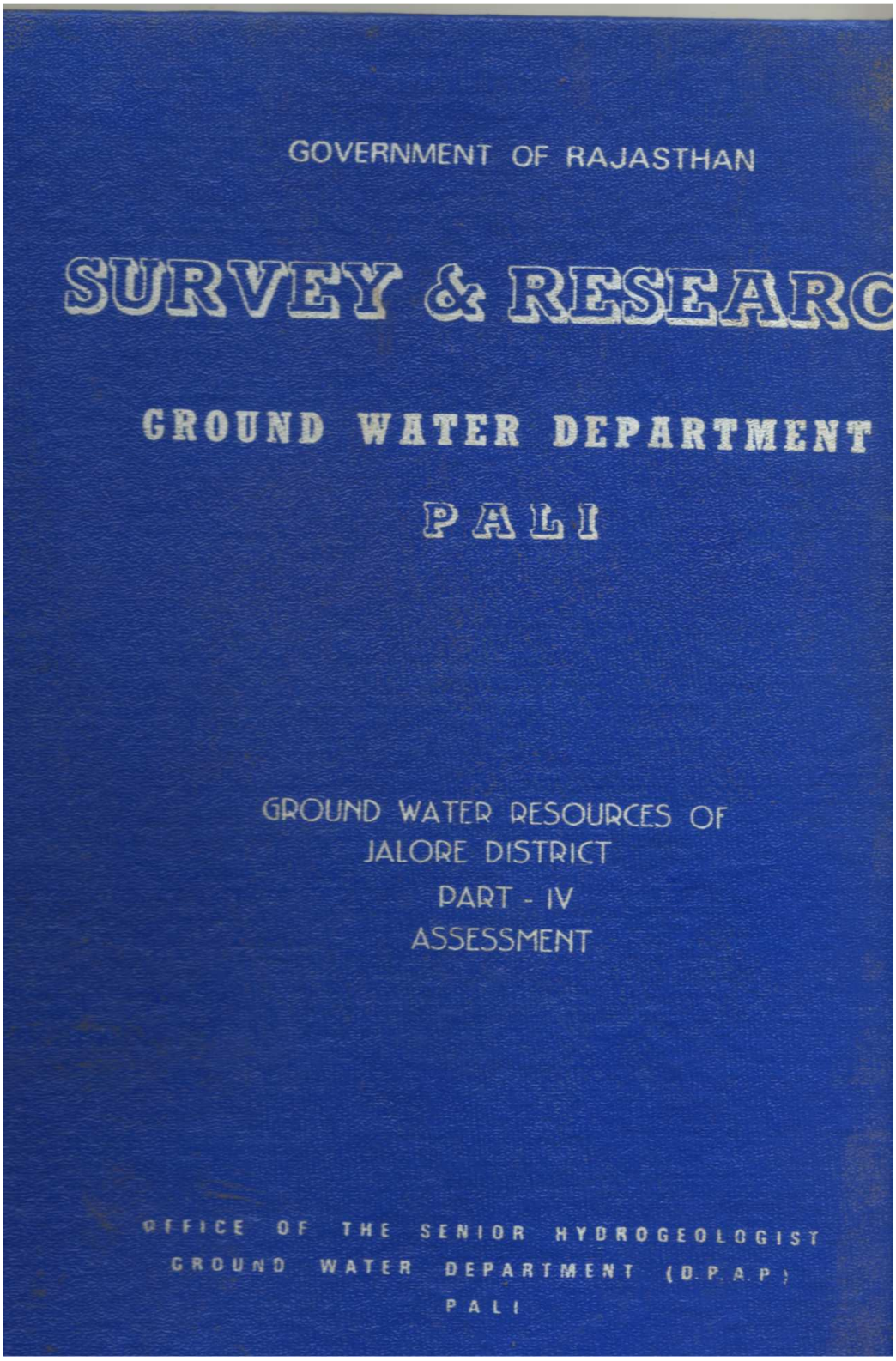

DHI Report of Jalore District Part-IV-Assessment

GOVERNMENT OF RAJASTHAN

SURVEY & RESEARCH

GROUND WATER DEPARTMENT

PALI

GROUND WATER RESOURCES OF
JALORE DISTRICT
PART - IV
ASSESSMENT

OFFICE OF THE SENIOR HYDROGEOLOGIST
GROUND WATER DEPARTMENT (D.P.A.P.)
PALI

GROUND WATER RESOURCES OF JALORE DISTRICT, RAJASTHAN

PART IV GROUND WATER ASSESSMENT

BY

ARUN HENRY K.C. NYATI
JUNIOR HYDROGEOLOGIST

&

B.L.PALIWAL
SENIOR HYDROGEOLOGIST

OFFICE OF THE SENIOR HYDROGEOLOGIST
GROUND WATER DEPARTMENT(DFAP)
PALI(Raj)

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A B S T R A C T

The detailed hydrogeological investigations of Jalore district were completed in March, 1983 and reports on hydrogeology, hydrochemistry and geophysical surveys have been published in three separate volumes. In the present report quantitative assessment of ground water resources has been attempted.

Ground water recharge has been worked out by the climatic water balance approach, specific yield water table fluctuation method and hydrograph analysis method. Draft has been calculated by taking into consideration withdrawal through open wells and tube wells.

Jalore district covering an area of about 10,640 sq.kms. is covered by sandy plains with few scattered hills towards north-east and prominent hills in the south-western part of the district. The region is drained by the Luni River and its tributaries. The climate of the district is arid type with average rainfall of 379.86 m.m. Ground Water in Jalore district occurs under unconfined, semi confined and confined condition and in some places extensive perched water bodies are also found. The general direction of ground watermovement is from south-east to north-west in the south and east to west in the north and western part of the district.

On the basis of Thornthwaite Scheme of climatic classification, the climate of Jalore district has been designated as arid. It possesses desertic

ecosystem with abundance of xerophytic plants and desertic soil.

A number of potential zones have been delineated by considering the various hydrogeological units encountered in the area, their yield and quality of ground water. Potentialzones located in younger alluxium, older alluvium, granite and phyolites are marked as A,B,C and D respectively. On the basis of chemical quality of ground water potential zone 'A' comprising younger alluvium has been further classified as $'A'_1$, A_2 and A_3 Potential zone 'B' comprising older alluvium has been classified further B_1,B_2,B_3 and B_4 on the basis of chemical quality of ground water similarly potential zones 'C' comprising granite has also been classified. The Zone 'D' comprising Rhyolite has limited area as such it has not been classified. These potential zones have been sub-classified further by considering their yielding capacity viz. A1/1, A1/2 A1/3 and so on. Estimation of ground water recharge has been attempted by adopting climatic water balance method. Hydrographanalysis method and by specific yield and fluctuation mothod. In climatic water balance method an attempt has been made to evaluate surplus water after computing daily water balance from Tharnthwaite method for four stations viz. Jalore, Bhinmal, Ahore and Sanchore. On the basis of analysis of hydrographs of 48 key wells and 18 piezometers, the recession coefficient, cumulative rise and infiltration factor for matching years have been determined. In specific yield waterlevel fluctuation mothod, the recharge quantification has been done by multiplying

specific yield, water level fluctuation and area of various potential zones delineated in the district.

Out of 24 potential zones rise in water level was observed in 21 zones during the year 1976, during 1977 it was observed in 22 zones, during 1978 rise in water level was observed in 20 zones, during 1979 in 22 zones, during 1980 only in 3 zones, during 1981 it was observed in 14 zones. Thus annual recharge of different years has been computed for these zones only.

Ground Water draft in the area is mainly through open wells and tube wells used for irrigation purpuses and domestic use. Annual draft for the period 1976 to 1981 have been calculated separately.

On the basis of annual recharge and annual draft in various potential zones, surplus ground water has been computed.

It could be concluded from the computation of ground water surplus for the year 1976 to 1981 that sufficient ground water is available for exploitation, but due to erratic behaviour of monsoon and presence of saline water having thin layer of fresh water at top, greater caution is needed for the ground water exploitation programme.

INTRODUCTION

The detailed hydrogeological investigations of Jalore district were initiated from the year 1976 to evaluate ground water resources. These investigations included hydrogeological, hydrochemical and geophysical studies of the area. The reports on hydrogeology, hydrochemistry and geophysical surveys have been published as separate volumes. The present report deals withthe auantitative assessment of ground water resources by taking into consideration present statics of ground water exploitation, estimation of ground water recharge and determination of ground water storage during study period.

1.1. METHODOLOGY:

Jalore district is located in the arid tract of south-western Rajasthan,where rainfall is scanty and erratic. A number of ephemeral river flows in the area, in direct response to rainfall. Their precipitaion is the main source for replenishing ground water. It therefore, becomes esstntial to study in details whatever increment results are due to recharge by precipita ion. Similarly as the ground water remmains the principal source of water for human and cattle consumptions, the withdrawal from these resource by way of wells and tube wells has to be eritically taken into account for computing ground water draft. Due to meagre and erratic rainfall and enhanced exploitation from a few and small ground water potentialzones. Assessment of

ground water recharge and draft have been done by applying various methods suitable for the area. The ground water recharge has been worked out by following methods.-

i) Climatic Water balance approach.
ii) Specific yield water table fluctuation method.
iii) Hydrograph analysis method.

The draft calculation for ground water withdrawal have been worked out by calculating the annual yield fromthe tube wells and open wells located in various potential zones. The ground water reserves have also been worked out on the basis of results of exploratory drilling and long duration pumping tests carried out in different aquifers of the district.

Finally ground water surplus and reserves, whereever available are in-corporated.

1.2 PHYSIOGRAPHY :

Jalore district is situated in the southwest of Rajasthan and occupies an area of 10,640 sq.Kms. The climate of district is arid type. The mean annual rainfall over Jalore station is observed to be 379.86 m.m. (Period 1901 - 1981) . The normal annual rainfall trend over Jalore district is increasing from WNW to ESE and it ranges from 350 m.m. to 450 m.m.

The district is generally covered by sandy plains and dunes with few scattered hills in the north-

east and pronunent hills in the south-western part of the district. The region is drained by the Luni River and its tributaries originating from the Aravalli hill ranges. The main tributaries of Luni river are Jawai, Sukari, Khari, Bandi and Sagi. All rivers are ephemeral with braided meandering courses and wide flood plains.

1.3 HYDROGEOLOGY

Geological formations encountered in the area ranges in age from Post Delhi intrusives to the Quaternaries, comprising of loosely consolidated to unconsolidated alluvial deposits and blown sand.

The younger alluvium fomrs the major promising aquifer in the area having generallyfresh water. It is loosely consolidated to unconsolidated stream lain deposits of gravels and sands. The depth to water in this formation varies from 0.80 metres to 15.56 metres. The discharge of existing wells varies from 5.0 cubic metres/day to 620.0cubic metres/day. The exploratory bore hold data reveals that the bore holes drilled near rivers have greater thickness of younger alluvium.

Older alluvium generally contains saline water or water of mixed character and is composed of unconsolidated to semiconsolidated sand and gravel with clay,kankar and silts. The depth to water in the wells tapping older alluvium varies from 1.00 to45.00 metres. The discharge of existing wells varies from 5.00 cubic metres/day to 480.0 cubic metres/day. The discharge

of the wells depends on the nature of sediments, their assortment and matrix. The exploratory bore hole data reveals that the thickness of alluvium increases west ward.

Tertiary formations(?) comprising thick consolidated clays, silts and gravel, medium to coarse sand with shale fragments are found in deeper horizones. It generally yields moderately saline water.

Post Delhi intrusives consists of rhyolites and granites. Granites are usually fractured and jointed while weathering is confined generally to upper few metres of the formation. Depth to water in the wells tapping granite varies from 2.20 metres to 15.85 metres. Discharge of existing wells varies from 10 cubic metres/day to 480 cubic metres/day. This formation yields usually fresh and mexed type of water.

The extent of distribution of rhyolite formation is limited. These are fractured and jointed in nature, while weathering is confined generally to the upperfew metres of the formation. The depth towater in the wells tapping rhyolites varies from 6.15 to 11.14 metres and the dischagge of wells varies from 35 cubic metres/day to 80 cubic metres/day depending upon the saturated thickness of weathered and fractured zone.

1.4 HYDRO-CHEMISTRY

To evalute the chemical quality of ground water, 165 water samples analysis have been selected. for representing the different hydrochemical characteristics in the area.

The ground water occuring in three major water bearing formation foz. younger alluvium, older alluvium and granite is fresh to saline. Saline Water with E.C. above 8,000 MS/CM occurs in Sanchore, north of Ahore, south-west and north east of Jalore and part of Bhinmal.

Ground water occuring in younger alluvium covering an area around the confluence of Luni and Jawai - Sukri rivers is less mineralised having bicarbonate, bicarbonate - chloride to chloride type. Saline ground water occurs in discharge zone i.e. west of Sanchore.

Older alluvium distributed mainly in north-eastern, south-western, western and central parts of Jalore mostly yields sodium, chloride type saline to higher saline water. More than 30% of analysis from this formation have high contents of nitrates, fluorides and chloride, pro-hibiting their use for domestic utilisation. Both fresh and saline waters occur in granites. Fresh to moderately saline water occuring near the foot hill zone of Jalore, Jaswantpura and Raniwara are soft with high content of fluoride.

Saline water occuring around Bhinmal and Ahore are of chloride type. Defluoridation or delution by low fluoride water is suggested for bringing down the harmful level of fluoride before the water is supplied for drinking.

It could be inferred from the distribution of electrical conductivity that there is wide variation in the quality of ground water in the phreatic aquifer. The lowest value of electrical conductivity i.e. 430 microsiemen/cm at 25°C. is observed in two well waters viz. Panseri and Rampura of Panchayat Samiti Jaswantpura and Raniwara respectively. Both the wells are situated near the hilly terrain. The highest value of 27,000 microsiemen/cm at 25°C. in recorded in the well water of village Baori of Panchayat Samiti Ahore.

Fresh ground water (E.C. less than 2000 WS) is found in parts of Jaswantpura, Raniwara and near the river banks around Bhinmal and Saila. Ground water of tolerable quality with 2000 to 4000 E.C. value occurs in western part of Jalore, Ahore and Bhinmal while sanchore, north of Ahore, south-west and north-east of Jalore and part of Bhinmal have saline water.

Ground water in deeper aquifers are hard and more mineralised in Sanchore, Ahore and Jalore blocks, but around Jodhawas & Punasa in Sanchore and Bhinmal and Near Alwara - Dahiwa in Saila are comparatively less mineralised. The chemical cont-

ents, like Chloride, sulphate etc. of deeper ground water representing older alluvium, younger alluvium and granites are comparatively higher than those of phreatic water. However, the concentration of nitrate and fluoride are comparatively less.

The ground water from the tertiary formation(?) has a tolerable quality (Jodhawas Sanchore) and can be used for both agricultural and domestic purpose.

The suitablility of ground water for drinking purpose was judged on the basis of standards recommended by I.C.M.R. (1975). Major part of Sanchore, north west of Saila, north of Ahore, central part of Bhinmal and southern part of Jalore have saline waters unfit for human consumption.

1.5 GEOPHYSICAL SURVEY:

Geophysical investigation using electrical resistivity techniques was takenup to know the quality of ground water, demarcate saline to fresh water interface and to find the bed rock configuration in the area to provide additional data for detailed hydrogeological investigations.

Vertical electrical sounding (VES) have been conducted along various sections and on selected spots 41 sections and 162 spots were chosen on the basis of hydrogeological reconnaissance and available data. In total, 698 vertical electrical soundings along sections and 178 vertical electrical soundings on spots were conducted.

The results of geophysical investigations show wide variations in chemical quality of ground water i.e. fresh to highly saline. Basement in the area is undulating and becomes deeper towards west and north-west part of the district. Younger alluvium have usually fresh quality of ground water while major part covered by older alluvium contains saline or water of mixed characters. Crystallines are having fresh to saline water.

It has been concluded from the results of geophysical survey that in the north-eastern part of the district the quality of water is potable with sufficient saturated thickness. In the central and north-western part of district the quality of water is potable along the river courses with saturated thickness upto 70 metres while in the major part, the quality of water is saline to mixed character with saturated thickness varying from 55 to 60 metres. However, at places quality is potable as in Kuaber, Dahiwa and Alwara. Basement gradually become deeper towards west and north-western part of the district.

The ground water towards west and south-west is genrally saline and presence of thick clay lenses is also inferred. But at places, localised pockets of fresh to slightly saline water with sufficient saturated thickness can be demarcated after co-relatio with hydro-geological data.

1.6 LAND USE AND ELECTRIFICATION :

To have a review of present land use in the district, the land irrigated by wells, ponds, cannels and by other sources were collected from the year 1976 to 1982 respectively.

It is ap arent from the tables that above 99% irrigated land getting irrigation through wells in the district.

The agricultural statistics of the district during the year 1980-1981 are as follows :-

1. Total area of the district	10,64,000	hectors
2. Total uncultivable area	1,20,133	"
3. Total land suitable for irrigation.	9,18,852	"
4. Total area of forest	17,459	"
5. Total area of hills	7,556	"
6. Total irrigated land	1,70,671	"
7. Total area irrigated by wells	1,69,385	"
8. Total area irrigated by tanks	n i l	
9. Total area irrigated by canals	1,055	"
10. Total area irrigated by other sources.	231	"
11. Total populatio of the district (1981 census)	9,03,073	"
12. Total No.of cattles (1977)	13,30,534	

The other details of agricultural statistics are tabulated in Table I and II.

Year	LAND IRRIGATED IN HECTORS									
	By wells		By ponds		By canals		Others		Total	
	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Nes	Gross
1976-77	87719	97304	51	51	2036	3077	104	104	89910	100936
1977-78	112764	126756	2618	2618	2241	2881	504	527	118127	132782
1978-79	133890	153001	773	773	1956	2756	334	334	136953	156864
1979-80	145161	164646	168	168	4264	5064	306	306	149899	170184
1980-81	143930	169564	164	179	849	1055	52	52	144995	170850
1981-82	-	169385	-	-	-	1055	-	231	-	170671

TABLE - 2 SHOWING DETAILS OF CROPS GROWN IN JALORE DISTRICT

S. No.	Crops	LAND USED IN HECTORS 1976-77	1977-78	1978-79	1979-80	1980-81
1	2	3	4	5	6	7
1.	Bajra	219962	239460	285564	233202	324953
2.	Jawar	1219	2778	2430	3686	1095
3.	Wheat	43301	472965	47199	76066	42936
4.	Corn	364	392	473	760	1487
5.	Barley	7771	3981	2436	4613	3663
6.	Small grains.	2004	1304	1371	3058	1120
7.	Rice	87	346	169	73	47
8.	Gram	5816	11454	5717	21986	768
9.	Toor	84	4	17	4	-
10.	Pulses Kharif.	72115	65095	38263	23092	23951
11.	Pulses Rabi	176	-	2	495	367
12.	Til	40415	32304	1	21124	26630
13-	Raida & Mustard	27797	39280	42004	80054	57207
14.	Alsi	2	1	1	7	-
15.	Ground nut	37	54	19	11	7
16.	Arandi	983	828	37	2041	1242
17.	Cotton	1086	1778	2690	1622	1536
18.	Sugar cane	10	18	17	12	6
19.	Tabacoo	392	72	59	85	59
20.	Red Pepper	1785	1743	1377	666	1065
21.	Patato	19	7	21	8	9
22.	Sunn	88	52	44	20	29

1.6(i) ELECTRIFICATION :

In Jalore district about 53% villages have been electrified. out of this 85.50% are electrified in Ahore, 74.40% in Bhinmal, 32.14% in Jalore and 14.81% in Sanchore Tehsil respectively.

TABLE - 3 SHOWING ELECTRIFIED VILLAGES IN JALORE DISTRICT

S. No.	Name of Tehsil	Total No. of villages	Total No. of electrified villages	Percentage of electrified villages.
1.	Ahore	126	109	85.50
2.	Bhinmal	211	157	74.40
3.	Jalore	112	36	32.14
4.	Sanchore	162	24	14.81
	Total	611	326	53.35

A C K N O W L E D G E M E N T

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II CLIMATOLOGY & HYDROMETEOROLOGY

2.1 RAINFALL CHARACTERISTICS :

The vitality of rainfall statistics in adjusting cropping pattern, climatic forecasting, drainage design, water resources management etc. is well known. Depending upon the problem, rainfall statistics on different meteorological periodicities e.g. annual, seasonal, monthly, weekly or daily are required. Annual and seasonal rainfall distribution and variability are of limited utility because rainfall is confined to few hours/ days of the season/year and shorter period e.g. weekly or pented basis can not be used as dependable indicator because of high variability. The rainfall statistics on monthly, seasonal and annual basis have been given here under :

Rainfall data of five rain gauge stations in 10,640 sq.kms. area coverage have been used. The location and data availability position of different stations are as follows :

S.No.	Station	Latitude	Longitude	Period of record available
1.	Ahore	25°23'	72°38'	1957-1981
2.	Bhinmal	25°00'	72°04'	1957-1981
3.	Jalore	25°17'	72°19'	1901-1981
4.	Jaswantpura	24°46'	72°18'	1957-1976
5.	Sanchore	24°44'	71°34'	1957-1981

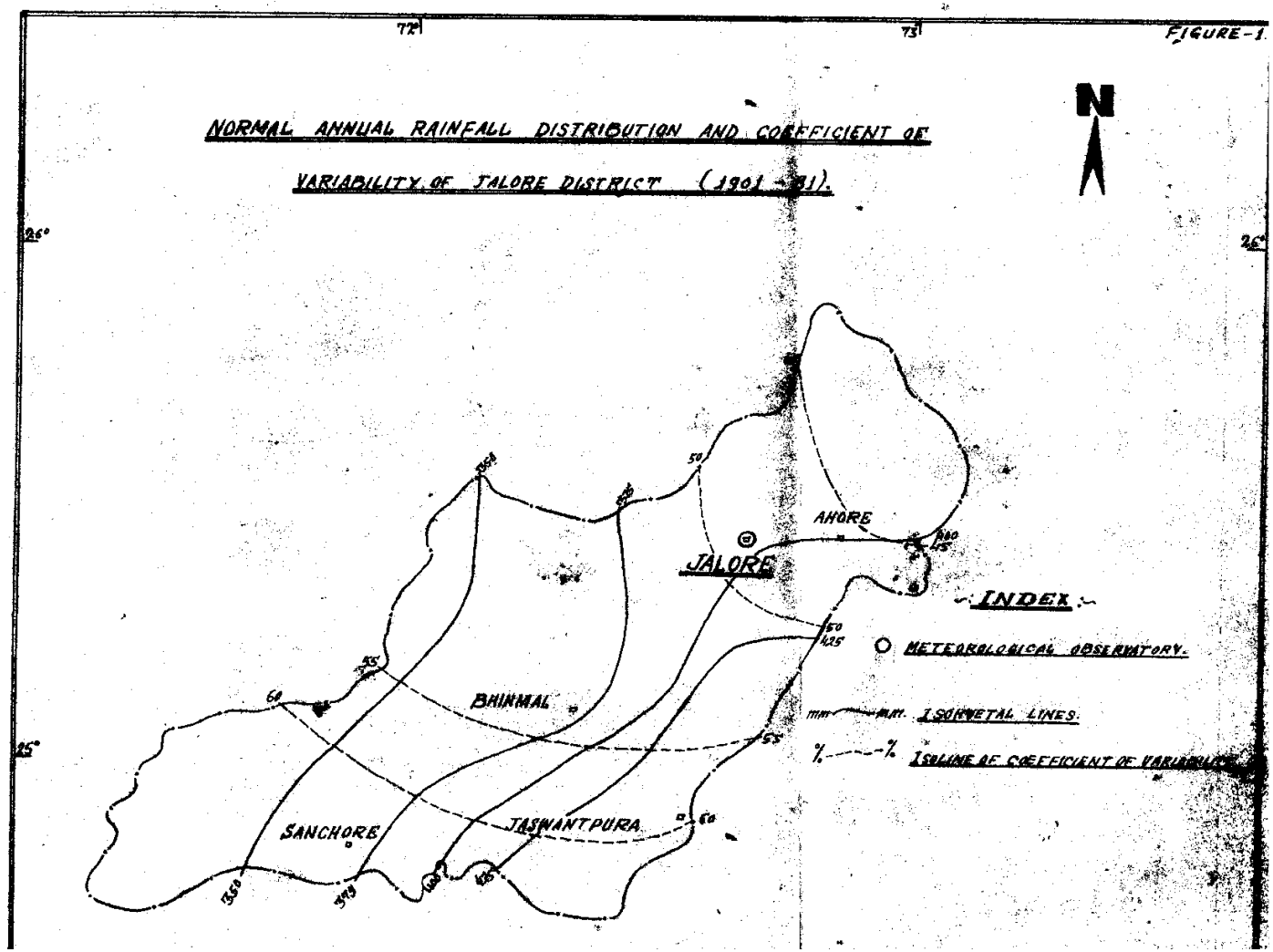


FIGURE-1.
NORMAL ANNUAL RAINFALL DISTRIBUTION AND COEFFICIENT OF
VARIABILITY OF JALORE DISTRICT (1901 - 71).
72°
73°
26°
25°
N
AHORE
JALORE
BHINMAL
SANCHORE
JASNANTPURA
INDEX :-
METEOROLOGICAL OBSERVATORY.
ISOHYETAL LINES.
ISOLINE OF COEFFICIENT OF VARIABILITY

The mean standard deviation (S.D) and coefficient of variability on monthly and annual basis for the five stations have been worked out and tabulated in table IV. The table IV reveal that average annual rainfall in the region varies from 371.6 mm to 464.0 m.m. The coefficient of variability (C.V) of annual rainfall varies from 46% to 63%. The C.V. on monthly basis are less than 100% during rainy season and more in the remaining period. The distribution of average annual rainfall and its coefficient of variability is shown in Fig. 1. The contribution of monsoon fainfall (June to September) to annual rainfall is 91.8% in the district.

