

Waste Water Treatment Technology

 **Green Technology**
to sustain Environment



**Case Studies On
Industrial Waste Water Streams**

Case Study – 1

Type of Waste Water	Nitro Toluene Stream
Capacity of transBio-Filter Plant	Pilot Plant Study
Process	Effluent from Nitration

Initial Analysis done at Biolab Ekalbara

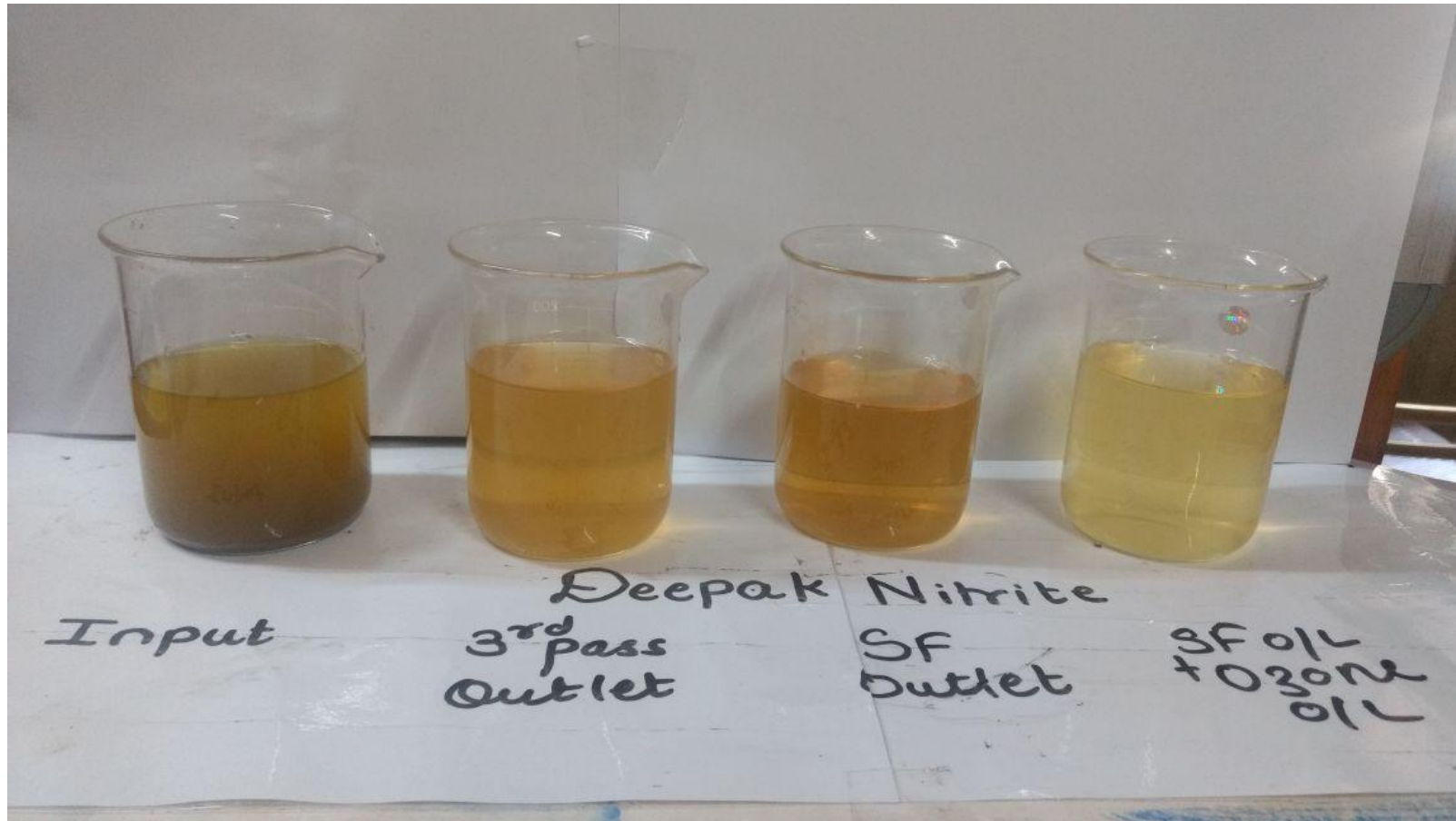
Sample No.	Sample ID	Qty. In KLD	pH	TDS (ppm)	Turbidity (NTU)	Colour	Odour	COD (ppm)	BOD (ppm)	Chlorides (ppm)	NH4 (ppm)	Sulfates (ppm)	SO3 (ppm)
1	NT Stream	300	1.7	13000	6.7	Yellow	Bitter Almond	1800	266	731	112	370	Nil

Treatability Study Report (NT Stream)

Sample	Color	Odour	pH	TDS (ppm)	Turbidity (NTU)	COD (ppm)	Sulfates (ppm)	NH4 (ppm)	BOD (ppm)	COD Load (Kgs/Day) & (% Red.)
Before Treatment with 1 % Culture	Greyish Yellow	Bitter Almond	7.5 – 7.8	4000	500 - 650	1800 - 2300	370	104	266	690
After BF Treatment	Pale Yellow	Very Mild	7.2 – 7.5	3200	25 -40	250-300	244	Nil	33	90 (87.0%)
After Tertiery Treatment	Very Pale	Odorless	7.2 – 7.5	3200	25 -40	250	244	Nil	28	75 (89.0%)

DO levels are through out in the range of 3-4 ppm

Photographs of Sample



Case Study – 2

Type of Waste Water	From Equaliazation
Capacity of transBio-Filter Plant	Pilot Plant Study
Process	Effluent from Nitration

