GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)

Kilometers

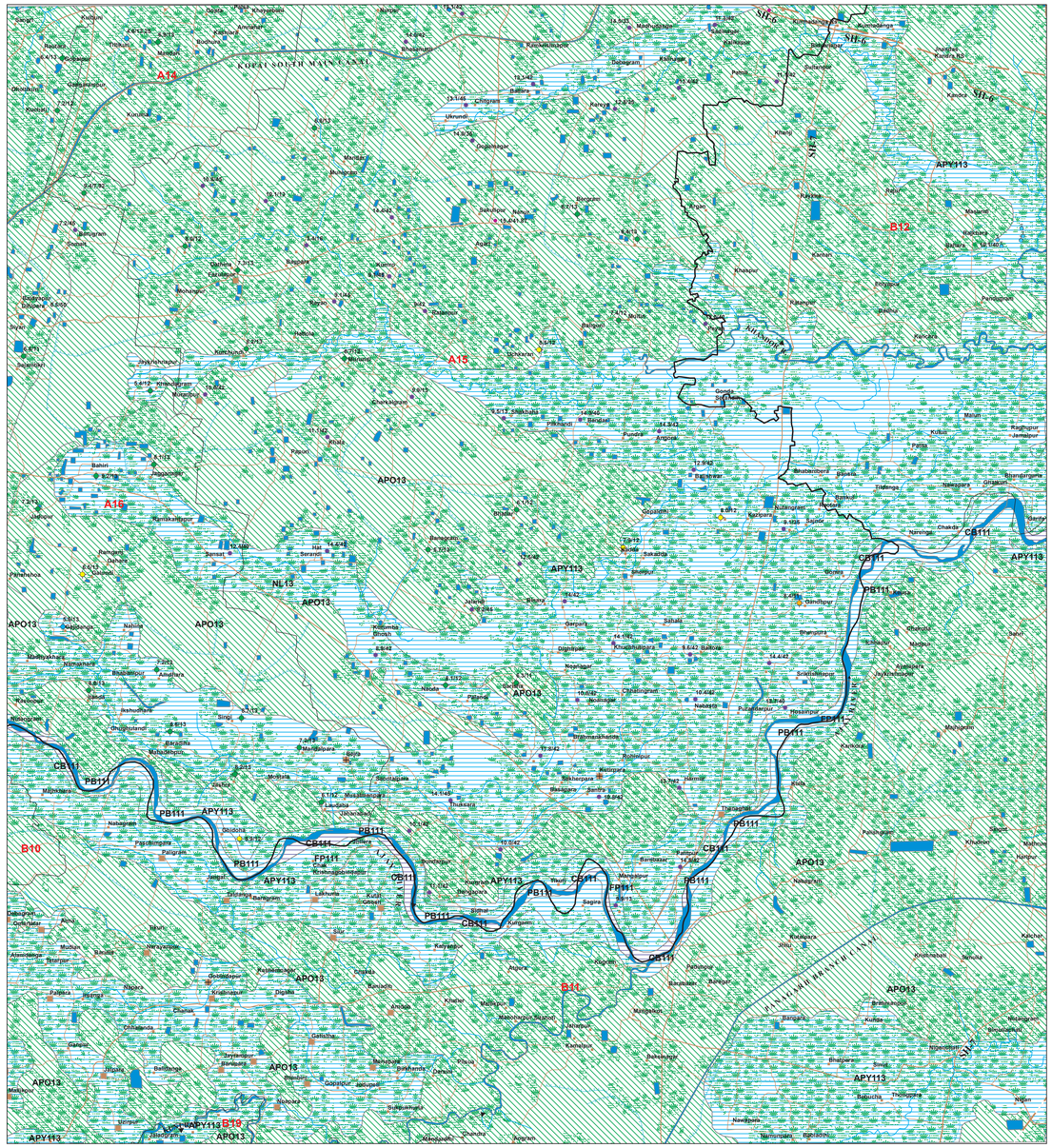
0 1 2 3 4 5

SCALE - 1 : 50,000

N W E S

MAP SHEET NO. 73M/14

BANKURA & BARDDHAMAN DISTRICTS, WEST BENGAL



L E G E N D

MAP UNIT (HYDROGEOMORPHIC 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: AQUIFER MATERIAL	TYPE OF WELLS SUITABLE	DEPTH RANGE OF WELLS (SUGGESTED) MIN - MAX (IN METERS)	YIELD RANGE OF WELLS (EXPECTED) (in LPM or m^3 /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)	RECHARGE STRUCTURES SUITABLE & PRIORITY	REMARKS (PROBLEMS / LIMITATIONS)
						LS = LOOSE SEDIMENTS PR = POREMBLE ROCK FR = FISSURED ROCK FR = FRACTURED ROCK WR = WEATHERED ROCK CR = CONSOLIDATED MATERIAL IR = IMPERVIOUS ROCK	DW = DUG WELL RW = RING WELL BW = BORE WELL TW = TUBE WELL DBW = DUG CUM-BORE WELL DTW = DUG CUM TUBE WELL						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 MEASURES	
CB111	Hugli Basin Path Formation (Present day deposits) (Present Day)	Alluvium (Sand Dominant) (111)	Channel Bar (CB)	5 - 6 / 2	Excellent	LS	TW	5 -10 m	400-500 LPM	Very High	P	42%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
PB111			Point Bar (PB)	6 / 1	Very Good	LS	RW TW	5 -10 m	300-400 LPM	Very High	P	7%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
FP111			Flood Plain (FP)	5 - 22 / 104	Very Good	LS	RW TW	30 - 40 m	250-350 LPM	Very High	P	93%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