2.2. FREQUENCY DISTRIBUTION OF ANNUAL AND MONSOON RAINFALL :

Only Jalore station is having more than 40 years rainfall data at the time of report

TABLE IV MEAN (mm), STANDARD DEVIATION (mm) AND COEFFICIENT OF VARIABILITY (%)
OF FIVE STATIONS OF JALORE DISTRICT
(PERIOD 1957 TO 1981)

		Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
JALORE	Mean	2.1	3.2	5.8	0.4	14.48	34.20	120.96	138.81	60.31	11.57	6.23	0.9	398.95
	S.D	3.60	6.5	21.2	1.36	24.22	26.0	91.8	124.68	77.24	26.27	10.89	3.25	197.5
	C.V.	171.4	203.1	365.5	340.0	167.3	76.0	75.87	89.8	128.1	227.1	174.9	360.9	49.49
SANCHORE														
	Mean	1.84	1.30	4.5	0.4	3.96	28.91	123.0	102.4	88.0	7.66	4.07	5.44	371.48
	S.D	6.46	3.76	22.0	1.8	8.67	24.59	101.9	71.29	125.97	22.48	7.44	21.49	233.81
	C.V.	351.2	289.37	488.9	450.0	219.	85.07	82.89	69.6	143.16	293.54	182.9	395.15	62.94
JASWANTPURA														
	Mean	1.44	0.01	6.25	0.51	3.10	31.05	134.86	187.5	89.4	4.12	4.77	0.51	463.97
	S.D.	4.77	-	27.24	2.22	11.6	35.4	119.43	190.4	114.66	10.1	8.77	1.02	277.8
	C.V.	331.29	-	435.88	435.88	374-2	112.4	88.56	101.57	128.25	245.1	183.9	200.0	59.87
BHINMAL														
	Mean	1.25	1.35	5.10	0.63	4.7	34.9	111.1	120.8	68.81	9.6	12.57	0.78	371.59
	S.D.	3.38	4.09	23.80	2.36	12.9	36.39	84.6	113.46	77.3	9.2	28.2	3.3	195.38
	C.V.	270.3	303.0	466.83	374.7	274.3	104.28	76.2	93.9	112.36	95.7	224.35	423.1	52.58
AHORE														
	Mean	2.0	1.4	6.65	0.42	9.15	37.18	117.24	141.1	60.24	11.4	9.29	1.63	397.7
	S.D.	4.0	3.06	29.2	1.18	16.3	40.0	87.7	114.4	67.45	28.37	16.5	5.32	182.65
	C.V.	200.0	218.6	439.0	281.1	178.1	107.6	74.8	81.1	111.98	248.8	177.6	326.4	45.93

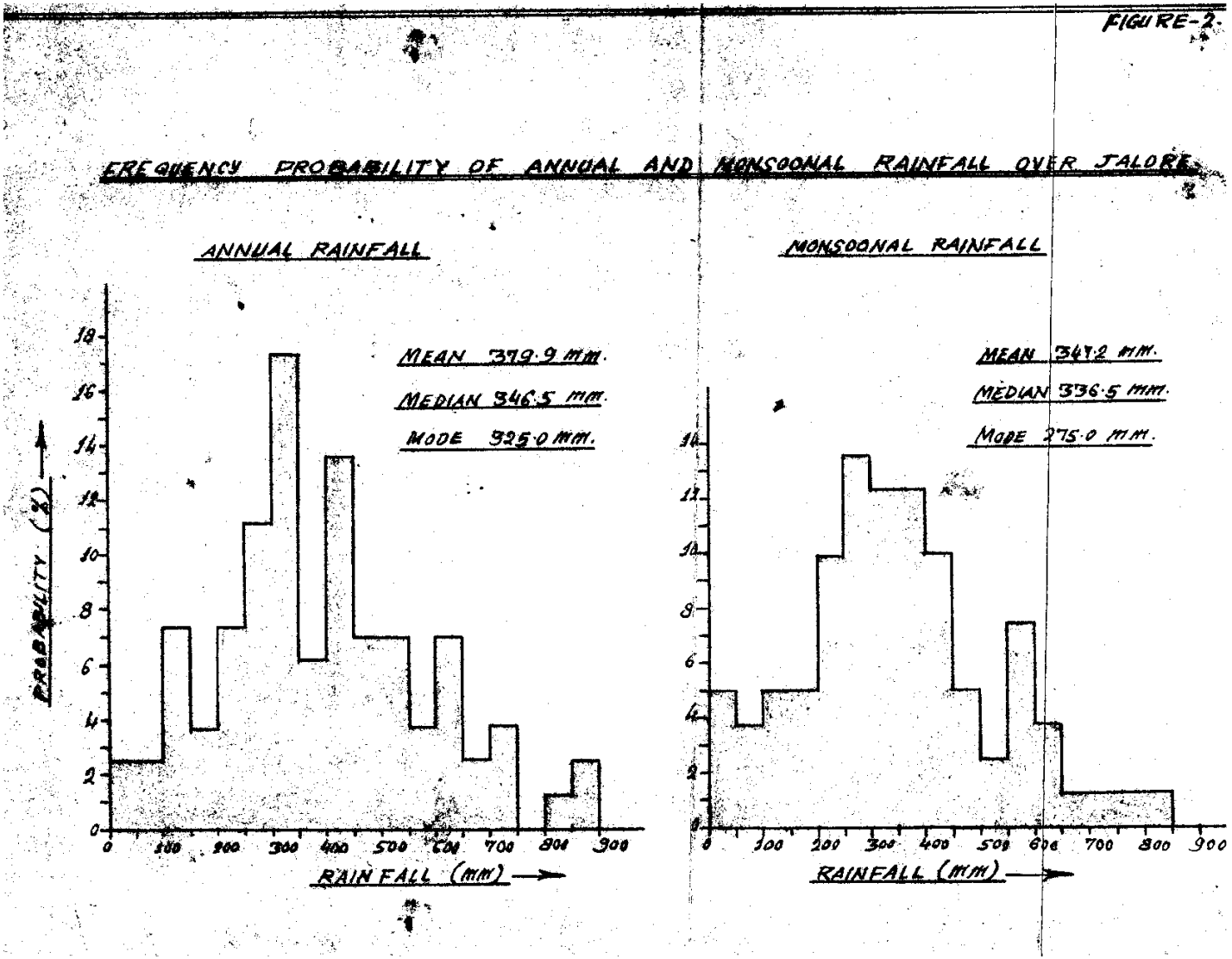
writing for statistical analysis. The frequency of occurrence of monsoonal and annual rainfall at different class interval ofJalore have been computed and tabulated. The class interval for frequency distribution was chosen arbitrarily as 50 m.m. The occurrence of different amount of rainfall (in year and percentage) in different classinterval over Jalore has been computed and shown below :

TABLE V OCCURRENCE OF DIFFERENT AMOUNT OF RAINFALL IN DIFFERENT CLASS INTERVAL OVER JALORE

Class Interval(mm)	Frequency of occurrence			
	Annual rainfall (In year)	(in %)	Mansoonal rainfall (in year)	(in %)
1	2	3	4	5
0 - 50	2	2.47	4	4.94
51 - 100	2	2.47	3	3.70
101 - 150	6	7.41	4	4.94
151 - 200	3	3.70	4	4.94
201 - 250	6	7.41	8	9.88
251 - 300	9	11.11	11	13.58
301 - 350	14	17.28	10	12.35
351 - 400	5	6.17	10	12.35
401 - 450	11	13.58	8	9.88
451 - 500	4	4.94	4	4.94
501 - 550	4	4.94	2	2.47
551 - 600	3	3.70	6	7.41
601 - 650	4	4.94	3	3.70
651 - 700	2	2.47	1	1.23
701 - 750	3	3.70	1	1.23
751 - 800	0	0	1	1.23

FIGURE-2.

FREQUENCY PROBABILITY OF ANNUAL AND MONSOONAL RAINFALL OVER JALORE.



801 - 850	1	1.23	1	1.23
851 - 900	2	2.47	0	0

A pictorial representation of frequency distribution of annual and monsoonal rainfall over Jalore have been given in the form of histogram (Figure - 2). It is apparent from the histogram that mean, median and more of annual and monsoonal rainfall are in good agreement. As simple test of normality that is to work out ratio of median to mean (which is equal to 0.96) is being applied and it is ascertained that annual rainfall over Jalore is not significantly different from normal distribution.

Form the table V, it is seen that highest (17.28%) frequency of occurrence of annual rainfall is observed in class interval 301-350 m.m. while lowest zero percent is observed in class interval 751 - 800 m.m. Also in monsoon as rainfall highest 13.58% frequency of occurance observed in class interval 251 - 900 m . m. It is interesting to note that in monsoon period 1.23% frequency of occurrence is observed in class interval 651 - 700, 701 - 750, 751 - 800 and 801- 850 m.m. respectively.

The occurrence of amount of rainfall at different probability levels may be determined by arranging annual rainfall values in increasing or de-creasing order. The middle value is known as median or annual rainfall at 50% probability level. The occurrence of amount of rainfall at different

probability has been computed and tabulated in Table VI. From the table it is apparent that lowest value is 24.3 m.m. while highest (at 100% probability level) is 849.6 m.m. at the station Jalore.

TABLE VI AMOUNT OF RAINFALL COMPUTED AT DIFFERENT PROBABILITY LEVELS FOR JALORE

1	2
24.3	Lowest value
110.0	10% probability level
202.4	20% -do-
254.1	30% -do-
298.7	40% -do-
337.6	50% -do-
385.2	60% -do-
407.5	70% -do-
462.5	80% -do-
598.4	90% -do-
849.6	Highest value.

Probability of occurrence of excessive, normal, deficient and scanty rainfall at Jalore during monsoon period is 29.11% , 35.44% , 22.78% and 12.66% respectively.

2.3 RAINFALL TREND OVER JALORE

Generally climatic condition during a particular year over any station is assessed by deviation of annual rainfall from its average value. In the last 80 years of climatic history of Jalore

loest annual rainfall (27.1 mm) was ex-perienced in the year 1901 while highest annual rainfall (870.8 m.m) has beem recorded in 1983. However, the year to year variation of annual rainfall from its average value (in %) have been worked out and presented in Table VII. In such areas magnitude of dry spells should not be assessed by the rainfall condition during that particular year, but climatic condition during a year is alsoinfluenced by the rainfall pattern of preceding years. Moderate drought condition during two consecutive years may lead to a large drought condition during later year. Similarly, three consecutive years of moderate drought may lead to severe drought during fourth year and so on. Therefore, departure and cimmulative departure (in percentage) of annual rainfall from average annual rainfall has been computed and given in the table VII and shown in Figure-4. The departure and cummulative departure of annual rainfall reveal that most dry condition prevailed over the region upto 1978 while wet period occured during 1979 onward. From the cummulative departure trend, it is inferred that rainfall trend is increasing.

TABLE VII DEPARTURE & CUMMULATIVE DEPARTURE (IN %) OF ANNUAL RAINFALL FROM MEAN ANNUAL RAINFALL FOR THE JALORE STATION

Average rainfall=379.86 mm

Year 1	Annual rainfall(mm) 2	Departure from average(%) 3	Cummulative departure(%) 4
1901	27.1	- 92.86	- 92.86
1902	145.1	- 61.80	- 154.66
1903	274.8	- 27.65	- 182.31
1904	125.2	- 67.04	- 249.35
1905	369.6	- 2.70	- 252.05
1906	418.3	+ 10.11	- 241.94
1907	644.9	+ 69.77	- 172.17
1908	552.8	+ 45.52	- 126.65
1909	439.3	- 15 64	- 111.01
1910	346.2	- 8.86	- 119.87
1911	121.7	- 67.96	- 187.83
1912	238.1	- 37.32	- 225.15
1913	318.5	- 16.15	- 241.30
1914	296.9	- 21.84	- 263.14
1915	166.7	- 56.11	- 319.25
1916	455.2	+ 19.83	- 299.42
1917	855.7	+125.26	- 174.16
1918	49.8	- 86.89	- 261.05
1919	615.7	+ 62.08	- 198.97
1920	384.4	+ 1.19	- 197.78
1921	314.7	- 17.15	- 214.93
1922	277.0	- 27.07	- 242.00
1923	212.4	- 44.08	- 286.08
1924	327.3	- 13.84	- 299.92
1925	130.5	- 65.64	- 365.56

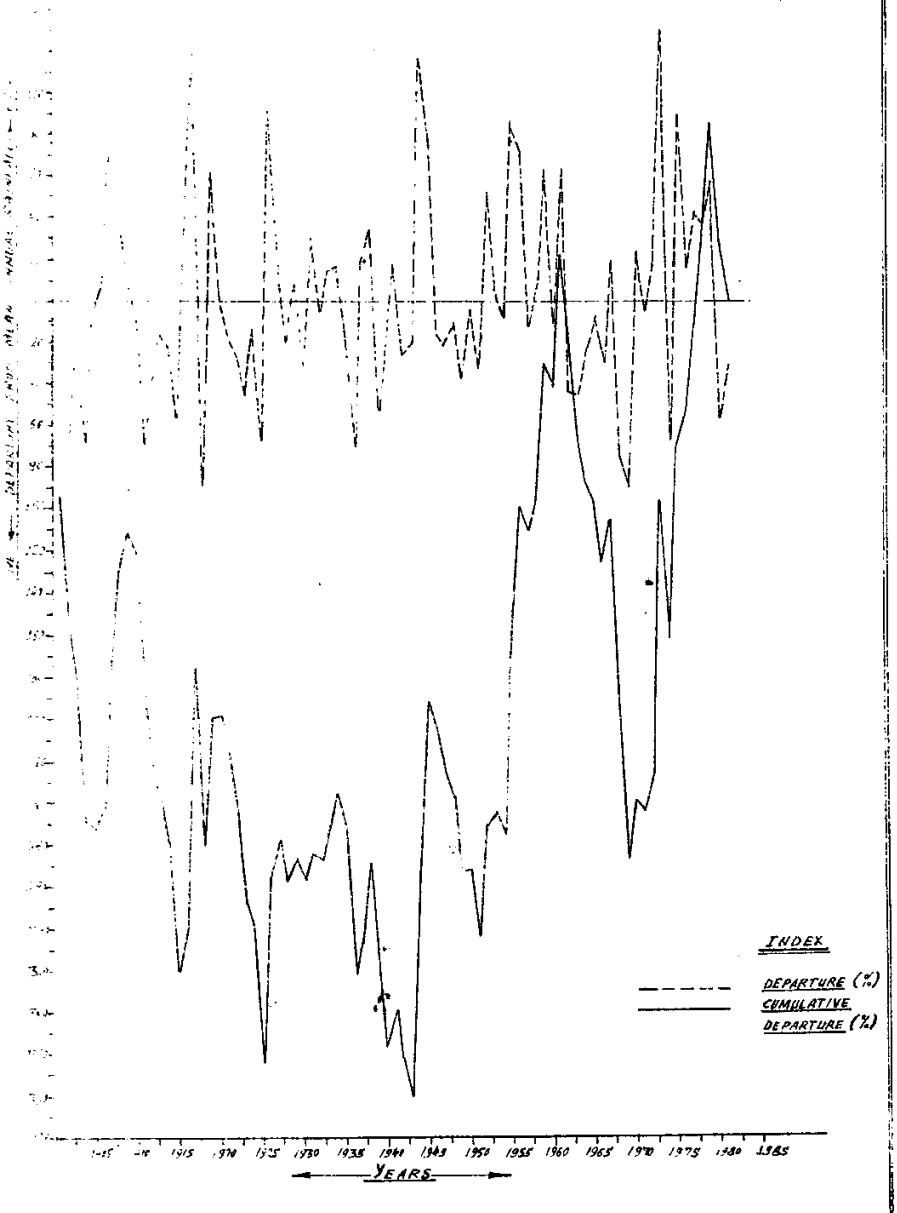
1	2	3	4
1926	725.7	+ 91.04	- 274.52
1927	442.8	+ 16.57	- 257.95
1928	309.5	- 18.52	- 276.47
1929	415.1	+ 9.28	- 267.19
1930	264.4	- 30.39	- 297.58
1931	504.4	+ 32.78	- 264.80
1932	370.1	= 2.57	- 267.37
1933	437.7	+ 15.23	- 252.14
1934	444.0	+ 16.88	- 235.26
1935	315.4	- 16.97	- 252.23
1936	119.7	- 68.49	- 320.72
1937	448.8	+ 18.15	- 302.57
1938	510.6	+ 34.42	- 268.15
1939	182.3	- 52.01	- 320.16
1940	244.1	- 35.74	- 355.90
1941	444.0	+ 16.88	- 339.02
1942	289.6	- 23.76	- 362.78
1943	308.6	- 18.76	- 381.54
1944	816.4	+114.92	- 266.62
1945	668.1	+ 75.88	- 190.74
1946	321.1	- 15.47	- 206.21
1947	307.1	19.15	- 225.36
1948	337.1	11.26	- 236.62
1949	246.09	-035.00	- 271.62
1950	378.2	- 0.44	- 272.06
1951	262.6	- 30.87	- 302.93
1952	378.2	+ 52.34	- 250.59
1953	401.7	+ 5.75	- 244.84
1954	346.5	- 8.78	- 253.62
1955	702.4	+ 84.91	- 168.71
1956	650.6	+ 71.27	- 97.44

1	2	3	4
1957	339.9	- 10.52	- 107.96
1958	425.0	+ 11.88	- 96.08
1959	630.0	+ 65.85	- 30.23
1960	342.4	- 9.86	- 40.09
1961	619.0	- 62.95	- 22.86
1962	215.6	- 43.24	- 20.38
1963	212.0	- 44.19	- 64.57
1964	293.5	- 22.73	- 87.30
1965	349.5	- 7.99	- 95.29
1966	275.1	- 27.58	- 122.87
1967	451.5	+ 18.86	- 104.01
1968	100.4	- 73.57	- 177.58
1969	50.8	- 86.63	- 264.21
1970	474.5	+ 24.91	- 239.30
1971	367.5	- 3.25	- 242.55
1972	453.0	+ 19.25	- 223.30
1973	870.8	+129.24	- 94.06
1974	133.2	- 64.93	- 158.99
1975	720.8	+ 89.75	- 69.24
1976	443.7	+ 16.81	- 52.43
1977	544.1	+ 43.24	- 9.19
1978	525.4	+ 38.31	+ 29.12
1979	595.9	+ 56.87	+ 85.99
1980	172.6	- 54.56	+ 31.43
1981	260.8	- 31.34	+ 0.09

FIGURE-4

DEPARTURE (IN %) OF ANNUAL RAINFALL FROM

ANNUAL RAINFALL OF JALORE.



The bar diagram of annual rainfall and number of rainy days has been drawn and shown in figure 3 with 10 years, 20 years and 30 years moving average from the Fig. 3 it is seen that rainfall trend is increasing for the Station Jalore.

Also the normal annual rainfall has been computed for all the stations of Jalore district and the isohyetel lines have been drawn (Figure -1) from the Figure-1,it is seen that rainfall trend is increasing from WNW to ESE and it ranges from 350 m.m. to 450 m.m. in the district.

2.4 CHARACTERISTICS OF METEOROLOGICAL PARAMETERS (OTHER THAN RAINFALL):

The mean monthly averages for maximum and minimum temperature, air temperature, relative humidity (at 0830 & 1730 hrs.), vapour prassure (at 0830 & 1730 hrs.) and wind velocity has been computed and given in Table VIII. From the table it can be seen that highest mean monthly maximum temperature 41.2°C. is observed in the month of May, while lowest 25.5°C. in January, The highest mean monthly minimum temperature 29.3°C isobserved in June and lowest 11.8°C. in the month of January, The highest mean monthly relative humidity 78.4%

TABLE VIII METEOROLOGICAL DATA OF JALORE DISTRICT

Mbt Months	Average Temp (°C) Max.	Min	Air Temp.	Mean relative humidity (%)at 0830 hrs	1730 hrs	Mean vapour (Mb)pressure at 0830 hrs	1730 hrs.	Mean wind speed(Kmph)
January	25.5	11.8	18 7	55.6	33.3	8.6	9.8	2.8
February	28.5	15.9	22.2	52.5	32.2	10.3	11.1	4.1
March	34.2	21.3	27.7	41.1	23.5	11.3	11.0	6.0
April	35.7	27.2	31.5	39.6	21.9	16.2	14.5	8.6
May	41.2	29.2	35.2	53.8	24.7	23.7	17.9	13.0
June	39.5	29.3	34.4	64.7	38.3	28.6	24.5	12.1
July	34.9	27.4	31.1	76.2	57.4	30.0	28.2	10.8
August	33.1	26.4	29.7	78.4	61.9	29.1	28.5	9.8
September	34.9	25.9	30.4	70.2	49.1	26.3	23.8	7.6
October	36.3	25.0	30.7	55.4	34.7	19.6	17.6	4.0
November	32.0	19.7	25.9	54.7	36.8	13.0	13.5	2.3
December	27.2	13.3	20.3	58.5	35.6	9.1	10.0	2.2

at 0830 hrs. is observed in August while lowest mean monthly relative humidity 39.6% in April, Also at 1730 hrs (I.S.T.) the highest mean monthly relative humidity 61.9% is observed in August, while lowest 21.9% in April. The highest mean monthly vapour Pressure 30.0 mb. at 0830 hrs is observed in the month of July while minimum 8.6 meters in January. Also at 1730 hrs (3.57) the highest mean monthly vapour pressure 28.5 mb. is observed in August while lowest 9.8 mb. in February. The highest mean monthly wind velocity 13.0 Kms./hour is observed in the month of May while lowest 2.2 Kms/hour during the month of December. The highest maximum temperature 46.5°C. over the station was recorded on 18th June, 1979 while lowest maximum temperature 13.2°C was observed on 31st January, 1976. Also the highest minimum temperature 38.6°C recorded on 7th June, 1981 while lowest minimum temperature 1.2°C on 29th January, 1973 during the period April, 1972 to December, 1981. The maximum relative humidity (100%) is generally observed in rainy days. These meteorological parameters have been used for estimating evaporation and evapotranspiration by various formula and in evirenmental analysis of the area.