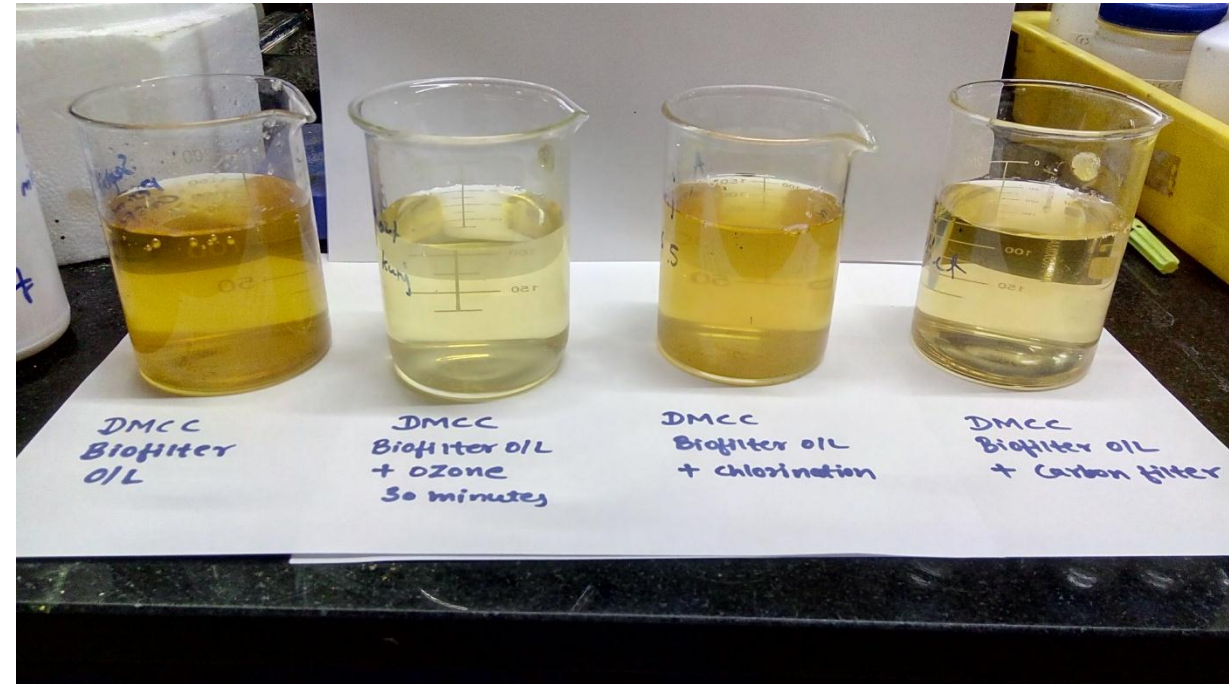
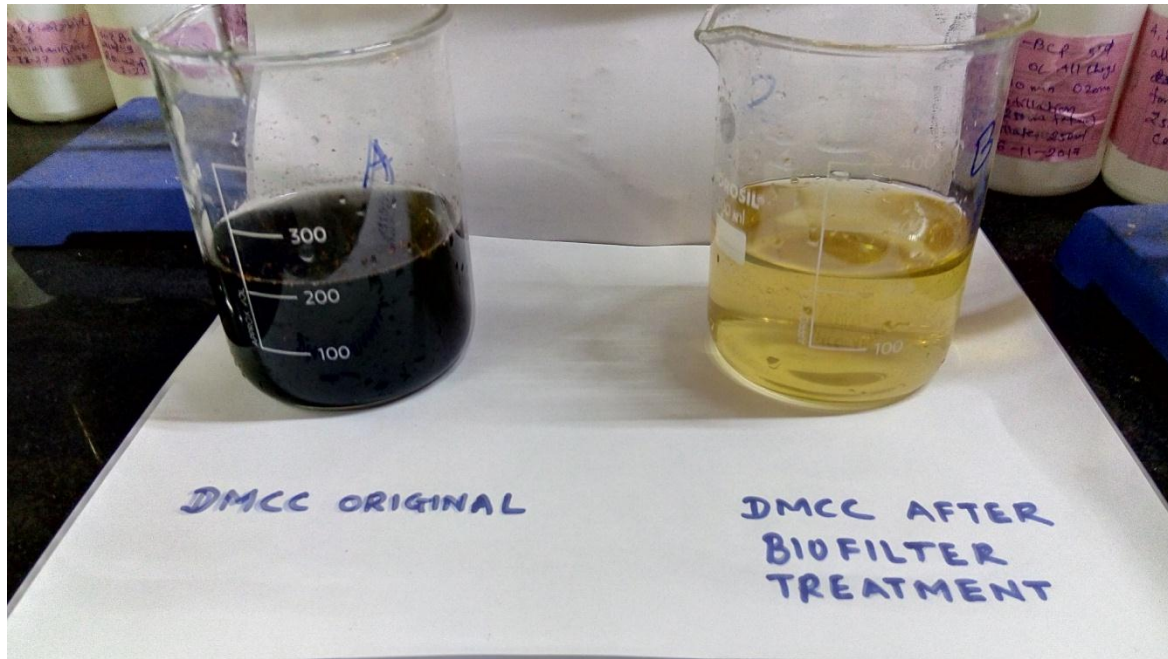
Initial Analysis done at Biolab Ekalbara													
Sample No.	Sample ID	Qty. In KLD	pH	TDS (ppm)	Turbidity (NTU)	Colour	Odour	COD (ppm)	BOD (ppm)	Chlorides (ppm)	NH4 (ppm)	Sulfates (ppm)	SO3 (ppm)
1	Composite	60 -70	6.3	6450	> 1000	Dark Black	Mild	5000	2000	729	34	165	63

Pilot Plant Study Report

Sample	Color	Odour	pH	TDS (ppm)	Turbidity (NTU)	COD (ppm)	Sulfates (ppm)	SO3 (ppm)	Chlorides (ppm)	COD Load (Kgs/Day) & (% Red.)
Before Treatment with 1 % Culture	Greyish Yellow	Mild	6.4 – 6.8	6700	150 - 250	4800 - 5000	250	63	800	350
After BF Treatment	Pale Yellow	Odorless	7.2 – 7.5	6500	10 -15	400-450	244	Nil	735	31.5 (91.0%)
After Tertiary Treatment	Colorless	Odorless	7.2 – 7.5	6500	10 -15	180-250	244	Nil	720	17.5 (95.0%)

DO levels are through out in the range of 3-4 ppm & Ammonia less than 10 ppm

Photographs of Sample



Tertiary Treatment

Case Study – 3

Type of Waste Water	Solvent based Stream
Capacity of transBio-Filter Plant	Pilot Plant Study
Process	Effluent from Organic Products

