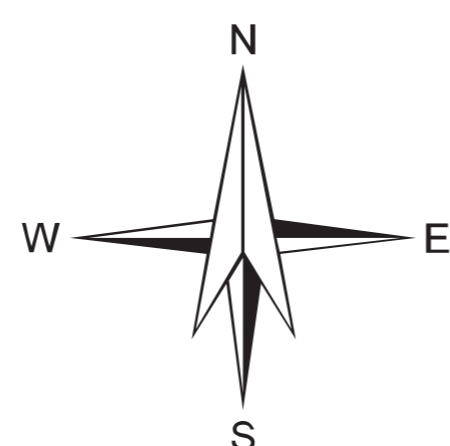


(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)



BARDHAMAN, PURULIYA AND BANKURA DISTRICTS, WEST BENGAL



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

Designed & Developed by Hydrogeology Division, NRSC, ISRC

MAP UNIT		GEOLOGICAL SEQUENCE / ROCK TYPE	GEO MORPHIC UNIT / LANDFORM	DEPTH TO WATER LEVEL	RECHARGE CONDITIONS	GROUND WATER PROSPECTS										RECHARGE STRUCTURES SUITABLE & PRIORITY	RE MARKS
(HYDROGEO MORPHIC UNIT) REPRESENTED IN THE MAP WITH ALPHABETIC CODE (COLOUR INDICATES YIELD RANGE AND MAXIMUM RECHARGE DEPTH RANGE)		(REPRESENTED IN THE MAP WITH NUMERIC CODE)	(REPRESENTED IN THE MAP WITH ALPHABETIC CODE)	PRE / POST MONSOON (AVERAGE IN METERS)	BASED ON AVAILABILITY OF (RAINFALL & OTHER SOURCES)	AQUIFER MATERIAL	TYPE OF WELLS SUITABLE	DEPTH RANGE OF WELLS (SUGGESTED)	YIELD RANGE OF WELLS (EXPECTED)	HOMOGENEITY IN THE UNIT & SUCCESS RATE OF WELLS (PROBABILITY)	QUALITY OF WATER (POTABLE / P. NOT POTABLE / R. NON POTABLE / H. HIGH POTABLE)	GROUND WATER IRRIGATED AREA (APPROX. RANGE IN PERCENTAGE)					
CB111		Aluminum (Sed Dominant) (111)	Channel Bar (CB)	5 - 6	Excellent	LS	RW / TW	5 - 10	400 - 500	Very High	P	42%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.			
RH512		Sandstone (Siura Panchet) (Mahadeva Formation) (512)	Residual Hill (RH)	No wells observed	—	—	—	—	—	—	—	—	—	Run-off zone Not suitable for groundwater development.			
DHM512			Denudational Hill / Moderately dissected (DHM)	No wells observed	—	—	—	—	—	—	—	—	—	Run-off zone Not suitable for groundwater development.			
VFS556			Valley Fill Shallow (VFS)	No wells observed	Good	LS Underlain by WM+FR	TW / BW	30 - 50	100 - 125 LPM	Moderate	P	8%	DT Moderate	Recharge structures will increase sustainability of groundwater prospect.			
BPM556			Buried Pedipain Moderate (BPM)	No wells observed	Moderate	WM+FR	DW TW / BW	15 - 20 40 - 50	10 - 15 m ³ /day 100 - 125 LPM	Moderate	P	Negligible	Not Required	Recharge structures not required since there are no settlements in the unit.			
BPS556		Shale with Sandstone Bands (Panchel Formation) (55)	Buried Pedipain Shallow (BPS)	3.23 - 9.39 DW - 18	Limited	IR+WM+FR	DW TW / BW	15 - 20 40 - 60	5 - 10 m ³ /day 50 - 100 LPM	Low	P	18%	RW Moderate	Recharge structures will increase sustainability of groundwater prospect.			
PPS556			Weathered Pedipain Shallow (PPS)	No wells observed	Limited	FR	DW TW / BW	15 - 20 40 - 60	5 - 10 m ³ /day 30 - 50 LPM	Low	P	Nil	Not Required	Small unit/recharge structures not required.			
BJS556			Bajada Shallow (BJS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	15 - 20 80 - 100	15 - 20 m ³ /day 100 - 125 LPM	Moderate	P	Nil	Not Required	Material deposited along slope and underlying Sandstone from the aquifer. Better yield at greater depths.			
VFS531			Valley Fill Shallow (VFS)	No wells observed	Good	LS Underlain by WM+FR	TW / BW	20 - 25	75 - 100 LPM	Moderate	P	Nil	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supply.			
BPS531		Sandstone with Shale Coal Bands (Rangang Formation) (531)	Buried Pedipain Shallow (BPS)	1.95 - 8.73 DW - 46 HP - 2	Moderate	WM+FR	DW TW / BW	5 - 10 20 - 30	10 - 15 m ³ /day 30 - 50 LPM	Low	P	10%	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supply.			
PPS531			Weathered Pedipain Shallow (PPS)	No wells observed	Limited	FR	DW TW / BW	5 - 10 20 - 30	5 - 10 m ³ /day 30 - 50 LPM	Low	P	Nil	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supply.			
