|  |  |  |
| --- | --- | --- |
|  | |  |
| **Department:** | HEALTH, SAFETY, ENVIRONMENTAL AND QUALITY DEPARTMENT | |
| **Title:** | **Annexure 03: ORGANISATIONAL QUARTERLY ENVIRONMENTAL REPORT**  **Organisation: WDL Quarter :TWO** | |
| **Procedure Nr:** | HSEQ-GP-PO-18 | |
| **Distribution:** | Petra Diamonds Ltd | |
| **Originator:** | Group HSEQ Data Analyst and Reporting Coordinator | |
| **Responsible HOD:** | Group HSEQ Environmental Lead | |
| **References:** | HSEQ-GP-PO-40 | |
| **Annexures:** | none | |
|  | |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | |  | |
| **Original Date:** | 18 August 2014 | **Revision Date:** | 29 September 2020 |
| **Revision number:** | 04 | **Next Revision Date:** | September 2021 |
|  | |  | |



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**EXECUTIVE SUMMARY**

Report Sign-off:

We hereby acknowledge the contents of this report and confirm that it is a true reflection of the current state of the environment at the organisation.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Environmental Specialist

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

HSE Manager

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

General / Mine Manager Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# COMPLIANCE

The compliance of Petra’s organisations is measured against the applicable environmental legislation in the respective countries of operation. The section below is dedicated to identify any non-compliances by the organisations.

# Directive and Instructions

The organisation is to note any *Directives, or Instructions* received from Environmental authorities during the period under review:

Table 1: Details of Directives / Instructions

|  |  |
| --- | --- |
| **Date of Directive/ Instruction:** | 15 October 2020 |
| **Authority:** | District Mine Closure Committee |
| **Applicable Legislation (In terms of):** | Mine regulations of 2010 |
| **Detail of Instruction:** | Minutes will be send |
| **List of Actions to Address Instruction:** | Minutes will be send |
| **Due Date of Reply:** | 31 November 2020 |
| **Number of Directives/ Instructions for the organisation YTD[[1]](#footnote-1)** |  |

*The KPI for Petra Diamonds is to have not more than one directive or legal instruction (≤1) per organisation within the group for FY 2021*.

# Authority Audits and Inspections

Authorities are mandated to do site inspections/audits to check on compliance to permit and license conditions, as well as general compliance to all applicable legislation. This section indicates all authority inspections conducted in this quarter, as well as the outcomes thereof.

* No External statutory audit conducted.

Table 2: Outcome of Authority Audits and Inspections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Authority** | **Date of Inspection** | **Scope of inspection** | **No. of Findings** | **Actions to address findings and progress on implementation** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

# General Compliance

Compliance issues that are material to the organisation for the period under review e.g. revision of permits and licences, communication with authorities on the issuing of authorisations, inspections done (and pending) by authorities, are reported on in this section.

Table 3: Material Compliance Issues

|  |  |
| --- | --- |
| **Compliance Issue** | **Summary/ Description** |
|  |  |
|  |  |
|  |  |
|  |  |

# External Complaints

* **No any internal or external complaints were received during the reporting period.**

Table 4: Details of External Complaints

|  |  |
| --- | --- |
| **Date of Complaint 1:** |  |
| **Description of Complaint:** |  |
| **Action Taken and Progress:** |  |
| **Date of Complaint 2:** |  |
| **Description of Complaint:** |  |
| **Action Taken and Progress** |  |

# ASSURANCE

This section of the report focuses on the internal processes and systems on mine. Areas such as certification and Group Projects / Initiatives are reported on.

# ISO 14001 Certification

The KPI for Petra Diamonds is that all South African organisations are to retain their ISO 14001:2015 certification.

Please note the details of the organisation’s certification, as well as active action plans.

Table 5: Details of ISO 14001 Audits

|  |  |
| --- | --- |
| **Certification Body** |  |
| **Date of Most Recent Audit** |  |
| **No. of Findings** |  |
| **No. of Critical Findings** |  |
| **Details of Critical Finding 1** |  |
| **Actions to Address and Progress on Implementation** |  |
| **Details of Critical Finding 2** |  |
| **Actions to Address and Progress on Implementation** |  |
| **Details of Critical Finding 3** |  |
| **Actions to Address and Progress on Implementation** |  |

# Incident Reporting

Report on all the Environmental incidents for the period under review. *Note that the figures quoted in this section need to correspond with IsoMetrix.*

Table 6: Number of Environmental incidents per Severity Class

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Minor** | **Low** | **Medium** | **High** | **Major** | **Total** |
| **This Period** | 43 | 18 | 0 | 0 | 0 | 61 |
| **Previous Period** | 29 | 27 | 0 | 0 | 0 | 56 |

# Significant Environmental Incidents

Only Environmental Incidents rated as Medium, High or Major, are reported on in this sub-section.

