

**Monthly Performance Report
(HWT-NG100-MPR-19-R0)**

**February 2018
(From 01/02/2018 to 28/02/2018)**

**100 TPD Municipal Solid Waste (MSW) Facility
Calangute, North Goa**

Prepared By
**Hindustan Waste Treatment Pvt. Ltd.
(HWT)**

Submitted To
**Department of Science & Technology (DS&T)
&
Goa State Infrastructural Development
Corporation Limited (GSIDC)**

Table – 1
Summary of Overall Average Results for February 2018
(As compared to Schedule – 7: Performance Standards, Volume – I of RFP)

Sr. No.	Parameter	Performance Standard As per Schedule – 7	Actual Performance at Plant (Monthly Average)
1.	Number of fractions of recyclables sorted per day from the input mixed waste	Minimum 10 numbers of fractions shall be sorted daily from the input dry waste as received in the facility. The list of fractions are as follows: <ol style="list-style-type: none"> 1. PET Bottles 2. Mixed Plastic Articles 3. Newspapers / other Paper Material 4. Cardboard 5. Styrofoam & Thermocol 6. Coconut Shells 7. Clothes 8. Rubber Articles 9. Metal Articles & Cans 10. E-waste Articles and any Hazardous Waste 	13 numbers of fractions are being sorted daily from the input dry waste as received in the facility. The list of fractions are as follows: <ol style="list-style-type: none"> 1. Glass 2. Metal Articles & Cans 3. Tetrapacks 4. Paper / Cardboard 5. Plastic Film 6. Hard Plastics 7. PET Bottles 8. Styrofoam & Thermocol 9. Cloth / Rags / Textile 10. Jute bags 11. Leather / Rubber / Rexine 12. Coconut Shells 13. E-waste Articles and any Hazardous Waste
2.	Quantum of reject/residues to be sent to the landfill after processing. No organic fraction shall be disposed in the landfill.	Maximum 10% of inert of the total input waste as received in the facility (in TPD).	Input waste to the Plant is <u>166.00 TPD</u> . Quantum of Inert is <u>4.222 TPD</u> which is < 10% of the Total Input Waste as received in the Facility. No Organic Waste has been disposed in the Sanitary Landfill Facility.
3.	Electricity generation in the Plant	Minimum electricity to be generated in the plant shall be 0.40 MW per 100 tons of input wet biodegradable waste as received in the Facility (in TPD).	Electricity generation is <u>0.51 MW/100</u> tons of Input Biodegradable Waste as received in the Facility (in TPD).

Sr. No.	Parameter	Performance Standard As per Schedule – 7	Actual Performance at Plant (Monthly Average)										
4.	Biogas Flaring System	The Biogas Flaring System shall strictly be used only in case of emergency and not as a routine practice.	Biogas is being flared strictly, only under emergency and not as a routine practice. The average running time of Biogas Flaring System is 1.15 hours/day .										
5.	Discharge of treated effluent conforming to regulatory norms	Effluent Treatment Plant shall be operated under all conditions.	Effluent Treatment Plant is being operated continuously and is meeting all statutory conditions. The Treated Effluent Characteristics are as follows: <table border="1" data-bbox="1032 726 1403 940"> <tbody> <tr> <td>pH</td> <td>7.03</td> </tr> <tr> <td>BOD</td> <td>7 mg/l</td> </tr> <tr> <td>COD</td> <td>71 mg/l</td> </tr> <tr> <td>TSS</td> <td>8 mg/l</td> </tr> <tr> <td>TDS</td> <td>1,629 mg/l</td> </tr> </tbody> </table>	pH	7.03	BOD	7 mg/l	COD	71 mg/l	TSS	8 mg/l	TDS	1,629 mg/l
pH	7.03												
BOD	7 mg/l												
COD	71 mg/l												
TSS	8 mg/l												
TDS	1,629 mg/l												
6.	General Housekeeping, hygienic conditions, cleanliness, safety norms, adequate manpower, treatment methodology for plant operation & maintenance and storage conditions in the plant.	Minimum housekeeping, safety norms and cleanliness conditions shall be maintained at all times as per the Bid Document requirement.	<ul style="list-style-type: none"> • High standard of Housekeeping, Cleanliness and Safety are being maintained at all times at the Plant. • Adequate manpower has been deployed in all shifts. • Also, the treatment methodology is being followed properly and proper storage conditions have been maintained in the Plant. 										

