

Hydrology Project

Protocols for HIS (GW) Activities & Data Validation

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks
1	Data Collection							
	1.1 Ground Water Regime monitoring							
		1.1.1	Static data					
			Collection/ Field check of all the static information related to monitoring well on 1: 50,000 scale	Once for Historical data and regular activity for new structures	Within a week for new wells.	STA/AHG/JHG	SHG	
		1.1.2	Semi-static Depth, MP, Dia)	Continuous activity	Along with the January measurement	STA/AHG/JHG	SHG	
		1.1.3	Dynamic Data					
			Ground Water					
			Manual (Open Well)	As per frequency specified	With in ten days or as specified	STA/AHG/JHG	SHG	
			Water Level Data (critical areas)	Monthly	By 30 th of month	STA/AHG/JHG	SHG	

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			Piezometer (Manual)	Monthly	By 30 th of month	STA/AHG/JHG	SHG	
			Piezometer (Automatic) Down load of AWLR/DWLR data	Monthly	By 30 th of month	STA/AHG/JHG	SHG	
			Water Quality Data					
			Base Line	Once every year	Pre-monsoon, May, June	STA/AHG/JHG/Chemist	SHG/Sr Chemist	
			Trend	Four Times a year	Pre-monsoon May, June & after interval of 3 months	STA/AHG/JHG/Chemist	SHG/Sr Chemist	
			Trend-cum Surveillance	Minimum 4 times a year	Dictated by the importance of water use	STA/AHG/JHG/Chemist	SHG/Sr Chemist	
			Submission of sample and Receipt at water quality lab	As specified for the study	By 2 nd day	STA/AHG/JHG /Chemist	Sr. chemist	
			Water Quality analysis at lab	Once	Continuous process	STA/Asstt chemist/chemist	Sr. chemist	
			Receipt of analyzed data from lab at data center	Once	By 5 th day after completion of analysis	ACH/chemist	Sr Hg/Sr chemist	

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		1.2	Other Ground Water studies					
		1.2.1	Hydro geological Investigation					
			Collection of all the details of structures etc monitored on 1: 50,000 scale in standard formats.	As required	To be completed by the end of investigation	STA/AHG/JHG	SHG	
		1.2.2	Ground Water Exploration					
			Collection of data related to Drilling operation, construction , development of well and pumping test	As required	With in 10 days of the completion	STA/AHG/JHG	SHG	
		1.2.3	Artificial Recharge (AR)					
			Data related to feasibility study		Within 10 days after study	STA/AHG/JHG	SHG	
			Constructional details of AR structure		With in 10 days after completion	STA/AHG/JHG	SHG	
			WQ Monitoring	As per frequency specified	Within a day	STA/AHG/JHG	SHG	
		1.2.4	Geophysical investigation					
			Location details of all the sites on 1: 50,000 scale in standard formats	Once	Start to end of completion	STA/AGP/JGP	SGP	
		1.2.5	Hydrological/Hydrometeorological investigation					

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks	
			Static						
			Location details of all the sites on 1: 50,000 scale in standard formats	Once	With in week of the completion of investigation	STA/AH/JH	SH		
			Dynamic						
			Data related to Base flow/ springs/ river gauging (Own station)	As per frequency specified	Quarterly	STA/AH/JH	SH		
			Data related to Base flow/ springs/ river gauging (Other Agencies)	Once per year or as specified	As and when required	STA/AH/JH	SH		
			Data related to all HM parameters	Continuous process	As and when required	STA/AH/JH/ HM	SH/HM		
		1.2.6	Special studies						
			Ground Water	As per requirement	As and when required	AHG/JHG	SHG		
			Water Quality	As per requirement	As and when required	Ach/chemist	Sr. chemist		
2	Data Entry and online validation								
		2.1	Regime Monitoring						

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks	
		2.1.1	Ground Water						
			Manual (Open Well)	As per frequency specified	With in a week	STA/AHG/JHG	SHG		
			Water Level Data (critical areas)	Monthly	With in a week	STA/AHG/JHG	SHG		
			Piezometer (Manual)	Monthly	With in a week	STA/AHG/JHG	SHG		
			Piezometer (Automatic) Down load of AWLR/DWLR data	Monthly	With in a week	STA/AHG/JHG	SHG		
			Data transfer from palm top to PC at Data Center	Monthly	Immediate	STA/AHG/JHG	SHG		
			Integration of DWLR data with the GWIS with standard checks	Monthly	3 days after upload	STA/AHG/JHG	SHG		
		2.1.2	Water Quality						
			Base Line	Once every year	With in a week after the analysis	STA/AHG/JHG/Chemist	SHG/Sr Chemist		
			Trend	Four Times a year	With in a week after the analysis	STA/AHG/JHG/Chemist	SHG/Sr Chemist		
			Trend-cum Surveillance	Minimum 4 times a year	With in a week after the analysis	STA/AHG/JHG/Chemist	SHG/Sr Chemist		
		2.2	Miscellaneous Ground Water Studies						