2.5 ESTIMATION OF EVAPOTRANSPIRATION

Exchange of moisture in the form of vapour directly from open water surface is known as evaporation and when routed through plants as transpiration. In nature it would difficult to delineate plant free Zones and for all practical purposes water losses by the combined process of evaporation and transpiration

are considered simultaneously and termed evapotranspiration. Evapotranspiration is dependent upon plant, soil and meteorological condition of the area. As a reference the concept of potential (maximum possible) evapotranspiration was introduced which is defined as the "maximum amount of water capable of being lost as water vepour in a given climate, by a continuous stretch of vegetation covering whole ground when the soil is kept saturated.

The potential evapotranspiration has been estimated by the formula devised by research is based on basic hydrometeorological data. There are various formula for estimation of evapotranspiration like Thornthwaite's, Makkins, Blaney criddle, Penman and Christiansen. Out of these formula the most simple and popular formul for estimating potential evapotranspiration is given by Thornthwaite's (1948).

Thornthwaite's method for estimation of PE is based on mean air temperature and duration of sunshine over the Station. Thornthwaite's proposed the following formula :

$$e = 1.6 (10\ t/I)\ a$$

in which e = Unadjusted PE (in cm) per month (month of 30 days each) and 12 hours a day time)

t = Mean air temperature in °C

I 1 Annual heat index

$$h = \frac{(ti)}{5} 1.514$$

i = Monthly heat index

a = An empirical exponent computed by the equation.

$$a = 0.600000\ 675\ I^{3} - 0.0000771\ I^{2} + 0.01792\ I + 0.49239$$

The unadjusted values of 'e' are corrected for actual day light hours and days in a month. The correction factors of 'e' and monthly values of i are taken from tables.

The draw backs of the formula are as follows:

1/ Temperature alone is not a good indication of the energy available for evapotranspiration.

2/ Air temperature of a place lags behind radiation.

3/ The formula does not take into account the wind effect which might be an imporatant factor in some area.

4/ According to this formula ET will cease when mean temp is below 0°C.

2.6 CLIMATIC CONDITION OF THE AREA

Based on moisture index (Im) Thornthwaite (1948) defined six climatic zones. The values of Im may vary from - 100% to more than + 100% - The different climatic zones for different Im ranges are as follows :

Moisture index	Type of climate
+ 100%	per humid
+ 200% - + 20%	humid
+ 20% - 0%	Moist sub humid
0% - -33.3%	Dry sub humid
-33.3% - -66.6%	Semi arid
-66.6% - - 100%	Arid

The estimated moisture index for Jalore has been calculated from the Table IX

$$Im = -Ia \frac{1161.0}{1561.0} \times 100$$

$$= -74\%$$

The relation between humidity index (Ih) Ariding index (Ia) and moisture index (Im) are as follows :

Im = Ih - Ia

In Jalore Ih = 0 i.e. no surplus water observed.

The value of moisture index of Jalore district shows that the area is arid. It possesses desertic ecosystem with abandance of xerophytic plants and desertic soils.

TABLE IX - CLIMATIC SOIL WATER BALANCE(THORNTHWAITE,1955)FOR JALORE ST.TION

F.C. 150 UNIT M.M.

	Jan	Feb	March	April	May	June	July	Aug.	Sept	Oct	Nov	Dec	Total
P	2.1	3.2	5.6	0.4	14.5	34.2	121.0	138.8	60.3	11.6	6.2	0.9	
PE	68	86	137	175	230	200	138	118	133	130	78	68	1561.0
P-PE	-66	-83	-131	-175	-1215	-166	- 17	21	-73	-118	-72	-59	
Actual potential loss.	-672	-755	-886	-1061	-1276	-1442	-1459	-284	-357	-475	-547	-606	
ST	2	1	1	1	1	1	1	22	13	6	4	2	
ST	0	-1	0	0	0	0	0	21	- 9	- 7	- 3	- 2	
AE	2	4	6	0	15	34	121	118	69	19	9	3	400.0
WD	66	82	131	175	215	166	17	0	64	111	69	65	1161.0

III GROUND WATER POTENTIAL ZONES

In Jalore district studies regarding occurrence and quality of ground water were the main objective of hydrogeological investigations. The major part of the district has brackish to moderately saline water which is due to arid climatic conditions and abundance of argillaceous material within diffenent water bearing formations. However, there are some areas where ground water of potable quality is available in abundance. On the basis of detailed hydrogeological studies potential zones have been demarcated where exploitation of ground water is feasible.

It has been observed that in alluvial areas fresh ground water with less than 4000 E.C. is found along the Jawai, Sukri river and its tributaries flowing from the south the Khari, the Bandi and the Sagi rivers. The observations shows that along the Jawai-Sukri section the fresh water body is found to lie over saline water resulting in disconnected lenses of limited areal extent. A similar situation was also observed along the Khari, Bandi and Sagi Rivers. Alluvial deposits in the Jawai - Sukri rivers are composed mainly of clays, sands, and gravels with thickness increasing down stream.

3.1 CLASSIFICATION OF POTENTIAL ZONES :

A number of potential zones have been classified on the basis of various hydrogeological formations encountered in the area. Potential zones located in younger alluvium older alluvium, granites and rhyolite are marked as A,B,C and D respectively. On the basis

of chemical quality of ground water potential zone 'A' comprising younger alluvium as principal water bearing formation has been further classified as A_1, A_2 and A_3 Similarly potential zones 'B' and 'C' have been subclassified as B_1, B_2, B_3 and C_1, C_2, C_3 respectively. Potential zone 'D' has limited area assuch it has not been subclassffied. The zone B_4 which occupy the maximum area in the district, has E.C. range from 2000 to 8000 microsiemens/cm. This zone is only suitable for the construction of shallow open wells, tapping only limited thickness of aquifer.

3.2 DESCRIPTION OF POTENTIAL ZONES

3.2.1 ZONE A1/1

The potential zone A1/1 is located towards north and north - east part of the district i.e. along Jawai-Sukri river and cover an area of about 449.00 sq. kms. The main water bearing formation in this zone is younger alluvium Few tubewells are operating in this zone for various water supply schemes.

The depth to water in this zone varies from 5.00 metres to 15.00 metres. The discharge of tubewells varies from 64.3 cubic meter/day to 1987.2 cubic meter/ day. The quality of ground water is potable havingEC. value below 4000 microsiemeans/cm.

3.2.2. ZONE A1/2

The potential zone A 1/2 located toward southern and northern part of the district. However toward north-eastern part of the district a small area is acquired by this zone and in total covers an area of about 365.00 sq.kms. The main water bearing

formation in this zone is younger alluvium. The depth to water varies from 0.82 metres to 14.20 metres. The discharge of tube wells varies from 3960 cubic meter/day to 972.0 cubic meter/day. Yield of open wells varies from 75.00 cubic meter/day to 315.00 cubic meter/day. The quality of ground water is potable having E.C. value below 4000 microsiemens/cm.

3.2.3 ZONE A1/3

Potential zone A1/3 covers an area of about 93.00 sq.kms. towards southern and north eastern part of the district. The main water bearing formation in this zone is younger alluvium. The depth to water varies from 1.70 metres to 4.80 metres and quality of ground water is potable having E.C. value below 4000 microsiemen/cm. Yield of open wells varies from 15 cubic meter/day to 123.0 cubic meter/day. However the construction of tubewells in this zone is not recommended because of shallow depth to basement which comprises mainly compact granites.

3.2.4 ZONE A 2/1

The zone covers an area of 96.00 sq.kms. in the morth-western part of the district and a small patch towards west of Bhinmal town. The main water bearing formation in this zone is younger alluvium. Some tube-wells are constructed in this zone for water supply schemes and irrigation purposes. The depth to water varies from 4.00 metres to 9.25 metres. The discharge of tube wells varies from 388 cubic metre/day to 3336.40 cubic meter/day. The yield of open wells varies from 40.00 cubic meter/day to 500.00 cubic meter/day. The

quality of ground water in this zone is slightly saline with E.C. ranging between 4000 to 6000 microsiemens/cm.

3.2.5 ZONE A2/2

The potential zone A2/2 is located towards SSW of Bhinmal town. and covers an area of about 56.00 sq.kms. The main water bearing formation in this zone is younger alluvium. The depth to water varies from 9.10 metres to 13.07 metres. Some tube wells are constructed at Dhanwara village for water supply scheme to Bhinmal town. The approximate discharges of the tube are 576.0 cubic meter/day. The yield of open wells varies from 35.0 cubic meter/day to 380.0 cubic meter/ day. The quality of water is potable to slightly saline having E.C. range between 4000 to 6000 microsiemens/cm.

3. 2.6 ZONE A2/3

The potential zone A2/3 is located toward north-west of Jalore town and in small patch south of Bhinmal it covers an area of about 36 sq. kms. The main water bearing formation in this zone is younger alluvium. The depth to water varies from 5.95 metres to 6.62metres. Two tube wells were constructed under U.N. Assistance programme at Dangra and Ratunja villages having the discharge range between 21.60 cubic meter/day to 1935.50 cubic meter/day. Yield of open wells varies from 30.0 cubic meter/day to 250 cubic meter/day. The quality of ground water is saline having E.C. value ranging between 4000 - 6000 microsiemens/cm.

3.2.7 ZONE A3/1

This zone is adjoining to A2/1 in the north-western part of the district. It covers an area about 55.89 sq.kms. Ground water in this zone occurs in the younger alluvium. This zone include only one village, Dhumaria. The depth to water ranges from 6.90 metres to 9.76 metres having the yield 40.0 to 150 cubic meter/day. The quality of ground water is saline having E.C. value ranging between 6000 - 8000 microsiemens/cm.

3.2.8 ZONE A3/2

This zone covers a small area of 17.00 sq.kms. and lies towards the northern side of the Bhinmal Town. Ground water in this zone occurs in the younger alluvium. This zone also include only one village Sarthala. The quality of ground water is saline having E.C. value ranging between 6000 - 8000 microsiemens/cm.

3.2.9 ZONE B1/1

This zone covers an area of 515 sq.kms. in the northern, southern and western part of the district. The main water bearing formation is older alluvium, the depth to water varies from 3.70 metres to 30.50 metres. A number of tube wells are operating in this zone for irrigation purposes and for various water supply schemes. The maximum number of tube wells are operating at Punasa, Phagotara and Nohra villages for irrigation purposes. The discharge of tube wells varies from 216.0 cubic meter/day to 1008 cubic meter/day. Yield of open wells varies from 60.00 cubic meter/day to 270 cubic meter/day. The quality of ground water is potable having E.C. value below 4000 microsiemens/cm.

3.2.10 ZONE B1/2

The potential zone B1/2 is located towards south-west, and east of Jalore and towards west of Jaswantpura villages. It covers an area about 487 sq. kms. The main water bearing formation is older alluvium. The depth to water in this zone varies from 5.17 metres to 24.50 metres. The discharge of tubewells varies from 216.0 cubic meter/day to 765.0 cubic meter/day. The quality of ground water is potable having E.C. value below 4000 microsiemens/cm. Yield of open wells varies from 50.0 cubic meter/day to 225.0 cubic meter/day.

3.2.11 ZONE B1/3

The potential zone B1/3 is located toward south - west and south - east of Jalore town and covers an area about 624.00 sq. kms. Ground water occurs in this zone in the older alluvium. The depth to water varies from 5.80 metres to 15.85 metres. The discharge of tube wells varies from 92.0 cubic meter/day to 306 cubic meter/day. The quality of ground water is potable having E.C. value below 4000 microsiemens/cm. Yield of open wells varies from 20.00 cubic meter/day to 150.00 cubic meter/day.

3.2.12 ZONE B2/1

The potential B2/1 is located towards north of Saila, west of Bhinmal, south-east of Sanchore and east of Jalore. This zone covers an area about 387.sq.kms. A number of tube wells are operating in this zone for irrigation purposes. The maximum number of tube wells are operating at Charli village for irrigation purposes.

The main water bearing formation in this zone is older alluvium. The depth to water in this zones varies from 1.60 metres to 11.20 metres. The quality of ground water is slightly saline having E.C. value ranging from 4000-6000 microsiemens/cm. Yield of open wells varies from 30.00 cubic meter/day to 270.0 cubic meter/day. The discharge of tube wells varies from 160.0 cubic meter/day to 432.0 cubic meters/day.

3.2.13 ZONE B2/2/

This zone lies in the extreme north east part of the Jalore district and covers an area about 113.00 sq.kms. Ground water in this zone occurs in the older alluvium. Thedepth towater varies from 2.10 metres to 9.00 metres. The discharge of tube wells varies from 104.0 dubic meters/day to 237.50 cubic meters/day whereas thedug wells yield from 25 cubic meters/day to 250 cubic meters/day. The quality of ground water is slightly saline having E.C.value ranging from 4000-6000 microsiemens/cm. The quality of water is tolerable near foot hills only as it deteriorites away from foot hill zone.

3.2.14 ZONE B2/3

This zone covers an area about 17.00 sq.kms. toward north-west of Bhinmal town. Ground water in this zone occurs in older alluvium. The depth to water varies from 15.65 to 23.16 metres. The quality of ground water is slightly saline having E.C. value ranging from 4000 - 6000 microsiemens/cm. Yield of open well is 15.00 to 240.0 cubic meters/day.

3.2.15 ZONE B3/1

This zone is located towards eastern side of the Sanchore town. It covers an area of about 123.00 sq. kms. The main water bearing formation in this zone is older alluvium. Few tube wells are operating in Hura village for irrigation purposes. Thedischarge of tube wells varies from 108.0 cubic meters/day to 413.50 cubic meters/day. Yield of open wells varies from 30.0 cubic meters/day to 270 mubic meters/day. Thequality of ground water is saline having E.C. value ranging from 6000-8000 microsiemens/cm. The depth towater in this zone varies from 16.43 metres to 25.17 metres.

3.2.16 ZONE B3/2

This zone lies towards the south-western and western side of Saila village. It covers an area about 133.00 sq.kms. The main water bearing formation is older alluvium. The depth to water in this zone varies from 9.40 metres to10.90 metres. The yield of wells varies from 20.0 cubic meters/day to250.0 cubic meters/day. The quality of ground water is saline having E.C. value ranging from 6000-8000 microsiemens/cm.

3.2.17 ZONE B3/3

This zone is located towards east of Ahore and covers an area about 286.00 sq.kms. The main water bearing formation in this zone is older alluvium. The depth to water varies from 3.70 metres to 9.17 metres. Yield of open wells varies from 10.0 cubic meters/day to 220.0 cubic meters / day. The quality of ground water is saline having E.C.value ranging from 6000 - 8000 microsiemens/cm.

3.2.18 ZONE B4

This zone covers an area of about 2188.0 sq.kms. in the south-west partof the district. The major water bearingformation is alluvium. The depth to watervaries from 1.00 to 45.00 metres. The quality of ground water in this zone ranges from fresh to saline in the shallow zones. In the deeper horizons it is highly saline. The zone is suitable for construction of shallow open wells, tapping only limited thickness of aquifers. Certain area have been found suitable for construction of shallow tube wells i.e. Shilu, Deora, Sanchore and Hariyali. The depth ranging upto 35.00 metres. Some deep tube wells are constructed in this zone for exploration of fresh ground waterat Hariyali, Dungari, Binjrol ka golia, Digaon and Janwai. The bore hole at Janwri has been abandoned due to non-availability of productive horizon upto 300.0 metres depth. At Dungari Binjrol ka golia and Hariyali, ground water is highly saline in deeper horizon. However, at Digaon quality of ground water is slightly saline. Thedischarge of exploratory tube wells varies from 235.0 cubic meters/day to 536 cubic meters/day. The yield of open wells varies from 5.0 cubic meters/day to 360 dubic meters/day. The quality of ground water is having E.C. value ranging from 2000 - 8000 microsiemens/cm.

3.2.19 ZONE C1/1

The potential zone C1/1 is located towards south of Jalore town and is small patches towards south and south east of Bhinmal town. It covers an area about 99.00 sq.kms. The main water bearing formation in this zone is Granite of Post Delhi. Few tube wells are operating for irrigation purposes. Thedepth to water in

this zone varies from 3.15 metres to 6.85 metres. The discharge of tube wells varies from 64.8 cubic meters/day to 368.0 cubic meters/day. Yield of open wells varies from 50.0 cubic meters/dayto 300 cubic meters/day. The quality of ground water is fresh having E.C.value below 4000 microsiemens/cm.

3.2.20 ZONE C1/2

This zone covers few patches towards south east of the district having an area of 816 sq.kms. The main water bearing formation in this zone is granite of Post Delhi . The depth to water varies from 2.20 metres to 8.85 metres. The discharge of tube wells varies from 7.2 cubic meters/day to 216 cubic meters/day. Yield of open wells varies from 40.0 cubic meters/day to 220.0cubic meters/day. The quality of ground water in this zone is fresh having E.C. value below 4000 microsiemens/cm.

3.2.21 ZONE C1/3

This zone is located towards north-eastern of Bhinmal village. It covers an area of about 4600 sq.kms. Ground water in this zone occurs in granites of Post Delhi. The depth to water varies from 4.70 to 10.90 metres. Yield of open well is 20.0 cubic meters/day to 150 cubic meters/day. The quality of ground water in this zone is fresh having E.C. value below 4000 microsiemens/cm.

3.2.22 ZONE C2/1

This zone covers an area about 46.00 sq.kms. and located towards south-east and north-east of Bhinmal town. Ground water in this zone occurs in granites of

Post Delhi. The depth to water varies from 10.77 metres and 15.59 metres. Thedischarge of tube wells varies from 108.0 cubic meters/day to 144.0 cubic meters/day. Yield of open well is 10.0 cubic meters/day. The quality of ground water in this zone is slightly saline having E.C. value ranging from 4000 - 6000 microsiemens/cm.

3.2.23 ZONE C2/2

This zone covers an area of about 39.0 sq. kms. near Bhinmal. The main water bearing formation in this zone is granite of Post Delhi. The depth to water varies from 4.10 metres to 7.32 metres. The discharge of tube wells varies from 80.0 cubic metres/day to 432 cubic meters/day. Yield of open well is 80.0 cubic meters/day to 300.0 cubic meters/day The quality of ground water in this zone is slightly saline having E.C. value ranging from 4000 - 6000 microsiemens/cm.

3.2.24 ZONE C3 3

This zone lies in theeastern border of the Jalore district and covers an area of about 16.0 sq.kms. Ground water in this zone occurs in granites of Post Delhi. The depth to water varies from 3.15 metres to 5.81 metres. The quality of ground water in this zone is saline having E.C. value raning from 6000 to 8000 microsiemens/cm. Yield of open wells varies from 70.0 cubic meters/day to 150 cubic meters/day. The area is trickey and a number of tubewells drilled in the area has been abondaned either due to poor discharge or due to poor quality of ground water.

Only suitable sites can be proposed for construction of wells.

3.2.25 ZONE D

This zone covers an area of about 71.00 sq. kms. towards south of Bhinmal. The main water bearing formation in this zone is rhyolites. The depth to water in this zone varies from 6.15 metres to 11.14 metres. Yield of open wells varies from 35.0 cubic meters/day to 80.0 cubic meters/day. The quality of water is potable having E.C. value below 4000 micro-siemens/cm.

IV - ESTIMATION OF GROUND WATER RESOURCES

The estimation of ground water resources have been attempted by computation of recharge to aquifer and the draft of existing wells. For this purpose long term monitoring data of key wells, meterological stations, agricultural statistics and revenue data have been utilised. From the analysis of these data annual ground water surplus available in different potential zones have been worked out. Water balance for the area will be attempted lateron, when computing water balance for Luni Basin.

4.1 GROUND WATER RESHARGE :

The major source of ground water recharge is through precipitation. A major part of the rainfall is returned toatmosphere in the form of water vapour by evaporation and transpiration. Part of the precipitation is retained by the soils and the surplus water percolates downward through the primary and secondary opening and interstics of the rock formation recharging the aquifers. The ground water recharge mainly depends upon theamount of precipitation, intensity of rainfall, composition and texture of the soil, under lying formation, vegetation, geomorphic features and the depth to zone of saturation.

Estimation of ground water recharge in Jalore district has been attempted by adopting following three methods :

i/ Climatic water balance method.
ii/ Hydrograph analysis method
iii/ Specific yieldfluctuation method.

4.2 CLIMATIC WATER BALANCE METHOD.

The soil water balance technique was prepared to assess the rainfall condition for management of water resources by Thornthwaite in 1948 and later it was modified by Thornthwaite and Manner in 1955. In this technique a comparative study between rainfall and potential evapotranspiration is made for different periodicities. The excess rainfall over potential evapotranspiration is available for infiltration and perdolation to the soils. Surplus water available after meeting the field capacity of the soil is available for ground water recharge and runoff.

The surplus water has been computed for four stations ofthe Jalore district viz.Ahore, Bhinmal, Jalore and Sanchore on the basis of daily water balance. The monsoon period of Jalore district is extending from Jule to September and the maximum amount of rainfall experienced during the month of August and September.

The daily water balance (Thornthwaite's method) for monsoon period has been computed considering 100 & 150 m.m. as field capacity of the soils. The values ofpotential evapotranspiration has been taken by interpoluting the values of PE of nearby stations. The maximum 201.0 m.m. potential evapotranspiration observed in the month of June while lowest 117.8 m.m. experienced by the month of August for all the four stations of Jalore district. The values of potential evapotranspiration and available surplus water for all the four stations has been shown in table X for the period 1076 to 1981. From the table it is evident that surplus water is available mostly in the month of August and September.

It is intersting to note that no surplus was observed for all the four stations of Jalore district in 1980 at field capacity 100 & 150 m.m. At 100 m.m.field capacity the maximum 200.8 m.m.(38.96% to the monsoon rainfall) amount of surplus water was available in 1976 at the station Ahore, while minimum 24.0 m.m.(11.76% to the monsoon rainfall) surplus water in 1979 at the Station Sanchore in monsoon period. Generally the surplus water is available in the monsoon period but in Nov, 1981 a surplus of 12.6 m.m. was computed at the the station Bhinmal which is post monsoon season. Similarly, at 150 m.m. field capacity the maximum 162.3 m.m. (31.49% to the monsoon rainfall) of surplus water was available in 1976 at Ahore while lowest 8.4 m.m. (2.51% to the monsoon rainfall) in 1981 for the station sanchore.

From the analysis of rainfall date, it is evident that no surplus water will be available during normal rainfall years. The surplus water is available only when heavy rainfall occurs i.e. it should be more than potential evapotranspiration. Such instance has been observed in case of Ahore 1976.