Petra Diamonds set a KPI of 0 Major incidents for FY 2021.

Table 7: Significant Environmental Incidents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **IsoMetrix No.** | **Severity** | **Description and progress on actions to address the incident** | **Investigation Status** |
|  |  |  |  |  |
|  |  |  |  |  |

# Internal Assessments

Only assessments conducted by either on-site personnel, group personnel or consultants contracted for *assessments to be used internally only*, are noted in this section.

Table 8: Internal Assessments

|  |  |  |  |
| --- | --- | --- | --- |
| **Audit / Assessment** | **Assessor** | **No. of Findings** | **Conclusion of Assessor** |
| **IWWMP / GN R704** |  |  |  |
| **Legal Compliance** |  |  |  |
| **CAP** |  |  |  |
| **Internal EMS** |  |  |  |
| **Other:** |  |  |  |

# Mine Closure and Rehabilitation

Details on the Annual Rehabilitation Plan and the dates of all workshops that had been held in order to compile and finalise the document, should be indicated.

Petra Diamonds set a KPI of a finalised Annual Rehabilitation Plan with proof of management workshops for the compilation and finalisation of the document.

Table 9: Progress on Annual Rehabilitation Plan Document

|  |  |
| --- | --- |
| **Dates of Management Workshops** | **Progress on Document** |
|  |  |
|  |  |
|  |  |

# Financial Liability

This section seeks to supply information on the annually required amendment of the Financial Liability calculations and costs

Table 10: Financial Liability

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Financial Provision** | | | | |
| **Total Financial Liability for Mine closure** | | | |  |
| **Has the total Financial Liability for mine closure been amended in FY 2021?** | | | |  |
| **Has the amended total Financial Liability for mine closure been submitted to the DMRE?** | | | |  |
| **Percentage change in total mine closure costs as compared to FY 2020** | **Unit** | **Total this Period** | **Total previous period** | **Comment** |
|  | % |  |  | MCP under review |

# MONITORING

This section deals with the monitoring done at each organisation.

# Surface Water Quality

Standard against which surface water quality is measured, as well as monitoring frequency to be supplied:

|  |  |
| --- | --- |
| Standard: THE ENVIRONMENTAL MANAGEMENT (WATER QUALITY STANDARDS) REGULATIONS, 2007 | Frequency: Quarterly or when need arises. |

*Each organisation to populate the table below with all variables monitored, units and the standard value that may not be exceeded (horisontal row) - as per example. Coordinates of all monitoring sites must be indicated in last column and the name of the monitoring locality in the first column.*