Initial Analysis done at Biolab Ekalbara

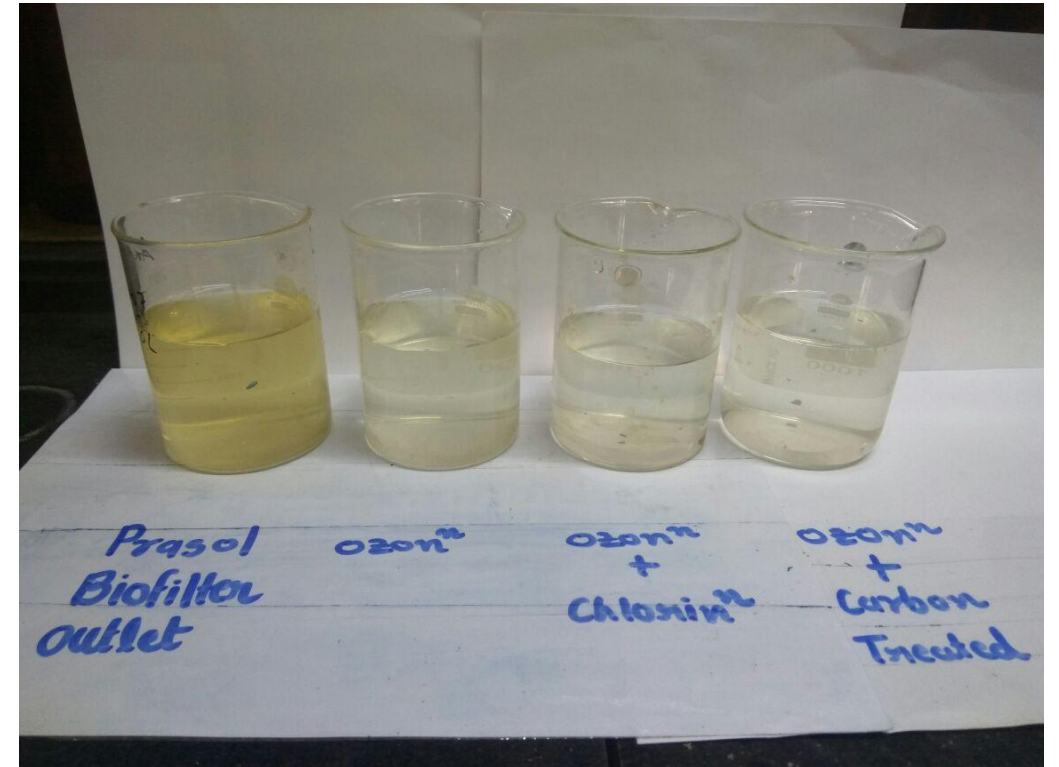
Sample No.	Sample ID	Qty. In KLD	pH	TDS (ppm)	Turbidity (NTU)	Colour	Odour	COD (ppm)	BOD (ppm)	Chlorides (ppm)	Phenolic (ppm)	Sulfates (ppm)
1	Drum 1	40	7.04	8971	50	Pale Yellow	Solvent	3800	2100	4728	ND	24.6
2	Drum 2		6.80	12361	100	Pale Yellow	Solvent	6503	3000	6365	ND	23.7

Treatability Study Report (Organic - Stream)

Sample	Color	Odour	pH	TDS (ppm)	Turbidity (NTU)	COD (ppm)	Sulfate (ppm)	BOD (ppm)	Chlorides (ppm)	COD Load (Kgs/Day) & (% Red.)
Before Treatment with 0.5 % Culture	Turbid Yellow	Solvent	6.5 – 7.0	12000	150 - 250	6200	38	3000	5784	248
After BF Treatment	Pale Yellow	Odorless	7.5	10867	8 - 10	200 - 250	33	54	4499	10 (96.0%)
After Tertiary Treatment	Colorless	Odorless	7.2	10574	< 10	180 -200	30	30	4500	8 (97 %)

DO levels are through out in the range of 3-4 ppm

Photographs of Sample



Tertiary Treatment

Case STUDY – 4

Type of Waste Water	Polymer intermediates
Capacity of transBio-Filter Plant	Pilot Plant Study
Process	Effluent from Polymer intermediates