APY113	Panskura/Kamalpur Formation (Early to Late Holocene)	Alluvium (Sand and Silt) (113)	Alluvial Plain Younger (APY)	5.5 - 14.6 / DW - 6 HP - 39	Very Good	LS	DW TW	10 - 12 m <30 m	100 - 125 m^3/day 250 - 300 LPM	Very High	P	Nil	Not Required	Aquifer is formed of sandy part of alluvium. Recharge structures are not required as good recharge conditions prevail
NL13	Sijua (Kamduni) Formation (Lower Holocene)	Alluvium (Sand, Silt and Clay) (13)	Natural Leeve (NL)	8.2 - 14.5 / DW - 3 HP - 6	Good to Very Good	LS	DW TW	10 - 15 m 25 - 30 m	50 - 75m^3/day 200 - 250 LPM	High	P	Nil	Not Required	Aquifer is formed of sandy part of alluvium. Recharge structures are not required as good recharge conditions prevail
APO13			Alluvial Plain Older (APO)	3.5 - 15.4 / DW -14 PW - 2 HP - 2	Good	LS	DW TW	15 - 20 m 40 - 60 m	50 - 75 m^3/day 150 - 200 LPM	High	P	Nil	Not Required	Aquifer is formed of sandy part of alluvium. Recharge structures are not required as good recharge conditions prevail

F____F/____/ — — - *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
D— — -D / Q— — -Q / P— — -P 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/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

YIELD RANGE OF WELLS	COLOUR CODE	DEPTH RANGE OF WELLS: SHALLOW (< 20 METRES)	MODERATE (20 - 30 METRES)	DEEP (> 30 METRES)
> 800 LPM	VIOLET			
400 - 800 LPM	INDIGO			
200 - 400 LPM	BLUE			
100 - 200 LPM	GREEN			
50 - 100 LPM	YELLOW			
30 - 50 LPM	ORANGE			
20 - 30 LPM	BROWN			
10 - 20 LPM	PINK			
Prospects limited by valley portions only (Hills, Plateaus etc.)	RED			
Run-off zone/ Barrier for G.W. movement	RED	(Inselberg / Ridge / Dyke etc.)		

