United Way Mumbai

Samarth Bharat Vyaspeeth

MAHIM RETI BUNDER & MAHIM CAUSEWAY BEACH

OCTOBER 2024 REPORT

HISTORY

Mahim Retibunder

Mahim Beach, located in the bustling city of Mumbai, serves as a peaceful oasis amid the urban chaos. This scenic beach stretches along the Arabian Sea, providing visitors with a stunning backdrop of the shimmering waters and the distant skyline of the city. A walk along the sandy shores is not just a treat for the eyes; it's also a chance to immerse yourself in the vibrant local culture. Families can be seen enjoying picnics on the beach, while children build sandcastles and play in the gentle waves. The atmosphere is lively, filled with the sounds of laughter and the aroma of delicious street food wafting through the air. For those seeking a taste of local cuisine, Mahim Beach is known for its array of street food vendors offering mouth-watering snacks. As the sun begins to set, the beach transforms into a setting, the golden hues reflecting off the water create a picturesque view that is unforgettable.

Mahim Causeway

The Mahim Causeway was built between 1841 and 1846 to connect the island of Salsette with Mahim. The swampy region that separated the islands made traveling dangerous, and a need for a causeway was born. Mahim Bay is located between the Mahim Causeway in the south and the Bandra-Worli Sea Link in the north. The bay was a strategic anchorage point for maritime trade during the colonial era. It is home to a variety of marine life and is a scenic backdrop for recreational activities like boating and fishing. Mithi River which is a part of Mahim Causeway

Present Status

The growing urbanization in Mumbai, which is the economic capital of India, has had adverse effects on the sea, creeks, forests, rivers, and other forms of biodiversity. Due to the massive increase in population along the coastline and creeks of Mumbai, both of these elements have started to become polluted. Several non-biodegradable substances have primarily contributed to this water pollution. Against this backdrop, it has become crucial to responsibly use such non-biodegradable materials and ensure their proper disposal. And hence there is a priority need to collect, classify and scientifically dispose of the non-degradable materials floating on the shores of Mahim Retibunder and causeway.

Measures

UNITED WAY MUMBAI, a non-government organization which is a society registered under the Society Registration Act, 1860 and a trust registered the Maharashtra Public Trusts Act, 1950

Samarth Bharat Vyaspeeth, Samarth Bharat Vyaspeeth is section 8 company Non-Profit Organization working in field of waste management and education for under privileged street children, and SBV is engaged in the collection and disposal/recycling of plastic waste.

To prevent water pollution, both the social organizations United Way Mumbai and Samarth Bharat Vyaspeeth, have come together and formulated an action program to implement the Beach Cleanliness Mission. Under this initiative, every day, through six safai sathis, a minimum of 7 hours is dedicated to collecting non-biodegradable materials from the coastline. Afterward, these materials are sorted at the waste management center under Samarth Bharat Vyaspeeth Project Revitalisation, where they are disposed of in a scientifically appropriate manner.

Action

Mahim Retibunder and Causeway are adjacent to each other and connected, covering a total area of approximately 4 kilometers. Based on the timing of the tides, it has been observed that collection activities take place at different times of the day at both locations. Accordingly, the collection campaign is carried out at Mahim Sandbar from 8 AM to 1 PM, and at Causeway from 2 PM to 4:30 PM. Collection is done every day of the week. During the collection process, different types of waste are gathered and sorted. Items like plastic bags, packaging plastics, cartons, glass, hard plastics, cloth, and other materials are collected. Afterward, the collected waste is sent daily to the waste management center under Samarth Bharat Vyaspeeth's Project on Revitalisation.

Process

Once the waste reaches the waste management center under Samarth Bharat Vyaspeeth project Revitalisation, it is first spread out in the designated area for sundrying. This process typically lasts for about three to four days to allow the moisture to evaporate. Every morning and afternoon, the waste is turned over to ensure that the moisture in every part of the waste is effectively removed during sundrying.

After the waste has dried, it is sorted into different categories, such as single-use plastics, multilayer plastics, hard plastics, glass, and non-recyclable waste. The single-use plastics and multilayer plastics are processed in a dust remover machine to remove any sand or other debris. The cleaned plastics are then sent to the baling machine, where they are compacted into bales and sent for recycling.