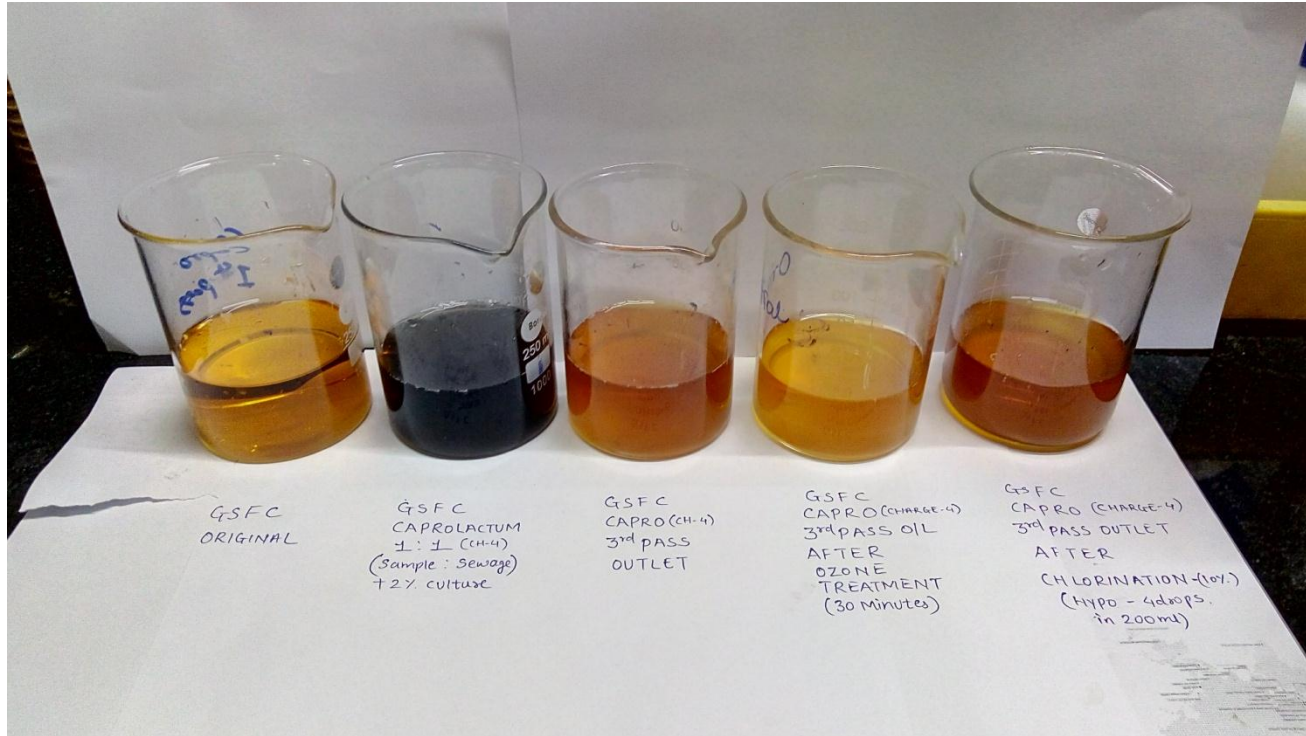
sample analysis done at Biolab Ekalbara

Sample No.	Sample ID	Qty. In KLD	pH	TDS (ppm)	Turbidity (NTU)	Colour	Odour	COD (ppm)	BOD (ppm)	Sulfites (ppm)	Sulfide (ppm)	Sulfates (ppm)	Ammonia (ppm)
1	P - 832	80	1.9	47820	6.0	Brownish Red	Mild Ammonia like	52416	10000	105	39	2044	3332

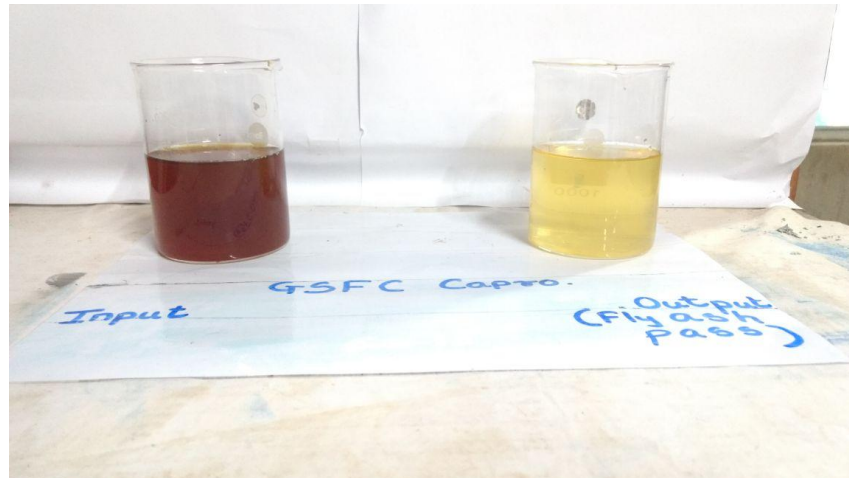
Treatability Study Report

Sample	Color	Odour	pH	TDS (ppm)	Turbidity (NTU)	COD (ppm)	Sulfates (ppm)	Sulfide (ppm)	SO3 (ppm)	Ammonia (ppm)	COD Load (Kgs/Day) & (% Red.)
Before Treatment (1:1) with 2 % Culture	Brown	Sewage Like	6.7	25000	500	30950	1220	26.6	70	2044	4800
After BF Treatment	Brown	Odorless	7.1	15000	55	5634	635	Nil	10	950	900 (81.2%)
After Tertiary Treatment	Pale Yelloow	Odorless	7.5	2310	1.0	350	--	Nil	Nil	238	56 (98.8 %)

Photographs of Sample



NF Treatment



Case Study – 5

Type of Waste Water	Organo-Phosphorous Stream
Capacity of transBio-Filter Plant	Pilot Plant Study
Process	Effluent from Plant

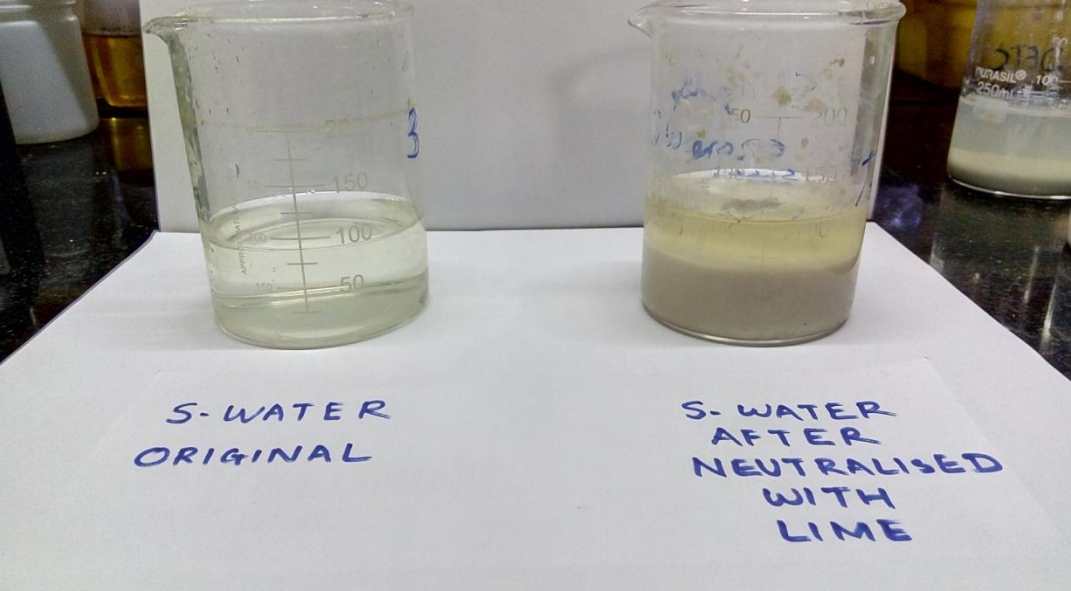
WASTE WATER SAMPLES

Sample No.	Sample ID	Qty. In KLD	pH	TDS (ppm)	Turbidity (NTU)	Colour	Odour	COD (ppm)	Chlorides (ppm)	Sulfide (ppm)	Sulfite (ppm)	Sulfates (ppm)	Phosphates (ppm)
1	Sulfur Wash Water	80	7.1	98360	21	Yellow	Sulfide like	15850	52417	76	154	124	--
2	DETC Effluent	110	5.4	40870	5.9	Pale Yellow	Sulfide like	12800	14358	536	5088	450	106

