ATUL LIMITED

BRIEF SUMMARY OF THE PROJECT

Title : Expansion of Existing Production Plant and Addition of New Products at Survey No. 5, 6, 29, 30, 33 to 38, 80, 81, 84, 85, 91, 96 to 105, 108, 112 to 117, 142, 144 to 148, 274,275 & 276, At & Po. Atul, Valsad District, Gujarat State

Land Acquired : Existing Project Area: 1126067.07 m^2 (~112.60 Ha.)

Proposed Expansion: No additional area – expansion will be within existing plot area only.

Cost of the Project : 178903 Lacs INR

Production Capacity :

Product Group

S. No.	Name of Products	Category	Production capacity in MT/M			
			Existing as per CCA	**EC 2015**	**Proposed 2018**	**Total**
A	DYES	5(f)	1300.8	583.33	9286	11170.13
B	CHLOR-AKLALI	4(d)	3400	4100	21133.29	28633.29
C	PESTICIDES TECH	5(b)	2637.04	278.24	11370.59	14285.87
D	BULK DRUG AND PHARMACEUTICALS	5(f)	350.6	0	1979	2329.6
E	RESINS	5(f)	2990.9	441.67	17000	20432.57
F	OTHER CHEMICALS	5(f)				
	Total Production Capacity of this group Sodium Thio sulphate (dry basis)		21443.267	651	40516.86	62611.127
	Total Production Capacity of this group Sodium Thio sulphate (wet basis)		22443.267	651	42316.86	65411.127
G	Flavors & Fragrances	5(f)	0	733.3	6500	7233.3
H	Co Products:	5(f), 5(b)	0	417	9283.65	9700.65
	Total Production Capacity with Sodium Thio sulphate (dry basis)		**32122.607**	**7204.54**	**117069.39**	**156396.54**
	Total Production Capacity with Sodium Thio sulphate (wet basis)		**33122.607**	**7204.54**	**118869.39**	**159196.54**

Detailed Product List

S. No.	Name of Products	Category	Production capacity in MT/M			
			Existing as per CCA	EC 2015	Proposed 2018	Total
A	**DYES**	**5(f)**				
1	Azo dyes	5(f)	550	0	0	550
2	Sulfur Black		250	583.33	1667	2500.33
3	Sulfur Dyes range		25	0	0	25
4	Naphthol range		75	0	0	75
5	Fast Color Bases		40	0	0	40
6	Disperse dyes		118.5	0	0	118.5
7	Optical Brighteners		10	0	0	10
8	Reactive Dyes		127.3	0	834	961.3
9	Vat dyes		105	0	0	105
10	Indigo		0	0	500	500
11	Manganese sulphate		0	0	1000	1000
12	40 % Manganese sulphate solution		0	0	2500	2500
13	Pigments		0	0	200	200
14	1-Aminoantraquinone		0	0	417	417
15	H-acid		0	0	500	500
16	4-amino-phenyl-4-beta hydroxy ethyl sulphone sulphate ester, Para base ester		0	0	834	834
17	DNCB (Di Nitro ChloroBenzene)		0	0	834	834
	Total Production Capacity of DYES		**1300.8**	**583.3**	**9286.0**	**11170.1**
B	**CHLOR-AKLALI**	**4(d)**				
18	Caustic soda/potash & sodium sulfide	4(d)	1800	2200	11100	15100
19	Liquid Chlorine /Hcl		1600	1900	9768	13268
20	Hydrogen		0.0	0	265.29	265.29
	Total Production Capacity of CHLOR-ALKALI		**3400.0**	**4100.0**	**21133.3**	**28633.3**
C	**PESTICIDES TECH**	**5(b)**				
21	Carbamate group of Agrochemicals	5(b)	33.3	10	66.7	110
22	Diuron		20	200	200	420
23	Trichlo Carbon		8.3	0	0	8.3

24	Cartap Hcl		50	0	0	50
25	Carbendazim		20.9	0	180.1	201
26	Herbicides (2,4-D & related products)		2170	0	2750	5670
27	MCPA				750	
28	Pyridine based insecticides & Herbicides chemical Imidacloprid		25	4.16	95.84	125
29	Triazole based Fungiside		1.67	0	100.33	102
30	Pyrethroides		10	0	0	10
31	Sulphonyl Urea		25	10.25	34.75	70
32	Glyphosate		50	15	2935	3000
33	Isoprothiolane		8.3	10	81.7	100
34	Fipronil		5	0	25	30
35	Formulations		200	0	2000	2200
36	Buprofesin		4	0	0	4
37	Imazethpyr		1.83	0	0	1.83
38	Kresoxim Methyl		2.08	0	0	2.08
39	Fenoxaprop		0.83	0	0	0.83
40	Cyhalofop		0.83	0	0	0.83
41	Mesotrione		0	0	300	300
42	Sucotrione		0	0	300	300
43	Glycin		0	0	1000	1000
44	Pyrazosulfurone		0	0.5	29.5	30
45	BisPyribac Sodium		0	0.83	29.17	30
46	Azoxystrobin		0	2.08	147.92	150
47	Quizalofop		0	1.25	48.75	50
48	Thiamethoxam		0	10	90	100
49	Metribuzine		0	10	50	60
50	Diafenthiurone		0	4.17	25.83	30
51	Chlorantraniliprole		0	0.0	70	70
52	5-Chloro 1-Indenone		0	0.0	60	60
	Total Production Capacity of PESTICIDES		**2637.04**	**278.24**	**11370.59**	**14285.87**
D	**BULK DRUG AND PHARMACEUTICALS**	**5(f)**				
53	Mabendazole	5(f)	2	0	0	2
54	Tolbutamide		2.5	0	0	2.5

