



**CONSERVATION AND ENVIRONMENT PROTECTION AUTHORITY**

**OFFICE OF THE MANAGING DIRECTOR**

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P O Box 6601, BOROKO, NCD  
Papua New Guinea

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*Date:* 19<sup>th</sup> /11/2021  
*Our Reference:* EP-L3(806)  
*Action Officer:* eirale

Pacific Elite Investment Limited  
P.O. Box 567, Waigani  
National Capital District 131  
Papua New Guinea.

Dear Sir;

**Subject: Grant of Environment (Transfer) Permit for Pacific Elite Investment Limited.**

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Find attached the approved Environment (Transfer) Permit EP-L3(806). The permit is transferred from Wewak Agriculture Development Limited to the Pacific Elite Investment Limited (PEIL).

The issuance of transfer of this permit authorizes the carrying out of works involving large scale agriculture clearance associated with palm oil extraction and processing in plants producing more than 5,000 tonnes per year; and to extract water from nearby creeks while carrying out the activities associated with large-scale agriculture clearance.

Further to the approval of the Environment (Transferred) Permit your company is hereby reminded of its obligations under this approval.

Please note that we are now operating as the CEPA. You will be informed accordingly of the new annual charges in due course. For any clarification on the terms and conditions of the permit, please contact the undersigned on Phone 3014500 or 3014543.

Yours faithfully,

**Gunther JOKU**  
**Director of Environment and**  
**Managing Director**



THE INDEPENDENT STATE OF PAPUA NEW GUINEA  
*Environment Act 2000*

*Act, Section. 65 & 66*  
*Reg., Sec. 16(1)*

**ENVIRONMENT PERMIT**

**An Environment Permit is hereby issued under Section 65 of the *Environment Act 2000*.**

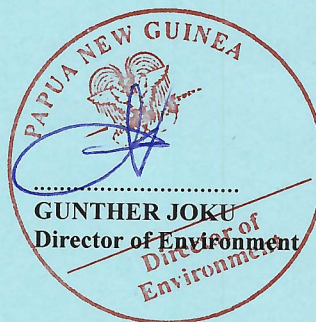
**TO:** Pacific Elite Investment Limited

**OF:** P.O. Box 567, **WAIGANI**, National Capital District 131, Papua New Guinea.

- (a) to carry out works within Momase Large Scale Integrated Agriculture Project (FCA 11-03) area (the "premises") which covers parts and parcels of Terubu LLG in Wewak District, Sausso LLG of Yangoru Saussia District, and Angoram LLG of Angoram District, of East Sepik Province;
- (b) to discharge wastes into the environment from its premises while carrying out a **Level 3 (Sub-category 16.2) activity** associated with Large-scale Agriculture clearance under Section 90 (a), (b), (c), or (d) of the *Forest Act 1991* (as amended) and **Level 2(Category B) (Sub-category 9.5) activity** associated with palm oil extraction and processing in plants producing more than 5,000 tonnes per year; and
- (c) to extract water from Mawit Creek while carrying out the activities associated with large-scale agriculture clearance, from Kimange Creek for the Oil Palm Nursery, and Urr-u Creek for activities associated with the palm oil extraction and processing plants.

The activity shall be carried out in accordance with the terms and conditions of this permit.

**Permit Number:** EP-L3(806)  
**Date of Issue of Transfer:** 19<sup>th</sup> November, 2021  
**Date of Amendment:** 19<sup>th</sup> November, 2021  
**Term of Permit:** Twenty-five (25) years  
**Date of Expiry:** 18<sup>th</sup> November 2046



## INTERPRETATIONS

**Application for Transfer:** refers to the permit application to transfer the Environment Permit **EP-L3(196)** issued on 05<sup>th</sup> December, 2008 for the development of the Large Scale Integrated Agriculture Project in East Sepik Province, to the new permit holder, Pacific Elite Investment Limited.

**Application for Amendment:** refers to the permit amendment application submitted by Pacific Elite Investment Limited to rename the project as Momase Large Scale Integrated Project in the transferred Environment Permit.

**Base Flow:** means the minimum flow within surface water that is necessary for protection of the most susceptible aquatic organism in that aquatic ecosystem. Reduction of the flow rate below the base flow through water extraction may lead to physiological stress on the most susceptible aquatic organism. The base flow is also referred to as environmental flow.