TABLE X CLIMATIC WATER BALANCE(THORNTHWAITE'S METHOD) FOR JALORE DISTRICT USING DAILY WATER BALANCE COMPUTATION TECHNIQUE

S.No.	Name of Station	Months Years	Field capacity of the soil : 100 mm							Field capacity of the soil: 150 mm						
			June PE: 201.0	July PE: 139.5	Aug PE: 117.8	Sept PE: 132.0	Totals (in mm PE: 590.3	Monsoon totals (in mm)	%contribution to the monsoon rainfall.	June PE: 201.0	July PE: 139.5	Aug. PE: 117.8	Sept PE: 132.0	Totals (in mm) PE 590.3	Monsoon totals (in mm)	%contributo the monsoon rainfall.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.	Ahore	1976 WS	-	-	149.2	51.6	200.8	515.4	38.96	-	-	112.7	49.6	162.3	515.4	31.49
2.	Bhinmal	1976 WS	-	-	111.2	16.4	127.6	414.2	30.81	-	-	73.0	-	73.0	414.2	17.62
3.	Jalore	1976 WS	-	-	24.0	83.0	107.0	402.3	26.60	-	-	-	-	-	402.3	-
4.	Sanchore	1976 WS	-	25.6	70.8	64.8	161.2	530.2	30.40	-	-	54.6	63.8	118.4	530.2	22.33
6.	Ahore	1978 WS	-	15.8	37.8	-	53.6	377.6	14.19	-	-	-	-	-	377.6	-
2.	Bhinmal	1978 WS	-	1.6	29.4	-	31.0	421.3	7.36	-	-	-	-	-	421.3	-
3.	Jalore	1978 WS	-	58.4	7.2	33.0	98.6	460.4	21.42	-	15.2	2.2	33.0	50.4	460.4	10.95
4.	Sanchore	1978 WS	-	-	65.2	-	65.2	447.1	14.58	-	-	-	-	-	447.1	-

1. Ahore	1979 WS	-	193.0	-	-	193.0	471.8	40.91	-	142.0	-	-	142.0	471.8	30.1
2. Bhinmal	1979 WS	-	42.4	80.0	-	122.4	366.8	33.37	-	-	73.0	-	73.0	366.8	19.9
3. Jalore	1979 WS	-	59.6	133.4	-	193.0	427.0	45.20	-	10.8	128.4	-	139.2	427.0	32.6
4. Sanchore	1979 WS	-	-	24.6	-	24.6	209.2	11.76	-	-	-	-	-	209.2	-
1. Ahore	1980 WS	-	-	-	-	-	158.0	-	--	-	-	-	-	158.0	-
2. Bhinmal	1980 WS	-	-	-	-	-	119.5	-	-	-	-	-	-	119.5	-
3. Jalore	1980 WS	-	-	-	-	-	156.4	-	-	-	-	-	-	156.4	-
4. Sanchore	1980 WS	-	-	-	-	-	132.0	-	-	-	-	-	-	132.0	-
1. Ahore	1981 WS	-	-	-	-	-	149.2	-	-	-	-	-	-	149.2	-
2. Bhinmal	1981 WS	-	-	-	-	-	137.7	-	-	-	-	-	-	137.7	-
3. Jalore	-do-	-	-	-	-	-	184.8	-	-	-	-	-	-	184.8	-
4. Sanchore	1981 WS	-	-	53.4	-	53.4	334.5	15.86	-	-	8.4	-	8.4	334.5	2.51
4. Bhinmal	1981 WS Nov	-	-	-	-	12.6	-	-	-	-	-	-	-	-	112.6 mm *

* Surplus observed on 3rd Nov, 1981 dur to heavy rainfall (112.6 m.m)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Ahore	1977 WS	-	53.3	50.4	-	103.7	387.5	26.8	-	18.0	48.4	-	66.4	387.5	7.1.	
2. Bhinmal	1977 WS	1.8	245.1	4.2	-	251.1	544.5	46.1	-	195.4	3.2	-	198.6	544.5	36.5	
3. Jalore	1977 WS	-	65.8	41.0	-	106.8	462.5	23.1	-	20.5	39.0	-	59.5	462.5	12.9	
4. Sanchore	1977 WS	77.3	363.9	22.6	-	463.8	768.4	60.4	30.3	363.9	15.6	-	409.8	768.4	53.3	

4.3 HYDROGRAPH ANALYSIS METHOD

The increment due to recharge and decrement in ground water storage due to draft from an aquifer is directly reflected by water table hydrograph of a well tapping the aquifer. If water is added to an aquifer, it is indicated by rising trend in a hydrograph. The rising limband recession curve of a hydrograph are formed by joining points of water levels at different time intervals.

The recession curve indicates the depletion of water level either under the effect of gravity or due to head loss developed by withdrawal. The recession coefficient (also equivalent to spacific yield in unconfined aquifers) ___, can be determined from recession curve by using following equation :

$$= \frac{(n\ (ho/h)}{t}$$

where t is time in days during which water level recedes from ho to h, ho and h are two points selected on the recession curve.

While analysis recession curve, it is advisable to select points towards the end portion or receding curve to certain more retional values since external influence on water table is more realistic during that period.

The commulative rise in water table is given by Degallier's equation :

$$Hc = 1/2 \quad hn\ (i+e^{\ dt}),$$

Where hn is n^{th} ordinate of rising limb from zero recession level of previous post monsoon period, n is the number of segments of therising limb upto peak

water level; dt is time interval between the segments divided. The infiltration I is given by following equation :

$$I = Hc \quad x$$

The rainfall infiltration factor can be computed by $IR = \frac{I}{P} \times 100$

where P is monsoonal rainfall in metres and IR is rainfall infiltration factor in percentage.

On the basis of analysis of hydrographs of 48 dug wells and 18 piezometers the recession coefficient, cummulative rise and infiltration factor for two different years (i.e. for year 1980 and 1982) have been determined as given in Table-XI, Table XII and Table XIII and a set of representative hydrograph has shown in Figure - 5.

TABLE -XI : RESULTS OF HYDROGRAPH ANALYSIS OF KEYWELLS/ PIEZOMETERS (PERIOD, YEAR 1 9 8 0)

S. No.	Location	Monsoonal water lev-erise(m)	Recession coeffic-ient (%)	Commula-tive rise in metres	Rainfall infiltra-tion fac-tor (%)
1	2	3	4	5	6
A.	YOUNGER ALLUVIUM				
1.	Kushalpura	0.05	2.33	0.09	1.75
2.	Dayalpura Madri	-	0.80	-	-
3.	Bamanwara	0.09	0.52	0.10	0.44
4.	Agdawa	-	2.30	-	-
5.	Saila	0.17	1.17	0.27	2.02
6.	Sanphara	-	0.87	-	-
B.	OLDER ALLUVIUM				
7.	Bhadrajun	0.84	0.85	1.35	7.26
8.	Bijali	0.37	2.13	0.90	12.13
9.	Daspa	1.46	2.14	2.57	46.02
10.	Phagotra	0.09	0.29	0.13	0.32
11.	Sewari	0.02	3.1	0.04	1.04
12.	Bhagli Shidhawan	0.27	0.56	0.47	1.68
13.	Panseri	0.16	0.52	0.31	1.35
14.	Raniwara	0.37	0.79	0.67	4.43
15.	Bhadruna	0.08	0.69	0.10	0.52
16.	Gardali	0.70	0.74	1.18	6.62
17.	Sanchore	-	1.79	-	-
18.	Siwara	-	2.30	-	-
19.	Bakra	0.43	1.03	0.69	4.54
20.	Bantra	0.66	1.86	2.05	24.38
21.	Dahiwa	0.06	1.53	0.14	1.37
22.	Meghalwa	0.25	3.15	0.60	12.08

	PIEZOMETER :				
23.	Phagotra	0.02	4.6	0.02	0.87
24.	Sankad	0.01	5.9	0.03	1.15
C.	GRANITE :				
25.	Bhinmal	0.45	5.87	1.85	90.87
26.	Jalore	0.84	1.46	1.42	13.26

TABLE XII : RESULTS OF HYDROGRAPH ANALYSIS OF KEYWELLS
(PERIOD YEAR 1 9 8 2)

S.No.	Location	Monsoonal water level rise (M)	Recession coefficient(%)	Comulative rise in Metres	Rainfall infilatration factor(%)
1	2	3	4	5	6
A.	YOUNGER ALLUVIUM				
1.	Bhainswara	0.65	4.73	1.60	36.25
2.	Umedpura	2.80	2.06	6.42	63.34
3.	Kushelapura	0.82	1.70	1.55	6.37
4.	Kirawa	0.35	3.05	0.95	11.56
5.	Dungri	0.04	4.62	0.09	1.66
6.	Hanmu	0.05	0.23	0.08	0.09
7.	Otwara	0.10	2.35	0.18	2.12
B.	OLDER ALLUVIUM:				
8.	Jaitpura	1.40	2.96	6.78	96.11
9.	Rama	0.08	0.77	0.13	0.48
10.	Sewari	0.13	3.93	0.29	2.76
11.	Bhagli Sindhawan	0.42	3.05	0.93	14.20
12.	Panseri	0.41	1.98	0.72	3.45
13.	Raniwara	3.69	1.13	5.02	31.34
14.	Sanchore	0.10	2.70	0.19	2.05
15.	Siwara	0.07	2.30	0.16	1.47
16.	Bakra	0.72	2.30	1.57	18.07
17.	Bantra	0.11	2.30	0.02	0.23
18.	Dahiwa	0.26	3.33	0.52	8.67
19.	Meghalwa	0.07	2.30	0.21	2.42
20.	Jhak	0.30	6.48	1.15	41.17
C.	GRANITE:				
21.	Bhinmal	3.98	0.74	10.79	19.30
22.	Bharudi	7.80	6.36	26.09	401.19
23.	Golana	4.35	0.63	4.90	17.05
24.	Jaswantpura	1.25	0.19	1.28	1.24

TABLE - XIII - RESULTS OF HYDROGRAPH ANALYSIS OF PIEZOMETERS (PERIOD , YEAR 1 9 8 2)

S.No.	Location	Monsoonal water level rise (m)	Recession coefficient(%)	Comulative rise in metres	Rainfal infiltration Factor(%)
1	2	3	4	5	6
A.	YOUNGER ALLUVIUM :				
1.	Bagora	0.14	2.88	0.26	1.77
2.	Bhainswara	2.12	3.66	4.94	86.59
3.	Bhinmal	1.29	1.84	1.82	8.10
4.	Daspa	0.19	1.75	0.23	1.18
5.	Jaipura-Badgaon	0.21	8.60	1.89	89.80
6.	Saila	0.10	3.66	0.30	5.49
7.	Umedpura	0.43	4.0	0.50	11.30
B.	OLDER ALLUVIUM:				
8.	Jaitpura Jogni	0.48	1.97	0.97	9.15
9.	Meda	0.13	2.80	0.38	4.25
10.	Panseri	0.69	2.30	1.58	20.08
11.	Rama	0.38	3.05	0-88	12.85
12.	Raniwara	0.19	3.05	1.45	24.43
13.	Dankad	0.14	0.90	0.37	1.33
C.	GRANITE:				
14.	Khanpur	1.60	2.20	5.74	30.53
15.	Korita	1.05	2.10	2.19	11.12
16.	Paoli	2.86	3.89	13.92	299.16

SPECIFIC YIELD -FLUCTUATION METHOD

In Jalore district water levels were monitored in key wells during June, October and March of every year. Selected wells and piezometers were also monitored every month to record fluctuation in response to rainfall (Appendix 1 & 2). The recharge quantification has been done by multiplying specific yield, water level fluctuation and rechargeable area of various potential zones delineated in the district. For each potential zone, average fluctuation in water table has been taken into consideration on thebasis of water level records during different years. The specific yield of the hydrogeological formation has been adlopted on the basis of hydrograph analysis and pumping test analysis. Area of each potential zone has been calculated separately. Out of toal 24 potential zones rise in water level during 1976 was observed in 21 Zones during year 1977 it was observed in 22 zones, during the year 1978 rise in water level was observed in 20 zones, during 1979 rise was observed in 22 zones, during 1980 only 3 zones show rise of water level and during 1981 it was observed in 14 potential zones. Therefore,annual recharge for different years has been computed for these zones only. In zones where rise in water level was not observed it was inferred that draft exceeded recharge hence contribution by rainfall was not reflected. Details have been tabulated in Table XIV.

TABLE XIV SHOWING YEARWISE RECHARGE IN DIFFERENT POTENTIAL ZONES
(PERIOD 1976-77 TO 1981-82)

Name of Zone	Area of the Zone in Sq.kms	Specific Yield	AVERAGE FLUCTUATION OF THE ZONE IN METRES FROM 1976 TO 1982						Net Recharge					
			76-77	77-78	78-79	79-80	80-81	81-82	76-77	77-78	78-79	79-80	80-81	81-82
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A1/1	448.776	0.10	0.40	0.58	0.34	1.213	-0.823	-0.021	17.95	26.02	15.25	54.436	-	-
A1/2	365.148	0.10	0.71	0.80	0.41	0.23	0.17	0.46	25.92	29.21	14.97	8.39	-	16.79
A1/3	92.736	0.10	0.79	0.41	-0.36	0.73	-0.43	-0.45	7.32	3.80	-	6.76	-	-
A2/1	96.048	0.10	0.81	0.79	0.18	-0.02	-0.30	0.17	7.77	7.58	1.72	-	-	1.63
A2/2	57.546	0.10	0.375	0.97	1.17	0.295	-1.40	-0.61	2.15	5.58	6.73	1.69	-	-
A2/3	35.60	0.10	0.58	0.52	0.90	0.92	-0.23	-0.24	2.06	1.85	3.20	3.27	-	-
A3/1	55.89	0.10	1.26	0.70	0.10	0.20	-0.39	-0.23	7.04	3.91	0.55	1.11	-	-
A3/2	17.39	0.10	0.62	0.125	0.24	0.76	-0.20	0.40	1.078	0.217	0.417	1.321	-	0.695
B1/1	515.016	0.06	0.07	0.583	0.66	0.169	-0.07	0.446	2.16	18.015	20.39	5.22	-	13.781
B1/2	487.278	0.06	0.145	0.435	0.539	0.438	-0.344	-0.721	4.23	14.17	15.75	12.80	-	-
B1/3	624.312	0.06	2.04	1.355	-0.746	0.925	-0.224	-0.011	76.41	50.75	-	34.64	-	-

B2/1	386-676	0.06	0.106	0.326	0.567	-0.095	-1.135	0.172	2.45	7.56	13.15	-	-	3.99
B2/2	113.436	0.06	-0.40	3.41	0.38	3.02	-0.81	4.88	-	23.20	2.58	20.55	-	33.21
B2/3	16.56	0.06	0.94	1.85	0.30	5.69	-0.40	3.59	0.93	1.83	0.29	5.65	-	3.56
B3/1	122.544	0.06	0.945	-	0.726	0.203	0.106	-0.223	21.65	-	5.33	1.49	0.77	-
B3/2	132.894	0.06	-	0.43	-0.60	0.40	-0.07	-0.15	-	3.42	-	3.18	-	-
B3/3	286.074	0.06	0.193	1.755	0.873	2.423	-0.06	-0.803	3.312	0.123	14.984	41.58	-	-
B4	2187.60	0.06	0.144	-	0.495	0.569	0.022	0.438	18.90	-	64.97	74.68	-	57.490
C1/1	98.53	0.015	0.085	2.65	0.877	0.585	0.245	0.892	1.603	3.916	1.296	0.864	0.362	1.318
C1/2	815.58	0.015	1.84	1.422	0.085	0.65	0.029	0.870	22.510	17.396	1.039	7.951	0.354	10.64
C1/3	46.368	0.015	2.84	3.55	-	1.68	0.00	0.80	1.975	2.469	-	1.168	0.00	0.556
C2/1	45.54	0.015	-	9.20	1.68	8.54	-4.12	7.30	-	6.284	1.147	5.833	-	4.98
C2/2	39.33	0.015	0.48	0.85	0.42	0.47	-1.29	2.35	0.283	0.501	0.247	0.277	-	1.386
D	71.208	0.015	0.893	2.47	0.653	0.953	-0.633	1.04	0.953	2.638	0.697	1.017	-	1.110

4.5 GROUND WATER DRAFT

Ground water draft in Jalore district is mainly through open wells and tube wells used for irregation and domestic consumption. Annual draft of ground water for six years i.e. 1976 to 1981 has been calculated by taking into consideration draft from open wells and tube wells separately for each potential zone, and has been given in Table XV.

4.6 EXPLOITABLE GROUND WATER POTENTIAL :

Ground water surplus in various potential zones has been calculated for the year 1976 to 1981 taken into consideration annual recharge and annual draft of ground water.

In Jalore district it has been observed that the tube wells and open wells are mainly operated for domestic and irrggation purposes, withdrawal of ground water is regular and in number of potential zones it is more than the recharge. Only in a few potential zones recharge has been found to exceed the withdrawal, thus leaving surplus ground water.

It has been observed that during the year 1976 ground water surplus is available only in

TABLE XV SHOWING CALCULATION OF DRAFT FROM OPEN WELLS AND TUBE WELLS IN M.C.M.

Zone No.	Open wells.	Tube wells.	Other agencies	Total
1976-77				
A1/1	78.417	0.405	8.723	87.545
A1/2	41.323	-	-	41.323
A1/3	7.043	-	-	7.043
A2/1	14.820	3.186	-	18.006
A2/2	3.758	-	4.526	8-284
A2/3	3.301	-	-	3.301
A3/1	2.571	-	-	2.571
A3/2	0.018	-	-	0.018
B1/1	17.127	17-358	3.613	38.098
B1/2	18.850	-	2.628	21.128
B1/3	11.329	-	1.971	13.300
B2/1	14.445	2.808	-	17.253
B2/2	0.854	-	0.857	1.711
B2/3	0.864	-	-	0.864
B3/1	4.036	-	1.204	5.240
B3/2	5.194	-	-	5.194
B3/3	2.782	-	-	2.782
B4	48.950	-	1.497	50.447
C1/1	12.630	-	0.328	12.958
C1/2	15.918	-	2.299	18.217
C1/3	1.384	-	-	1.384
C2/1	3.666	0.162	-	3.828
C2/2	4.134	-	-	4.134
D	1.467	-	-	1.467
1977-78				
A1/1	78.969	0.405	8.723	88.097
A1/2	43.230	-	-	43.230
A1/3	7.160	-	-	7.160
A2/1	15.882	3.186	-	19.068
A2/2	4.079	-	4.526	8.605
A2/3	3.403	-	-	3.403
A3/1	2.571	-	-	2.571
A3/2	0.026	-	-	0.026
B1/1	18.517	17.358	3.613	39.488
B1/2	22.889	-	2.628	25.517
B1/3	11.109	-	1.971	13.080
B2/3	15.605	2.808	-	18.413
B2/2	1.244	-	0.857	2.101
B2/3	0.900	-	-	0.900

1	2	3	4	5
B3/1	4.265	-	1.204	5.469
B3/2	5.668	-	-	5.668
B3/3	3.661	-	-	3.661
B4	48.934	-	1.497	50.431
C1/1	14.190	0.135	0.328	14.653
C1/2	17.058	-	2.299	19.357
C1/3	1.536	-	-	1.536
C2/1	4.386	6.162	-	10.548
C2/2	4.134	-	-	4.134
D	1.475	-	-	1.475
1978-79				
A1/1	78.228	1.425	8.723	88.376
A1/2	45.013	-	-	45.013
A1/3	7.414	-	-	7.414
A2/1	16.728	3.186	3.547	23.461
A2/2	3.421	-	4.526	7.947
A2/3	3.541	-	-	3.541
A3/1	2.872	-	-	2.872
A3/2	0.007	-	-	0.007
B1/2	20.803	17.358	3.613	41.774
B1/2	25.687	-	2.628	28.315
B1/3	11.925	-	1.971	13.896
B2/1	16.555	2.808	-	19.363
B2/2	1.151	-	0.857	2.008
B2/3	0.900	-	-	0.900
B3/1	4.270	-	1.204	5.474
B3/2	5.667	-	-	5.677
B3/3	3.769	-	-	3.769
B4	50.942	-	1.497	52.439
C1/1	14.235	0.243	0.328	14.806
C1/2	16.713	-	2.299	19.012
C2/3	1.582	-	-	1.582
C2/1	4.530	0.162	-	4.692
C2/2	4.017	-	-	4.017
D	1.792	-	-	1.792
1979-80				
A1/1	73.384	1.425	8.872	83.681
A1/2	42.703	-	-	42.703
A1/3	7.100	-	-	7.100
A2/1	17.124	3.186	3.547	23.857
A2/2	5.256	-	4.526	9. 782
A2/3	1.206	-	-	1.206
A3/1	2.974	-	0.361	3.335
A3/2	00.045	-	-	00.045

1	2	3	4	5
B1/1	23.269	17.358	3.613	44.240
B1/2	20.714	-	2.628	23.342
B1/3	10.881	-	1.971	12.852
B2/1	16.762	2.808	0.511	20.081
B2/2	1.110	-	0.857	1.967
B2/3	0.969	-	-	0.969
B3/1	4.270	-	1.204	5.474
B3/2	5.287	-	-	5.287
B3/3	3.783	-	-	3.783
B4	45.144	-	1.497	46.641
C1/1	12.075	0.243	0.328	12.646
C1/2	18.633	-	2.299	20.932
C1/3	1.585	-	-	1.585
C2/1	4.185	0.162	-	4.347
C2/2	4.134	-	-	4.134
D	1.819	-	-	1.819
1980-81				
A1/1	81.484	1.425	10.132	93.041
A1/2	32.854	-	0.164	44.018
A1/3	7.165	-	-	7.165
A2/1	17.280	3.186	3.547	24.013
A2/2	5.256	-	4.526	9.782
A2/3	3.645	-	-	3.645
A3/1	3,109	-	0.361	3.470
A3/2	0.045	-	-	0.045
B1/1	23.372	17.348	3.613	44.343
B1/2	27.809	-	2.628	30.437
B1/3	10.057	-	1.971	12.028
B2/1	15.610	3.807	0.511	19.928
B2/2	1.248	-	0.857	2.105
B2/3	1.525	-	-	1.525
B3/1	4.274	-	1.204	5.478
B3/2	5.440	-	-	5.440
B3/3	4.857	-	-	4.857
B4	52.872	-	2.891	55.763
C1/1	13.072	1.042	0.328	14.442
C1/2	18.978	-	2.299	21.277
C1/3	1.584	-	-	1.584
C2/1	4.371	0.162	-	4.533
C2/2	4.167	0.648	-	4.815
D	1.596	-	-	1.596

1	2	3	4	5
1981-82				
A1/1	88.870	1.425	10.752	101.047
A1/2	43.883	-	2.381	46.264
A1/3	8.331	-	-	8.331
A2/1	19.398	3.186	4.335	26.913
A2/2	7.023	-	5.840	12.863
A2/3	4.684	-	-	4.684
A3/1	3.151	-	0.361	3.512
A3/2	00.056	-	0.361	3.512
B1/1	31.387	17.358	3.613	52.358
B1/2	32.789	-	2.956	35.745
B1/3	12.094	-	2.993	15.087
B2/1	17.235	4.995	0.511	22.741
B2/2	1.552	-	0.857	2.409
B2/3	1.525	-	-	1.525
B3/1	4.410	1.404	1.204	7.018
B3/2	5.526	-	-	5.526
B3/3	5.209	-	-	5.209
B4	55.005	-	3.803	58.808
C1/1	14.265	1.258	1.065	16.588
C1/2	20.097	1.296	2.810	24.203
C1/3	1.605	-	-	1.605
C2/1	4.614	0.162	-	4.776
C2/2	4.167	0.648	-	4.815
D	1.791	-	-	1.791

potential zones A 1/3, A3/1, A3/2 , B1/3, B2/3, B3/1, B3/3, C1/2 and C1/3 comprising younger alluvium, older alluvium and granite reppectively. During the year 1977, ground water as surplus is available in potential zones A3/1, B3/2, B1/3, B2/2, B2/3, B3/3, C1/2, C1/3, C2/1 and D comprising younger alluvium, older alluvium, granite and rhyolite respectively. During the year 1978, ground water surplus is available in A2/3, A3/2, B2/2, B3/1, B3/3, B4 and C3/3 comprising younger alluvium, older alluvium and granite respective. During the year 1979, ground water surplus is available in A1/3, A2/3, A3/2, B1/3, B2/2, B2/3, B3/3, B4 and C2/1 comprising younger alluvium. Older alluvium and granite respectively. But during the year 1980 due tocomparatively low rainfall and drought in the district, there is no surplus ground water available in any of the potential zones. This indicates the ground water withdrawal from each potential zones has exceeded the recharge. Recharge was not reflected due to low rainfall except in potential zones B3/1, C1/1, C1/2 and C1/3 where recharge of low magnitude was observed. Similarly during the year 1981 there is no surplus ground water available in younger alluvium except in A3/2. In older alluvium surplus ground water available only in three potential zones i.e. B2/2, B2/3 and B4. Similarly in granite surplus ground water available in only C2/1 zone. The annual ground water recharge, draft and available surplus has been given in Table - XVI.

4.7 GROUND WATER RESERVES:

An attempt has been made to evaluate ground water storage in various potential zones of Jalore district. Ground water storage of suitable quality of water having electrical conductivity less than 8000 microsiemens/cm has been estimated taking into consideration, the average productive thickness of various aquifers and given in Table XVII. The next ground water surplus and storage in different blocks of Jalore district has shown in Table XVIII.