55	Quiniodochlor		15	0	0	15
D1	Bulk Drugs & Intermediates		9.6	0	-	194.6
56	Dapsone-API				65	
57	Valacyclovir HCL					
58	Celecoxib					
59	Desvenlafixine					
60	Mirabegron					
61	Vildagliptin					
62	Venlafaxine Hydrochloride					
63	5-Hydroxy methyl thiazole (5-HMT)				20	
64	Thiophene-2-carboxaldehyde (2-TC)				90	
65	1-Chloroacetyl-2-carbonitrile pyrrolidine (CACP)				10	
66	Dechlofenac sodium / potassium		2.5	0	0	2.5
67	Atenolol		1.7	0	0	1.7
68	Fresamide		1.3	0	0	1.3
69	Trimethoprim		0.9	0	0	0.9
70	Para hydroxy acetophenone		1.7	0	0	1.7
71	Para hydroxy phenyl acetamide		3	0	0	3
72	Acyclovir		5.2	0	0	5.2
73	Bathenechol		5.2	0	0	5.2
D2	Pharma Intermediates & Chemicals		300	0		2094
74	4,4 Diamino diphenyl sulphone				250	
75	4,4 Dichloro diphenyl sulphone				1000	
76	3,3 Diamino diphenyl sulphone				44	
77	DHDPS & Other sulfones				500	
	Total Production Capacity of BULK DRUG AND PHARMACEUTICALS		**350.6**	**0**	**1979.000**	**2329.600**
E	**RESINS**	**5(f)**				
78	Epoxy Resin	5(f)	2500	100	15000	17600
79	Vinyl Easter Resins		37.5	0	0	37.5
80	Ketone Formaldehyde Resins & Sulphonamide, Formaldehyde Resins		20.8	0	0	20.8
81	UF/MF/PF/DiCyandiamide Resins		270.9	0	0	270.9
82	Polyamide resins		161.7	0	0	161.7

83	Polygrip TPU based		0	41.67	300	341.67
84	Polygrip rubber based		0	300	1700	2000
	Total Production Capacity of RESINS		**2990.9**	**441.67**	**17000**	**20432.57**
F	**OTHER CHEMICALS**					
85	Anthraquinone, Naphthalene, Benzene Intermediates. (Including Beta – Napthol & BON Acid)	5(f)	740	0	0	740
86	Resorcinol (Meta hydroxy phenol)	5(f)	460	0	600	1060
87	Carbamite	5(b)	30	0	0	30
88	Chlorzoxazone & other related products	5(f)	5	0	0	5
89	4 Ethyl 2,3 – Diorcopiperazino carbonyl Chloride	5(f)	3.3	0	0	3.3
90	Imino Dibenzyl 5 carbonyl Chloride	5(f)	0.8	0	0	0.8
91	Formaldehyde and base products	5(f)	3200	0	12000	15200
92	Sulfuric Acid / Oleum / Chlorosulphonic Acid & Salts	--	11550	0	0	11550
93	Sulpha Drug Intermediate	5(f)	193.8	0	0	193.8
94	Acetyl Sulphanilyl Chloride and its derivatives.	5(f)	1500	0	0	1500
95	Acetanilide	5(f)	500	0	0	500
96	Sulpha Methyl Phenazole Sodium	5(f)	1.1	0	0	1.1
97	Pyrazole Base	5(f)	10.5	0	0	10.5
98	Sulphanilic acid	5(f)	25	0	0	25
99	Bis Phenol A	5(f)	416.7	0	0	416.7
100	Hexamine	5(f)	150	0	0	150
101	Epoxy Intermediates	5(f)	23.8	0	0	23.8
102	Hardners and auxilaries	5(f)	500	0	3500	4000
103	Hardener Intermediates	5(f)	700	0	0	700
104	Bisphenol S & Intermediate Chemicals	5(f)	16.6	0	0	16.6
105	Sodium Thio sulphate (dry basis)	---	900	0	1600	2500
106	Sodium Thio sulphate (wet basis)	---	1900	0	3400	5300
107	Phosgene	5(f)	416.667	0	416.16	832.827
108	HX-13059	5(f)	0	5	0	5
109	Alkyl ketene dimer	5(f)	0	0	500	500
110	Anisole	5(f)	0	166	140	306
111	PF Resin	5(f)	0	0	200	200
112	CMC (Carboxy methyl cellulose)	5(f)	0	0	2000	2000

113	HMMM (Hexa Methoxy Methyl Melemine)	5(f)	0	0	40	40
114	m-Amino phenol	5(f)	0	0	250	250
115	Mono chloro benzene	5(f)	0	0	2500	2500
116	Propionyl chloride	5(f)	0	0	200	200
117	Resorcinol derivatives	5(f)	0	0	100	100
118	RF Resin (Resoform P-18,19,20)	5(f)	0	85.0	320	405
119	Trichloro acetyl chloride	5(f)	0	0	200	200
120	Thio glycolic acid	5(f)	0	0	200	200
121	Thionyl chloride	--	0	0	1000	1000
122	1,3 Cyclohexanedione	5(f)	0	80	40	120
F1	Agro, Pharma intermediates, Isocyanats & Carbonat Esters, etc.	5(f)	100			
123	Trans-4-MCHI	5(f)		315	0	2230
124	p-Anisyl chloroformate	5(f)				
125	DI-TERT-BUTYL DICARBONATE (Boc. anhydride)	5(f)				
126	N, N- Disuccinimidyl Carbonate	5(f)				
F1.1	Chloroformate	5(f)			800	
127	1-Chloro ethyl chloroformate (1-CECF)	5(f)				
128	4-Nitrophenyl chloroformate (4-NPCF)					
129	n-Pentyl chloroformate (n-PCF)					
130	Isobutyl chloroformate (IBCF)					
131	2 Ethyl Hexyl Cholroformate (2-EHCF)					
132	Phenyl Chloroformate (PCF)					
133	Benzyl Chloroformate (BCF)					
134	Methyl chloroformate (MCF)					
135	n--Hexyl chloroformate (n-HCF)					
F1.2	Carbonate	5(f)				
136	Di-tert-butyl dicarbonate (DIBOC)	5(f)			100	
137	Bis (4-Nitrophenyl) Carbonate (Bis-NPC)				10	
138	Diphenyl carbonate (DPC)				50	
139	Dimethyl carbonate (DMC)				50	
140	1,1'-Carbonylldiimidazole (CDI)				20	
F1.3	Isocynates	5(f)				
141	p-Toluene sulphonyl isocyanate (PTSI) and other Isocynates	5(f)			300	

