

Surface Water monitoring carried out During Pre and Post Idol Immersion in River Satluj in 2018

Point of sample collection	pH	D.O mg/l	COD mg/l	BOD mg/l	TSS mg/l	TDS mg/l	Con d.	Turb mg/l	Zn mg/l	Cr mg/l	Mn mg/l	Pb mg/l	Cd mg/l	Fe mg/l	Cu mg/l	Na mg/l
100 meter U/s River Satluj near toll Plaza (From the Visarjan site) Date: 23/09/2018	7.9	8.2	12	<5	14	232	390	20	BDL	BDL	0.52	BDL	BDL	0.37	BDL	12
200 meter D/s River Satluj(Front site) Date: 23/09/2018	7.7	8.1	12	<5	15	240	406	24	BDL	BDL	0.44	BDL	BDL	0.30	BDL	11
500 meter D/s River Satluj(Front site) Date: 23/09/2018	7.4	8.2	12	<5	15	246	418	24	BDL	BDL	0.18	BDL	BDL	0.27	BDL	11
100 meter U/s River Satluj near toll Plaza (From the Visarjan site) Date: 24/09/2018	7.90	7.6	12	<5	14	232	390	20	0.21	BDL	0.32	BDL	BDL	0.33	BDL	11.2
200 meter D/s River Satluj(Front site) Date: 24/09/2018	7.74	7.4	12	<5	20	240	406	24	BDL	BDL	0.27	BDL	BDL	0.26	BDL	10.7
500 meter D/s River Satluj(Front site) Date: 24/09/2018	7.39	7.4	12	<5	20	246	418	24	BDL	BDL	0.53	BDL	BDL	0.23	BDL	10.9

Surface Water monitoring carried out During Pre and Post Idol Immersion in Sirhind Canal in 2019

Parameters	Upstream of Sirhind Canal at Doraha fly over before idol immersion DOC- 30/08/2019	Downstream of Sirhind Canal at Doraha fly over during idol immersion DOC- 12.09.2019	Downstream of Sirhind Canal at Doraha fly over after idol immersion DOC- 07.10.2019
pH	7.77	7.95	8.1
DO mg/l	8.2	8.1	8.8
TSS mg/l	38	49	28
Turibidity NTU	30	35	24
Electrical Conductivity (μ S/cm)	248	280	224
TDS mg/l	148	168	142
COD mg/l	<5	<5	<5
BOD mg/l	<1	<1	<1
Chromium mg/l	BDL	BDL	BDL
Lead mg/l	BDL	BDL	BDL
Zinc mg/l	0.23	0.12	0.17
Copper mg/l	BDL	BDL	BDL

Surface Water monitoring carried out During Pre and Post Idol Immersion in River Satluj in 2020

Sr. No.	Name of Parameter	Points of sample collection (River Satluj)		
		100 m U/S Ganesh Visarjan	200 m D/S of Ganesh Visarjan	500 m D/S of Ganesh Visarjan
1	pH	7.2	7.7	7.7
2	Total Suspended Solids mg/l	95	143	135
3	Total Dissolved Solids mg/l	180	185	181
4	Chemical Oxygen Demand mg/l	16	20	18.4
5	Bio-chemical oxygen Demand mg/l	<1	3.8	2.4
6	Cadmium mg/l	BDL	BDL	BDL
7	Lead mg/l	BDL	BDL	BDL
8	Total Chromium mg/l	BDL	BDL	BDL
10	Nickel mg/l	BDL	BDL	BDL
11	Iron mg/l	0.06	0.08	0.07
12	Hardness (mg/l)	134	148	140
13	Calcium Hardness mg/l	82	86	84
14	Magnesium Hardness mg/l	52	62	56
15	Calcium (mg/l)	32.8	34.4	33.6
16	Magnesium (mg/l)	12.6	15.1	13.6
17	Chloride (mg/l)	13	18	14
18	Sulfate (mg/l)	15	18	15
19	Oil & Grease (mg/l)	BDL	BDL	BDL

Note: BDL means below method detection limit

Surface Water monitoring carried out During Pre and Post Idol Immersion in Sulargharat in 2018

