4 numeric	Sample depth (to nearest tenth of a meter)
Characters 23-27	5 numeric	Temperature (°C to nearest thousandth)
Characters 28-32	5 numeric	Salinity (in parts per thousand to nearest thousandth)
Characters 33-36	4 numeric	Sigma -t (to nearest hundredth)
Characters 37-39	3 numeric	Transmissivity in % (to nearest tenth)
Characters 40-42	3 numeric	ph (to nearest hundredth)
Characters 43-46	4 numeric	eh (to nearest hundredth)
Characters 47-50	4 numeric	Dissolved oxygen (in ml/l to nearest hundredth)
Characters 51-53	3 numeric	Ammonia (in micorgram-atoms/l to nearest tenth)
Characters 54-56	3 numeric	Nitrite (in microgram-atoms/l to nearest hundredth)
Characters 57-60	3 numeric	Nitrate (in microgram-atom/l to nearest hundredth)
Characters 61-64	4 numeric	Silicate (in microgram-atom/l to nearest hundredth)
Characters 65-67	3 numeric	Phosphate-Inorganic (in microgram-atom/l to nearest hundredth)

Characters 68-71	4 numeric	Suspended Solids (miligrams/l to nearest tenth)
Characters 72-75	4 numeric	Turbidity
Characters 76-79	4 numeric	Chlorophyll (micrograms-atom/l to nearest hundredth)
Character 80	Blank	

* The last data record of each station is followed by a terminator record with characters 1-10 identical to the last data record, followed by 998 as characters 11-13, and with all other characters blank. The last data record of the entire file is followed by a terminator record (last record of the file) with characters 1-10 identical to the last data record, followed by 999 as characters 11-13 and with all other characters blank.