100 TPD Municipal Solid Waste (MSW) Facility at Calangute, North Goa

#	Plant Performance Data: February 2018		
Sr. No.	Content	Month	Signature
1	Input Waste Composition	From 01.02.2018 To 28.02.2018	
2	Recyclables		
3	Electricity Generation		
4	Biogas Flare		
5	Effluent Treatment Plant		
6	Inert		
7	Housekeeping		

1 INPUT WASTE COMPOSITION:

Sr. No.	Description	Unit	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	Weekly Average	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	Weekly Average		
A Input Waste:																				
1	Dry Waste	TPD	59.580	61.640	64.740	60.950	66.360	62.250	59.050	62.08	37.77%	60.950	61.680	65.680	57.720	72.350	72.410	65.080	65.12	39.35%
2	Wet Waste	TPD	105.720	95.710	103.540	92.460	105.660	95.800	90.830	98.53	59.95%	94.370	99.050	98.580	99.430	103.120	96.300	100.390	98.75	59.66%
3	Mixed Waste	TPD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00%
4	Tree Waste	TPD	4.980	3.680	4.410	2.000	4.260	1.970	4.920	3.75	2.28%	4.970	0.440	0.000	1.380	0.000	3.660	1.010	1.64	0.99%
5	Total.....1+2+3+4	TPD	170.28	161.03	172.69	155.41	176.28	160.02	154.80	164.36	100.00%	160.29	161.17	164.26	158.53	175.47	172.37	166.48	165.51	100.00%
B Input Waste Composition:																				
1	Organic / Bio degradable Fraction	65.00%	105.72	95.71	103.54	92.46	105.66	95.80	90.83	98.53	59.95%	94.37	99.05	98.58	99.43	103.12	96.30	100.39	98.75	59.66%
2	Inorganic / Non-recyclable Fraction (RDF)		41.37	36.29	38.22	38.83	39.07	40.27	38.15	38.88	23.66%	37.37	35.51	35.90	31.83	43.91	52.39	39.72	39.52	23.88%
3	Recyclables	14.00%	19.51	24.46	26.59	21.10	26.34	20.19	21.75	22.85	13.90%	24.14	23.37	25.43	24.51	23.25	20.12	21.73	23.22	14.03%
	Glass	0.50%	0.15	0.10	0.10	0.14	0.16	0.13	0.14	0.13	0.08%	0.14	0.13	0.13	0.11	0.11	0.16	0.12	0.13	0.08%
	Metal	0.50%	0.53	0.66	0.59	0.56	0.56	0.51	0.70	0.59	0.36%	0.56	0.71	0.53	0.67	0.63	0.81	0.60	0.64	0.39%
	Paper / Cardboard / Tetrapack	4.00%	3.93	5.07	5.99	4.29	5.82	4.00	3.76	4.70	2.86%	4.70	3.51	4.48	3.77	5.00	3.31	3.06	3.98	2.40%
	Mixed Plastic, Bottles, Cups, Food Packets, Coated Plastics	6.00%	7.29	10.82	12.42	9.65	8.60	8.64	9.77	9.60	5.84%	8.72	8.82	11.66	11.35	6.98	6.74	7.57	8.84	5.34%
	Thermocoal / Styrofoam	1.00%	0.10	0.13	0.10	0.11	0.16	0.14	0.11	0.12	0.07%	0.14	0.11	0.10	0.14	0.12	0.15	0.13	0.13	0.08%
	Cloth / Rags / Textiles	1.50%	3.41	3.75	3.42	3.11	4.55	3.76	3.98	3.71	2.26%	4.58	4.06	4.16	4.74	4.49	3.48	4.00	4.22	2.55%
	Rubber Items	0.50%	0.80	0.52	0.78	0.76	0.83	0.45	0.53	0.67	0.40%	0.53	0.45	0.66	0.59	0.72	0.84	0.77	0.65	0.39%
	Coconut		3.30	3.41	3.19	2.49	5.66	2.56	2.77	3.34	2.03%	4.76	5.58	3.71	3.14	5.19	4.65	5.46	4.64	2.80%
4	Inert	10.00%	3.68	4.57	4.33	3.01	5.22	3.76	4.07	4.09	2.49%	4.41	3.24	4.35	2.76	5.19	3.57	4.64	4.02	2.43%
5	Mulched Tree Waste	11.00%	4.98	3.68	4.41	2.00	4.26	1.97	4.92	4.97		0.44	0.00	1.38	0.00	3.66	1.01			
	Total.....1+2+3+4+5	100.00%								100.00%										100.00%

