## Entry of Historical SW Data

# Proposed Approach

## Contents

## 1. Background

Most of the surface water agencies involved in the Hydrology Project have a rich archive of observed hydro-meteorological data. The period of available data varies from agency to agency and also from station to station within the agency. While a few agencies have much longer lengths of data at many of their observational stations, sometimes for 40-50 years or more, other agencies may generally have data for past 10-20 years. Each agency has scores of observation stations at which observations have been made in the past and/or being continued presently. Data for a number of variables like stage-discharge observations, stages, a few meteorological variables, sediment concentration data and a few water quality variables are generally available with the agencies. Climatic variables generally observed are the synoptic hour and short duration rainfall, maximum and minimum temperatures, dry and wet bulb temperatures, wind speed and direction and pan evaporation. Since rainfall and stream gauging networks are the oldest, the length of rainfall, stage and stage-discharge data is comparatively much larger than other types of data.

Various agencies are thus in possession of a huge amount of historical data. While some agencies have put a part of the observed data onto magnetic media, others are yet to start this process of data entry. The quantum of data available with various agencies which is yet to be entered onto the magnetic media varies tremendously from agency to agency and can roughly range between about a few millions to a hundred million values or so. And this information is normally archived at one or more offices of the agencies in form of manuscript or typed paper records. For achieving better efficiency in using this vast amount of data, which is an asset created by various agencies by investing a sizeable amount, it is very essential to properly organise it on to the magnetic media. The benefits derived from such an effort and the urgency with which this activity should be accomplished does not need any emphasis.

A system for entry of Surface Water Data has been developed under the Technical Assistance Component of the Hydrology Project for the entry of all types of historical surface water data available with various agencies. This **Surface Water Data Entry System (SWDES)** is dedicated to the data entry requirements of the surface water data and to organise the entered data in well defined open database structures. The user interface of the software provides a user friendly environment and allows minimising possible data entry errors. While on one hand the software will be employed for completing the backlog of vast amount of entry of historical data, on other hand it will be possible to complete entry of data forthcoming in the future on a monthly basis. This will avoid any pilling up of data entry work in future. It is expected that this software will be very useful and efficient tool with the agencies and would go a long way in accomplishing the task of entry of surface water data both, historical and of current origin.

The task of keying in all the relevant observed field data is enormous and requires appropriate attention and planning so as to organise and conclude it as soon as possible. Since this will involve many staff members and offices within each agency and will be a fairly long exercise, it is of utmost necessity that a clear cut and comprehensive plan is made outlining major milestones, total work to be accomplished and responsibilities shared by all the concerned with this activity. This article outlines various aspects required to be addressed by various agencies while making plans for complete computerisation of the historical surface water data.

## 2. Use of SWDES for data entry

The software system SWDES has been developed under the Technical Assistance component of the Hydrology Project. SWDES is specially dedicated to the requirements of entry of all types of surface water data. The software developed for use on personal computers in WINDOWS 95 / WINDOWS NT environment using **Visual Basic for Access** with **Microsoft's Access 97** Back-end Database. The SWDES databases stores the entered data in the form of well defined inter-related tables. Essential aspects of data entry operations, like user friendliness, speed of data entry and reliability are given appropriate attention while developing this software.

Various customised features available in the software, making its use advantageous by being efficient, flexible and comprehensive for surface water data entry operations, are:

- ***User Authorisation*** — Adequate facility for user authorisation and identification is available. Number of users can be authorised by the system manager for working with the software with varying access level of authority.

- ***Organised Databases*** — The data pertaining to different sub-basins or offices or periods can be organised in separate databases in a well-organised and methodical way.

- ***Extended Data Types*** — A comprehensive set of variables are available in the program. The characteristics like description, unit and type of measurement of the variables are also maintained. Adequate flexibility is provided for adding new data types in the program.

- ***Master Information*** — The software maintains a set of important information on stations, data series, administrative and drainage boundaries and that on the offices controlling various observation stations. Adequate facility is available in the system to extend or modify this type of information.

- ***Data Entry Screens*** — A number of user friendly data entry screen layouts are available that are appropriate for data pertaining to different types of variables and time intervals.

- ***Data Entry Checks*** — Adequate facilities are built into the system for providing a number of data entry checks so that the amount of data entry errors can be reduced to a very low level. Sufficient flexibility is available in the system for making these data entry checks more effective.

- ***Graphical Plots*** — Facility is provided in most of the options to make graphical plots of the data being entered. This provides the user a very convenient way to graphically visualise the entered data, which thereby will help in reduction of errors in data entry.

- ***User Friendliness*** The software provides sufficient level of user friendliness while working with it. Most of the work is accomplished by choosing an item by clicking it from the available lists. Only the actual data to be entered are required to be keyed-in using the keyboard.

The first version of the software, i.e. SWDES (Version 1.01), is capable of fulfilling requirements of data entry for all types of surface water data excepting those on detailed flow measurements, water quality and sediment observations. For the past period, entry of detailed flow measurement is however not considered worthwhile. The bulk of historical data with various agencies **(about 80-90% of the total)** is on rainfall, water level and stage-discharge observations and can very conveniently be entered with the help of SWDES (Version 1.01). Next version of SWDES will follow shortly with options to enter all types of data on detailed flow measurements, reservoir data, water quality and sediment.

Considering the above, it is expected that SWDES will serve all Hydrology Project agencies with advantage in accomplishing surface water data entry activities.

## 3. Type of data to be entered

Typically, all surface water agencies collect and have archive of meteorologic, river stage and flow, water quality and sediment data. Most of the meteorological data is on rainfall and a few other climatic variables like temperatures, humidity, wind speed, wind direction, pan evaporation, sunshine duration etc.. River stages and flow data mainly comprise of water stages or levels and stage-discharge data. Data on few water quality and sediment variables is also available with a few agencies. Rainfall data is primarily at daily, twice daily and hourly time intervals. However, the bulk of rainfall data is at daily time interval. Other climatic variables are predominantly at daily or twice daily intervals, however temperature and humidity data is also sometimes available at hourly intervals. River stages are available either at few times a day or at hourly intervals. However, the bulk of stage data is at few times a day. Flow data on stage-discharge observation is mostly at daily interval, however, a some agencies have it for 4 times a day as well. Water quality data for a few variables is available at 15 daily or monthly intervals. Sediment data is available with a few agencies on fine, medium and coarse suspended sediment at daily intervals and bed material data at seasonal intervals.