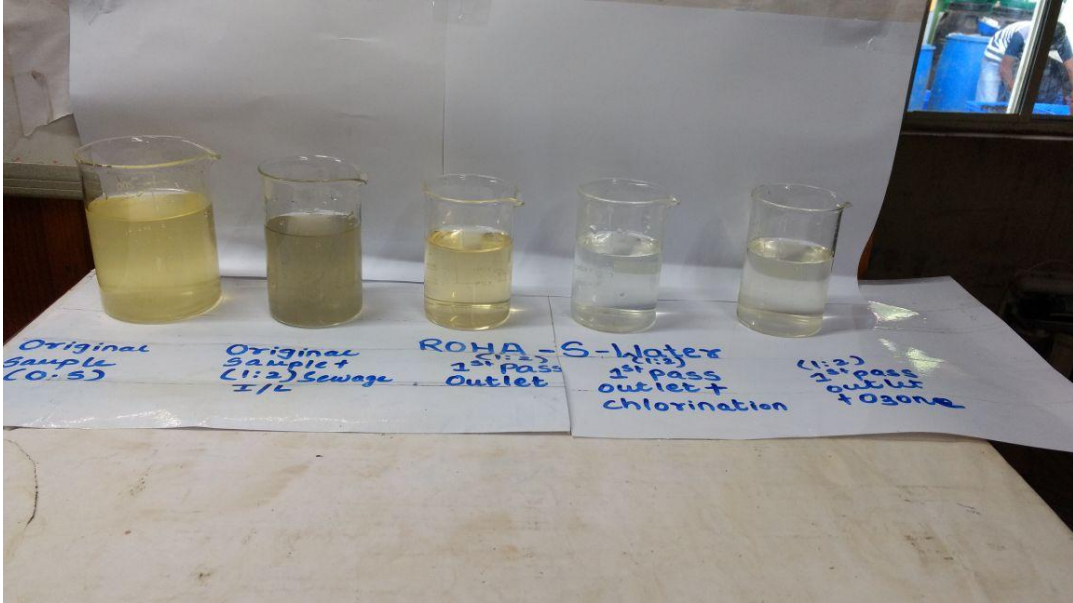
**(Sulfur Wash Water -)
(1:1)**

Sample	Color	Odour	pH	TDS (ppm)	Turbidity (NTU)	COD (ppm)	Chlorides (ppm)	Sulfide (ppm)	Sulfite (ppm)	COD Load (Kgs/Day) & (% Red.)
Before Treatment (1:1)	Greyish	Sulfide like	6.5	68330	110	12032	34148	54	160	1920
After BF Treatment	Pale Yellow	Nil	7.2	52660	5.5	1550	30471	23.7	79	248 (87.0 %)
After Tertiary Treatment	Colorless	Mild	5.7	32200	0.8	850		Nil	Nil	136 (92.9 %)

