

**The PROJECT FOR IMPROVEMENT OF GULU MUNICIPAL CONSTRUCTION ROADS
IN NORTHERN UGANDA**

Monitoring Form (Construction Phase)

Reporting Period: 30th June 2017 ~ 10th June 2019

Reporter: Ministry of Works and Transport (MoWT)

Reporting for: April 2019 (Monthly)

I. Pollution

1. Air Pollution

(1) Measurement

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Standard in Uganda	Referred Intl./3 rd country Standards	Location	Frequency	Evaluation
SO ₂	µg/m ³ (24h)					Not measured . , So far no problem can be seen.	Quarterly <i>*waiting for delivery of measurement installations</i>	<input type="checkbox"/> A
CO	Mg/m ³ (24h)				<input type="checkbox"/> B			
NO ₂	µg/m ³ (24h)				<input type="checkbox"/> C			
TSP	µg/m ³ (24h)							
Pb	µg/m ³ (24h)							

※1: The Environment Management and Co-operation Act (1999)

(2) Observation and Hearing

Monitoring Item	Monitoring Result	Measurement to be taken	Frequency	Evaluation
Sprinkling of water on the road in the construction site	Done	Frequent watering along the construction site. Watering minimum three times a day.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B
No idling of equipment and machinery in the construction site	None	Operators are well educated through the safety meeting conducted daily and monthly by the Contractor.	Monthly	<input type="checkbox"/> C
Physical observation of the dust around the construction sites	Dust can be seen during a strong blast wind.	Frequent watering along the construction site. Watering minimum three times a day.	Monthly	
Driving speed of the construction machinery and vehicle in the	Properly controlled	Drivers are well educated through the safety meeting conducted daily and monthly	Monthly	

**The PROJECT FOR IMPROVEMENT OF GULU MUNICIPAL CONSTRUCTION ROADS
IN NORTHAN UGANDA**

construction sites		by the Contractor.	
Usage of dust cover sheet on the truck	None	So far not required.	Monthly
Usage of dust control equipment at quarry plant	Properly applied	Watering was conducted on the vibration feeder.	Monthly

2. Water Pollution

Item	Unit	Kaunda Ground Reported on 11-Apr-18	Pakiri Quarry reported on 05-Feb-18	Standard in Uganda	Referred Intl. Standards (WHO) ^{*3}	National Standard for potable water	Location	Frequency	Evaluation
pH	---	6.82	6.8	6.0-8.0 ^{*1} 6.5-8.5 ^{*2}	N/A	5.5-9.5	Boreholes near the construction site	Monthly	<input checked="" type="checkbox"/> A
EC	μS/cm	234	356	2500μS/cm ^{*2}	N/A	2500			<input type="checkbox"/> B
Turbidity		2.12	4.0			2.5			<input type="checkbox"/> C
Total dissolved solids	mg/l	149.76	240			1500			
Total Alkalinity (as CaCo3)	mg/l	76	120			500			
Magnesium Mg2	mg/l	15.36	28.0			100			
Calcium Ca2+	mg/l	16	40.0			150			
Hardness total CaCo3	Mg/l		68			600			
Iron	mg/l	0.000	0.020	10 mg/l ^{*1} 1 mg/l ^{*2}	N/A	0.3			
Total suspended solids	mg/l	0	0			0.0			
Chloride Cl	mg/l	114	20			250			
Nitrate N	mg/l	0.35	0.0			45			
Bi-Carbonates CaCo3	mg/l	92.72	120			500			
Colour	Ptco	11	24			50			

**The PROJECT FOR IMPROVEMENT OF GULU MUNICIPAL CONSTRUCTION ROADS
IN NORTHAN UGANDA**

Sulphate	mg/l	0	10			400			
Fluoride	mg/l	0.0	0.03			1.5			
Faecal Coliforms	CFU/100 ml		0			0			
Total Coliforms	CFU/100 ml	'---	0			10			
Escherichia Coliforms	CFU/100 ml	0	'---			0			
BOD	mg/l			50 mg/l	N/A				
COD	mg/l			100 mg/l ^{※1}	N/A				
Oil	mg/l			10 mg/l ^{※1}	N/A				
Ammonia	mg/l			10 mg/l ^{※1} 1 mg/l ^{※2}	N/A				
Temp	°C			20-35°C ^{※1} 25°C for ^{※2}	N/A				

Item	Unit	Upstream side of Gulu Ave inspected on 30-Apr-19	Downstream side of Awere Rd inspected on 30-Apr-19	Standard in Uganda	Referred Intl. Standards (WHO) ^{※3}	Location	Frequency	Evaluation
Turbidity	mg/l	Slightly brown colour but not turbid.	Slightly brown colour but not turbid.	Compare the date between upstream and downstream MoFPED and the construction point	N/A	Downstream side from the construction sites in the Pece River	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C

