GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)

N

W E

S

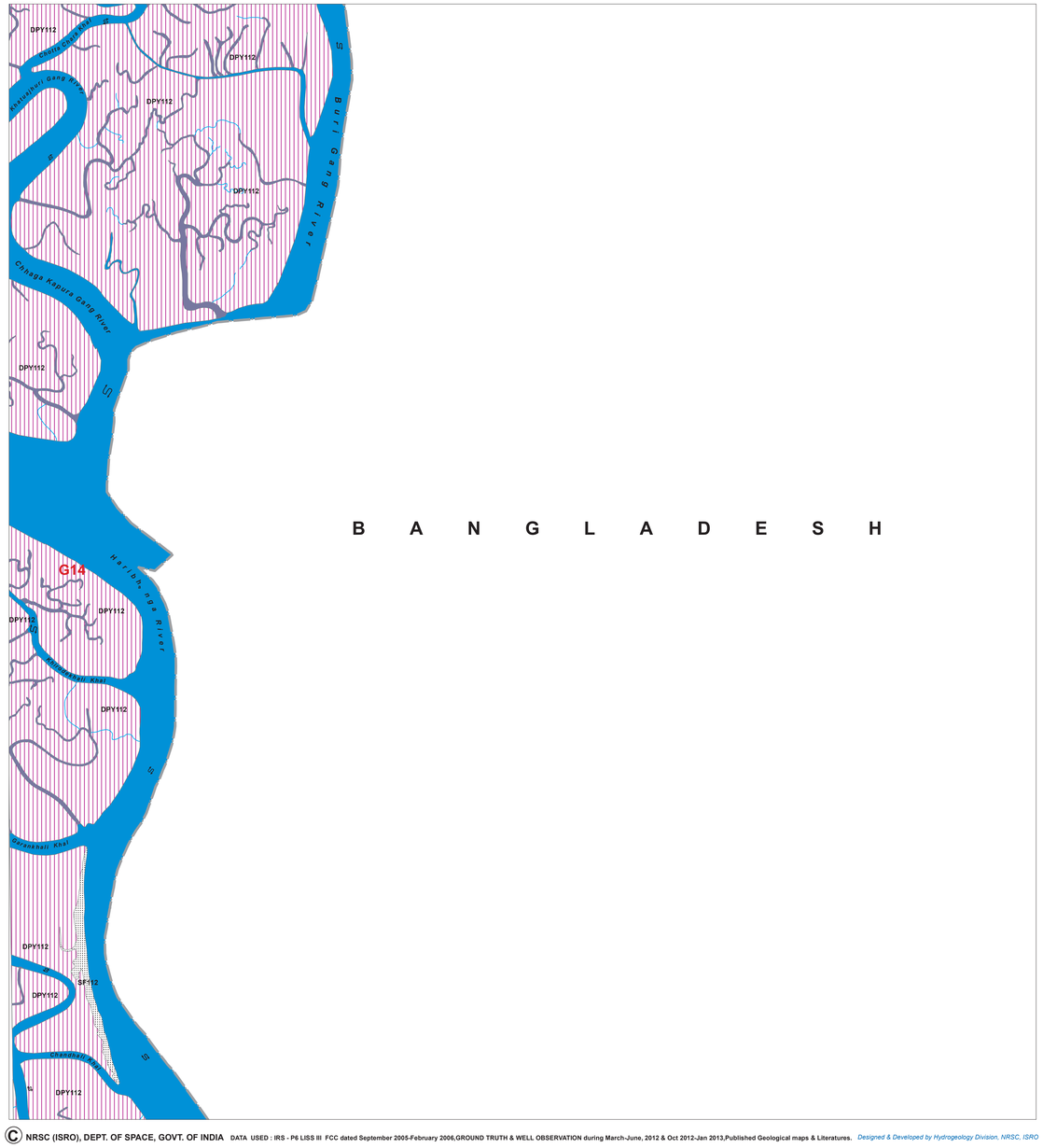
Kilometers

0 1 2 3 4 5

SCALE - 1 : 50,000

MAP SHEET NO. 79G/1

SOUTH 24 PARGANAS DISTRICT, WEST BENGAL



© NRSC (ISRO), DEPT. OF SPACE, GOVT. OF INDIA DATA USED : IRS - P6 LISS 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*

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	GROUND WATER PROSPECTS: TYPE OF WELLS SUITABLE	GROUND WATER PROSPECTS: DEPTH RANGE OF WELLS (SUGGESTED) MIN - MAX (IN METERS)	GROUND WATER PROSPECTS: YIELD RANGE OF WELLS (EXPECTED) (in LPM or m³ / day)	GROUND WATER PROSPECTS: HOMOGENEITY IN THE UNIT & SUCCESS RATE OF WELLS (PROBABILITY) VERY HIGH HIGH MODERATE LOW	GROUND WATER PROSPECTS: QUALITY OF WATER POTABLE (P) NON - POTABLE (NP) (INDICATE REASONS IF NON- POTABLE)	GROUND WATER PROSPECTS: GROUND WATER IRRIGATED AREA (APPROX. RANGE IN PERCENTAGE)	RECHARGE STRUCTURES 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 MEASURES	REMARKS (PROBLEMS / LIMITATIONS)
DPY112	Active Estuarine Deposits (Present Day)	Alluvium (Sand and Silt) (112)	Deltaic Plain Younger (DPY)										
				F o r e s t a r e a n o h a b i t a t i o n - h e n c e n o r e c o m m e n d a t i o n .									