F1.4	Acid Chlorides	5(f)				
142	N-Methylpiperazinyl carbamoyl chloride Hydrochloride (NPCCL)	5(f)			50	
143	(Chlormethylene)dimethylammonium chloride (VMR)/ Phosgeniminium chloride and other Acid chlorides				75	
144	N,N-Dimethyl carbamoyl chloride (DMCCl)				60	
145	Hexaethyl guanidinium chloride (HEGCl)				50	
F1.5	Urea	5(f)				
146	Tetrabutyl Urea (TBU)	5(f)			75	
147	Tetramethyl Urea (TMU)				75	
F1.6	Carbodiimide	5(f)				
148	N,N'-Dicyclohexylcarbodiimide (DCC)	5(f)			100	
149	Sodium sulphite	--	0	0	3261	3261
150	30% HCl	--	0	0	3622.5	3622.5
151	Sodium hypo chloride solution (10%)	--	0	0	1853.7	1853.7
152	Potassium chloride	--	0	0	740	740
153	Salt (PH)	--	0	0	18.5	18.5
154	HCl 30%	--	0	0	1000	1000
155	Sodium Chloride	--	0	0	2400	2400
	Total Production Capacity of this group Sodium Thio sulphate (dry basis)		**21443.3**	**651.0**	**40516.9**	**62611.1**
	Total Production Capacity of this group Sodium Thio sulphate (wet basis)		**22443.3**	**651.0**	**42316.9**	**65411.1**
G	**Flavors & Fragrances**					
G1	Allyl Esters such as	5(f)				
156	Allyl Caproate		0	0	250.00	250
157	Allyl cyclohexyl propionate		0	0	250.00	250
158	Allyl Heptanoate		0	0	150.00	150
159	Cyclogalbanate		0	0	25.00	25
G2	Styrene Based derivatives such as	5(f)				
160	Phenyl Ethyl Alcohol (PEA)		0	0	850.00	850
161	PE acetate		0	0	250.00	250
162	PEME (Phenyl ethyl methyl ether)		0	0	200.00	200
163	Pommerol (Phenyl ethyl isoamyl ether)		0	0	100.00	100
164	Styrene oxide		0	0	500.00	500

165	Phenyl ethyl phenyl acetate (PEPA)		0	0	100.00	100
166	Phenyl acetaldehyde dimethyl Acetal		0	0	250.00	250
167	Styrallyl acetate		0	0	500.00	500
G3	Coumarin derivatives such as	5(f)				
168	Coumarin		0	0	500.00	500
169	Dihydro Coumarin		0	0	100.00	100
170	Sunscreen prodcuts such as	5(f)				
171	Avobenzene		0	83.3	0	83.3
172	Octacrylene		0	83.3	0	83.3
173	OctaylMethoxy Cinnamate		0	200	0	200
G5	Others such as					
174	Peonile	5(f)	0	0	50.00	50
175	Mugetanol	5(f)	0	0	25.00	25
176	Salicylaldehyde	5(f)	0	0	500.00	500
177	Evernyl	5(f)	0	0	200.00	200
178	Heliotropin	5(f)	0	0	250.00	250
179	Helional	5(f)	0	0	500.00	500
180	1,2 Hexane Diol	5(f)	0	0	200.00	200
181	Indoflor	5(f)	0	0	50.00	50
182	Floral	5(f)	0	0	50.00	50
183	Cyclohexyl Salicylate	5(f)	0	0	100.00	100
184	Methyl Anthranilate	5(f)	0	0	300.00	300
185	Dihydroanethole	5(f)	0	0	50.00	50
186	Benzilydine acetone	5(f)	0	0	100.00	100
187	Hexenyl -3 -Cis- Benzoate	5(f)	0	0	25	25
188	Hexenyl Hexenoate, Cis-3	5(f)	0	0	25	25
189	Citronellyl Oxyacetaldehyde	5(f)	0	0	25	25
190	Karmaflor	5(f)	0	0	25	25
191	Anethole	5(f)	0	166.7	0	166.7
192	Raspberry Ketone	5(f)	0	100	0	100
193	P-AninylPropanal	5(f)	0	100	0	100
	Total Production Capacity of this group		**0.0**	**733.3**	**6500.0**	**7233.3**
H	**Co Products:**					

1	Gypsum	--	0	0	3300	3300
2	Sodium sulphate	--	0	0	885.9	885.9
3	Recovered phenol	--	0	0	3	3
4	Tula resin	--	0	0	30	30
5	Calcium chloride	--	0	0	360	360
6	Calcium sulfate	--	0	0	444.75	444.75
7	Gypsum	--	0	0	3260	3260
8	Sodium Sulfate	--	0	0	500	500
9	Calcium Chloride	--	0	0	500	500
10	30% HCl (By product)	--	0	417	0	417
	Total Production Capacity of this group		**0**	**417**	**9283.65**	**9700.65**
	Total Production Sodium Thio sulphate (dry basis)		**32122.607**	**7204.54**	**117069.39**	**156396.54**
	Total Production Sodium Thio sulphate (wet basis)		**33122.607**	**7204.54**	**118869.39**	**159196.54**

Fuel Consumption and Flue Gas Stacks:

Sr. No.	Stack Details	Stack height m	Capacity T/H	Fuel	Fuel Consumption	APCD
Existing						
East site						
1	FBC boiler E1	56	34	Coal /Lignite	8.5 T/hr.	Electrostatic precipitator
2	FBC boiler E2	56	34	Coal /Lignite	8.5 T/hr.	Electrostatic precipitator
3	FBC boiler E3	80.3	50	Coal /Lignite	12.5 T/hr.	Electrostatic precipitator
4	Hot Oil Unit (Resorcinol Plant)	32.5	17 L Kcal/Hr	PNG	27 sm^3/hr	Adequate stack height
5	DG set (Standby)	10	1010 KVA	Diesel		Adequate stack height
West Site						
6	FBC boiler W1	70	45	Coal /Lignite	11.3 T/hr	Electrostatic precipitator
7	Hot Oil Plant shed-B	19	10 L Kcal/Hr	PNG	27 sm^3/hr	Adequate stack height
8	Oil burner Shed B (Stand By)	17	10 L Kcal/Hr	PNG	27 sm^3/hr	Adequate stack height
9	Boiler (2 Nos W2,W3)	106	50+50	Coal /Lignite	12.5 T/hr.	Electrostatic precipitator
10	DG set (Stand By)	11	1500 KVA	Diesel		Adequate stack height
North Site						
11	Thermic fluid heater of DCO/DAP Plant	12	6 L Kcal/Hr	PNG	20 sm^3/hr	Adequate stack height
Proposed						

Additional flue gas stack is not required after proposed expansion

Process Vents:

Sr. No.	Stack Details	Stack Height m	Parameter	Permissible Limits	APCD
I	**Existing**				
	Atul East Site				
1	Phosgene Plant	15	Phosgene	0.1 ppm	Alkali& water scrubber
	Caustic Chlorine Plant				
2	Dechlorination Plant	35	CI 2	9.0 mg/Nm^3	Hypo scrubber
			HCI	20.0 mg/Nm^3	
3	Common stack of Hcl Sigri unit 1& 2	25	CI 2	9.0 mg/Nm^3	water scrubber
			HCI	20.0 mg/Nm^3	
	FCB Plant				
4	Foul Gas Scrubber	26.5	SO2	40.0 mg/Nm^3	
			NOx	25.0 mg/Nm^3	
	Sulfuric Acid (East Side)				
5	Sulfuric Acid plant	30	SO2	2.0 kg/T	water scrubber with DCDA system
			Acid Mist	50.0 mg/Nm^3	
6	ChloroSulfonic Acid plant reactor	11	CI 2	9.0 mg/Nm^3	water scrubber
			HCI	20.0 mg/Nm^3	
	Incinerator				
7	Incinerator	40	PM	150.0 mg/Nm^3	Alkali& water scrubber
			SO2	40.0 mg/Nm^3	
			Nox	25.0 mg/Nm^3	
			% of Efficiency	-	
	NI Plant				
8	Foul Gas Scrubber	26.5	SO2	40.0 mg/Nm^3	Caustic scrubber
			Nox	25.0 mg/Nm^3	
	NBD Plant				
9	Spray Dryer	21	PM	150.0 mg/Nm^3	water scrubber
	2-4-D Plant				
10	Common Scrubber; 2,4D Plant	5	Cl2	9.0 mg/Nm^3	Caustic scrubber
			HCI	20.0 mg/Nm^3	
			Phenol	--	

11	Dryer-1	26.5	PM with Pesticide compound	20.0 mg/Nm^3	bag filter, water scrubber
12	Dryer-2	26.5	PM with Pesticide compound	20.0 mg/Nm^3	cyclone, bag filter, caustic scrubber
13	Dryer-3	26.5	PM with Pesticide compound	20.0 mg/Nm^3	cyclone, bag filter, caustic scrubber
14	Dryer-4	26.5	PM with Pesticide compound	20.0 mg/Nm^3	cyclone, bag filter, caustic scrubber
CP Plant					
15	MCPA	19	CL_2	9 mg/NM^3	Alkali& water scrubber
			HCL	20 mg/NM^3	
			SO_2	40 mg/NM^3	
16	Fipronil (MPP)	19	SO2	40 mg/NM^3	Alkali& water scrubber
			HCL	20 Mq/Nm3	
17	Imidacloprid (Urathane)	20	NH3	175 Mg/Nm^3	water followed by acid scrubber
18	Pyrathroids (Indoxa 1)	19	SO2	40 Mg/Nm^3	Alkali& water scrubber
			HCL	20 Mq/Nm^3	
19	Stack at Amine Plant	5	NH3	175 Mg/Nm^3	Caustic scrubber
MPSL Plant					
20	Phosgene Scrubber at MPSL	7	Phosgene	0.1 ppm	Caustic scrubber
21	Central Scrubber at MPSL	7	Phosgene	0.1 ppm	Caustic scrubber
NICO Plant					
22	Central scrubber at Nico Plant	12	Acetonytryle, IPA	---	water scrubber
Ester Plant					
23	Scrubber at Ester plant for Glyphosate	12	Formaldehyde	10 Mg/Nm^3	water scrubber
24	Central Scrubber MCPA Plant	19	HCL	20 Mg/Nm^3	Caustic scrubber
25	MPP plant scrubber		HCL	20 Mg/Nm^3	Caustic scrubber
			Phosgene	0.1 ppm	
26	MPP Plant	21	HCl	20 mg/NM^3	Water & Alkali Scrubber
27	Flavors & Fragrances Plant	21	HCl	20 mg/NM^3	Water scrubber followed by caustic scrubber
Atul West Site					
28	Shed A05/03/44	19	Cl_2	9 mg/NM^3	Caustic scrubber
			HCl	20 mg/NM^3	
29	Shed B2/12/24 Reaction Vessel	19	Cl_2	9 mg/NM^3	Caustic scrubber