HYDROLOGICAL INFORMATION

DESCRIPTION	SYMBOL
CANAL / TANK IRRIGATED AREA	
GROUND WATER IRRIGATED AREA	
RIVER / STREAM (with sand)	
WATER BODY / SPRING	
CANAL	
RAIN GUAGE STATION (With average annual rainfall in mm)	800
RECHARGE STRUCTURES SUGGESTED	
PERCOLATION TANK	CHECK DAM
NALA BUND	RECHARGE WELL
DESILTING OF TANK	RECHARGE PIT
SUBSURFACE DYKE	RECHARGE SHAFT
SOIL CONSERVATION MEASURES	STORAGE TANK

WELLS OBSERVED DURING FIELD VISIT

YIELD RANGE IN LPM	BORE / TUBE WELL	YIELD RANGE IN m^3/ day	DUG WELL / RING WELL
> 800 LPM	15/70	> 400 m^3 / day	8/15
400 - 800 LPM	15/70	200 - 400 m^3 / day	8/15
200 - 400 LPM	15/70	100 - 200 m^3 / day	8/15
100 - 200 LPM	15/70	50 - 100 m^3 / day	8/15
50 - 100 LPM	15/70	25 - 50 m^3 / day	8/15
30 - 50 LPM	15/70	15 - 25 m^3 / day	8/15
20 - 30 LPM	15/70	10 - 15 m^3 / day	8/15
10 - 20 LPM	15/70	5 - 10 m^3 / day	8/15
< 10 LPM	15/70	< 5 m^3 / day	8/15

Colour inside well symbol indicates yield range. The figures on the top right hand side of well indicate the depth to water level and depth of well in meters

DUG -CUM- BORE WELL; HAND PUMP WELL; ARTESIAN WELL; OBSERVATION WELL OF G.W DEPT. / C.G.W.B.

STRUCTURAL INFORMATION

DIPS	BEDDING	SCHISTOSITY/ FOLIATION
GENTLE (< 15)		
MODERATE (15 - 45)		
STEEP (45 - 80)		
SUB - VERTICAL TO VERTICAL (> 80)		

ANTICLINE / ANTIFORM; SYNCLINE / SYNFORM; TREND LINE; ESCARPMENT; LITHOLOGY / GEOMORPHIC UNIT BOUNDARY

	MINOR	MAJOR
FAULT	F F	F F
THRUST	T T	T T
FRACTURE / LINEAMENT		
FRACTURE / LINEAMENT (Inferred)		
SHEAR ZONE (Confirmed / Inferred)		S / S S
DYKE (Confirmed / Inferred)	D / D	D / D D
QUARTZ REEF (Confirmed / Inferred)	Q / Q	Q / Q Q
PEGMATITE VEIN (Confirmed / Inferred)	P / P	P / P P

Lithologic contacts are inferred at places & Geomorphic boundaries are gradational

BASE MAP INFORMATION

SYMBOL	DESCRIPTION
NH - 2	NATIONAL HIGHWAY
SH - 9	STATE HIGHWAY
	METALLED ROAD
	OTHER ROAD
	RAILWAY
	CITY / VILLAGE
	HABITATIONS : NON - COVERED (NC) PARTIALLY COVERED (PC)

BOUNDARY :
STATE
DISTRICT
BLOCK

OTHER INFORMATION

Rainfall : 1348mm

(Source IMD)

LOCATION INFORMATION

STATE INDEX

DISTRICT INDEX

A-BIRBHUM
B-BARDDHAMAN
C-PURULIYA
D-BANKURA
E-PASCHIM MEDINIPUR

BLOCK INDEX

A15-LABHPUR
A16-NANUR
A17-BOLPUR
B10-AUSGRAM / SALANTPUR
B11-MANGALKOT
B12-KATWA / JAMUR
B19-SAIURI

MAPSHEET INDEX

73M/9	73M/13	79A/1
73M/10	73M/14	79A/2
73M/11	73M/15	79A/3

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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.

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