2 RECYCLABLES:

Sr. No.	Description	Unit	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	Weekly Average	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	Weekly Average	
A Recyclables:																			
1	Glass	Kg	153	97	104	140	159	128	139	131	144	129	131	111	105	155	117	127	
2	Metal	Kg	528	660	587	559	564	512	697	587	561	709	526	666	632	810	599	643	
3	Tetrapack	Kg	220	436	551	296	483	364	312	380	432	309	233	257	360	185	227	286	
4	Paper / Cardboard	Kg	3,713	4,636	5,441	3,993	5,334	3,636	3,449	4,315	4,264	3,204	4,251	3,516	4,641	3,124	2,837	3,691	
	Total.....3+4	Kg	3,933	5,072	5,992	4,289	5,817	4,000	3,761	4,695	4,696	3,513	4,484	3,773	5,001	3,309	3,064	3,977	
5	Plastic Films	Kg	6,173	9,176	10,802	8,396	7,536	7,492	8,312	8,270	7,612	7,520	9,528	9,376	6,048	5,830	6,689	7,515	
6	Hard Plastic	Kg	714	877	869	512	559	458	860	693	610	670	1,143	1,101	454	559	417	708	
7	Pet	Kg	401	768	745	743	508	691	596	636	497	626	991	874	482	350	470	613	
	Total.....5+6+7	Kg	7,288	10,821	12,416	9,651	8,603	8,641	9,768	9,598	8,719	8,816	11,662	11,351	6,984	6,739	7,576	8,835	
8	Thermocal	Kg	102	129	104	109	159	144	108	122	144	113	99	143	123	121	150	128	
9	Cloth / Rags / Textile	Kg	2,479	2,634	2,554	2,549	3,429	3,057	3,151	2,836	3,246	3,257	3,113	3,474	3,549	2,782	2,825	3,178	
10	Jute Bags	Kg	926	1,118	865	559	1,119	703	827	874	1,339	804	1,043	1,266	943	700	1,171	1,038	
	Total.....9+10	Kg	3,405	3,752	3,419	3,108	4,548	3,760	3,978	3,710	4,585	4,061	4,156	4,740	4,492	3,482	3,996	4,216	
11	Leather / Rubber / Rexine	Kg	800	515	777	762	829	448	526	665	529	451	657	587	719	845	766	651	
12	Coconut	Kg	3,303	3,414	3,195	2,487	5,659	2,560	2,771	3,341	4,761	5,576	3,712	3,139	5,194	4,654	5,461	4,642	
13	Total	Kg	19,512	24,460	26,594	21,105	26,338	20,193	21,748	22,850	24,139	23,368	25,427	24,510	23,250	20,115	21,729	23,220	
		TPD	19.51	24.46	26.59	21.11	26.34	20.19	21.75	22.85	24.14	23.37	25.43	24.51	23.25	20.12	21.73	23.22	

3 ELECTRICITY GENERATION:

Sr. No.	Description	Unit	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	Weekly Average	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	Weekly Average	
A Biogas Gensets:																			
1	Biogas Genset-I: Running Time	hr	24.00	24.00	23.95	23.85	24.00	21.20	14.60	22.23	23.95	24.00	16.00	23.85	21.35	24.00	24.00	22.45	
2	Biogas Genset-I: Energy Generation	kW.hr	3,920	3,800	3,770	3,750	3,680	3,040	2,170	3,447	3,770	3,310	2,140	3,610	2,960	3,840	3,820	3,350	
3	Biogas Genset-II: Running Time	hr	23.95	24.00	24.00	23.80	24.00	20.75	14.60	22.16	23.95	21.90	16.10	23.80	21.50	24.00	24.00	22.18	
4	Biogas Genset-II: Energy Generation	kW.hr	3,990	3,880	3,860	3,820	3,780	3,050	2,190	3,510	3,780	3,120	2,250	3,690	3,150	3,910	3,920	3,403	
5	Total.....2+4	kW.hr	7,910	7,680	7,630	7,570	7,460	6,090	4,360	6,957	7,550	6,430	4,390	7,300	6,110	7,750	7,740	6,753	

3 ELECTRICITY GENERATION:

Sr. No.	Description	Unit	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	Weekly Average	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	Weekly Average
B Electricity Generation:																		
1	As per Tender: Minimum electricity to be generated in the plant shall be 0.4 MW per per 100 tons of Input Biodegradable Waste as received in the Facility.																	
2	Biodegradable Waste.....1.B4	Tons	105.72	95.71	103.54	92.46	105.66	95.80	90.83	98.53	94.37	99.05	98.58	99.43	103.12	96.30	100.39	98.75
3	Electricity Generation required as per Tender.....0.4 x 1000 x B2/100	kWH	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
4	Electricity generated..... (A2/A1) + (A4/A3)	kWH	330	320	318	318	311	290	299	312	315	280	274	306	285	323	323	301
#	Surplus / Shortage	kWH	90	80	78	78	71	50	59		75	40	34	66	45	83	83	

