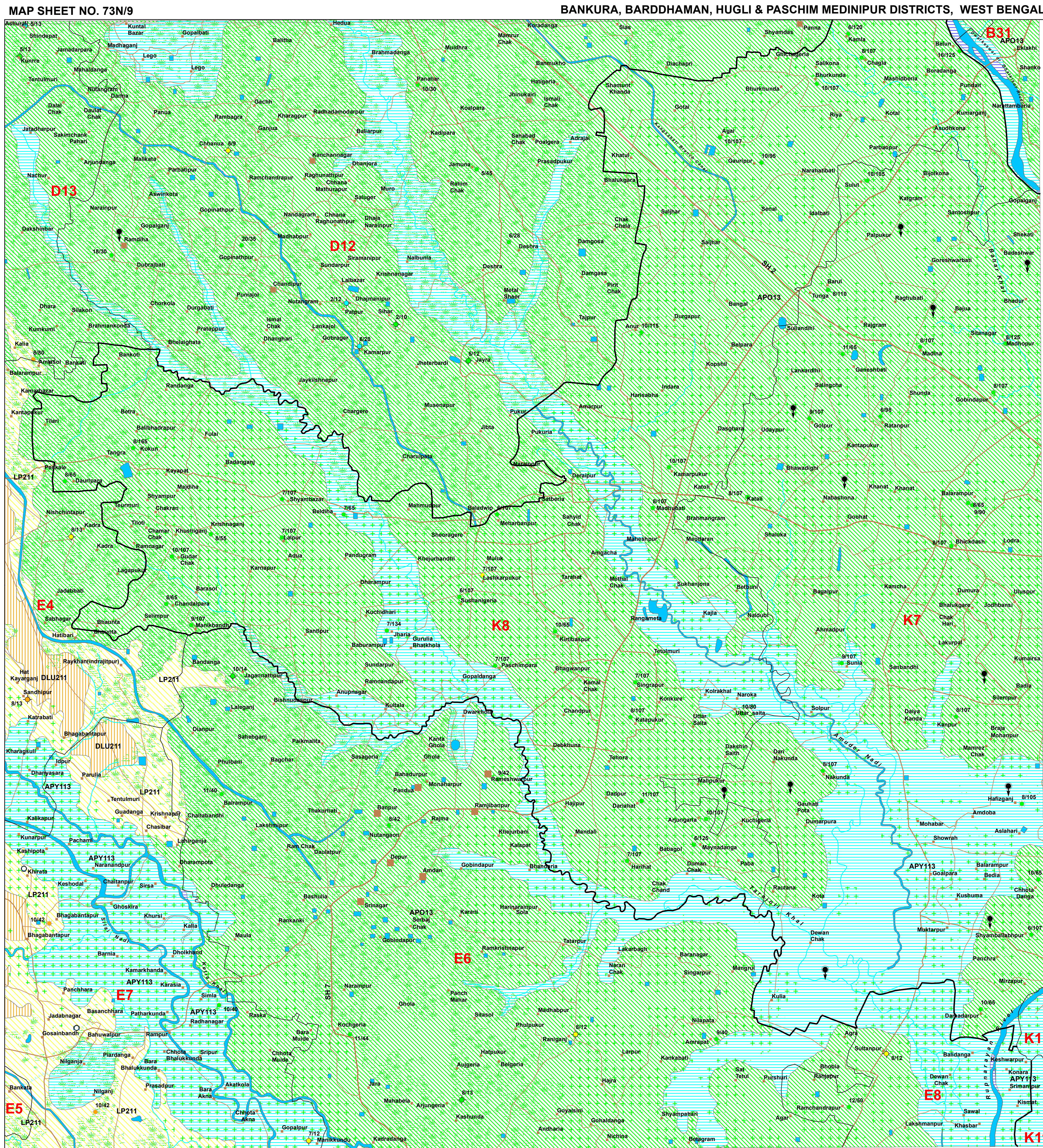
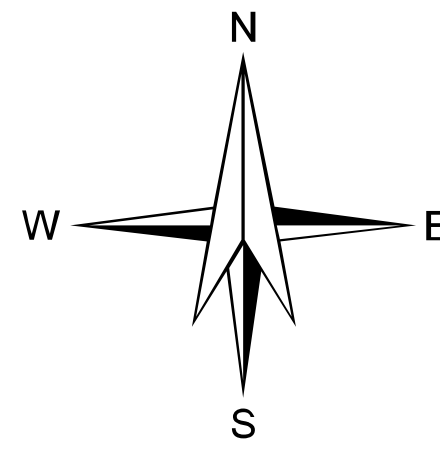
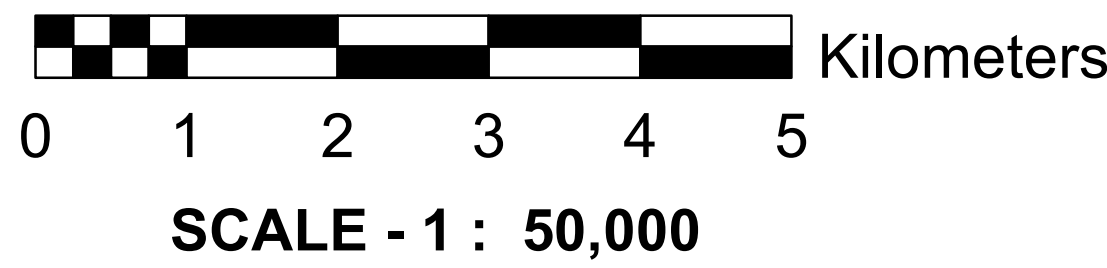
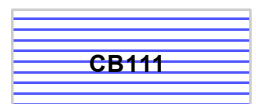
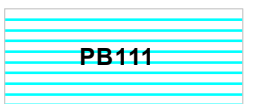
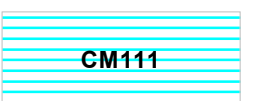
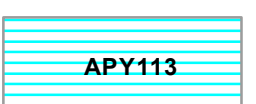





GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)



LEGEND

MAP UNIT (HYDROGEOLOGIC UNIT) REPRESENTED IN THE MAP WITH ALPHANUMERIC CODE (COLOUR INDICATES YIELD RANGE AND HATCHING INDICATE DEPTH RANGE)	GEOLOGICAL SEQUENCE / ROCK TYPE (REPRESENTED IN THE MAP WITH NUMERIC CODE)	GEOMORPHIC UNIT / LANDFORM (REPRESENTED IN THE MAP WITH ALPHABETIC CODE)	DEPTH TO WATER LEVEL PRE / POST-MONSOON (AVERAGE IN METERS) NO. OF WELLS OBSERVED	RECHARGE CONDITIONS BASED ON AVAILABILITY OF WATER (RAINFALL & OTHER SOURCES)	GROUND WATER PROSPECTS							RECHARGE STRUCTURES SUITABLE & PRIORITY	REMARKS (PROBLEMS / LIMITATIONS)		
					AQUIFER MATERIAL	TYPE OF WELLS SUITABLE	DEPTH RANGE OF WELLS (SUGGESTED)	YIELD RANGE OF WELLS (EXPECTED) (IN LPM or m ³ / day)	HOMOGENEITY IN THE UNIT & SUCCESS RATE OF WELLS (PROBABILITY)	QUALITY OF WATER POTABLE (P) NON- POTABLE (NP) (CHECKS REQUIRED IF NOT POTABLE)	GROUND WATER IRRIGATED AREA (APPROX. RANGE IN PERCENTAGE)				
 CB111	Hugli/Bhagirathi Formation(Present Day)	Channel Bar (CB)	No well observed	Excellent	LS	RW TW	5-10 m	400-500 LPM	Very High	P	Nil	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.		
 PB111		Alluvium (Sand Dominant) (111)	Point Bar (PB)	No well observed	Very Good	LS	RW TW	5-10 m	300-400 LPM	Very High	P	Nil	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.	
 CM111			Cut-off Meander (CM)	No well observed	Very Good	LS	RW TW	10-15 m	200-300 LPM	Very High	P	Nil	Not Required	Potable water available at shallow depth.	
 APY113	Panikure Formation (Early to Late Holocene)	Alluvium (Sand and Silt) (113)	Alluvial Plain Younger (APY)	$\frac{10 / 6}{6}$	Good	LS	TW	25-30 m	200-300 LPM	High	P	28.8	Not Required	Potable water available at shallow depth.	
 AP013	Silur Formation (L. Pleistocene-E. Holocene)	Alluvium (Sand,Silt & Clay) (13)	Alluvial Plain Older (APO)	$\frac{11 / 6}{70}$	Moderate to Good	LS	TW	40-60 m	150-200 LPM	Moderate to High	P	71.1	RW Moderate to Low	Moderate groundwater potential at intermediate depths.	
 LP211	Laterite/Interspersed Formation (Middle to Upper Pleistocene)	Lateritic Plain (LP)	$\frac{11 / 7}{3}$	Limited	WM+FR	TW	50-60 m	50-100 LPM	Moderate	P	Nil	RW High	Areas of exposed lithomarge clay. Fracture zones form the aquifer, recharge structures will enhance groundwater development.		
 DLU211		Dissected Lateritic Upland (DLU)	No well observed	Poor to Limited	WM+IR (Impervious Material)	TW	80-100 m	30-50 LPM	Low	P	Nil	Not Required	Essentially run-off zone where hard capping is present.Areas of nodular laterites are recharge zones with deep water table conditions. Primarily forest areas with sparse settlements. Not suitable for large scale development of groundwater.		
F --- F' / I --- I'														These are fault / fracture zones, which generally act as conduits for movement of ground water in hard rocks. Along these zones, the yields are significantly higher and wells are likely to be sustainable for longer duration. However, the inferred fractures need to be confirmed by detailed ground surveys.	
D --- D' / Q --- Q' / P --- P' / R --- R'														These are dykes, quartz reefs and pegmatite veins, which generally act as barriers for ground water movement.	
N.B.-The depth range and yield range of wells may vary within the unit because of certain inhomogeneities. Fractures/Linements which are clearly observed / inferred from the satellite image are indicated on the map. There could be some obscured fractures which also influence the ground water prospects. Locations of the recharge structures shown in the map are tentative. This map is useful for narrowing down the target zones and exact location on the ground for wells and recharge structures should be identified based on follow-up ground hydrogeological/geophysical surveys.															

