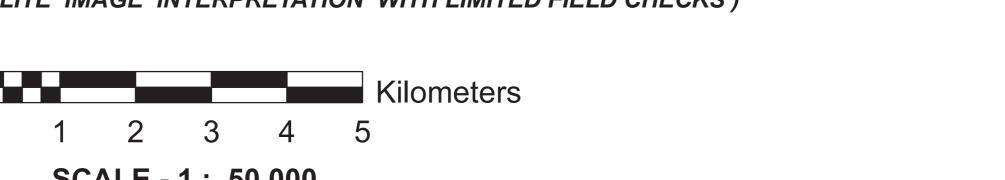
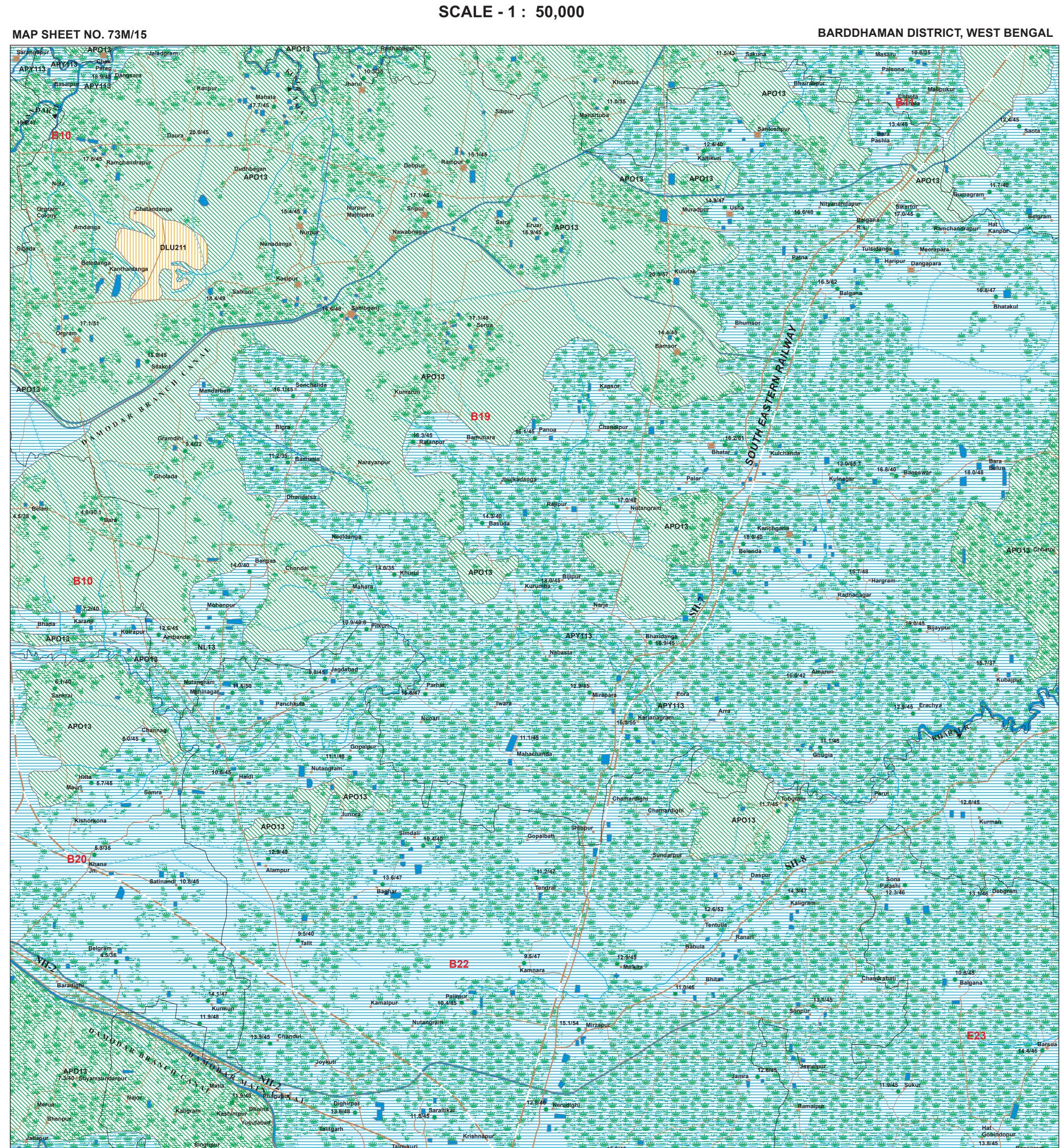
GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)