Table 11: Surface Water Quality Non-conformances

**Water Monitoring Results for Q1 Conducted on November 2020**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sampling Date** | **Monitoring Report Name/ID** | **Location**  **(Coordinates)** | **Non-Conformance** | **Standard[[2]](#footnote-2)** |
| 11 November 2020 | Nhumbu Dam | E557011,N9612840 | BOD – 10.0 | 5 mg/l |
| 11 November 2020 | Alamas Dam | E572612,N9612279 | pH- 9.4 | 6.5-8.5 |
| 11 November 2020 | Alamas Dam | E572612,N9612279 | BOD – 6.0 | 1 mg/l |
| 11 November 2020 | Alamas Dam | E572612,N9612279 | Iron Total – 2.3 | 1 mg/l |
| 11 November 2020 | Kawawa Pond 1 | E566468,N9610186 | Colour - 310 | 300 TCU |
| 11 November 2020 | Kawawa Pond 1 | E566468,N9610186 | Nitrate- 23.0 | 20 mg/l |
| 11 November 2020 | Kawawa Pond 1 | E566468,N9610186 | Total Coliform Organisms-49,000,000 | 10,000counts/100mL |
| 11 November 2020 | Kawawa Pond 2 | E566468,N9610186 | Nitrate - 36.4 | 20 mg/l |
| 11 November 2020 | Kawawa Pond 2 | E566468,N9610186 | Phosphorus – 6.1 | 6 mg/l |
| 11 November 2020 | Kawawa Pond 2 | E566468,N9610186 | Total Coliform Organisms-78,000 | 10,000counts/100mL |
| 11 November 2020 | Kawawa Pond 3 | E566468,N9610186 | Colour - 466 | 300 TCU |
| 11 November 2020 | Kawawa Pond 3 | E566468,N9610186 | Nitrate - 44 .7 | 20 mg/l |
| 11 November 2020 | Kawawa Pond 3 | E566468,N9610186 | Total Coliform Organisms-31,000,000 | 10,000counts/100mL |
| 11 November 2020 | Mine Cresent Pond 1 | E565038,N9610722 | TSS - 354 | 100mg/l |
| 11 November 2020 | Mine Cresent Pond 1 | E565038,N9610722 | BOD - 48 | 30 mg/l |
| 11 November 2020 | Mine Cresent Pond 1 | E565038,N9610722 | COD - 117 | 60mg/l |
| 11 November 2020 | Mine Cresent Pond 1 | E565038,N9610722 | Colour - 740 | 300 TCU |
| 11 November 2020 | Mine Crescent Pond 1 | E565038,N9610722 | Nitrate - 49.2 | 20 mg/l |
| 11 November 2020 | Mine Crescent Pond 1 | E565038,N9610722 | Phosphorus – 12.9 | 6mg/l |
| 11 November 2020 | Mine Crescent Pond 1 | E565038,N9610722 | Total Coliform Organisms 5,000,000 | 10,000counts/100mL |
| 11 November 2020 | Mine Crescent Pond 2 | E565038,N9610722 | Colour - 304 | 300 TCU |
| 11 November 2020 | Mine Crescent Pond 2 | E565038,N9610722 | Phosphorus – 13.5 | 6mg/l |
| 11 November 2020 | Mine Crescent Pond 2 | E565038,N9610722 | Total Coliform Organisms 53,000 | 10,000counts/100mL |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sampling Date** | **Monitoring Report Name/ID** | **Location**  **(Coordinates)** | **Non-Conformance** | **Standard[[3]](#footnote-3)** |
| 11 November 2020 | Mine Crescent Pond 3 | E565038,N9610722 | pH- 9.3 | 6.5-8.5 |
| 11 November 2020 | Main Gate Pond 1 | E564379,N96110271 | Colour - 316 | 300 TCU |
| 11 November 2020 | Main Gate Pond 1 | E564379,N96110271 | Phosphorus- 6.7 | 6mg/l |
| 11 November 2020 | Main Gate Pond 1 | E564379,N96110271 | Total Coliform Organisms 89,000,000 | 10,000counts/100mL |
| 11 November 2020 | Main Gate Pond 2 | E564379,N96110271 | TSS - 440 | 100mg/l |
| 11 November 2020 | Main Gate Pond 2 | E564379,N96110271 | Phosphorus- 7.1 | 6mg/l |
| 11 November 2020 | Main Gate Pond 2 | E564379,N96110271 | Total Coliform Organisms 7,000,000 | 10,000counts/100mL |
| 11 November 2020 | Main Gate Pond 3 | E564379,N96110271 | Total Coliform Organisms 9,300,000 | 10,000counts/100mL |
| 11 November 2020 | Recovery Dam 02 | E568651,N9609735 | pH- 9.5 | 6.5-8.5 |
| 11 November 2020 | Recovery Dam 02 | E568651,N9609735 | Sulphate - 744 | 500mg/l |
| 11 November 2020 | Recovery Dam 02 | E568651,N9609735 | Total Coliform Organisms 5,500,000 | 10,000counts/100mL |
| 11 November 2020 | Plant RO Water | - | pH- 8.6 | 6.5-8.5 |
| 11 November 2020 | Plant RO Water | - | TSS - 437 | 100mg/l |
| 11 November 2020 | Plant RO Water | - | Turbidity - 371 | 300 NTU |
| 11 November 2020 | Plant RO Water | - | Colour - 5330 | 300 TCU |
| 11 November 2020 | Plant RO Water | - | Iron total- 20.3 | 5mg/l |
| 11 November 2020 | Plant RO Water | - | Aluminium – 4.2 | 2mg/l |
| 11 November 2020 | Plant RO Water | - | Total Coliform Organism 210,000 | 10,000counts/100mL |
| 11 November 2020 | H 05 | E567585,N9609246 | Colour - 63 | 1.5-50 TCU |
| 11 November 2020 | Reservoir No 1 |  | TSS - 170 | 100mg/l |
| 11 November 2020 | Reservoir No 1 |  | Colour - 1480 | 300 TCU |
| 11 November 2020 | Reservoir No 1 |  | Iron total- 5.9 | 5mg/l |
| 11 November 2020 | Reservoir No 1 |  | Chloride- 222 | 200mg/l |
| 11 November 2020 | Reservoir No 1 |  | Total Coliform Organisms 6,000,000 | 10,000counts/100mL |

