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CHAPTER II

BACKGROUND INFORMATION

2.0 BACKGROUND INFORMATION

2.1 GENERAL

Chenab is a major river of the Indus Basin originating from the Great Himalayan and Pir Panjal ranges, having snow covered slopes from El. 3500 m to El.± 7000 m above MSL. The river is formed by two major tributaries in the head reaches, namely Chandra and Bhaga. The Chandra originates from Bara Lachala and is further augmented by Chandra Tal whereas the Bhaga takes off from Suraj Tal in the vicinity of Bara-Lachala and is further joined by Jhankar and Millang Nallahs before it joins Chandra at TANDI to form Chenab The river in its course traverses through district Lahaul & Spiti and district Chamba of Himachal Pradesh before it Crosse into Jammu & Kashmir, downstream of Biana Nallah. The catchment area above El. ± 4500 m remains under permanent snow cover and provides for bulk of the perennial flow. The topographical features of the catchment and the flow characteristics of the river combine suitably at a large number of locations to provide potential sites for locating hydroelectric projects. A master plan for harnessing the hydel potential of the river, within the territory of the Himachal Pradesh had been drawn by Himachal Pradesh as early as 1970-71 and schemes totaling an installation of 1037.8 MW had been identified. Of this potential, a very small fraction has so far been exploited in the form of Sissu (100 KW), Billing (200 KW), Shansha (200 KW) & Thirot (4.5 MW) only.

2.1.1 RIVER CHENAB AND CATCHMENT CHARACTERISTICS

The river orginates from the snow covered slopes of Great Himalayan of Pir-Panjal ranges in Lahaul Spiti district and flows in a steep gradient with a series of loopes and bends. The river is formed by the two major

tributaries in the head reaches namely Chandra and Bhaga.The river Chandra originates from Bara Lachala and is further augmented by Chandra Tal. The river Bhaga takes off from Suraj Tal in the vicinity of Bara Lachala and is further joined by Jhankar and Millang nallahs in the head reaches. The catchment of these two major tributaries have snow covered peaks at height ranging from El. ± 3500 m to ±5500 m. The Chandra river and Bhaga river joins at Tandi to form Chandra-Bhaga i.e. the Chenab. Further downstream of confluence it is joined by other significant tributaries namely Shansha nallah near Rashil and Thirot nallah at Thirot, Miyar nallah at Udaipur, Saichu nallah at DAWAG, Mahal Nallal at Killar, Dheda nallah and Lujai nallah d/s of Killar. Chenab river drains a catchment of about 7500 Sq. Km. before it crosses in to J&K border.

2.2 POWER ABSORPTION IN NORTHERN REGION

2.2.1 POWER LOAD DEVELOPMENT

The Northern Region comprises the states of Himachal, Haryana, Punjab, Rajasthan, Jammu & Kashmir, Uttar Pradesh and Union territory of Delhi and Chandigarh. The Northern Regional Power Grid comprises the power system controlled by the Electricity Boards of above states/Union territories and Bhakhra Beas Management Board.

The Power system in this region is now operating in an inter-connected and coordinated manner. Even in coordinated operation of existing hydro, nuclear and thermal power station, including benefits from the ongoing projects and as well from the new schemes cleared by CEA, the Northern region is expected to face severe power deficits in the Tenth Five Year Plan.

CHAPTER-IV

GEOLOGY

4.0 INTRODUCTION

The Central Electricity Authority in an effort to assess the balance hydroelectric potential in the country carried out ranking studies for about 400 schemes identified in order of priority and have proposed three schemes on the river Chandra. Gondhala Hydroelectric Project is envisaged on Chandra river upstream of its confluence with Bhaga river in Lahaul and Spiti district of Himachal Pradesh.

Of the three proposed schemes, Raling is easternmost scheme while Jhalma is western most proposed to be located downstream of confluence of Chandra and Bhaga rivers. Gondhla Hydroelectric Project has been proposed downstream of Raling project on the river Chandra. The project envisages construction of a diversion barrage across Chandra river just upstream of shulling village, a 10870m long HRT and a power house on the right bank of river Chandra near Tandi ±600 m upstream of the confluence of Bhaga river with installed capacity of 144 MW utilizing a net head of 134 m. The project lies between Longitudes 76°-58'-28"E to 77°-4'-34"E and latitudes 32°-32'-45"N to 32°-29'34"N.

4.1 REGIONAL GEOLOGY

The area where project is located forms a part of the Great Himalayan Range and constitutes both northern and southern slopes of Chandra valley. The altitude in the area varies between 2750m and 6020m. The terrain in upper reaches of tributaries shows typical glacial landscape characterized by rugged towering peaks, cirque glaciers and morainic deposits. Chandra river forms main drainage of the area. It is joined by a

number of tributaries on its either bank. These are mostly snow/ glacier fed. These tributaries show sub-dendritic to trellis pattern. The higher reaches of slopes on either side of Chandra River have a number of glaciers which form the perennial source of discharge in tributaries. There are several conspicuous moraines which are well developed towards left bank. There are a number of water falls in the area of which the one at Sissu village and that about 4 km upstream of Sissu Nala are prominent ones. The presence of abundant water falls in the area, besides glacier fed discharge is attributable to thick bedded nature and sub-horizontal disposition of rocks. Besides, lakes are also a common features in glacial terrain. The lower Chandra valley is characterized by the river terraces which are being used for habitation and cultivation by local habitants. Although three levels of terraces have been identified in Sissu area, only one prominent terrace has been identified in Chhatru and Khoksar areas. These terraces are very thick and extend up to 3225 m elevation in lower reaches i.e. near Sissu and Retil villages.

The valley slopes in the area are characterised by the stretches of unusually abundant debris. These could have been formed due to the fractured or weathered rocks transported in abundance by snow, avalanche and landslides to the lower elevations on the banks of the river.

The area around the proposed project exposes the rocks belonging to Rohtang Group of rocks of Pre-Cambrian age (Prashara & Kumbkarni, 1986-87). But same has been named as Lahaul Group by Prashara (1992). At higher elevations, the Rohtang Group is succeeded by the rocks belonging to Haimanta Group in the east and those belonging to Vaikrita Group extending from Chandra area in west.

The Pre-Cambrian stratigraphic succession in the area given by Prashara et al (1986-87) and Prashara (1992) is given below:-

REGRESSION ANALYSIS BETWEEN DISCHARGES OF TANDI AND GHOUSAI JUNE- JULY

YEAR	MONTH		TANDI D/SITE Qx (Cumecs)	GHOUSAL D/SITE Qy (Cumecs)	LOG x	LOG y	DEVIATION FROM MEAN X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	54.28	98.00	1.7346	1.9912	-0.3652	-0.3987	0.1334	0.1456
1974	JUN	II	85.59	163.00	1.9324	2.2122	-0.1674	-0.1777	0.0280	0.0298
		III	57.44	110.00	1.7592	2.0414	-0.3406	-0.3485	0.1160	0.1187
		I	92.61	154.00	1.9667	2.1875	-0.1332	-0.2024	0.0177	0.0270
	JUL	II	163.53	289.00	2.2136	2.4609	0.1138	0.0710	0.0129	0.0081
		III	136.12	238.00	2.1339	2.3766	0.0341	-0.0133	0.0012	-0.0005
		I	86.44	196.00	1.9367	2.2923	-0.1631	-0.0977	0.0266	0.0159
1975	JUN	II	127.51	271.00	2.1055	2.4330	0.0057	0.0430	0.0000	0.0002
		III	162.02	306.00	2.2096	2.4857	0.1098	0.0958	0.0120	0.0105
		I	132.00	228.00	2.1206	2.3579	0.0208	-0.0320	0.0004	-0.0007
	JUL	II	210.91	403.00	2.3241	2.6053	0.2243	0.2154	0.0503	0.0483
		III	151.52	278.00	2.1805	2.4440	0.0807	0.0541	0.0065	0.0044
		I	109.18	208.00	2.0381	2.3181	-0.0617	-0.0719	0.0038	0.0044
1976	JUN	II	84.79	163.00	1.9283	2.2122	-0.1715	-0.1777	0.0294	0.0305
		III	63.81	139.00	1.8049	2.1430	-0.2949	-0.2469	0.0870	0.0728
		I	146.59	269.00	2.1661	2.4298	0.0663	0.0398	0.0044	0.0026
	JUL	II	208.80	352.00	2.3197	2.5465	0.2199	0.1566	0.0484	0.0344
		III	208.87	372.00	2.3199	2.5705	0.2201	0.1806	0.0484	0.0397
		I	61.59	135.00	1.7895	2.1303	-0.3103	-0.2596	0.0963	0.0806
1977	JUN	II	48.04	93.00	1.6816	1.9685	-0.4182	-0.4214	0.1749	0.1763
		III	155.71	281.00	2.1923	2.4487	0.0925	0.0588	0.0086	0.0054
		I	209.09	370.00	2.3203	2.5682	0.2205	0.1783	0.0486	0.0393
	JUL	II	185.87	347.00	2.2692	2.5403	0.1694	0.1504	0.0287	0.0255
		III	156.26	294.00	2.1938	2.4683	0.0940	0.0784	0.0088	0.0074
		I	116.06	237.00	2.0647	2.3747	-0.0351	-0.0152	0.0012	0.0005
1978	JUN	II	97.95	215.00	1.9910	2.3324	-0.1088	-0.0575	0.0118	0.0063
		III	229.03	411.00	2.3599	2.6138	0.2601	0.2239	0.0676	0.0582
		I	204.43	443.00	2.3105	2.6464	0.2107	0.2565	0.0444	0.0540
	JUL	II	171.15	369.00	2.2334	2.5670	0.1336	0.1771	0.0178	0.0237
		III	176.99	360.00	2.2479	2.5563	0.1481	0.1664	0.0219	0.0246
		I	40.70	101.00	1.6096	2.0043	-0.4902	-0.3856	0.2403	0.1890
1979	JUN	II	90.39	205.00	1.9561	2.3118	-0.1437	-0.0782	0.0206	0.0112
		III	194.47	403.00	2.2889	2.6053	0.1890	0.2154	0.0357	0.0407
		I	182.98	359.00	2.2624	2.5551	0.1626	0.1652	0.0264	0.0269
	JUL	II	229.97	431.00	2.3617	2.6345	0.2619	0.2446	0.0686	0.0640
		III	173.08	346.00	2.2382	2.5391	0.1384	0.1492	0.0192	0.0206
		I	99.89	202.00	1.9995	2.3054	-0.1003	-0.0846	0.0101	0.0085
1980	JUN	II	121.45	235.00	2.0844	2.3711	-0.0154	-0.0189	0.0002	0.0003
		III	173.78	334.00	2.2400	2.5237	0.1402	0.1338	0.0197	0.0188
		I	184.27	352.00	2.2655	2.5465	0.1656	0.1566	0.0274	0.0259
	JUL	II	184.29	340.00	2.2655	2.5315	0.1657	0.1416	0.0275	0.0235
		III	161.10	313.00	2.2071	2.4955	0.1073	0.1056	0.0115	0.0113
		I	70.07	151.00	1.8455	2.1790	-0.2543	-0.2109	0.0647	0.0536
1981	JUN	II	77.57	152.00	1.8897	2.1818	-0.2101	-0.2081	0.0442	0.0437
		III	186.01	315.00	2.2695	2.4983	0.1697	0.1084	0.0288	0.0184
		I	141.26	277.00	2.1500	2.4425	0.0502	0.0526	0.0025	0.0026
	JUL	II	169.95	357.00	2.2303	2.5527	0.1305	0.1627	0.0170	0.0212
		III	196.92	376.00	2.2943	2.5752	0.1945	0.1853	0.0378	0.0360
		I	60.53	122.00	1.7820	2.0864	-0.3178	-0.3036	0.1010	0.0965
1982	JUN	II	100.83	232.00	2.0036	2.3655	-0.0962	-0.0244	0.0093	0.0024
		III	115.64	213.00	2.0631	2.3284	-0.0367	-0.0615	0.0013	0.0023
		I	156.48	283.00	2.1945	2.4518	0.0946	0.0619	0.0090	0.0059
	JUL	II	150.71	314.00	2.1781	2.4969	0.0783	0.1070	0.0061	0.0084
		III	186.55	353.00	2.2708	2.5478	0.1710	0.1579	0.0292	0.0270
		I	71.20	133.00	1.8525	2.1239	-0.2473	-0.2661	0.0612	0.0658
1983	JUN	II	83.29	148.00	1.9206	2.1703	-0.1792	-0.2197	0.0321	0.0394
		III	108.14	219.00	2.0340	2.3404	-0.0658	-0.0495	0.0043	0.0033
		I	133.41	269.00	2.1252	2.4298	0.0254	0.0398	0.0006	0.0010
	JUL	II	89.79	224.00	1.9532	2.3502	-0.1466	-0.0397	0.0215	0.0058
		III	201.52	337.00	2.3043	2.5276	0.2045	0.1377	0.0418	0.0282
G.TOTAL					125.99	143.40	0.00	0.00	2.18	2.00
NO. OF PERIOD			60		**LOG x'**	**LOG y'**				
AVERAGE					**2.0998**	**2.3899**				
Co-efficient of Corelation										
b	=	SIGMA	X*Y	=	**0.9168**					
		SIGMA	X^2							

REGRESSION ANALYSIS BETWEEN DISCHARGES OF TANDI AND GHOUSAI AUG.- SEPT.