※1 The National Environmental (Standards for Discharge effluent into water or land regulations(1999)

※2 Uganda Standard for drinking water(2008)

※3 Guidelines for drinking water quality 4th Edition (WHO 2011)

**The PROJECT FOR IMPROVEMENT OF GULU MUNICIPAL CONSTRUCTION ROADS
IN NORTHAN UGANDA**

3. Waste

Monitoring Item	Monitoring Result	Measurement to be taken	Frequency	Evaluation
Solid waste management at environmentally licensed site	Ok	Excavated waste materials are disposed at an approved disposal area by GMC.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
Reuse of the excavated soils as filling materials	Ok	Excavated materials are selected and reused.	Monthly	
Training to the employee regarding the waste management	Done (regularly conducted)	Workers are well educated through safety meetings conducted daily and monthly by the Contractor.	Monthly	

4. Soil contamination

Monitoring Item	Monitoring Result	Measurement to be taken	Frequency	Evaluation
Usage of oil tray at the construction site	No	Fuel and oil storage is protected from the inflow rain water by the bulkhead constructed.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C

5. Noise and Vibrations

Item	Unit	Nehru Rd on 24-Feb -19	Acholi Rd on 24-Feb-19	Paliri Quarry Site on 27-Mar-19	Standard in Uganda	Referred Intl./3 rd country Standards (Japan)	Location	Frequency	Evaluation
Noise Level	dB	71.2	69.5	73.1 Less than 114 dB for the limit of Quarry site.	70dB(A): Road const., 114dB(C):Blasting	65dB(A): Road const. 85dB:Const ^{※1}	Road construction site, asphalt plant, and quarry plant	Quarterly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
Vibration Level	dB	---	---	---	N/A	70dB(A)			

**The PROJECT FOR IMPROVEMENT OF GULU MUNICIPAL CONSTRUCTION ROADS
IN NORTHAN UGANDA**

※1 less than 65dB of noise limitation is applied for the daytime noise by traffic in the area categorized as “C” where having commercial, industrial, and living facilities in Japan. Specific standards for the blasting noise are not established, but general construction noise limit is not more than 85dB, while limitation value recommended by the Japan Explosives Industry Association is more than 100dB

II. Natural Environment

10. Ecosystem

Monitoring Item	Monitoring Result	Measurement to be taken	Frequency	Evaluation
Interview to the inhabitants living along the Pece River about significant changes on the ecosystem identified by them	None	No special action was taken.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C

III. Social Environment

Item	Monitoring Item	Monitoring Result	Measurement to be taken	Frequency	Evaluation
16. Land use and local resource	Minutes of the sensitization workshop with community regarding the condition of the pavement, duration of the aggregate plant etc.	Can be obtained from MDF offices. Construction schedule was announced to the public through the local radio station weekly	Representative of the stakeholders (Municipal Development Forum) held communities meeting frequently.	Month when conducted the sensitization workshop	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
17. Water use	Advance notice to the inhabitants and citizens about temporary cutoff of the water pipe.	Done	Advance notice was given by NWSC.	Month when conducted announcement.	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
23. Landscape	Number of trees cut and replanted on the roadside	So far only 18 trees were cut but not yet replanted.	Prior approval was sought to GMC before removal of the existing trees.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
24. Gender and 25. Children's right.	Accessible pass way for the students around the schools	Provided	Temporary access is provided during the works.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
	No child labor who are under 18 years old.	.None	The Contractor prohibits employing the child labour.	Monthly	
26. Infectious disease like HIV/AIDS.	Record of the Sensitization workshop to the workers by HIX/AIDS focal persons of GMC	Ok	Sensitization workshops were conducted on 31-Mar-18 and 25-Aug-18.	Month when conducted the sensitization workshop	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
	Distribution of condom	Done	1000 pcs of	Monthly	