# Groundwater Quality

Standard against which groundwater quality is measured, as well as monitoring frequency to be supplied:

|  |  |
| --- | --- |
| Standard: THE ENVIRONMENTAL MANAGEMENT (WATER QUALITY STANDARDS) REGULATIONS, 2007 | Frequency: Bi –annually or when need arises |

*Each organisation to populate the table below with all variables monitored, units and the standard value that may not be exceeded (horisontal row) - as per example. Coordinates of all monitoring sites must be indicated in last column and the name of the monitoring locality in the first column.*

Table 12: Groundwater Quality Non-conformances

* Ground water monitoring was not conducted

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variable monitored** | **e.g.**  **Electrical conductivity (EC)** |  |  |  |  |  |  |  | **Coordinates: monitoring locality (Latitude and longitude values as recorded in WUL)** |
| **Unit** | **mS/m** |  |  |  |  |  |  |  |
| **Standard's value** | **100** |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

# Air Quality

Monitoring details for fall-out dust, PM₁₀ and PM₂,₅ sampling are recorded in this section.

Standard against which each element is measured, as well as the monitoring frequency to be indicated:

|  |  |  |
| --- | --- | --- |
| **Element:** | **Standard** | **Frequency** |
| **Dust Fall-Out:** | 10mg/m3 | Annually |
| **PM₁₀** | 0.1ppm | Annually |
| **PM₂,₅** | 0.1ppm | Annually |

Table 13: Air Quality Monitoring Non-conformances

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sampling Date** | **Monitoring Point Name/ID** | **Dust Fall-Out Rate** | **PM₁₀** | **PM₂,₅** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

# Environmental Noise

Standard against which environmental noise is measured, as well as the monitoring frequency to be indicated:

|  |  |
| --- | --- |
| Standard: 85dB | Frequency: Monthly or when need arises |

Table 14: Environmental Noise Monitoring Non-conformances

* None

|  |  |  |  |
| --- | --- | --- | --- |
| **Sampling Date** | **Monitoring Point ID/Name** | **Noise Level** | **Details of Non-conformance** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# PERFORMANCE

This section seeks to describe the progress made by organisations regarding their physical performance in the implementation of sound environmental management principles. Units specified for each element to be reported on, are crucial for performance monitoring.

# Production

Most consumption figures will be normalised by using the organisation’s official production figures (tonnes treated)

Table 15: Production Figures

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Element** | **Unit** | **This Period** | **Previous Period** | **% Change** | **Reason**  **If ≥ 20%** |
| **Ore Treated ROM** | Tonnes | 0.00 | 0.00 | ∞ |  |
| **Ore Treated From Dumps** | Tonnes | 0.00 | 0.00 | ∞ |  |
| **Total Ore Treated** | Tonnes | 0.00 | 0.00 | ∞ |  |
| **Overburden Moved** | Tonnes | 0.00 | 0.00 | ∞ |  |
| **Waste tonnes hoisted** | Tonnes | 0.00 | 0.00 | ∞ |  |
| **Carats Recovered** | Carats | 0.00 | 0.00 | ∞ |  |

# Land Management

This section indicates the progress towards concurrent rehabilitation as implemented via the Mine Rehabilitation and Closure Focus area. The figures provided must correlate with the period being reported on.

Table 16: Concurrent Rehabilitation Figures

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Concurrent Rehabilitation Status** | **Unit** | **This Period** | **Previous Period** | **% Change** | **Reason**  **If ≥ 20%** |
| **Total Area Disturbed:** | ha | 699.26 | 699.26 | 0 |  |
| **Total Area Considered Rehabilitated during the Reporting Period:** | ha | 0 | 0 | ∞ |  |
| **Cumulative Area Considered as Rehabilitated:** | ha | 405.47 | 405.47 | 0 |  |
| **Cumulative Area Undergoing Rehabilitation:** | ha | 0 | 0 | ∞ |  |
| **Total Area Still Requiring Rehabilitation:** | ha | 293.76 | 293.76 | 1.91325 |  |