TABLE XVI ; SHOWING ANNUAL GROUND WATER RECHARGE, DRAFT AND SURPLUS AVAILABLE IN MCM IN DIFFERENT POTENTIAL ZONES

Zone No. 1	Recharge 2	Draft 3	Surplus 4
1976-77			
A1/1	33.012	87.545	-
A1/2	34.184	41.323	-
A1/3	8.728	7.043	1.685
A2/1	11.371	18.006	-
A2/2	2.801	8.284	-
A2/3	2.720	3.301	-
A3/1	7.554	2.571	4.983
A3/2	1.081	0.018	1.063
B1/1	9.057	38.098	-
B1/2	8.00	21.128	-
B1/3	78.676	13.300	65.376
B2/1	5.901	17.253	-
B2/2	-	1.711	-
B2/3	1.103	0.864	0.239
B3/1	22.457	5.240	17.217
B3/2	-	5.194	-
B3/3	3.868	2.782	1.086
B4	28.690	50.447	-
C1/1	4.129	12.958	-
C1/2	25.694	18.217	7.477
C1/3	2.252	1.384	0.868C2/1
C2/1	-	3.828	-
C2/2	-1.109	4.134	-
D	1.246	1.467	
1977-78			
A1/1	41.894	88.097	-
A1/2	37.856	42.230	-
A1/3	5.232	7.160	-
A2/1	11.393	19.068	-
A2/2	6.395	8.605	-
A2/3	2.530	3.403	-
A3/1	4.425	2.571	1.854
A3/2	0.222	0.026	0.196
B1/1	25.190	39.488	-
B1/2	18.747	25.517	-
B1/3	52.971	13.080	39.891
B2/1	11.241	18.413	-
B2/2	23.448	2.101	21.347
B2/3	2.01	0.900	1.110

1	2	3	4
B3/1	-	5.469	-
B3/2	4.459	5.668	-
B3/3	30.855	3.661	27.194
B4	-	50.431	-
C1/1	6.781	14.653	-
C1/2	20.807	19.357	1.450
C1/3	2.776	1.536	1.240
C2/1	7.193	4.548	2.645
C2/2	1.327	4.134	-
D	2.933	1.475	1.458
1978-79			
A1/1	31.180	88.376	-
A1/2	23.977	45.013	-
A1/3	-	7.414	-
A2/1	5.713	23.461	-
A2/2	7.414	7.947	-
A2/3	3.908	3.541	0.367
A3/1	1.124	2.872	-
A3/2	0.418	0.007	0.411
B1/1	28.022	41.774	-
B1/2	20.887	28.315	-
B1/3	-	13.896	-
B2/1	17.022	19.363	-
B2/2	2.810	2.008	0.802
B2/3	0.470	0.900	-
B3/1	6.184	5.474	0.710
B3/2	-	5.677	-
B3/3	15.737	3.769	11.968
B/4	75.158	52.439	22.719
C1/1	4.191	14.806	-
C1/2	4.381	19.012	-
C1/3	-	1.582	-
C2/1	2.085	4.692	-
C2/2	1.050	4.017	-
D	1.055	1.792	-
1979-80			
A1/1	69.397	83.681	-
A1/2	16.930	42.703	-
A1/3	8.180	7.10	1.080
A2/1	-	23.857	-
A2/2	2.741	9.782	-
A2/3	3.511	1.206	2.305
A3/1	1.704	3.335	-
A3/2	1.330	0.045	1.285

1	2	3	4
B1/1	13.345	44.240	-
B1/2	16.942	23.342	-
B1/3	36.816	12.852	23.964
B2/1	-	20.081	-
B2/2	20.772	1.967	18.805
B2/3	5.843	0.969	4.874
B3/1	2.344	5.474	-
B3/2	4.315	5.287	-
B3/3	42.336	3.783	38.553
B4	83.708	46.641	37.067
C1/1	3.327	12.646	-
C1/2	11.677	20.832	-
C1/3	1.485	1.585	-
C2/1	6.702	4.347	2.355
C2/2	1.103	4.134	-
D	1.380	1.819	-
1980-81			
A1/1	-	93.041	-
A1/2	-	44.018	-
A1/3	-	7.165	-
A2/1	-	24.013	-
A2/2	-	9.782	-
A2/3	-	3.645	-
A3/1	-	3.470	-
A3/2	-	0.045	-
B1/1	-	44.343	-
B1/2	-	30.437	-
B1/3	-	12.028	-
B2/1	-	19.928	-
B2/2	-	2.105	-
B2/3	-	1.525	-
B3/1	1.624	5.478	-
B3/2	-	5.440	-
B3/3	-	4.857	-
B4	-	55.063	-
C1/1	3.184	14.442	-
C1/2	4.149	21.277	-
C1/3	0.316	1.584	-
C2/1	-	4.533	-
C2/2	-	4.815	-
D	-	1.596	-

1	2	3	4
1981-82			
A1/1	-	101.047	-
A1/2	25.566	46.264	-
A1/3	-	8.331	-
A2/1	6.146	26.913	-
A2/2	-	12.863	-
A2/3	-	4.684	-
A3/1	-	3.512	-
A3/2	0.706	0.856	0.650
B1/1	23.524	52.358	-
B1/2	-	35.745	-
B1/3	-	15.087	-
B2/1	7.998	22.741	-
B2/2	33.520	2.409	31.111
B2/3	3.865	1.525	2.340
B3/1	-	7.018	-
B3/2	-	5.526	-
B3/3	-	5.209	-
B4	68.490	58.808	9.682
C1/1	4.422	16.588	-
C1/2	14.918	24.203	-
C1/3	0.876	1.605	-
C2/1	5.935	4.776	1.159
C2/2	2.349	4.815	-
D	1.468	1.791	-

TABLE XVII : STORAGE OF GROUND WATER IN VARIOUS POTENTIAL ZONES.

S.No.	Potential Zone	Area in sq.kms.	Specific yield in %	Aquifer thickness in mters.	Storage in mcm
1.	A1/1	448.776	10	28.00	1271.38
2.	A1/2	363.148	10	22.00	821.583
3.	A1/3	92.736	10	12.00	115.92
4.	A2/1	96.048	10.	20.0	192.09
5.	B1/1	515.016	9	56.0	1725.20
6.	B1/2	487.278	6	22.00	633.26
7.	B1/3	624.312	6	15.00	561.88
8.	B2/1	386.676	6	38.00	870.02
9.	B2/1	113.436	6	15.00	102.09
10.	B3/1	122.544	6	30.0	220.57
11.	B3/3	286.074	6	10.0	171.64
12.	B4	2187.60	6	35.0	4593.96
13.	C1/1	98.53	1.5	13.0	19.70
14.	C1/2	815.58	1.5	10.0	122.33
15.	C2/1	45.54	1.5	15.0	10.24
16.	C2/2	39.33	1.5	20.0	11.79

TABLE XVIII : GROUND WATER SURPLUS AND STORAGE BLOCKS OF JALORE DISTRICT.

S.No.	Blocks	Ground Water Surplus and Storage						Ground Water Storage
		1976	1977	1978	1979	1979	1980	
1.	AHORE	1.086	48.541	12.770	57.348	-	31.111	743.17
2.	BHINMAL	13.9606	8.3891	0.234	8.5554	-	2.990	463.79
3.	JALORE	90.8160	11.1620	-	7.2046	-	-	856.70
4.	JASWANTPURA	44.9253	28.5013	-	17.4523	-	1.1590	480.35
5.	RANIWARA	16.2259	49.8133	1.3450	3.5127	-	0.4841	1306.36
6.	SANCHORE	17.217	-	22.2930	35.2136	-	9.1979	5350.44
7.	SAILA	-	-	0.1578	0.9911	-	-	2241.68

V - C O N C L U S I O N

Jalore district covering an area of 10,640 sq.kms. is covered by sandy plains with few scattered hills. The region is drained by the Luni river and its tributaries. The climate of the district is arid type with average rainfall 379.86 m.m (at Jalore station).

As a result of detailed hydrogeological investigations, a number of potential zones have been delineated by considering various hydrogeological units encountered in thearea, their yield and quality of ground water. The quantitative assessment of these potential zones has been worked out by climatic water balance, approach, specific yield - water level fluctuation method and well hydrograph analysis and by considering ground water withdrawal through open wells and tube wells. Ground water surplus has been computed for each zone seperately. Ground water surplus available in various potential zones falling in different blocks has been described as follows:

5.1 AHORE BLOCK

In this block six potential zones namely A1/1, A1/2, B1/2, B2/1, B2/2 and B3/2 covering an area of about 602 sq.kms. have been delineated in which resultant ground water surplus and ground water storage have been computed as shown in Table XVI & XVII, XVIII. In potential zone A1/1, B1/2, B2/1 and B2/2. 50.00 metres to 85.00 metres deep tube wells can be constructed yielding 100.00 cubic meters/day to 490.0cubic meters/day.

The quality of ground water in zone A1/1 and B1/2 is fresh while in zone B2/1 and B2/2 it is slightly saline. The remaining potential zones of this block are suitable only for the construction of open dug wells.

5.2 BHINMAL BLOCK:

In this block nine potential zones viz.A1/2, A2/1,A3/1, A3/2, B1/1, B1/3, B2/3,C1/3 and C2/2 coverinn an area about 404.0 sq. kms. have been delineated inwhich resultant ground water surplus and ground water storage have been computed as shown in Table XVI, XVII and XVIII. Tube wells can be constructed in A2/1, B1/1 and C2/2 potential zones having a depth of about 76.0 meters to 250.0 metres. Their yielding capacity ranging between 80.0 cubic meters / day to 860.0 cubic meters/ day. The quality of ground water in zone B1/1 is fresh while in zone A2/1 and C2/2 it is slightly saline. The remaining potential zones of the block are suitable only for open dug wells. The quality of ground water in zones B1/3 , and C1/3 is fresh while in zones B2/3, C2/2, A3/1 and A3/2 quality is alightly saline to saline.

5.3 JALORE BLOCK :

Six potential zones viz. A1/2, A1/3, B1/2,B1/3, C1/1 and C1/2 covering an area of about 922.0 sq.kms. have been delineated in this block. Resultant ground water surplus and ground water storage in these zones have been computed as shown in Table XVI, XVII and XVIII. In A1/2, B1/2, B1/3 and C1/1 potential zones tube wells having depth of 30 to 160 metres can be

constructed. The yielding capacity of these tube wells may range in between 90 cubic meters/day to 750 cubic meters/day. The quality of ground water in these zones is fresh. The potential zones A1/3 and C1/2 are suitable for the construction of open dug wells.

5.4 JASWANPURA BLOCK :

Five potential zones viz. A1/1, B1/3, C1/1, C1/2 and C2/1 covering an area of about 890.0 sq.kms. have been delineated in this block. Resultant ground water surplus and ground water storage in these zones have been computed as shown in Table XVI, XVII and XVIII. In potential zones A1/1, C1/1, C1/2 and C2/1 30.0 metres to 80.0 metres deep tube wells can be constructed yielding 40.0 cubic meters/ day to 670 cubic meters/day. The quality of ground water in zone A1/1 . C1/1 and C1/2 is fresh while in C2/1 it is slightly saline. The potential zone B1/3 is suitable for the construction of open dug wells.

5.5 RANIWARA BLOCK :

Ten potential zones namely A1/2, A1/3, A2/2. A2/3, B1/1.B1/2, C1/1, C1/2, D and B4 covering an area about 912.0 sq.kms. have been delineated in this block of which resultant ground water surplus and ground water storage have been computed and given in Table XVI,,XVII and XVIII. Tube wells of 40.0 meters to 120.0 metres depth with yield ranging between 145 cubic meters/day to 500 cubic meters/day can be constructed in A1/2, *2/2, B1/1, C1/1 and C1/2 zones.

The quality of ground water in A1/2, B1/1, C1/1 and C1/2 is fresh while in A2/2 it is fresh to slightly saline.

In zone B4 300.0 metres deep tube well has been drilled at Digaon having yielding capacity of 240.0 cubic meters/day. The quality of water in this zone is slightly saline.

The remaining zones A1/3, A2/3, B1/2 and D are suitable for the construction of dug wells however shallow tube well (average 30.0 metres depth) can also be constructed on suitable sites.

5.6 SAILA BLOCK :

In this block five potential zones viz. A1/1, A1/2, A2/3, B1/1 and B3/2 covering an area of about 886.0 sq.kms. have been delineated in which resultant ground water surplus and ground water storage have been computed, Table XVI, XVII and XVIII. Tube wells of 80.0 metres to 300 metres depth can be constructed in the A1/1, A2/3 and B1/1 potential zones having yield range between 64.0 cubic meters/day to 1306 cubic meters/day. The quality of ground water in zones A1/1 and B1/1 is fresh while in A2/3 it is slightly saline.

5.7 SANCHORE BLOCK :

Three potential zones namely B2/1, B3/1 and B4 covering an area of about 2541.00 sq.kms. have been delineated inthis block of which resultant ground water surplus and ground water storage have been computed and and given in Table XVI, XVII & XVIII. In potential zone B2/1 and B3/1, 100.0 metres to 300.0 metres deep tube wells can be constructed having an yield of

160 cubic meters/day to 360.0 cubic meters/day. The quality of ground water is slightly saline to saline. In zone B4 the quality of ground water ranges from fresh to saline in theshallow zones, while in the deeper zone it is hightly saline. It is suitable for the construction of shallow open wells, tapping only limited thickness of aquifer. Certain areas have been found suitable for construction of shallow tube wells i.e. Shilu, Hariyali, Deora etc.

LIST OF VILLAGES OF JALORE DISTRICT FALLING UNDER VARIOUS POTENTIAL ZONES

Zone	Block	Name of villages.
1	2	3
A1/1	Saila	Surana
		Harmi
		Tilora
		Goliya
		Posana
		Borwara
		Asana
		Charau
		Sayala
		Otwala
		Virana
		Deta
		Ummedabad
		Elana
		Sanphara
		Paharpura
		Tikhi
		Khanpur
		Nayakhera
	Ahore	Un
		Kaniwara
		Buchawadi
		Ahore
		Bhagli Purohita
		Sanwara
		Royalpur medi
		Gura Balotan
		Chiparwara
		Agwari
		Ummedpura
		Pachanwa
		Bhainawara
	Jaswantpura	Dhansa
		Serna
		Modran
		Raniwara
		Dhanani
A1/2	Saila	Khural
		Dhora
		Modavala

	Ahore	Dodiyali
	Jalore	Narpura
		Saral
		Madgaon
		Santhu
		Nun
		Akali
	Raniwara	Vasan
		Meitriwara
		Singawas
		Meda Khurd
		Meda kallan
		Borthara
		Jaitpura
		Pupawati
		Matasin
		Bamanwara
		Jujapura
		Bhamsin
		Dhanol
		Bhavriya
		Mar.Ratanpura
		Jhakhri
		Maruwara
	Bhinmal	Khushlapura
		Golia
		Narta
A1/3	Jalore	Ratanpura
		Sakarna
		Maheshpura
		Sayntipura
		Dudri
		Arwara
	Raniwara	Ker
		Dungri
		Surajwara
		Rora
		Rampura
		Agodan
		Dhuliya
		Chandpura
		Ghara
		Chitrori
		Kori

1	2	3
A2/1	Bhinmal	Bagora Daman Kaleti Nimbawas Kirwala Samlawas Nimbara
	Saila	Dadhal
A2/2	Raniwara	Dhanwara Alri
A2/3	Saila	Dangra Ratunja
	Raniwara	Ropsi
A3/1	Bhinmal	Dhunaria
A3/2	Bhinmal	Sathala
B1/1	Saila	Dahiwa Cangana Juwana Babatra Taliyana Akawa Alwara Punawas Meghalwa Bhundwa Mokni khera Balera Kuaber
	Raniwara	Raipur Garg Harshwara Hirapur Raniwara kalla Raniwara khurd Kura

	Bhinmal	Punasa Phagotara Nohra
	Jaswantpura	Panseri
B1/2	Raniwara	Jalera khurd Jalera kallan Kot Santru Karwara Jal Malwara Ken
	Jalore	Keshwana Katrasan Tarwa Pijopura Rewat Kalapura Dakatara Dhanpur Rewatara Berath Chunra Bagra Bhagli Sindhwan Balera Road
	Ahore	Bedana Nariyali Sugaliya Balotan Sedriya Balotan Pavta Rasiyawas Palasia Alwa
	Saila	Bakra
B1/3	Jalore	Jalore Koâar Rajanwari Pandgoran Budtara Chanwarcha Kuara

		Thanwala
		Dhavala
		Bibalsan
		Dewara
		Raipuriya
		Sumergarh
	Jaswantpura	Tatol
		Gola
		Chandana
		Lur ki dhani
		Jorwara
		Somata
		Dhanji ka bera
		Malpura
		Mandali
		Sikwara
		Bhutawas
		Thak
		Murtara Selli
	Bhinmal	Tabab
		Ghaseri
		Kot Kasta
		Borta
		Nasali
		Bhimpura
B2/1	Ahore	Dayalpura
		Charli
		Gangawa
		Samuja
		Godhan
	Sanchore	Jodhawas
		Nimbau
		Kuka
		Bhadvi
		Thoban
		Jogan
		Jelotra
		Dantiwa
		Virol
		Pladar
		Nenol
		Luni Yasar
		Panchla
		Tenlop

		Surawa
		Dugawa
		Lachiwara
		Sewara
B2/2	Ahore	Rama
		Deogarh
		Bankli
		Selri
		Goindla
		Bhadrajun
		Kunwara
B2/3	Bhinmal	Bhagal bhim
B3/1	Sanchore	Pathmada
		Meda
		Kantalo
		Kuda
		Bhutasan
		Sankad
		Palri
		Mokhatra
		Cantwara
		Danta
		Hadetan
B3/2	Sanila	Bisala
		Unri
		Thalwar
B3/3	Ahore	Rodla
		Manpura
		Nakhana
		Chandarlai
		Thumba
		Padarli
		Jora
		Bithura
		Khara
		Mandla
		Jetpura
		Surpura
		Kerol

B4	Sanchore	Gundav
		Sarnau
		Pur
		Arnai
		Pamana
		Jherol
		Binjrol
		Binjrol ka golia
	Sanchore	Devda
		Bhutel
		Moli
		Seli
		Jhab
		Borli
		Tentrol
		Khirodi
		Birawa
		Agdawa
		Silasan
		Tampi
		Nimbaj
		Pavta
		Arwa
		Dungri
		Duthwa
		Kesuli
		Daval
		Bhadruna
		Sidheran
		Dedua
		Harecha
		Dhamana
		Palir
		Dongra
		Jhakhal
		Hariyali
		Karwardi
		Akoli
		Malwara
		Parawa
		Dhotra
		Siwara
		Padarli
		Chitalwana
		Ratanpura
		Gomi
		Janwi
		Hotigaon

		Ratoda
		Keriya
		Hativav
		Dhanta
		Falna
		Sanchore
	Sanchore	Pratap pura
		Gardali
		Golasar
		Achalpura
		Shilu
		Bharwal
		Basan
		Chajjala
		Vank
		Dantiya
		Bawarla
		Kolva
		Agar
		Baoal
		Dedusan
		Lalpur
	Raniwara	Digaon
		Karda
		Korka
		Bhatip
		Samrani
C1/1	Jalore	Siyana
		Nagni
		Chandnu
		Digaon
		Deldari
	Jaswantpura	Paoli
		Mandhar
		Paharpura
	Raniwara	Golwara
		Dadoki
C1/2	Raniwara	Baretha
		Silasan
		Chirpatiya
		paravi
		Akhran
		Kagmala

	Jaswantpura	Rajpura Dantlawa Jaswantpura
	Jaswantpura	Gajapura Uchnta Bikamwas Kalapura Golana Rajkiawas Dorda Chandur Ambatri Murthala Thur Bharudi Ramsin Kolar Bugaon Bithan Punag Khurd Punag Kallan Ratpura
	Jalore	Meda Uparla Meda Nichla Maylawas Takhatpura Bhetala Devda Narnawas Nabi
C1/3	Bhinmal	Ledarman Bhadaua
C2/1	Jaswantpura	Chanpur Gajipura Korita
C2/2	Bhinmal	Bhinmal Bhinmal ki dhani
C3/3	Ahore	Rundmal ki dhani Chawarda Kaonla Bhuti Bardara Mulawa
D	Raniwara	Vandar Chatwara Lakhawas

APPENDIX-2

RECORD OF WATER LEVELS (IN METRES) AS OBSERVED IN KEY WELLS OF JALORE DISTRICT (PERIOD 1876-1982)

DEPTH TO WATER (IN METRES) B. G. L.

S. No.	Name of village	Code No.	1976 I	1976 II	1976 III	1977 I	1977 III	1977 II	1978 I	1978 II	1978 III	1979 I	1979 II	1979 III	1980 I	1980 II	1980 III	1981 I	1981 III	1982 III	1982 I
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	AHORE BLOCK																				
1.	AHORE	1	-	13.40	14.89	13.97	13.95	14.65	14.30	13.75	16.13	16.47	15.65	17.45	18.25	21.25	22.25	21.75	22.05	22.25	22.10
2.	BALA	2	18.0	16.90	-	17.60	15.78	15.86	16.32	17.0	17.34	17.60	12.17	12.76	13.42	14.08	15.06	14.38	15.80	15.52	16.80
3.	BANKLI (NICHLI)	3	-	1.65	-	2.80	1.60	1.74	2.10	2.45	2.21	2.05	1.65	1.39	1.40	2.68	6.00	3.79	4.55	5.57	6.00
4.	BAORI	4	2.40	2.30	2.56	-	1.61	2.20	2.44	2.50	2.91	0.98	1.53	1.77	2.08	2.03	2.47	2.47	2.70	4.00	2.97
5.	BHADRAJUN KI DHANI	5	-	5.10	-	12.00	4.32	-	6.00	6.10	7.90	7.47	3.79	5.25	7.10	7.58	14.70	19.10	6.60	11.80	14.80
6.	BHAINSAWARA	6	7.05	6.75	7.15	7.45	6.92	8.82	8.45	8.25	9.65	10.25	9.26	10.72	10.95	10.55	12.70	14.07	14.77	15.35	15.75
7.	BHAWARNI	7	2.50	3.43	-	4.15	2.49	4.66	-	4.40	7.47	5.80	1.55	2.59	3.00	3.36	7.70	5.81	5.60	8.75	8.02
8.	BHUTI	8	4.45	6.00	-	6.60	3.60	7.75	6.90	5.50	8.40	6.92	3.40	5.80	5.95	6.20	14.74	12.30	8.30	14.00	11.40
9.	BEBANA	9	6.15	7.90	8.54	7.00	6.01	8.55	8.80	7.00	9.80	10.20	6.00	6.90	7.70	9.65	11.40	9.18	11.20	13.40	15.26
10.	BIJALI	10	3.50	3.50	-	7.80	4.20	3.64	4.92	4.92	4.90	4.56	5.00	1.82	2.44	3.64	3.88	4.73	5.10		
10.	BIJAL&	10	3.50	3.50	-	7.80	4.20	3.64	4.92	4.90	4.56	5.00	1.82	2.44	3.64	3.88	4.73	5.10	5.32	8.60	7.15
11.	BITHURA	11	3.80	3.52	-	4.85	3.74	-	5.90	5.50	8.50	7.39	5.66	7.35	7.16	7.11	10.20	9.25	10.06	12.34	11.40
12.	DAYALPURA	12	6.65	6.38	7.85	6.90	6.60	11.50	9.00	10.00	15.70	12.74	10.55	9.80	6.00	14.20	21.00	21.00	20.50	20.30	18.35
13.	-do-(NADRU)	13	-	-	-	-	-	-	-	-	-	9.30	6.92	7.19	8.69	10.90	14.06	15.06	Dry	Dry	Dry
14.	DODIYALI	14	-	4.80	-	5.80	6.70	-	7.70	7.20	7.70	7.50	6.00	6.95	7.69	8.00	10.70	12.20	13.35	14.20	14.20
15.	DUDIA	15	4.62	5.40	-	-	-	-	5.00	4.60	6.67	6.36	3.41	4.85	5.03	5.50	8.50	6.62	7.95	10.40	9.30
16.	GHANA-I	16	9.95	6.90	-	11.45	10.32	-	11.25	10.80	13.09	12.12	5.72	9.69	9.61	9.83	13.66	11.91	11.75	13.95	13.23
17.	-do- II	17	5.80	6.05	7.78	7.04	5.47	6.47	6.80	-	-	7.85	3.77	5.37	5.46	5.63	8.55	8.51	5.10	9.70	10.30
18.	JAITPURA	18	-	8.35	8.59	8.20	6.39	-	8.45	10.30	-	9.83	6.77	16.45	8.09	8.03	12.78	10.93	16.00	15.20	13.40
19.	KAONLA	19	5.35	5.00	-	-	-	-	5.81	5.40	6.87	6.00	3.80	5.46	6.78	8.04	12.02	10.10	11.10	12.10	10.25
20.	MANPURA	20	6.80	6.40	-	8.90	6.50	-	9.17	8.00	11.14	9.88	6.76	9.70	9.33	9.04	14.70	12.11	10.20	17.20	13.52
21.	NIMBLA	21	-	3.20	4.20	4.44	2.60	3.30	4.60	3.10	4.76	4.86	2.97	3.39	3.80	4.02	6.33	5.56	5.80	6.40	6.55
22.	PADARLI	22	1.75	1.85	-	-	-	-	3.70	2.65	3.26	4.05	1.63	2.28	3.33	3.85	5.05	5.19	8.70	8.70	7.05
23.	PALASIA	23	-	8.65	9.80	3.86	3.50	4.50	5.17	4.05	8.60	6.24	5.85	7.40	4.00	6.97	14.60	6.30	11.18	12.10	11.50
24.	RAMA	24	6.90	7.30	8.40	7.98	6.62	8.29	9.00	7.40	9.10	8.90	3.93	4.68	5.62	6.30	6.40	10.40	7.50	9.90	9.50
25.	RUNDMAL KI DHANI	25	1.85	5.50	-	-	-	3.06	3.15	1.58	3.60	3.36	1.18	2.87	3.25	2.80	3.40	4.53	3.90	6.40	4.85
26.	SANKHWALI	26	9.45	8.55	12.94	11.94	7.48	12.10	12.00	9.00	13.40	13.41	17.10	11.50	10.62	13.50	19.27	16.50	9.60	18.00	19.20
27.	UMEDPURA	27	6.35	6.75	6.95	5.87	7.30	9.71	9.20	11.15	10.45	11.11	6.87	9.45	10.40	11.47	13.45	15.37	12.95	16.95	16.95

APPENDIX-2

RECORD OF WATER LEVELS (IN METRES) AS OBSERVED IN KEY WELLS OF JALORE DISTRICT (PERIOD 1976-1982)

DEPTH TO WATER (IN METRES) B. G. L.

