

## **MED POL Info System explanatory note to provide data flow for reporting**

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## INTRODUCTION

This manual represents an explanatory note to support the Contracting parties to provide the monitoring data flow for period 2016-2018. The scope is guiding the reporter user in the data upload and to describe how spreadsheets templates should be filled with specific data.

In order to facilitate compilation and procedure for data upload, a short data dictionary description is introduced for each of ten parameters that shall upload. Concerning general functionality and operational concepts of MED POL Info System we assume that the reporter user have already read the documentation on system available in the web page of system itself ([User Manual for Med POL Info System - Monitoring-IS](#)).

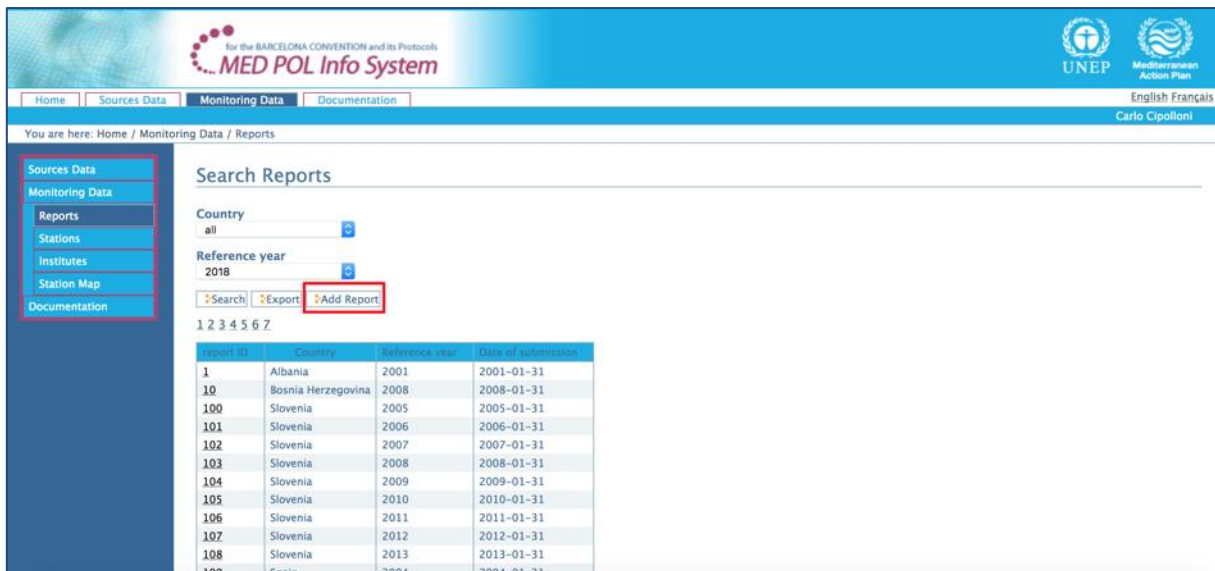
## LOGIN ACTIONS

When a user get into the main webpage (figure 1), available at: <http://193.206.192.122/infomap/medpol>, in order to upload the data table related to each parameters required in the monitoring data, he needs to login with relative credential.

Figure 1. MED POL Info System main page.

## REPORT SECTION

Once the user is logged into the system, he can access to “Report” section to generate a new data flow report for a specific year (figure 2), clicking on “Add Report” button. The system will ask to select a reference year and the name of responsible for reporting. After that the system will ask to select which parameter he wants provide (figure 3).



Report ID	Country	Reference year	Date of submission
1	Albania	2001	2001-01-31
10	Bosnia Herzegovina	2008	2008-01-31
100	Slovenia	2005	2005-01-31
101	Slovenia	2006	2006-01-31
102	Slovenia	2007	2007-01-31
103	Slovenia	2008	2008-01-31
104	Slovenia	2009	2009-01-31
105	Slovenia	2010	2010-01-31
106	Slovenia	2011	2011-01-31
107	Slovenia	2012	2012-01-31
108	Slovenia	2013	2013-01-31
109	Spain	2004	2004-01-31

Figure 2. New report generation page.