**CEPA:** means the Conservation and Environment Protection Authority.

**Director/Director of Environment:** means the Managing Director of Conservation and Environment Protection Authority.

**Discharge Point (1):** refers to the location where the treated domestic wastewater (leachate) from the septic tank serving the Mawit Base Camp is discharged into Mawit Creek via a settling pond. The discharge point is specified by Map Coordinates **9,586,137mN and 807,099mE**.

**Discharge Point (2):** refers to the location where the treated industrial waste water from the workshop is discharged in a settling pond. The discharge point is specified by Map Coordinates **9,586,253mN and 807,202mE**.

**Discharge Point (3):** refers to the location where the treated domestic waste water from the Executive Workers Compound at the mill in Mundomundo is discharged into absorption trenches and the waterways. The discharge point is specified by Map Coordinates **803,655mE and 9,544,380mN**.

**Discharge Point (5):** refers to the location where the treated domestic waste water from the General Workers compound at the mill in Mundomundo is discharged into absorption trenches and the waterways. The discharge point is specified by Map Coordinates **802,963mE and 9,543,928mN**.

**Discharge Point (6):** refers to the location where the treated Industrial waste water and Palm Oil Mill Effluent (POME) from the Crude Palm Oil Mill at Mundomundo is discharged from a range of treatment ponds into the absorption trench and water way then to Nagam River. The discharge point is specified by Map Coordinates **803,533mE and 9,543,678mN**.

**Domestic Wastewater:** means grey water and sewage.

**Environment Act/ the Act:** means the Environment Act 2000 (as amended) and any Environment Policies and Regulations made there under.

**Extraction Point (1):** refers to the location where water is extracted from Mawit Creek in Terubu LLG of Wewak District for use at the Mawit Base Camp. The extraction point is specified by Map Coordinates **9,586,264mN and 807,253mE**.

**Extraction Point (2):** refers to the location where water for the operation of the Oil Palm Nursery is extracted from Kimange (Uyenymo) Creek in Sausso LLG of Yangoru Saussia District. The extraction point is specified by Map Coordinates **9,567,270mN and 804,660mE**.

**Extraction Point (3):** refers to the location where water for the operation of the Oil Mill and Oil Mill Staff Housing Compound is extracted from Urr-u Creek in Angoram LLG of Angoram District. The extraction point is specified by Map Coordinates **9,544,480mN and 801,270mE**.

**Grey water:** means grey water derived from the kitchen and laundry activities and which may contain elevated levels of BOD<sub>5</sub> and detergents.

**LLG:** means Local Level Government.

**Logging/Log Salvaging Operation:** refers to forest harvesting operation involving the use of heavy machinery within a coup within the Momase Large Scale Integrated Agriculture Project (an FCA) area. Forest harvesting near watercourses can seriously affect the flow and quality of the surface water if acceptable environmental protection practices, as specified in the PNG Logging Code of Practice, are not observed.



**Permit:** means the Environment Permit issued under *Section 65 of the Environment Act 2000*. This permit refers to the transferred permit EP-L3(806) [formerly EP-L3(196)] which is issued to Pacific Elite Investment Limited. The permit authorizes the carrying out of works within the premises, the discharge of wastes and extraction of water from Mawit, Kimange and Urr-u Creeks and Nagam River for the activities associated with the Large Scale Integrated Agro-forestry development and crude palm oil processing.

**Permit Holder:** refers to Pacific Elite Investment Limited.

**Premises:** refers to the Momase Large Scale Integrated Agriculture Project (FCA 11-03) area which covers parts and parcels of Terubu LLG in Wewak District, Sausso LLG of Yangoru Saussia District, and Angoram LLG of Angoram District all in East Sepik Province. The project boundary and the legal description of the premises will be provided in accordance with *Condition 5* of this permit.

**POME:** mean Palm Oil Mill Effluent.

**Surface water:** means streams, creeks, lakes, etc. Logging/log salvaging operation near surface waters should not affect the flow rate, direction of flow and water rate.

**Water source:** means the Mawit Creek, Kimange (Uyenyomo) Creek, Urr-u Creek, Nagam River and any other unnamed sources (rainwater).

