

Study area covers 1500 sq km.

Calibration = 2004-2013,

Validation = 2014-2018,

Prediction = 2019-2035.

GWL declined an average 4 m in 2035.

Sy = 0.005 – 0.025.

Rainfall = 650 mm/ year

Recharge = 100 mm/ year

2004-05			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.07	1.83	1.24
Recharge (inflow)	61.25	45.94	15.31
Lakes seepage (inflow)	7.05	4.96	2.09
Total inflow	71.37	52.73	18.64
River leakage (outflow)	9.04	5.66	3.38
Pumping (outflow)	57.97	18.78	39.19
Lakes seepage (outflow)	4.29	3.12	1.17
Total outflow	71.30	27.57	43.73
Change in groundwater storage (inflow-outflow)	0.07		
2005-06			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.42	1.96	1.46
Recharge (inflow)	63.25	49.31	13.94
Lakes seepage (inflow)	7.78	5.46	2.32
Total inflow	74.45	56.73	17.72
River leakage (outflow)	9.93	6.19	3.74
Pumping (outflow)	58.31	19.36	38.95
Lakes seepage (outflow)	5.23	3.78	1.45
Total outflow	73.47	29.33	44.14
Change in groundwater storage (inflow-outflow)	0.98		
2006-07			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon

River leakage (inflow)	3.46	2.06	1.40
Recharge (inflow)	65.09	52.07	13.02
Lakes seepage (inflow)	7.86	5.50	2.36
Total inflow	76.41	59.64	16.77
River leakage (outflow)	9.71	5.86	3.85
Pumping (outflow)	58.49	19.18	39.31
Lakes seepage (outflow)	5.24	3.80	1.44
Total outflow	73.44	28.85	44.59
Change in groundwater	2.97		
storage (inflow-outflow)			

2007-08			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.15	1.83	1.32
Recharge (inflow)	62.25	49.18	13.07
Lakes seepage (inflow)	7.30	5.16	2.14
Total inflow	72.70	56.16	16.54
River leakage (outflow)	9.10	5.50	3.60
Pumping (outflow)	58.86	19.48	39.38
Lakes seepage (outflow)	4.59	3.30	1.29
Total outflow	72.55	28.28	44.27
Change in groundwater	0.15		
storage (inflow-outflow)			

2008-09			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.19	1.91	1.28
Recharge (inflow)	61.25	47.35	13.90
Lakes seepage (inflow)	6.85	4.80	2.05
Total inflow	71.29	54.05	17.24
River leakage (outflow)	8.06	4.88	3.18
Pumping (outflow)	59.00	19.53	39.47
Lakes seepage (outflow)	4.30	3.10	1.20
Total outflow	71.36	27.51	43.85
Change in groundwater	-0.07		
storage (inflow-outflow)			

2009-10			
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<b>Inflow/outflow</b>	<b>Total volumetric</b>	<b>Post-monsoon</b>	<b>Pre-monsoon</b>
River leakage (inflow)	3.08	1.83	1.25
Recharge (inflow)	62.25	48.31	13.94
Lakes seepage (inflow)	6.58	4.62	1.96
Total inflow	71.91	54.76	17.15
River leakage (outflow)	8.41	5.16	3.25
Pumping (outflow)	59.01	20.00	39.01
Lakes seepage (outflow)	4.48	3.22	1.26
Total outflow	71.90	28.38	43.52
Change in groundwater storage (inflow-outflow)	0.01		

<b>2010-11</b>			
<b>Inflow/outflow</b>	<b>Total volumetric</b>	<b>Post-monsoon</b>	<b>Pre-monsoon</b>
River leakage (inflow)	3.69	2.23	1.46
Recharge (inflow)	66.06	52.19	13.87
Lakes seepage (inflow)	8.39	5.92	2.47
Total inflow	78.14	60.33	17.81
River leakage (outflow)	10.89	6.69	4.20
Pumping (outflow)	59.09	20.03	39.06
Lakes seepage (outflow)	6.02	4.38	1.64
Total outflow	76.00	31.10	44.90
Change in groundwater storage (inflow-outflow)	2.14		

<b>2011-12</b>			
<b>Inflow/outflow</b>	<b>Total volumetric</b>	<b>Post-monsoon</b>	<b>Pre-monsoon</b>
River leakage (inflow)	2.92	1.75	1.17
Recharge (inflow)	62.50	48.50	14.00
Lakes seepage (inflow)	6.27	4.41	1.86
Total inflow	71.69	54.66	17.03
River leakage (outflow)	7.98	4.95	3.03
Pumping (outflow)	59.35	20.12	39.23
Lakes seepage (outflow)	4.35	3.10	1.25
Total outflow	71.68	28.17	43.51
Change in groundwater storage (inflow-outflow)	0.01		