Photographs of Sulfur Water

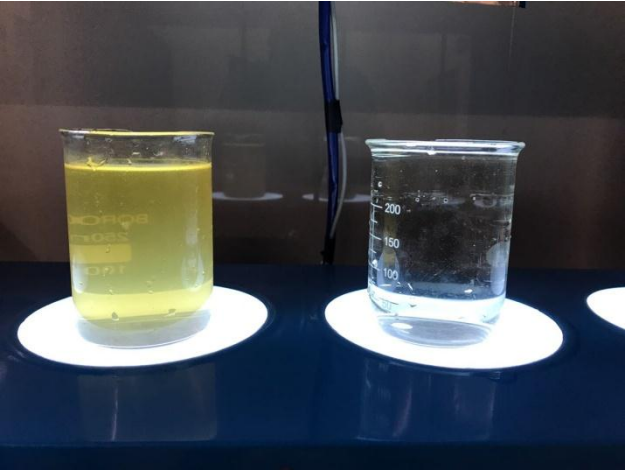


After Neutralization



After Biofilter

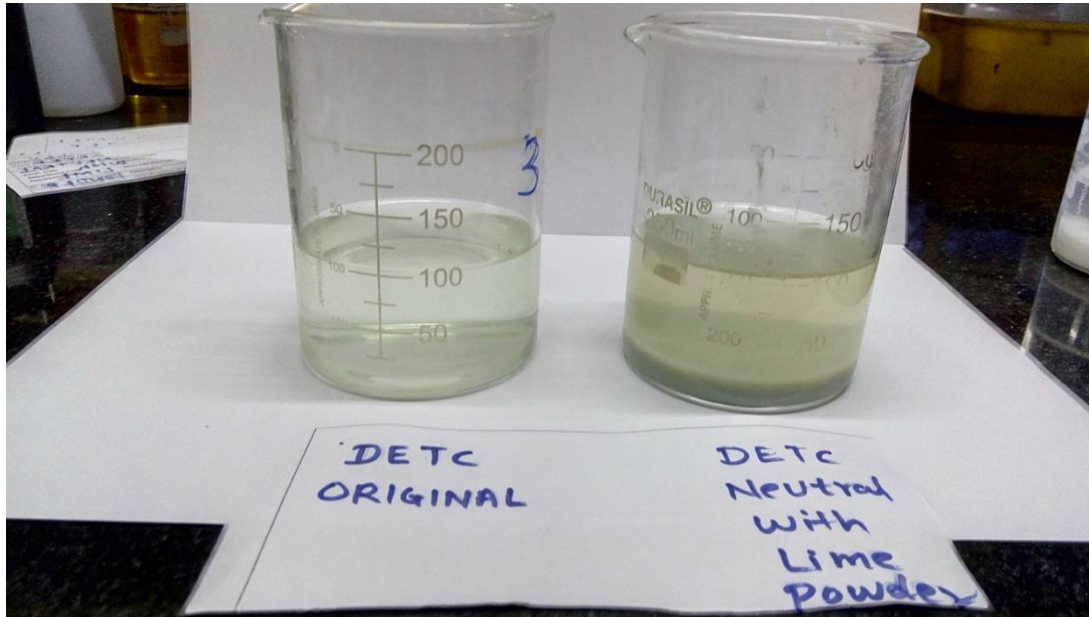
After Tertiary Treatment



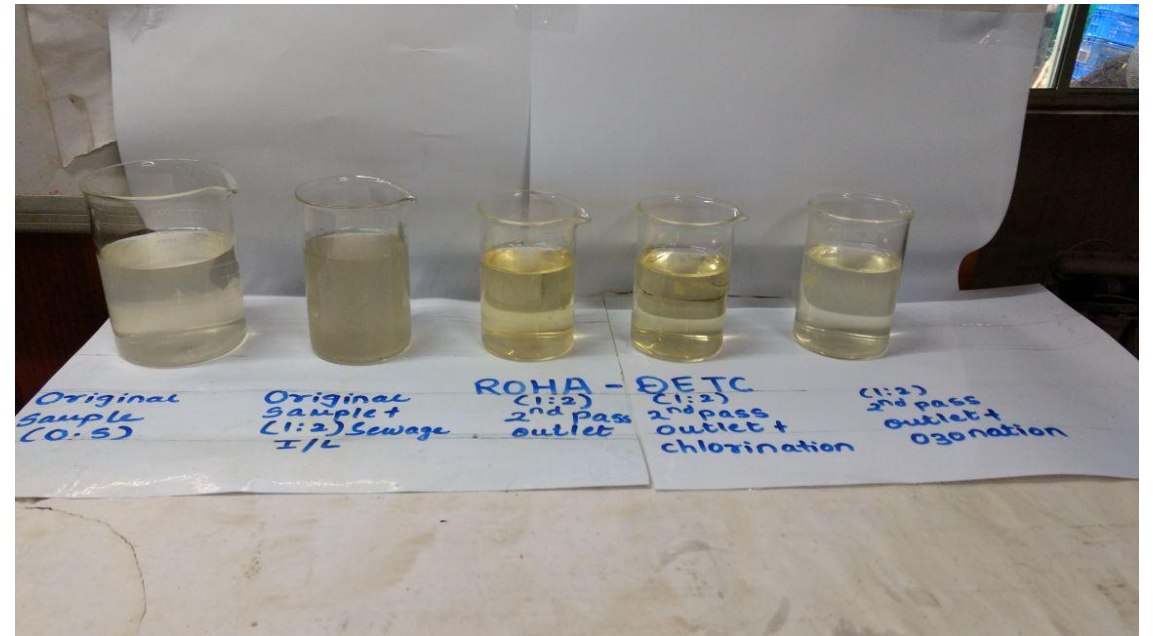
DETC Effluent - Roha (Without Dilution)

Sample	Color	Odour	pH	TDS (ppm)	Turbidity (NTU)	COD (ppm)	Chlorides (ppm)	Sulfide (ppm)	Sulfite (ppm)	Phosphates (ppm)	COD Load (Kgs/Day) & (% Red.)
Before Treatment	Greyish Black	Strong Sulfide like	6.3	26360	>1000	12877	14680	214	4767	100	1410
After BF Treatment	Pale Yellow	Mild Odor	6.6	18820	5.2	1150	9350	56.3	606.5	36.5	126.5 (91.0 %)
After Tertiary Treatment	Colorless	Mild	5.7	8250	0.8	850		Nil	Nil		93.5 (93.3 %)

Photographs of DETC Waste Water

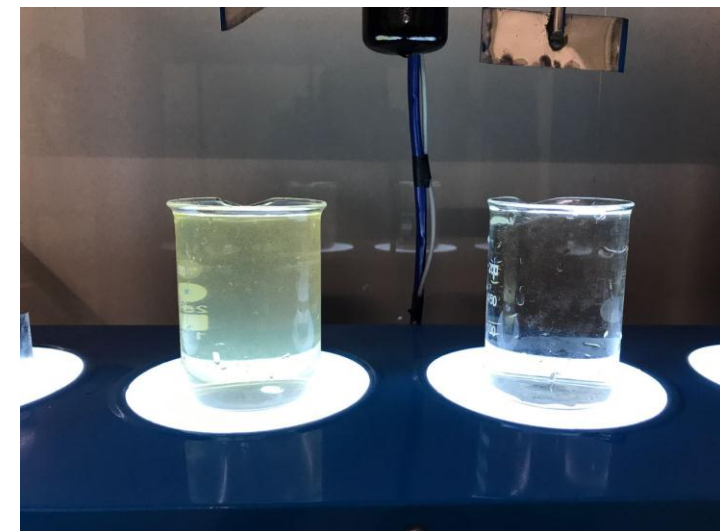


After Neutralization



After Biofilter

After Tertiary Treatment



Case Study – 6

Type of Waste Water	Phenolic Stream
Capacity of transBio-Filter Plant	Pilot Plant Study
Process	Effluent from Phenol plant