Designed & Developed by Hydrogeology Division, NRSC, ISRO



DATA USED: IRS - P6 LISS III FCC dated February 2006, GROUND TRUTH & WELL OBSERVATION during April-May, 2009 & Jan-Feb, 2010, Published Geological maps & Literatures.

RSC (ISRO), DEPT. OF SPACE, GOVT. OF INDIA

L E G E N D

MAP UNIT	GEOLOGICAL SEQUENCE / ROCK TYPE		GEOMORPHIC UNIT / LANDFORM	DEPTH TO WATER LEVEL	RECHARGE CONDITIONS	GROUND WATER PROSPECTS					RECHARGE STRUCTURES	REMARKS		
(HYDROGEOMORPHIC UNIT) REPRESENTED IN THE MAP WITH ALPHANUMERIC CODE (COLOUR INDICATES YIELD RANGE AND HATCHING INDICATE DEPTH RANGE)	(RI	EPRESENTED IN THE MAP WITH UMERIC CODE)	(REPRESENTED IN THE MAP WITH ALPHABETIC CODE)	PRE / POST- MONSOON (AVERAGE IN METERS) NO. OF WELLS OBSERVED	BASED ON AVAILABILITY OF WATER (RAINFALL & OTHER SOURCES)	PR = PERMEABLE ROCK FIR = FISSURED ROCK FR = FRACTURED ROCK WR /= WEATHERED ROCK /	TYPE OF WELLS SUITABLE DW = DUG WELL RW = RING WELL BW = BORE WELL TW = TUBE WELL DBW /= DUG CUM-BORE WELL / DTW DUG CUM-TUBE WELL	DEPTH RANGE OF WELLS (SUGGESTED) MIN - MAX (IN METERS)	YIELD RANGE OF WELLS (EXPECTED) (in LPM or m³/day)	HOMOGENEITY IN THE UNIT & SUCCESS RATE OF WELLS (PROBABILITY) VERY HIGH HIGH MODERATE LOW	QUALITY OF WATER POTABLE (P) NON - POTABLE (NP) (INDICATE REASONS IF NON POTABLE)	GROUND WATER IRRIGATED AREA (APPROX . RANGE IN PERCENTAGE)	SUITABLE & PRIORITY PT = PERCOLATION TANK CD = CHECK DAM NB = NALA BUND RW = RECHARGE WELL DT = DESILTING OF TANK RP = RECHARGE PIT SD = SUBSURFACE DYKE RS = RECHARGE SHAFT ST = STORAGE TANK SCM = SOIL CONSERVATION MEASURE	(PROBLEMS / LIMITATIONS)
PB111	Hugli/Bhagirathi Formation/Present Day Deposita (Present Day)	Alluvium (Sand Dominant) (111)	Point Bar (PB)	<u>6</u> 1	Very Good	LS	RW TW	5-10 m	300-400 LPM	Very High	Р	7%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
APY113	Panskura/Arambagh Formation (Early to Late Holocene)	Alluvium (Sand and Silt) (113)	Alluvial Plain Younger (APY)	9.7 - 19.0 HP - 2	Very Good	LS	DW TW	10 - 12 m 20 - 30 m	100 - 125m ³ /day 200 - 250 LPM	Very High	Р	82%	Not Required	Aquifer is formed of sandy part of all Recharge structures are not require good recharge conditions prevail
NL13	at formation Early holocene)	arly holocene) mining	Natural Leeve (NL)	7.2 - 14.0 HP - 6	Good to Very Good	LS	DW TW	10 - 15 m 25 - 30 m	50 - 75 m³/day 200 - 250 LPM	High	Р	6%	Not Required	Aquifer is formed of sandy part of all Recharge structures are not require good recharge conditions prevail
APO13	Sijua/Rampurhat formation (Late Pleistocene - Early holocene)	(Sand,Silt and Clay) (13)	Alluvial Plain Older (APO)	4.5 - 19.3 HP - 78	Good	LS	DW TW	10 - 15 m 40 - 60 m	50 - 75 m ³ /day 150 - 200 LPM	High	Р	64%	Not Required	Aquifer is formed of sandy part of allowed Recharge structures are not required good recharge condition prevails
DLU211	Lalgarh/Illambazar Formation (Middle to Upper Pleistocene)	Laterite Ferricrete-hard crust, ateritic nodules and lithomarge clay) (211)	Dissected Lateritic Upland (DLU) (Hard crust & lateritic nodules)	No wells observed	Poor to limited	WM + IR (Impervious Material)	TW / BW	80 -100 m	30 - 50 LPM	Low	Р	Nil	Not Required	Essentially run-off zone where hard of is present. Areas of lateritic nodules are recharge zones with deep water table conditions. Small patch with spatisettlements. Not suitable for large scandevelopment of ground water.