2012-13			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.17	1.88	1.29
Recharge (inflow)	64.00	51.00	13.00
Lakes seepage (inflow)	6.32	4.40	1.92
Total inflow	73.49	57.28	16.21
River leakage (outflow)	9.30	5.62	3.68
Pumping (outflow)	59.89	19.82	40.07
Lakes seepage (outflow)	4.26	3.06	1.20
Total outflow	73.45	28.50	44.95
Change in groundwater storage (inflow-outflow)	0.04		

2013-14			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.65	2.17	1.48
Recharge (inflow)	70.69	56.73	13.96
Lakes seepage (inflow)	8.17	5.78	2.39
Total inflow	82.51	64.68	17.83
River leakage (outflow)	12.36	7.54	4.82
Pumping (outflow)	59.96	19.73	40.23
Lakes seepage (outflow)	7.25	5.18	2.07
Total outflow	79.57	32.45	47.12
Change in groundwater storage (inflow-outflow)	2.94		

2014-15			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.29	1.97	1.32
Recharge (inflow)	62.96	49.74	13.22
Lakes seepage (inflow)	7.30	5.02	2.28
Total inflow	73.55	56.73	16.82
River leakage (outflow)	8.06	5.08	2.98
Pumping (outflow)	60.05	20.42	39.63
Lakes seepage (outflow)	5.37	3.80	1.57
Total outflow	73.48	29.29	44.19
Change in groundwater storage (inflow-outflow)	0.07		

storage (inflow-outflow)			
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2015-16			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.15	1.86	1.29
Recharge (inflow)	62.25	46.07	16.19
Lakes seepage (inflow)	7.12	4.94	2.18
Total inflow	72.52	52.86	19.65
River leakage (outflow)	7.02	4.42	2.60
Pumping (outflow)	60.02	19.21	40.81
Lakes seepage (outflow)	5.70	3.59	2.11
Total outflow	72.74	27.22	45.52
Change in groundwater storage (inflow-outflow)	-0.23		

2016-17			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.41	1.94	1.47
Recharge (inflow)	66.35	49.76	16.59
Lakes seepage (inflow)	8.53	5.82	2.71
Total inflow	78.29	57.53	20.76
River leakage (outflow)	10.06	6.34	3.72
Pumping (outflow)	62.35	19.95	42.40
Lakes seepage (outflow)	5.71	3.99	1.72
Total outflow	78.12	30.28	47.84
Change in groundwater storage (inflow-outflow)	0.17		

2017-18			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.37	1.99	1.38
Recharge (inflow)	68.25	53.24	15.02
Lakes seepage (inflow)	7.73	5.48	2.25
Total inflow	79.35	60.70	18.65
River leakage (outflow)	9.45	5.86	3.59
Pumping (outflow)	62.45	20.98	41.47
Lakes seepage (outflow)	4.77	3.46	1.31

Total outflow	76.67	30.30	46.36
Change in groundwater	2.68		
storage (inflow-outflow)			

2019-20			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.37	2.02	1.35
Recharge (inflow)	63.60	49.16	14.44
Lakes seepage (inflow)	6.10	4.32	1.78
Total inflow	73.07	55.50	17.57
River leakage (outflow)	9.45	5.75	3.70
Pumping (outflow)	66.30	22.94	43.36
Lakes seepage (outflow)	4.30	3.09	1.21
Total outflow	80.05	31.77	48.28
Change in groundwater	-6.98		
storage (inflow-outflow)			

2024-25			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	2.96	1.81	1.15
Recharge (inflow)	62.25	49.18	13.07
Lakes seepage (inflow)	6.00	4.24	1.76
Total inflow	71.21	55.22	15.99
River leakage (outflow)	8.89	5.60	3.29
Pumping (outflow)	71.35	23.62	47.73
Lakes seepage (outflow)	4.33	3.11	1.22
Total outflow	84.57	32.33	52.24
Change in groundwater	-13.36		
storage (inflow-outflow)			

2029-30			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	3.03	1.85	1.18
Recharge (inflow)	61.60	46.82	14.78
Lakes seepage (inflow)	6.69	4.79	1.90
Total inflow	71.32	53.45	17.87
River leakage (outflow)	8.98	5.67	3.31
Pumping (outflow)	75.69	23.46	52.23

Lakes seepage (outflow)	4.37	3.09	1.28
Total outflow	89.04	32.22	56.82
Change in groundwater	-17.72		
storage (inflow-outflow)			

2034-35			
Inflow/outflow	Total volumetric	Post-monsoon	Pre-monsoon
River leakage (inflow)	2.63	1.50	1.13
Recharge (inflow)	60.36	46.48	13.88
Lakes seepage (inflow)	5.75	4.02	1.73
Total inflow	68.74	51.99	16.75
River leakage (outflow)	8.12	5.20	2.92
Pumping (outflow)	79.06	24.51	54.55
Lakes seepage (outflow)	3.99	2.87	1.12
Total outflow	91.17	32.58	58.59
Change in groundwater	-22.43		
storage (inflow-outflow)			