# Water Management

Use to determine legal compliance and environmental performance in terms of water abstraction and consumption

Permitted (licensed) maximum volumes of water per source are indicated below:

|  |  |
| --- | --- |
| **Water Source** | **Maximum Licensed Volume in m³ per Quarter** |
| **Abstraction from Surface Water Bodies** | Nhumbu Dam 16,370 m³/day = 1,473,300m³/Quarter  Songwa Dam 7,500 m³/day = 675,000m³/Quarter  Alamasi Dam 3,000 m³/day = 270,000 m³/Quarter |
| **Abstraction from Groundwater (Boreholes)** | N/A |
| **Underground Dewatering** | N/A |
| **Potable Water** | 374,574 |

Table 17: Water Consumption Figures

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Water Source** | **Unit** | **This Period** | **Previous Period** | **% Change** | **Reason**  **If ≥ 20%** |
| **Off- Mine Potable Water Consumption** | **m³** | 315,894 | 296,097 | -6.685984 |  |
| **On Mine Potable Water Consumption** | **m³** | 69,550 | 57,937 | -20.04418 |  |
| **Raw Water** | **m³** | 49,127 | 50,152.50 | 2.04476347 |  |
| **New water intake** | **m³** | 118,677 | 108,089.50 | -9.7951235 |  |
| **Consumptive water** | **m³** | 434,577 | 404,186.50 | -7.51893 |  |
| **Re-Used / Recycled Water** | **m³** | 0.00 | 0.00 | ∞ |  |
| **Underground Dewatering water used in mining circuit** | **m³** | 0.00 | 0.00 | ∞ |  |
| **Underground Dewatering NOT used in mining circuit** | **m³** | 0.00 | 0.00 | ∞ |  |
| **Total Water Use on Mine** | **m³** | 118,677 | 108089.50 | -9.7951235 |  |
| **Water use efficiency (Total water use per tonne treated)** | **m³/t** | 0.00 | 0.00 | ∞ |  |
| **Percentage recycled water** | **%** | 0.00 | 0.00 | ∞ |  |
| **Rainfall** | **mm** | 324.40 | 30.02 | -980.612924 |  |
| **PROGRESS ON GROUP IMPROVEMENT STRATEGIES** | **Unit** | **This Period** | **KPI value :** | % Change | **Reason if KPI has** **not been met** |
| **Total water use per ton treated as compared to KPI value (≤ FY 2020 +1%)** | **%** | 0.00 | **1.47** | -100 |  |

# Effluent Management

Permitted (Licensed) maximum discharge volume per discharge point:

|  |  |
| --- | --- |
| **Discharge Point** | **Maximum Licensed Volume per Quarter (m³)** |
| **Effluent discharged to surface water bodies** | 0 |
| **Effluent discharged to purification works** | 16,800m3 per dayx90=1,512,000m3 per Quarter |

Table 18: Effluent Volumes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Effluent Volumes** | **Unit** | **This Period** | **Previous Period** | **% Deviation** | **Reason**  **If ≥ 20%** |
| **Effluent Discharged to Surface Water Bodies** | m³ | 0 | 0 | ∞ |  |
| **Effluent Discharged to a Purification Works** | m³ | 1,512,000 | 1,512,000 | 0 |  |

# Energy Management

Table 19: Energy Consumption

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Energy Source** | **Unit** | **This Period** | **Previous Period** | **% Change** | **Reason**  **If ≥ 20%** |
| **Diesel for Vehicles** | Litre | 32,565 | 30,854 | -5.54547 |  |
| **Diesel for Generation of Electricity** | Litre | 3,679 | 7359 | 50.006 | Reduction in consumption due to seizing of production. |
| **Total Diesel Consumption** | Litre | 36,244 | 38,213 | 5.152696 |  |
| **Electricity Generated** | kWh | 11,432 | 22,869 | 50.0109 | Reduction in consumption due to seizing of production. |
| **Electricity Purchased** | kWh | 2,116,615 | 2,316,828 | 0.086416 |  |
| **Total electricity used** | kWh | 2,128,047 | 2,339,697 | 9.046043 |  |
| **Petrol** | Litre | 2,666.20 | 2733.38 | 2.457762 |  |
| **LPG[[4]](#footnote-4)** | kg | 90 | 60 | -50 |  |
| **PROGRESS ON GROUP IMPROVEMENT STRATEGIES** | **Unit** | **This Period** | **KPI value** | **% Change** | **Reason if KPI has not been met** |
| **Electricity use per tonne treated as compared to KPI value ≤ FY 2020 +1% )** | kWh/t | 0.00 | **10.58** | -100 |  |
| **Diesel use (TMM) per tonne treated as compared to KPI value**  **(≤FY 2020-1%)** | litre/t | 0.00 | **1.03** | -100 |  |