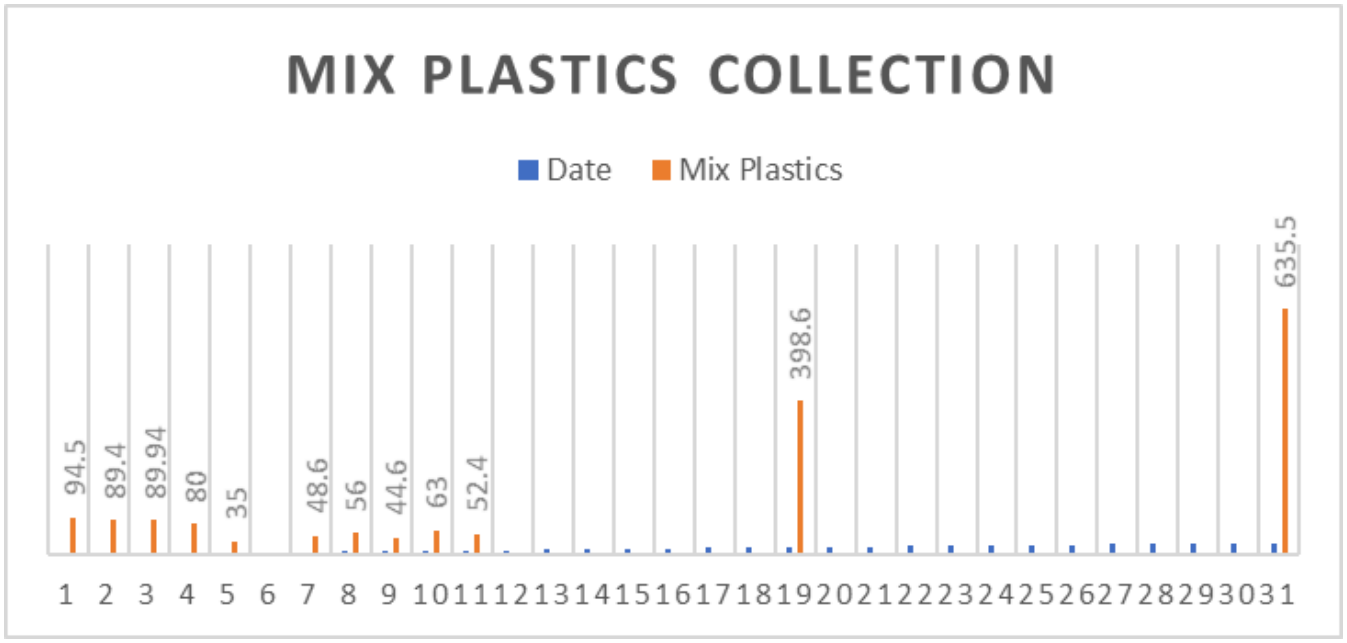
Hard plastics and glass are manually cleaned by staff using cleaning brushes to remove any attached sand, and then they are placed in separate bags and sent for recycling. Non-recyclable waste is sent to the municipal processing center for appropriate disposal.