4 BIOGAS FLARE:

Sr. No.	Description	Unit	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	Weekly Average	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	Weekly Average
1	Operation Time	hr/day	1.33	0.97	1.05	1.53	0.18	0.00	0.88	0.85	0.08	0.00	2.42	0.15	2.75	0.33	0.37	0.87

5 EFFLUENT TREATMENT PLANT:

Sr. No.	Description	Unit	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	Weekly Average	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	Weekly Average
A Raw Effluent Quality:																		
1	Flow	m ³ /day	60.10	42.99	80.63	86.42	94.01	94.52	90.89	78.51	96.00	96.76	94.94	95.39	94.87	94.37	95.41	95.39
2	pH	---	7.76	7.34	6.32	7.84	6.22	7.61	6.59	7.10	7.90	7.88	7.92	7.46	7.61	7.27	7.50	7.65
3	Biochemical Oxygen Demand (BOD5)	mg/l	1,587	1,756	2,092	1,960	2,110	2,191	1,768	1,923	1,951	1,641	1,580	2,219	1,511	2,276	1,775	1,850
4	Chemical Oxygen Demand (COD)	mg/l	3,666	3,565	4,916	4,920	6,161	5,258	4,137	4,660	4,312	3,298	4,724	6,968	4,246	6,828	4,597	4,996
5	Total Suspended Solids (TSS)	mg/l	3,761	2,669	3,661	4,077	3,271	4,382	4,226	3,721	3,746	2,921	3,839	4,527	2,629	4,461	3,905	3,718
6	Total Dissolve Solids (TDS)	mg/l	1,347	1,639	1,453	1,684	1,417	1,679	1,543	1,537	1,704	1,515	1,342	1,566	1,521	1,732	1,490	1,553
B Treated Effluent Quality:																		
1	pH	---	7.14	7.10	7.23	6.82	7.13	6.68	7.11	7.03	6.99	7.18	7.04	7.32	6.63	7.12	7.20	7.07
2	Biochemical Oxygen Demand (BOD5)	mg/l	6	5	5	9	8	5	7	6	8	6	7	6	5	8	8	7
3	Chemical Oxygen Demand (COD)	mg/l	69	56	71	87	89	81	77	76	58	89	73	58	56	63	79	68
4	Total Suspended Solids (TSS)	mg/l	7	6	6	10	9	6	8	7	9	7	8	7	6	9	9	8
5	Total Dissolve Solids (TDS)	mg/l	1,468	1,672	1,540	1,701	1,474	1,813	1,620	1,613	1,721	1,560	1,463	1,644	1,658	1,784	1,505	1,619

6 DISPOSAL OF INERT:

Sr. No.	Description	Unit	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	Weekly Average	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	Weekly Average
1	As per Tender: Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility.																	
3	Inert Fraction	TPD	3.678	4.573	4.335	3.015	5.218	3.760	4.071	4.093	4.408	3.240	4.353	2.758	5.194	3.568	4.645	4.024
4	% of Total Input Waste.....3/2	%	2.16%	2.84%	2.51%	1.94%	2.96%	2.35%	2.63%	2.48%	2.75%	2.01%	2.65%	1.74%	2.96%	2.07%	2.79%	2.42%

7 HOUSEKEEPING:

Sr. No.	Description	Unit	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb	Weekly Average	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	Weekly Average
1	Hygienic Conditions	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
2	Cleanliness	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
3	Manpower Deployed	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
4	Safety Norms	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
5	Treatment Methodology	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
6	Storage Conditions	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted

1 INPUT WASTE COMPOSITION:

Sr. No.	Description	Unit	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	Weekly Average	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	Weekly Average	Monthly Average			
A Input Waste:																						
1	Dry Waste	TPD	70.610	65.030	59.110	53.230	70.780	58.240	67.500	63.50	37.44%	58.700	64.340	64.690	57.110	74.320	70.110	54.310	63.37	38.51%	63.52	38.27%
2	Wet Waste	TPD	101.030	99.450	104.980	100.360	108.520	106.870	108.760	104.28	61.49%	98.260	106.150	95.480	101.510	93.750	101.550	86.100	97.54	59.28%	99.78	60.10%
3	Mixed Waste	TPD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00%	0.00	0.00%
4	Tree Waste	TPD	1.990	1.960	0.000	0.970	2.860	1.640	3.190	1.80	1.06%	6.710	3.260	7.350	0.570	5.870	1.650	0.000	3.63	2.21%	2.70	1.63%
5	Total.....1+2+3+4	TPD	173.63	166.44	164.09	154.56	182.16	166.75	179.45	169.58	100.00%	163.67	173.75	167.52	159.19	173.94	173.31	140.41	164.54	100.00%	166.00	100.00%
B Input Waste Composition:																						
1	Organic / Bio degradable Fraction	65.00%	101.03	99.45	104.98	100.36	108.52	106.87	108.76	104.28	61.49%	98.26	106.15	95.48	101.51	93.75	101.55	86.10	97.54	59.28%	99.78	60.10%
2	Inorganic / Non-recyclable Fraction (RDF)		42.13	42.41	35.73	29.93	42.49	32.68	44.47	38.55	22.73%	39.89	36.79	45.35	29.76	48.88	41.38	32.45	39.22	23.83%	39.04	23.52%
3	Recyclables	14.00%	25.28	20.02	18.72	21.10	26.29	22.78	21.19	22.20	13.09%	20.87	26.55	22.48	23.61	26.28	25.86	19.33	23.57	14.32%	22.96	13.84%
	Glass	0.50%	0.16	0.15	0.11	0.14	0.11	0.10	0.13	0.13	0.08%	0.11	0.12	0.10	0.14	0.12	0.12	0.08	0.12	0.07%	0.13	0.08%
	Metal	0.50%	0.76	0.67	0.53	0.76	0.62	0.73	0.61	0.67	0.39%	0.69	0.85	0.77	0.75	0.83	0.78	0.45	0.73	0.44%	0.66	0.40%
	Paper / Cardboard / Tetrapack	4.00%	4.43	3.41	5.53	3.71	4.83	4.89	2.76	4.22	2.49%	2.88	5.49	4.00	3.79	4.89	5.08	4.13	4.32	2.63%	4.30	2.59%
	Mixed Plastic, Bottles, Cups, Food Packets, Coated Plastics	6.00%	12.83	6.19	5.86	9.68	11.06	10.97	9.71	9.47	5.58%	11.33	8.91	8.95	10.89	10.38	9.95	7.19	9.66	5.87%	9.39	5.66%
	Thermocoal / Styrofoam	1.00%	0.10	0.15	0.11	0.14	0.13	0.13	0.13	0.13	0.08%	0.11	0.12	0.13	0.14	0.10	0.12	0.13	0.12	0.08%	0.13	0.08%
	Cloth / Rags / Textiles	1.50%	2.64	3.16	3.04	2.46	3.33	2.55	3.37	2.94	1.73%	2.55	5.06	2.81	2.88	4.19	3.99	2.82	3.47	2.11%	3.58	2.16%
	Rubber Items	0.50%	0.71	0.55	0.74	0.53	0.77	0.60	0.54	0.63	0.37%	0.56	0.68	0.69	0.67	0.50	0.68	0.42	0.60	0.36%	0.64	0.38%
	Coconut		3.65	5.74	2.81	3.69	5.45	2.80	3.95	4.01	2.37%	2.64	5.32	5.03	4.35	5.25	5.15	4.11	4.55	2.76%	4.14	2.49%
4	Inert	10.00%	5.19	4.56	4.66	3.17	4.86	4.42	5.02	4.56	2.69%	4.65	4.26	4.20	4.31	5.03	4.52	2.53	4.21	2.56%	4.22	2.54%
5	Mulched Tree Waste	11.00%	1.99	1.96	0.00	0.97	2.86	1.64	3.19			6.71	3.26	7.35	0.57	5.87	1.65	0.00				
	Total.....1+2+3+4+5	100.00%								100.00%									100.00%		100.00%	