N.B.-The depth range and yield range of wells may vary within the unit because of certain inhomogeneities. Fractures/Lineaments 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.

GROUND WATER PROSPECTS INFORMATION	HYDROLOGICAL INFORMATION	STRUCTURAL INFORMATION	BASE MAP INFORMATION	LOCATION INFORMATION		
YIELD COLOUR DEPTH RANGE OF WELLS	DESCRIPTION SYMBOL	DIPS BEDDING SCHISTOSITY/ FOLIATION	SYMBOL DESCRIPTION	STATE INDEX DISTRICT INDEX		
RANGE CODE SHALLOW MODERATE DEEP	CANAL / TANK IRRIGATED AREA	GENTLE (<15)	NH - 2 NATIONAL HIGHWAY	\$rd.		
OF WELLS <30 METERS 30 -80 METERS >80 METERS	GROUND WATER IRRIGATED AREA	MODERATE (15 - 45)				
> 800 LPM VIOLET	RIVER / STREAM (with sand)	STEEP (45 - 80)	SH - 9 STATE HIGHWAY			
	WATER BODY / SPRING	SUB - VERTICAL TO VERTICAL (> 80)	METALLED ROAD			
400 - 800 LPM INDIGO	CANAL	ANTICLINE / ANTIFORM ←←		COD		
	RAIN GUAGE STATION (With average annual rainfall in mm)	7.UTISEME / YUTIN STUM	OTHER ROAD			
200 - 400 LPM BLUE	RECHARGE STRUCTURES SUGGESTED	SYNCLINE / SYNFORM	RAILWAY	WEST E		
	PERCOLATION TANK CHECK DAM RECHARGE WELL			BENGAL A-BIRBHUM B-BARDDHAMAN		
100 - 200 LPM GREEN	DESILTING OF TANK O RECHARGE PIT	TREND LINE	CITY / VILLAGE	C-PURULIYA D-BANKURA		
NO - 200 ET III GREEN	SUBSURFACE DYKE	ESCARPMENT		E-PASCHIM MEDINIPUR		
	MEASURES STORAGE TANK WELLS OBSERVED DURING FIELD VISIT	LITING COVI OF CHARDING LINET	HABITATIONS : NON - COVERED (NC) PARTIALLY COVERED (PC)			
50 - 100 LPM YELLOW	YIELD RANGE BORE / YIELD RANGE DUG WELL IN LPM TUBE WELL IN m³/day RING WELL	LITHOLOGY / GEOMORPHIC UNIT BOUNDARY	, , , , , , , , , , , , , , , , , , , ,	DI GOV METY		
	> 800 LPM + 15/70 > 400 m³ / day	MINOR MAJOR FAULT F F F F	BOUNDARY:	BLOCK INDEX MAPSHEET INDE		
30 - 50 LPM ORANGE	400 - 800 LPM		STATE			
	200 - 400 LPM		DISTRICT	B10 73M/10 73M/14 79.		
20 - 30 LPM BROWN BROWN	50 - 100 LPM	FRACTURE / LINEAMENT	BLOCK	B19		