# Materials Consumption

Table 20: Materials Consumption

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Material** | **Unit** | **This Period** | **Previous Period** | **% Change** | **Reason**  **If ≥ 20%** |
| **Calcium Carbonate** | kg | 0.00 | 700 | 100 | No consumption of the material |
| **Calcium Chloride** | kg | 0.00 | 0.00 | ∞ |  |
| **Ferrosilicon** | t | 0.00 | 0.00 | ∞ |  |
| **Ferrosilicon per tonne treated** | t/t | 0.00 | 0.00 | ∞ |  |
| **Flocculants** | kg | 24,500 | 21750 | -12.6436 |  |
| **Grease** | kg | 0.00 | 0.00 | ∞ |  |
| **Oils & Hydraulic Fluids** | Litre | 2,225 | 1685 | -32.0474 |  |
| **Oils & Hydraulic Fluids per tonne treated** | l/t | 0.00 | 0.00 | ∞ |  |
| **Paper Bought[[5]](#footnote-5)** | kg | 250 | 0.00 | 0 |  |
| **Sodium Nitrate** | kg | 0.00 | 0.00 | ∞ |  |
| **Sodium Nitrite** | kg | 0.00 | 0.00 | ∞ |  |
| **Steel** | t | 0.00 | 0.00 | ∞ |  |
| **Timber** | t | 0.70 | 0.00 | 0 |  |
| **Oxy-acetylene** | kg | 1,028 | 1318 | 22.00305 | Reduction in consumption of materials. |
| **Trichloroethylene[[6]](#footnote-6) (TCE)** | Litre | 20.8 | 40.02 | 48.0259 | Reduction in consumption of materials. |

# Waste Management

Table 21: Waste Disposal

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Waste Disposed** | **Unit** | **This Period** | **Previous Period** | **% Change** | **Reason**  **If ≥ 20%** |
| **Waste Disposed to landfill** | | | | | |
| **Hazardous Waste Disposed** | tonnes | 0 | 0 | ∞ |  |
| **General Waste Disposed** | tonnes | 928.33 | 711.88 | -30.40540 |  |
| **Total waste to landfill** | tonnes | 928.33 | 711.88 | -30.40540 |  |
| **Waste Recycled** | | | | | |
| **Cardboard / Paper** | tonnes | 0.00 | 0.00 | ∞ |  |
| **Conveyor Belting** | tonnes | 0.00 | 0.00 | ∞ |  |
| **E-waste** | tonnes | 0.00 | 0.00 | ∞ |  |
| **Lead Acid Batteries** | tonnes | 0.07 | 0.00 | 0 |  |
| **Plastic** | tonnes | 0.00 | 0.00 | ∞ |  |
| **Scrap Metal** | tonnes | 0.00 | 30.09 | 100 |  |
| **Timber** | tonnes | 0.00 | 0.00 | ∞ |  |
| **Toner / Ink Cartridges** | tonnes | 0.01 | 0.01 | ∞ |  |
| **Fluorescent Tubes** | tonnes | 0.00 | 0.00 | ∞ |  |
| **Tyres** | tonnes | 1.12 | 0.56 | -100 |  |
| **Used Oil** | tonnes | 1.02 | 0.68 | -50 |  |
| **Total Waste Recycled** | tonnes | 2.23 | 32.15 | 93 | Reduction in consumption of materials. |
| **Waste Incinerated** | | | | | |
| **Medical Waste** | tonnes | 1.46 | 2.24 | 34.821 |  |
| **Other Waste** | tonnes | 0.74 | 0.19 | -289.4737 |  |
| **Total Waste Incinerated[[7]](#footnote-7)** | tonnes | 2.20 | 2.42 | 9.0909 |  |
| **Total waste generated** | tonnes | 932.76 | 746.45 | -24.9594 |  |
| **PROGRESS ON GROUP IMPROVEMENT STRATEGIES** | **Unit** | **This Period** | **KPI value** | **% Change** | **Reason if KPI has not been met** |
| **Total tonnage of waste to landfill (general and hazardous) as compared to KPI value (FY 2020-1%)** | tonnes | 928.33 | **564.30** | 64.51 |  |
| **Mine waste** | | | | | |
| **Fine (slimes)** | tonnes | 0.00 | **0.00** | ∞ |  |
| **Coarse (tailings)** | tonnes | 0.00 | **0.00** | ∞ |  |