Parameters	Upstream Sulargharat canal (Before the discharge point of Idol Immersion) Date : 17/9/2018	discharge point of Idol Immersion (Before Idol Immersion) Date : 17/9/2018	Downstream Sulargharat canal (After the discharge point of Idol Immersion) Date : 17/9/2018
Total Suspended Solids mg/l	183	138	223
Total Dissolved Solids mg/l	135	138	138
Total Hardness mg/l	124	139	131
Calcium mg/l	38.8	38.8	36.4
Magnesium mg/l	6.6	10.2	9.7
Chloride mg/l	7	9	5
Turbidity mg/l	277	180	238
Oil and Grease mg/l	BDL	BDL	BDL

Parameters	U/S Sulargharat canal (Before the discharge point of Idol Immersion) Date : 21/9/2018	discharge point of Idol Immersion Date : 21/9/2018	D/S Sulargharat canal (After the discharge point of Idol Immersion) Date : 21/9/2018
Total Suspended Solids mg/l	119	115	115
Total Dissolved Solids mg/l	137	152	146
Total Hardness mg/l	112	105	114
Calcium mg/l	32	30.8	32.4
Magnesium mg/l	7.8	6.8	8.0
Chloride mg/l	5	5	5
Turbidity mg/l	93	101	97
Oil and Grease mg/l	BDL	BDL	BDL

Surface Water monitoring carried out During Pre and Post Idol Immersion in Kotla & Sirhind Canal in 2018

Parameters	Upstream of Kotla canal (Before the discharge point of Idol Immersion) Date : 18/9/2018	discharge point of Idol Immersion (Before Idol Immersion) Date : 18/9/2018	Downstream of Kotla canal (After the discharge point of Idol Immersion) Date : 18/9/2018
Total Suspended Solids mg/l	233	255	233
Total Dissolved Solids mg/l	144	146	148
Total Hardness mg/l	138	133	128
Calcium mg/l	40.8	42.4	38
Magnesium mg/l	8.7	6.6	8.0
Chloride mg/l	7	7	7
Turbidity mg/l	200	196	197
Oil and Grease mg/l	BDL	BDL	BDL

Parameters	Upstream of Kotla canal (Before the discharge point of Idol Immersion) Date : 23/9/2018	discharge point of Idol Immersion (After Idol Immersion) Date : 23/9/2018	Downstream of Kotla canal (After the discharge point of Idol Immersion) Date : 23/9/2018	Pre-immersion of Idol (Sirhind Canal Bathinda) Date : 23/2/2018	Post immersion of Idol (Sirhind Canal Bathinda) Date : 23/2/2018
Total Suspended Solids mg/l	174	272	210	184	173
Total Dissolved Solids mg/l	158	166	161	136	148
Total Hardness mg/l	107	116	108	104	110
Calcium mg/l	30.8	34.8	30	30	32
Magnesium mg/l	7.3	7.0	8.0	7.0	7.3
Chloride mg/l	13	13	11	10	6
Turbidity NTU	359	496	430	204	197
*Oil and Grease mg/l	BDL	BDL	BDL	BDL	BDL

Surface Water monitoring carried out During Pre and Post Idol Immersion in BML Canal in 2018

Parameters	BML Canal at Vill. Ganda Kheri, Rajpura road, Distt. Patiala (Upstream of Bhakra Main line Canal) Date : 22/9/2018	BML Canal at Vill. Ganda Kheri, Rajpura road, Distt. Patiala (Downstream of Bhakra Main line Canal) Date : 22/9/2018	BML Canal at Nabha road, Distt. Patiala (Upstream of Bhakra Main line Canal) Date : 22/9/2018	BML Canal at Nabha road, Distt. Patiala (Downstream of Bhakra Main line Canal) Date : 22/9/2018
pH	7.9	7.7	7.8	7.9
Electrical Conductivity $\mu\text{S}/\text{cm}$	217	220	214	211
Total Suspended Solids mg/l	39	13	6	BDL
Turbidity NTU	32	20	15	10
Dissolved Oxygen mg/l	7.5	7.4	7.7	7.8
Total Dissolved Solids mg/l	133	116	128	117
Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
Bio-chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
Iron mg/l	0.34	0.34	0.13	0.19
Total Chromium mg/l	BDL	BDL	BDL	BDL
Lead mg/l	BDL	BDL	BDL	BDL
Copper mg/l	BDL	BDL	BDL	BDL
Nickel mg/l	BDL	BDL	BDL	BDL
Zinc mg/l	0.19	0.13	BDL	BDL
Cobalt mg/l	BDL	BDL	BDL	BDL
Cadmium mg/l	BDL	BDL	BDL	BDL