However, the bulk of surface water data is on rainfall, water level and stage-discharge observations. This constitutes to about 80 to 90% of the available data with the agencies. In the beginning phase of data entry work, the type of data which are to be entered are:

- Particulars of observation stations (viz., identification, locational, administrative aspects)
- Observed rainfall at daily or twice a day time interval (if twice daily data is available at certain station for a certain period then daily data need not be entered for the same period)
- Observed rainfall at hourly time interval
- Observed climatic data at daily or twice daily time intervals
- Observed water level or stages at smallest available time intervals (together with records of R.L. of zero of the gauge for different periods). This includes water level measurement made at reservoir stations as well.
- Observed stage-discharge data available at one or more times a day

**It must be emphasised here that none of the computed data must be attempted to be entered because such data can effortlessly and swiftly be computed again using standardised procedures for which use will be made of the dedicated surface water data processing software HYMOS**. The remaining data on water quality and sediment can be entered at later stage after the required options are available for this in the SWDES in its next version and the entry of substantial amount of above mentioned data is completed.

It is also very important that after entry of data for a period of 8 – 10 years it is processed to see if the quality of data is adequate. Only those type of data must be considered for enrty for further periods which show sufficient level of consistency.

## 4. Overall Planning

The amount of work involved in the entry of data available with the agencies is enormous and therefore needs adequate attention and planning. Proper planning at the beginning will ensure optimal use of available resources and manpower and completing the whole work in time. The data entry work has to be planned, monitored and accomplished by each agency individually. The first and foremost thing is to identify one single office/officer (State/Regional Data Storage Centre Manager in case one is from the SW agency or otherwise State/Regional Data Processing Centre Manager) who will have the overall charge and responsibility of the data entry work within each individual agency. Such responsibility must be clearly and explicitly assigned. This overall incharge within each agency must have the full support of all relevant Circles or Divisional offices which in turn will have support from the required Sub-Divisional offices. Important activities which need to be planned meticulously are outlined here:

- **Inventory of available historical data**

The first activity which must be finalised very quickly is to make a comprehensive inventory of all historical data available with the agency. All the observation stations must be listed in tabular form for each Division/Sub-division with their associated characteristics as given in table 1. The inventory on available data must indicate the period of availability of different types of data (in years) for each stations covering all observation stations within the state/region. The inventory must also necessarily include those observation stations which are not functional now but were operated in the past for a considerable period (say 10 years or more). However, the observation stations setup by the agencies for specific water resource projects for 6-8 years of operation may not be considered. Separate inventories must be made for rainfall data, stage data, stage-discharge data and climatic data. It should be possible to estimate the total amount of data required to be entered in terms of **number of values, in millions**, from such inventories. Suggested layouts for such inventory is given in Tables 2a to 2f.

The progress made on the data entry at any point of time must be clearly brought out in the form of bar charts in tabular manner as illustrated in Table 3a and 3b. Such tables must be prepared for each data type corresponding to Tables 2a to 2f.

- **Data already available on magnetic media**

A few agencies have already been using magnetic media for storage of hydrological data for the past few years. These agencies may have sizable amount of data in well-defined formats on the storage devices. Such data is to be enlisted separately giving details with respect to the period and type of format/software/database used for storage. It is normally possible to read

such data automatically and write back in desired formats and therefore it is not necessary to enter them again from the scratch. For example, CWC, Irrigation Department Maharastra, Narmada & Water Resources Department Gujarat and Irrigation Department Orissa have some of the observed data already available on computer devices. More importantly, data pertaining to many of the rainfall observation stations of the state agencies is available with IMD in computerised databases. There should not be any need to re-enter such data again and it has to be obtained from IMD in digital form. Conversion of all such data, available in definite format on the magnetic media, into the desired formats has to be undertaken with the assistance of the consultants. Thus, it is necessary to make an inventory of availability of data on the magnetic media and this can be done by including it in Tables 1a to 1e, as explained above. In case, none of the data of a particular type is available on magnetic media then the columns showing availability of data on magnetic media may even be excluded.

- **Organising manuscript records**

All the paper records containing the historical observed data to be entered has to be systematically organised. This organisation of manuscript is very essential to avoid any confusion and duplication of effort in the process. Organisation of data sets may be done in smaller units comprising observation stations pertaining to different Division, rivers or periods (say groups of 5 or 10 years each) etc.

- **Enlisting resources available for historical data entry work**

All the possible resources required and available for accomplishing the task of historical data entry must be listed before hand. Both, human and material resource must be estimated so that complete planning can be based on a realistic estimate of the capacity to carry out the work. The material resource comprises of all the computers that are being procured under Hydrology Project with the sole mandate of hydrological data processing work. The human resource available for this activity will be all the staff members posted at various sub-divisional, divisional and state/regional data processing centres of the hydrological information system within each agency. The hydrologists and assistant hydrologists need to guide and supervise the data entry work while the data processing assistants carry out the actual data entry operations. The availability of the computers for the historical data entry must be worked out in light of the fact that the current data being generated has also to be entered and processed simultaneously with priority. Pilling up of data processing work of current data in any case from now on has to be avoided at all costs.

- **Schedule for implementation**

Drawing up a realistic schedule and adhering to it is most essential in this kind of task. The schedule has to be drawn in light of the available human and material resources and the amount of data to be entered. There must however be an upper limit of time allotted for the completion of the task. And if the amount of work is very huge in comparison of the resources available then use of computers in shifts has also to be explored for planning completion of data entry task within the available time. Activities must be planned on a monthly basis so that distribution, execution and progress of work can be monitored in a very systematic way.