**Works:** means the carrying out of works associated with Large-scale Agricultural Clearance, Oil Palm Development and palm oil processing within the premises. These activities include construction of access roads, bridges (including culverts), accommodation or base camp, log pond, jetty, vehicle and machinery workshop and a stationary sawmill and Palm Oil Mill Plant.



## TERMS & CONDITIONS OF ENVIRONMENT PERMIT

### *Annual Charge*

The total annual charge under this permit falls under the *Fee Rank* for Forestry Sector (*Group 2 - Level 3*) *Logging Operations* and will be invoiced in accordance with the Conservation and Environment Protection Authority (CEPA) Management Fees Regulation 2015 (No. 792).

### *Conditions*

#### **General**

1. The Permit Holder shall carry out works in accordance with the plans and specifications in the environment permit applications for both the Oil Palm Development and Processing.
2. In the event of an inconsistency between the environment permit application and a condition of this permit, the condition of this permit will apply.

#### **Biodiversity Off-Set**

3. The Developer shall commit to develop and implement a biodiversity offsets program consistent with applicable Regulations which shall include:
  - (a) A Biodiversity Offsets Plan;
  - (b) A robust scientific procedure for the measurement of the area of vegetation converted to a different land use and the area of vegetation degraded on an annual basis;
  - (c) A commitment to protect an area of land and/ or water determined by the DEC in accordance with its National Protected Area Priorities and using fees generated under the Biodiversity Offsets Plan.
4. The Developer should be aware that any failure to meet any Conditions of this Permit or requirement of an Environment Management Plan will result in penalties imposed.

#### **Spatial Data**

5. The Permit Holder shall submit to DEC within three (3) months from the date of amendment of this permit spatial data in digital form at 1:100,000 Map Scale which displays the boundary of the permit indicating Momase Integrated Agro-Forestry Project Area, existing infrastructure and existing discharge and extraction points. A digital elevation model at 5m resolution and streamlines is also required.
6. The spatial data is required to be submitted in the following format(s): Software format: ArcGIS or MapInfo; Datum WGS84; un-projected (Latitude/Longitude) format.

#### **Biological Data**

7. The Permit Holder shall conduct biological surveys on the aquatic and terrestrial flora and fauna species within the premises based on the Permit Holder's Five (5) Year Forest Clearing Plans and submit Biological Reports for each segment of the project area defined by the Five (5) Year Forest Clearing Plan to the Director for his approval prior to commencement of works within that segment.

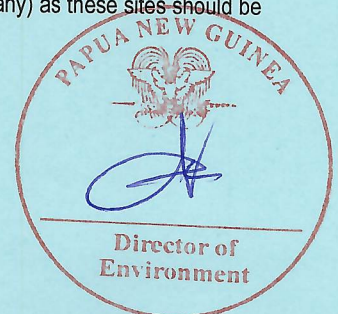
#### **Works**

##### *Buffer Zone*

8. The Permit Holder shall maintain buffer zones on each side of permanent or semi-permanent watercourses in accordance with the *PNG Logging Code of Practice* whilst carrying out works associated with the logging operation.

##### *Prohibited Activities*

9. The Permit Holder shall ensure no works is allowed within 100 meters of cultural sites (if any) as these sites should be served as reserve sites for cultural purposes.



10. The Permit Holder shall ensure that **no** works are carried out within the buffer zone reserved along watercourses.

*Erosion Control*

11. The Permit Holder shall design and apply appropriate measures to prevent soil erosion and minimize discharge of sediment into watercourses. The measures shall include but not limited to use of cutoff drains, velocity control techniques, sediment traps, ground cover (natural, e.g. grass growing and artificial, e.g. plastic sheets), sedimentation pond, limited vegetation clearing, etc.

*Bund*

12. The Permit Holder shall construct bunds around the fuel storage tanks, workshops and sawmill plan within the premises using the appropriate bund specifications in the Australian Standards-AS 1940.

*Waste Treatment Facilities*

Septic Tank

13. The Permit Holder shall construct septic tanks with soak-away trenches for treatment and disposal of domestic wastewater from Mawit and Mundomundo Base Camps. The septic tanks shall be established not less than 100m from any nearest surface water.

Landfill

14. The Permit Holder shall construct domestic and industrial landfills at Mawit and Mundomundo Base Camps and any other locations within the premises for the disposal of domestic and industrial wastes, respectively. The landfills must be constructed not less than 100m from the nearest watercourse and designed to comply with the minimum environmental requirements in the DEC *Environmental Code of Practice for Sanitary Landfill Sites*.