S. No.	Name of village	Code No.	1976			1977			1978			1979			1980			1981		1982	
			I	II	III	I	III	III	I	II	III	I	II	III	I	II	III	I	III	III	I
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	AHORE BLOCK																				
1.	AHORE	1	-	13.40	14.89	13.97	13.95	14.65	14.30	13.75	16.13	16.47	15.65	17.45	18.25	21.25	22.25	21.75	22.05	22.25	22.10
2.	BALA	2	18.0	16.90	-	17.60	15.78	15.86	16.32	17.0	17.34	17.60	12.17	12.76	13.42	14.08	15.06	14.38	15.80	15.52	16.80
3.	BANKLI (NICHLI)	3	-	1.65	-	2.80	1.60	1.74	2.10	2.45	2.21	2.05	1.65	1.39	1.40	2.68	6.00	3.79	4.55	5.57	6.00
4.	BAORI	4	2.40	2.30	2.56	-	1.61	2.20	2.44	2.50	2.91	0.98	1.53	1.77	2.08	2.03	2.47	2.47	2.70	4.00	2.97
5.	BHADRAJUN KI DHANI	5	-	5.10	-	12.00	4.32	-	6.00	6.10	7.90	7.47	3.79	5.25	7.10	7.58	14.70	19.10	6.60	11.80	14.80
6.	BHAINSAWARA	6	7.05	6.75	7.15	7.45	6.92	8.82	8.45	8.25	9.65	10.25	9.26	10.72	10.95	10.55	12.70	14.07	14.77	15.35	15.75
7.	BHAWARNI	7	2.50	3.43	-	4.15	2.49	4.66	-	4.40	7.47	5.80	1.55	2.59	3.00	3.36	7.70	5.81	5.60	8.75	8.02
8.	BHUTI	8	4.45	6.00	-	6.60	3.60	7.75	6.90	5.50	8.40	6.92	3.40	5.80	5.95	6.20	14.74	12.30	8.30	14.00	11.40
9.	BEHANA	9	6.15	7.90	8.54	7.00	6.01	8.55	8.80	7.00	9.80	10.20	6.00	6.90	7.70	9.65	11.40	9.18	11.20	13.40	15.26
10.	BIJALI	10	3.50	3.50	-	7.80	4.20	3.64	4.92	4.92	4.90	4.56	5.00	1.82	2.44	3.64	3.88	4.73	5.10		
10.	BIJALE	10	3.50	3.50	-	7.80	4.20	3.64	4.92	4.90	4.56	5.00	1.82	2.44	3.64	3.88	4.73	5.10	5.32	8.60	7.15
11.	BITHURA	11	3.80	3.52	-	4.85	3.74	-	5.90	5.50	8.50	7.39	5.66	7.35	7.16	7.11	10.20	9.25	10.06	12.34	11.40
12.	DAYALPURA	12	6.65	6.38	7.85	6.90	6.60	11.50	9.00	10.00	15.70	12.74	10.55	9.80	6.00	14.20	21.00	21.00	20.50	20.30	18.35
13.	-do-(NADRU)	13	-	-	-	-	-	-	-	-	-	9.30	6.92	7.19	8.69	10.90	14.06	15.06	Dry	Dry	Dry
14.	DODIYALI	14	-	4.80	-	5.80	6.70	-	7.70	7.20	7.70	7.50	6.00	6.95	7.69	8.00	10.70	12.20	13.35	14.20	14.20
15.	DUDIA	15	4.62	5.40	-	-	-	-	5.00	4.60	6.67	6.36	3.41	4.85	5.03	5.50	8.50	6.62	7.95	10.40	9.30
16.	GHANA-I	16	9.95	6.90	-	11.45	10.32	-	11.25	10.80	13.09	12.12	5.72	9.69	9.61	9.83	13.66	11.91	11.75	13.95	13.23
17.	-do- II	17	5.80	6.05	7.78	7.04	5.47	6.47	6.80	-	-	7.85	3.77	5.37	5.46	5.63	8.55	8.51	5.10	9.70	10.30
18.	JAITPURA	18	-	8.35	8.59	8.20	6.39	-	8.45	10.30	-	9.83	6.77	16.45	8.09	8.03	12.78	10.93	16.00	15.20	13.40
19.	KAONLA	19	5.35	5.00	-	-	-	-	5.81	5.40	6.87	6.00	3.80	5.46	6.78	8.04	12.02	10.10	11.10	12.10	10.25
20.	MANPURA	20	6.80	6.40	-	8.90	6.50	-	9.17	8.00	11.14	9.88	6.76	9.70	9.33	9.04	14.70	12.11	10.20	17.20	13.52
21.	NIMBLA	21	-	3.20	4.20	4.44	2.60	3.30	4.60	3.10	4.76	4.86	2.97	3.39	3.80	4.02	6.33	5.56	5.80	6.40	6.55
22.	PADARLI	22	1.75	1.85	-	-	-	-	3.70	2.65	3.26	4.05	1.63	2.28	3.33	3.85	5.05	5.19	8.70	8.70	7.05
23.	PALASIA	23	-	8.65	9.80	3.86	3.50	4.50	5.17	4.05	8.60	6.24	5.85	7.40	4.00	6.97	14.60	6.30	11.18	12.10	11.50
24.	RAMA	24	6.90	7.30	8.40	7.98	6.62	8.29	9.00	7.40	9.10	8.90	3.93	4.68	5.62	6.30	6.40	10.40	7.50	9.90	9.50
25.	RUNDMAL KI DHANI	25	1.85	5.50	-	-	-	3.06	3.15	1.58	3.60	3.36	1.18	2.87	3.25	2.80	3.40	4.53	3.90	6.40	4.85
26.	SANKHWALI	26	9.45	8.55	12.94	11.94	7.48	12.10	12.00	9.00	13.40	13.41	17.10	11.50	10.62	13.50	19.27	16.50	9.60	18.00	19.20
27.	UMEDPURA	27	6.35	6.75	6.95	5.87	7.30	9.71	9.20	11.15	10.45	11.11	6.87	9.45	10.40	11.47	13.45	15.37	12.95	16.95	16.95

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
BHINMAL BLOCK:																					
28. BAGAWAS	28	10	12	9.65	-	10.15	9.80	10.85	10.56	10.00	10.30	10.60	10.76	11.35	11.24	11.37	12.14	12.15	12.24	12.79	12.92
29. BHAGALBHIM	29	14.99	14	05	-	15.80	13.95	-	15.65	15.35	18.85	17.30	11.61	18.95	17.45	17.85	18.85	21.94	18.35	19.75	23.16
30. BHIMPURA	30	15.49	13.45	-		15.20	13.05	14.04	14.83	14.40	-	13.85	17.00	18.41	17.00	17.29	19.30	19.05	19.15	15.20	21.70
31. BHINMAL	31	3.58	3.10	-		4.00	3.15	7.90	4.10	3.68	6.69	4.47	4.00	5.37	4.69	5.98	6.92	6.92	4.57	6.65	7.82
32. CHAJJALA	32	34.90	34.95	-		34.77	34.60	-	34.60	34.50	34.50	34.42	34.48	34.60	33.37	34.65	Dry	38.04	34.81	34.97	35.11
33. DAMAN	33	3.75	3.06	-		375	3.20	3.60	4.00	3.73	3.95	4.30	3.59	4.22	4.85	4.78	5.15	6.61	5.75	6.24	5.55
34. DASPA	34	12.00	7.70	-		10.10	7.37	9.15	9.63	8.70	10.37	10.77	11.24	12.40	12.76	13.00	14.00	14.44	Dry	Dry	Dry
35. DEVDA KA GOLIA	35	-	-	-		-	-	-	3.88	3.50	3.74	4.12	3.85	4.05	5.18	4.33	4.30	4.64	4.79	4.54	4.71
36. DHUMARIA	36	8.91	7.65	-		7.75	7.05	8.70	6.90	6.80	6.90	8.05	7.85	7.90	8.41	8.80	8.86	9.15	9.38	9.56	9.76
37. GOLIA	37	-	-	-		-	-	-	14.20	13.94	16.51	15.82	15.77	16.15	17.31	17.75	19.55	19.82	18.05	19.55	20.75
38. JERAN	38	9.10	8.05	-		8.85	9.40	8.25	9.68	8.30	9.81	9.99	9.17	9.70	10.10	9.99	10.75	11.08	10.78	12.77	11.60
39. JESAWAS	39	8.78	8.93	-		8.70	9.37	8.20	8.00	7.80	8.00	8.51	8.34	8.56	9.00	8.80	8.84	9.94	8.55	9.04	9.12
40. JETU	40	8.15	8.11	-		8.30	8.17	8.35	8.49	8.35	8.60	9.70	8.60	8.71	8.80	8.93	9.25	9.57	8.85	9.96	10.23
41. JUNJANI	41	18.10	18.00	-		18.45	18.90	20.10	19.36	18.95	19.90	19.32	19.20	20.65	-	-	Dry	Dry	Dry	Dry	Dry
42. KHUSLAPURA	42	1.04	4.65	-		6.25	4.65	4.60	6.25	6.15	6.60	7.15	6.51	7.20	7.50	8.50	8.50	10.59	8.80	12.53	12.85
43. LEDERMER	43	7.54	4.70	-		8.70	5.15	-	10.30	-	-	10.10	8.42	9.20	13.90	13.90	9.70	10.20	9.40	10.70	10.90
44. MEDA	44	2.99	2.09	-		-	-	3.25	3.65	3.18	3.48	2.80	2.72	2.85	3.55	3.75	3.72	3.90	3.75	3.89	4.62
45. MORSIM	45	-	-	-		-	-	-	3.20	2.40	3.03	2.90	2.67	3.37	3.90	3.93	4.02	4.47	4.23	4.42	4.84
46. MANDIA	46	5.56	5.40	-		5.45	4.92	5.20	5.55	4.25	4.45	5.27	5.27	6.42	4.85	4.80	5.05	5.66	5.42	5.83	5.81
47. NAVARAUTA	47	3.86	3.53	-		-	-	-	3.80	3.20	3.30	3.89	3.60	3.78	3.78	3.82	4.22	4.20	4.20	4.31	4.41
48. NIMBAWAS	48	11.64	10.40	-		10.85	9.70	8.85	9.25	9.05	9.25	9.40	10.44	11.13	11.71	12.52	13.62	14.14	14.92	15.68	16.11
49. PHAGOTRA	49	18.95	18.91	-		19.00	18.70	18.80	18.85	18.60	18.87	18.61	18.39	18.76	18.61	18.53	19.00	19.19	19.00	19.42	19.41
50. PUNASA	50	18.45	18.44	-		18.80	18.90	19.60	18.95	18.33	18.35	18.22	17.65	18.30	18.22	18,30	18.60	19.12	18.79	20.00	20.45
51. RANGALA	51	10.11	9.43	-		10.35	10.00	11.75	8.70	8.40	8.65	10.05	9.90	10.27	10.60	10.32	10.47	10.70	10.32	10.77	10.67
52. SIWRI	52	8.35	7.80	-		8.20	7.90	9.60	7.90	7.85	8.29	8.20	7.90	8.20	8.25	8.61	8.87	8.94	9.08	9.81	9.63
53. SOBRAWAS	53	8.53	8.55	-		8.40	7.99	8.35	7.45	7.35	7.60	8.36	8.16	8.40	8.05	8.28	8.35	8.43	8.39	8.67	8.99
4.																					
JALORE BLOCK																					
54. AKOLI	54	-	-	-	-	-	-	7.07	7.10	4.45	-	7.50	6.40	8.42	8.50	7.63	9.65	10.85	10.07	11.96	11.40
55. ARTHWARA	55	-	-	-	-	-	-	-	3.72	10.30	-	12.20	9.80	12.60	-	-	-	-	-	-	-
56. BAGRA	56	-	-	-	-	-	-	6.36	6.25	5.85	-	6.80	8.80	8.70	8.10	8.20	8.50	9.30	9.50	11.38	10.25
57. BAKRA ROAD	57	-	-	-	-	-	-	-	8.60	8.62	-	9.20	8.70	9.70	10.10	9.30	10.50	10,70	10.98	11.90	11.95
58. BHAGLI SINDHVAN	58	-	24.75	24.86	96.24	52.24	50	24.19	24.50	24.45	24.27	24.24	23.96	24.00	24.02	23.82	23.82	23.80	23.92	23.80	24.07

59.BILBAR	59	-	-	-	-	-	5.75	5.80	5.70	-	6.96	7.90	9.19	8.17	8.50	16.30	10.20	-	11.41	11.40
60.BOKRA	60	-	13.10	-	14.00	13.20	-	14.70	11.80	17.75	17.88	16.70	16.80	16.65	16.80	20.36	20.00	19.70	21.40	20.80
61.CHANPURA	61	-	-	-	-	-	7.33	4.35	4.30	-	4.12	3.30	4.25	5.25	3.94	4.40	-	-	-	-
62. GODHAN	62	-	9.00	10.15	9.31	8.75	11.35	11.20	10.00	11.50	12.77	11.79	13.25	13.50	14.00	15.22	15.00	16.85	18.41	18.50
63.JALORE	63	-	16.80	16.60	17.00	15.95	15.97	15.85	12.80	13.60	17.90	16.60	19.10	18.30	18.40	20.37	20.60	21.70	21.20	21.60
64.-do-	64	-	-	-	-	-	-	-	-	-	16.20	11.62	11.88	13.08	13.67	16.13	17.10	18.70	18.10	18.17
65.MAYLAWAS	65	-	-	-	-	-	4.81	4.95	4.55	-	6.49	5.50	6.90	7.90	8.30	9.95	9.60	9.07	9.87	9.60
66.MERAUPARLIA	66	-	15.20	-	7.09	7.02	9.30	8.95	9.68	10.76	8.10	10.90	9.84	10.00	9.20	11.20	14.00	15.25	14.80	15.00
67.MESHPURA	67	-	4.85	-	4.39	3.74	4.85	4.80	5.50	5.35	552	4.10	6.15	5.67	5.07	7.80	6.69	9.72	8.80	8.40
68.MITHRI	68	-	12.20	13.65	12.37	9.30	13.50	14.00	14.35	17.00	16.30	13.04	16.02	145	814.56	18.34	18.15	18.10	19.70	18.60
69.RAJANWARI	69	-	16.80	-	-	-	12.00	8.90	9.20	9.31	9.39	12.60	9.46	10.90	11.90	13.95	10.90	10.15	10.20	11.30
70.REWAT	70	-	18.40	-	18.90	18.55	-	18.60	18.60	18.83	18.82	18.67	19.00	19.15	18.70	19.37	19.87	25.44	18.90	18.40
71.SIYANA	71	-	-	-	-	-	-5.65	5.30	4.35	-	5.10	4.70	5.50	6.98	4.82	6.00	5.65	5.75	7.34	6.70
72.SARUDI	72	-	5.60	-	6.75	-	11.30	8.70	10.90	-	10.90	8.10	12.16	10.70	16.11	13.30	13.05	11.35	12.90	12.70
73.BUGAON	73	-	8.35	-	4.50	-	7.46	5.40	-	-	7.70	3.87	8.33	10.20	9.30	14.90	9.75	10.30	6.82	7.35
74.CHANDUR	74	-	-	-	5.80	4.80	8.10	7.80	4.80	-	6.90	9.80	9.80	8.65	6.68	9.75	10.45	7.33	9.20	10.30
75.DHANJI KA BERA	75	-	10.83	-	11.75	10.03	13.30	12.10	11.60	-	12.45	11.00	14.43	13.30	13.15	15.65	15.20	15.14	16.58	16.80
76.DHANSA	76	-	12.40	-	12.52	12.10	12.52	12.85	12.10	-	13.08	12.80	12.90	12.80	13.52	14.90	14.80	15.01	16.18	16.00
77.GOLANA	77	-	2.35	-	3.77	2.48	3.39	4.84	-	-	4.10	3.00	6.60	7.70	6.66	18.35	9.40	8.55	10.89	9.80
78.JHAK8	78	-	6.83	-	-	-	6.20	6.30	11.00	-	9.84	8.35	8.50	10.10	11.90	11.80	13.90	13.30	12.20	11.95
79.JASWANTPURA	79	-	-	-	2.30	1.80	-	2.20	1.85	-	3.12	2.40	2.71	2.90	2.27	3.75	4.68	2.17	3.82	3.55
80.KEHLA	80	-	3.55	-	7.20	2.85	-	8.85	8.90	-	9.40	7.50	8.00	11.05	11.10	14.65	14.70	14.40	16.70	16.60
81.KORITA	81	-	7.10	-	13.05	3.85	-	10.77	9.09	12.10	14.87	6.33	14.50	14.17	18.29	13.48	18.23	10.93	15.59	15.17
82.NABDIKI	82	-	7.45	-	7.10	-	9.76	8.70	7.05	-	1126	8.72	13.17	12.42	11.08	14.15	14.65	12.27	15.13	15.30
83.MODRAN	83	-	7.25	-	8.27	7.39	9.79	7.80	8.30	-	9.00	9.32	9.37	9.15	9.64	10.90	Dry	-	-	-
84.MURTARA SILLI	84	-	-	-	12.80	-	15.03	13.20	13.20	-	18.40	13.14	15.90	16.59	15.15	15.90	16.20	16.09	16.34	13.50
85.PANSERI	85	-	2.80	-	3.65	1.67	-	3.48	2.59	3.15	3.22	3.32	3.55	3.85	4.10	4.00	4.83	4.54	4.63	4.80
86.PALI	86	-	-	-	6.30	3.00	7.05	6.85	5.05	-	7.10	5.20	8.50	9.60	9.45	10.90	10.80	7.77	10.99	8.90
87.PUNAK KALA	87	-	2.40	-	3.01	3.00	3.80	4.40	6.05	-	5.40	6.75	7.91	5.90	4.76	6.05	6.90	6.10	7.44	7.40
88.TATOL	88	-	12.03	-	11.90	11.40	-	11.95	12.50	-	14.20	14.25	16.95	14.92	15.98	18.50	18.35	19.35	20.25	19.85
89.																				
JASWANTPURA BLOCK (RANIWARA BLOCK)																				
89.AJODAR	89	4.75	3.60	-	4.02	3.35	-	4.04	4.11	3.81	3.87	4.26	3.58	3.80	3.86	3.38	3.82	4.28	4.04	3.70
90.AIRI	90	9.50	9.15	-	9.60	8.78	9.60	9.10	8.13	10.44	10.02	9.60	11.54	10.30	13.35	14.37	14.40	15.30	15.57	16.06
91.BHMANWARA	91	1.90	0.58	-	1.52	0.37	-	0.82	0.40	0.57	1.06	0.74	1.10	1.27	1.90	2.40	2.26	2.36	2.50	2.70