Data

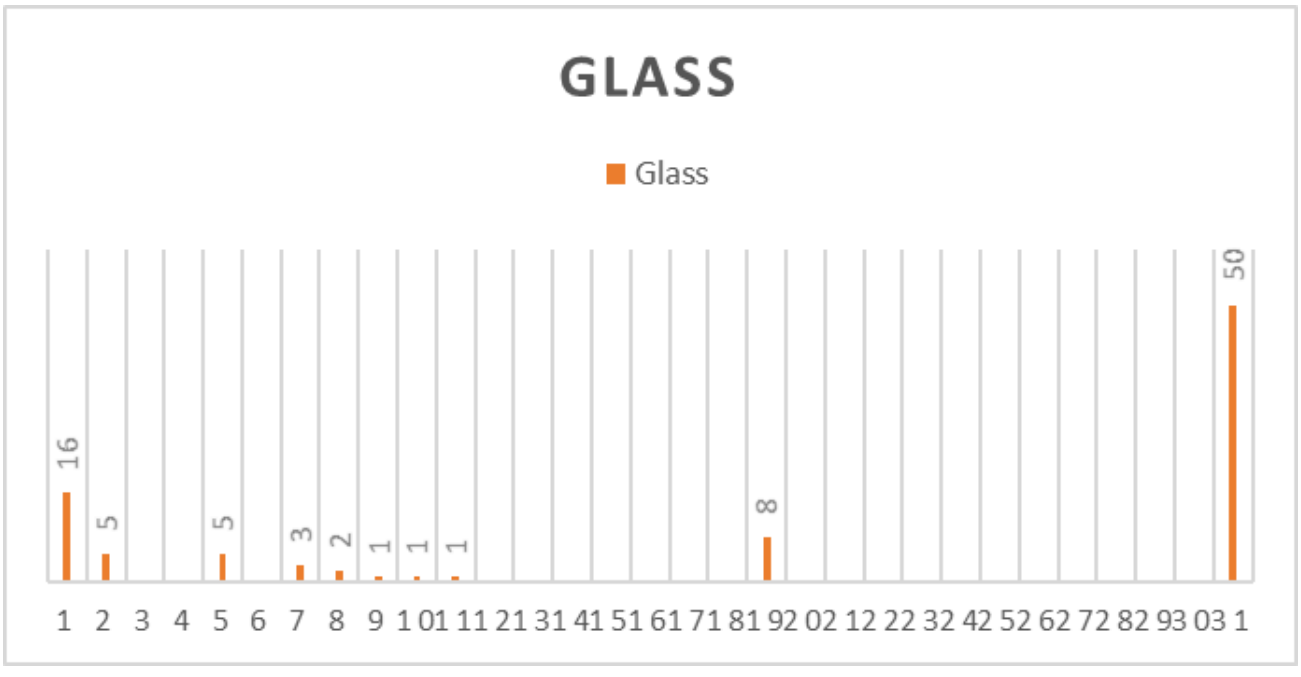
United way Mumbai & Samarth Bharat Vyaspeeth Beach cleanup drive Month of October 2024 Data