YEAR	MONTH		TANDI D/SITE Qx (Cumecs)	GHOUSAL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN LOG y	X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	140.96	262.00	2.1491	2.4183	0.1890	0.1610	0.0357	0.0304
1974	AUG	II	108.22	222.00	2.0343	2.3464	0.0742	0.0890	0.0055	0.0066
		III	106.99	205.00	2.0293	2.3118	0.0693	0.0544	0.0048	0.0038
		I	75.23	136.00	1.8764	2.1335	-0.0837	-0.1238	0.0070	0.0104
	SEPT	II	60.48	100.00	1.7816	2.0000	-0.1785	-0.2573	0.0318	0.0459
		III	41.41	66.00	1.6171	1.8195	-0.3430	-0.4378	0.1176	0.1501
		I	182.62	329.00	2.2615	2.5172	0.3015	0.2599	0.0909	0.0784
1975	AUG	II	218.79	357.00	2.3400	2.5527	0.3800	0.2954	0.1444	0.1122
		III	134.86	236.00	2.1299	2.3729	0.1698	0.1156	0.0288	0.0196
		I	101.37	183.00	2.0059	2.2625	0.0458	0.0051	0.0021	0.0002
	SEPT	II	73.70	127.00	1.8675	2.1038	-0.0926	-0.1535	0.0086	0.0142
		III	44.74	80.00	1.6507	1.9031	-0.3094	-0.3542	0.0957	0.1096
		I	146.32	262.00	2.1653	2.4183	0.2052	0.1610	0.0421	0.0330
1976	AUG	II	127.47	233.00	2.1054	2.3674	0.1453	0.1100	0.0211	0.0160
		III	98.12	184.00	1.9918	2.2648	0.0317	0.0075	0.0010	0.0002
		I	84.73	156.00	1.9280	2.1931	-0.0320	-0.0642	0.0010	0.0021
	SEPT	II	54.96	84.00	1.7400	1.9243	-0.2200	-0.3330	0.0484	0.0733
		III	44.35	69.00	1.6469	1.8388	-0.3132	-0.4185	0.0981	0.1310
		I	181.88	349.00	2.2598	2.5428	0.2997	0.2855	0.0898	0.0856
1977	AUG	II	119	249.00	2.0755	2.3962	0.1155	0.1389	0.0133	0.0160
		III	109.56	221.00	2.0397	2.3444	0.0796	0.0871	0.0063	0.0069
		I	92.03	189.00	1.9639	2.2765	0.0039	0.0192	0.0000	0.0001
	SEPT	II	61.94	109.00	1.7920	2.0374	-0.1681	-0.2199	0.0283	0.0370
		III	43.63	71.00	1.6398	1.8513	-0.3203	-0.4061	0.1026	0.1300
		I	182.35	368.00	2.2609	2.5658	0.3008	0.3085	0.0905	0.0928
1978	AUG	II	146.17	289.00	2.1649	2.4609	0.2048	0.2036	0.0419	0.0417
		III	119.00	259.00	2.0755	2.4133	0.1155	0.1560	0.0133	0.0180
		I	60.00	126.00	1.7782	2.1004	-0.1819	-0.1569	0.0331	0.0285
	SEPT	II	37.98	105.00	1.5796	2.0212	-0.3805	-0.2361	0.1448	0.0898
		III	53.28	83.00	1.7266	1.9191	-0.2335	-0.3382	0.0545	0.0790
		I	188.89	386.00	2.2762	2.5866	0.3161	0.3293	0.0999	0.1041
1979	AUG	II	156.29	322.00	2.1939	2.5079	0.2339	0.2505	0.0547	0.0586
		III	99.16	236.00	1.9963	2.3729	0.0363	0.1156	0.0013	0.0042
		I	98.36	213.00	1.9928	2.3284	0.0328	0.0711	0.0011	0.0023
	SEPT	II	52.16	112.00	1.7173	2.0492	-0.2427	-0.2081	0.0589	0.0505
		III	23.60	51.00	1.3729	1.7076	-0.5872	-0.5497	0.3447	0.3228
		I	176.94	339.00	2.2478	2.5302	0.2878	0.2729	0.0828	0.0785
1980	AUG	II	95.18	223.00	1.9785	2.3483	0.0185	0.0910	0.0003	0.0017
		III	105.30	251.00	2.0224	2.3997	0.0624	0.1424	0.0039	0.0089
		I	68.52	157.00	1.8358	2.1959	-0.1242	-0.0614	0.0154	0.0076
	SEPT	II	45.10	99.00	1.6542	1.9956	-0.3059	-0.2617	0.0936	0.0800
		III	30.36	69.00	1.4823	1.8388	-0.4778	-0.4185	0.2283	0.1999
		I	163.37	324.00	2.2132	2.5105	0.2531	0.2532	0.0641	0.0641
1981	AUG	II	145.32	296.00	2.1623	2.4713	0.2023	0.2140	0.0409	0.0433
		III	87.76	216.00	1.9433	2.3345	-0.0168	0.0771	0.0003	-0.0013
		I	81.66	169.00	1.9120	2.2279	-0.0481	-0.0294	0.0023	0.0014
	SEPT	II	47.39	94.00	1.6757	1.9731	-0.2844	-0.2842	0.0809	0.0808
		III	39.77	86.00	1.5996	1.9345	-0.3605	-0.3228	0.1300	0.1164
		I	199.82	379.00	2.3006	2.5786	0.3406	0.3213	0.1160	0.1094
1982	AUG	II	151.72	335.00	2.1810	2.5250	0.2210	0.2677	0.0488	0.0592
		III	97.35	247.00	1.9883	2.3927	0.0283	0.1354	0.0008	0.0038
		I	88.49	163.00	1.9469	2.2122	-0.0132	-0.0451	0.0002	0.0006
	SEPT	II	68.20	151.00	1.8338	2.1790	-0.1263	-0.0783	0.0159	0.0099
		III	37.19	115.00	1.5704	2.0607	-0.3896	-0.1966	0.1518	0.0766
		I	246.85	397.00	2.3924	2.5988	0.4324	0.3415	0.1869	0.1476
1983	AUG	II	188.24	358.00	2.2747	2.5539	0.3146	0.2966	0.0990	0.0933
		III	185.17	354.00	2.2676	2.5490	0.3075	0.2917	0.0946	0.0897
		I	149.26	288.00	2.1739	2.4594	0.2139	0.2021	0.0457	0.0432
	SEPT	II	97.29	202.00	1.9881	2.3054	0.0280	0.0480	0.0008	0.0013
		III	53.98	108.00	1.7322	2.0334	-0.2278	-0.2239	0.0519	0.0510
G.TOTAL					117.60	135.44	0.00	0.00	3.52	3.37
NO. OF PERIOD			60		**LOG x'**	**LOG y'**				
AVERAGE					**1.9601**	**2.2573**				
Co-efficient of Corelation										
b	=	SIGMA	X*Y	=	**0.9583**					
		SIGMA	X^2							

REGRESSION ANALYSIS BETWEEN DISCHARGES OF TANDI AND GHOUSAI (NON-MONSOON PERIOD)

YEAR	MONTH		TANDI D/SITE Qx (Cumecs)	GHOUSAL D/SITE Qy (Cumecs)	LOG x	LOG y	DEVIATION FROM MEAN X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	24.62	35.00	1.3913	1.5441	0.2877	0.1687	0.0828	0.0485
1974-75	OCT	II	21.58	27.00	1.3341	1.4314	0.2305	0.0560	0.0531	0.0129
		III	17.31	22.00	1.2383	1.3424	0.1347	-0.0329	0.0181	-0.0044
		I	14.92	18.00	1.1738	1.2553	0.0702	-0.1201	0.0049	-0.0084
	NOV	II	18.83	17.00	1.2749	1.2304	0.1713	-0.1449	0.0293	-0.0248
		III	11.45	16.00	1.0588	1.2041	-0.0448	-0.1712	0.0020	0.0077
		I	10.69	15.00	1.0290	1.1761	-0.0746	-0.1992	0.0056	0.0149
	DEC	II	10.43	13.00	1.0183	1.1139	-0.0853	-0.2614	0.0073	0.0223
		III	10.42	14.00	1.0179	1.1461	-0.0857	-0.2292	0.0073	0.0196
		I	8.38	14.00	0.9232	1.1461	-0.1803	-0.2292	0.0325	0.0413
	JAN	II	8.07	14.00	0.9069	1.1461	-0.1967	-0.2292	0.0387	0.0451
		III	7.60	12.00	0.8808	1.0792	-0.2228	-0.2961	0.0496	0.0660
		I	8.19	14.00	0.9133	1.1461	-0.1903	-0.2292	0.0362	0.0436
	FEB	II	7.59	14.00	0.8802	1.1461	-0.2233	-0.2292	0.0499	0.0512
		III	9.12	14.00	0.9600	1.1461	-0.1436	-0.2292	0.0206	0.0329
		I	7.30	11.00	0.8633	1.0414	-0.2403	-0.3339	0.0577	0.0802
	MAR	II	6.43	12.00	0.8082	1.0792	-0.2954	-0.2961	0.0872	0.0875
		III	7.26	16.00	0.8609	1.2041	-0.2427	-0.1712	0.0589	0.0415
		I	8.42	18.00	0.9253	1.2553	-0.1783	-0.1201	0.0318	0.0214
	APR	II	10.38	25.00	1.0162	1.3979	-0.0874	0.0226	0.0076	-0.0020
		III	13.70	35.00	1.1367	1.5441	0.0331	0.1687	0.0011	0.0056
		I	23.16	51.00	1.3647	1.7076	0.2612	0.3322	0.0682	0.0868
	MAY	II	47.15	111.00	1.6735	2.0453	0.5699	0.6700	0.3248	0.3818
		III	62.11	143.00	1.7932	2.1553	0.6896	0.7800	0.4755	0.5379
		I	36.47	61.00	1.5619	1.7853	0.4583	0.4100	0.2101	0.1879
1975-76	OCT	II	30.99	51.00	1.4912	1.7076	0.3876	0.3322	0.1503	0.1288
		III	21.50	33.00	1.3324	1.5185	0.2289	0.1432	0.0524	0.0328
		I	16.53	23.00	1.2183	1.3617	0.1147	-0.0136	0.0132	-0.0016
	NOV	II	14.42	20.00	1.1590	1.3010	0.0554	-0.0743	0.0031	-0.0041
		III	13.23	18.00	1.1216	1.2553	0.0180	-0.1201	0.0003	-0.0022
		I	13.32	16.00	1.1245	1.2041	0.0209	-0.1712	0.0004	-0.0036
	DEC	II	12.02	14.00	1.0799	1.1461	-0.0237	-0.2292	0.0006	0.0054
		III	11.75	13.00	1.0700	1.1139	-0.0336	-0.2614	0.0011	0.0088
		I	12.16	12.00	1.0849	1.0792	-0.0187	-0.2961	0.0003	0.0055
	JAN	II	11.46	12.00	1.0592	1.0792	-0.0444	-0.2961	0.0020	0.0131
		III	10.84	11.00	1.0350	1.0414	-0.0686	-0.3339	0.0047	0.0229
		I	10.41	12.00	1.0175	1.0792	-0.0861	-0.2961	0.0074	0.0255
	FEB	II	10.21	8.00	1.0090	0.9031	-0.0946	-0.4722	0.0089	0.0447
		III	10.03	10.00	1.0013	1.0000	-0.1023	-0.3753	0.0105	0.0384
		I	10.49	12.00	1.0208	1.0792	-0.0828	-0.2961	0.0069	0.0245
	MAR	II	10.10	11.00	1.0043	1.0414	-0.0993	-0.3339	0.0099	0.0331
		III	10.13	10.00	1.0056	1.0000	-0.0980	-0.3753	0.0096	0.0368
		I	10.08	10.00	1.0035	1.0000	-0.1001	-0.3753	0.0100	0.0376
	APR	II	10.91	16.00	1.0378	1.2041	-0.0658	-0.1712	0.0043	0.0113
		III	20.08	40.00	1.3028	1.6021	0.1992	0.2267	0.0397	0.0452
		I	26.13	57.00	1.4171	1.7559	0.3136	0.3805	0.0983	0.1193
	MAY	II	39.74	88.00	1.5992	1.9445	0.4956	0.5692	0.2457	0.2821
		III	62.72	122.00	1.7974	2.0864	0.6938	0.7110	0.4814	0.4933
		I	31.29	49.00	1.4954	1.6902	0.3918	0.3149	0.1535	0.1234
1976-77	OCT	II	20.19	31.00	1.3051	1.4914	0.2015	0.1160	0.0406	0.0234
		III	16.71	23.00	1.2230	1.3617	0.1194	-0.0136	0.0143	-0.0016
		I	14.45	21.00	1.1599	1.3222	0.0563	-0.0531	0.0032	-0.0030
	NOV	II	13.17	19.00	1.1196	1.2788	0.0160	-0.0966	0.0003	-0.0015
		III	11.95	17.00	1.0774	1.2304	-0.0262	-0.1449	0.0007	0.0038
		I	10.40	16.00	1.0170	1.2041	-0.0866	-0.1712	0.0075	0.0148
	DEC	II	9.24	14.00	0.9657	1.1461	-0.1379	-0.2292	0.0190	0.0316
		III	8.93	13.00	0.9509	1.1139	-0.1527	-0.2614	0.0233	0.0399
		I	8.07	12.00	0.9069	1.0792	-0.1967	-0.2961	0.0387	0.0583
	JAN	II	7.97	11.00	0.9015	1.0414	-0.2021	-0.3339	0.0409	0.0675
		III	7.18	9.00	0.8561	0.9542	-0.2475	-0.4211	0.0612	0.1042
		I	9.47	13.00	0.9763	1.1139	-0.1272	-0.2614	0.0162	0.0333
	FEB	II	7.22	12.00	0.8585	1.0792	-0.2451	-0.2961	0.0600	0.0726
		III	7.26	12.00	0.8609	1.0792	-0.2427	-0.2961	0.0589	0.0719
		I	7.12	12.00	0.8525	1.0792	-0.2511	-0.2961	0.0631	0.0744
	MAR	II	7.33	12.00	0.8651	1.0792	-0.2385	-0.2961	0.0569	0.0706
		III	9.05	17.00	0.9566	1.2304	-0.1469	-0.1449	0.0216	0.0213
		I	9.91	20.00	0.9961	1.3010	-0.1075	-0.0743	0.0116	0.0080
	APR	II	9.31	19.00	0.9689	1.2788	-0.1346	-0.0966	0.0181	0.0130
		III	10.28	24.00	1.0120	1.3802	-0.0916	0.0049	0.0084	-0.0004
		I	11.33	24.00	1.0542	1.3802	-0.0494	0.0049	0.0024	-0.0002
	MAY	II	15.18	36.00	1.1813	1.5563	0.0777	0.1810	0.0060	0.0141
		III	36.42	88.00	1.5613	1.9445	0.4578	0.5692	0.2095	0.2605
		I	30.11	50.00	1.4787	1.6990	0.3751	0.3236	0.1407	0.1214
1977-78	OCT	II	23.55	34.00	1.3720	1.5315	0.2684	0.1562	0.0720	0.0419