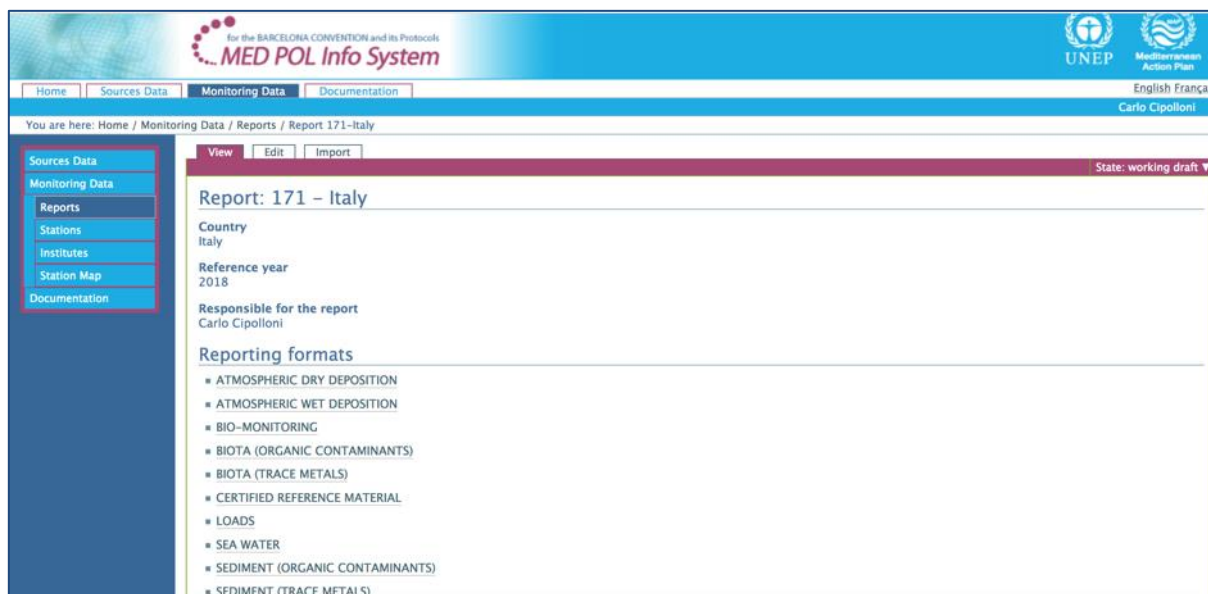


Figure 3. Reporting parameters to provide.

After selecting a parameter the system will ask to fill related webform for reporting manually or clicking on import tab to upload a spread-sheets using the CSV template available.

**WARNING: In order to do not have problems with upload, pay attention to the spread-sheets, following the data dictionary explanation provided with this document.**

Some common errors encountered during uploading actions are listed in order to guide the reporter user to figure them out.

## CASE 1

Uploading a data table with some misspelling or wrong data type input (i.e. string instead a number attribute or a data type attribute – figure 4), the system will upload the record and highlighting where the errors are or if there are some mandatory attribute not filled. In this simple case the reporter has to modify manually in order to finalise the data flow submission.

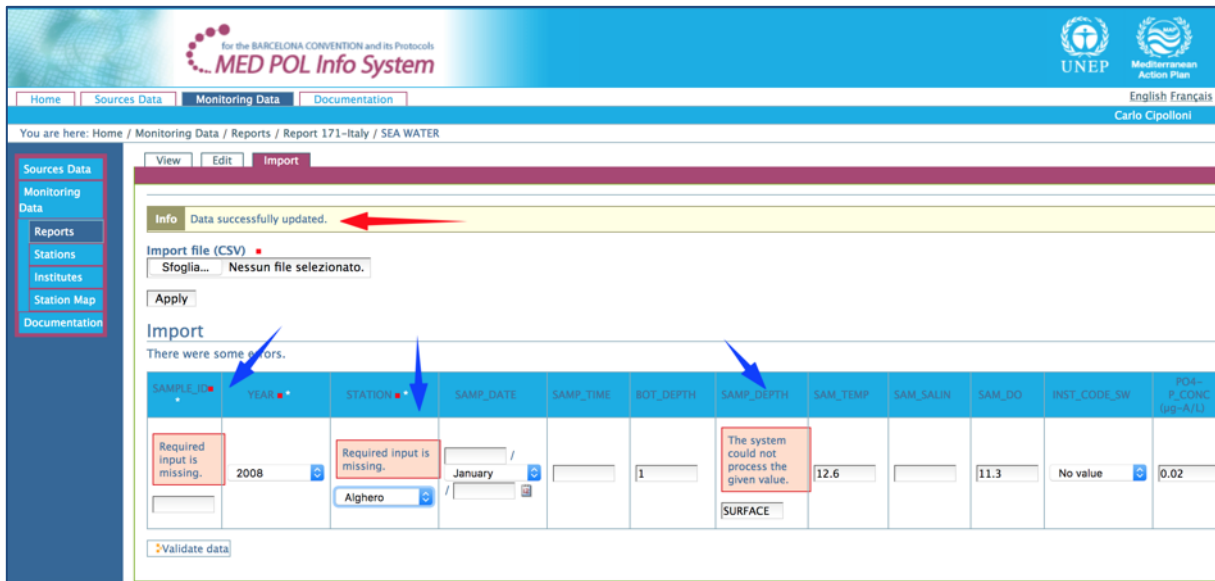


Figure 4. Spread-sheets upload with some errors or missing part.