59.BILBAR	59	-	-	-	-	5.75	5.80	5.70-	6.96	7.90	9.19	8.17	8.50	16.30	10.20	-	11.41	11.40		
60.BOKRA	60	-	13.10	-	14.00	13.20	-	14.70	11.80	17.75	17.88	16.70	16.80	16.65	16.80	20.36	20.00	19.70	21.40	20.80
61.CHANPURA	61	-	-	-	-	-	7.33	4.35	4.30-	4.12	3.30	4.25	5.25	3.94	4.40	-	-	-	-	
62. GODHAN	62	-	9.00	10.15	9.31	8.75	11.35	11.20	10.00	11.50	12.77	11.79	13.25	13.50	14.00	15.22	15.00	16.85	18.41	18.50
63.JALORE	63	-	16.80	16.60	17.00	15.95	15.97	15.85	12.80	13.60	17.90	16.60	19.10	18.30	18.40	20.37	20.60	21.70	21.20	21.60
64.-do-	64	-	-	-	-	-	-	-	-	-	16.20	11.62	11.88	13.08	13.67	16.13	17.10	18.70	18.10	18.17
65.MAYLAWAS	65	-	-	-	-	4.81	4.95	4.55-	6.49	5.50	6.90	7.90	8.30	9.95	9.60	9.07	9.87	9.60		
66.MERAUPARLIA	66	-	15.20	-	7.09	7.02	9.30	8.95	9.68	10.76	8.10	10.90	9.84	10.00	9.20	11.20	14.00	15.25	14.80	15.00
67.MESHPURA	67	-	4.85	-	4.39	3.74	4.85	4.80	5.50	5.35	552	4.10	6.15	5.67	5.07	7.80	6.69	9.72	8.80	8.40
68.MITHRI	68	-	12.20	13.65	12.37	9.30	13.50	14.00	14.35	17.00	16.30	13.04	16.02	145	814.56	18.34	18.15	18.10	19.70	18.60
69.RAJANWARI	69	-	16.60	-	-	-	12.00	8.90	9.20	9.31	9.39	12.60	9.46	10.90	11.90	13.95	10.90	10.15	10.20	11.30
70.REWAT	70	-	18.40	-	18.90	18.55	-	18.60	18.60	18.83	18.82	18.67	19.00	19.15	18.70	19.37	19.87	25.44	18.90	18.40
71.SIYANA	71	-	-	-	-	-	-5.65	5.30	4.35	-	5.10	4.70	5.50	6.98	4.82	6.00	5.65	5.75	7.34	6.70
72.SHARUDI	72	-	5.60	-	6.75-		11.30	8.70	10.90	-	10.90	8.10	12.16	10.70	16.11	13.30	13.05	11.35	12.90	12.70
73.SUGAON	73	-	8.35	-	4.50	-	7.46	5.40	-	-	7.70	3.87	8.33	10.20	9.30	14.90	9.75	10.30	6.82	7.35
74.CHANDUR	74	-	-	-	5.80	4.80	8.10	7.80	4.80	-	6.90	9.80	9.80	8.65	6.68	9.75	10.45	7.33	9.20	10.30
75.DHANJI KA BERA	75	-	10.83	-	11.75	10.03	13.30	12.10	11.60	-	12.45	11.00	14.43	13.30	13.15	15.65	15.20	15.14	16.58	16.80
76.DHANSA	76	-	12.40	-	12.52	12.10	12.52	12.85	12.10	-	13.08	12.80	12.90	12.80	13.52	14.90	14.80	15.01	16.18	16.00
77.GOLANA	77	-	2.35	-	3.77	2.48	3.39	4.84	-	-	4.10	3.00	6.60	7.70	6.66	18.35	9.40	8.55	10.89	9.80
78.JHAK8	78	-	6.83	-	-	-	6.20	6.30	11.00	-	9.84	8.35	8.50	10.10	11.90	11.80	13.90	13.30	12.20	11.95
79.JASWANTPURA	79	-	-	-	2.30	1.80	-	2.20	1.85	-	3.12	2.40	2.71	2.90	2.27	3.75	4.68	2.17	3.82	3.55
80.KEBLA	80	-	3.55	-	7.20	2.85	-	8.85	8.90	-	9.40	7.50	8.00	11.05	11.10	14.65	14.70	14.40	16.70	16.60
81.KORITA	81	-	7.10	-	13.05	3.85	-	10.77	9.09	12.10	14.87	6.33	14.50	14.17	18.29	13.48	18.23	10.93	15.59	15.17
82.NABDIKI	82	-	7.45	-	7.10	-	9.76	8.70	7.05	-	1126	8.72	13.17	12.42	11.08	14.15	14.65	12.27	15.13	15.30
83.MODRAN	83	-	7.25	-	8.27	7.39	9.79	7.80	8.30	-	9.00	9.32	9.37	9.15	9.64	10.90	Dry	-	-	-
84.MURTARA SILLI	84	-	-	-	12.80	-	15.03	13.20	13.20	-	18.40	13.14	15.90	16.59	15.15	15.90	16.20	16.09	16.34	13.50
85.PANSERI	85	-	2.80	-	3.65	1.67	-	3.48	2.59	3.15	3.22	3.32	3.55	3.85	4.10	4.00	4.83	4.54	4.63	4.80
86.PAOLI	86	-	-	-	6.30	3.00	7.05	6.85	5.05	-	7.10	5.20	8.50	9.60	9.45	10.90	10.80	7.77	10.99	8.90
87.PUNAK KALA	87	-	2.40	-	3.01	3.00	3.80	4.40	6.05	-	5.40	6.75	7.91	5.90	4.76	6.05	6.90	6.10	7.44	7.40
88.TATOL	88	-	12.03	-	11.90	11.40	-	11.95	12.50	-	14.20	14.25	16.95	14.92	15.98	18.50	18.35	19.35	20.25	19.85
89.																				
JASWANTPURA BLOCK (RANIWARA BLOCK)																				
89.AJODAR	89	4.75	3.60	-	4.02	3.35	-	4.04	4.11	3.81	3.87	4.26	3.58	3.80	3.86	3.38	3.82	4.28	4.04	3.70
90.AIRI	90	9.50	9.15	-	9.60	8.78	9.60	9.10	8.13	10.44	10.02	9.60	11.54	10.30	13.35	14.37	14.40	15.30	15.57	16.06
91.BHMANWARA	91	1.90	0.58	-	1.52	0.37	-	0.82	0.40	0.57	1.06	0.74	1.10	1.27	1.90	2.40	2.26	2.36	2.50	2.70

2. BARETHA	92	5.62	3.78	-	-	-	5.38	6.25	5.30	6.55	7.54	4.75	6.15	7.55	8.07	9.07	9.62	8.51	8.46	8.52
3. CHATWARA	93	8.13	7.54	-	8.25	6.88	=	7.85	7.38	7.50	8.02	7.73	8.90	9.19	8.59	9.31	10.28	8.99	9.84	9.98
4. DADOKI	94	3.68	2.68	-	-	-	-	3.15	2.94	3.01	6.17	6.10	3.40	3.60	4.57	4.99	5.40	5.74	5.80	6.22
5. DHANOL	95	16.01	1568	-	-	13.25		13.85	13.05	13.55	13.95	14.00	14.35	14.88	14.47	15.04	15.50	9.49	9.55	9.75
6. DHANWARA	96	15.00	14.60	-	13.42	12.30	12.45	13.07	11.70	12.90	13.52	13.35	13.60	13.85	14.00	15.00	15.55	15.87	15.50	16.99
7. DIGAON	97	15.10	40.51	-	-	-	-	45.00	39.36	44.75	49.42	39 .30	46.37	47.50	46.07	46.24	46.58	39.69	42.08	39.51
8. FATHEHPURA MALWARA	98	8.35	6.46	-	8.18	9.63	6.95	8.35	6.46	8.05	8.22	8.45	10.64	9.77	10.80	10.95	11.05	9.99	11.30	11.05
9. GANG	99	13.35	13.02	-	-	10.75	-	12.75	10.95	12.65	13.16	12.42	12.75	13.30	12.94	13.05	11.05	14.55	15.38	13.71
10. GOLWARA	100	3.52	2.35	-	3.95	1.95	3.15	3.80	3.25	3.70	4.12	3.95	4.00	7.30	7.16	8.79	9.00	8.02	8.88	8.56
11. HARSHWARA	101	26.30	26.76	-	-	24.90	-	23.80	23.20	23.50	24.11	24.27	24.00	24.27	25.75	26.29	26.50	24.70	24.85	24.72
12. HETPURA	102	14.26	14.55	-	15.30	13.92	-	13.90	14.70	14.00	14.30	15.78	15.00	15.40	16.40	16.30	16.68	17.05	16.47	17.03
13. KAGMAL	103	-	3.82	-	5.60	2.46	4.30	5.00	4.30	5.10	6.17	6.10	6.96	7.28	7.70	7.40	10.13	9.67	10.10	9.80
14. KARDA	104	-	-	-	-	-	-	8.65	7.85	8.55	10.63	9.25	11.65	11.48	10.55	13.07	13.23	12.40	13.85	12.89
15. KORKA	105	25.35	25.15	-	25.08	24.70	-	24.77	24.58	24.54	24.60	24.39	24.51	24.52	24.53	24.53	24.58	24.52	23.68	24.69
16. LAKHAWAS	106	5.49	4.58	-	6.55	4.32	5.25	6.15	6.05	6.40	8.77	7.20	10.70	11.20	13.20	14.20	15.20	14.60	14.89	14.67
17. MARUWARA	107	10.35	10.15	-	-	-	-	9.60	9.74	10.10	10.77	10.35	10.60	11.05	10.51	10.60	11.41	10.10	11.34	11.46
18. PAL	108	16.08	16.17	-	16.55	14.15	-	15.27	15.18	15.42	15.60	15.74	15.95	16.11	16.35	16.54	16.97	16.85	16.08	17.10
19. RAMPURA	109	2.41	1.52	-	1.75	1.60	-	1.70	1.60	1.72	1.82	1.73	1.70	1.81	1.87	1.90	2.10	1.80	2.18	2.21
20. RANIWARA	110	-	-	-	-	2.14	6.95	3.70	2.83	3.85	3.81	3.78	4.73	4.80	4.70	5.40	5.74	5.69	6.48	6.87
21. RATANPURA	111	6.40	6.07	-	-	4.25	-	6.00	6.08	6.50	6.60	7.00	7.26	7.62	7.51	7.60	8.00	8.35	8.27	8.48
22. ROPSI	112	5.60	4.56	-	-	-	-	6.62	5.11	6.60	5.70	4.46	5.60	5.68	6.03	8.66	7.48	7.75	8.04	7.67
23. RORA.	113	5.30	4.95	-	4.43	4.25	-	3.65	4.45	4.15	4.32	4.15	5.51	4.37	6.60	4.88	5.73	4.35	6.51	6.15
24. SEWARA	114	31.15	31.73	-	31.52	31.40	-	31.20	30.70	30.36	30.27	30.19	30.56	30.30	30.35	30.76	30.78	30.80	31.07	30.75
25. VANDAR	115	9.48	8.30	-	10.55	6.92	-	11.14	9.75	9.85	10.15	9.15	9.65	10.55	11.05	12.05	12.43	11.20	9.85	9.84
ANCHORE BLOCK																				
26. ACHAIPURA	116	7.70	7.65	-	-	6.50	-	6.60	6.40	6.70	6.65	7.04	7.29	7.35	7.22	7.58	7.59	7.27	7.31	7.55
27. AGDAWA	117	10.57	10.08	-	-	6.95	10.65	9.80	10.08	10.28	10.58	10.26	10.06	10.17	10.27	10.30	10.53	10.59	10.50	10.65
28. AMLI	118	3.55	3.45	-	-	2.65	-	3.33	3.50	3.60	3.73	3.74	3.82	-	-	Dry	Dry	Dry	Dry	Dry
29. ANKHOL	119	2.66	-	-	-	-	-	2.92	2.45	2.59	2.80	2.62	2.75	3.11.	3.07	2.97	3.25	3.09	3.08	3.31
30. ARNAI	120	-	-	-	-	22.70	-	25.30	24.61	24.40	24.70	24.89	25.10	25.65	25.86	25.84	26.30	25.91	25.33	25.39
31. ARWA	121	-	-	-	-	4.35	-	-	-	-	4.75	4.64	4.78	4.95	4.73	4.95	5.01	4.95	5.05	5.04
32. BAWARLA	122	3.43	4.66	-	-	-	-	4.87	3.21	3.77	4.68	4.08	5.45	5.21	5.65	5.21	4.98	3.97	5.75	5.61
33. BHANDRINA	123	11.92	11.73	-	-	7.40	-	11.15	11.03	11.05	11.15	11.33	11.55	11.56	11.63	11.85	11.81	11.96	12.11	12.21
34. BHANWATRA	124	-	-	-	-	-	-	2.35	2.50	2.55	2.52	-	31.31	2.38	2.71	2.45	2.64	2.74	3.02	-
35. BINJROL	125	-	-	-	-	-	-	13.34	13.00	13.48	13.40	13.39	13.50	14.01	13.67	14.21	14.45	13.98	14.14	14.40
36. BINJROL KA GOLIA	126	12.65	12.50	-	-	12.10	-	12.10	11.50	11.90	12.00	12.08	12.31	12.31	12.30	12.51	12.56	12.56	12.76	12.82

			4.65	-	-	3.83	-	3.75	3.68	3.75	4.05	3.90	4.53	4.45	4.25	4.60	5.01	4.50	4.71	4.91
128. CHITALWANA	128	5.37	5.30	-	-	3.85	5.50	5.05	4.95	5.50	5.20	5.11	5.41	5.66	5.84	6.20	6.40	6.39	6.67	6.75
129. CHOTA AKODIA	129	-	-	-	-	-	-	2.60	-	1.86	-	-	-	-	-	-	-	-	-	-
130. DEDUA	130	10.50	10.40	-	-	8.76	-	9.08	8.95	9.24	9.27	9.30	9.38	9.40	9.50	Dry	9.89	9.74	6.89	9.90
131. DHANI GUDA HEMA	131	4.55	4.39	-	-	-	4.50	4.65	4.53	4.65	4.63	4.54	4.70	4.89	4.68	4.90	5.00	5.65	Dry	Dry
132. DHANTA	132	22.05	21.95	-	-	20.95	-	20.62	20.41	20.40	20.05	19.95	20.20	19.07	20.13	20.00	19.91	20.00	18.88	18.87
133. DUGAWA	133	9.18	9.00	-	-	-	-	1.60	0.91	1.10	1.45	1.65	2.05	2.15	3.07	3.23	3.93	3.59	3.80	4.24
134. DUNGRI	134	25.15	25.95	-	-	25.15	-	-	-	-	24.80	24.75	24.85	24.76	24.88	24.85	24.28	25.02	25.01	24.92
135. GARDALI	135	14.90	14.92	-	-	13.44	-	13.20	13.60	13.55	13.62	13.68	13.80	13.87	13.97	14.17	14.05	14.05	13.16	14.16
136. HADETAR	136	16.95	16.98	-	-	-	-	16.93	14.87	15.43	15.00	14.81	15.23	15.15	15.08	15.73	15.78	15.11	15.74	15.59
137. HOTIGAON	137	-	-	-	-	-	-	4.05	4.25	5.08	5.17	4.70	5.22	5.17	5.15	5.68	5.78	5.55	5.77	5.81
138. JANWI	138	-	-	-	-	-	-	2.10	1.70	1.77	2.07	-	2.40	2.50	2.28	2.15	2.21	2.13	1.37	3.99
139. JHAB	139	2.69	2.02	-	-	2.12	2.05	2.60	2.30	284	4.03	2.47	3.04	3.24	3.03	3.00	3.57	3.36	3.50	3.94
140. JODHAWAS	140	-	-	-	-	-	-	2.95	2.50	2.80	2.42	2.35	2.85	3.05	3.45	4.67	4.00	2.87	4.28	3.31
141. KERIA	141	3.50	1.92	-	-	1.86	2.25	2.70	2.60	6.55	6.77	5.60	6.40	7.20	7.19	7.33	7.47	7.50	7.65	7.75
142. KHARA	142	-	-	-	-	-	-	33.33	31.45	31.55	31.75	31.30	31.53	31.85	32.11	32.25	32.89	32.02	31.93	32.73
143. KHEJDIYALI	143	-	-	-	-	-	-	2.60	-	2.95	1.85	-	-	-	-	-	-	-	-	-
144. LALPUR	144	11.60	10.30	-	-	8.80	-	9.11	9.12	9.49	9.53	9.60	9.90	9.81	10.02	10.35	9.91	10.25	10.37	10.36
145. MELAWAS	145	3.00	2.55	-	-	-	2.60	2.75	2.45	3.15	2.97	2.64	2.79	2.84	2.92	3.14	3.24	3.35	3.32	3.32
146. NALDHRA	146	-	-	-	-	-	-	2.80	2.56	3.48	3.52	-	2.80	3.20	3.05	3.20	Dry	Dry	Dry	Dry
147. NIMBAU	147	11.26	10.76	-	-	10.14	10.95	10.82	10.50	11.50	11.02	13.39	11.65	11.75	11.40	11.70	11.79	11.30	12.20	12.00
148. PATHMEDA	148	-	-	-	-	-	-	17.10	16.84	16.79	16.65	16.56	16.72	16.61	16.52	16.80	16.83	18.40	16.93	16.86
149. PLADAR	149	-	-	-	-	10.78	-	10.20	9.70	9.90	10.00	9.90	10.00	10.49	10.49	10.58	10.71	11.39	10.50	10.44
150. PAMPURA	150	-	-	-	-	-	-	3.25	3.21	3.38	3.50	-	-	-	-	-	-	-	-	-
151. RANODAR KA GOLIA	151	2.12	1.45	-	-	-	2.40	1.70	1.80	2.10	2.52	0.99	1.98	2.16	5.30	2.72	2.74	2.55	2.62	2.55
152. SAKRIA KI DHANI	152	-	-	-	-	-	-	3.60	3.30	4.18	4.08	-	2.81	3.18	3.50	4.45	4.10	3.98	Dry	-
153. SANCHORE	153	12.94	12.67	-	-	11.60	-	11.74	11.60	11.80	11.92	11.90	12.00	11.99	12.30	12.60	12.89	12.50	12.79	12.75
154. SANGDAVA	154	5.25	5.20	-	-	4.07	-	4.30	4.50	4.70	4.67	4.96	4.32	5.20	5.30	5.38	5.24	5.29	5.09	5.24
155. SANKAD	155	27.0404	21.12	-	-	25.55	-	25.18	24.81	24.98	24.80	24.47	24.56	24.35	24.19	24.38	24.34	24.11	24.36	24.30
156. SARNAU	156	27.73	27.65	-	-	26.28	-	25.62	25.18	24.94	24.94	24.68	24.61	24.47	24.34	24.29	24.30	24.15	24.12	24.11
157. SHILU	157	-	-	-	-	-	-	8.50	8.25	8.90	8.50	8.45	8.55	8.75	9.25	10.05	10.25	10.15	11.75	9.95
158. SIWARA	158	6.12	5.87	-	-	6.22	-	6.03	5.70	5.80	6.17	6.33	6.40	6.78	6.93	6.80	7.05	6.71	6.14	7.19
159. SUNTRI	159	-	-	-	-	-	-	2.75	3.25	3.60	4.04	-	2.42	-	-	-	Dry	Dry	Dry	Dry
160. SURAWA	160	-	-	-	-	-	-	4.65	3.90	4.85	4.49	4.10	4.40	4.80	5.25	6.18	6.13	6.15	6.40	5.62

162.TEMTROL	162	6.21	5.92	-	-	5.93	-	1.00	1.20	2.15	1.97	-	2.23	1.68	1.98	2.64	2.69	2.05	2.45	-
163.VANK 163		-	-	-	-	-	-	6.64	6.38	6.30	6.50	5.97	6.41	6.00	5.40	6.50	6.75	6.60	6.76	6.87
164.VIROL	164	10.41	10.25	-	-	6.75	-	3.12	3.00	3.70	3.72	-	-	-	-	-	Dry	Dry	Dry	Dry
SAILA BLOCK								7.40	4.70	5.95	6.55	8.65	6.75	7.45	7.50	7.60	7.90	7.24	7.46	7.49
165.BAKRA	165	8.58	8.05	-	8.70	8.04	8.92	8.70	8.35	9.11	9.05	8.64	9.46	9.48	9.30	9.81	9.94	10.05	10.70	10.70
166.BISALA	166	-	9.90	-	10.05	9.62	9.68	9.95	10.55	9.70	9.80	9.40	10.01	9.85	9.92	10.15	10.35	10.50	10.75	10.90
167.DAUTRA	167	29.95	30.05	-	-	30.35	30.20	30.50	30.50	30.52	30.60	30.34	30.68	30.90	30.26	30.26	30.37	25.60	30.90	30.75
168.BISANGARH	168	10.08	9.70	-	11.10	9.85	11.00	11.15	11.00	12.53	11.96	11.10	12.48	12.25	12.56	15.70	13.80	11.50	12.80	14.70
169.CHARAU	169	8.18	7.47	-	-	7.63	8.35	8.50	8.30	8.69	8.55	8.35	9.00	9.02	9.18	9.25	9.69	9.70	10.16	10.80
170.DODHAL	170	5.32	4.83	-	5.20	4.54	4.70	4.86	4.68	4.92	5.01	4.75	5.30	5.25	5.40	5.92	6.15	5.72	6.00	Dry
171.DAHIWA	171	27.60	27.55	-	27.57	27.48	27.50	27.70	27.41	27.53	27.48	27.35	27.76	27.60	27.78	27.80	27.81	27.85	28.15	27.04
172.DETA	172	-	-	-	-	-	-	7.80	7.00	8.00	8.10	6.40	7.92	8.25	8.42	9.17	9.41	9.43	9.95	10.00
173.GOL	173	5.33	4.55	-	4.85	4.15	5.35	5.90	5.85	7.05	6.25	5.43	5.75	6.46	6.90	7.57	8.26	8.15	8.60	8.70
174.GOLIYA	174	9.90	9.90	-	9.80	9.52	10.14	10.30	10.15	10.41	10.34	10.05	10.45	10.47	10.60	11.30	11.27	10.95	12.60	11.60
175.HARMU	175	7.00	6.92	-	7.05	6.58	7.15	7.00	6.93	7.19	7.18	7.45	7.45	7.37	7.53	8.05	8.11	8.25	8.05	8.71
176.KHETLAWA	176	10.36	9.92	-	-	-	-	10.13	10.00	10.25	9.85	9.55	10.95	10.79	10.85	10.45	11.37	11.17	11.78	10.70
177.KESWANA	177	7.53	-	-	7.55	7.00	7.54	8.10	8.00	8.37	8.20	7.76	8.80	8.56	9.10	10.00	11.00	10.25	12.00	12.20
178.KUABER	178	19.15	-	-	-	-	-	25.63	25.10	25.20	25.60	25.05	26.10	25.60	26.00	26.50	26.10	27.05	27.35	26.60
179.MEGALWA	179	9.29	8.85	-	9.45	9.25	-	9.95	8.75	10.15	9.91	9,66	10.27	10,20	10.07	10.60	10.61	10.55	10.05	11.09
180.MOKNI	180	26.20	25.95	-	27.10	26.25	26.24	27.15	26.90	26.64	26.70	26.33	27.70	26.90	26.60	26.64	26.81	27.10	28.30	26.90
181.KHEDA																				
181.OTHWARA	181	5.02	3.89	-	4.81	4.40	-	5.35	4.65	5.05	5.52	4.56	5.20	6.00	6.00	6.76	6.98	6.80	7.86	7.20
182.PAHARPURA	182	10.04	49.27	-	11.07	9.05	12.80	11.50	11.00	13.22	12.85	10.30	13.98	14.00	18.20	16.00	18.00	18.40	20.50	20.80
183.PANTHERI	183	-	9.75	-	11.95	11.75	11.55	12.15	11.95	12.15	12.15	11.85	12.20	12.23	12.25	12.60	12.64	12.70	13.10	13.15
184.RATUNJA	184	5.38	5.25	-	5.72	5.20	5.65	5.95	5.65	6.02	6.04	5.43	5.95	6.05	6.16	5.69	5.90	6.80	-	-
185.SANPHARA	185	5.28	3.48	-	6.25	4.13	6.50	7.30	4.60	6.52	7.42	3.87	5.68	6.40	8.50	9.07	10.22	11.95	11.50	12.90
186.SAILA	186	6.65	6.00	-	-	6.12	7.15	7.25	6.85	7.39	7.57	6.70	7.38	7.72	8.02	8.70	8.95	8.80	8.80	9.60
187.SAILA	187	-	-	-	-	-	-	-	-	-	6.60	5.52	6.30	6.68	7.00	8.65	Dry	Dry	Dry	Dry
188.SIRANA	188	15.15	15.05	-	14.95	14.68	14.60	14.70	14.63	14.75	14.70	14.78	15.00	15.00	15.05	15.49	15.32	15.21	15.43	15.58
189.TILORA	189	5.62	6.40	-	-	4.22	5.50	5.87	5.40	5.76	4.87	5.38	-	5.20	5.10	6.70	4.99	5.00	5.00	5.60

REMARKS : I = Premonsoon period II= Postmonsoon period III = Post irrigation period.