***There are two options for sequencing the data entry of the entire data:***

- ***The data from all the stations can be entered simultaneously by working backward in time (say 1997 to 1990 data taken in the first phase and for 1989 to 1980 taken in second phase and so on).***

- ***One or two Basins/Sub-basins can be taken in first phase and its entire data entered and then rest of the basin's data entered.***

***The advantage of the latter approach is that the whole arsenal of processing tools can be introduced and staff can be acquainted with them at an earlier date.***

- **Distribution and execution of data entry work**

The data entry work has to be distributed, as per the plan and schedule for implementation, among all the identified offices. The execution of work must include the process of data entry by the data entry assistants and supervision by the officers. All the data entered must be checked using the available data entry checks by the supervisors. And supervisor must formally certify that the data entry checks have been satisfactorily carried out. Only those data which have been certified by the supervisors as properly entered must be considered as finalised. Hence, the data entry work have to be followed by certification using data entry checks by the supervisors and this sequence must be strictly adhered to throughout the whole task.

- **Supervision and monitoring progress of data entry work**

Strict and regular monitoring of execution of data entry work will be paramount in accomplishing the task in time. Adequate seriousness has to be maintained by the officers responsible for completion of the work. The difficulties experienced by the persons involved in the work must be identified and addressed to, as soon as possible. This will be possible only when monitoring of the progress is done regularly. The overall status of the progress of data entry can be brought in the form of an overview as illustrated in Fig. 1. This will help in monitoring and planning the process of data entry task.

## 5. Responsibilities

Since a number of offices and staff will be involved in this work, it is important to clearly indicate the responsibilities assigned to everyone. The responsibility assigned to a particular person means that that person is solely responsible to accomplish the stated task. However, the necessary support and work to be done has to be ensured from all the concerned officers and support staff. The responsibilities to be shared for the major activities are outlined hereunder as reference and suggestion. Agencies must however make appropriate planning for the whole process to be accomplished efficiently.

- **Overall responsibility** : One officer from Nodal Officer of HP/Data Processing Centre Manager/Chief Engineer or an Officer authorised by the agency to accomplish the whole data entry work

- **Enlisting resources available**: Officer who is assigned the overall responsibility together with concerned Divisional Data Processing Centre Managers (Executive Engineers)

- **Overall planning** : Officer who is assigned the overall responsibility together with concerned Divisional Data Processing Centre Managers (Executive Engineers)

- **Inventory of historical data** : Those officers who are in custody of the archives of historical records. Generally, the data records are archived at one office in the agency or in the respective Divisional offices. So, typically this responsibility should be with one or more Divisional Data Processing Centre Managers (Executive Engineers).

- **Data already on magnetic media**: Those officers who are in custody of such computer files having data in definite formats. Generally, these records also are archived at one office in the agency or in the respective Divisional offices. So, typically this responsibility should be with one or more Divisional Data Processing Centre Managers (Executive Engineers).

- **Organising manuscript records**: The officers who will supervise the data entry work. Typically this responsibility should be with one or more Divisional Data Processing Centre Managers (Executive Engineers).

- **Schedule for implementation**: Officer who is assigned the overall responsibility together with concerned Divisional Data Processing Centre Managers (Executive Engineers)

- **Distribution of work** : The Divisional Data Processing Managers (Executive Engineers) of those Divisions where the data entry work is done.

- **Data entry work** : Persons given the assignment of entry of data.

- **Supervision** : The Divisional Data Processing Centre Managers (Executive Engineers) and Hydrologists (Sub-Divisional Officer/Assistant Engineers) of those Divisions to which the data entry work is distributed.

- **Monitoring** : Divisional Data Processing Centre Managers for monitoring progress at Divisional levels and the

person having the overall responsibility for monitoring progress at the agency level.

- **Training to TOTs** : HP Consultants, NIH
- **Hands on Training** : HP Consultants, NIH and ToTs
- **Review agency's progress** : Officer given the overall responsibility, HP Consultants (including SMC)

**Table: 1: List of observation stations alongwith their characteristics**

**Agency: ……..** **Division/Sub-Division: ……**

| S.No. | Station Name | Station Code (if any) | District | Tehsil/taluka | River Basin | Independent River | Tributory to Independent River | Latitude | Longitude | Altitude | Area (if river gauging) | Section Office |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| … | | | | | | | | | … | | | |
| … | | | | | | | | | … | | | |
| … | | | | | | | | | … | | | |
| 93 | | | | | | | | | | | | |
| 94 | | | | | | | | | | | | |
| 95 | | | | | | | | | | | | |
| 96 | | | | | | | | | | | | |
| 97 | | | | | | | | | | | | |
| 98 | | | | | | | | | | | | |
| 99 | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | |
| 101 | | | | | | | | | | | | |
| 102 | | | | | | | | | | | | |
| 103 | | | | | | | | | | | | |