# Biodiversity Management

Table 22: Biodiversity Data

|  |  |  |  |
| --- | --- | --- | --- |
| **Element** | **Unit** | **This Period** | **List/Detail** |
| **Total Protected Area[[8]](#footnote-8)** | **ha** | **906** | Agave sisalana, Albizia lebbeck, Aloe lateritia, Annona muricata, Azidarachta indica, Bambusa vulgaris, Bauhinia monandra, Bougainvillea glabra, Callistemon lanceolatus, Cassuarina litorea, Ceiba petandra, Cenna |
| **Number of Invasive Plant Species** | **No.** | **34** |  |
| **Number of Red Data Flora Species[[9]](#footnote-9)** | **No.** |  |  |
| **Number of Red Data Fauna Species[[10]](#footnote-10)** | **No.** |  |  |

Note the dates of most recent surveys, as well as responsible specialists:

|  |  |  |
| --- | --- | --- |
| **Type of survey/study** | **Date** | **Responsible specialists** |
|  |  |  |
|  |  |  |

# Ozone Depleting Substance

This data is required for the carbon footprint calculation

Table 23: Ozone Depleting Substances

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Substance** | **Unit** | **This Period** | **Previous Period** | **% Change** | **Reason**  **If ≥ 20%** |
| **1,1,1-trichloroethane (TCA)** | kg | 0 | 0 | ∞ |  |
| **Carbon Tetrachloride (CTC)** | kg | 0 | 0 | ∞ |  |
| **Halon** | kg | 0 | 0 | ∞ |  |
| **Methyl Bromide** | kg | 0 | 0 | ∞ |  |
| **R 134a** | kg | 0 | 0 | ∞ |  |
| **R 410** | kg | 0 | 0 | ∞ |  |
| **R 507** | kg | 0 | 0 | ∞ |  |
| **Other: ( Name)** | kg | 0 | 0 | ∞ |  |
| **Total Ozone depleting substances** | kg | 0 | 0 | ∞ |  |
| **R 22** | kg | 6.28 | 0.80 | -685 |  |

# Carbon Emissions

As Petra Diamonds follows a centralised approach based on the GHG Protocol principles for the gathering of information on its GHG emissions, the organisational carbon footprints are calculated at Group level by the Group HSEQ Data Analyst and Reporting Coordinator. Emission calculations are thus standardised across all the operations, but based on data and information supplied by the organisation. The organisational reporting of verified, accurate and reliable data**/**information is key in this process. Petra Diamonds have decided on a materiality threshold of 5 % for Scope 1 and Scope 2 emissions and 10% for Scope 3 emissions. All GHG emission calculations and reporting are based on the GHG Protocol principles of relevance, completeness, consistency, transparency and accuracy. To ensure compliance to these principles, a third party audit is conducted annually.Petra Diamonds account for and report on the emissions of Carbon Dioxide (CO2), Methane (CH4), Nitrous oxide (N2O) and Hydrofluorocarbons (HFCs).

Table 24: GHG Emissions accounted for

|  |  |
| --- | --- |
| **Scope** | **Emissions** |
| **Scope 1: Direct Emissions** | **Mobile combustion**: Diesel and petrol use for company owned/controlled vehicles;  jet fuel use for company owned jet  **Stationary combustion**: Diesel use for generation of electricity; combustion of LPG in workshops;  **Fugitive hydrofluorocarbon (HFC) emissions**: Air conditioning;  **Process emissions**: Effluent treated at treatment plants under direct control of a mine |
| **Scope 2: Indirect emissions** | **Electricity** purchased from:  Eskom (South Africa)  Tanesco (Tanzania) |
| **Scope 3: Other Indirect Emissions** | **Business travel**: Employee commute; car hire; business flights -air lines and chartered aeroplanes  **Paper use**  **Waste**: General, hazardous, non-biomass waste disposed to landfill; Scrap metal for recycling;  **Potable water:** pumping |
| **R-22** |  |

All GHG emissions related information as required by the GHG Protocol, will be reported on in the *Annual GHG Emissions Report for Petra Diamonds - FY 2021*. This report will be published on SharePoint and the official Petra website (*Petradiamonds.com*).