Cut-Off Drains

15. The Permit Holder shall construct cut-off drains around the fuel storage area, workshop, and sawmill plants for diverting oil-contaminated wastewater.

Oil-water Separator

16. The Permit Holder shall install triple interceptor traps in the cut-off drains referred to in *Condition 15*, for separation of oil-film from wastewater emanating from all workshops, fuel storage areas and sawmill plant established with the premises. The oil-water separator shall be designed to comply with the minimum environmental specifications in the DEC *Environmental Code of Practice for Vehicle/Machinery Workshops and Petroleum (Hydrocarbons) Storage/Resale/Usage Site, DEC, 1997*

Incinerator

17. All hazardous wastes such as biomedical waste and oily rags are to be disposed of safely and securely off the premises. If the offsite disposal is not reasonably practicable then the Permit Holder shall install an appropriate incinerator for treatment before disposal into the environment.

Mill Effluent Treatment Ponds

18. The Permit Holder shall construct a series of treatment ponds including aerobic and anaerobic ponds for treatment of the "palm oil mill effluent" from Palm Oil Mills prior to discharge to the environment.

19. The Permit Holder shall construct appropriate anaerobic and aerobic pond/s for the treatment of POME prior to discharge into the environment.

**Operation**

*Logging/Log Salvaging Operations*

20. The Permit Holder shall observe the relevant requirements in the *PNG Logging Code of Practice* whilst carrying out logging operations within the premises.

*Oil Palm Plantation*

21. The Permit Holder shall ensure that fertilizers are only applied during dry season to prevent runoff and the application should **NOT** be conducted under windy conditions or upwind from the buffer zones.



22. The Permit Holder shall ensure that storage sheds for fertilizers and pesticides are built on a well-drained site, and with due regard to relevant environment, health and safety requirements (e.g., bund requirements, ventilation, etc.).
23. The Permit Holder shall ensure that pesticides and fertilizers are applied with due consideration of human health and the environment and at a distance not less than 10 meters from the edge of the buffer zones.
24. No empty pesticide and fertilizer containers or spray equipment shall be washed directly in watercourses or in areas where chemical residues can enter watercourses through rainfall runoff.
25. Chemical substances including fertilizers should not be overstocked in order to avoid possible damage to stock and the resulting disposal issue including accidental discharge of chemical substances into the environment through rainfall runoff.

#### *Palm Oil Processing*

26. The Permit Holder shall observe the relevant requirements in the *Environmental Code of Practice for Papua New Guinea Oil Palm Processing Industry, DEC, 2013*.
27. The Permit Holder shall ensure that all the Empty Fruit Bunches (EFB) generated at the mill are pressed, fiberized as fuel for renewal energy in the boiler.

#### *Small-scale Timber Processing*

28. The Permit Holder shall establish sawmill plants at a number of locations within the premises for the processing of the timber in small scale.
29. The Permit Holder shall ensure sawmill plant shall be established 100m away from the nearest water source to avoid contamination of the water course.
30. The Permit Holder shall ensure that the operation of small-scale timber processing is done on a bunded concrete surface

#### *Waste Treatment Facilities*

31. The Permit Holder shall carry out routine inspection and maintenance of septic tanks (*Condition 13*), landfills (*Condition 14*) cut-off drains (*Condition 15*), oil-water separators (*Condition 16*), incinerator (*Condition 17*), effluent treatment ponds (*Condition 18*), in order to maintain the treatment efficiency of these waste treatment facilities.
32. The Permit Holder shall ensure that leachates from domestic wastewater effluent should not flow out onto the land surface from the soak-away trenches after it is discharged from the septic tanks.

#### *Erosion Control*

33. The Permit Holder shall take all reasonable measures, whilst undertaking the logging operation within the premises, to ensure that –
  - (a) soil erosion and discharge of sediment into any surface water is minimized, and
  - (b) the natural direction of flow of surface waters within the premises is not altered, and
  - (c) the flow rate of surface waters within the premises is not altered due to obstruction by logs or other forest/log debris or wastes.