## CASE 2

Uploading a data table for a specific parameter with some attributes are missing or misspelling as the title or the standard template (described in the data dictionary), the system returns back some errors highlighting the wrong columns.

The system is not able to give you a descriptive notification (figure 5) about the reason of errors occurring (i.e. Missing or misspelling), but only about attributes not corresponding to the standard.

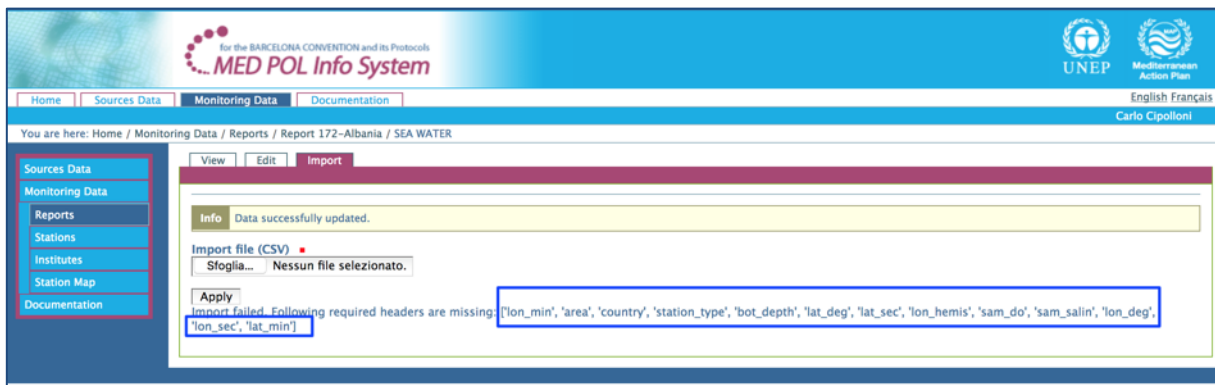


Figure 5. Table upload with some missing attributes notified.

## CASE 3

The spreadsheet uploaded has a great amount of records, with one or more attributes missing or misspelling and with some wrong data type. In this case the system will upload the data apparently, but in the lower part it will return a generic error of unconformity on the entire table (figure 6).

In this case, we recommend to read the data dictionaries carefully as already explained in this document, check the spreadsheets in order to identify the errors due to the missing or wrong typing columns title. Moreover, we suggest to check if there are some error due to different

format. A typical errors could be incorrect use of data type or use of comma instead of dot for decimal number.

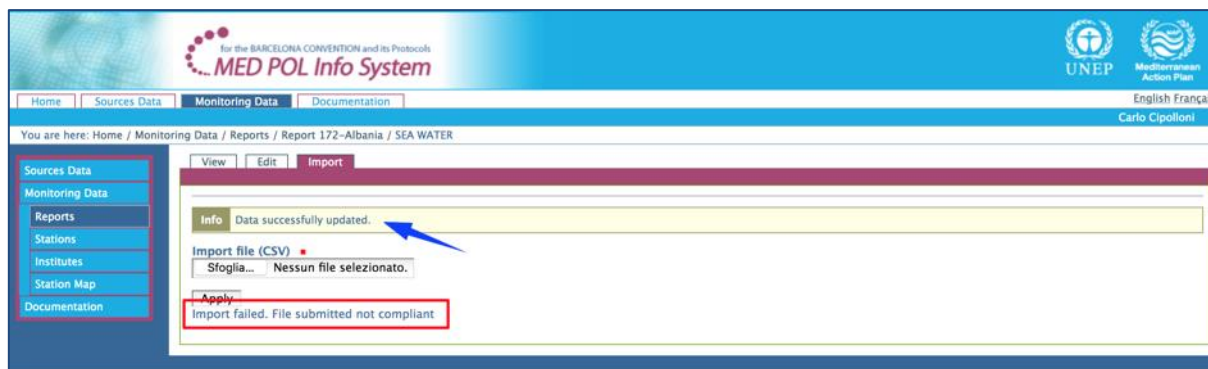


Figure 6. The case of generic message of not compliance of spread-sheet provided due to several errors.