Table-5.3(4)

YEAR	MONTH		TANDI D/SITE Qx (Cumecs)	GHOUSAL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN LOG y	X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		III	18.45	29.00	1.2660	1.4624	0.1624	0.0871	0.0264	0.0141
		I	15.74	26.00	1.1970	1.4150	0.0934	0.0396	0.0087	0.0037
	NOV	II	14.3	22.00	1.1553	1.3424	0.0517	-0.0329	0.0027	-0.0017
		III	13.85	21.00	1.1414	1.3222	0.0379	-0.0531	0.0014	-0.0020
		I	12.17	20.00	1.0853	1.3010	-0.0183	-0.0743	0.0003	0.0014
	DEC	II	10.86	17.00	1.0358	1.2304	-0.0678	-0.1449	0.0046	0.0098
		III	10.35	15.00	1.0149	1.1761	-0.0886	-0.1992	0.0079	0.0177
		I	9.94	13.00	0.9974	1.1139	-0.1062	-0.2614	0.0113	0.0278
	JAN	II	11.57	15.00	1.0633	1.1761	-0.0403	-0.1992	0.0016	0.0080
		III	10.35	14.00	1.0149	1.1461	-0.0886	-0.2292	0.0079	0.0203
		I	9.16	13.00	0.9619	1.1139	-0.1417	-0.2614	0.0201	0.0370
	FEB	II	10.57	12.00	1.0241	1.0792	-0.0795	-0.2961	0.0063	0.0235
		III	9.02	18.00	0.9552	1.2553	-0.1484	-0.1201	0.0220	0.0178
		I	8.6	12.00	0.9345	1.0792	-0.1691	-0.2961	0.0286	0.0501
	MAR	II	8.1	12.00	0.9085	1.0792	-0.1951	-0.2961	0.0381	0.0578
		III	8.41	15.00	0.9248	1.1761	-0.1788	-0.1992	0.0320	0.0356
		I	9.1	16.00	0.9590	1.2041	-0.1445	-0.1712	0.0209	0.0247
	APR	II	14.41	26.00	1.1587	1.4150	0.0551	0.0396	0.0030	0.0022
		III	19.48	33.00	1.2896	1.5185	0.1860	0.1432	0.0346	0.0266
		I	44.66	102.00	1.6499	2.0086	0.5463	0.6333	0.2985	0.3460
	MAY	II	70.87	159.00	1.8505	2.2014	0.7469	0.8261	0.5578	0.6170
		III	86.93	181.00	1.9392	2.2577	0.8356	0.8824	0.6982	0.7373
		I	24.94	56.00	1.3969	1.7482	0.2933	0.3729	0.0860	0.1094
1978-79	OCT	II	17.61	44.00	1.2458	1.6435	0.1422	0.2681	0.0202	0.0381
		III	21.49	38.00	1.3322	1.5798	0.2286	0.2045	0.0523	0.0467
		I	12.26	28.00	1.0885	1.4472	-0.0151	0.0718	0.0002	-0.0011
	NOV	II	10.70	25.00	1.0294	1.3979	-0.0742	0.0226	0.0055	-0.0017
		III	11.17	25.00	1.0481	1.3979	-0.0555	0.0226	0.0031	-0.0013
		I	10.02	23.00	1.0009	1.3617	-0.1027	-0.0136	0.0106	0.0014
	DEC	II	9.29	22.00	0.9680	1.3424	-0.1356	-0.0329	0.0184	0.0045
		III	9.17	22.00	0.9624	1.3424	-0.1412	-0.0329	0.0199	0.0046
		I	8.52	22.00	0.9304	1.3424	-0.1731	-0.0329	0.0300	0.0057
	JAN	II	7.92	19.00	0.8987	1.2788	-0.2049	-0.0966	0.0420	0.0198
		III	8.07	18.00	0.9069	1.2553	-0.1967	-0.1201	0.0387	0.0236
		I	7.86	20.00	0.8954	1.3010	-0.2082	-0.0743	0.0433	0.0155
	FEB	II	7.12	18.00	0.8525	1.2553	-0.2511	-0.1201	0.0631	0.0301
		III	9.41	16.00	0.9736	1.2041	-0.1300	-0.1712	0.0169	0.0223
		I	8.35	17.00	0.9217	1.2304	-0.1819	-0.1449	0.0331	0.0264
	MAR	II	18.35	22.00	1.2636	1.3424	0.1600	-0.0329	0.0256	-0.0053
		III	28.50	28.00	1.4548	1.4472	0.3513	0.0718	0.1234	0.0252
		I	20.00	31.00	1.3010	1.4914	0.1974	0.1160	0.0390	0.0229
	APR	II	16.00	38.00	1.2041	1.5798	0.1005	0.2045	0.0101	0.0206
		III	25.02	63.00	1.3983	1.7993	0.2947	0.4240	0.0868	0.1250
		I	30.02	88.00	1.4774	1.9445	0.3738	0.5692	0.1397	0.2128
	MAY	II	25.58	77.00	1.4079	1.8865	0.3043	0.5112	0.0926	0.1556
		III	24.78	76.00	1.3941	1.8808	0.2905	0.5055	0.0844	0.1469
		I	20.72	48.00	1.3164	1.6812	0.2128	0.3059	0.0453	0.0651
1979-80	OCT	II	17.94	39.00	1.2538	1.5911	0.1502	0.2157	0.0226	0.0324
		III	14.83	34.00	1.1711	1.5315	0.0676	0.1562	0.0046	0.0105
		I	13.23	31.00	1.1216	1.4914	0.0180	0.1160	0.0003	0.0021
	NOV	II	10.74	27.00	1.0310	1.4314	-0.0726	0.0560	0.0053	-0.0041
		III	10.24	26.00	1.0103	1.4150	-0.0933	0.0396	0.0087	-0.0037
		I	9.74	25.00	0.9886	1.3979	-0.1150	0.0226	0.0132	-0.0026
	DEC	II	8.93	23.00	0.9509	1.3617	-0.1527	-0.0136	0.0233	0.0021
		III	8.86	23.00	0.9474	1.3617	-0.1562	-0.0136	0.0244	0.0021
		I	7.68	20.00	0.8854	1.3010	-0.2182	-0.0743	0.0476	0.0162
	JAN	II	7.76	19.00	0.8899	1.2788	-0.2137	-0.0966	0.0457	0.0206
		III	6.08	18.00	0.7839	1.2553	-0.3197	-0.1201	0.1022	0.0384
		I	6.54	23.00	0.8156	1.3617	-0.2880	-0.0136	0.0829	0.0039
	FEB	II	6.83	20.00	0.8344	1.3010	-0.2692	-0.0743	0.0725	0.0200
		III	6.79	22.00	0.8319	1.3424	-0.2717	-0.0329	0.0738	0.0089
		I	5.5	20.00	0.7404	1.3010	-0.3632	-0.0743	0.1319	0.0270
	MAR	II	5.55	22.00	0.7443	1.3424	-0.3593	-0.0329	0.1291	0.0118
		III	6.63	24.00	0.8215	1.3802	-0.2821	0.0049	0.0796	-0.0014
		I	7.9	26.00	0.8976	1.4150	-0.2060	0.0396	0.0424	-0.0082
	APR	II	9.03	29.00	0.9557	1.4624	-0.1479	0.0871	0.0219	-0.0129
		III	10.98	32.00	1.0406	1.5051	-0.0630	0.1298	0.0040	-0.0082
		I	25.76	66.00	1.4109	1.8195	0.3074	0.4442	0.0945	0.1365
	MAY	II	33.09	90.00	1.5197	1.9542	0.4161	0.5789	0.1731	0.2409
		III	55.23	122.00	1.7422	2.0864	0.6386	0.7110	0.4078	0.4541

Table-5.3(5)