	30 - 50 LPM	FRACTURE / LINEAMENT		73M/11 73M/15 79		
10 - 20 LPM PINK	20 - 30 LPM 15/70 10 - 15 m ³ / day 8/15	SHEAR ZONE (Confirmed / Inferred) S S/S S S	OTHER INFORMATION	B20 Transfer		
	10 - 20 LPM	DYKE (Confirmed / Inferred)	OTHER INFORMATION	B22 B23		
Prospects limited to valley	< 10 LPM	 	Rainfall: 1348mm	73M/12 73M/16 79		
portions only (Hills, Plateaus etc.)	Colour inside well symbol indicates yield range. The figures on the top right	QUARTZ REEF (Confirmed / Inferred)	Tallian : 1040iiiii	B19 BHATAR B22 BARDDHAMAN - I B11 MANGALKOAT B23 BARDDHAMAN - II		
Run-off zone/	hand side of well indicate the depth to water level and depth of well in meters DUG - CUM- BORE WELL HAND PUMP WELL	PEGMATITIE VEIN (Confirmed / Inferred)	(Source IMD)			
Barrier for G.W. movement (Inselberg / Ridge / Dyke etc.)	ARTESIAN WELL OBSERVATION WELL OF G.W DEPT. / C.G.W.B.	Lithologic contacts are inferred at places & Geomorphic boundaries are gradational	(332)			
PREPARED BY	TECHNICAL GUIDANCE & QUALITY CHECK	PARTICIPATING ORGANIZATIONS	METHODOLOGY & PROJECT EXECUTION	SPONSORED BY		
GEOINFORMATICS & REMOTE SENSING CELL	ਫ਼ਸ਼ਹੇ ਫ਼ਿਸ਼ਹ		इसरो ंडन्व	RAJIV GANDHI NATIONAL DRINKING WATER MI		
B. STATE COUNCIL OF SCIENCE AND TECHNOLOGY		SURVEY OF INDIA	NATIONAL REMOTE SENSING CENTRE	(PHASE III B)		
DEPARTMENT OF SCIENCE AND TECHNOLOGY	NATIONAL REMOTE SENSING CENTRE	GEOLOGICAL SURVEY OF INDIA		DEPARTMENT OF DRINKING WATER SUPPLY (DI MINISTRY OF RURAL DEVELOPMENT GOVERNMENT OF INDIA NEW DELHI		
GOVERNMENT OF WEST BENGAL 4TH FLOOR, BIKASH BHAVAN	INDIAN SPACE RESEARCH ORGANISATION (ISRO DEPT. OF SPACE, GOVT. OF INDIA	PHED, GOVT. OF WEST BENGAL STATE WATER INVESTIGATION DIRECTORATE, GOWB	INDIAN SPACE RESEARCH ORGANISATION (ISRO) DEPT. OF SPACE, GOVT. OF INDIA			
SALT LAKE, KOLKATA 700 091	BALANAGAR, HYDERABAD - 500 625	P.S.MAPS (LAND RECORD), GOVT OF WEST BENGAL	BALANAGAR, HYDERABAD - 500 625			