## DATA DICTIONARY DESCRIPTION

In this section will be described all the ten standard templates used in the spread-sheets, in order to explain what type of data are needed and how they has to be inserted.

### ATMOSPHERIC DRY DEPOSITION

ATMOSPHERIC DRY DEPOSITION		
Parameter	Data Type	Example
SAMPLE_ID	STRING	
YEAR	DATE	2018-02-22
COUNTRY	STRING	
AREA	STRING	
STATION	STRING	
STATION_ID	STRING	
HEIGHT	DECIMAL	10.22
ALTITUDE	DECIMAL	10.22
DIST_SHORE	DECIMAL	10.22
METEO_DIST	DECIMAL	10.22
LAT_DEG	INTEGER	
LAT_MIN	INTEGER	
LAT_SEC	INTEGER	
LON_DEG	INTEGER	
LON_MIN	INTEGER	
LON_SEC	INTEGER	
LON_HEMIS	STRING	
SAMP_START_DATE	DATE	2018-02-22
SAMP_START_HOUR	DATE	22/02/2018: 01:00:00
SAMP_END_DATE	DATE	2018-02-22

SAMP_END_HOUR	TIME	22/02/2018: 01:00:00
SAMP_TIME_TOT	TIME	22/02/2018: 01:00:00
AIR_VOLUME	DECIMAL	10.22
SAMP_INST_CODE	STRING	
INST_CODE_DUST	STRING	
ANALY_DATE_DUST	DATE	2018-02-22
ANALY_METH_DUST	DECIMAL	10.22
DUST_CONC	DECIMAL	0.0001
DUST_UNIT	STRING	
INST_CODE_TM	STRING	
ANALY_DATE_TM	DATE	2018-02-22
ANALY_METH_TM	DECIMAL	10.22
CD_CONC	DECIMAL	0.0001
CD_UNIT	STRING	

## ATMOSPHERIC WET DEPOSITION

ATMOSPHERIC WET DEPOSITION		
Parameter	Data Type	Example
SAMPLE_ID	STRING	
YEAR	DATE	2018-02-22
COUNTRY	STRING	
AREA	STRING	
STATION	STRING	
STATION_ID	STRING	
HEIGHT	DECIMAL	11.22
ALTITUDE	DECIMAL	11.22
DIST_SHORE	DECIMAL	11.22
METEO_DIST	DECIMAL	11.22
LAT_DEG	INTEGER	
LAT_MIN	INTEGER	
LAT_SEC	INTEGER	
LON_DEG	INTEGER	
LON_MIN	INTEGER	
LON_SEC	INTEGER	
LON_HEMIS	STRING	
SAMP_START_DATE	DATE	2018-02-22
SAMP_START_HOUR	DATE	22/02/2018:01:00:00
SAMP_END_DATE	DATE	2018-02-22
SAMP_END_HOUR	TIME	01:00:00
SAMP_TIME_TOT	TIME	01:00:00
PRECIPITATION_NG	DECIMAL	0.0001

SAMP_INST_CODE	STRING	
INST_CODE_TM	STRING	
ANALY_DATE_TM	DATE	
ANALY_METH_TM	DECIMAL	11.22
CD_CONC	DECIMAL	0.0001
CD_UNIT	STRING	

## BIOTA -ORGANIC CONTAMINANTS

BIOTA -ORGANIC CONTAMINANTS		
Parameter	Data Type	Example
SAMPLE_ID	STRING	
YEAR	DATE	2018-02-22
COUNTRY	STRING	
AREA	STRING	
STATION	STRING	
STATION_TYPE	STRING	
SAMP_DATE	DATE	2018-02-22
LON_DEG	INTEGER	
LON_MIN	INTEGER	
LON_SEC	INTEGER	
LON_HEMIS	STRING	
LAT_DEG	INTEGER	
LAT_MIN	INTEGER	
LAT_SEC	INTEGER	
BOT_DEPTH	DECIMAL	11.22
SAM_DEPTH	DECIMAL	11.22
SAM_TEMP	DECIMAL	11.22
SAM_SALIN	DECIMAL	11.22
SAM_DO	DECIMAL	11.22
SPECY	STRING	
TISSUE	STRING	
SAM_NO	INTEGER	
NS	DECIMAL	11.22
LENGTH_AVG	INTEGER	
LENGTH_STD	DECIMAL	11.22
LENGTH_UNIT	STRING	
WEIGHT_AVG	DECIMAL	11.22
WEIGHT_STD	DECIMAL	11.22
WEIGHT_UNIT	STRING	
EOM	DECIMAL	11.22
EOM_UNIT	STRING	