**Table: 2a: Availability of historical synoptic hour rainfall data** **(Example Illustration - Data not real)**

**Agency: ……..** **Division/Sub-Division: ……**

| S.No. | Name of Station | Station Code (if any) | Sub-basin | Basin | Daily/ Twice daily (D/TD) | Availability of synoptic hour rainfall data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total available data | | | | | Data already available on magentic media | | | | | Data required to be entered | | | | |
| | | | | | | Year: From | Year: To | Total Years | Number of data per year | Total number of values | Year: From | Year: To | Total Years | Total number of values | Type of database/ software used | Year: From | Year: To | Total Years | Total number of values |
| 1 | | | | | D | 1965 | 1978 | 13 | 365 | 4,745 | - | - | 0 | 0 | - | 1965 | 1978 | 13 | 4,745 |
| 2 | | | | | D | 1972, 1981 | 1976, 1998 | 21 | 365 | 7,665 | 1985 | 1998 | 13 | 4,745 | dBase | 1972, 1981 | 1976, 1985 | 8 | 2,920 |
| 3 | | | | | D | 1962 | 1998 | 36 | 365 | 13,140 | 1985 | 1998 | 13 | 4,745 | dBase | 1962 | 1985 | 23 | 8,395 |
| 4 | | | | | TD | 1935 | 1998 | 63 | 730 | 45,990 | 1985 | 1998 | 13 | 9,490 | dBase | 1935 | 1985 | 50 | 36,500 |
| 5 | | | | | D | 1966 | 1988 | 22 | 365 | 8,030 | 1985 | 1988 | 3 | 1,095 | dBase | 1966 | 1985 | 19 | 6,935 |
| 6 | | | | | D | 1976 | 1998 | 22 | 365 | 8,030 | 1985 | 1998 | 13 | 4,745 | dBase | 1976 | 1985 | 9 | 3,285 |
| 7 | | | | | D | 1976 | 1998 | 22 | 365 | 8,030 | 1985 | 1998 | 13 | 4,745 | dBase | 1976 | 1985 | 9 | 3,285 |
| 8 | | | | | D | 1976 | 1998 | 22 | 365 | 8,030 | 1985 | 1998 | 13 | 4,745 | dBase | 1976 | 1985 | 9 | 3,285 |
| 9 | | | | | TD | 1981 | 1993 | 12 | 730 | 8,760 | 1985 | 1993 | 8 | 5,840 | dBase | 1981 | 1985 | 4 | 2,920 |
| 10 | | | | | TD | 1981 | 1993 | 12 | 730 | 8,760 | 1985 | 1993 | 8 | 5,840 | dBase | 1981 | 1985 | 4 | 2,920 |
| 11 | | | | | D | 1981 | 1998 | 17 | 365 | 6,205 | 1985 | 1998 | 13 | 4,745 | dBase | 1981 | 1985 | 4 | 1,460 |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 93 | | | | | D | 1972 | 1998 | 26 | 365 | 9,490 | 1985 | 1998 | 13 | 4,745 | Excel | 1972 | 1985 | 13 | 4,745 |
| 94 | | | | | D | 1972 | 1998 | 26 | 365 | 9,490 | 1985 | 1998 | 13 | 4,745 | Excel | 1972 | 1985 | 13 | 4,745 |
| 95 | | | | | D | 1972 | 1998 | 26 | 365 | 9,490 | 1985 | 1998 | 13 | 4,745 | Excel | 1972 | 1985 | 13 | 4,745 |
| 96 | | | | | D | 1928, 1981 | 1956, 1998 | 45 | 365 | 16,425 | 1985 | 1998 | 13 | 4,745 | Excel | 1928, 1981 | 1956, 1985 | 32 | 11,680 |
| 97 | | | | | D | 1966 | 1992 | 26 | 365 | 9,490 | 1985 | 1992 | 7 | 2,555 | Excel | 1966 | 1985 | 19 | 6,935 |
| 98 | | | | | D | 1966 | 1992 | 26 | 365 | 9,490 | 1985 | 1992 | 7 | 2,555 | Excel | 1966 | 1985 | 19 | 6,935 |
| 99 | | | | | D | 1966 | 1992 | 26 | 365 | 9,490 | 1985 | 1992 | 7 | 2,555 | Excel | 1966 | 1985 | 19 | 6,935 |
| 100 | | | | | D | 1981 | 1998 | 17 | 365 | 6,205 | 1985 | 1998 | 13 | 4,745 | Excel | 1981 | 1985 | 4 | 1,460 |
| 101 | | | | | D | 1981 | 1998 | 17 | 365 | 6,205 | 1985 | 1998 | 13 | 4,745 | Excel | 1981 | 1985 | 4 | 1,460 |
| 102 | | | | | D | 1981 | 1998 | 17 | 365 | 6,205 | 1985 | 1998 | 13 | 4,745 | Excel | 1981 | 1985 | 4 | 1,460 |
| 103 | | | | | D | 1981 | 1998 | 17 | 365 | 6,205 | 1985 | 1998 | 13 | 4,745 | Excel | 1981 | 1985 | 4 | 1,460 |
| | | | | | | | | Grand Total: | | 225,570 | | Grand Total: | | 96,360 | | | Grand Total: | | 129,210 |