2 RECYCLABLES:

Sr. No.	Description	Unit	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	Weekly Average	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	Weekly Average	Monthly Average
A Recyclables:																			
1	Glass	Kg	156	150	115	139	109	100	126	128	115	122	101	143	122	121	84	115	126
2	Metal	Kg	764	666	525	757	619	734	610	668	687	851	771	748	835	780	449	732	657
3	Tetrapack	Kg	350	276	404	367	367	435	155	336	262	291	292	201	327	340	289	286	322
4	Paper / Cardboard	Kg	4,078	3,136	5,126	3,342	4,460	4,451	2,609	3,886	2,618	5,200	3,711	3,588	4,560	4,738	3,839	4,036	3,982
	Total.....3+4	Kg	4,428	3,412	5,530	3,709	4,827	4,886	2,764	4,222	2,880	5,491	4,003	3,789	4,887	5,078	4,128	4,322	4,304
5	Plastic Films	Kg	10,688	5,238	4,821	8,331	9,885	9,293	8,301	8,080	9,978	7,639	7,514	9,027	8,827	8,386	6,355	8,247	8,028
6	Hard Plastic	Kg	937	384	551	610	597	801	544	632	725	775	562	991	903	836	446	763	699
7	Pet	Kg	1,206	570	486	735	575	878	864	759	623	499	769	871	654	726	388	647	664
	Total.....5+6+7	Kg	12,831	6,192	5,858	9,676	11,057	10,972	9,709	9,471	11,326	8,913	8,945	10,889	10,384	9,948	7,189	9,656	9,390
8	Thermocal	Kg	104	150	115	139	128	133	126	128	115	122	134	143	104	121	126	124	125
9	Cloth / Rags / Textile	Kg	2,037	2,577	2,189	1,986	2,667	2,056	2,847	2,337	1,923	4,166	2,170	2,279	3,022	3,245	2,292	2,728	2,770
10	Jute Bags	Kg	602	585	847	472	667	495	526	599	631	890	644	602	1,170	741	531	744	814
	Total.....9+10	Kg	2,639	3,162	3,036	2,458	3,334	2,551	3,373	2,936	2,554	5,056	2,814	2,881	4,192	3,986	2,823	3,472	3,584
11	Leather / Rubber / Rexine	Kg	712	549	738	526	765	600	538	633	556	678	687	669	504	676	421	599	637
12	Coconut	Kg	3,646	5,742	2,806	3,694	5,447	2,801	3,948	4,012	2,635	5,317	5,026	4,346	5,253	5,147	4,114	4,548	4,136
13	Total	Kg	25,280	20,023	18,723	21,098	26,286	22,777	21,194	22,197	20,868	26,550	22,481	23,608	26,281	25,857	19,334	23,568	22,959
		TPD	25.28	20.02	18.72	21.10	26.29	22.78	21.19	22.20	20.87	26.55	22.48	23.61	26.28	25.86	19.33	23.57	23

3 ELECTRICITY GENERATION:

Sr. No.	Description	Unit	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	Weekly Average	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	Weekly Average	Monthly Average
A Biogas Gensets:																			
1	Biogas Genset-I: Running Time	hr	23.15	24.00	23.80	24.00	24.05	23.85	23.75	23.80	23.90	22.50	23.70	24.00	24.00	23.85	24.00	23.71	23.05
2	Biogas Genset-I: Energy Generation	kW.hr	3,460	3,810	3,240	3,450	3,520	3,450	3,360	3,470	3,780	3,310	3,780	3,660	3,790	3,780	3,910	3,716	3,496
3	Biogas Genset-II: Running Time	hr	23.15	24.00	23.80	24.00	24.00	23.85	23.80	23.80	23.90	22.40	23.65	24.05	24.00	23.75	24.00	23.68	22.95
4	Biogas Genset-II: Energy Generation	kW.hr	3,570	3,880	3,410	3,590	3,690	3,650	3,600	3,627	3,900	3,510	3,930	3,830	3,920	3,880	4,010	3,854	3,599
5	Total.....2+4	kW.hr	7,030	7,690	6,650	7,040	7,210	7,100	6,960	7,097	7,680	6,820	7,710	7,490	7,710	7,660	7,920	7,570	7,094

3 ELECTRICITY GENERATION:

Sr. No.	Description	Unit	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	Weekly Average	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	Weekly Average	Monthly Average
B Electricity Generation:																			
1	As per Tender: Minimum electricity to be generated in the plant shall be 0.4 MW per per 100 tons of Input Biodegradable Waste as received in the Facility.																		
2	Biodegradable Waste.....1.B4	Tons	101.03	99.45	104.98	100.36	108.52	106.87	108.76	104.28	98.26	106.15	95.48	101.51	93.75	101.55	86.10	97.54	99.78
3	Electricity Generation required as per Tender.....0.4 x 1000 x B2/100	kWH	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
4	Electricity generated..... (A2/A1) + (A4/A3)	kWH	304	320	279	293	300	298	293	298	321	304	326	312	321	322	330	319	308
#	Surplus / Shortage	kWH	64	80	39	53	60	58	53		81	64	86	72	81	82	90		