# PROJECTS AND ACHIEVEMENTS

This section is used to describe all current projects and findings of completed projects, as well as any achievements or awards relevant to Environmental Management.

# Research Projects

Please note any research that the organisation plans to do or is busy with.

|  |  |
| --- | --- |
| **Project Description** | Vegetation Assessment |
| **Service Provider** | Tanzania Forest Research Institute |
| **Planned Outcome** | The assessment results to be used for concurrent rehabilitation and during mine closure |
| **Inception Date** | 18/09/2020 |
| **Planned Due Date** | On going |
| **Progress** | On going |
| **Actual Outcome** | To get best tree species that has other values like timber tress apart from indigenous trees. |

|  |  |
| --- | --- |
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| **Actual Outcome** | To get best tree species that has other values like timber tress apart from indigenous trees. |

# Energy Efficiency Projects

Energy efficiency is a high level priority area within Petra. The organisation are encouraged to implement measures to save energy such as electricity and diesel on a gross scale or to use these resources more efficiently where gross reductions are not feasible.

* **No any Energy efficient project was implemented**

|  |  |
| --- | --- |
| **Project Description** |  |
| **Service Provider / Project Manager** |  |
| **Planned Outcome** |  |
| **Inception Date** |  |
| **Planned Due Date** |  |
| **Progress** |  |
| **Actual Outcome** |  |

# Consumption Reduction Plans

Please note any other reduction programmes or plans implemented during the reporting period.

* **None**

|  |  |
| --- | --- |
| **Project Description** |  |
| **Service Provider / Project Manager** |  |
| **Planned Outcome** |  |
| **Inception Date** |  |
| **Planned Due Date** |  |
| **Progress** |  |
| **Actual Outcome** |  |

# Achievements

1. No major environmental incidents were reported during the period.
2. Successfully completion of workshop exercise with Officers from IDWB which involved the visiting of 11 villages which are direct beneficiaries of Songwa and Nhumbu Dams. The exercise involved selection of three representatives from each villages who formed a joint Communities of water users Association.
3. District Mine Closure Committee meeting was conducted on 15th October 2020. The aim was to discuss options stipulated in WDL Mine Closure Plan and recommendations were given.
4. Submission of Mine Closure Plan first and second progressive report to Chief Inspector of Mines. This is part of implementation of directives received from National Mine Closure Committee after site inspection on 09 – 10 September 2020
5. First quarter Water sampling was completed and the sampling Laboratory analysis results received. Sampling is done to comply with legal requirements.
6. Successful completion of rabies Vaccination of mine camp dogs to complete a total number of 117 Dogs which were not vaccinated during first exercise which was conducted in July 2020. Total number of 35 Dogs have been vaccinated.
7. Tree planting alongside roads was completed in the Mine camp roads, A total number of 2000 trees were planted for this rain season as part of mine camp rehabilitation.
8. Completion of Safe disposal of Asbestos material from Mwadui Technical School to Salvageable and recovery Laydown area.
9. Re planting trees at Rehabilitation trial project was completed. 1200 of Cederella Odorata trees and 500 of Acacia nilotica trees were planted as part of concurrent rehabilitation.
10. Submission of feedback reports concerning Annual Environmental Report to the Mining Commission and NEMC as per received letters after Final review and General Manager’s approval.
11. WDL participated in Mining exhibition which was held in Shinyanga town. WDL emerged as second runner up in Mining sector.
12. Letter requesting soil analysis and vegetation assessment to identify different tree species that can grow in our mining area was submitted to TAFORI and Response letter from TAFORI has been received. The study will enable us to plant different tree species during mine closure.
13. A total number of 22991 trees were donated to different institutions both Governmental, Non-Governmental and individuals.

1. YTD: Year to Date [↑](#footnote-ref-1)
2. Record value of standard [↑](#footnote-ref-2)
3. Record value of standard [↑](#footnote-ref-3)
4. Note Only LPG used for energy purposes (e.g. cooking, furnace), not cutting [↑](#footnote-ref-4)
5. Required for Carbon Footprint calculation [↑](#footnote-ref-5)
6. Chemical used for belt splicing or as degreasing agent (neat or as a component of a product), also known as “trichlor”. Carcinogenic [↑](#footnote-ref-6)
7. Include explosive boxes [↑](#footnote-ref-7)
8. e.g. game Farms [↑](#footnote-ref-8)
9. Confirmed species only [↑](#footnote-ref-9)
10. Confirmed species only [↑](#footnote-ref-10)