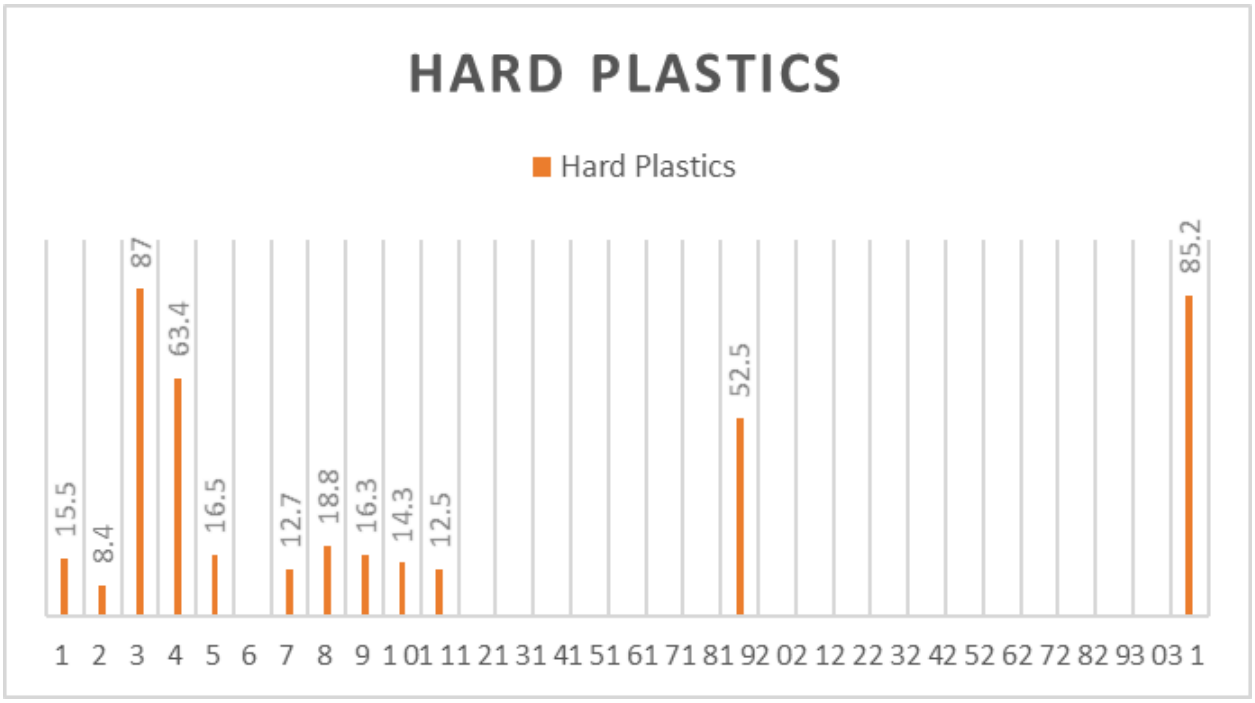
Date	Mix Plastics	Gunny Bags	Pet Bottles	Glass	Hard Plastics	Tharmocol	Shoes	Rejected Waste	Sand	Moisture	Total Waste Collected
1	94.5	14	12.2	16	15.5	5		98	147	98	500.2
2	89.4	16	10.6	5	8.4	4.72		65	106.5	41.1	346.72
3	89.94				87			30	45	12	263.94
4	80				63.4			22.3	36	10	211.7
5	35	3	21.5	5	16.5	2	4	23	50	20	180
6											0
7	48.6	4	10.6	3	12.7			35.6	45	16	175.5
8	56	7	13.8	2	18.8	5	2	75	56	20	255.6
9	44.6	4	10.4	1	16.3	2		89	54	15	236.3
10	63	5	13.5	1	14.3	1		94.7	52.3	18	262.8
11	52.4	5	13.1	1	12.5	2		69.2	29	19	203.2
14											249.5
15											208.1
16											168
17											255.5
18											278.6
19	398.6	35	46.3	8	52.5	5	6	421.2	226	161.7	200.6
20											0
21											168
22											180.2
23											176.4
24											169
25											189.3
26											176.1
27											0
28											192.6
29											164
30											187
31	635.5	40	56.1	50	85.2	10	15	147	556	200.3	192.5
Total	**1687.54**	**133**	**208.1**	**92**	**403.1**	**36.72**	**27**	**1170**	**1402.8**	**631.1**	**5791.36**