**Table: 2b: Availability of historical hourly rainfall data** **(Example Illustration - Data not real)**

**Agency: ……** **Division/Sub-Division: ……**

| S.No. | Name of Station | Station Code (if any) | Sub-basin | Basin | Period in year | Availability of hourly rainfall data | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total available data | | | | | Data already available on magentic media | | | | | Data required to be entered | | | |
| | | | | | | Year: From | Year: To | Total Years | Number of data per year | Total number of values | Year: From | Year: To | Total Years | Total number of values | Type of database /software used | Year: From | Year: To | Total Years | Total number of values |
| 1 | | | | | 12 m | 1956 | 1978 | 23 | 8,760 | 201,480 | - | - | - | - | - | 1956 | 1978 | 23 | 201,480 |
| 2 | | | | | 12 m | 1972, 1981 | 1976, 1998 | 23 | 8,760 | 201,480 | - | - | - | - | - | 1972, 1981 | 1976, 1998 | 23 | 201,480 |
| 3 | | | | | 12 m | 1972 | 1998 | 27 | 8,760 | 236,520 | - | - | - | - | - | 1972 | 1998 | 27 | 236,520 |
| 4 | | | | | 12 m | 1954 | 1998 | 45 | 8,760 | 394,200 | - | - | - | - | - | 1954 | 1998 | 45 | 394,200 |
| 5 | | | | | 12 m | 1962 | 1988 | 27 | 8,760 | 236,520 | - | - | - | - | - | 1962 | 1988 | 27 | 236,520 |
| 6 | | | | | 12 m | 1972 | 1998 | 27 | 8,760 | 236,520 | - | - | - | - | - | 1972 | 1998 | 27 | 236,520 |
| 7 | | | | | 12 m | 1976 | 1998 | 23 | 8,760 | 201,480 | - | - | - | - | - | 1976 | 1998 | 23 | 201,480 |
| 8 | | | | | 4 m | 1976 | 1998 | 23 | 2,880 | 66,240 | - | - | - | - | - | 1976 | 1998 | 23 | 66,240 |
| 9 | | | | | 4 m | 1981 | 1993 | 13 | 2,880 | 37,440 | - | - | - | - | - | 1981 | 1993 | 13 | 37,440 |
| 10 | | | | | 4 m | 1981 | 1993 | 13 | 2,880 | 37,440 | - | - | - | - | - | 1981 | 1993 | 13 | 37,440 |
| 11 | | | | | 4 m | 1981 | 1998 | 18 | 2,880 | 51,840 | - | - | - | - | - | 1981 | 1998 | 18 | 51,840 |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 25 | | | | | 4 m | 1972 | 1998 | 27 | 2,880 | 77,760 | - | - | - | - | - | 1972 | 1998 | 27 | 77,760 |
| 26 | | | | | 4 m | 1972 | 1998 | 27 | 2,880 | 77,760 | - | - | - | - | - | 1972 | 1998 | 27 | 77,760 |
| 27 | | | | | 4 m | 1972 | 1998 | 27 | 2,880 | 77,760 | - | - | - | - | - | 1972 | 1998 | 27 | 77,760 |
| 28 | | | | | 4 m | 1928, 1981 | 1956, 1998 | 47 | 2,880 | 135,360 | - | - | - | - | - | 1928, 1981 | 1956, 1998 | 47 | 135,360 |
| 29 | | | | | 4 m | 1966 | 1992 | 27 | 2,880 | 77,760 | - | - | - | - | - | 1966 | 1992 | 27 | 77,760 |
| 30 | | | | | 4 m | 1966 | 1992 | 27 | 2,880 | 77,760 | - | - | - | - | - | 1966 | 1992 | 27 | 77,760 |
| 31 | | | | | 12 m | 1966 | 1992 | 27 | 8,760 | 236,520 | - | - | - | - | - | 1966 | 1992 | 27 | 236,520 |
| 32 | | | | | 12 m | 1984 | 1998 | 15 | 8,760 | 131,400 | - | - | - | - | - | 1984 | 1998 | 15 | 131,400 |
| 33 | | | | | 12 m | 1984 | 1998 | 15 | 8,760 | 131,400 | - | - | - | - | - | 1984 | 1998 | 15 | 131,400 |
| 34 | | | | | 12 m | 1984 | 1998 | 15 | 8,760 | 131,400 | - | - | - | - | - | 1984 | 1998 | 15 | 131,400 |
| 35 | | | | | 12 m | 1984 | 1998 | 15 | 8,760 | 131,400 | - | - | - | - | - | 1984 | 1998 | 15 | 131,400 |
| | | | | | | | | Grand Total: | | 3,187,440 | | Grand Total: | | 0 | | | Grand Total: | | 3,187,440 |

**Table: 2c: Availability of synoptic hour climatic data** **(Example Illustration - Data not real)**

**Agency: ……** **Division/Sub-Division: ……**

| S.No. | Name of Station | Station Code (if any) | Sub-basin | Basin | Daily/ Twice daily (D/TD) | Availability of synoptic hour climatic data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total available data | | | | | | Data already available on magentic media | | | | | Data required to be entered | | | |
| | | | | | | Year: From | Year: To | Total Years | Number of obser. per year | Number of climatic data | Total number of values | Year: From | Year: To | Total Years | Total number of values | Type of database /softwar e used | Year: From | Year: To | Total Years | Total number of values |
| 1 | | | | | D | 1965 | 1978 | 13 | 365 | 4 | 18,980 | - | - | - | - | - | 1965 | 1978 | 13 | 18,980 |
| 2 | | | | | D | 1972, 1981 | 1976, 1998 | 21 | 365 | 4 | 30,660 | - | - | - | - | - | 1972, 1981 | 1976, 1998 | 21 | 30,660 |
| 3 | | | | | D | 1962 | 1998 | 36 | 365 | 4 | 52,560 | - | - | - | - | - | 1962 | 1998 | 36 | 52,560 |
| 4 | | | | | TD | 1935 | 1998 | 63 | 730 | 4 | 183,960 | - | - | - | - | - | 1935 | 1998 | 63 | 183,960 |
| 5 | | | | | D | 1966 | 1988 | 22 | 365 | 4 | 32,120 | - | - | - | - | - | 1966 | 1988 | 22 | 32,120 |
| 6 | | | | | D | 1976 | 1998 | 22 | 365 | 8 | 64,240 | - | - | - | - | - | 1976 | 1998 | 22 | 64,240 |
| 7 | | | | | D | 1976 | 1998 | 22 | 365 | 8 | 64,240 | - | - | - | - | - | 1976 | 1998 | 22 | 64,240 |
| 8 | | | | | D | 1976 | 1998 | 22 | 365 | 8 | 64,240 | - | - | - | - | - | 1976 | 1998 | 22 | 64,240 |
| 9 | | | | | TD | 1981 | 1993 | 12 | 730 | 8 | 70,080 | - | - | - | - | - | 1981 | 1993 | 12 | 70,080 |
| 10 | | | | | TD | 1981 | 1993 | 12 | 730 | 8 | 70,080 | - | - | - | - | - | 1981 | 1993 | 12 | 70,080 |
| 11 | | | | | D | 1981 | 1998 | 17 | 365 | 8 | 49,640 | - | - | - | - | - | 1981 | 1998 | 17 | 49,640 |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 25 | | | | | D | 1972 | 1998 | 26 | 365 | 8 | 75,920 | - | - | - | - | - | 1972 | 1998 | 26 | 75,920 |
| 26 | | | | | D | 1972 | 1998 | 26 | 365 | 8 | 75,920 | - | - | - | - | - | 1972 | 1998 | 26 | 75,920 |
| 27 | | | | | D | 1972 | 1998 | 26 | 365 | 4 | 37,960 | - | - | - | - | - | 1972 | 1998 | 26 | 37,960 |
| 28 | | | | | D | 1928, 1981 | 1956, 1998 | 45 | 365 | 4 | 65,700 | - | - | - | - | - | 1928, 1981 | 1956, 1998 | 45 | 65,700 |
| 29 | | | | | D | 1966 | 1992 | 26 | 365 | 4 | 37,960 | - | - | - | - | - | 1966 | 1992 | 26 | 37,960 |
| 30 | | | | | D | 1966 | 1992 | 26 | 365 | 4 | 37,960 | - | - | - | - | - | 1966 | 1992 | 26 | 37,960 |
| 31 | | | | | D | 1966 | 1992 | 26 | 365 | 4 | 37,960 | - | - | - | - | - | 1966 | 1992 | 26 | 37,960 |
| 32 | | | | | D | 1981 | 1998 | 17 | 365 | 4 | 24,820 | - | - | - | - | - | 1981 | 1998 | 17 | 24,820 |
| 33 | | | | | D | 1981 | 1998 | 17 | 365 | 4 | 24,820 | - | - | - | - | - | 1981 | 1998 | 17 | 24,820 |
| 34 | | | | | D | 1981 | 1998 | 17 | 365 | 4 | 24,820 | - | - | - | - | - | 1981 | 1998 | 17 | 24,820 |
| 35 | | | | | D | 1981 | 1998 | 17 | 365 | 4 | 24,820 | - | - | - | - | - | 1981 | 1998 | 17 | 24,820 |
| | | | | | | | | | Grand Total: | | 1,169,460 | | Grand Total: | | 0 | | | Grand Total: | | 1,169,460 |