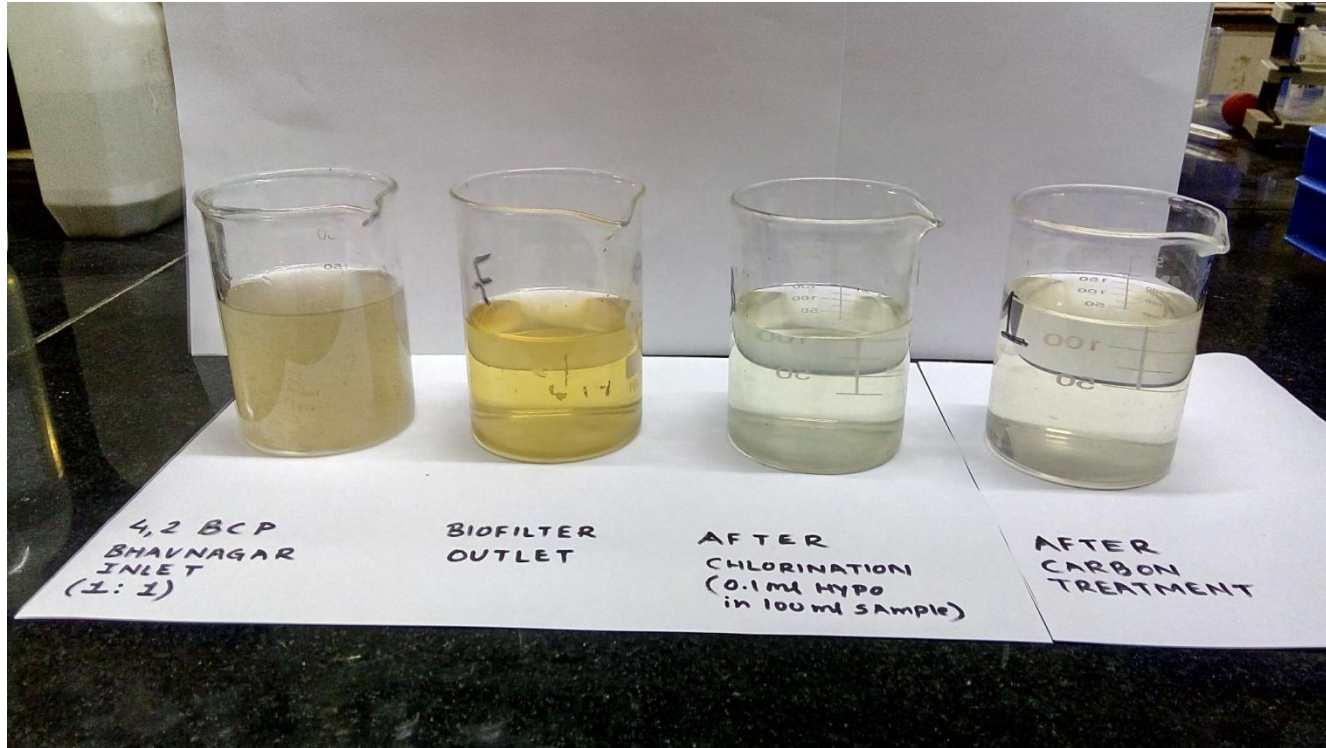
sample analysis done at Biolab Ekalbara

Sample No.	Sample ID	Qty. In KLD	pH	TDS (ppm)	Turbidity (NTU)	Colour	Odour	COD (ppm)	BOD (ppm)	Chlorides (ppm)	Sulfide (ppm)	Sulfates (ppm)	Phenol (ppm)
1	4-2 BCP	10	3.8	18880	3.3	Colorless	Phenolic	4605	1650	4870	933	769	1325

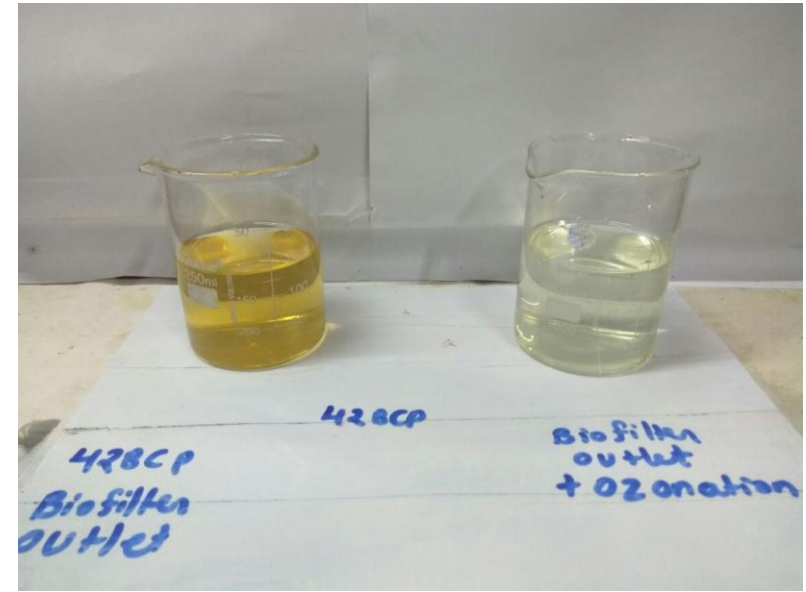
Treatability Study Report

Sample	Color	Odour	pH	TDS (ppm)	Turbidity (NTU)	COD (ppm)	BOD (ppm)	Sulfates (ppm)	Sulfide (ppm)	Chlorides (ppm)	Phenol (ppm)	COD Load (Kgs/Day) & (% Red.)
Before Treatment (1:1) with 1 % Culture	Greyish	Phenolic	6.8	8590	200	2500	525	286	133	2585	950	50
After BF Treatment	Pale Yellow	Odorless	6.9	8200	5.0 – 8.0	650-700	150	25	Nil	1700	3-4	14 (72%)
After Tertiary Treatment	Colorless	Odorless	7.1	580	1.0	< 250	< 100	< 10	Nil	300	< 1.0	5 (90%)

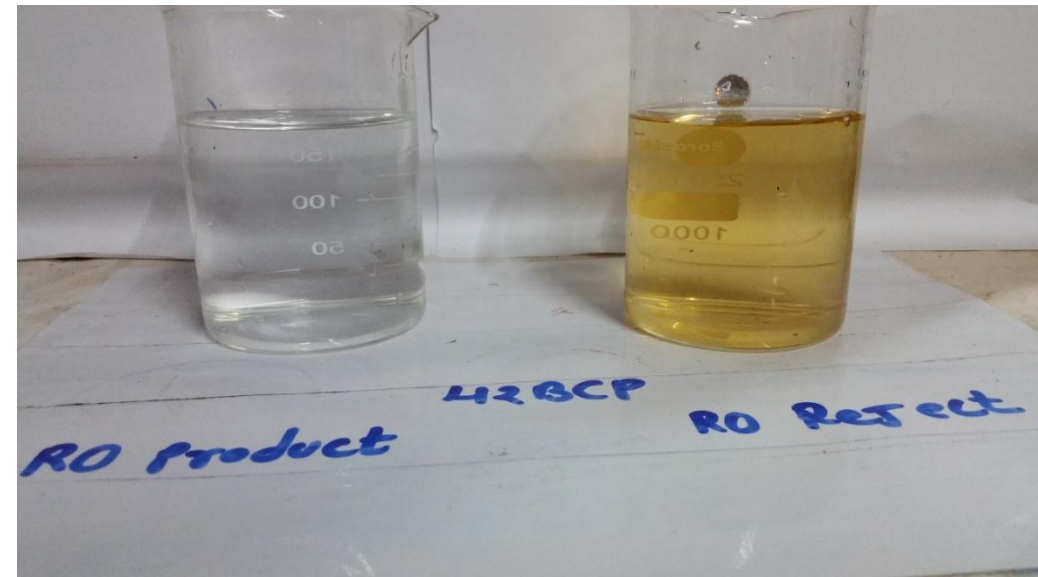
Photographs of Sample



RO Treatment



Ozone Treatment



Case Study – 7

Type of Waste Water	Sodium Formate Stream
Capacity of transBio-Filter Plant	Pilot Plant Study
Process	Effluent from Hydro Plant

