## GROUND WATER PROSPECTS MAP (PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS) SCALE - 1: 50,000 **PURULIYA DISTRICT, WEST BENGAL** MAP SHEET NO. 73E/15

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.

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



MAP UNIT  (HYDROGEOMORPHIC UNIT)  REPRESENTED IN THE MAP WITH ALPHANUMERIC CODE  (COLOUR INDICATES YIELD RANGE AND HATCHING INDICATE DEPTH RANGE)	GEOLOGICAL SEQUEN ROCK TYPE		E / 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	REMARKS
		( REPRESENTED IN THE MAP WITH NUMERIC CODE )				AQUIFER MATERIAL  LS = LOOSE SEDIMENTS PR = PERMEABLE ROCK FIR = FISSURED ROCK FR = FRACTURED ROCK WR /= WEATHERED ROCK / WM WEATHERED MATERIAL IR = IMPERVIOUS ROCK IM = IMPERVIOUS MATERIAL	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 = DESILITING OF TANK RP = RECHARGE PIT SD = SUBSURFACE DYKE RS = RECHARGE SHAFT ST = STORAGE TANK SCM = SOIL CONSERVATION MEASURES	(PROBLEMS / LIMITATIONS)
VF\$832	(Lower Proterozoic-2300 - 2400 mill.yrs.)	Granitoid Gneiss (832)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM + FR	TW / BW	30 - 50	150 - 175 LPM	Moderate	Р	40%	CD/DT Moderate	Prospects inferred as no wells obser Recharge condition is moderate with moderate groundwater prospects
BPS832			Buried Pediplain Shallow (BPS)	2.73 - 7.32 DW - 27 HP - 5	Limited	WM+FR	DW TW / BW	5 -10 40 - 60	10 - 15 m <sup>3</sup> /day 75 - 100 LPM	Low	Р	10%	RP/DT High	Recharge structures will improve sustainability of groundwater source
PP\$832			Weathered Pediplain Shallow (PPS)	No wells observed	Poor	FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m <sup>3</sup> /day 30 - 50 LPM	Low	Р	Negligible	RP High	Due to high run-off and poor infiltrati recharge structures are required to maintain sustainability of groundwate sources
BJS832			Bajada Shallow (BJS)	4 - 8.38 DW - 6 HP - 3	Moderate	LS Underlain by WM + FR	DW TW / BW	10 - 15 90 - 100	15 - 25 m <sup>3</sup> /day 150 - 175 LPM	Moderate	Р	30%	Not Required	Recharge is moderate. Better yields at greater depths within fractured ro
RH832			Residual Hill (RH)	No wells observed	_	-	-	-	_	_	-	-	-	Run-off zone, not suitable for ground water development
DHM832			Denudational Hill/ Moderately dissected (DHM)	No wells observed	-	_	-	-	-	-	-	-	_	Run-off zone, not suitable for ground water development
VFS923	Unclassified Metamorphics (Older Metamorphics)  (Archaean)	Mica Schist (923)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM + FR	TW / BW	30 - 50	100 - 125 LPM	Moderate	Р	Nil	CD/DT Moderate	Prospects inferred as no well observ Recharge condition is moderate with moderate groundwater prospects
BPS923			Buried Pediplain Shallow (BPS)	3.72 - 4.49 DW - 2	Limited	WM+FR	DW	5 -10	5 - 10 m <sup>3</sup> / day	Low	Р	Nil	Not Required	Smaller units with sparse settlement recharge structures not required
PPS923			Weathered Pediplain Shallow (PPS)	No wells observed	Poor	FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m <sup>3</sup> /day 30 - 50 LPM	Low	Р	Nil	Not Required	Smaller units, recharge structures n required
DHM923			Denudational Hill/ Moderately dissected (DHM)	No wells observed		_	_	_	_	I	-	-	_	Run-off zone, not suitable for ground water developement
VFS99		1	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM + FR	TW / BW	30 - 50	125 - 150 LPM	Moderate	Р	80%	CD Moderate	Loose sediments and underlying weathered zone and fractured rock form the aquifer. Recharge structure will enhance groundwater resources
ВРМ99			Buried Pediplain Medium (BPM)	7.27 DW - 1	Moderate	WM+FR	DW TW / BW	5 - 10 40 - 50	15 - 25 m <sup>3</sup> / day 125 - 150 LPM	Low	Р	Nil	RP Moderate	Recharge structures has high priorit to maintain sustainability of ground water sources
BPS99			Buried Pediplain Shallow (BPS)	5.35 - 8.23 DW - 4 HP - 1	Limited	WM+FR	DW TW / BW	15 - 20 40 - 60	10 - 15 m <sup>3</sup> / day 75 - 100 LPM	Moderate	Р	Negligible	RP High	Recharge structures will improve sustainability of groundwater prospe
PPS99			Weathered Pediplain Shallow (PPS)	No wells observed	Limited to Poor	FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m <sup>3</sup> / day 30 - 50 LPM	Low	Р	Nil	Not Required	Smaller units, recharge structures n required. Limited recharge along fractured zones
BJS99			Bajada Shallow (BJS)	No wells observed	Moderate	LS Underlain by WM + FR	DW TW / BW	10 - 15 90 - 100	15 - 25 m <sup>3</sup> / day 125 - 150 LPM	Moderate	Р	Nil	Not Required	Recharge is moderate. Better yields at greater depth within underlying weathered and fractured rock
DHM99			Denudational Hill/ Moderately dissected (DHM)	No wells observed	-	_	_	_	_	-	-	-	_	Run-off zone, not suitable for groun water development

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 /Q\_\_\_Q / P\_\_P These are dykes, quartz reefs and pegmatite veins, which generally act as barriers for ground water movement.

Designed & Developed by Hydrogeology Division, NRSC, ISRO

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.