**Table: 2d: Availability of multiple times a day water level data** **(Example Illustration - Data not real)**

**Agency: ……** **Division/Sub-Division: ……**

| S.No. | Name of Station | Station Code (if any) | Sub-basin | Basin | Availability of multiple times a day water level data | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Total available data | | | | | Data already available on magentic media | | | | | Data required to be entered | | | |
| | | | | | Year: From | Year: To | Total Years | Number of staff data per year | Total number of values | Year: From | Year: To | Total Years | Total number of values | Type of database /software used | Year: From | Year: To | Total Years | Total number of values |
| 1 | | | | | 1982 | 1998 | 16 | 730 | 11,680 | 1996 | 1998 | 2 | 1,460 | - | 1982 | 1996 | 14 | 10,220 |
| 2 | | | | | 1972 | 1992 | 20 | 730 | 14,600 | - | - | 0 | 0 | - | 1972 | 1992 | 20 | 14,600 |
| 3 | | | | | 1972 | 1992 | 20 | 730 | 14,600 | - | - | 0 | 0 | - | 1972 | 1992 | 20 | 14,600 |
| 4 | | | | | 1971 | 1998 | 27 | 730 | 19,710 | 1996 | 1998 | 2 | 1,460 | - | 1971 | 1996 | 25 | 18,250 |
| 5 | | | | | 1971 | 1988 | 17 | 730 | 12,410 | - | - | 0 | 0 | - | 1971 | 1988 | 17 | 12,410 |
| 6 | | | | | 1971 | 1998 | 27 | 1,095 | 29,565 | 1996 | 1998 | 2 | 2,190 | - | 1971 | 1996 | 25 | 27,375 |
| 7 | | | | | 1976 | 1998 | 22 | 1,095 | 24,090 | 1996 | 1998 | 2 | 2,190 | - | 1976 | 1996 | 20 | 21,900 |
| 8 | | | | | 1976 | 1998 | 22 | 1,095 | 24,090 | 1996 | 1998 | 2 | 2,190 | - | 1976 | 1996 | 20 | 21,900 |
| 9 | | | | | 1981 | 1993 | 12 | 1,095 | 13,140 | - | - | 0 | 0 | - | 1981 | 1993 | 12 | 13,140 |
| 10 | | | | | 1981 | 1993 | 12 | 1,095 | 13,140 | - | - | 0 | 0 | - | 1981 | 1993 | 12 | 13,140 |
| 11 | | | | | 1981 | 1998 | 17 | 1,095 | 18,615 | 1996 | 1998 | 2 | 2,190 | - | 1981 | 1996 | 15 | 16,425 |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 25 | | | | | 1972 | 1998 | 26 | 1,095 | 28,470 | 1996 | 1998 | 2 | 2,190 | dBase 3 | 1972 | 1996 | 24 | 26,280 |
| 26 | | | | | 1972 | 1998 | 26 | 1,095 | 28,470 | 1996 | 1998 | 2 | 2,190 | dBase 3 | 1972 | 1996 | 24 | 26,280 |
| 27 | | | | | 1972 | 1998 | 26 | 1,095 | 28,470 | 1996 | 1998 | 2 | 2,190 | dBase 3 | 1972 | 1996 | 24 | 26,280 |
| 28 | | | | | 1982 | 1998 | 16 | 1,095 | 17,520 | 1996 | 1998 | 2 | 2,190 | dBase 3 | 1982 | 1996 | 14 | 15,330 |
| 29 | | | | | 1966 | 1992 | 26 | 1,095 | 28,470 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 28,470 |
| 30 | | | | | 1966 | 1992 | 26 | 730 | 18,980 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 18,980 |
| 31 | | | | | 1966 | 1992 | 26 | 730 | 18,980 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 18,980 |
| 32 | | | | | 1984 | 1998 | 14 | 730 | 10,220 | 1996 | 1998 | 2 | 1,460 | dBase 3 | 1984 | 1996 | 12 | 8,760 |
| 33 | | | | | 1984 | 1998 | 14 | 730 | 10,220 | 1996 | 1998 | 2 | 1,460 | dBase 3 | 1984 | 1996 | 12 | 8,760 |
| 34 | | | | | 1984 | 1998 | 14 | 730 | 10,220 | 1996 | 1998 | 2 | 1,460 | dBase 3 | 1984 | 1996 | 12 | 8,760 |
| 35 | | | | | 1984 | 1998 | 14 | 730 | 10,220 | 1996 | 1998 | 2 | 1,460 | dBase 3 | 1984 | 1996 | 12 | 8,760 |
| | | | | | | | Grand Total: | | 405,880 | | Grand Total: | | 26,280 | | | Grand Total: | | 379,600 |