YEAR	MONTH		TANDI D/SITE Qx (Cumecs)	GHOUSAL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN LOG y	X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	30.26	54.00	1.4809	1.7324	0.3773	0.3571	0.1423	0.1347
1980-81	OCT	II	21.63	35.00	1.3351	1.5441	0.2315	0.1687	0.0536	0.0391
		III	17.26	28.00	1.2370	1.4472	0.1335	0.0718	0.0178	0.0096
		I	12.35	21.00	1.0917	1.3222	-0.0119	-0.0531	0.0001	0.0006
	NOV	II	9.02	20.00	0.9552	1.3010	-0.1484	-0.0743	0.0220	0.0110
		III	8.62	20.00	0.9355	1.3010	-0.1681	-0.0743	0.0283	0.0125
		I	8.16	18.00	0.9117	1.2553	-0.1919	-0.1201	0.0368	0.0230
	DEC	II	7.82	17.00	0.8932	1.2304	-0.2104	-0.1449	0.0443	0.0305
		III	7.64	16.00	0.8831	1.2041	-0.2205	-0.1712	0.0486	0.0378
		I	7.71	17.00	0.8871	1.2304	-0.2165	-0.1449	0.0469	0.0314
	JAN	II	7.35	16.00	0.8663	1.2041	-0.2373	-0.1712	0.0563	0.0406
		III	7.36	15.00	0.8669	1.1761	-0.2367	-0.1992	0.0560	0.0472
		I	7.46	15.00	0.8727	1.1761	-0.2308	-0.1992	0.0533	0.0460
	FEB	II	7.07	16.00	0.8494	1.2041	-0.2542	-0.1712	0.0646	0.0435
		III	6.76	18.00	0.8299	1.2553	-0.2736	-0.1201	0.0749	0.0329
		I	6.76	17.00	0.8299	1.2304	-0.2736	-0.1449	0.0749	0.0396
	MAR	II	6.60	17.00	0.8195	1.2304	-0.2840	-0.1449	0.0807	0.0412
		III	6.80	18.00	0.8325	1.2553	-0.2711	-0.1201	0.0735	0.0325
		I	7.44	19.00	0.8716	1.2788	-0.2320	-0.0966	0.0538	0.0224
	APR	II	9.34	26.00	0.9703	1.4150	-0.1332	0.0396	0.0178	-0.0053
		III	33.52	37.00	1.5253	1.5682	0.4217	0.1929	0.1778	0.0813
		I	70.93	131.00	1.8508	2.1173	0.7472	0.7419	0.5584	0.5544
	MAY	II	77.63	166.00	1.8900	2.2201	0.7864	0.8448	0.6185	0.6644
		III	92.76	195.00	1.9674	2.2900	0.8638	0.9147	0.7461	0.7901
		I	15.05	47.00	1.1775	1.6721	0.0739	0.2968	0.0055	0.0219
1981-82	OCT	II	12.80	39.00	1.1072	1.5911	0.0036	0.2157	0.0000	0.0008
		III	12.24	25.00	1.0878	1.3979	-0.0158	0.0226	0.0002	-0.0004
		I	10.72	23.00	1.0302	1.3617	-0.0734	-0.0136	0.0054	0.0010
	NOV	II	8.67	20.00	0.9380	1.3010	-0.1656	-0.0743	0.0274	0.0123
		III	7.31	18.00	0.8639	1.2553	-0.2397	-0.1201	0.0574	0.0288
		I	6.42	17.00	0.8075	1.2304	-0.2961	-0.1449	0.0876	0.0429
	DEC	II	5.94	15.00	0.7738	1.1761	-0.3298	-0.1992	0.1088	0.0657
		III	5.72	14.00	0.7574	1.1461	-0.3462	-0.2292	0.1198	0.0793
		I	8.34	14.00	0.9212	1.1461	-0.1824	-0.2292	0.0333	0.0418
	JAN	II	8.20	14.00	0.9138	1.1461	-0.1898	-0.2292	0.0360	0.0435
		III	9.41	12.00	0.9736	1.0792	-0.1300	-0.2961	0.0169	0.0385
		I	9.32	13.00	0.9694	1.1139	-0.1342	-0.2614	0.0180	0.0351
	FEB	II	8.70	14.00	0.9395	1.1461	-0.1641	-0.2292	0.0269	0.0376
		III	8.76	13.00	0.9425	1.1139	-0.1611	-0.2614	0.0259	0.0421
		I	8.37	15.00	0.9227	1.1761	-0.1809	-0.1992	0.0327	0.0360
	MAR	II	7.92	15.00	0.8987	1.1761	-0.2049	-0.1992	0.0420	0.0408
		III	8.09	14.00	0.9079	1.1461	-0.1956	-0.2292	0.0383	0.0448
		I	8.50	16.00	0.9294	1.2041	-0.1742	-0.1712	0.0303	0.0298
	APR	II	9.13	17.00	0.9605	1.2304	-0.1431	-0.1449	0.0205	0.0207
		III	11.40	25.00	1.0569	1.3979	-0.0467	0.0226	0.0022	-0.0011
		I	21.96	49.00	1.3416	1.6902	0.2380	0.3149	0.0567	0.0750
	MAY	II	20.11	44.00	1.3034	1.6435	0.1998	0.2681	0.0399	0.0536
		III	30.79	76.00	1.4884	1.8808	0.3848	0.5055	0.1481	0.1945
		I	20.84	80.00	1.3189	1.9031	0.2153	0.5278	0.0464	0.1136
1982-83	OCT	II	18.58	70.00	1.2690	1.8451	0.1655	0.4698	0.0274	0.0777
		III	16.79	39.00	1.2251	1.5911	0.1215	0.2157	0.0148	0.0262
		I	15.31	26.00	1.1850	1.4150	0.0814	0.0396	0.0066	0.0032
	NOV	II	13.77	25.00	1.1389	1.3979	0.0353	0.0226	0.0012	0.0008
		III	12.27	22.00	1.0888	1.3424	-0.0147	-0.0329	0.0002	0.0005
		I	11.40	18.00	1.0569	1.2553	-0.0467	-0.1201	0.0022	0.0056
	DEC	II	10.54	15.00	1.0228	1.1761	-0.0807	-0.1992	0.0065	0.0161
		III	12.22	14.00	1.0871	1.1461	-0.0165	-0.2292	0.0003	0.0038
		I	7.36	15.00	0.8667	1.1761	-0.2369	-0.1992	0.0561	0.0472
	JAN	II	7.40	15.00	0.8692	1.1761	-0.2344	-0.1992	0.0549	0.0467
		III	7.62	15.00	0.8820	1.1761	-0.2216	-0.1992	0.0491	0.0442
		I	7.39	14.00	0.8686	1.1461	-0.2349	-0.2292	0.0552	0.0538
	FEB	II	7.20	14.00	0.8573	1.1461	-0.2463	-0.2292	0.0606	0.0564
		III	7.45	14.00	0.8722	1.1461	-0.2314	-0.2292	0.0536	0.0530
		I	11.99	18.00	1.0788	1.2553	-0.0248	-0.1201	0.0006	0.0030
	MAR	II	12.42	20.00	1.0941	1.3010	-0.0095	-0.0743	0.0001	0.0007
		III	11.44	18.00	1.0584	1.2553	-0.0452	-0.1201	0.0020	0.0054
		I	11.41	18.00	1.0573	1.2553	-0.0463	-0.1201	0.0021	0.0056
	APR	II	10.28	18.00	1.0120	1.2553	-0.0916	-0.1201	0.0084	0.0110
		III	12.42	21.00	1.0941	1.3222	-0.0095	-0.0531	0.0001	0.0005
		I	20.45	37.00	1.3107	1.5682	0.2071	0.1929	0.0429	0.0399
	MAY	II	35.11	56.00	1.5454	1.7482	0.4418	0.3729	0.1952	0.1647
		III	56.24	83.00	1.7500	1.9191	0.6465	0.5438	0.4179	0.3515

Table-5.3(6)

YEAR	MONTH		TANDI D/SITE Qx (Cumecs)	GHOUSAL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN LOG y	X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
1983-84		I	45.51	76.00	1.6581	1.8808	0.5545	0.5055	0.3075	0.2803
	OCT	II	27.07	51.00	1.4325	1.7076	0.3289	0.3322	0.1082	0.1093
		III	17.04	33.00	1.2315	1.5185	0.1279	0.1432	0.0164	0.0183
		I	12.42	27.00	1.0941	1.4314	-0.0095	0.0560	0.0001	-0.0005
	NOV	II	11.67	25.00	1.0671	1.3979	-0.0365	0.0226	0.0013	-0.0008
		III	11.10	23.00	1.0453	1.3617	-0.0583	-0.0136	0.0034	0.0008
		I	10.40	20.00	1.0168	1.3010	-0.0868	-0.0743	0.0075	0.0064
	DEC	II	9.55	19.00	0.9801	1.2788	-0.1234	-0.0966	0.0152	0.0119
		III	3.42	18.00	0.5340	1.2553	-0.5696	-0.1201	0.3244	0.0684
		I	11.03	19.00	1.0426	1.2788	-0.0610	-0.0966	0.0037	0.0059
	JAN	II	10.59	19.00	1.0249	1.2788	-0.0787	-0.0966	0.0062	0.0076
		III	10.06	18.00	1.0026	1.2553	-0.1010	-0.1201	0.0102	0.0121
		I	9.62	17.00	0.9829	1.2304	-0.1206	-0.1449	0.0146	0.0175
	FEB	II	9.07	17.00	0.9576	1.2304	-0.1460	-0.1449	0.0213	0.0211
		III	8.73	16.00	0.9410	1.2041	-0.1626	-0.1712	0.0264	0.0278
		I	9.65	16.00	0.9845	1.2041	-0.1191	-0.1712	0.0142	0.0204
	MAR	II	11.19	18.00	1.0488	1.2553	-0.0548	-0.1201	0.0030	0.0066
		III	11.48	19.00	1.0599	1.2788	-0.0436	-0.0966	0.0019	0.0042
		I	11.91	20.00	1.0759	1.3010	-0.0277	-0.0743	0.0008	0.0021
	APR	II	10.85	20.00	1.0354	1.3010	-0.0682	-0.0743	0.0046	0.0051
		III	15.00	26.00	1.1761	1.4150	0.0725	0.0396	0.0053	0.0029
		I	28.03	45.00	1.4476	1.6532	0.3440	0.2779	0.1184	0.0956
	MAY	II	33.90	74.00	1.5302	1.8692	0.4266	0.4939	0.1820	0.2107
		III	72.58	125.00	1.8608	2.0969	0.7572	0.7216	0.5734	0.5464
G.TOTAL					264.86	330.08	0.00	0.00	15.65	14.99
NO. OF PERIOD			240		LOG x'	LOG y'				
AVERAGE					1.1036	1.3753				
Co-efficient of Corelation										
b	=	SIGMA	X*Y	=	0.9580					
		SIGMA	X^2							