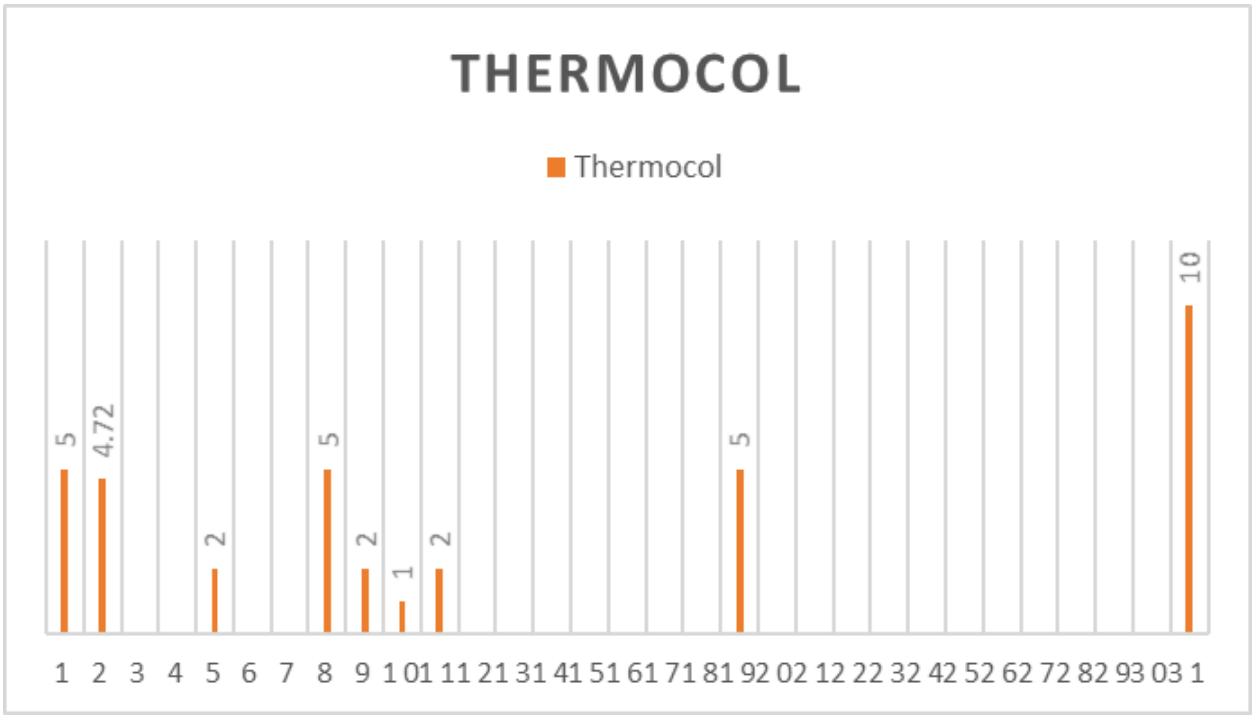
Data Analysis

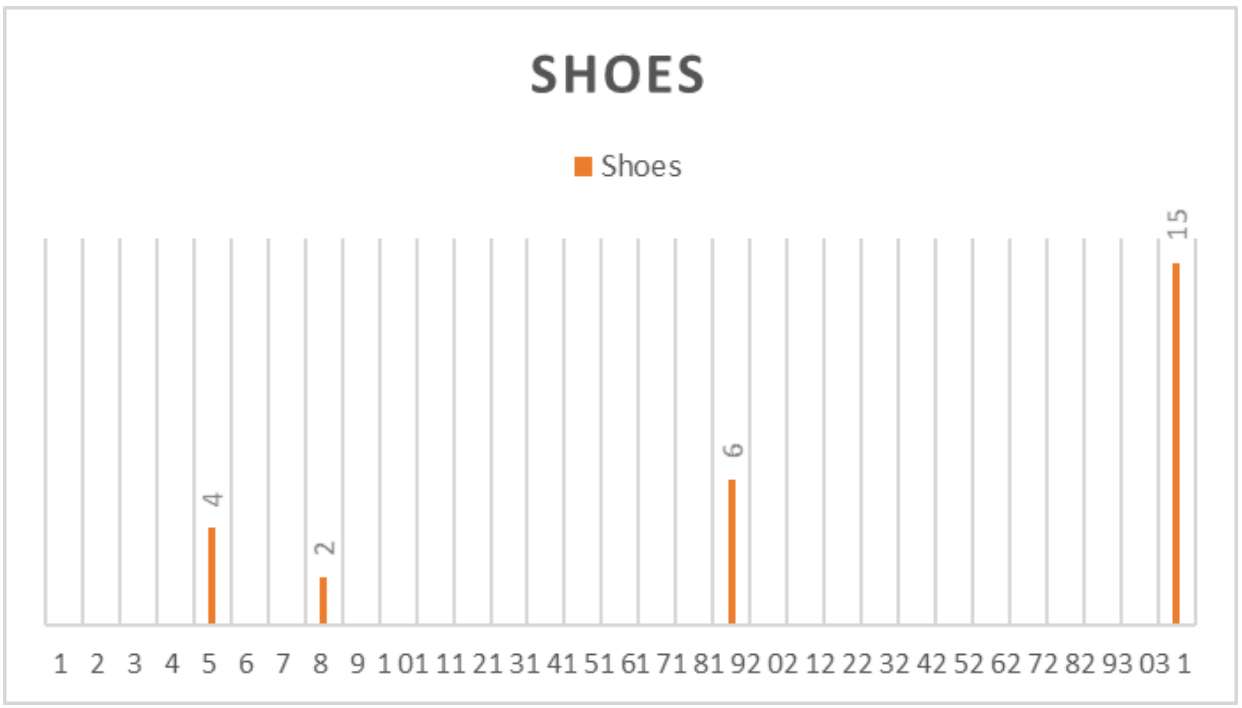


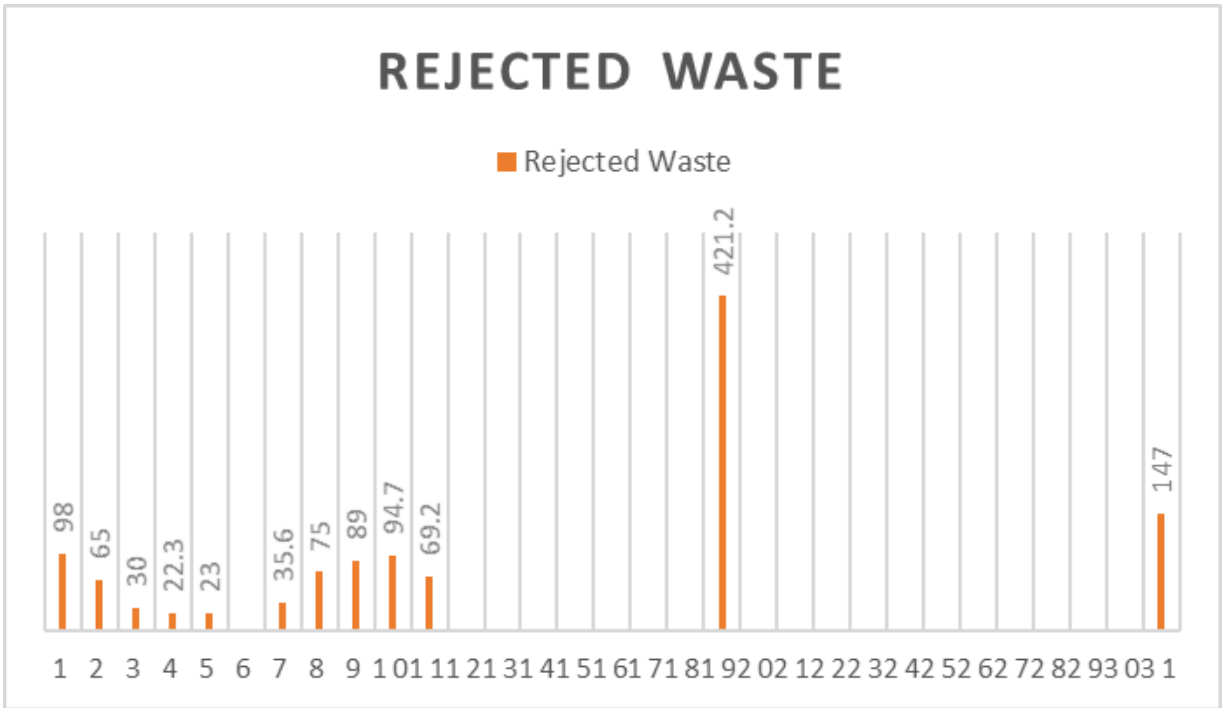

PET BOTTLES COLLECTION
Pet Bottles
12.2
10.6
21.5
10.6
13.8
10.4
13.5
13.1
46.3
56.1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