INST_CODE_OC	STRING	
FW_DW	STRING	
ANAL_DATE_PAH	DATE	2018-02-22
ANAL_METH_PAH	STRING	
PAH_CONC	DECIMAL	0.0001
PAH_BDL	STRING	
PAH_DL	DECIMAL	0.0001
PAH_UNIT	STRING	
DW/FW	DECIMAL	0.0001
SPECY	STRING	
TISSUE	STRING	

## BIOTA -TRACE METALS

BIOTA -TRACE METALS		
Parameter	Data Type	Example
SAMPLE_ID	STRING	
YEAR	DATE	2018-02-22
COUNTRY	STRING	
AREA	STRING	
STATION	STRING	
STATION_TYPE	STRING	
SAMP_DATE	DATE	2018-02-22
LON_DEG	INTEGER	
LON_MIN	INTEGER	
LON_SEC	INTEGER	
LON_HEMIS	STRING	
LAT_DEG	INTEGER	
LAT_MIN	INTEGER	
LAT_SEC	INTEGER	
BOT_DEPTH	DECIMAL	11.22
SAM_DEPTH	DECIMAL	11.22
SAM_TEMP	DECIMAL	11.22
SAM_SALIN	DECIMAL	11.22
SAM_DO	DECIMAL	11.22
DO_UNIT	STRING	
STRING	STRING	
TISSUE	STRING	
SAM_NO	INTEGER	
NS	DECIMAL	11.22
LENGTH_AVG	DECIMAL	11.22
LENGTH_STD	DECIMAL	11.22

LENGTH_UNIT	STRING	
WEIGHT_AVG	DECIMAL	11.22
WEIGHT_STD	DECIMAL	11.22
WEIGHT_UNIT	STRING	
EOM	DECIMAL	11.22
EOM_UNIT	STRING	
DW / FW	DECIMAL	11.22
INST_CODE_TM	STRING	
ANALY_DATE_TM	DATE	2018-02-22
ANALY_METH_TM	STRING	
FW_DW	STRING	
AS_CONC	DECIMAL	0.0001
AS_BDL	STRING	
AS_DL	DECIMAL	0.0001
AS_UNIT	STRING	
CD_CONC	DECIMAL	0.0001
CD_BDL	STRING	
CD_DL	DECIMAL	0.0001
CD_UNIT	STRING	
CR_CONC	DECIMAL	0.0001
CR_BDL	STRING	
CR_DL	DECIMAL	0.0001
CR_UNIT	STRING	
CU_CONC	DECIMAL	0.0001
CU_BDL	STRING	
CU_DL	DECIMAL	0.0001
CU_UNIT	STRING	
HGT_CONC	DECIMAL	0.0001
HGT_BDL	STRING	
HGT_DL	DECIMAL	0.0001
HGT_UNIT	STRING	
PB_CONC	DECIMAL	0.0001
PB_BDL	STRING	
PB_DL	DECIMAL	0.0001
PB_UNIT	STRING	
ZN_CONC	DECIMAL	0.0001
ZN_BDL	STRING	
ZN_DL	DECIMAL	0.0001
ZN_UNIT	STRING	
FE_CONC	DECIMAL	0.0001
FE_BDL	STRING	
FE_DL	DECIMAL	0.0001
FE_UNIT	STRING	
NI_CONC	DECIMAL	0.0001
NI_BDL	STRING	