REGRESSION ANALYSIS BETWEEN DISCHARGES OF TANDI PLUS GHOUSAL AND UDAIPUR JUNE- JULY

YEAR	MONTH		UDAIPUR D/SITE Qx (Cumecs)	TDI.+GSL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN LOG y	X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	195.00	152.28	2.2900	2.1826	-0.4193	-0.3874	0.1758	0.1625
1974	JUN	II	318.00	248.59	2.5024	2.3955	-0.2069	-0.1746	0.0428	0.0361
		III	203.00	167.44	2.3075	2.2239	-0.4018	-0.3462	0.1615	0.1391
		I	299.00	246.61	2.4757	2.3920	-0.2337	-0.1781	0.0546	0.0416
	JUL	II	636.00	452.53	2.8035	2.6556	0.0941	0.0856	0.0089	0.0081
		III	504.00	374.12	2.7024	2.5730	-0.0069	0.0029	0.0000	0.0000
		I	361.00	282.44	2.5575	2.4509	-0.1518	-0.1192	0.0231	0.0181
1975	JUN	II	558.00	398.51	2.7466	2.6004	0.0373	0.0304	0.0014	0.0011
		III	651.00	468.02	2.8136	2.6703	0.1042	0.1002	0.0109	0.0104
		I	513.00	360.00	2.7101	2.5563	0.0008	-0.0138	0.0000	0.0000
	JUL	II	887.00	613.91	2.9479	2.7881	0.2386	0.2180	0.0569	0.0520
		III	618.00	429.52	2.7910	2.6330	0.0816	0.0629	0.0067	0.0051
		I	477.00	317.18	2.6785	2.5013	-0.0308	-0.0688	0.0010	0.0021
1976	JUN	II	351.00	247.79	2.5453	2.3941	-0.1640	-0.1760	0.0269	0.0289
		III	287.00	202.81	2.4579	2.3071	-0.2515	-0.2630	0.0632	0.0661
		I	574.00	415.59	2.7589	2.6187	0.0496	0.0486	0.0025	0.0024
	JUL	II	721.00	560.80	2.8579	2.7488	0.1486	0.1787	0.0221	0.0266
		III	755.00	580.87	2.8779	2.7641	0.1686	0.1940	0.0284	0.0327
		I	258.00	196.59	2.4116	2.2936	-0.2977	-0.2765	0.0886	0.0823
1977	JUN	II	184.00	141.04	2.2648	2.1493	-0.4445	-0.4207	0.1976	0.1870
		III	633.00	436.71	2.8014	2.6402	0.0921	0.0701	0.0085	0.0065
		I	828.00	579.09	2.9180	2.7627	0.2087	0.1927	0.0435	0.0402
	JUL	II	754.00	532.87	2.8774	2.7266	0.1680	0.1565	0.0282	0.0263
		III	601.00	450.26	2.7789	2.6535	0.0695	0.0834	0.0048	0.0058
		I	456.00	353.06	2.6590	2.5478	-0.0504	-0.0222	0.0025	0.0011
1978	JUN	II	424.00	312.95	2.6274	2.4955	-0.0820	-0.0746	0.0067	0.0061
		III	845.00	640.03	2.9269	2.8062	0.2175	0.2361	0.0473	0.0514
		I	904.00	647.43	2.9562	2.8112	0.2468	0.2411	0.0609	0.0595
	JUL	II	700.00	540.15	2.8451	2.7325	0.1358	0.1624	0.0184	0.0221
		III	700.00	536.99	2.8451	2.7300	0.1358	0.1599	0.0184	0.0217
		I	197.00	141.70	2.2945	2.1514	-0.4149	-0.4187	0.1721	0.1737
1979	JUN	II	401.00	295.39	2.6031	2.4704	-0.1062	-0.0997	0.0113	0.0106
		III	806.00	597.47	2.9063	2.7763	0.1970	0.2062	0.0388	0.0406
		I	736.00	541.98	2.8669	2.7340	0.1575	0.1639	0.0248	0.0258
	JUL	II	927.00	660.97	2.9671	2.8202	0.2577	0.2501	0.0664	0.0645
		III	698.00	519.08	2.8439	2.7152	0.1345	0.1451	0.0181	0.0195
		I	395.00	301.89	2.5966	2.4798	-0.1127	-0.0902	0.0127	0.0102
1980	JUN	II	481.00	356.45	2.6821	2.5520	-0.0272	-0.0181	0.0007	0.0005
		III	696.00	507.78	2.8426	2.7057	0.1333	0.1356	0.0178	0.0181
		I	731.00	536.27	2.8639	2.7294	0.1546	0.1593	0.0239	0.0246
	JUL	II	762.00	524.29	2.8820	2.7196	0.1726	0.1495	0.0298	0.0258
		III	635.00	474.10	2.8028	2.6759	0.0934	0.1058	0.0087	0.0099
		I	292.00	221.07	2.4654	2.3445	-0.2440	-0.2256	0.0595	0.0550
1981	JUN	II	311.00	229.57	2.4928	2.3609	-0.2166	-0.2092	0.0469	0.0453
		III	738.00	501.01	2.8681	2.6998	0.1587	0.1298	0.0252	0.0206
		I	582.00	418.26	2.7649	2.6214	0.0556	0.0514	0.0031	0.0029
	JUL	II	779.00	526.95	2.8915	2.7218	0.1822	0.1517	0.0332	0.0276
		III	818.00	572.92	2.9128	2.7581	0.2034	0.1880	0.0414	0.0382
		I	320.00	182.53	2.5051	2.2613	-0.2042	-0.3088	0.0417	0.0630
1982	JUN	II	537.00	332.83	2.7300	2.5222	0.0206	-0.0479	0.0004	-0.0010
		III	519.00	328.64	2.7152	2.5167	0.0058	-0.0534	0.0000	-0.0003
		I	582.00	439.48	2.7649	2.6429	0.0556	0.0729	0.0031	0.0040
	JUL	II	705.00	464.71	2.8482	2.6672	0.1388	0.0971	0.0193	0.0135
		III	903.00	539.55	2.9557	2.7320	0.2463	0.1619	0.0607	0.0399
		I	264.00	204.20	2.4216	2.3101	-0.2877	-0.2600	0.0828	0.0748
1983	JUN	II	310.00	231.29	2.4914	2.3642	-0.2180	-0.2059	0.0475	0.0449
		III	555.00	327.14	2.7443	2.5147	0.0349	-0.0554	0.0012	-0.0019
		I	497.00	402.41	2.6964	2.6047	-0.0130	0.0346	0.0002	-0.0004
	JUL	II	350.00	313.79	2.5441	2.4966	-0.1653	-0.0734	0.0273	0.0121
		III	725.00	538.52	2.8603	2.7312	0.1510	0.1611	0.0228	0.0243
G.TOTAL					162.56	154.21	0.00	0.00	2.15	2.03
NO. OF PERIOD			60		**LOG x'**	**LOG y'**				
AVERAGE					**2.7093**	**2.5701**				
Co-efficient of Corelation										
b	=	SIGMA	X*Y	=	**0.9422**					
		SIGMA	X^2							

REGRESSION ANALYSIS BETWEEN DISCHARGES OF TANDI PLUS GHOUSAL AND UDAIPUR AUG.- SEPT

YEAR	MONTH		UDAIPUR D/SITE Qx (Cumecs)	TDI.+GSL D/SITE Qy (Cumecs)	LOG x	LOG y	DEVIATION FROM MEAN X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	524.00	402.96	2.7193	2.6053	0.1394	0.1697	0.0194	0.0237
1974	AUG	II	430.00	330.22	2.6335	2.5188	0.0535	0.0832	0.0029	0.0045
		III	417.00	311.99	2.6201	2.4941	0.0402	0.0586	0.0016	0.0024
		I	293.00	211.23	2.4669	2.3248	-0.1131	-0.1108	0.0128	0.0125
	SEPT	II	205.00	160.48	2.3118	2.2054	-0.2682	-0.2302	0.0719	0.0617
		III	144.00	107.41	2.1584	2.0310	-0.4216	-0.4045	0.1777	0.1705
		I	731.00	511.62	2.8639	2.7089	0.2840	0.2734	0.0806	0.0776
1975	AUG	II	856.00	575.79	2.9325	2.7603	0.3525	0.3247	0.1243	0.1145
		III	535.00	370.86	2.7284	2.5692	0.1484	0.1336	0.0220	0.0198
		I	718.00	284.37	2.8561	2.4539	0.2762	0.0183	0.0763	0.0051
	SEPT	II	288.00	200.70	2.4594	2.3025	-0.1205	-0.1330	0.0145	0.0160
		III	177.00	124.74	2.2480	2.0960	-0.3320	-0.3396	0.1102	0.1127
		I	569.00	408.32	2.7551	2.6110	0.1752	0.1754	0.0307	0.0307
1976	AUG	II	518.00	360.47	2.7143	2.5569	0.1344	0.1213	0.0181	0.0163
		III	381.00	282.12	2.5809	2.4504	0.0010	0.0148	0.0000	0.0000
		I	326.00	240.73	2.5132	2.3815	-0.0667	-0.0541	0.0045	0.0036
	SEPT	II	178.00	138.96	2.2504	2.1429	-0.3295	-0.2927	0.1086	0.0964
		III	159.00	113.35	2.2014	2.0544	-0.3785	-0.3812	0.1433	0.1443
		I	724.00	530.88	2.8597	2.7250	0.2798	0.2894	0.0783	0.0810
1977	AUG	II	501.00	368.00	2.6998	2.5658	0.1199	0.1303	0.0144	0.0156
		III	468.00	330.56	2.6702	2.5193	0.0903	0.0837	0.0082	0.0076
		I	396.00	281.03	2.5977	2.4488	0.0178	0.0132	0.0003	0.0002
	SEPT	II	226.00	170.94	2.3541	2.2328	-0.2258	-0.2027	0.0510	0.0458
		III	151.00	114.63	2.1790	2.0593	-0.4010	-0.3763	0.1608	0.1509
		I	725.00	550.35	2.8603	2.7406	0.2804	0.3050	0.0786	0.0855
1978	AUG	II	619.00	435.17	2.7917	2.6387	0.2118	0.2031	0.0448	0.0430
		III	528.00	378.00	2.7226	2.5775	0.1427	0.1419	0.0204	0.0202
		I	253.00	186.00	2.4031	2.2695	-0.1768	-0.1661	0.0313	0.0294
	SEPT	II	221.00	142.98	2.3444	2.1553	-0.2355	-0.2803	0.0555	0.0660
		III	164.00	136.28	2.2148	2.1344	-0.3651	-0.3012	0.1333	0.1100
		I	817.00	574.89	2.9122	2.7596	0.3323	0.3240	0.1104	0.1077
1979	AUG	II	666.00	478.29	2.8235	2.6797	0.2435	0.2441	0.0593	0.0594
		III	437.00	335.16	2.6405	2.5253	0.0605	0.0897	0.0037	0.0054
		I	423.00	311.36	2.6263	2.4933	0.0464	0.0577	0.0022	0.0027
	SEPT	II	216.00	164.16	2.3345	2.2153	-0.2455	-0.2203	0.0603	0.0541
		III	130.00	74.60	2.1139	1.8727	-0.4660	-0.5629	0.2172	0.2623
		I	750.00	515.94	2.8751	2.7126	0.2951	0.2770	0.0871	0.0818
1980	AUG	II	423.00	318.18	2.6263	2.5027	0.0464	0.0671	0.0022	0.0031
		III	473.00	356.30	2.6749	2.5518	0.0949	0.1162	0.0090	0.0110
		I	301.00	225.52	2.4786	2.3532	-0.1014	-0.0824	0.0103	0.0084
	SEPT	II	213.00	144.10	2.3284	2.1587	-0.2516	-0.2769	0.0633	0.0697
		III	165.00	99.36	2.2175	1.9972	-0.3625	-0.4384	0.1314	0.1589
		I	694.00	487.37	2.8414	2.6879	0.2614	0.2523	0.0683	0.0659
1981	AUG	II	628.00	441.32	2.7980	2.6448	0.2180	0.2092	0.0475	0.0456
		III	467.00	303.76	2.6693	2.4825	0.0894	0.0469	0.0080	0.0042
		I	370.00	250.66	2.5682	2.3991	-0.0117	-0.0365	0.0001	0.0004
	SEPT	II	221.00	141.39	2.3444	2.1504	-0.2355	-0.2852	0.0555	0.0672
		III	211.00	125.77	2.3243	2.0996	-0.2557	-0.3360	0.0654	0.0859
		I	861.00	578.82	2.9350	2.7625	0.3551	0.3270	0.1261	0.1161
1982	AUG	II	664.00	486.72	2.8222	2.6873	0.2422	0.2517	0.0587	0.0610
		III	425.00	344.35	2.6284	2.5370	0.0485	0.1014	0.0023	0.0049
		I	338.00	251.49	2.5289	2.4005	-0.0510	-0.0351	0.0026	0.0018
	SEPT	II	339.00	219.20	2.5302	2.3408	-0.0497	-0.0947	0.0025	0.0047
		III	136.00	152.19	2.1335	2.1824	-0.4464	-0.2532	0.1993	0.1130
		I	903.00	643.85	2.9557	2.8088	0.3757	0.3732	0.1412	0.1402
1983	AUG	II	686.00	546.24	2.8363	2.7374	0.2564	0.3018	0.0657	0.0774
		III	697.00	539.17	2.8432	2.7317	0.2633	0.2961	0.0693	0.0780
		I	597.00	437.26	2.7760	2.6407	0.1960	0.2052	0.0384	0.0402
	SEPT	II	406.00	299.29	2.6085	2.4761	0.0286	0.0405	0.0008	0.0012
		III	195.00	161.98	2.2900	2.2095	-0.2899	-0.2261	0.0840	0.0656
G.TOTAL					154.80	146.14	0.00	0.00	3.49	3.37
NO. OF PERIOD			60		**LOG x'**	**LOG y'**				
AVERAGE					**2.5799**	**2.4356**				
Co-efficient of Corelation										
b	=	SIGMA	X*Y	=	**0.9648**					
		SIGMA	X^2							

