

APPENDIX

Water Analysis Test 1 (On a Normal Day)

MINISTRY OF AGRICULTURE ANIMAL INDUSTRIES AND FISHERIES

National Fisheries Resources Research Institute, P. O. Box 343 Jinja
Head Office +256 434 120484, 121369, 120798; Email; firi@firi.go.ug; URL; www.firi.go.ug



Summary Laboratory Results

CLIENT: Girls for Climate Action

SAMPLE TYPE: Industrial Effluents

DATE OF SAMPLING: Jan 2024

SAMPLED BY: Technician/NaFIRRI

LABORATORY NO:001

ANALYSES COMPLETION: 13/1/ 2024

| Method code* | Parameter | NAVA | | Millennium Tiles | | Gold Star | | | Victoria | | Teta | NEMA, MPL2020 |
|----------------------|--------------------------------------|--------------|--------------|------------------|--------------|---------------|-------------|-------------|--------------|--------------|-------------|---------------|
| | | Pramukh | G/water | Point Source | Point Source | Misiri | Mixture | Free flow | Point Source | Mixture | | |
| 10300 D | DO (mg/l) | 11.1 | 10.1 | 13.4 | 13.9 | 11.9 | 8.7 | 13.9 | 15.8 | 12.4 | 12.5 | - |
| 2550 B | Temp (°C) | 23.9 | 23.8 | 23.9 | 24.0 | 24.3 | 23.6 | 23.4 | 22.4 | 23.1 | 22.8 | |
| 4500 H | pH | 8.1 | 8.5 | 8.1 | 8.0 | 7.1 | 7.6 | 8.0 | 7.5 | 7.6 | 8.4 | 5 – 8.5 |
| 2510 B | EC (µ/cm) | 261.9 | 265.3 | 377.0 | 250.6 | 4381.6 | 108.9 | 240.4 | 129.3 | 129.0 | 425.1 | 1000 |
| 2050 A | Salinity (ppt) | 0.1 | 0.1 | 0.2 | 0.2 | 11.9 | 5.1 | 2.4 | 6.0 | 6.0 | 21.0 | - |
| 1030 F | TDS (mg/l) | 176.6 | 176.7 | 250.6 | 237.4 | 2886.5 | 161.0 | 72.7 | 88.3 | 87.0 | 288.2 | 750 |
| 2310 B | Alkalinity (CO ₃) (mg/l) | 384 | 40 | 186 | 184 | 200 | 210 | 218 | 60 | 196 | 238 | - |
| 4500-NO ₃ | NO ₃ -N (mg/l) | 0.173 | 0.165 | 0.16 | 0.09 | 0.14 | 0.15 | 0.15 | 0.15 | 0.03 | 0.16 | 10 |
| 4500-NO ₂ | NO ₂ -N (mg/l) | 0.063 | 0.021 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.02 | 0.003** |
| 4500-NH ₃ | NH ₄ -N (mg/l) | 0.54 | 0.21 | 0.25 | 0.22 | 0.05 | 0.04 | 0.04 | 0.22 | 0.28 | 0.25 | 0.5* |
| 4500-P B | PO ₄ -P (mg/l) | 0.59 | 0.403 | 0.22 | 0.13 | 0.04 | 0.03 | 0.07 | 0.04 | 0.06 | 0.05 | 2.2 |
| 2540 D | TSS (mg/l) | 40.5 | 6.0 | 12.0 | 15.0 | 31.0 | 35.0 | 30.0 | 46.5 | 107.0 | 31.0 | 50 |

NB: *US EPA, 2009; **ISO 15681Standards (EAC, 2014)

General Remarks: Figures in bold are in excess of the maximum permissible limit as per NEMA standard, 2020. Most parameters seem within the range except for some few cases. This is probably attributed to the fact that samples were collected outside the peak discharge period.

Recommendation: There is need to sample during time of discharge.

Henry O.
Analyst

Date: 13/01/2024

Water Analysis II (Day of Waste Release)

MINISTRY OF AGRICULTURE ANIMAL INDUSTRIES AND FISHERIES

National Fisheries Resources Research Institute, P. O. Box 343 Jinja
Head Office +256 434 120484, 121369, 120798; Email: firi@firi.go.ug; URL: www.firi.go.ug



Summary Laboratory Results

CLIENT: Girls for Climate Action

SAMPLE TYPE: Industrial Effluents

DATE OF SAMPLING: 27th Jan 2024

SAMPLED BY: Technician/NaFIRRI

LABORATORY NO:002

ANALYSES COMPLETION: 30th Jan 2024

| Method code* | Parameter | Pramukh + Nile Plastics | Millennium Tiles | NAVA Lake | Briton Lubricant | Modern Distillery + Amazima | NAVA Highway | NEMA, 2020 |
|----------------------|--------------------------------------|-------------------------|------------------|-------------|------------------|-----------------------------|---------------|-------------|
| 10300 D | DO (mg/l) | 6.3 | 7.6 | 8.9 | 7.5 | 4.5 | 6.8 | - |
| 2550 B | Temp (°C) | 28.8 | 24.5 | 25.8 | 23.8 | 22.3 | 22.6 | - |
| 4500 H | pH | 7.5 | 7.4 | 7.8 | 6.7 | 7.9 | 3.9 | 5 – 8.5 |
| 2510 B | EC (µ/cm) | 267 | 432 | 90 | 1925 | 2268 | 2449 | 1000 |
| 2050 A | Salinity (ppt) | 0.12 | 0.21 | 0.04 | 1.0 | 1.23 | 1.32 | 0.5 |
| 1030 F | TDS (mg/l) | 162 | 284 | 58 | 1277 | 1554 | 1668 | 1200 |
| 2310 B | Alkalinity (CO ₃) (mg/l) | 119.4 | 299.4 | 75.4 | 1599.4 | 1899.4 | 1899.4 | 80 – 120*** |
| 2120 B | Color (TCU) | 1.0 | 0.5 | 1.5 | 5.5 | 6.5 | 7 | 5 |
| 2130 B | Turbidity (NTU) | 93 | 75 | 160 | 1200 | 1500 | 3000 | 30 |
| 4500-NO ₃ | NO ₃ -N (mg/l) | 1.1 | 0.7 | 0.4 | 0.7 | 1.5 | 0.7 | 10 |
| 4500-NO ₂ | NO ₂ -N (mg/l) | 0.09 | 0.07 | 0.01 | 0.02 | 0.01 | 0.02 | 0.003** |
| 4500-NH ₃ | NH ₄ -N (mg/l) | 6.1 | 5.9 | 0.5 | 4.9 | 5.5 | 5.0 | 0.5* |
| 4500-P B | PO ₄ -P (mg/l) | 8.6 | 11.5 | 0.8 | 7.1 | 9.5 | 11.9 | 2.2 |
| 2540 D | TSS (mg/l) | 27.3 | 17.3 | 73.3 | 1085.0 | 820.0 | 2305.0 | 50 |

NB: *US EPA, 2009; **ISO 15681 Standards (EAC, 2014); ***Ideal alkalinity range

General Remarks: Figures in bold show poor conditions beyond the recommended limit (MPL) as per NEMA standard, 2020. The worst wastewater quality was detected at NAVA - Kampala Jinja Highway Bridge crossing with an acidic condition recorded. The highest polluters were Modern Distillery and Briton Lubricant. All tested physicochemical conditions are indicative of high usage of chemicals portraying a high environmental risk.

Recommendation: Better wastewater treatment practices must be emphasized before discharge into the environment.

Henry O.
Analyst

Date: 30/01/2024