NI_DL	DECIMAL	0.0001
NI_UNIT	STRING	

## CERTIFIED REFERENCE MATERIAL

CERTIFIED REFERENCE MATERIAL		
Parameter	Data Type	Example
SAMPLE_ID	STRING	
YEAR	DATE	2018-02-22
COUNTRY	STRING	
INST_CODE_TM_BIO	STRING	
CRM_BIO_TM_CD	DECIMAL	11.22
CRM_BIO_CD_VALUE	DECIMAL	11.22
CRM_BIO_CD_SAMP NO	DECIMAL	11.22
CRM_BIO_CD_CONC	DECIMAL	11.22
CRM_BIO_CD_UNIT	STRING	
ANALY_DATE_CD_BIO	DATE	2018-02-22
ANALY_METH_CD_BIO	STRING	
CRM_BIO_TM_HGT	STRING	
CRM_BIO_HGT_VALUE	DECIMAL	11.22
CRM_BIO_HGT_SAMP NO	DECIMAL	11.22
CRM_BIO_HGT_CONC	DECIMAL	11.22
CRM_BIO_HGT_UNIT	STRING	
ANALY_DATE_HGT_BIO	DATE	2018-02-22
ANALY_METH_HGT_BIO	STRING	
INST_CODE_TM_SED	STRING	
CRM_SED_TM_CD	STRING	
CRM_SED_CD_VALUE	DECIMAL	11.22
CRM_SED_CD_SAMP NO	INTEGER	
CRM_SED_CD_CONC	DECIMAL	0.0001
CRM_SED_CD_UNIT	STRING	
ANALY_DATE_CD_SED	DATE	2018-02-22
ANALY_METH_CD_SED	STRING	
CRM_SED_TM_HGT	STRING	
CRM_SED_HGT_VALUE	DECIMAL	0.0001
CRM_SED_HGT_SAMP NO	INTEGER	
CRM_SED_HGT_CONC	DECIMAL	0.0001
CRM_SED_HGT_UNIT	STRING	
ANALY_DATE_HGT_SED	DATE	
ANALY_METH_HGT_SED	STRING	
INST_CODE_OC_BIO	STRING	
CRM_BIO_OC_HH	DECIMAL	0.0001

CRM_BIO_HH_VALUE	DECIMAL	0.0001
CRM_BIO_HH_SAMP NO	INTEGER	
CRM_BIO_HH_CONC	DECIMAL	0.0001
CRM_BIO_HH_UNIT	STRING	
ANALY_DATE_HH_BIO	DATE	2018-02-22
ANALY_METH_HH_BIO	STRING	
CRM_BIO_OC_PAH	DECIMAL	0.0001
CRM_BIO_PAH_VALUE	DECIMAL	0.0001
CRM_BIO_PAH_SAMP NO	INTEGER	
CRM_BIO_PAH_CONC	DECIMAL	0.0001
CRM_BIO_PAH_UNIT	STRING	
ANALY_DATE_PAH_BIO	DATE	
ANALY_METH_PAH_BIO	STRING	
INST_CODE_OC_SED	STRING	
CRM_SED_OC_HH	DECIMAL	0.0001
CRM_SED_HH_VALUE	DECIMAL	0.0001
CRM_SED_HH_SAMP NO	INTEGER	
CRM_SED_HH_CONC	DECIMAL	0.0001
CRM_SED_HH_UNIT	STRING	
ANALY_DATE_HH_SED	DECIMAL	0.0001
ANALY_METH_HH_SED	DECIMAL	0.0001
CRM_SED_OC_PAH	DECIMAL	0.0001
CRM_SED_PAH_VALUE	DECIMAL	0.0001
CRM_SED_PAH_SAMP NO	DECIMAL	0.0001
CRM_SED_PAH_CONC	DECIMAL	0.0001
CRM_SED_PAH_UNIT	STRING	
ANALY_DATE_PAH_SED	DECIMAL	0.0001
ANALY_METH_PAH_SED	STRING	

## LOADS

LOADS		
Parameter	Data Type	Example
SAMPLE_ID	STRING	
YEAR	DATE	2018-02-22
COUNTRY	STRING	
AREA	STRING	
STATION	STRING	
STATION_TYPE	STRING	
SAMP_PH	DECIMAL	11.22
SOURCE_TYPE	STRING	
SAMP_DATE	DATE	2018-02-22

SAMP_TIME	TIME	
LON_DEG	INTEGER	
LON_MIN	INTEGER	
LON_SEC	INTEGER	
LON_HEMIS	STRING	
LAT_DEG	INTEGER	
LAT_MIN	INTEGER	
LAT_SEC	INTEGER	
SAMP_DEPTH	DECIMAL	11.22
SAMP_TEMP	DECIMAL	11.22
SAMP_DO	DECIMAL	11.22
DO_UNIT	STRING	
DISCHARGE_MIN	DECIMAL	11.22
DISCHARGE_AVE	DECIMAL	11.22
DISCHARGE_MAX	DECIMAL	11.22
DISCHARGE_UNIT	STRING	
INST_CODE_TM	STRING	
ANALY_DATE_TM	DATE	2018-02-22
ANALY_METH_TM	STRING	
CD_CONC	DECIMAL	0.0001
CD_BDL	STRING	
CD_DL	DECIMAL	11.22
CD_UNIT	STRING	
CR_CONC	DECIMAL	0.0001
CR_BDL	STRING	
CR_DL	DECIMAL	11.22
CR_UNIT	STRING	
CU_CONC	DECIMAL	0.0001
CU_BDL	STRING	
CU_DL	DECIMAL	11.22
CU_UNIT	STRING	
HG_CONC	DECIMAL	0.0001
HG_BDL	STRING	
HG_DL	DECIMAL	11.22
HG_UNIT	STRING	
NI_CONC	DECIMAL	0.0001
NI_BDL	STRING	
NI_DL	DECIMAL	11.22
NI_UNIT	STRING	
PB_CONC	DECIMAL	11.22
PB_BDL	STRING	
PB_DL	DECIMAL	11.22
PB_UNIT	STRING	
ZN_CONC	DECIMAL	11.22
ZN_BDL	STRING	