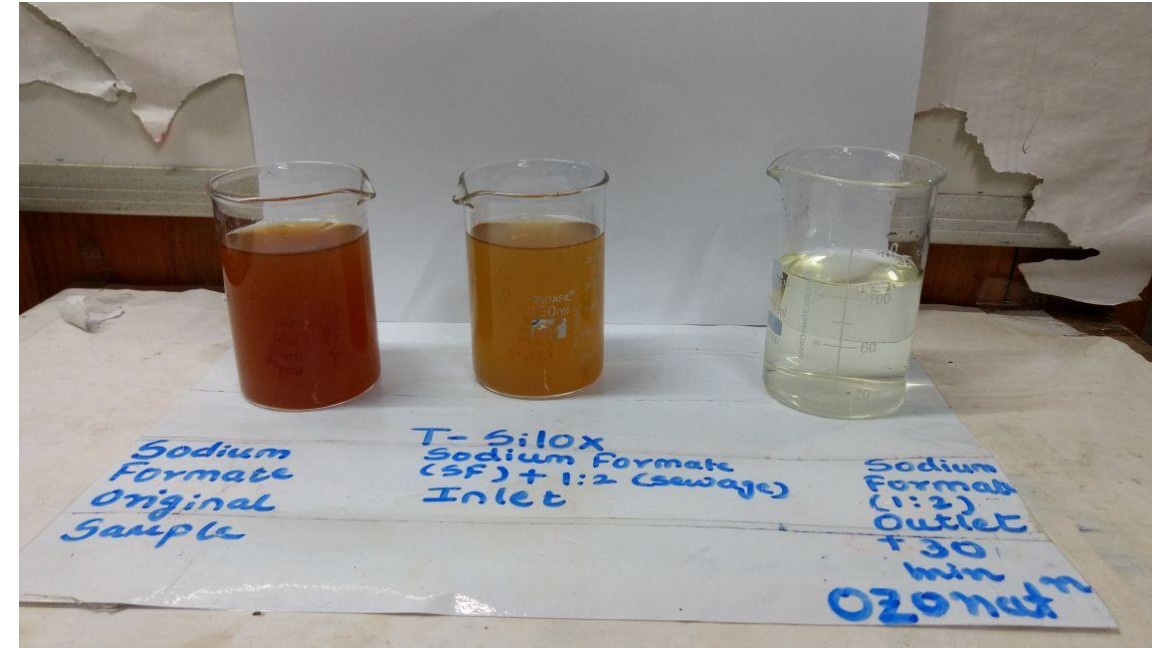
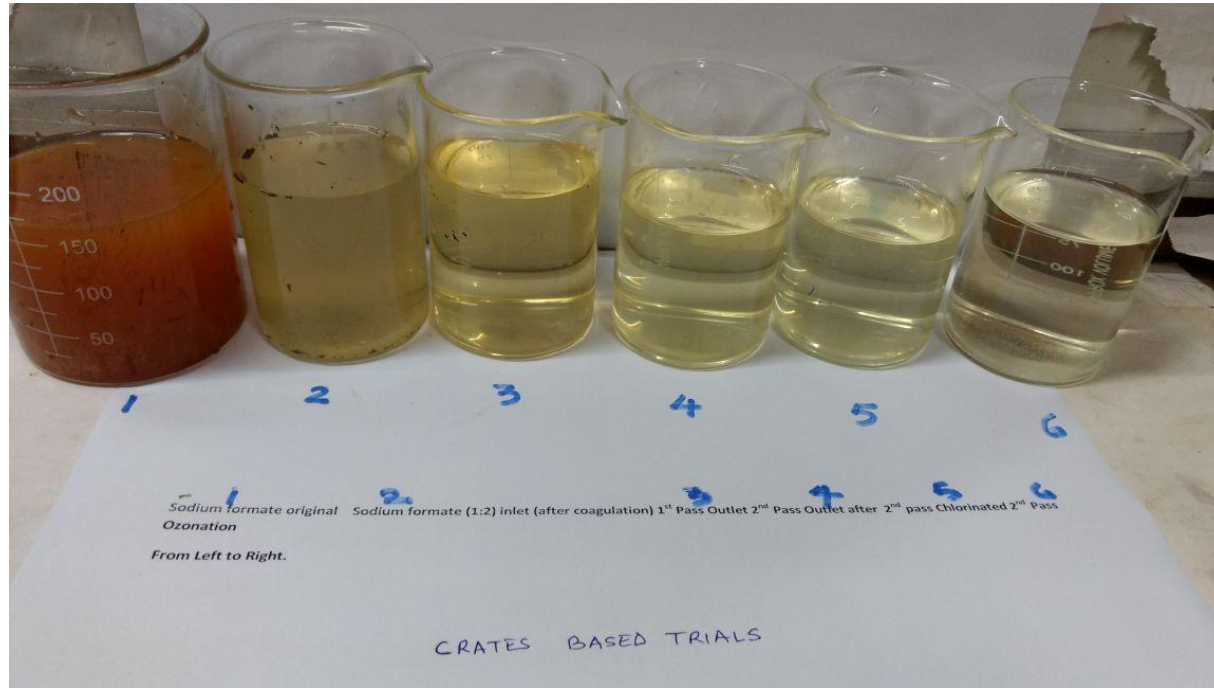
samples analysis done at Biolab Ekalbara

Sample No.	Sample ID	Qty. In KLD	pH	TDS (ppm)	Turbidity (NTU)	Colour	Odour	COD (ppm)	Chlorides (ppm)	Sulfide (ppm)	Sulfite (ppm)	Sulfates (ppm)
1	Sodium Formate Effluent	25	6.5	14700	300	Reddish Brown	Formate	24800	2018	155	388	50

Treatability Study Report (Hydro- Sodium Formate Effluent)

Sample	Color	Odour	pH	TDS (ppm)	Turbidity (NTU)	COD (ppm)	SO3 (ppm)	Sulfide (ppm)
Before Treatment	Reddish Brown	Formate	6.8	14700	300	24800	388	155
After Treatment	Pale Yellow	Mild	7.4	8000	4 -8	370 - 380	5 - 10	Nil
After Tertiary Treatment	Colorless	Odorless	6.8	< 500	< 5.0	< 100	Nil	Nil

Photographs of Sample



RO Treatment

THANK YOU