#### *Rehabilitation*

34. The Permit Holder shall undertake progressive landform rehabilitation during the logging operation, including soil conservation and rehabilitation of disperse soil, stockpiles, quarry extraction sites, etc.
35. The Permit Holder shall undertake progressive re-vegetation work at construction sites including the camp site, access road, quarry extraction sites, etc.

#### *Storage of Hazardous Substances*

36. All hazardous substances (chemicals, reagents, wood preservatives, etc.) that are used within the premises shall be safely stored in accordance with the manufacturer's recommendations.



#### *Workshop & Fuel Storage*

37. The Permit Holder shall manage the workshop and fuel storage areas in accordance with the minimum environmental requirements in the DEC *Environmental Code of Practice for Vehicle/Machinery Workshops and Petroleum (Hydrocarbons) Storage/Resale/Usage Site*, DEC, 1997.

#### **Waste Management**

##### *Aerial Emission*

38. The Permit Holder shall employ appropriate control measures to minimize air emissions from the premises (boiler stacks, steam from vents, diesel gen-set exhaust and fugitive emissions).
39. The Permit holder shall employ appropriate control measures to minimize offensive odour within the premises.
40. The Permit Holder shall minimize airborne emission of particulate matter (soot) and black smoke from the emission stack at the processing mills through the use of appropriate pollution control equipments to ensure that on a daily basis, emissions of black smoke from boiler stacks remain better than Ringelman 2 for periods exceeding 80 per cent of total boiler operating time.

##### *Noise*

41. The Permit Holder shall ensure that noise levels generated within the premises are minimized through the use of appropriate noise control measures.

##### *Solid Waste*

42. The Permit Holder shall dispose of all domestic and industrial solid wastes from the premises in the sanitary landfills referred to in *Condition 14*.
43. The Permit Holder shall not place solid or liquid waste (excluding mill effluent discharged through land irrigation) in a manner where it could easily enter surface water through rainfall runoff.
44. The Permit holder shall not place any solid or liquid waste in a manner where it could easily be dispersed to other areas and cause contamination within and/or outside the premises through rainfall runoff.
45. The Permit Holder shall ensure that the Empty Fruit Bunches (EFB) generated at the mills are utilized as mulch / compost in the oil palm fields.

##### *Solid Mill Waste (decanter cake)*

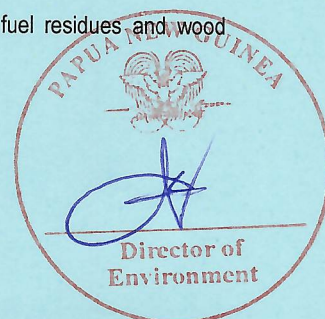
46. The Permit Holder shall ensure that the solid mill wastes (decanter cake) is used as a form of fertilizer within its oil palm plantations and not disposed of into the environment.

##### *Rainfall Runoff*

47. The Permit Holder shall ensure that storm water runoff from the locations near the Anaerobic (methane capture) and Aerobic ponds are not contaminated with POME.
48. The Permit Holder shall segregate storm water runoff from the locations where machinery and fuel are stored in order to avoid cross-contamination of the rainwater.

##### *Waste Oil*

49. The Permit Holder shall ensure that waste oil (fuel and lubricants) are reused and/or disposed of securely and responsibly.
50. The Permit Holder shall ensure that the floors at the workshop and sawmill are free of fuel residues and wood treatment chemicals prior to any floor-washing activity.



51. All wastewater containing oil film (including contaminated rainfall runoff) shall be directed to oil-water separators referred to in *Condition 16* for removal of oil film prior to discharge.
52. The oil film from the oil-water separators must be skimmed off and stored in a used-oil container for reuse and/or disposal in the industrial landfill or through incineration referred to *Condition 17*.

#### *Domestic Wastewater*

53. All domestic wastewater from the Mawit and Mundomundo Base Camps shall be directed to the septic tanks referred to in *Condition 13* for treatment prior to discharge.