VFS54			Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50	50 - 75 LPM	Moderate	P	8%	DT Moderate	Groundwater prospects moderate. Recharge structures will improve the sustainability of groundwater.			
BPS54			Buried Pedipain Shallow (BPS)	4.38 - 5.63 DW - 2	Limited	IR+WM+FR	DW TW / BW	5 - 10 40 - 50	5 - 10 m ³ /day 30 - 50 LPM	Moderate	P	Negligible	RW/DT Moderate	Recharge structures will increase scope for groundwater development.			
VFS532		Sandstone with Shale Coal Bands (Barakar Formation) (532)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	20 - 25	75 - 100 LPM	Moderate	P	Nil	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supply.			
BPS532			Buried Pedipain Shallow (BPS)	No wells observed	Moderate	WM+FR	DW TW / BW	5 - 10 20 - 30	10 - 15 m ³ /day 30 - 50 LPM	Low	P	Negligible	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supply.			
PPS81			Weathered Pedipain Shallow (PPS)	No wells observed	Poor	FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m ³ /day 30 - 50 LPM	Low	P	Nil	RP High	Essentially run-off zone. Recharge structures may help in limited groundwater development.			
LR81 / RH81			Granite (RH)	Linear Ridge/Residual Hill (RH)	No wells observed	—	—	—	—	—	—	—	—	—	Run-off zone Not suitable for groundwater development.		
VFS73		Anorthosite and Gabbroic Anorthosite (73)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50	50 - 75 LPM	Moderate	P	5%	DT Moderate	Prospect inferred as no wells observed. Recharge structures will improve groundwater prospects.			
BPM73			Buried Pedipain Moderate (BPM)	4.91 - 7.15 DW - 1 HP - 1	Moderate	WM+FR	DW TW / BW	5 - 10 40 - 50	5 - 10 m ³ /day 50 - 75 LPM	Moderate	P	10%	RP Moderate	Weathered material and underlying fractured rock form the aquifer. Sustainability of groundwater yield can be increased with recharge structures.			
BPS73			Buried Pedipain Shallow (BPS)	4.26 - 5.58 DW - 5	Limited	WM+FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m ³ /day 30 - 50 LPM	Low	P	Nil	RP High	Limited groundwater resources. Priority of recharge structures is high.			
PPS73			Weathered Pedipain Shallow (PPS)	No wells observed	Poor	FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m ³ /day 30 - 50 LPM	Low	P	Negligible	RP High	Essentially run-off zone. Recharge structures may help in limited groundwater development.			
RH73		Residual Hill (RH)	Residual Hill (RH)	No wells observed	—	—	—	—	—	—	—	—	—	Run-off zone Not suitable for groundwater development.			
VFS832			Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50	150 - 175 LPM	Moderate	P	5%	CO/DT Moderate	Prospects inferred as no wells observed. Recharge condition is moderate with moderate groundwater prospects.			
BPM832			Buried Pedipain Moderate (BPM)	5.44 DW - 1	Moderate	WM+FR	DW TW / BW	5 - 10 40 - 50	15 - 25 m ³ /day 150 - 175 LPM	Moderate	P	15%	Not Required	Small unit/recharge structure not required.			
BPS832			Buried Pedipain Shallow (BPS)	2.45 - 9.04 DW - 33 HP - 5	Limited	WM+FR	DW TW / BW	5 - 10 40 - 60	10 - 15 m ³ /day 75 - 100 LPM	Low	P						

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.

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

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NATIONAL REMOTE SENSING CENTRE
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DEPT. OF SPACE, GOVT. OF INDIA
BALANAGAR, HYDERABAD - 500

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