Parameters	BML Canal at Vill. Ganda Kheri, Rajpura road, Distt. Patiala (Upstream of Bhakra Main line Canal) Date : 23/9/2018	BML Canal at Vill. Ganda Kheri, Rajpura road, Distt. Patiala (Downstream of Bhakra Main line Canal) Date : 23/9/2018	BML Canal at Nabha road, Distt. Patiala (Upstream of Bhakra Main line Canal) Date : 23/9/2018	BML Canal at Nabha road, Distt. Patiala (Downstream of Bhakra Main line Canal) Date : 23/9/2018
pH	7.9	7.9	7.9	7.8
Electrical Conductivity $\mu\text{S}/\text{cm}$	211	213	210	212
Total Suspended Solids mg/l	7	29	20	32
Turbidity NTU	20	25	28	26
Dissolved Oxygen mg/l	7.2	7.1	7.3	7.2
Total Dissolved Solids mg/l	121	138	130	135
Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
Bio-chemical Oxygen Demand mg/l (3days at 27°C)	BDL	BDL	BDL	BDL
Iron mg/l	0.36	0.50	0.33	0.39
Total Chromium mg/l	BDL	BDL	BDL	BDL
Lead mg/l	BDL	BDL	BDL	BDL
Copper mg/l	BDL	BDL	BDL	BDL
Nickel mg/l	BDL	BDL	BDL	BDL
Zinc mg/l	BDL	BDL	0.10	0.43
Cobalt mg/l	BDL	BDL	BDL	BDL
Cadmium mg/l	BDL	BDL	BDL	BDL

Surface Water monitoring carried out During Pre and Post Idol Immersion in BML Canal in 2018

Point of sample collection	Upstream of Bhakra Main line Canal Date : 28/9/2018	Downstream of Bhakra Main line Canal Date : 28/9/2018	Upstream of Bhakra Main line Canal Date : 1/10/2018	Downstream of Bhakra Main line Canal Date : 1/10/2018
pH	7.83	7.84	7.9	8.0
Electrical Conductivity $\mu\text{S}/\text{cm}$	222	223	220	218
Total Suspended Solids mg/l	19	20	15	16
Turbidity NTU	21	21	18	20
Dissolved Oxygen mg/l	7.8	8.0	6.4	6.5
Total Dissolved Solids mg/l	136	141	135	137
Chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
Bio-chemical Oxygen Demand mg/l	BDL	BDL	BDL	BDL
Iron mg/l	0.46	0.61	0.27	1.81
Total Chromium mg/l	BDL	BDL	BDL	BDL
Lead mg/l	BDL	BDL	BDL	BDL
Copper mg/l	BDL	BDL	BDL	BDL
Nickel mg/l	BDL	BDL	BDL	BDL
Zinc mg/l	BDL	BDL	0.10	0.17
Cobalt mg/l	BDL	BDL	BDL	BDL
Cadmium mg/l	BDL	BDL	BDL	BDL

Surface Water monitoring carried out During Pre and Post Idol Immersion in Rajasthan Feeder in 2019

Point of sample collection	Rajasthan Feeder Downstream of Kotkapura-Faridkot Bridge on NH- 15 (Pre Immersion) Date : 12/9/2019	Rajasthan Feeder Downstream of Kotkapura-Faridkot Bridge on NH- 15 (During Immersion) Date : 12/9/2019	Rajasthan Feeder Downstream of Kotkapura-Faridkot Bridge on NH- 15 (Post Immersion) Date : 12/9/2019
pH	7.98	7.87	7.79
Electrical Conductivity $\mu\text{S}/\text{cm}$	268	280	270
Total Suspended Solids mg/l	14	28	16
Turbidity NTU	136	144	153
Total Dissolved Solids mg/l	180	183	187
Chemical Oxygen Demand mg/l	14	16	18
Bio-chemical Oxygen Demand mg/l	1.4	1.4	1.6
Iron mg/l	0.63	4.78	0.55
Total Chromium mg/l	BDL	BDL	BDL
Lead mg/l	BDL	BDL	BDL
Copper mg/l	BDL	BDL	BDL
Nickel mg/l	BDL	BDL	BDL
Zinc mg/l	BDL	BDL	0.25
Cadmium mg/l	BDL	BDL	BDL