#### **Waste Discharge**

#### *Domestic Wastewater*

54. The discharge of treated domestic wastewater at Discharge Points (1), (3), (4) shall occur at the rates specified in Table 1 below

**Table 1 – Permitted Discharge Rates for Treated Domestic Wastewater**

| Description.                          | Discharge Rate  |               |                |                |                                |
|---------------------------------------|-----------------|---------------|----------------|----------------|--------------------------------|
|                                       | Litres per hour | Hours per day | Days per month | Month per year | Annual discharge volume        |
| Discharge Point (1)                   | 303.01          | 24            | 30             | 12             | 2,618 m <sup>3</sup> /yr.      |
| Discharge Point (3)                   | 33.23           | 24            | 30             | 12             | 287 m <sup>3</sup> /yr.        |
| Discharge Point (4)                   | 298.38          | 24            | 30             | 12             | 2,578 m <sup>3</sup> /yr.      |
| <b>Total Annual Discharge Volume.</b> |                 |               |                |                | <b>5,483 m<sup>3</sup>/yr.</b> |

#### *Industrial Wastewater*

55. The discharge of treated industrial wastewater within the premises at Discharge Points (2) and (5) shall occur at the rates specified in Table 2, below.

**Table 2 – Permitted Discharge Rate for Treated Industrial Wastewater**

| Description.                                                  | Discharge Rate  |               |                |                |                                  |
|---------------------------------------------------------------|-----------------|---------------|----------------|----------------|----------------------------------|
|                                                               | Litres per hour | Hours per day | Days per month | Month per year | Annual discharge volume.         |
| Discharge Point (2)                                           | 266.94          | 10            | 30             | 12             | 961 m <sup>3</sup> /yr.          |
| Discharge Point (5)                                           | 166.94          | 10            | 30             | 12             | 601 m <sup>3</sup> /yr.          |
| Discharge Point (5)                                           | 30,000.00       | 16            | 30             | 9              | 129,600 m <sup>3</sup> /yr.      |
| <b>Total Industrial (workshop washwater) Discharge Volume</b> |                 |               |                |                | <b>1,562 m<sup>3</sup>/yr.</b>   |
| <b>Total Industrial (POME) Discharge Volume</b>               |                 |               |                |                | <b>129,600 m<sup>3</sup>/yr.</b> |

56. The discharge of treated domestic and industrial wastewater at Discharge Points (1), (2), (3), (4) and (5) shall not cause the water quality within Mawit Creek and Nagam River or any surface water within the premises to exceed the water quality criteria in Table 3, below

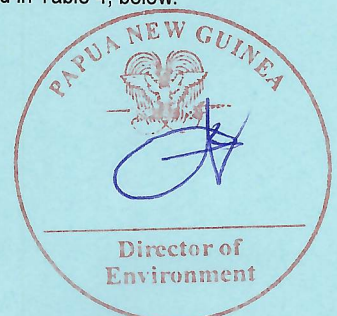
**Table 3- Fresh Water Quality Criteria**

| Parameters.            | Water Quality Criteria.                                 |
|------------------------|---------------------------------------------------------|
| *Faecal Coliform       | ≤ 200 faecal coliform/100ml                             |
| Dissolve Oxygen        | >6.0 mg/L (>80-90% saturation)                          |
| Total Suspended Solids | <10% change from background mean seasonal values        |
| Oil & Grease           | None noticeable as visible film or detectable by odour. |

\*Criteria based on not fewer less than five samples taken over not more than a 30 day period, in which the median value of the faecal coliform bacteria content of the surface water shall not exceed 200 per 100 ml.

#### **Water Extraction**

57. The Permit Holder shall ensure that extraction of water from Mawit and Urr-u Creeks do not exceed the base flow of the surface water.
58. The extraction of water at Extraction Points (1), (2) and (3) shall occur at the rates specified in Table 4, below.



**Table 4 – Permitted Water Extraction Rates from Mawit, Kimange (Uyenyo) and Urr-u Creeks**

| Description.                           | Extraction Rate  |                |                 |                 |                                  |
|----------------------------------------|------------------|----------------|-----------------|-----------------|----------------------------------|
|                                        | Litres per hour. | Hours per day. | Days per month. | Month per year. | Annual Extraction Volume.        |
| Extraction Point (1)                   | 104.75           | 24             | 30              | 12              | 905 m <sup>3</sup> /yr.          |
| Extraction Point (2)                   | 83.33            | 24             | 30              | 12              | 720 m <sup>3</sup> /yr.          |
| Extraction Point (3)                   | 13,441.32        | 24             | 30              | 12              | 116,133 m <sup>3</sup> /yr.      |
| <b>Total Annual Extraction Volume.</b> |                  |                |                 |                 | <b>117,758 m<sup>3</sup>/yr.</b> |

59. The Permit Holder shall ensure that the quality of the surface water complies with Public Health (Drinking) Water Quality Standards in Table 5, if the water is used for domestic consumption.