© NRSC (ISRO), DEPT. OF SPACE, GOVT. OF INDIA DATA USED : IRS - P6 LISB III FCC dated September 2005-February 2006, GROUND TRUTH & WELL OBSERVATION during March-June, 2012 & Oct 2012-Jan 2013, Published Geological maps & Literatures. Designed & Developed by Hydrogeology Division, NRSC, ISRO

GROUND WATER PROSPECTS INFORMATION			HYDROLOGICAL INFORMATION			STRUCTURAL INFORMATION			BASE MAP INFORMATION			LOCATION INFORMATION		
YIELD RANGE OF WELLS	COLOUR CODE	DEPTH RANGE OF WELLS	DESCRIPTION		SYMBOL	DIPS		BEDDING	SCHISTOSITY/ FOLIATION	SYMBOL	DESCRIPTION		STATE INDEX	DISTRICT INDEX
			SHALLOW (0-10 METERS)	MODERATE (10-25 METERS)	DEEP (>100 METERS)	CANAL / TANK IRRIGATED AREA	GROUND WATER IRRIGATED AREA	GENTLE (< 15°)	MODERATE (15° - 45°)		ADVERSE (> 45° - 90°)	NH - 2		
> 800 LPM	VIOLET			RIVER / STREAM (with sand)		STEP (45 - 90°)				SH - 9	STATE HIGHWAY			
400 - 800 LPM	INDIGO			WATER BODY / SPRING		SUB - VERTICAL TO VERTICAL (> 80°)					METALLED ROAD			
200 - 400 LPM	BLUE			CANAL		ANTICLINE / ANTIFORM					OTHER ROAD			
100 - 200 LPM	GREEN			RAIN GUAGE STATION (With average annual rainfall in mm)		SYNCLINE / SYNFORM					RAILWAY			
50 - 100 LPM	YELLOW			PERCOLATION TANK		TREND LINE					CITY / VILLAGE			
30 - 50 LPM	ORANGE			NALA BUND		ESCAPMENT					HABITATIONS : NON - COVERED (NC), PARTIALLY COVERED (PC)			
20 - 30 LPM	BROWN			DESILTING OF TANK		LITHOLOGY / GEOMORPHIC UNIT BOUNDARY					BOUNDARY :			
10 - 20 LPM	PINK			SUBSURFACE DYKE		FAULT					INTERNATIONAL			
	RED			SOIL CONSERVATION MEASURES		THRUST					DISTRICT			
				WELL SPREAD DRAINAGE FIELD		FRACTURE / LINEAMENT (Inferred)					BLOCK			
				YIELD RANGE		SHEAR ZONE					OTHER INFORMATION			
				WELL RANGE		DYKE					Rainfall : 1542 mm (Source IMD)			
				WELL RANGE		QUARTZ REEF								
				WELL RANGE		PEGMATITE VEIN								
				WELL RANGE		Lithologic contacts are inferred at places & Geomorphic boundaries are gradational								
PREPARED BY			TECHNICAL GUIDANCE & QUALITY CHECK			PARTICIPATING ORGANIZATIONS			METHODOLOGY & PROJECT EXECUTION			SPONSORED BY		
GEOINFORMATICS & REMOTE SENSING CELL			NATIONAL REMOTE SENSING CENTRE			SURVEY OF INDIA			NATIONAL REMOTE SENSING CENTRE			RAJIV GANDHI NATIONAL DRINKING WATER MISSION		
W.B. STATE COUNCIL OF SCIENCE AND TECHNOLOGY			INDIAN SPACE RESEARCH ORGANISATION (ISRO)			GEOLOGICAL SURVEY OF INDIA			INDIAN SPACE RESEARCH ORGANISATION (ISRO)			PHASE IV		
DEPARTMENT OF SCIENCE AND TECHNOLOGY			DEPT. OF SPACE, GOVT. OF INDIA			PHED, GOVT. OF WEST BENGAL			DEPT. OF SPACE, GOVT. OF INDIA			DEPARTMENT OF DRINKING WATER SUPPLY (DWWS)		
GOVERNMENT OF WEST BENGAL			BALANAGAR, HYDERABAD - 500 625			STATE WATER INVESTIGATION DIRECTORATE, GOWB			BALANAGAR, HYDERABAD - 500 625			MINISTRY OF DRINKING WATER & SANITATION		
4TH FLOOR, BIKASH BHAVAN						P.S.MAPS (LAND RECORD), GOVT OF WEST BENGAL						GOVERNMENT OF INDIA		
SALT LAKE, KOLKATA 700 091												NEW DELHI		