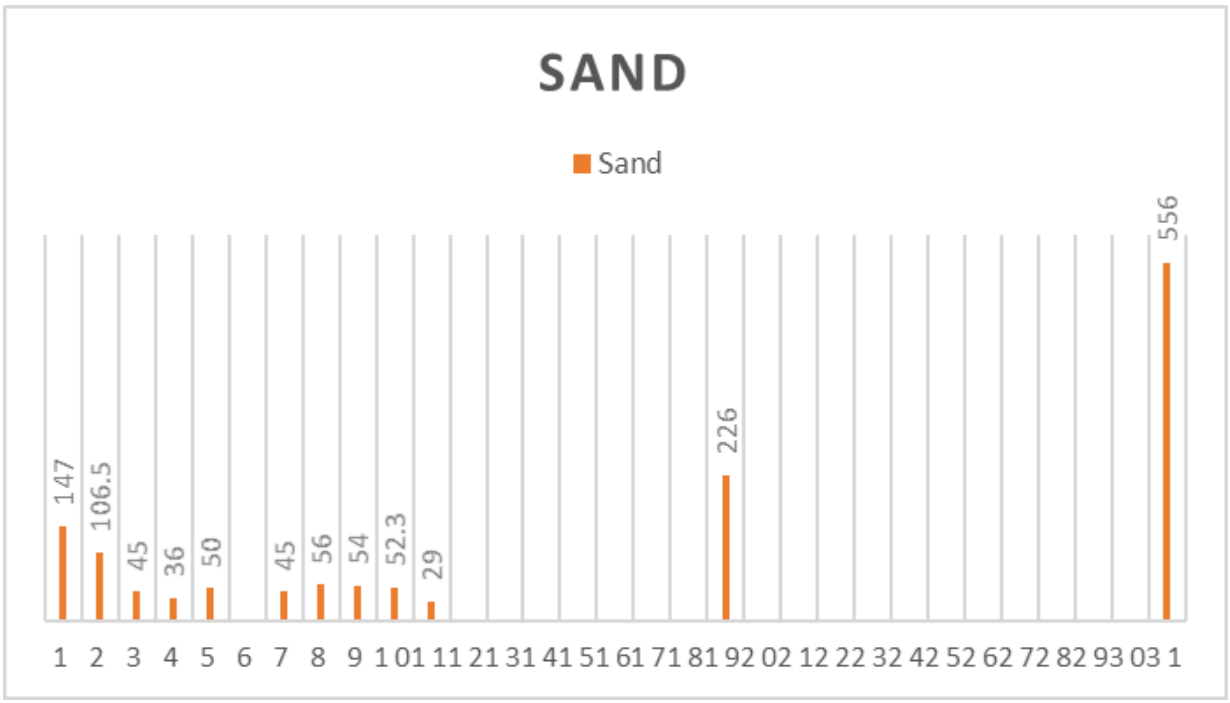

GLASS
Glass
16
5
5
3
2
1
1
1
8
50
1 2 3 4 5 6 7 8 9 1 01 11 21 31 41 51 61 71 81 92 02 12 22 32 42 52 62 72 82 93 03 1