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks
			Receipt of paper record and feed back for the no-receipt or incomplete information.	As specified for study	By 5 th day after receipt of data	STA/AHG/JHG	SHG	
			Check for incompleteness of data of arithmetic correction of the data	As specified for study	By 5 th day after receipt of data	AHG/JHG	SHG	
			Entry of all the data	As specified for study	By 10 th day after the receipt of data at district data center/ Unit/regional office	STA/AHG/JHG	SHG	
			Online Validation such as date time entry/parameters limits/data field type including water quality parameters (available in software)	As specified for study	By 10 th day after the receipt of data at district data center/ Unit/regional office	STA/AHG/JHG /ACH/Chemist	SHG/Sr Chemist	
			Value addition to GIS maps	Continuous process	Continuous process	STA/AHG/JHG	SHG	
3	Data Validation							
		3.1	Primary Validation (GW)					
		3.1.1	Field level validation(GW+WQ)					

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks	
			Checking of the WL with Depth of the well, Checking of WL before taking LSR of the DWLR, check for continuity of data with the previous down load.	Monthly	Along with the measurement/ download	STA/AHG/JHG	SHG		
		3.1.2	Data center level validation						
			Primary validation of all the data entered & Identification of type errors	Once for each field study	By 15 th day after receipt of data	AHG/JHg	SHG		
			Correction/removal/flagging of doubt full data depending upon the type of errors detected and feed back	Once for each field study	By 17 th day after receipt of data	AHG/JHG	SHG		
			Single site/well data validation with respect to time	Once for each field study	By 20 th day after receipt of data	AHG/JHG	SHG		
		3.2	Primary validation (WQ)						
			Primary validation of all the data entered & Identification of type errors	Once for each field study	By 15 th day after analysis of data	Ach/Chemist	Sr Chemist		
			Correction/removal/flagging of doubt full data depending upon the type of errors detected and feed back	Once for each field study	By 15 th day after receipt of data	Ach/chemist	Sr Chemist		

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks	
			Single site/well data validation with respect to time	Once for each field study	By 15 th day after receipt of data	Ach/chemist	Sr chemist		
			Validation for ionic balance using various standard relationship	Once for each field study	By 15 th day after receipt of data	Ach/chemist	Sr chemist		
		3.3	Secondary validation (GW+WQ)						
			Time consistency checks including basic statistical validation	Once for each field study	By 20 th day after receipt of date	AHG/JHG	SHG		
			Neighborhood check including cross correlation & spatial interpolation	Once for each field study	By 20 th day after receipt of date	AHG/JHG	SHG		
			Advanced Statistical validation in space & time	Once for each field study	By 20 th day after receipt of date	AHG/SHG	SHG		
		3.4	Hydrogeological validation at macro/micro level (GW+WQ)						
			Consistency between related hydrogeological process like checks for aquifer parameters in space & time using inter/interagency data		Continuous process	JHG/SHG	SHG		
4	Data Transfer								

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks
			Data download from District/ Unit/Regional data centers	Monthly	Continuous activity	AHG/Ch/JHG	SHG	
			Data Receipt	Monthly	Continuous activity	AHG/Ch/JHG	SHG	
			Acknowledgement of receipt	Immediately	Continuous activity	AHG/Ch/JHG	SHG	
			Re- transfer data incase of bad delivery	Immediately		AHG/Ch/JHG	SHG	
			Data Validation at higher level	Fortnightly	Continuous activity	AHG/Ch/JHG	SHG	
			Sending back the Validation report	Weekly	20 th day after receipt of data	AHG/Ch/JHG	SHG	
			Feed back from the lower office, if necessary	By 5 th day after receipt of the validated data	5 days after the receipt	AHG/Ch/JHG	SHG	
			Final correction of the data at lower office and upload to higher office	25-30 th day after receipt of data	Immediate	AHG/Ch/JHG	SHG	
5	Inter agency Validation							
			Identification of type and frequency of the data to be	One time	By July 2002	Sr HG	RD	

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks
			exchanged					
			Joint approval of the process of data exchange	One time	By August 2002	Sr HG	RD	
			Regular exchange of data	Monthly	Immediately after secondary validation	JHg/Sr HG	RD	
			Inter Agency Validation	Monthly	45 days after the end of monitoring	AHG/JHg	Sr HG	
			Exchange of validation report	4 times a year	47 days after the end of monitoring	AHG/JHg	Sr HG	
			Joint meeting for finalization of the validated data	4 times a year	55 days after the end of monitoring	AHG/JHg	Sr HG	
			Correction of the data	4 times a year	60 days after the end of monitoring	AHG/JHg	Sr HG	
6	Data Processing & Reporting							
			Bore Hole Data Report	Once for each well	By 2 nd day after final validation	STA/AHG/JHG	SHG	