			HCI	20 mg/NM^3	
30	Shed B18/02/24 Fan	19	SO_2	40 mg/NM^3	Caustic scrubber
			HCl	9 mg/NM^3	
			Cl_2	20 mg/NM^3	
31	Shed C5/20/15 Chlorinator	19	Cl_2	9 mg/NM^3	Alkali& water scrubber
			HCl	20 mg/NM^3	
32	Shed D Niro Spray dryer No.45	19	PM	150 mg/NM^3	water scrubber
33	Shed D Niro Spray dryer No. 50	19	PM	150 mg/NM^3	water scrubber
34	Shed E 7/12/49 Spray Dryer	19	PM	150 mg/NM^3	water scrubber
35	Shed F 6/1/15 Reaction Vessel	19	Cl_2	9 mg/NM^3	Alkali& water scrubber
			HCl	20 mg/NM^3	
36	Shed G 10/8/1 (receiver)	19	Cl_2	9 mg/NM^3	Alkali& water scrubber
			HCl	20 mg/NM^3	
37	Shed H 11/6/17 Chlorinator	19	Cl_2	9 mg/NM^3	Alkali& water scrubber
			HCl	20 mg/NM^3	
38	Shed K K-13/3/4 Final of Sulfuric acid plant	19	SO_2	2 kg/T	Alkali& water scrubber
			Acid Mist	50 mg/NM^3	
39	Shed J15/09/25	19	HBr	--	Alkali& water scrubber
			SO_2	40 mg/NM^3	
40	Shed J12/01/42	19	SO_2	40 mg/NM^3	Alkali& water scrubber
			Cl_2	20 mg/NM^3	
			HCl	9 mg/NM^3	
41	Shed J12/03/36	19	SO_2	40 mg/NM^3	Caustic scrubber
			HCl	9 mg/NM^3	
42	Shed N Scrubber Fan N20/08/24	19	Cl_2	9 mg/NM^3	Caustic scrubber
			HCl	20 mg/NM^3	
43	Shed N Scrubber Fan N20/02/41	19	SO_2	40 mg/NM^3	Alkali& water scrubber
44	Sulfer Black Plant	19	H_2S	--	Alkali& water scrubber
			NH_3	175 mg/NM^3	
45	Sulfer Dyes plant	19	H_2S	--	Alkali& water scrubber
			NH_3	175 mg/NM^3	
Atul North Site					
46	N-FDH Plant Catalytic Incinerator	31.5	PM	150.0 mg/Nm^3	bag filter
			SO2	40.0 mg/Nm^3	
			Nox	25.0 mg/Nm^3	

			Formaldehyde	10.0 mg/Nm^3	
47	PHIN Plant	15.5	Phosgene	0.1 ppm	water scrubber followed by two stage caustic scrubber with Ammonia/steam injection at stack
48	DCDPS Plant	30	SO3	---	Alkali &water scrubber
49	DDS Plant	20	NH3	175 Mg/Nm^3	water followed by acid scrubber
50	SPIC II Plant	30	SO3	---	Alkali & water scrubber
51	SPIC I Plant	30	NH3	175 Mg/Nm^3	water scrubber followed by two stage caustic scrubber with Ammonia/steam injection at stack
52	SPIC IV Plant	2	NH3	175 Mg/Nm^3	Alkali & water scrubber
		2	SO3	---	
53	Furnace (Phosgene plant-New)	15	PM	150 mg/Nm^3	Alkali & water scrubber
54	Reactor (Phosgene plant-New)	15	CO	--	Alkali & water scrubber
			COCl2	0.1 ppm	
II.	**PROPOSED**				
1	Sulfur Black Plant	19	H_2S	--	Caustic scrubber
			NH_3	175 mg/NM^3	Water scrubber
2	Carbamite group of acgrochemical - Phosgenation	25 m	Phosgene	0.1 mg/NM^3	Water scrubber followed by caustic scrubber
3	Diuron -Phosgenation	25 m	Phosgene	0.1 mg/NM^3	Water scrubber followed by caustic scrubber
4	Mesotrione	25 m	CO_2	---	Caustic scrubber
			HCl	20 mg/NM^3	
5	Sucrotrione -	25 m	CO_2	---	Caustic scrubber
			HCl	20 mg/NM^3	
6	Carbendazim	25 m	HCl	20 mg/NM^3	Caustic scrubber
7	Herbicides (2-4 D & related products)-SFD	25 m	PM	20 mg/NM^3	SFD
8	Herbicides (2-4 D & related products)	25 m	HCl,	20 mg/NM^3	Common Caustic scrubber
			Cl_2,	9 mg/NM^3	
			Phenol	---	
9	Pyridine based insecticides & Herbicides chemcial Imidacloprid-	25 m	Pyridine	--	Caustic scrubber
10	Triazole based fungicides	25 m	HCl	20 mg/NM^3	Caustic scrubber
11	Sulphonyl Urea	25 m	Phosgene	0.1 mg/NM^3	Water scrubber followed by caustic scrubber
12	MCPA-SFD	25 m	PM	150 mg/NM^3	SFD
13	MCPA-Common Caustic scrubber	25 m	HCl,	20 mg/NM^3	Common Caustic scrubber
			Cl_2,	9 mg/NM^3	