ZN_DL	DECIMAL	11.22
ZN_UNIT	STRING	
INST_CODE_OC	STRING	
ANALY_DATE_PAH	DATE	2018-02-22
ANALY_METH_PAH	STRING	
PAH_CONC	DECIMAL	0.0001
PAH_BDL	STRING	
PAH_DL	DECIMAL	11.22
PAH_UNIT	STRING	
ANALY_DATE_HH	DATE	2018-02-22
ANALY_METH_HH	STRING	
HH_CONC	DECIMAL	0.0001
HH_BDL	STRING	
HH_DL	DECIMAL	0.0001
HH_UNIT	STRING	
BOD_CONC	DECIMAL	0.0001
BOD_UNIT	STRING	
COD_CONC	DECIMAL	0.0001
COD_UNIT	STRING	
PO4-P_CONC	DECIMAL	0.0001
PO4-P_UNIT	STRING	
TP_CONC	DECIMAL	0.0001
TP_UNIT	STRING	
NH3-N_CONC	DECIMAL	0.0001
NH3-N_UNIT	STRING	
NH4-N_CONC	DECIMAL	0.0001
NH4-N_UNIT	STRING	
NO2-N_CONC	DECIMAL	0.0001
NO2-N_UNIT	STRING	
NO3-N_CONC	DECIMAL	0.0001
NO3-N_UNIT	STRING	
TN_CONC	DECIMAL	0.0001
TN_UNIT	STRING	
SIO4_CONC	DECIMAL	0.0001
SIO4_UNIT	STRING	
TSS_CONC	DECIMAL	0.0001
TSS_UNIT	STRING	
FC	DECIMAL	0.0001
FC_UNIT	STRING	

## SEA WATER

SEA WATER		
Parameter	Data Type	Example
SAMPLE_ID	STRING	
YEAR	DATE	2018-02-22
COUNTRY	STRING	
AREA	STRING	
STATION	STRING	
STATION_TYPE	STRING	
SAMP_DATE	DATE	2018-02-22
SAMP_TIME	TIME	
LON_DEG	INTEGER	
LON_MIN	INTEGER	
LON_SEC	INTEGER	
LON_HEMIS	STRING	
LAT_DEG	INTEGER	
LAT_MIN	INTEGER	
LAT_SEC	INTEGER	
BOT_DEPTH	DECIMAL	11.22
SAMP_DEPTH	DECIMAL	11.22
SAM_TEMP	DECIMAL	11.22
SAM_SALIN	DECIMAL	11.22
SAM_DO	DECIMAL	11.22
INST_CODE_SW	STRING	
PO4-P_CONC	DECIMAL	0.0001
PO4-P_UNIT	STRING	
TP_CONC	DECIMAL	0.0001
TP_UNIT	STRING	
NH4-N_CONC	DECIMAL	0.0001
NH4-N_UNIT	STRING	
NO2-N_CONC	DECIMAL	0.0001
NO2-N_UNIT	STRING	
NO3-N_CONC	DECIMAL	0.0001
NO3-N_UNIT	STRING	
NO3-2-N_CONC	DECIMAL	0.0001
NO3-2-N_UNIT	STRING	
TN_CONC	DECIMAL	0.0001
TN_UNIT	STRING	
SIO4_CONC	DECIMAL	0.0001
SIO4_UNIT	STRING	
CHL-A_CONC	DECIMAL	0.0001
CHL-A_UNIT	STRING	