**Table: 2e: Availability of hourly water level data** **(Example Illustration - Data not real)**

**Agency: ……..** **Division/Sub-Division: ……**

| S.No. | Name of Station | Station Code (if any) | Sub-basin | Basin | Availability of hourly water level data | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Total available data | | | | | Data already available on magentic media | | | | | Data required to be entered | | | |
| | | | | | Year: From | Year: To | Total Years | Number of hourly data per year | Total number of values | Year: From | Year: To | Total Years | Total number of values | Type of database/ software used | Year: From | Year: To | Total Years | Total number of values |
| 1 | | | | | 1982 | 1998 | 16 | 8,760 | 140,160 | - | - | 0 | 0 | - | 1982 | 1998 | 16 | 140,160 |
| 2 | | | | | 1972 | 1992 | 20 | 8,760 | 175,200 | - | - | 0 | 0 | - | 1972 | 1992 | 20 | 175,200 |
| 3 | | | | | 1972 | 1992 | 20 | 8,760 | 175,200 | - | - | 0 | 0 | - | 1972 | 1992 | 20 | 175,200 |
| 4 | | | | | 1971 | 1998 | 27 | 2,880 | 77,760 | - | - | 0 | 0 | - | 1971 | 1998 | 27 | 77,760 |
| 5 | | | | | 1971 | 1988 | 17 | 2,880 | 48,960 | - | - | 0 | 0 | - | 1971 | 1988 | 17 | 48,960 |
| 6 | | | | | 1971 | 1998 | 27 | 2,880 | 77,760 | - | - | 0 | 0 | - | 1971 | 1998 | 27 | 77,760 |
| 7 | | | | | 1976 | 1998 | 22 | 2,880 | 63,360 | - | - | 0 | 0 | - | 1976 | 1998 | 22 | 63,360 |
| 8 | | | | | 1976 | 1998 | 22 | 2,880 | 63,360 | - | - | 0 | 0 | - | 1976 | 1998 | 22 | 63,360 |
| 9 | | | | | 1981 | 1993 | 12 | 2,880 | 34,560 | - | - | 0 | 0 | - | 1981 | 1993 | 12 | 34,560 |
| 10 | | | | | 1981 | 1993 | 12 | 2,880 | 34,560 | - | - | 0 | 0 | - | 1981 | 1993 | 12 | 34,560 |
| 11 | | | | | 1981 | 1998 | 17 | 2,880 | 48,960 | - | - | 0 | 0 | - | 1981 | 1998 | 17 | 48,960 |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 25 | | | | | 1972 | 1998 | 26 | 2,880 | 74,880 | - | - | 0 | 0 | Lotus | 1972 | 1998 | 26 | 74,880 |
| 26 | | | | | 1972 | 1998 | 26 | 2,880 | 74,880 | - | - | 0 | 0 | Lotus | 1972 | 1998 | 26 | 74,880 |
| 27 | | | | | 1972 | 1998 | 26 | 2,880 | 74,880 | - | - | 0 | 0 | Lotus | 1972 | 1998 | 26 | 74,880 |
| 28 | | | | | 1982 | 1998 | 16 | 2,880 | 46,080 | - | - | 0 | 0 | Lotus | 1982 | 1998 | 16 | 46,080 |
| 29 | | | | | 1966 | 1992 | 26 | 2,880 | 74,880 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 74,880 |
| 30 | | | | | 1966 | 1992 | 26 | 2,880 | 74,880 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 74,880 |
| 31 | | | | | 1966 | 1992 | 26 | 2,880 | 74,880 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 74,880 |
| 32 | | | | | 1984 | 1998 | 14 | 2,880 | 40,320 | 1996 | 1998 | 2 | 5,760 | Lotus | 1984 | 1996 | 12 | 34,560 |
| 33 | | | | | 1984 | 1998 | 14 | 2,880 | 40,320 | 1996 | 1998 | 2 | 5,760 | Lotus | 1984 | 1996 | 12 | 34,560 |
| 34 | | | | | 1984 | 1998 | 14 | 2,880 | 40,320 | 1996 | 1998 | 2 | 5,760 | Lotus | 1984 | 1996 | 12 | 34,560 |
| 35 | | | | | 1984 | 1998 | 14 | 2,880 | 40,320 | 1996 | 1998 | 2 | 5,760 | Lotus | 1984 | 1996 | 12 | 34,560 |
| | | | | | | | Grand Total: | | 1,596,480 | | | Grand Total: | 23,040 | | | | Grand Total: | 1,573,440 |