Surface Water monitoring carried out During Pre and Post Idol Immersion in River Ghaggar at Bhankarpur in 2019

Point of sample collection	Upstream of Bhankarpur Bridge at Bhankarpur Date : 13/9/2019	Upstream of Bakarpur Canal at Ludhiana Malerkotala Road, Dhuri Date : 12/9/2019	Upstream of River Ghaggar, post idol immersion (by RO Mohali) Date : 16/9/2019
pH	8.16	8.12	7.59
Electrical Conductivity $\mu\text{S/cm}$	450	755	466
Total Suspended Solids mg/l	207	229	370
Turbidity NTU	360	99	460
Total Dissolved Solids mg/l	299	494	307
Chemical Oxygen Demand mg/l	118	6.8	98
Bio-chemical Oxygen Demand mg/l	27	BDL	20
Iron mg/l	-	BDL	-
Total Chromium mg/l	BDL	BDL	BDL
Lead mg/l	BDL	BDL	BDL
Copper mg/l	BDL	BDL	BDL
Zinc mg/l	BDL	0.34	BDL

Surface Water monitoring carried out During Pre and Post Idol Immersion in Babanpur drain in 2019

Point of sample collection	Downstream of Babanpur Canal at Ludhiana Date : 12/9/2019	Upstream of Babanpur drain at Ludhiana Malerkotala Road, Dhuri Date : 25/9/2019	Downstream of Babanpur drain at Ludhiana Malerkotala Road, Dhuri Date : 25/9/2019
pH	8.18	8.02	8.08
Electrical Conductivity $\mu\text{S/cm}$	779	704	730
Total Suspended Solids mg/l	326	205	226
Turbidity NTU	160	60	70
Total Dissolved Solids mg/l	502	474	478
*Chemical Oxygen Demand mg/l	7.2	5.6	6.2
*Bio-chemical Oxygen Demand mg/l (3days at 27°C)	BDL	BDL	BDL
Iron mg/l	BDL	0.37	1.70
*Total Chromium mg/l	BDL	BDL	BDL
*Lead mg/l	BDL	BDL	BDL
*Copper mg/l	BDL	BDL	BDL
Nickel mg/l	-	BDL	BDL
*Cadmium mg/l	-	BDL	BDL
Zinc mg/l	0.17	0.13	0.37
Cobalt mg/l	-	BDL	BDL

Surface Water monitoring carried out During Pre and Post Idol Immersion in River Beas from 2018-2021

Detail of sample collection	pH	DO mg/l	COD mg/l	BOD mg/l	Cond μ S/cm	Turb. N.T.U	TDS mg/l	TSS mg/l	TH mg/l	Ca mg/l	Mg mg/l	Cl mg/l	SO ₄ mg/l
Before Visarjan 12/09/2018	7.4	7.5	14	1.5	NA	NA	166	196	125	42	5	18	16
During Visarjan 17/09/2018	7.6	7	22	1.8	NA	NA	242	178	190	58	11	24	28
Pre-idol immersion 5/9/19	7.4	7.5	10	1.3	240	42	151	20	95	28	6	10	14
During-idol immersion 9/9/19	7.8	7	18	2.8	310	102	198	48	126	41	6	20	26
Post-idol immersion 13/9/19	7.6	7.7	14	1.4	256	38	162	16	82	25	5	14	16
Idol immersion U/s 26/08/2020	7.9	7	16	1.8	220	170	170	38	120	31	10	16	12
Idol immersion D/s 26/08/2020	7.5	7	20	2	245	184	210	50	174	42	15	22	20
Idol immersion U/s 17/09/2021	7.9	7.1	18	1.7	203	80	102	40	118	30	10	18	20
Idol immersion D/s 17/09/2021	7.8	7	20	1.8	217	110	116	51	142	37	12	23	27