			Phenol	---	
14	Glyphosate-Common Caustic scrubber	25 m	HCl	20 mg/NM^3	Common Caustic scrubber
15	Glyphosate-SFD	25 m	PM	150 mg/NM^3	SFD
16	Glycine-Ammonia scrubber	25 m	Ammonia	175 mg/NM^3	Ammonia scrubber
17	Glycine-Common Caustic scrubber	25 m	HCl	20 mg/NM^3	Common Caustic scrubber
18	Fipronil -Common Caustic scrubber	25 m	Chloropyradine	--	Common Caustic scrubber
19	Formulation-Common Caustic scrubber	25 m	Amine	--	Common Caustic scrubber
20	Pyrazosulfurone-Common Caustic scrubber	25 m	Phosgene, Isocynate	0.1 mg/NM^3	Water scrubber followed by caustic scrubber
			Isocynate	--	
21	BisPyribac sodium-Common Caustic scrubber	25 m	SO_2	40 mg/NM^3	Common Caustic scrubber
22	Azozystrobin-Common Caustic scrubber	25 m	Cynophenol	--	Common Caustic scrubber
23	Quizalafop-Common Caustic scrubber	25 m	Chlorphenol	---	Common Caustic scrubber
24	Thiamthoxam-Common Caustic scrubber	25 m	amine	--	Common Caustic scrubber
			NO_x	25 mg/NM^3	
			Chloro compound	---	
25	Metribuzine-Common Caustic scrubber	25 m	SO_2	40 mg/NM^3	Common Caustic scrubber
26	Diafenthiurone-Common Caustic scrubber	25 m	Isocynate & amine	---	Common Caustic scrubber
27	Chlorantraniliprole - Common Caustic scrubber	25 m	CO2	---	Common Caustic scrubber
			HCl	20 mg/NM^3	
			SO2	40 mg/NM^3	
28	Alkyl ketene dimer	20 m	HCl	20 mg/NM^3	Water scrubber followed by caustic scrubber
			SO2	40 mg/NM^3	
29	PF Resin	20 m	HCl	20 mg/NM^3	Water scrubber followed by caustic scrubber
30	Caustic- Chlorination	20 m	HCl	20 mg/NM^3	Water scrubber followed by caustic scrubber
			Cl2	9 mg/NM^3	
31	Caustic- Hypo unit	20 m	HCl	20 mg/NM^3	Water scrubber followed by caustic scrubber
			Cl2	9 mg/NM^3	
32	m-Amino phenol- Hot oil generator	20 m	SO2	40mg/NM^3	Water scrubber followed by caustic scrubber
			Nox	25 mg/NM^3	
33	m-Amino phenol-process	20 m	SO2	40 mg/NM^3	Water scrubber followed by caustic scrubber
			SO3	---	
34	Mono chloro benzene	20 m	HCl	20 mg/NM^3	Water scrubber followed by caustic scrubber
35	Propionyl chloride	20 m	SO2	40 mg/NM^3	Water scrubber followed by caustic scrubber
			HCl	20 mg/NM^3	
36	Resorcinol-Hot oil generator	20 m	SO2	40mg/NM^3	Water scrubber followed by caustic scrubber

			Nox	25 mg/NM^3	
37	Resorcinol-Process	20 m	SO2	40 mg/NM^3	Water scrubber followed by caustic scrubber
			SO3	---	
38	Trichloro acetyl chloride	20 m	SO2	40 mg/NM^3	Water scrubber followed by caustic scrubber
			HCl	20 mg/NM^3	
39	Thionyl chloride	20 m	SO2	40 mg/NM^3	Water scrubber followed by caustic scrubber
40	Ammonia system	6	NH3	175 mg/NM^3	water
41	Scrubber Blower Discharge	20	Phosgene	0.1 mg/NM^3	Water scrubber followed by caustic scrubber
42	Scrubber Blower Discharge	20	Phosgene	0.1 mg/NM^3	Water scrubber followed by caustic scrubber
43	Epoxy plant	8	Toluene/ECH	---	caustic scrubber
44	Hardner Plant	12	HCl	20 mg/N^3	Water scrubber followed by caustic scrubber

Water Requirement	Source of Water: Par River The unit has obtained permission for withdrawal of raw water @ 4 MGD (18184 m^3/day).

Table Error! No text of specified style in document.**-1: Water Consumption Details**

S. No.	Description	Water Requirement in KLD		
		Existing	Proposed	Total
A	Gardening	537	1	538
B	Domestic	402	14	416
C	Industrial			
1	Process	17658	9259	26917
2	Cooling Tower	4782	4077	8859
3	Washing (Reactor and Floor)	1851	527	2378
4	Boiler	3128	0	3128
	Total	**28358**	**13878**	**42236**
	Recycled Water	**3335**	**6000**	**9335**
	Treated STP water**	**0**	**11778**	**11778**
	Rain water harvesting	**3073**	**0**	**3073**
	Fresh Water Requirement	**21950**	**-3900**	**18050**

**Note: This water consumption is considering all products produced simultaneously. However in actual scenarios all products will not be produced simultaneously at its full capacity. We will manage our production capacity such that fresh water requirement will not increase beyond the present approved quantity of 18184 KLD as per the agreement with irrigation department.*

**Note: Atul will arrange for treated STP water from nearby Municipal Corporation.

Table Error! No text of specified style in document.**-2: Wastewater Generation Details**

S. No.	Description	Wastewater Generation in KLD		
		Existing	**Proposed**	**Total**
A	Gardening			
B	Domestic	322	1	323
C	Industrial			0
1	Process			0
a	For Incineration	82	17	99
b	To ETP	17066	2731	19797
c	To RO/MEE	1000	6764	7764
2	Cooling Tower B/D & Boiler B/D			0
a	For Direct Disposal	1275	705	1980
b	To MEE	2500	0	2500
3	Washing	1851	542	2393
	Total Wastewater Generation	**24096**	**10760**	**34856**
	Wastewater Going to ETP for Treatment	**19239**	**3274**	**22513**
	Treated effluent for discharge	**20514**	**3979**	**24493**

Waste Water Generation, Treatment & Disposal:

Sewage Treatment: Sewage generated from the industry is treated in existing septic tank and finally in to ETP. Overflow of the septic tank is being diverted to the Aeration tank of the ETP where biological treatment is being provided. The same system shall be continued after proposed expansion.