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks
			Surface Geophysical Report	Once for each study	By 2 nd day after final validation	AGP/JGP	SGP	
			Chemical Reports	Once for each study	By 2 nd day after final validation	ACH/chemist	SCH	
			Water Level Reports (Draft Report for internal circulation)	4 times	By 15 th day after receipt of data	Ahg/Jhg	SHG	
			Water Level Reports (Final Report)	4 times	3 rd day after final validation	Ahg/Jhg	SHG	
			Year Book	Once in a year	April every year for previous GW Year	SHG	RD	
			Ground Water Estimation Committee (GEC) Reports	Once in a year	April every year for the previous year	SHG	RD	
			Artificial Recharge Structure Reports	Once for each study	15 days after completion of validation	STA/AHG/JHG	SHG	

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks
			Investigation Reports	Once for each study	6 days after completion of validation	AHG/JHG	SHG	
			Customized reports for various users/agencies	As per need	Within 7 days after request	AHG/JHG	SHG	
			Ground Water Exploration Report	Once yearly	By June every year	JHG/SHG	RD	
			Event/ forecasting/ adhoc report	As per need	As specified			
			Network optimization in space and time	Once in three year	By Sept every year	SHG	RD	
7	Data Storage & Dissemination							
		7.1	Data storage					
			Regular Backup of the data & objects					
				Daily	Daily at 16.30 hrs	JHG/IT Expert	SHG/IT Expert	
				Weekly	Every Friday	JHG/IT Expert	SHG/IT Expert	
				Monthly	30 th Day of month	JHG/IT Expert	SHG/IT Expert	
				Yearly	December 31 st	JHG/IT Expert	SHG/IT	

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					every year		Expert	
		7.2	Data Dissemination					
			Documentation of the data dissemination policy	One time	July 2002	All Agencies	HLTG/PCS, MOWR	
			Approval of the data dissemination policy	One time	July 2002	In-charge DSC	HLTG/PCS, MOWR	
			Security of data dissemination from unauthorized uses and loss	One time	July 2002	ROLTA/Tata Infotech Ltd	RD	
			Interaction with users	Bi-annually	Nov & May	AHG/JHG	SHG	
			Holding HDUG meeting	Bi-annually	Dec & June	Data Center Incharge	Member (Secretary)	
			Finding of data requirement and addition of user in the group	Bi-annually	Dec & June	Data Center Incharge	Member (Secretary)	
8	Training							
			Training need assessment for various equipment and different software including Dedicated Software	Yearly	By January	Sr Hg/Sr Chemist	RD	
			Identification of training institutes	Yearly	By January	Sr Hg/Sr Chemist	RD	
			Prepare plan for holding training courses	Yearly	By January	Sr Hg/Sr Chemist		

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			Training on the dedicated software	Yearly	Along with the induction level course	RGI	Member (T&TT)		
9	Maintenance								
		9.1	Ground Water						
			Giving unique number to measuring tapes	Once every year	Immediate	Sr Hg	RD		
			Calibration of All tapes	Before field visits.	One week before field visit	STA/Ahg/Jr Hg	SHG		
			DWLR maintenance including replacement of batteries if required.	Monthly	Within period of measurement	STA/AHG/JHG	SHG		
			Submission of Inspection report on the status of structure and working of equipment	Quarterly	Within 7 days	STA/AAHG/JH G	SHG		
			AMC for the Computers and other peripherals	Once in a year	By March every year	SHG	RD		
			Procurement of stationery items and other necessities	4 times a year	By May every year	Chemist/Sr. Chemist	RD		
		9.2	Water Quality						

Sl; No	Component/ Details of activities	Sub activity	Details	Frequency	Time frame	Responsibility	Supervision	Remarks
			AMC of the exiting WQ equipment	Once in a year	By March every year	Sr Chemist	RD	
			Participation in the Analytical Quality Control (AQC) exercise	Once in a year	By May every year	Chemist/Sr Chemist	RD	
			Preparation of Maintenance report of all the Water Quality Equipment	Every month	By 3 rd of every month	Chemist/Sr Chemist	RD	
			Submission of inspection report	Every month	By 4 th of every month	Chemist/Sr Chemist	RD	
			AMC for glassware and reagents etc.	Once in a year	By March	Sr Chemist	RD	
10	HIS Management							
			Human Resource	Biannually	January every year	RD	Competent authority	
			Logistics	Annual	January every year	RD	Competent authority	
			Budgetary provision for Operation and maintenance cost	Annually once	July every year	JHG	SHG	

Responsibility & Supervision may be entrusted with the same or equivalent posts in the state agencies.