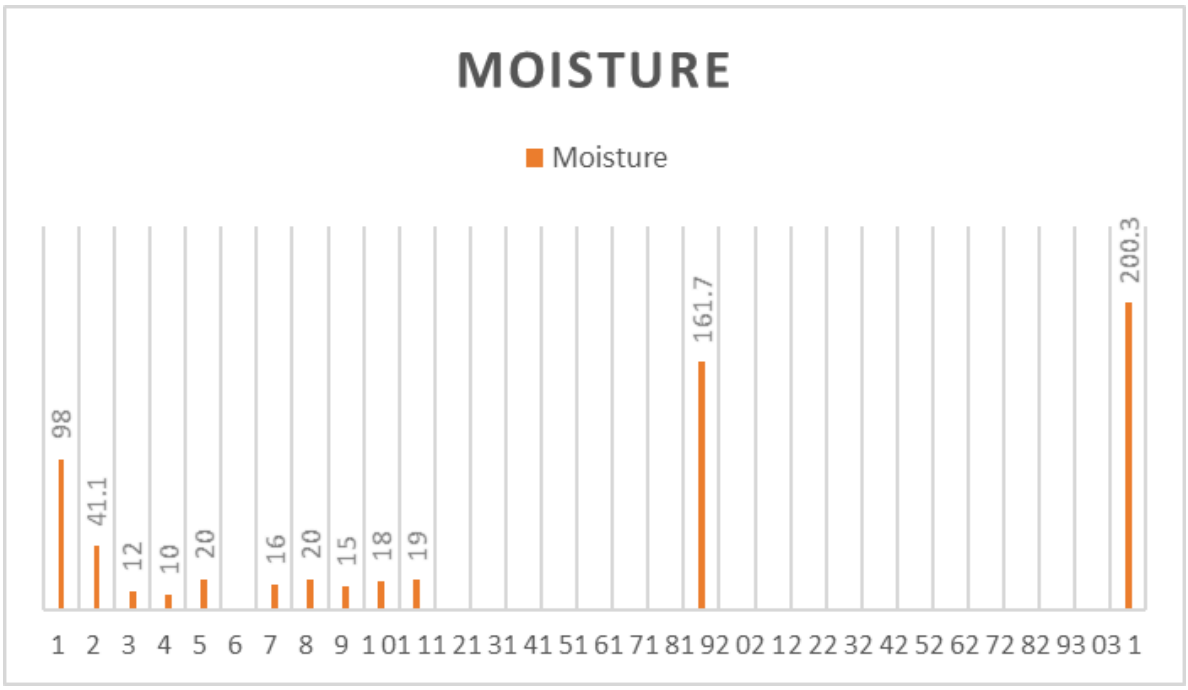

HARD PLASTICS
Hard Plastics
15.5
8.4
87
63.4
16.5
12.7
18.8
16.3
14.3
12.5
52.5
85.2
1 2 3 4 5 6 7 8 9 1 01 11 21 31 41 51 61 71 81 92 02 12 22 32 42 52 62 72 82 93 03 1


THERMOCOL
Thermocol
5
4.72
2
5
2
1
2
5
10
1 2 3 4 5 6 7 8 9 1 01 11 21 31 41 51 61 71 81 92 02 12 22 32 42 52 62 72 82 93 03 1


SHOES
Shoes
4
2
6
15
1 2 3 4 5 6 7 8 9 1 01 11 21 31 41 51 61 71 81 92 02 12 22 32 42 52 62 72 82 93 03 1


REJECTED WASTE
Rejected Waste
98
65
30
22.3
23
35.6
75
89
94.7
69.2
421.2
147
1 2 3 4 5 6 7 8 9 1 01 11 21 31 41 51 61 71 81 92 02 12 22 32 42 52 62 72 82 93 03 1


SAND
Sand
147
106.5
45
36
50
45
56
54
52.3
29
226
556
1 2 3 4 5 6 7 8 9 1 01 11 21 31 41 51 61 71 81 92 02 12 22 32 42 52 62 72 82 93 03 1


MOISTURE
Moisture
98
41.1
12
10
20
16
20
15
18
19
161.7
200.3
1 2 3 4 5 6 7 8 9 1 01 11 21 31 41 51 61 71 81 92 02 12 22 32 42 52 62 72 82 93 03 1

Findings

Collection Span – 1st October – 31st October 2024
Total Working Days – 26
Total Holidays – 5
Total Working Hours - 26 X 7 = 182 Hrs.
Total waste collected – 5791.36 KG
Waste collection per hour – 31.81 KG
Waste collection per hour per Safai Sathis – 5.3 KG
Total Waste Collected – 5791.36 KG
Total Mix Plastics - 1687.54 KG
Total Gunny Bags – 133 KG
Total Pet Bottles - 208.1 KG
Total Glass- 92 KG
Total Hard Plastics- 403.1 KG
Total Tharmocol- 36.72 KG
Total Shoes- 27 KG
Rejected Waste – 1170 KG
Sand - 1402.8 KG
Moisture- 631.1 KG

Percentage Analyzing

Mix Plastics - 29%
Gunny Bags - 2%
Pet Bottles - 3%
Glass - 1%
Hard Plastics - 6%
Tharmocol - 0.63%
Shoes - 0.46%
Rejected Waste - 20%
Sand - 24%
Moisture - 10%

Remarks

Of the total collected waste, 38% was found to be plastic waste. Due to the ebb tide, a large amount of sand enters the waste, and as a result, the proportion of sand in the collected waste was also significant, amounting to 24%.

A considerable amount of waste that cannot be recycled, such as waste thrown into the sea, creeks, and drainage systems, was found to make up nearly 20% of the total waste.

To reduce the sand content, measures have been implemented to shake off the sand while collecting the waste. Efforts will be made in the future to further reduce this percentage.

Among the plastic waste, nearly 80% was found to be packaging material.

Prior to the collection, this waste had been floating in the waters of the creek and sea for at least 3 to 4 months. The packaging date and expiry date found on the plastic bags indicated that these plastics had been polluting the water for around 2 to 4 months before washing up on the shore. This indicates that the plastic waste had been contributing to water pollution for a significant period of time.