**Table 5 – Water Quality Criteria for Non-disinfected Water Supplies**

| PARAMETER                   | HIGHEST DESIRABLE LEVEL | MAXIMUM PERMISSIBLE LEVEL |
|-----------------------------|-------------------------|---------------------------|
| <b>Microbiological</b>      |                         |                           |
| E.Coli (per 100 ml)         |                         | None                      |
| Total Coliform (per 100 ml) |                         | <3*                       |
| <b>Physical</b>             |                         |                           |
| Color                       | 5                       | 50                        |
| Odor                        | Unobjectionable         | Unobjectionable           |
| Taste                       | Unobjectionable         | Unobjectionable           |
| Turbidity                   | 5 units                 | 25 units                  |
| Total Solids                | 500 mg/L                | 1,500 mg/L                |

NOTE: \* Less than three Coliform organisms per 100 ml if E.Coli is absent.

SOURCE: Schedule 2, Public Health (Drinking Water) Regulation – Prepared for inclusion as at 1/1/1985.

#### Environment Management Plan

60. The Permit Holder shall submit its Environment Management within three (3) months from the date of amendment of this permit to the Director for Approval. The EMP should cover waste stream produced through this development of this project, waste management strategies, management and monitoring programmes of all phases of development and all levels of impacts and their mitigation measures.
61. The Permit Holder shall undertake monitoring of the waste discharges during the logging/log salvaging operation, oil palm development phase and palm oil processing phase. The monitoring shall cover all levels of impacts on environmental quality (water, air and land) including noise emission and the measures taken to minimize the impacts.
62. The Permit Holder shall conduct its environmental monitoring programs in accordance with the approved EMP. The monitoring programs should also cover monitoring requirements under this permit.

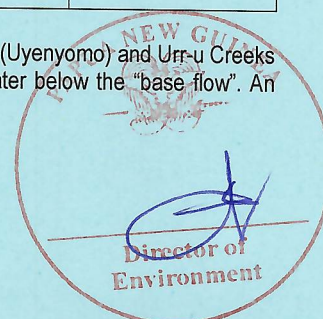
#### Water Quality

63. The Permit Holder shall conduct monthly Water Quality Monitoring in relation to parameters specified in Table 3 and 5 and conduct an inspection to determine effects of wastewater discharge and the ecological effects (if any) of the water extraction activity on Mawit Creek, Urr-u Creek, Kimange (Uyenyo) and Nagam River and any other surface water that exist with the premises and report the results (including records of volume of water extracted) in its Environmental Performance Report. The monitoring program shall be carried out accordance with the requirements in Table 6 and with respect to the parameters in Table 3 and 5 above.

**Table 6 – Fresh Water Quality Monitoring Program**

| Sampling Location                                                                                | Description                                                                                                            | Frequency |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Domestic Wastewater</b>                                                                       |                                                                                                                        |           |
| A location 50m upstream of Discharge Points (1), (3), (4), (5) of (Mawit Creek, and Nagam River) | Control Site. Assess background water quality of Mawit Creek and Nagam River prior to contact with domestic wastewater | Monthly   |
| A location 10m downstream of Discharge Points (2), (4), (5), (6)                                 | Sampling Site. Assess effects of domestic & Industrial wastewater quality after discharge.                             | Monthly   |

64. The Permit Holder shall carry out monthly monitoring on the flow rate of Mawit, Kimange (Uyenyo) and Urr-u Creeks to ensure that the water extraction rate does not reduce the volume of the surface water below the "base flow". An



assessment of the ecological effects should be conducted where the flow rate of the surface water is 10% higher than the base flow.

### **Reporting**

65. The Permit Holder shall submit an Environmental Performance Report to the Director at the end of each calendar year. The report shall include but not limited to -
- (a) raw data (analysis by certified laboratories) from the effluent and water quality monitoring programs,
  - (b) interpretation of raw data,
  - (c) incidence of non-compliance and reasons, and
  - (d) status of compliance with the Waste Management Plan and other conditions of this permit.