(A) STATEMENT SHOWING THE DETAILS OF EXPLORATORY DRILLING CARRIED OUR IN DISTRICT DURING THE PERIOD 1976-77 TO 1982-83

S. No.	Village	Panchayat Samiti	Year of construction	Type of well/ Ex/ob/ Pz.	Depth drilled in Mtrs	Pipe assy.lowered in mtrs(in a.g.l) with size	SWL in Mtrs	Drawdown	Discharge in M^3/day	Quality of water EC	F	NO_3
1	2	3	4	5	6	7	8	9	10	11	12	13
1-	Bhainswara	Ahore	76-77	E	70.00	68.60 (10"x8")	6.61	3.88	864	1800	1.32	15.00
2.	Sankarna	Jalore	77-78	E	56.00	51.37 (10"x8")	3.65	8.18	216	6750	2.40	Traces
3.	Jaitpura-Jogni	Ahore	77-78	E	77.00	77.00 (8")	7.60	2.00	736	10700	2.40	15.00
4.	Umedpura	Ahore	"	E	81.00	82.00 (10")	9.05	23.50	592	2711	2.00	Tr.
5.	Saila	Saila	"	E	175.50	175.11 (12½x8"x6")	8.00	5.00	1152	1320	1.60	-
6.	Bautra	"	"	E	290.00	251.00 (12"x6")	30.00	4.00	1008	880	Tr	55.00
7.	Rama	Ahore	"	E	53.00	51.70 (10½x8")	8.00	11.85	320	3796	-	75.00
8.	Raniwara	Raniwara	"	E	51.00	52.00(8")	7.40	3.10	1008	1080	1.60	15.00
9.	Bhadrajun	Ahore	"	E	53.50	- Abandoneddue to saline formation water				35210		
10.	Narsana	Saila	"	E	108.00	- Abandoned due to poor discharge				6550		
11.	Bhinmal	Bhinmal	"	E	60.00	25.00 (6")	5.50	-	16	10350	1.00	15.00

12. Sankad	Sanchore	77-78	O	49.50	45.00 (6")	33.0	8.0	216	4500	1.04	228
13. Bagora	Bhinmal	"	O	30.00	31.00 (6")	2.15	2.45	776	5555	2.5	28
14. Rajanwadi	Jalore	78-79	E	75.00	75.00 (10"x8")	7.8	17.00	184	1650	7.00	10
15. Siyana	"	"	E	31.00	31.50 (8")	4.20	2.00	736	-	-	-
16. Hariyali	Sanchore	"	E	300.00	130.50 (10")	10.00	-	896	16200	0.40	25
17. Meda	"	"	E	280.00	162.00 (10"x8")	15.00	2.00	576	6200	0.80	110
18. Bagra	Jalore	"	E	101.00	98.00	4.75	7.75	536	3400	2.80	-
19. Raithal	Ahore	"	E	30.00	Abandoned due to saline formation water.	2.80			43000	-	-
20. Kolar	Jaswantpura	"	E	99.00	13.50(6")	6.00	10.38	80	1470	4.00	125
21. Jaswantpura	"	"	E	9.05	-	8.00	Abandoned due to hard formations				
22. Degaon	Raniwara	79.80	E	285.00	275.75 (10"x6")	49.50	7.50	4.80	6400	2.80	25
23. Modran	Bhinmal	"	"	80.00	78.50 (10"x6")	8.30	3.05	1344	1080	5.32	10
24. Bhuti	Ahore	"	E	19.00	-	4.00	Abandoned due to poor discharge				
25. Rarwara	"	"	o	23.00	20.60(6")	80.00	-	160	35000	7.68	-
26. Panseri	Jaswantpura	80-81	E	33.00	31.10 (10"x8")	5.15	5.00	592	480	-	5.00
27. Jaitpura (Badgaon)	Raniwara	"	E	57.00	55.00(10"	13.00	-	592	360	-	10.00

28.	Pladar	Sanchore	80-81	E	300.0	278.00 (10"x6")	14.50	-	567	5400	2.8	75
29.	Punasa	Bhinmal	"	P	300.0	101.00(4")	20.50	-	432	1410	1.32	25.00
30.	Daspa	"	81-82	E	310.00	198.00(4")	19.12	6.00	737.6	9000	0.44	-
31.	Bhinmal Golia	"	"	E	116.00	117.00(8")	17.50	8.50	396	3400	3.60	60
32.	Balwara	Saila	"	E	127.00	122.50(4")	6.50	-	504	15300	-	-
33.	Dungri	Sanchore	"	E	100.00	97.00(4")	25.00	-	129.6	40000	3.20	15.00
34.	Korita	Jaswantpura	"	E	57.00	6.50(6")	8.00	-	144	6200	7.60	15.00
35.	Khanpur	Bhinmal	"	E	57.00	9.50(6")	8.00	4.21	288	5000	1.00	10.00
36.	Chatwara	Raniwara	"	E	47.00	9.60(6")	Abandoned due to poor discharge					
37.	Chandur	Jaswantpura	"	E	10.00	-	Abandoned due to compact formation.					
38.	Jodhawas	Sanchore	"	O	305.00	284.70(4")	1.75	2.0	320	5650	1.60	15.00
39.	Kuaber	Saila	"	O	221.00	219.85(4")	26.35	-	6576	3000	-	10.5
40.	Paoli	Jaswantpura	"	P	27.00	9.90(6")	10.50	-	288	1750	7.00	410.0
41.	Batera	Bhinmal	82-83	E	305.00	288.65(4")	4.10	-	576	7500	-	-

B. STATEMENT SHOWING THE DETAILS OF EXPLORATORY DRILLING CARRIED OUT IN JALORE DISTRICT DURING THE PERIOD (1978-79 TO 1982-83) UNDER LUNI BASIN SCHEME

42.	Janwi	Sanchore	80-81	E	300	Abandoned due to lack of granular zone.						
43.	Golana	Jaswantpura	81-82	E	57.0	12.0(6")	7.80	-	14.40	1680	2.8	15
44.	Dahiwa	Saila	82-83	E	276.0	241.85(4")	5.80	-	792	1760	1.20	45
45.	Chajjala	Bhinmal	"	E	315.00	287.25(4")	33.0	-	790	14500	2.0	55
46.	Alwara	Saila	"	E	300.0	288.80(4")	10.35	10.0	576	1600	0.80	30
47.	Binjrol	Sanchore	"	E	304.0	285.13(4")	16.00	2.0	1072	12000	0.80	40
48.	ka Golia											
48.	Ratanpura (Zakhri)	Raniwara	"	E	50.0	41.0 (4")	5.50	-	532	1102	1.20	45

C. STATEMENT SHOWING THE DETAILS OF BORE HOLE DRILLED UNDER FAMINE(PERIOD 1969)

49.	Bhagli	Jalore	1969	-	99.0	63.47(8")	28.30	7.62	435.2	1200ppm	-	-
50.	Jalore	"	"	-	64.0	-	-	-	-	-	-	-
51.	Jakhal	Sanchore	"	-	100.0	-	13.00	-	612	-	-	-
52.	Surawa	"	"	-	100.0	-	5.80	-	720	100ppm	-	-
53.	Mokhupura	"	"	-	60.0	-	13.0	-	-	-	-	-
54.	Goindla	Ahore	"	-	79.50	-	3.50	-	208	-	-	-
55.	Bedana	"	"	-	70.00	-	6.00	-	432	-	-	-
56.	Sankhwali	"	"	-	70.00	-	22.50	-	288	-	-	-
57.	Thoor	Bhinmal	"	-	80.00	-	11.00	3.00	208	-	-	-
58.	Harji	Ahore	"	-	54.00	-	6.00	4.00	208	-	-	-
59.	Baglsepta	Bhinmal	"	-	75.00	-	8.00	6.00	776	-	-	-
60.	Devra	Sanchore	1969	-	90.00		11.00	6.00	288	-	-	-
61.	Kuda	"	"	-	199.64	-	27.10	16.79	827	-	-	-
62.	Guda Inderpura	Ahore	"	-	53.00	-	4.00	10..	2.08	-	-	-

NOTE :Details of only one bore hole (expl./obs./piez./etc) are given for report purposes.

ANNEXURE 2(b)

DETAILS OF BORE HOLES DRILLED BY E.T.O.UNDER UNDP.
IN JALORE DISTRICT(RAJCO 5/-(5,)

S.No.	Name of site	Pancha-yat Samiti	Drill-ing in Metres	Depth of base-ment in Mtrs.	Granular Zone tapped in metres.	Tested discha-rge in M^3/day	S.W,L. in mtrs	Draw down in metres	CHEMICAL QUALITY T.D.S (PPM)	Cl (PPM)
1	2	3	4	5	6	7	8	9	10	11
1.	Padarli	Ahore	56.60	54.2	-	288	4.29	9.20	7440	3030
2.	Panchawa	"	53.22	54.25	20.19-43.05	180	5.35	11.94	520	160
3.	Garal	"	85.00	70.70	27.8-32.6 37.7-41.7 44.9-59.8	380.8	9.40	9.39	570	100
4.	Ahore	"	57.91	50.90	18.26-24.38 27.43-47.55	579.2	8.10	5.93	385	50
5.	Un	"	82.30	60.96	10.36-21.17 25.77-30-34 35.53-41.05 51.71-67.23	580.8	6.55	6.94	510	127
6.	Leta	Jalore	41.45	31.70	24.08-36.68	460.8	7.94	8.23	740	255
7.	Taskant ki bari	"	45.70	45.70	18.05-23.7	330	11.50	5.54	18484	5120
8.	Mespura	"	71.02	44.19	23.29-63-29	-	-	-	5360	1910
9.	Mithri	"	91.14	87.78	27.43-30.84 63.56-71.78	650.8	12.17	9.32	2920	1135
10.	Ghona	Ahore	50.90	30.78	-	-	-	-	-	-
11,	Sanphara	Saila	102.72	98.15	7.92-17.37	129.6	4.94	4.87	300	40

1	2	3	4	5	6	7	8	9	10	11
12.	Nawa Khera	Saila	85.95	-	6.3- 48.57	496.0	5.13	10.83	360	40
13.	Bokra	Jalore	47.54	6.00	-	-	-	-	-	-
14.	Paharpura	Saila	77.72	-	11.75-14.80 21.58-27.90 30.95-43.14	359.5	6.21	6.33	340	40
15.	Tikhi	"	97.84	97.84	10.33-13.88 25.50-46.76	518.4	4.8	4.0	445	50
16.	Ratunja	"	154.84	154.84	91.44-137.76	21.6	4.42	13.2	4010	1730
17.	Elana	"	163.07	163.07	14.63-24.08 30.48-44.20	1226.7	4.31	6.26	1460	375
18.	Keshwana	"	161.54	151.48	43.59-48.16 51.57-55.47 58.82-62.18 62.69-72.85 76.81-81.99	1497.6	4.33	7.20	760	170
19.	Degaon	Jalore	78.94	71.02	17.83-30.66	944	5.34	7-27	1900	730
20.	Dudsi-I	"	90.83	88.70	34.83-83.10	-	-	-	-	-
21.	-do- II	"	74.68	74.68	-	-	-	-	-	-
22.	Santhu	"	68.58	44.2	9.10-24.34 31.04-41.10	972	3.34	8.00	1010	355
23.	Nun	"	104.50	91.22	25.60-38.71 41.94-80.16 81.69-86.89	432	7.71	7.80	1130	300
24.	Bakra	"	127.10	121.31	5.49 -20.74 64.63-112.58	1530	5.12	3.86	2284	630
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]					
25.	Charan	Saila	221.89	-	27.43-33.67 64.30-70.40 85.87-98.27	1090.8	5.76	6.40	4960	2720

1	2	3	4	5	6	7	8	9	10	11
26.	Meghalwa	Saila	205.43	195.87	29.07-58.12 67.14-79.08	626.4	10.92	2.03	1960	570
27.	Golia	"	124.67	-	23.14-41.60	212.88	5.18	7.00	1100	145
28.	Surana	"	91.74	18.44-38.25		2613	4.41	6.33	550	80
29.	Tilora	"	121.31	-	16.64-36.50 61.20-73.86	810	5.24	6.29	900	195
30.	Dadhal	"	220.67	20.73	20.73-40.23 42.98-54.25 73.13-78.94 84.73-89.61 95.40-99.68 107.29-120.09 141.42-146.91 155.04-160.63 170.69-180.44	2096	-	6.96	690	115
31.	Bagora	Saila	195.07	-	21.64-43.83 53.59-64.56 70.35-79.49	3336.4	2.61	3.98	1690	390
32.	Bhinmal	Bhinmal	45.78	31.70	24.78-43.03	-	-	-	-	-
33.	Bhagalbhim	"	42.70	28.65	-	-	-	-	-	-
34.	Jujani	"	216.10	-	62.36-70.26 108-74-114.83 122.00-140.92 163.93-176.15 180.11-184.61 196.06-206.71	784.0	23.99	6.62	4660	2090

1	2	3	4	5	6	7	8	9	10	11
35.	Sewari	Bhinmal	210.62	-	-	-	-	-	-	-
36.	Kura	Sanchore	199.64	-	69.80-80.16 108.74- 95.40-108.20 126.49-139.04 159.16-178.36 185.62-181.34	184.0	26.78	16.79	1130	305
37.	Arnai	Bhinmal	222.49	-	61.6-73.9 95.4-104.8 122.6-134.8 127.9-140.9 152.9-159.2 177.1-180.6	217.6	23.90	5.98	7674	3900
38.	Dhumaria	"	199.00	-	4.00-53.3-		-	-	- 4996	2956
39.	Dangra	Saila	167,50	167.5	-	1935.5	-	-	-	-
40.	Batera	"	153.00		91.4-97.5 118-8-126.4 136.5-143.8	-	-	-	5088 5848 1484	2150 2850 550
41.	Posana	"	182.5	-	26.9 45.01 150	1987.2	-	-	890. 614 2234	130 80 860
42.	Turan	"	182.8		52.4-54.8 88.3-92.3 111.2-112.7 146.3-150.5 153.3-160.6	-	-	-	5414 3824 2676 4516 -	2960 2100 1100 2100 -
43.	Dangra-II	Saila	167.6	167.6	9.31 40.88 84.51 101.2 121.4	1935	-	-	352 696 1690 3760 10628 14540	45 195 710 1890 5570 8500

APPEXDIX -3

DETAILS OF TUBEWELLS CONSTRUCTED UNDER EXPLOITATION PROGRAMME (C.T.S. AND C.P.A.P) BY GROUND WATER DEPARTMENT (PERIOD YEAR 1974 - 1982)

S No.	Village Name	Owner's name	Total depth in mtrs.	Aquifer tapped	Discharge in cubic meter day	Remarks
1	2	3	4	5	6	7
A. ALLUVIUM (Successful)						
1.	AHORE	Sh.Hazarilal	76	Older alluvium	648	
2.	BHADVI	Sh.Anaram S/o Gangebji	123	-do-	1080	
3.	"	"Ganesh S/o Lakha	125	-do-	1080	
4.	"	"Roopa,Kana,Sajiya	123.33	"	1080	
5.	BHAGLI	" Dungarsingh	120	"	864	
6.	"	" Shivnathsingh	130	"	864	
7.	BHINMAL CHARLI	" Anilkumar Bishnoi	76	Younger alluvium	864	
8.	"	" Shaitansingh	51.8	Older alluvium	720	
9.	"	" Asharam	57.9	"	864	
10.	"	" Durgaram	41.8	"	864	
11.	"	" Hanumanpradad	66	"	612	
12.	"	" Devram	49	"	576	
13.	"	" Megraj	42	"	720	
14.	"	" Hanuwant Singh	52.43	"	720	
14.	DESU	" Okhsingh	60	"	864	
16.	DHANWARA	" Mohabat Singh	122	Younger alluvium	1152	
17.	GODAN	" Alikhan	98	"	720	

18.	GURA INDER PURA	Sh.Gajaisingh	63.6	Younger alluvium	864
19.	MANDHAR	" Khemsingh S/o Jaharsingh	70.2	"	1152
20.	KUDA	" Asraf	120	Older alluvium	612
21.	"	" Saja Mohammad	121.95	"	576
22.	"	" Ratnaram	122	"	684
23.	MADRI	" Gehrilal Mathur	47.85	Younger alluvium	540
24.	NIMBAWAS	" Ajitsingh S/o Moti singh	125	"	1152
25.	"	" Sohansingh S/o RAjxxsingh R	121.9	"	972
26.	"	"Ajitsingh S/o Rawat singh	125	"	972
27.	"	" Vela S/o Tikama	123	"	1152
28.	NOHRA	" Hanwantsingh S/o Khemsingh	121.68	Older alluvium	864
29.	"	" Anoopsingh S/oDansingh	121.68	Younger alluvium	648
30.	"	" Balwant singh S/o Roopaji	121.68	"	864
31.	"	" Nadsingh S/o Chimansingh	121.68	"	432
32.	PHAGOTRA	" Hukamsingh S/o Sohan Singh	121.9	Older alluvium	864
33.	"	" Panna,Sattar, Sajjan	128.5	"	1152
34.	"	" Peer Singh S/o Heer Singh	130	"	864
35.	"	" Sawa S/o Jora	133	2	1152
36.	"	" Panne Singh S/o Sohan Singh	121.92	"	1152
37.	"	" Rakha S/o Kana	127	"	1152

1	2	3	4	5	6	7
38.	PUNASA	" Vijay Singh	121.68	Older alluvium	1440	
39.	"	" Danaram S/o Dhularam	122	"	648	
40.	"	" Heera lal S/o Punamchand	130	"	1440	
41.	"	" Moolsingh S/o Jogsingh	121.68	"	1440	
42.	"	" Haringa S/o Jodha	123.44	"	1440	
43.	"	" Hukam Singh S/o Bhavsingh	123	"	1584	
44.	"	" Naga,Tola S/o Meghraj	123	"	1440	
45.	"	" Sona S/o Chain	99.14	"	1440	
46.	"	" Rajuram S/o Ganesh.	121.68	"	1440	
47.	"	" Mala,Sona,Prema S/o Lumba	123.44	"	1728	
48.	SEWARA	" Khetaram	121.3	"	864	
49.	"	" Ukha S/o Dharma	121	"	720	
50.	UMEDPURA	E Chandanmal	72	Younger alluvium	720	
51.	VELDHARA	" Naval Singh	44	Older alluvium	432	
ALLUVIUM (Failure)						
1.	BHADRAJUN.	" Chhogaram	48.7	"	57.60 Due to low discharge	

1	2	3	4	5	6	7
2.	CHARLI	" Ratilal	53	Older alluvium	Meargre Due to low discharge.	
3.	DAYALPURA	" Ghunnilal	46	Younger alluvium	288	"
4.	DELWARA	" Hazarimal	42.26	Older alluvium	144	"
5.	DESU	" Shambhoosingh	60	"	144	"
6.	JALORE	" Anilkumar	38	"	dry	"
7.	JALERA KHURD	" Tejaram	50	"	meagre	"
8.	JHACK	" Daulat singh	30	"	"	"
9.	KARWARA	" Mafat Lal	52.8	"	"	"
10.	LETA	" Ranchhod Bharti	82	"	"	"
11.	MEDA	" Laxma Sarpanch	60	Younger alluvium	dry	"
12.	"	" Maga/Lumba	68	"	360	"
13.	"	" Lama/Kana	52	"	288	"
14.	MODRAN	" Keshar Singh	100	"	432	Due to salinity
15.	NIMBODA	" Ajai S/o Vouka	123.44	Older alluvium	288	Due to low discharge
16.	NOHRA	" Jawansingh S/o Dan Singh	121.28	"	72	"
17.	PAL	" Modraram	60	"	Meagre	"
18.	E	" Ajjaram	62.5	"	"	"
19.	PANCHOTA	Ramjitsingh	74	"	"	"
20.	"	" Khet Singh	38	"	"	"
21.	VAIDARA	" Damodar Lal	33	"	129.6	"
22.	"	Smt. ~~Uda~~Sahebkunwar	44	"	129.6	"
23.	"	Sh.Udai Singh	33	"	144	"

1	2	3	4	5	6	7
24.	VAIDARA	" Shamboosingh	42	Older alluvium	180	Due to low dis-harge.
25.	"	" Jawan Singh	38	"	288	"
26.	"	" Rawala & Party	28	"	360	"
27.	"	" Damodar Lal	49	"	Dry	"
28.	"	" Sultan Singh	44	"	"	"
29.	"	" Bheek Singh	30	"	"	"
B.	CRYSTALLINE (Successful)					
1.	GOLWARA	Sh.Pratapa,Ragga	43	Grainite	288	
2.	HARJI	" Lal Chand	64	"	432	
3.	KAGMALA	" Hema/Jassa	26.2	"	432	
4.	KAGMALA	" Vagta/Chela	25.2	"	432	
5.	"	" Lakha/Harji	32	"	432	
6.	"	" Karima/Teju	44	"	432	
7.	KHANPUR	" Mohanlal	45	Granite	216	
8.	MANDHAR	" Chogsingh	38.7	"	180	
9.	PADLI	" Pratap Ram	56	"	129.6	
10.	"	" Jeewaram	33.76	"	360	
11.	"	" Bhoop Singh	41.15	"	288	
12.	"	" Dharmadana	57	"	288	
13.	"	" Akharam	50	"	144	
14.	RAMA	" Amit Kunwar	60	Alluvium + Granite	252	
15.	"	" Mool Singh	50	"	475	
16.	"	" Chodharam	50	"	475	
CRYSTALLINE (FAILURE)						
1.	BHARUDI	Sh.Choga/Bhura	25.5	Granite	Dry	Due to low dis charge.

2. GOLWARA	Sh.Fagloo	43	Granite	Dty	Due to low discharge
3. KANDA DEVAL	" Nathusingh	47.25	"	"	"
4. MANDHAR	" Nag Singh	56	"	"	"
5. KHANPUR	" Bhim Singh	55	"	"	"
6. PUNAK KALLA	" Harijiram	37.5	"	"	"
7. "	" Heera lal	30.5	"	"	"
8. RAMA	" Parbhu Singh	60	Alluvium + Granite	57.6	"
9. THOOR	" Jesaram	38	Granite	57.6	"
10."	" Badar Singh	57.25	"	36	"

APPENDIX 4 : DETAILS OF TUBE WELLS drilled FOR OTHER AGENCIES
(PERIOD 1972-73 TO 1980-81)

S.No.	Name of village	Panchayat Samiti	Year of construction	Depth drilled in metres.	Pipe assembly lowered in metres.	Static water level in metres.	Draw down in metres	Discharge in cubic metres/day
1	2	3	4	5	6	7	8	9
1.	Meghlwa	Saila	1972-73	78.0	-	18.29	4.57	350
2.	Jiwana	"	"	75.0	-	-	-	-
3.	Sirana	"	"	70.0	-	17.76	4.57	310
4.	Ahore	Ahore	"	70.10	-	14.63	-	490
5.	Sankhwali	"	"	70.0	-	21.34	7.62	315
6.	Rama	"	"	80.0	-	6.09	9.14	350
7.	Bhuti	"	"	43.0	-	-	-	-
8.	Bhagli-I	Jalore	"	80.0	-	-	-	-
9.	Bhagli-II	"	"	100.0	-	33.53	15.24	210
10.	Bhagalsepta	Bhinmal	1973-74	75.0	61.0	7.92	4.87	530
11.	Harji	Ahore	"	54	45	-	-	-
12.	Dadhal	Saila	1977-78	115	100	5.5	15	700
13.	Sankad	Sanchore	"	60	-	-	-	-
14.	Ahore	Ahore	"	65	62,5	8	8.5	420
15.	sankad	Sanchore	"	66	-	29.57	13.77	230
16.	Tikhi	Saila	1978-79	76	70.0	8	-	-
17.	Pacharpura	"	"	80	69.0	7.40	4	560
18.	Sankar-I	Sanchore	"	105	101	28	3	280
19.	Sankar-II	"	"	100	98	28	4	315

1	2	3	4	5	6	7	8	9
20.	Surawa	Sanchore	1978-79	100	98	5.80	2	700
21.	Jakhal	"	"	100	97	13	2	35
22.	Mokhupura	"	"	60	-	13 abendoned	-	-
23.	Akoli	Jalore	"	50	50.5	9	-	350
24.	Guda Balotan	Ahore	"	50	50.0	8.5	-	560
25.	Thanwala	Jalore	"	45	39	8.5	-	630
26.	Mithri-I	"	"	102	87	18	-	280
27.	Mithri-II	"	"	98	86	18	-	280
28.	Bhagli	"	"	96	96	23	-	350
29.	Mokhupura	Sanchore	1980-81	75	71	12.5	6	350
30.	Ahore	Ahore	"	48	40	13	8	350
31.	Dumariya	Bhinmal	"	90	68.59	18	-	630
32.	Dondiyali	Ahore	"	12.75	-	8.20 abandoned		
33.	Silu - I	Sanchore	"	25	24	6	-	91
34.	Silu -II	"	"	30	27.5	6	-	210
35.	Hariyali	"	"	35	31	9.30	3	630
36.	Akoli(Deldari)	Jalore	"	38	32	14.0	-	280