REGRESSION ANALYSIS BETWEEN DISCHARGES OF TANDI PLUS GHOUSAL AND UDAIPUR (N-MON

YEAR	MONTH		UDAIPUR D/SITE Qx (Cumecs)	TDI.+GSL D/SITE Qy (Cumecs)	LOG x	LOG y	DEVIATION FROM MEAN X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	82.00	59.62	1.9138	1.7754	0.1598	0.2095	0.0256	0.0335
1974-75	OCT	II	67.00	48.58	1.8261	1.6865	0.0721	0.1206	0.0052	0.0087
		III	55.00	39.31	1.7404	1.5945	-0.0136	0.0287	0.0002	-0.0004
		I	46.00	32.92	1.6628	1.5175	-0.0912	-0.0484	0.0083	0.0044
	NOV	II	40.00	35.83	1.6021	1.5542	-0.1519	-0.0116	0.0231	0.0018
		III	36.00	27.45	1.5563	1.4385	-0.1977	-0.1273	0.0391	0.0252
		I	36.00	25.69	1.5563	1.4098	-0.1977	-0.1561	0.0391	0.0309
	DEC	II	35.00	23.43	1.5441	1.3698	-0.2099	-0.1961	0.0441	0.0412
		III	35.00	24.42	1.5441	1.3877	-0.2099	-0.1781	0.0441	0.0374
		I	32.00	22.38	1.5051	1.3499	-0.2488	-0.2160	0.0619	0.0537
	JAN	II	31.00	22.07	1.4914	1.3438	-0.2626	-0.2220	0.0690	0.0583
		III	26.00	19.60	1.4150	1.2923	-0.3390	-0.2736	0.1149	0.0927
		I	27.00	22.19	1.4314	1.3462	-0.3226	-0.2197	0.1041	0.0709
	FEB	II	31.00	21.59	1.4914	1.3343	-0.2626	-0.2316	0.0690	0.0608
		III	32.00	23.12	1.5051	1.3640	-0.2488	-0.2019	0.0619	0.0502
		I	30.00	18.30	1.4771	1.2625	-0.2768	-0.3034	0.0766	0.0840
	MAR	II	31.00	18.43	1.4914	1.2655	-0.2626	-0.3003	0.0690	0.0789
		III	31.00	23.26	1.4914	1.3666	-0.2626	-0.1992	0.0690	0.0523
		I	38.00	26.42	1.5798	1.4219	-0.1742	-0.1439	0.0303	0.0251
	APR	II	54.00	35.38	1.7324	1.5488	-0.0216	-0.0171	0.0005	0.0004
		III	71.00	48.70	1.8513	1.6875	0.0973	0.1217	0.0095	0.0118
		I	108.00	74.16	2.0334	1.8702	0.2795	0.3043	0.0781	0.0850
	MAY	II	228.00	158.15	2.3579	2.1991	0.6040	0.6332	0.3648	0.3824
		III	277.00	205.11	2.4425	2.3120	0.6885	0.7461	0.4740	0.5137
		I	148.00	97.47	2.1703	1.9889	0.4163	0.4230	0.1733	0.1761
1975-76	OCT	II	121.00	81.99	2.0828	1.9138	0.3288	0.3479	0.1081	0.1144
		III	79.00	54.50	1.8976	1.7364	0.1437	0.1706	0.0206	0.0245
		I	58.00	39.53	1.7634	1.5969	0.0095	0.0311	0.0001	0.0003
	NOV	II	49.00	34.42	1.6902	1.5368	-0.0638	-0.0290	0.0041	0.0019
		III	42.00	31.23	1.6232	1.4946	-0.1307	-0.0713	0.0171	0.0093
		I	39.00	29.32	1.5911	1.4672	-0.1629	-0.0987	0.0265	0.0161
	DEC	II	33.00	26.02	1.5185	1.4153	-0.2355	-0.1505	0.0554	0.0354
		III	32.00	24.75	1.5051	1.3936	-0.2488	-0.1723	0.0619	0.0429
		I	33.00	24.16	1.5185	1.3831	-0.2355	-0.1827	0.0554	0.0430
	JAN	II	33.00	23.46	1.5185	1.3703	-0.2355	-0.1955	0.0554	0.0460
		III	32.00	21.84	1.5051	1.3393	-0.2488	-0.2266	0.0619	0.0564
		I	31.00	22.41	1.4914	1.3504	-0.2626	-0.2154	0.0690	0.0566
	FEB	II	25.00	18.21	1.3979	1.2603	-0.3560	-0.3055	0.1268	0.1088
		III	28.00	20.03	1.4472	1.3017	-0.3068	-0.2642	0.0941	0.0810
		I	31.00	22.49	1.4914	1.3520	-0.2626	-0.2139	0.0690	0.0562
	MAR	II	29.00	21.10	1.4624	1.3243	-0.2916	-0.2416	0.0850	0.0704
		III	28.00	20.13	1.4472	1.3038	-0.3068	-0.2620	0.0941	0.0804
		I	34.00	20.08	1.5315	1.3028	-0.2225	-0.2631	0.0495	0.0585
	APR	II	42.00	26.91	1.6232	1.4299	-0.1307	-0.1359	0.0171	0.0178
		III	101.00	60.08	2.0043	1.7787	0.2504	0.2129	0.0627	0.0533
		I	131.00	83.13	2.1173	1.9198	0.3633	0.3539	0.1320	0.1286
	MAY	II	189.00	127.74	2.2765	2.1063	0.5225	0.5405	0.2730	0.2824
		III	276.00	184.72	2.4409	2.2665	0.6869	0.7007	0.4719	0.4813
		I	118.00	80.29	2.0719	1.9047	0.3179	0.3388	0.1011	0.1077
1976-77	OCT	II	70.00	51.19	1.8451	1.7092	0.0911	0.1433	0.0083	0.0131
		III	56.00	39.71	1.7482	1.5989	-0.0058	0.0331	0.0000	-0.0002
		I	52.00	35.45	1.7160	1.5496	-0.0380	-0.0162	0.0014	0.0006
	NOV	II	44.00	32.17	1.6435	1.5075	-0.1105	-0.0584	0.0122	0.0065
		III	37.00	28.95	1.5682	1.4616	-0.1858	-0.1042	0.0345	0.0194
		I	34.00	26.40	1.5315	1.4216	-0.2225	-0.1442	0.0495	0.0321
	DEC	II	31.00	23.24	1.4914	1.3662	-0.2626	-0.1996	0.0690	0.0524
		III	31.00	21.93	1.4914	1.3410	-0.2626	-0.2248	0.0690	0.0590
		I	30.00	20.07	1.4771	1.3025	-0.2768	-0.2633	0.0766	0.0729
	JAN	II	29.00	18.97	1.4624	1.2781	-0.2916	-0.2878	0.0850	0.0839
		III	155.00	16.18	2.1903	1.2090	0.4364	-0.3569	0.1904	-0.1557
		I	33.00	22.47	1.5185	1.3516	-0.2355	-0.2142	0.0554	0.0504
	FEB	II	27.00	19.22	1.4314	1.2838	-0.3226	-0.2821	0.1041	0.0910
		III	26.00	19.26	1.4150	1.2847	-0.3390	-0.2812	0.1149	0.0953
		I	28.00	19.12	1.4472	1.2815	-0.3068	-0.2844	0.0941	0.0872
	MAR	II	29.00	19.33	1.4624	1.2862	-0.2916	-0.2796	0.0850	0.0815
		III	37.00	26.05	1.5682	1.4158	-0.1858	-0.1500	0.0345	0.0279
		I	40.00	29.91	1.6021	1.4758	-0.1519	-0.0900	0.0231	0.0137
	APR	II	39.00	28.31	1.5911	1.4519	-0.1629	-0.1139	0.0265	0.0186
		III	47.00	34.28	1.6721	1.5350	-0.0819	-0.0308	0.0067	0.0025
		I	50.00	35.33	1.6990	1.5481	-0.0550	-0.0177	0.0030	0.0010
	MAY	II	75.00	51.18	1.8751	1.7091	0.1211	0.1433	0.0147	0.0173
		III	168.00	124.42	2.2253	2.0949	0.4713	0.5290	0.2222	0.2494

YEAR	MONTH		UDAIPUR D/SITE Qx (Cumecs)	TDI.+GSL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN LOG y	X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	109.00	80.11	2.0374	1.9037	0.2835	0.3378	0.0803	0.0958
1977-78	OCT	II	80.00	57.55	1.9031	1.7600	0.1491	0.1942	0.0222	0.0290
		III	69.00	47.45	1.8388	1.6762	0.0849	0.1104	0.0072	0.0094
		I	57.00	41.74	1.7559	1.6206	0.0019	0.0547	0.0000	0.0001
	NOV	II	49.00	36.30	1.6902	1.5599	-0.0638	-0.0059	0.0041	0.0004
		III	44.00	34.85	1.6435	1.5422	-0.1105	-0.0236	0.0122	0.0026
		I	38.00	32.17	1.5798	1.5075	-0.1742	-0.0584	0.0303	0.0102
	DEC	II	35.00	27.86	1.5441	1.4450	-0.2099	-0.1209	0.0441	0.0254
		III	33.00	25.35	1.5185	1.4040	-0.2355	-0.1619	0.0554	0.0381
		I	32.00	22.94	1.5051	1.3606	-0.2488	-0.2053	0.0619	0.0511
	JAN	II	33.00	26.57	1.5185	1.4244	-0.2355	-0.1415	0.0554	0.0333
		III	32.00	24.35	1.5051	1.3865	-0.2488	-0.1793	0.0619	0.0446
		I	32.00	22.16	1.5051	1.3456	-0.2488	-0.2203	0.0619	0.0548
	FEB	II	27.00	22.57	1.4314	1.3535	-0.3226	-0.2123	0.1041	0.0685
		III	32.00	27.02	1.5051	1.4317	-0.2488	-0.1342	0.0619	0.0334
		I	31.00	20.60	1.4914	1.3139	-0.2626	-0.2520	0.0690	0.0662
	MAR	II	31.00	20.10	1.4914	1.3032	-0.2626	-0.2626	0.0690	0.0690
		III	36.00	23.41	1.5563	1.3694	-0.1977	-0.1964	0.0391	0.0388
		I	38.00	25.10	1.5798	1.3997	-0.1742	-0.1662	0.0303	0.0289
	APR	II	66.00	40.41	1.8195	1.6065	0.0656	0.0406	0.0043	0.0027
		III	82.00	52.48	1.9138	1.7200	0.1598	0.1541	0.0256	0.0246
		I	197.00	146.66	2.2945	2.1663	0.5405	0.6005	0.2921	0.3246
	MAY	II	290.00	229.87	2.4624	2.3615	0.7084	0.7956	0.5019	0.5637
		III	336.00	267.93	2.5263	2.4280	0.7724	0.8622	0.5966	0.6659
		I	121.00	80.94	2.0828	1.9082	0.3288	0.3423	0.1081	0.1126
1978-79	OCT	II	96.00	61.61	1.9823	1.7897	0.2283	0.2238	0.0521	0.0511
		III	79.00	59.49	1.8976	1.7744	0.1437	0.2086	0.0206	0.0300
		I	59.00	40.26	1.7709	1.6049	0.0169	0.0390	0.0003	0.0007
	NOV	II	49.00	35.70	1.6902	1.5527	-0.0638	-0.0132	0.0041	0.0008
		III	44.00	36.17	1.6435	1.5583	-0.1105	-0.0075	0.0122	0.0008
		I	40.00	33.02	1.6021	1.5188	-0.1519	-0.0471	0.0231	0.0071
	DEC	II	38.00	31.29	1.5798	1.4954	-0.1742	-0.0704	0.0303	0.0123
		III	35.00	31.17	1.5441	1.4937	-0.2099	-0.0721	0.0441	0.0151
		I	41.00	30.52	1.6128	1.4846	-0.1412	-0.0813	0.0199	0.0115
	JAN	II	42.00	26.92	1.6232	1.4301	-0.1307	-0.1358	0.0171	0.0177
		III	40.00	26.07	1.6021	1.4161	-0.1519	-0.1497	0.0231	0.0227
		I	39.00	27.86	1.5911	1.4450	-0.1629	-0.1209	0.0265	0.0197
	FEB	II	38.00	25.12	1.5798	1.4000	-0.1742	-0.1658	0.0303	0.0289
		III	35.00	25.41	1.5441	1.4050	-0.2099	-0.1608	0.0441	0.0338
		I	41.00	25.35	1.6128	1.4040	-0.1412	-0.1619	0.0199	0.0229
	MAR	II	40.00	40.35	1.6021	1.6058	-0.1519	0.0400	0.0231	-0.0061
		III	45.00	56.50	1.6532	1.7520	-0.1008	0.1862	0.0102	-0.0188
		I	64.00	51.00	1.8062	1.7076	0.0522	0.1417	0.0027	0.0074
	APR	II	91.00	54.00	1.9590	1.7324	0.2051	0.1665	0.0421	0.0342
		III	144.00	88.02	2.1584	1.9446	0.4044	0.3787	0.1635	0.1532
		I	179.00	118.02	2.2529	2.0720	0.4989	0.5061	0.2489	0.2525
	MAY	II	163.00	102.58	2.2122	2.0111	0.4582	0.4452	0.2100	0.2040
		III	145.00	100.78	2.1614	2.0034	0.4074	0.4375	0.1660	0.1783
		I	127.00	68.72	2.1038	1.8371	0.3498	0.2712	0.1224	0.0949
1979-80	OCT	II	108.00	56.94	2.0334	1.7554	0.2795	0.1896	0.0781	0.0530
		III	91.00	48.83	1.9590	1.6887	0.2051	0.1228	0.0421	0.0252
		I	83.00	44.23	1.9191	1.6457	0.1651	0.0799	0.0273	0.0132
	NOV	II	70.00	37.74	1.8451	1.5768	0.0911	0.0110	0.0083	0.0010
		III	65.00	36.24	1.8129	1.5592	0.0589	-0.0067	0.0035	-0.0004
		I	59.00	34.74	1.7709	1.5408	0.0169	-0.0250	0.0003	-0.0004
	DEC	II	57.00	31.93	1.7559	1.5042	0.0019	-0.0616	0.0000	-0.0001
		III	57.00	31.86	1.7559	1.5032	0.0019	-0.0626	0.0000	-0.0001
		I	57.00	27.68	1.7559	1.4422	0.0019	-0.1237	0.0000	-0.0002
	JAN	II	56.00	26.76	1.7482	1.4275	-0.0058	-0.1384	0.0000	0.0008
		III	52.00	24.08	1.7160	1.3817	-0.0380	-0.1842	0.0014	0.0070
		I	58.00	29.54	1.7634	1.4704	0.0095	-0.0954	0.0001	-0.0009
	FEB	II	57.00	26.83	1.7559	1.4286	0.0019	-0.1372	0.0000	-0.0003
		III	54.00	28.79	1.7324	1.4592	-0.0216	-0.1066	0.0005	0.0023
		I	51.00	25.50	1.7076	1.4065	-0.0464	-0.1593	0.0022	0.0074
	MAR	II	51.00	27.55	1.7076	1.4401	-0.0464	-0.1257	0.0022	0.0058
		III	51.00	30.63	1.7076	1.4861	-0.0464	-0.0797	0.0022	0.0037
		I	58.00	33.90	1.7634	1.5302	0.0095	-0.0356	0.0001	-0.0003
	APR	II	71.00	38.03	1.8513	1.5801	0.0973	0.0143	0.0095	0.0014
		III	95.00	42.98	1.9777	1.6333	0.2238	0.0674	0.0501	0.0151
		I	155.00	91.76	2.1903	1.9627	0.4364	0.3968	0.1904	0.1732
	MAY	II	182.00	123.09	2.2601	2.0902	0.5061	0.5244	0.2561	0.2654
		III	240.00	177.23	2.3802	2.2485	0.6262	0.6827	0.3922	0.4275