Effluent Treatment: High COD effluent generated after the proposed expansion shall be segregated and completely incinerated in company's own adequately designed incineration system of 7.2 MT/day capacity. High TDS effluent stream generated after proposed expansion shall be segregated and evaporated in new Multiple Effect Evaporator (MEE) of 5 m^3/hr capacity shall be installed along with Agitated Thin Film Dryer (ATFD). Concentrated stream generated from pharma division shall be subjected to distillation for recovery of solvent & rest shall be disposed off to ETP along with non toxic streams. Normal effluent stream shall be treated in Normal Effluent Treatment Plant of 32,000 KL/day capacity consisting of Primary, Secondary & Tertiary Units. The industry has adequate capacity to treat additional effluent of normal stream from proposed expansion. The final treated effluent from the ETP confirming the GPCB norms will be collected in guard pond and then discharged to estuary zone of River Par through closed pipeline having capacity of 44,000 m^3/day via diffuser.

Solid / Hazardous Waste Management and Disposal

S. No.	Description	Category	Quantity, MT/M			Method of disposal
			Existing	**Proposed**	**Total**	

A	**Chlor Alkali**					
1	Graphite granules from decomposer	16.1	0.0417	0	0.0417	Collection, storage, Transportation, disposal at OWN/Common TSDF
2	Sludge from recycle unit, ground floor & sack filter	16.1	0.014	0	0.014	Collection, storage, Transportation, disposal at OWN/Common TSDF
3	Sludge from Demercurisation Plant	16.1	1	0	1	Collection, storage, Transportation, disposal at OWN/Common TSDF
4	Membranes	16.2	6	45	51	Collection, storage, Transportation, disposal at OWN/Common TSDF
5	Waste Resin	16.2	0.05	0	0.05	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
6	Sulfurised Carbon	16.2	0.003	0	0.003	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
7	Activated Carbon	16.2	0.0104	0	0.0104	Collection, storage, Transportation, disposal at OWN/Common TSDF
8	Brine purification sludge	16.3	242.5	405	647.5	Collection, storage, Transportation, disposal at OWN/Common TSDF
B	**Sulfuric Acid**					
9	Sulphur sludge	17.1	5.83	0	5.83	Collection, storage, Transportation, reuse
10	Hot Gas filter Ash	17.1	0.02	0	0.02	Collection, storage, Transportation, disposal at OWN/Common TSDF
11	Bottom Sludge after recovery of Sulphur Sludge	17.1	0.5	0	0.5	Collection, storage, Transportation, disposal at OWN/Common TSDF
12	Waste Catalyst	17.2	0.083	0	0.083	Collection, storage, Transportation, disposal at OWN/Common TSDF
C	**Distillation**					
13	Spent Solvents	20.2	5	0	5	Collection, storage, Transportation, Recovery
14	OCBC / OCT distillation residue	20.3	154.042	0	154.042	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
15	waste residue Bulk Intermediate (meta hydroxy phenol) (Tar)	20.3	15	0	15	Collection, storage, Transportation, disposal by incineration at own Incineration or selling to actual user
16	Waste residue (from resorcinol plant)	20.3	15	0	15	Collection, storage, Transportation, disposal by incineration at own Incineration or selling to actual user

17	Distillation residue (BI)	20.3	0	266.75	266.75	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
D	**Polymer**					
18	Urea Formaldehyde Polymer product	23.1	0.25	0	0.25	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
19	Sludge containing higher amino compound	23.1	0.417	0	0.417	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
20	Filter cake of Epoxy resins with resin contamination	23.1	0.833	0	0.833	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
21	Epoxy Resin (Filter Cake with resin contamination)	23.1	130.29	277.5	407.79	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
E	**Dyes**					
22	Aluminum Hydroxide	26.1	15.417	0	15.417	Collection, storage, Transportation, disposal at OWN/Common TSDF
23	Iron sludge	26.1	80	0	80	Collection, storage, Transportation, disposal at OWN/Common TSDF
24	Brass residue	26.1	0.667	0	0.667	Collection, storage, Transportation, disposal at OWN/Common TSDF
25	Still / Other residue	26.1	8.67	0	8.67	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
26	Darco / filter aid sludge	26.1	2.083	0	2.083	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
27	Dust (Agro plant)	26.1	3	0	3	Collection, storage, Transportation, disposal at OWN/Common TSDF
28	Iron Residue	26.1	62.5	0	62.5	Collection, storage, Transportation, disposal at OWN/Common TSDF
29	PER crystal residue	26.1	0.4	0	0.4	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
30	Hyflo sludge	26.1	0.5	0	0.5	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized

						agency, OR co-processing at cement industry
31	Filter aid sludge for Hg recovery	26.1	1	0	1	Recovery of mercury
32	Sludge from waste water treatment	26.2	5	0	5	Collection, storage, Transportation, disposal at OWN/Common TSDF
33	Dust from Air Filtration System	26.3	0.001	0	0.001	Reprocessed, reused within industry
34	Cu Sludge	26.1	0	38	38	Recovered as Ca(OH)2
35	Process Waste	26.1	0	1	1	Collection, storage, Transportation, disposal at OWN/Common TSDF
F	**Pharma**					
36	Spent carbon,	28.2	40	23.2475	63.2475	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
37	Date expired, discarded and off-specification product	28.4	0.008	0	0.008	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
38	Spent Mother liquor, Kl/Month	28.5	19.75	0	19.75	Collection, storage, To ETP for recovery
39	Spent solvent	28.6	19.75	0	19.75	Collection, storage, Solvent recovery
40	Process Residue Waste (Isomers & distillation residue)	28.1	0	132	132	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
G	**Agro**					
41	Distillation Residue such as	29.1	83.43	205.84	289.27	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing at RSPL, Panoli OR co-processing at cement industry ***Remark: S. No. 42 to 46 to be merged as Distillation residue. The category and the disposal mode are same.***
42	Still / Other residue	29.1	63.66			
43	Pyridine based insecticides & herbicides (Darco / Filter aid Sludge)	29.1	3.62			
44	Sulfonyl Urea (Residue)	29.1	14.27			
45	Triazole based Fungicides (Residue)	29.1	1.28			
46	Pyrethroides	29.1	0.6			
47	Hyflo	29.1	15.75	135.1517	150.9017	Collection, storage, Transportation, disposal at OWN/Common TSDF
48	Dust from Air Filtration System,	29.3	0.008	0	0.008	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry

49	Process Waste (Filtration)	29.1	0	79.2275	79.2275	Collection, storage, Transportation, disposal at OWN/Common TSDF
50	Lime sludge	29.1	0	40.525	40.525	Collection, storage, Transportation, disposal at OWN/Common TSDF
51	MEE salt		0	9.9	9.9	Collection, storage, Transportation, disposal at OWN/Common TSDF OR selling to actual reuser
H	**Miscellaneous**					
52	Chemical containing residue from decontamination and disposal	33.1	0.0008	0	0.0008	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
53	Liners /Bags, NOs	33.3	9500	0	9500	collection, storage, Decontamination, detoxification
54	Drums /HDPE Carboys	33.3	250	0	250	collection, storage,& after decontamination again captive reuse/disposal by selling to authorised reusers
55	Flue gas cleaning residue	34.1	0.0008	0	0.0008	Collection, storage, Transportation, disposal at OWN/Common TSDF
56	Toxic metal containing residue from used-ion exchange material; in water purification	34.2	0.001	0	0.001	Collection, storage, Transportation, disposal at OWN/Common TSDF
57	Sludge from ETP	34.3	41.667	0	41.667	Collection, storage, Transportation, disposal at OWN/Common TSDF
58	Gypsum from ETP	34.3	2	0	2	Collection, storage, Transportation, disposal at OWN/Common TSDF
59	MEA distillation residue	35.1	1.667	0	1.667	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
60	Spent Catalyst	35.2	0.002	0	0.002	Collection, storage, Transportation, disposal at OWN/Common TSDF
61	Sludge from wet scrubber	36.1	0.02	0	0.02	Collection, storage, Transportation, disposal at OWN/Common TSDF
62	Incineration ash	36.2	4.62	0	4.62	Collection, storage, Transportation, disposal at OWN/Common TSDF
63	Sludge & filters contaminated with oil	3.3	0.005	0	0.005	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
64	Used oil, Kl/Month	5.1	2	0	2	Collection, storage, sell to registered refiners
65	Wastes / residues containing oil	5.2	0.001	0	0.001	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry

66	Aluminum Ash	B30	2.6	0	2.6	Collection, storage, Transportation, disposal at OWN/Common TSDF
67	Gypsum (From meta hydroxy phenol Plant)	D1	840	0	840	Collection, storage, Transportation, disposal at OWN/Common TSDF OR selling to actual reuser
68	Sodium Sulphite	D1	550	0	550	
69	Salt from MEE (with BI MEE)		1,678.71	213.24	1891.95	Collection, storage, Transportation, disposal at OWN/Common TSDF OR selling to actual reuser
70	Spent Acid	B15	4400	0	4400	collection, storage, transportation and sale to authorised industry having permission under rule-9 of Hazardous & other wastes (Management & Transboundary movement)rule 2016
71	Chemical Gypsum	34.3	4930 (Dry basis)	0	4930 (Dry basis)	Collection, storage, Transportation, disposal at OWN/Common TSDF OR send to cement industry for co-processing
72	Copper Hydroxide Wet cake	B3	40	0	40	collection, storage, transportation and sale to authorised industry having permission under rule-9 of Hazardous & other wastes (Management & Transboundary movement)rule 2016
73	Spent Organic solvent	28.5	24.75	0	24.75	collection, storage, transportation and sale to authorised industry having permission under rule-9 of Hazardous & other wastes (Management & Transboundary movement)rule 2016
74	2,6 Dichloro phenol		94.355	0	94.355	Collection, storage, Transportation, disposal by selling to actual reuser
75	2,4,6 Trichloro phenol		45.925	0	45.925	Collection, storage, Transportation, disposal by selling to actual reuser
76	p-CBSA/Na-Salt		127	0	127	Collection, storage, Transportation, disposal by selling to actual reuser
77	Waste from Pharma intermediates	28.1	28.97	0	28.97	
78	Spent Carbon catalyst	28	0.25	0	0.25	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
79	Waste Residue (Phin)	28	2	0	2	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
80	DCDPS waste	28	30	0	30	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
81	N.B.Tar / ODCB Tar	26.1	5	0	5	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
82	ONT Tar	26.1	15	0	15	Collection, storage, Transportation, disposal by incineration at

						own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
83	Various type of Residue	20.2	10	0	10	Collection, storage, Transportation, disposal by incineration at own Incinerator OR co-processing through outside authorized agency, OR co-processing at cement industry
84	Waste/Salt Lime Dust		5	0	5	Collection, storage, Transportation, disposal at OWN/Common TSDF.
85	Hyflo		0	2.560	2.560	Collection, storage, Transportation, disposal at OWN/Common TSDF.
86	KCL Salt		0	500.000	500.000	Collection, storage, Transportation, disposal at OWN/Common TSDF.
87	Distillation Residue (Aromatic High Boiler waste)	20.3	0	1246.3	1246.3	Sell to Agarbatti producers
88	$CaCl_2$		0	85.4	85.4	Collection, storage, Transportation, disposal at OWN/Common TSDF.

Green Belt : Existing green belt of 409030 sq. m area i.e. ~36.32% of total plot area is developed in the Premises.