LS = LOOSE SEDIMENTS
HR = HOMOGENEOUS ROCK
FR = FISSURED ROCK
FR = FRACTURED ROCK
WR = WEATHERED ROCK
WM = WEATHERED MATERIAL
IR = IGNEOUS ROCK

DW = DUG WELL
RW = RING WELL
BW = BORE WELL
TW = TUBE WELL
DBW = DUG CUM-BORE WELL
DTW = DUG CUM-TUBE WELL

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.

Sand Flat (112) is without habitation not used for groundwater extraction.

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 (<30 METERS)	MODERATE (30 - 60 METERS)	DEEP (>60 METERS)
> 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 to valley portions only (Hills, Plateaus etc.)	RED			
Run-off zone/ Barrier for G.W. movement		(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)	600

RECHARGE STRUCTURES SUGGESTED

PERCOLATION TANK
NALA BUND
DESILTING OF TANK
SUBSURFACE DYKE
SOIL CONSERVATION MEASURES
CHECK DAM
RECHARGE WELL
RECHARGE PIT
RECHARGE SHAFT
STORAGE TANK

WELL OBSERVED DURING PRE-MON

YIELD RANGE IN LPM	BORE / TUBE WELL	YIELD RANGE IN m³/day	DUG WELL / RING WELL
> 800 LPM	16/70	> 400 m³ / day	9/15
400 - 800 LPM	16/70	200 - 400 m³ / day	8/15
200 - 400 LPM	16/70	100 - 200 m³ / day	8/15
100 - 200 LPM	16/70	50 - 100 m³ / day	8/15
50 - 100 LPM	16/70	25 - 50 m³ / day	8/15
30 - 50 LPM	16/70	15 - 25 m³ / day	8/15
20 - 30 LPM	16/70	10 - 15 m³ / day	8/15
10 - 20 LPM	16/70	5 - 10 m³ / day	8/15
< 10 LPM	16/70	< 5 m³ / 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 S
DYKE	(Confirmed / Inferred)	D D / D D
QUARTZ REEF	(Confirmed / Inferred)	Q Q / Q Q
PEGMATITE VEIN	(Confirmed / Inferred)	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 :
INTERNATIONAL
STATE
DISTRICT
BLOCK

OTHER INFORMATION

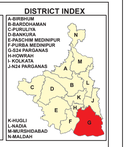
Rainfall : 1876 mm

(Source IMD)

LOCATION INFORMATION

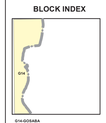
STATE INDEX

DISTRICT INDEX



A -BIRBHUM
B-BARDDHAMAN
C-NADIA
D-MURSHIDA
E-PASCHIM MEDINIPUR
F-PURBA MEDINIPUR
G-SOUTH 24PARGANAS
H-HOWRAH
I- KOLKATA
J-NORTH PARGANAS
K-HUGLI
L-NADIA
M-MURSHIDABAD
N-MALDAH

BLOCK INDEX



G14-GOSABA

MAPSHEET INDEX

79B16	79F04	79F08
79C13	79G01	79G05
79C14	79G02	79G06

PREPARED BY
GEOINFORMATICS & REMOTE SENSING CELL
W.B. STATE COUNCIL OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
GOVERNMENT OF WEST BENGAL
4TH FLOOR, BIKASH BHAVAN
SALT LAKE, KOLKATA 700 091

TECHNICAL GUIDANCE & QUALITY CHECK
NATIONAL REMOTE SENSING CENTRE
INDIAN SPACE RESEARCH ORGANISATION (ISRO)
DEPT. OF SPACE, GOVT. OF INDIA
BALANAGAR, HYDERABAD - 500 625

PARTICIPATING ORGANIZATIONS
SURVEY OF INDIA
GEOLOGICAL SURVEY OF INDIA
PHED, GOVT. OF WEST BENGAL
STATE WATER INVESTIGATION DIRECTORATE, GOWB
P.S.MAPS (LAND RECORD), GOVT OF WEST BENGAL

METHODOLOGY & PROJECT EXECUTION
NATIONAL REMOTE SENSING CENTRE
INDIAN SPACE RESEARCH ORGANISATION (ISRO)
DEPT. OF SPACE, GOVT. OF INDIA
BALANAGAR, HYDERABAD - 500 625

SPONSORED BY
RAJIV GANDHI NATIONAL DRINKING WATER MISSION (PHASE IV)
DEPARTMENT OF DRINKING WATER SUPPLY (DDWS)
MINISTRY OF DRINKING WATER & SANITATION
GOVERNMENT OF INDIA
NEW DELHI