YEAR	MONTH		UDAIPUR D/SITE Qx (Cumecs)	TDI.+GSL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN LOG y	X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		I	150.00	84.26	2.1761	1.9256	0.4221	0.3598	0.1782	0.1519
1980-81	OCT	II	116.00	56.63	2.0645	1.7530	0.3105	0.1872	0.0964	0.0581
		III	95.00	45.26	1.9777	1.6557	0.2238	0.0899	0.0501	0.0201
		I	84.00	33.35	1.9243	1.5231	0.1703	-0.0427	0.0290	-0.0073
	NOV	II	77.00	29.02	1.8865	1.4627	0.1325	-0.1031	0.0176	-0.0137
		III	72.00	28.62	1.8573	1.4567	0.1034	-0.1092	0.0107	-0.0113
		I	68.00	26.16	1.8325	1.4176	0.0785	-0.1482	0.0062	-0.0116
	DEC	II	67.00	24.82	1.8261	1.3948	0.0721	-0.1710	0.0052	-0.0123
		III	65.00	23.64	1.8129	1.3736	0.0589	-0.1922	0.0035	-0.0113
		I	65.00	24.71	1.8129	1.3929	0.0589	-0.1730	0.0035	-0.0102
	JAN	II	62.00	23.35	1.7924	1.3683	0.0384	-0.1976	0.0015	-0.0076
		III	65.00	22.36	1.8129	1.3495	0.0589	-0.2164	0.0035	-0.0128
		I	59.00	22.46	1.7709	1.3514	0.0169	-0.2144	0.0003	-0.0036
	FEB	II	64.00	23.07	1.8062	1.3630	0.0522	-0.2028	0.0027	-0.0106
		III	64.00	24.76	1.8062	1.3938	0.0522	-0.1721	0.0027	-0.0090
		I	61.00	23.76	1.7853	1.3758	0.0314	-0.1900	0.0010	-0.0060
	MAR	II	60.00	23.60	1.7782	1.3729	0.0242	-0.1929	0.0006	-0.0047
		III	65.00	24.80	1.8129	1.3945	0.0589	-0.1714	0.0035	-0.0101
		I	70.00	26.44	1.8451	1.4223	0.0911	-0.1436	0.0083	-0.0131
	APR	II	100.00	35.34	2.0000	1.5483	0.2460	-0.0176	0.0605	-0.0043
		III	149.00	70.52	2.1732	1.8483	0.4192	0.2825	0.1757	0.1184
		I	304.00	201.93	2.4829	2.3052	0.7289	0.7394	0.5313	0.5389
	MAY	II	321.00	243.63	2.5065	2.3867	0.7525	0.8209	0.5663	0.6177
		III	405.00	287.76	2.6075	2.4590	0.8535	0.8932	0.7284	0.7623
		I	125.00	62.05	2.0969	1.7927	0.3429	0.2269	0.1176	0.0778
1981-82	OCT	II	108.00	51.80	2.0334	1.7143	0.2795	0.1485	0.0781	0.0415
		III	92.00	37.24	1.9638	1.5710	0.2098	0.0052	0.0440	0.0011
		I	76.00	33.72	1.8808	1.5279	0.1268	-0.0380	0.0161	-0.0048
	NOV	II	57.00	28.67	1.7559	1.4574	0.0019	-0.1084	0.0000	-0.0002
		III	53.00	25.31	1.7243	1.4033	-0.0297	-0.1626	0.0009	0.0048
		I	49.00	23.42	1.6902	1.3696	-0.0638	-0.1963	0.0041	0.0125
	DEC	II	45.00	20.94	1.6532	1.3210	-0.1008	-0.2449	0.0102	0.0247
		III	44.00	19.72	1.6435	1.2949	-0.1105	-0.2709	0.0122	0.0299
		I	36.00	22.34	1.5563	1.3491	-0.1977	-0.2168	0.0391	0.0428
	JAN	II	35.00	22.20	1.5441	1.3464	-0.2099	-0.2195	0.0441	0.0461
		III	33.00	21.41	1.5185	1.3306	-0.2355	-0.2352	0.0554	0.0554
		I	36.00	22.32	1.5563	1.3487	-0.1977	-0.2171	0.0391	0.0429
	FEB	II	35.00	22.70	1.5441	1.3560	-0.2099	-0.2098	0.0441	0.0440
		III	37.00	21.76	1.5682	1.3377	-0.1858	-0.2282	0.0345	0.0424
		I	37.00	23.37	1.5682	1.3687	-0.1858	-0.1972	0.0345	0.0366
	MAR	II	37.00	22.92	1.5682	1.3602	-0.1858	-0.2056	0.0345	0.0382
		III	38.00	22.09	1.5798	1.3442	-0.1742	-0.2216	0.0303	0.0386
		I	45.00	24.50	1.6532	1.3892	-0.1008	-0.1767	0.0102	0.0178
	APR	II	56.00	26.13	1.7482	1.4171	-0.0058	-0.1487	0.0000	0.0009
		III	80.00	36.40	1.9031	1.5611	0.1491	-0.0047	0.0222	-0.0007
		I	138.00	70.96	2.1399	1.8510	0.3859	0.2852	0.1489	0.1101
	MAY	II	109.00	64.11	2.0374	1.8069	0.2835	0.2411	0.0803	0.0683
		III	179.00	106.79	2.2529	2.0285	0.4989	0.4627	0.2489	0.2308
		I	84.00	100.84	1.9243	2.0036	0.1703	0.4378	0.0290	0.0746
1982-83	OCT	II	71.00	88.58	1.8513	1.9473	0.0973	0.3815	0.0095	0.0371
		III	63.00	55.79	1.7993	1.7466	0.0454	0.1807	0.0021	0.0082
		I	53.00	41.31	1.7243	1.6161	-0.0297	0.0502	0.0009	-0.0015
	NOV	II	48.00	38.77	1.6812	1.5885	-0.0727	0.0227	0.0053	-0.0016
		III	44.00	34.27	1.6435	1.5349	-0.1105	-0.0309	0.0122	0.0034
		I	42.00	29.40	1.6232	1.4683	-0.1307	-0.0975	0.0171	0.0127
	DEC	II	42.00	25.54	1.6232	1.4072	-0.1307	-0.1586	0.0171	0.0207
		III	39.00	26.22	1.5911	1.4186	-0.1629	-0.1472	0.0265	0.0240
		I	31.00	22.36	1.4914	1.3494	-0.2626	-0.2164	0.0690	0.0568
	JAN	II	29.00	22.40	1.4624	1.3502	-0.2916	-0.2156	0.0850	0.0629
		III	28.00	22.62	1.4472	1.3545	-0.3068	-0.2114	0.0941	0.0648
		I	27.00	21.39	1.4314	1.3302	-0.3226	-0.2356	0.1041	0.0760
	FEB	II	26.00	21.20	1.4150	1.3263	-0.3390	-0.2395	0.1149	0.0812
		III	24.00	21.45	1.3802	1.3314	-0.3738	-0.2344	0.1397	0.0876
		I	26.00	29.99	1.4150	1.4770	-0.3390	-0.0889	0.1149	0.0301
	MAR	II	30.00	32.42	1.4771	1.5108	-0.2768	-0.0550	0.0766	0.0152
		III	32.00	29.44	1.5051	1.4689	-0.2488	-0.0969	0.0619	0.0241
		I	44.00	29.41	1.6435	1.4685	-0.1105	-0.0973	0.0122	0.0108
	APR	II	45.00	28.28	1.6532	1.4515	-0.1008	-0.1144	0.0102	0.0115
		III	45.00	33.42	1.6532	1.5240	-0.1008	-0.0418	0.0102	0.0042
		I	100.00	57.45	2.0000	1.7593	0.2460	0.1934	0.0605	0.0476
	MAY	II	173.00	91.11	2.2380	1.9596	0.4841	0.3937	0.2343	0.1906
		III	167.00	139.24	2.2227	2.1438	0.4687	0.5779	0.2197	0.2709
1983-84		I	142.00	121.51	2.1523	2.0846	0.3983	0.5188	0.1587	0.2066
	OCT	II	99.00	78.07	1.9956	1.8925	0.2417	0.3266	0.0584	0.0789
		III	62.00	50.04	1.7924	1.6993	0.0384	0.1335	0.0015	0.0051
		I	50.00	39.42	1.6990	1.5957	-0.0550	0.0299	0.0030	-0.0016
	NOV	II	48.00	36.67	1.6812	1.5643	-0.0727	-0.0015	0.0053	0.0001
		III	44.00	34.10	1.6435	1.5328	-0.1105	-0.0331	0.0122	0.0037

YEAR	MONTH		UDAIPUR D/SITE Qx (Cumecs)	TDI.+GSL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN			X^2	X*Y
						LOG y	X LOGx-LOGX'	Y LOGy-LOGy'		
	DEC	I	42.00	30.40	1.6232	1.4828	-0.1307	-0.0830	0.0171	0.0109
		II	39.00	28.55	1.5911	1.4557	-0.1629	-0.1102	0.0265	0.0180

YEAR	MONTH		UDAIPUR D/SITE Qx (Cumecs)	TDI.+GSL D/SITE Qy (Cumecs)	LOG x	DEVIATION FROM MEAN LOG y	X LOGx-LOGX'	Y LOGy-LOGy'	X^2	X*Y
		III	36.00	21.42	1.5563	1.3308	-0.1977	-0.2350	0.0391	0.0465
		I	35.00	30.03	1.5441	1.4776	-0.2099	-0.0883	0.0441	0.0185
	JAN	II	35.00	29.59	1.5441	1.4711	-0.2099	-0.0947	0.0441	0.0199
		III	32.00	28.06	1.5051	1.4481	-0.2488	-0.1178	0.0619	0.0293
		I	30.00	26.62	1.4771	1.4251	-0.2768	-0.1407	0.0766	0.0390
	FEB	II	28.00	26.07	1.4472	1.4161	-0.3068	-0.1497	0.0941	0.0459
		III	22.00	24.73	1.3424	1.3932	-0.4115	-0.1726	0.1694	0.0710
		I	33.00	25.65	1.5185	1.4091	-0.2355	-0.1568	0.0554	0.0369
	MAR	II	33.00	29.19	1.5185	1.4652	-0.2355	-0.1006	0.0554	0.0237
		III	36.00	30.48	1.5563	1.4840	-0.1977	-0.0818	0.0391	0.0162
		I	42.00	31.91	1.6232	1.5039	-0.1307	-0.0619	0.0171	0.0081
	APR	II	51.00	30.85	1.7076	1.4893	-0.0464	-0.0766	0.0022	0.0036
		III	69.00	41.00	1.8388	1.6128	0.0849	0.0469	0.0072	0.0040
		I	128.00	73.03	2.1072	1.8635	0.3532	0.2977	0.1248	0.1051
	MAY	II	180.00	107.90	2.2553	2.0330	0.5013	0.4672	0.2513	0.2342
		III	353.00	197.58	2.5478	2.2957	0.7938	0.7299	0.6301	0.5794
G.TOTAL					420.95	375.80	0.00	0.00	17.53	15.36
NO. OF PERIOD			240		LOG x'	LOG y'				
AVERAGE					1.7540	1.5658				
Co-efficient of Corelation										
b	=	SIGMA	X*Y	=	0.8766					
		SIGMA	X^2							

CHAPTER- IX

ENVIRONMENTAL ASPECTS

9.0 DESCRIPTION OF THE PROJECT

This Project is a run-of- the river scheme on Chandra river located upstream of the confluence of Chandra and Bhaga rivers at Tandi. The Power House is proposed on the right bank of Chandra river near Tandi ±600 m upstream of the confluence of Bhaga river. The Project area falls in Tehsil Keylong, Distt Lahaul & Spiti, H.P.