4 BIOGAS FLARE:

Sr. No.	Description	Unit	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	Weekly Average	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	Weekly Average	Monthly Average
1	Operation Time	hr/day	0.43	1.37	1.23	1.95	3.07	0.50	0.37	1.27	0.00	3.70	3.25	1.83	1.50	0.58	0.43	1.61	1.15

5 EFFLUENT TREATMENT PLANT:

Sr. No.	Description	Unit	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	Weekly Average	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	Weekly Average	Monthly Average
A Raw Effluent Quality:																			
1	Flow	m ³ /day	66.11	68.55	69.04	74.91	76.49	77.02	69.64	71.68	69.49	67.57	71.61	73.37	73.85	74.03	76.21	72.30	79.47
2	pH	---	6.87	6.18	7.44	6.77	7.02	7.5	7.65	7.06	6.15	6.56	6.25	7.74	7.65	6.72	7.33	6.91	7.18
3	Biochemical Oxygen Demand (BOD5)	mg/l	1,923	1,546	2,129	1,867	2,280	1,847	1,925	1,931	1,518	2,427	2,032	2,303	1,514	2,058	1,876	1,961	1,917
4	Chemical Oxygen Demand (COD)	mg/l	6,557	4,777	6,749	4,481	4,788	4,858	5,409	5,374	4,463	6,019	4,267	6,057	4,179	5,701	5,778	5,209	5,060
5	Total Suspended Solids (TSS)	mg/l	4,346	2,628	4,790	3,697	5,654	3,177	3,927	4,031	3,400	4,490	3,800	4,998	2,407	5,022	3,621	3,963	3,858
6	Total Dissolve Solids (TDS)	mg/l	1,379	1,378	1,495	1,643	1,431	1,742	1,653	1,532	1,570	1,519	1,595	1,592	1,705	1,555	1,317	1,550	1,543
B Treated Effluent Quality:																			
1	pH	---	7.33	6.85	7.09	7.33	7.34	7.35	7.1	7.20	7.21	6.63	6.86	6.82	7.01	6.55	6.62	6.81	7.03
2	Biochemical Oxygen Demand (BOD5)	mg/l	5	9	5	8	6	7	7	7	7	8	6	9	7	5	6	7	7
3	Chemical Oxygen Demand (COD)	mg/l	82	51	82	63	66	69	74	70	82	51	75	58	85	88	65	72	71
4	Total Suspended Solids (TSS)	mg/l	6	10	6	9	7	8	8	8	8	9	7	10	8	6	7	8	8
5	Total Dissolve Solids (TDS)	mg/l	1,503	1,419	1,645	1,807	1,488	1,864	1,802	1,647	1,696	1,610	1,643	1,735	1,790	1,648	1,330	1,636	1,629