**Table: 2f: Availability of stage-discharge data** **(Example Illustration - Data not real)**

**Agency: ……** **Division/Sub-Division: ……**

| S.No. | Name of Station | Station Code (if any) | Sub-basin | Basin | Availability of stage-discharge data | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Total available data | | | | | Data already available on magentic media | | | | | Data required to be entered | | | |
| | | | | | Year: From | Year: To | Total Years | Number of data per year | Total number of values | Year: From | Year: To | Total Years | Total number of values | Type of database /softwar e used | Year: From | Year: To | Total Years | Total number of values |
| 1 | | | | | 1982 | 1998 | 16 | 960 | 15,360 | - | - | 0 | 0 | - | 1982 | 1998 | 16 | 15,360 |
| 2 | | | | | 1972 | 1992 | 20 | 960 | 19,200 | - | - | 0 | 0 | - | 1972 | 1992 | 20 | 19,200 |
| 3 | | | | | 1972 | 1992 | 20 | 960 | 19,200 | - | - | 0 | 0 | - | 1972 | 1992 | 20 | 19,200 |
| 4 | | | | | 1971 | 1998 | 27 | 960 | 25,920 | - | - | 0 | 0 | - | 1971 | 1998 | 27 | 25,920 |
| 5 | | | | | 1971 | 1988 | 17 | 960 | 16,320 | - | - | 0 | 0 | - | 1971 | 1988 | 17 | 16,320 |
| 6 | | | | | 1971 | 1998 | 27 | 960 | 25,920 | - | - | 0 | 0 | - | 1971 | 1998 | 27 | 25,920 |
| 7 | | | | | 1976 | 1998 | 22 | 480 | 10,560 | - | - | 0 | 0 | - | 1976 | 1998 | 22 | 10,560 |
| 8 | | | | | 1976 | 1998 | 22 | 480 | 10,560 | - | - | 0 | 0 | - | 1976 | 1998 | 22 | 10,560 |
| 9 | | | | | 1981 | 1993 | 12 | 480 | 5,760 | - | - | 0 | 0 | - | 1981 | 1993 | 12 | 5,760 |
| 10 | | | | | 1981 | 1993 | 12 | 480 | 5,760 | - | - | 0 | 0 | - | 1981 | 1993 | 12 | 5,760 |
| 11 | | | | | 1981 | 1998 | 17 | 480 | 8,160 | - | - | 0 | 0 | - | 1981 | 1998 | 17 | 8,160 |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 25 | | | | | 1972 | 1998 | 26 | 960 | 24,960 | 1995 | 1998 | 3 | 2,880 | Lotus | 1972 | 1995 | 23 | 22,080 |
| 26 | | | | | 1972 | 1998 | 26 | 960 | 24,960 | 1995 | 1998 | 3 | 2,880 | Lotus | 1972 | 1995 | 23 | 22,080 |
| 27 | | | | | 1972 | 1998 | 26 | 960 | 24,960 | 1995 | 1998 | 3 | 2,880 | Lotus | 1972 | 1995 | 23 | 22,080 |
| 28 | | | | | 1982 | 1998 | 16 | 960 | 15,360 | 1995 | 1998 | 3 | 2,880 | Lotus | 1982 | 1995 | 13 | 12,480 |
| 29 | | | | | 1966 | 1992 | 26 | 960 | 24,960 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 24,960 |
| 30 | | | | | 1966 | 1992 | 26 | 480 | 12,480 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 12,480 |
| 31 | | | | | 1966 | 1992 | 26 | 480 | 12,480 | - | - | 0 | 0 | - | 1966 | 1992 | 26 | 12,480 |
| 32 | | | | | 1984 | 1998 | 14 | 480 | 6,720 | 1994 | 1998 | 4 | 1,920 | Lotus | 1984 | 1994 | 10 | 4,800 |
| 33 | | | | | 1984 | 1998 | 14 | 480 | 6,720 | 1994 | 1998 | 4 | 1,920 | Lotus | 1984 | 1994 | 10 | 4,800 |
| 34 | | | | | 1984 | 1998 | 14 | 480 | 6,720 | 1994 | 1998 | 4 | 1,920 | Lotus | 1984 | 1994 | 10 | 4,800 |
| 35 | | | | | 1984 | 1998 | 14 | 480 | 6,720 | 1994 | 1998 | 4 | 1,920 | Lotus | 1984 | 1994 | 10 | 4,800 |
| | | | | | | | Grand Total: | | 329,760 | | Grand Total: | | 19,200 | | | Grand Total: | | 310,560 |

**Table: 3a: Availability of data magnetic media for different observation stations** **(Example Illustration - Data not real)**

**Agency: ……..** **Division/Sub-Division: ……** **Period: 1961 to 1981**

: Data Not Observed in this Period : Total Period of Data Availability : Period for Data Entry Completed

| S.No. | Name of Station | Station Code (if any) | Sub-basin | Basin | Start Year | End Year | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | 1965 | 1978 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | 1972, 1981 | 1976, 1998 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | 1962 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | 1935 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | 1966 | 1988 | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | 1976 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | 1976 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | 1976 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | 1981 | 1993 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | 1981 | 1993 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | | | |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 93 | | | | | 1972 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 94 | | | | | 1972 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 95 | | | | | 1972 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 96 | | | | | 1928, 1981 | 1956, 1998 | | | | | | | | | | | | | | | | | | | | |
| 97 | | | | | 1966 | 1992 | | | | | | | | | | | | | | | | | | | | |
| 98 | | | | | 1966 | 1992 | | | | | | | | | | | | | | | | | | | | |
| 99 | | | | | 1966 | 1992 | | | | | | | | | | | | | | | | | | | | |
| 100 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 101 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 102 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | | | |
| 103 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | | | |

**Table: 3b: Availability of data magnetic media for different observation stations** **(Example Illustration - Data not real)**

**Agency: ……** **Division/Sub-Division: ……** **Period: 1981 to 1998**

: Data Not Observed in this Period : Total Period of Data Availability : Period for Data Entry Completed

| S.No. | Name of Station | Station Code (if any) | Sub-basin | Basin | Start Year | End Year | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | 1965 | 1978 | | | | | | | | | | | | | | | | | | |
| 2 | | | | | 1972, 1981 | 1976, 1998 | | | | | | | | | | | | | | | | | | |
| 3 | | | | | 1962 | 1998 | | | | | | | | | | | | | | | | | | |
| 4 | | | | | 1935 | 1998 | | | | | | | | | | | | | | | | | | |
| 5 | | | | | 1966 | 1988 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | 1976 | 1998 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | 1976 | 1998 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | 1976 | 1998 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | 1981 | 1993 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | 1981 | 1993 | | | | | | | | | | | | | | | | | | |
| 11 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 93 | | | | | 1972 | 1998 | | | | | | | | | | | | | | | | | | |
| 94 | | | | | 1972 | 1998 | | | | | | | | | | | | | | | | | | |
| 95 | | | | | 1972 | 1998 | | | | | | | | | | | | | | | | | | |
| 96 | | | | | 1928, 1981 | 1956, 1998 | | | | | | | | | | | | | | | | | | |
| 97 | | | | | 1966 | 1992 | | | | | | | | | | | | | | | | | | |
| 98 | | | | | 1966 | 1992 | | | | | | | | | | | | | | | | | | |
| 99 | | | | | 1966 | 1992 | | | | | | | | | | | | | | | | | | |
| 100 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | |
| 101 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | |
| 102 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | |
| 103 | | | | | 1981 | 1998 | | | | | | | | | | | | | | | | | | |

## Fig. 1: Overview of Status of Data Availability on Magnetic Media