The Project envisages construction of a diversion barrage ± 16 m high just upstream of village Shulling for diverting a discharge of 119 cumecs through 10870 m long head race tunnel aligned on the right bank to surface Power house near Tandi utilizing a gross head of 153.22 m for generating 144 MW of power.

9.1 DESCRIPTION OF ENVIRONMENT

9.1.1 PHYSICAL RESOURCE

9.1.1.1 HYDROLOGY

Chenab is a major river of the Indus Basin originating from the snow covered slopes of Great Himalaya of Pir-Panjal ranges in Lahaul Spiti district and flows in a steep gradient with a series of loops and bends. The two major rivers in the head ridges namely Chandra and Bhaga form the Chandra- Bhaga (Chenab) river.

The river Chandra originates from Bara- lachala and is further augmented by Chandra Tal. The river, after flowing for more than 48 km in south westerly direction turns abruptly to the west and flows for another 64 km

until it meets the Bhaga river at Tandi. The average fall of the river is 1 in 60. The first 80 km of the valley is completely uninhabited, represented by barren, eroding mountain slopes, with large alluvial flats and fans at places.

The Chandra Bhaga (Chenab) flows North West and maintains an average fall of 1 in 176. After traversing a distance of about 101 km from the confluence at Tandi, it passes at karunala in to Pangi valley of Chamba District. From Thirot onwards the river, in places, passes through rocky gorges several metres deep.

9.1.1.2 GEOLOGY

Great mass of the mountains is composed of ancient rocks of the lurian age, chiefly Schists, Slates and Balaini conglomerates. The principal rock formation is Mica schist, Shale and Sandstone. Taken as a whole, the rock system is very fragile and liable to erosion, which is often accentuated by the rigours of severe winter, avalanches and the strong winds that accompany them.

The insolation and absence of any water action has led to the accumulation of abundant detrital products on dry uplands and valleys forming the mantle rock of regolith of fresh, un decomposed fragments. The bare mountains thus exhibit typical desert colouration of rocks due to peculiar solar weathering.

9.1.1.3 SOIL

The soil is generally grey and light, charactrised by scanty plant cover and low fertility status. In the absence of any substantial leaching of minerals from the soil, the bases are continuously added to the soil complex, rendering pH to the alkaline side.

The soil in the Chandra valley is loam to sandy loam with gravel. Its depth varies inversely with slope. Generally on ridges, spurs, precipitous slopes and southern aspects soil tends to be shallow and dry with numerous outcrops of bare rocks or its strew with boulders. In the vicinity of villages and nearby areas, denuded slopes are subjected to year round concentrated grazing leading to poor soil. On northern aspects, in folds and hollows as also on easier slopes the soil is fairly deep and fertile for tree growth. It is for this reason that the better forests in this region are on the left bank of the river Chandra

9.2 ECOLOGICAL RESOURCE

9.2.1 FORESTS

Owing to high elevation and severe climatic conditions, the valley does not possess any forest for the first 60 km of its start exept for one small patch of birch forest on the left bank of Chandra about 4 km up stream Gramphoo. As the river progresses from Khoksar towards Tandi, there is very scanty natural growth of Kail, Fir and Birch. The stocking of these forests in general is very poor and in most of the areas there are only scattered or stray trees while canopied forests occur only in a few situations. In canopied forests too, there are frequent blanks along nullahs due to avalanches. There are few scattered trees of Juniper also. Natural growth of trees, in general, is very poor and slow. However, there are some very good patches of natural regeneration.

9.2.2 FLORA AND FAUNA

9.2.2.1 FLORA

Plants (Trees species) found in the area are as under:

S.N.	English Name	Common Name	Scientific Name
1	Pencil Cedar	Devi diar	Juniperus macropoda
2	Birch	Bhoj patra	Betula utilis
3	Salix	Willow/ Beli	Salix
4	Blue Pine	Kail	Pinus wallichiana

9.2.2.2 MEDICINAL PLANTS

IMPORTANT MEDICINAL PLANTS FOUND IN THE AREA ARE

S.N.	Common Name	Botanical Name
1	Patish	Aconitum heterophyllum
2	Mitha Telia	Aconitum violaceum
3	Gandha	Artemisia maritima
4	Kuth	Saussurea lappa
5	Karoo	Picorhiza kurroo
6	Ban Kakri	Podophyllum hexandrum
7	Dhup	Jurinea macrocephala
8	Shingli Mingli	Dioscorea deltoides
9	Wild Rose	Rosa webbiana
10	Seabuck Thorn	Hypphopahe rhamnoides
11		Ephedera gerardiana
12	Patishan roots	Heracleum candicans spp.
13	Chora	Angelica glauca
14	Ban Ajwain	Thymus sephylum
15	Nihani	Valeriana hardwichii

9.2.2.3 HERBS AND SHRUBS

Other common herbs and Shrubs found in the area are as under:

SNo	Common Name	Botanical Name
1	Local gulab	Rosa webbiana

2	Local gulab	R. foetida
3	Local gulab	R. macrophylla
4	Seabuckthorn	Hyphopae rhamnoides
5	Seabuckthorn	H salicifolia
6	Seabuckthorn	H tibetana
7		Aconogonum
8		Eremurus himalaicus
9		Polygonum
10		Rumex

9.2.2.4 GRASSES

IMPORTANT GRASSES FOUND IN THE AREA ARE AS UNDER

SN.	English Name	Scientific Name
1		Agropyron longearistatum
2	Brome grass	Bromus asper
3	Cocks foot	Dactylis glomerata
4	Fescues	Festuca rubra
5	Lucerne	Medicago falcata
6	Alfa Alfa	Medicago media
7	Clover	

9.2.3 FAUNA

9.2.3.1 ANIMALS

Important animals found in the area are

S.N.	English Name	Common Name	Scientific Name
2	Ibex	Tangrol	Copra siberica
3	Goral	Goral	Cemes goral

4	Blue sheep	Bharal	Ovis nahura
5	Brown bear	Bhalu/ Omo	Ursus arctos
6	Black Bear	Kala Bhalu	Ursus torguatus
7	Wolves	Shankhu	Canis lupus
8	Fox	Lomari/ Gidar	Vulpes montana

9.2.3.2 BIRDS

SOME COMMON BIRDS FOUND IN THE AREA ARE AS UNDER

S No.	English Name	Common Name	S. Name
1	Himalayan Snow Cock		Tetraognllo shimalayans
2	Snow pigeon		Columba spp
3	Crow		
4	Jungle Crow	Kawa	Corus macrorhynches
5	Dove	Panduk	Streptopilia
6	Blue rock pigeon		Columbia livia
7	Owl	Ullu	Glaucidium

9.3 BASELINE ENVIRONMENTAL STATUS

9.3.1 CLIMATE AND TEMPERATURE

The high mountains of Central Himalaya act as a barrier and block the rain bearing winds from the south and as such, receive very little or no rain during the whole year. However, during winters, which usually starts from the end of September in most of the areas receives snowfall and this continues even up to May. Summars are brief while winters are quite long.

9.3.1.1 TEMPERATURE, RAINFALL AND SNOWFALL DATA OF PATSEO (ADJOINING LAHAUL VALLEY)

Year	Month	Temperature ^{o} C		Snow Fall-cm	Rain Fall-mm
		Max	Min		
1983	Nov	1.14	-4.54	0	0
	Dec	-0.22	-5.76	1.25	0
1984	Jan	-1.86	-8.76	4.57	0
	Feb	-2.21	-8.15	4.37	0
	Mar	2.83	-5.44	7.07	0
	Aprl	3.20	-3.62	5.28	0
	May	5.22	-1.07	0	0.75
	Nov	1.59	0.389	1.5	0
	Dec	-1.54	-5.65	14.70	0
1985	Jan	-3.41	-8.96	6.74	0
	Feb	-1.41	-9.37	4.28	0
	March	1.00	-4.63	6	0
	April	2.96	-2.94	11.08	0
	May	4.77	-0.99	15.5	0
	Nov	1.55	-3.59	0	0
	Dec	-0.04	-5.25	5.44	0
1986	Jan	-1.81	-8.58	1.5	0
	Feb	-1.48	-8.30	6.3	0
	March	-0.58	-6.78	6.91	0
	April	2.35	-4.44	7.67	0
	May	3.93	-1.87	3.67	0
	Nov	1.70	-4.08	11.37	0
	Dec	-2.09	-8.06	12.45	0
1987	Jan	-1.93	-9.06	8.6	0
	Feb	-1.33	-7.67	6.86	0
	March	1.05	-6.36	6.7	0
	April	2.33	-4.15	19.46	0

	May	2.02	-4.32	0	0
	Dec	1.60	-4.63	5	0
1988	Jan	-2.09	-6.96	4.57	0
	Feb	-0.96	-6.89	8.42	0
	March	-0.02	-6.91	13.96	0
	April	2.87	-3.29	0	
	Nov	1.56	-3.59	3.69	0
	Dec	0.24	5.40	5.72	0
1989	Jan	-1.74	-7.99	8.29	0
	Feb	-1.88	-7.28	5.30	0
	march	1.31	-5.51	5.13	0
	April	2.07	-4.38	4	0
1992	Nov	3.15	-3.82	3.40	0
	Dec	0.35	-6.53	3.67	0
1993	Jan	-2.44	-8.61	9.31	0
	Feb	0.14	-5.96	7.64	0
	march	0.22	-6.90	20.78	0
	April	3.90	-4.42	10	0
	Nov	2.50	-4.04	6.5	0
	Dec	0.77	-7.06	0	0
1994	Jan	-1.72	-8.42	9.62	0
	Feb	-0.84	-10.26	7.45	0
	March	2.83	-5.96	5.22	0
	April	3.32	-4.26	8.44	0
	May	5.94	-1.40	9.16	0.6
	Nov	2.89	-4.07	0	0
	Dec	-0.84	-6.07	7.35	0
1995	Jan	-2.59	-10.72	5.67	0
	Feb	-1.12	-7.32	5.89	0
	March	0.90	-6.72	5.90	0
	April	2.66	-3.58	8.87	0
	Nov	-1.14	-6.59	3.00	0

	Dec	-10.6	-18.7	5.31	0
1996	Jan	-1.74	-8.04	13.36	0
	Feb	1.30	-7.75	15.68	0
	March	1.55	-5.60	9.56	0
	April	2.78	-3.82	9	0
1999	Nov	2.31	-4.99	4	0
	Dec	1.76	-6.44	1	0
2000	Jan	-0.07	-7.99	0	0
	Feb	0.18	-7.87	0	0
	March	1.71	-8.95	5.80	0
	April	4.14	-2.24	2.17	0
	May	8.14	0.74	0	0

9.3.1.2 PRECIPITATION IN LAHAUL DURING THE YEAR 1989:

Month	Rainfall-mm	Snowfall-cm	Temperature ^{o} centigrade	
			Maximum	Minimum
January	0	40	6.7	-16.5
February	0	73	6.1	-17.8
March	0	138	9.8	-13.8
April	0	78	14.8	-7.4
May	0	12	22.1	-0.9
June	10	0	25.9	2.9
July	15	0	26.8	5.3
August	0	0	26.7	6.7
September	0	0	25.6	1.3
October	0	0	21.8	-4.1
November	0	44	16.3	-7.7
December	0	68	17.9	-9.5

Air, Water, Soil and Sound data will be collected at the time of doing detailed EIA.