6 DISPOSAL OF INERT:

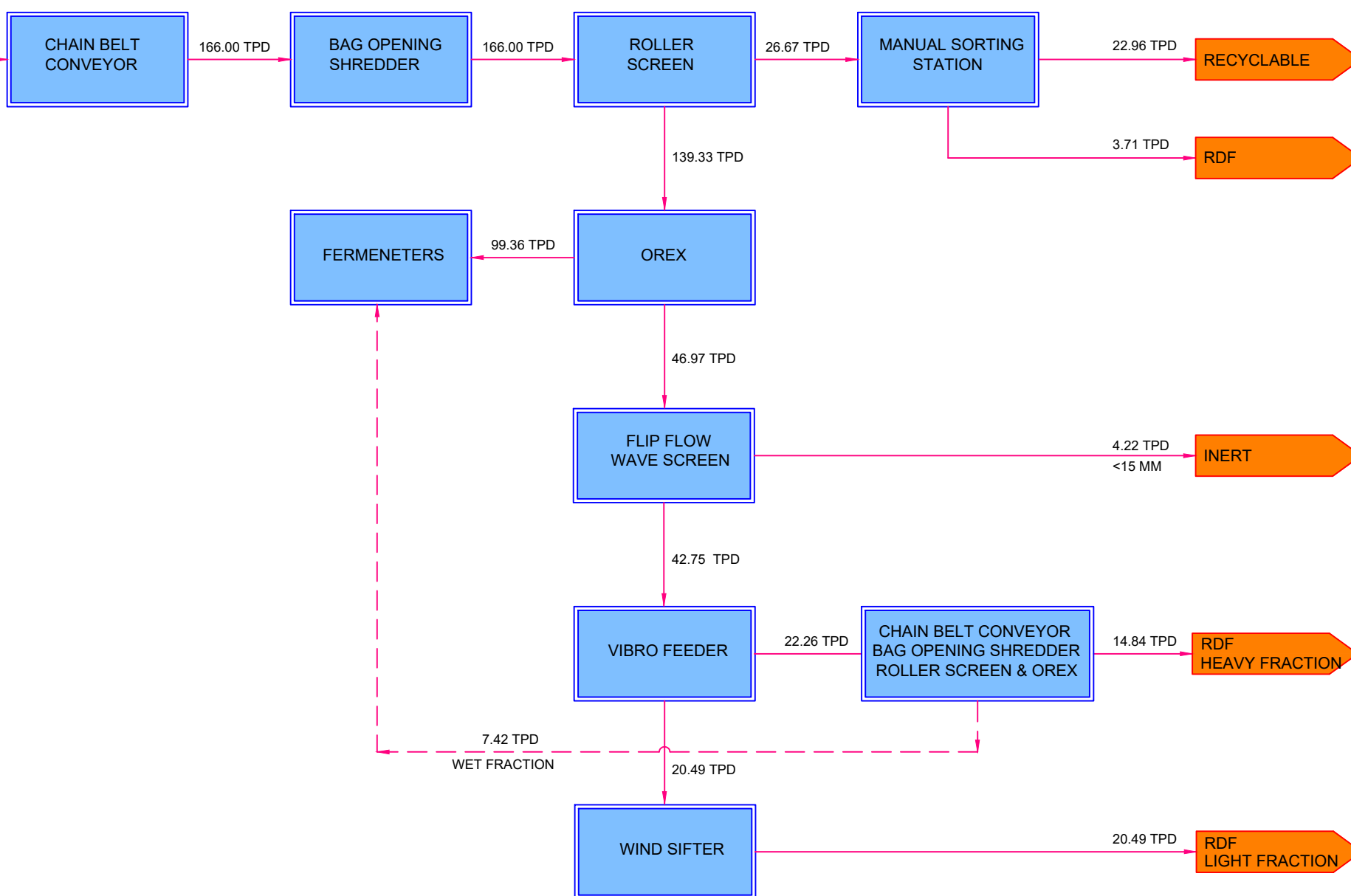
Sr. No.	Description	Unit	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	Weekly Average	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	Weekly Average	Monthly Average
1	As per Tender: Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility.																		
3	Inert Fraction	TPD	5.192	4.560	4.660	3.168	4.864	4.419	5.025	4.555	4.648	4.257	4.205	4.314	5.027	4.523	2.527	4.215	4.222
4	% of Total Input Waste.....3/2	%	2.99%	2.74%	2.84%	2.05%	2.67%	2.65%	2.80%	2.68%	2.84%	2.45%	2.51%	2.71%	2.89%	2.61%	1.80%	2.54%	2.53%

7 HOUSEKEEPING:

Sr. No.	Description	Unit	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	Weekly Average	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	Weekly Average	Monthly Average
1	Hygienic Conditions	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
2	Cleanliness	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
3	Manpower Deployed	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
4	Safety Norms	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
5	Treatment Methodology	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
6	Storage Conditions	---	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted

INPUT WASTE		
SR. NO.	NAME	WEIGHT (TPD)
1	RECYCLABLES	22.96
2	RDF	39.04
3	WET FRACTION	99.78
4	INERT	4.22
TOTAL		166.00

NUMBER OF RECYCLABLE FRACTIONS		
SR. NO.	NAME	WEIGHT (KG)
01	GLASS	126
02	METALS	657
03	TETRAPACK	322
04	PAPER/CARDBOARD	3,982
05	PLASTIC FILM	8,028
06	HARD PLASTIC	699
07	PET	664
08	THERMOCAL	125
09	CLOTH/RAGS/TEXTILE	2,770
10	JUTE BAGS	814
11	LEATHER/RUBBER/REXINE	637
12	COCONUT	4,136
TOTAL		22,959



OWNER:
DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT

THE MANAGING ASSOCIATE:
GOA STATE INFRASTRUCTURE DEVELOPMENT LTD.

CONTRACTOR:
M/s HINDUSTAN WASTE TREATMENT PVT. LTD.

	NAME	SIGN	DATE
DRWN	CS		01/03/18
DSGN	SG		01/03/18
CHKD	SG		01/03/18
APPD	GK		01/03/18

TITLE :
ANNEXURE -1
MASS BALANCE: FEBRUARY 2018

SCALE
NTS

SIZE
A3

REV.
R0