## SEDIMENT -ORGANIC CONTAMINANTS

<b>SEDIMENT -ORGANIC CONTAMINANTS</b>		
<b>Parameter</b>	<b>Data Type</b>	<b>Example</b>
SAMPLE_ID	STRING	
YEAR	DATE	<i>2018-02-22</i>
COUNTRY	STRING	
AREA	STRING	
STATION	STRING	
STATION_TYPE	STRING	
SAMP_NO	INTEGER	
SAMP_DATE	DATE	<i>2018-02-22</i>
LON_DEG	INTEGER	
LON_MIN	INTEGER	
LON_SEC	INTEGER	
LON_HEMIS	STRING	
LAT_DEG	INTEGER	
LAT_MIN	INTEGER	
LAT_SEC	INTEGER	
BOT_DEPTH	DECIMAL	<i>11.22</i>
BOT_TEMP	DECIMAL	<i>11.22</i>
BOT_SALIN	DECIMAL	<i>11.22</i>
BOT_DO	DECIMAL	<i>11.22</i>
DO_UNIT	STRING	
SAMP_LAYER	INTEGER	
SAMP_FRAC	DECIMAL	<i>11.22</i>
DW/WW	DECIMAL	<i>11.22</i>
INST_CODE_OC	STRING	
WW_DW	STRING	
ANALY_DATE_PAH	DATE	<i>2018-02-22</i>
ANALY_METH_PAH	STRING	
PAH_CONC	DECIMAL	<i>0.0001</i>
PAH_BDL	STRING	
PAH_DL	DECIMAL	<i>0.0001</i>
PAH_UNIT	STRING	
ANALY_DATE_HH	DATE	<i>2018-02-22</i>
ANALY_METH_HH	STRING	
HH_CONC	DECIMAL	<i>0.0001</i>
HH_BDL	STRING	
HH_DL	DECIMAL	<i>0.0001</i>
HH_UNIT	STRING	



## SEDIMENT -TRACE METALS

SEDIMENT -TRACE METALS		
Parameter	Data Type	Example
SAMPLE_ID	STRING	
YEAR	DATE	2018-02-22
COUNTRY	STRING	
AREA	STRING	
STATION	STRING	
STATION_TYPE	STRING	
SAMP_NO	INTEGER	
SAMP_DATE	DATE	2018-02-22
LON_DEG	INTEGER	
LON_MIN	INTEGER	
LON_SEC	INTEGER	
LON_HEMIS	STRING	
LAT_DEG	INTEGER	
LAT_MIN	INTEGER	
LAT_SEC	INTEGER	
LAT_HEMIS	STRING	
BOT_DEPTH	DECIMAL	11.22
BOT_TEMP	DECIMAL	11.22
BOT_SALIN	DECIMAL	11.22
BOT_DO	DECIMAL	11.22
SAMP_LAYER	INTEGER	
SAMP_FRAC	DECIMAL	11.22
DW/WW	DECIMAL	11.22
INST_CODE_TM	STRING	
ANALY_DATE_TM	DATE	2018-02-22
ANALY_METH_TM	STRING	
WW_DW	STRING	
AS_CONC	DECIMAL	0.0001
AS_BDL	STRING	
AS_DL	DECIMAL	0.0001
AS_UNIT	STRING	
CD_CONC	DECIMAL	0.0001
CD_BDL	STRING	
CD_DL	DECIMAL	0.0001
CD_UNIT	STRING	
CR_CONC	DECIMAL	0.0001
CR_BDL	STRING	
CR_DL	DECIMAL	0.0001
CR_UNIT	STRING	
CU_CONC	DECIMAL	0.0001

CU_BDL	STRING	
CU_DL	DECIMAL	0.0001
CU_UNIT	STRING	
HGT_CONC	DECIMAL	0.0001
HGT_BDL	STRING	
HGT_DL	DECIMAL	0.0001
HGT_UNIT	STRING	
PB_CONC	DECIMAL	0.0001
PB_BDL	STRING	
PB_DL	DECIMAL	0.0001
PB_UNIT	STRING	
ZN_CONC	DECIMAL	0.0001
ZN_BDL	STRING	
ZN_DL	DECIMAL	0.0001
ZN_UNIT	STRING	
NI_CONC	DECIMAL	0.0001
NI_BDL	STRING	
NI_DL	DECIMAL	0.0001
NI_UNIT	STRING	
AL_CONC	DECIMAL	0.0001
AL_BDL	STRING	
AL_DL	DECIMAL	0.0001
AL_UNIT	STRING	
FE_CONC	DECIMAL	0.0001
FE_BDL	STRING	
FE_DL	DECIMAL	0.0001
FE_UNIT	STRING	
MN_CONC	DECIMAL	0.0001
MN_BDL	STRING	
MN_DL	DECIMAL	0.0001
MN_UNIT	STRING	
ZN_CONC	DECIMAL	0.0001
ZN_BDL	STRING	
ZN_DL	DECIMAL	0.0001
ZN_UNIT	STRING	