**The PROJECT FOR IMPROVEMENT OF GULU MUNICIPAL CONSTRUCTION ROADS
IN NORTHAN UGANDA**

	to workers.		condoms were distributed to the workers in each Workshop.		
27. Working conditions, and occupation safety.	Record of the safety training to the workers and distribution of the emergency action plan	On 27-Apr-19, the Monthly Safety Meeting was conducted at Pakiri Quarry site for workers by the Contractor. In the meeting, general health and safety issues were discussed.	Safety trainings were conducted during the safety meetings conducted daily and monthly. Contents of the monthly safety meetings were recorded by the Contractor.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
	Distribution of the safety tools to the employees such as goggle, groves, etc.	Done	Distributions of PPEs were recorded by the Contractor.	Monthly	
	Periodical maintenance record of the equipment and machinery.	Regularly Done	Daily and Monthly checks for the equipment and plants were carried out and the monthly maintenance records were kept by the Contractor.	Monthly	
	Allocation of the First Aid Kit(FAK) at construction site and camp yard.	Ok	FAK is provided at the storeroom of the Base camp and Pakiri Quarry site.	Monthly	
28. Sanitation	Condition of the temporary toilets established in the construction sites and camp yard	Ok	The Contractor had agreements of several property owners where the workers can use their toilet facilities in the construction site.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
29. Accident	Records of the accident and countermeasures.	Done	The Contractor has recorded accidents in his Monthly Safety Report.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C
	Establishment of the barricade, flagmen around the construction sites	Ok	Daily safety meeting was conducted every morning prior to start the works which include arrangements of traffic diversions.	Monthly	
	Construction of the traffic safety facilities	Done	Construction site was blocked by	Monthly	

**The PROJECT FOR IMPROVEMENT OF GULU MUNICIPAL CONSTRUCTION ROADS
IN NORTHAN UGANDA**

	such as roundabout, cat's eye, rumble strips, bump, etc.	Construction schedule including traffic diversion plan was submitted to the Police Office and obtained an approval prior to start the works in weekly basis.	using color-corns and safety tape and prohibiting third parties to go inside of the working area.		
	Safety driving instruction to the driver by traffic police.	So far no instructions given by the traffic police.	Drivers were educated with driving manner by the Contractor through the daily and monthly safety meeting conducted routinely.	Month taken the instruction	
	Overloading of construction materials on the truck.	Not observed	Drivers were educated with driving manner by the Contractor through the daily and monthly safety meeting conducted routinely.	Monthly	
	Safety measures at quarry sites such as advance notice of blasting by siren, use of blasting mat or sheet.	Well done	Quarry operation including blasting operation was made in accordance with the Contractor's Quarry Operation Plan.	Month when operating crushing plant	
Common	Records of complains and grievance management if any.	Ok	Letters filed by the Contractor.	Monthly	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C

Evaluation: "A"=Confirmed as no problem; "B"=To be re-examined; "C"=To be solved

IV. Obstacles

Obstacles	Place	Relocation / Removal status	Time of relocation	Payer/Payment status
Small Housing (Hut)	Peter Teko Rd	Two nos. of grass thatched huts were collapsed before starting negotiation. Land compensation was agreed between the Land owner and GMC.	GMC cleared the site on 18 th April 2019 and handed over the site to the Contractor.	GMC/Done Payment for compensation was made on 3 rd May 2019

**The PROJECT FOR IMPROVEMENT OF GULU MUNICIPAL CONSTRUCTION ROADS
IN NORTHERN UGANDA**

		There was no complains made by the public.		
Graveyard	Acholi Rd	Removal completed. There was no complains made by the public.	7 th July 2018	GMC/Done. Payment for compensation was made in two phases on 6 th July 2018 and 3 rd January 2019.
Public toilet	Acholi Rd	Removed by GMC. There was no complains made by the public.	13 th December 2018	GMC/ No compensation required
Market Fence	Jomo Kenyatta Rd & Awere Rd	Removed by GMC There was no complains made by the public.	22 nd December 2018	GMC/ No compensation required
*Two numbers of elephant monuments mounted at the entrance of the main market.	Awere Rd	Remained.	—	—

*Since the statue of the elephant is the monument of the market, it was decided that the statue will be preserved by the meeting between GMC and MoWT

Land Compensation made at the end of Peter Teko Road

made on 23-May-19

Locations	Owner	Ref. Nos.	Items obstructed	Residents inhabited	Size / Q'ty	Compensations					
						Agreement	Agreement made between	Signed on	Paid on	Paid by	
Land A	Landlord staying in Kampala	A1	Area of Drainage to be constructed	N/A	approx.50m2 (W2m x L25m)	Signed in Agreement A	GMC and Landlord	03-May-19	03-May-19	GMC	
		A2	Grass thatched hut No.1 obstructed to the drainage	Huts are appendices of the main building within Land A used by the same tenant / family. Residents stayed in the huts shifted to the main building. The tenant's name is Amoy Janet sister to Acytc Francis.	approx. dia.2.5m	Signed in Agreement B - collapsed at the end of 2018	WKK and LC 1 Chairman on behalf of Landlord	18-Apr-19	18-Apr-19	WKK	
		A3	Grass thatched hut No.2 with temporary bathrooms obstructed to the temporary access road		approx. dia.3.0m of the hut and approx.2.8m2 (1.2m x 1.2m x 2nos.) of the bathrooms	Signed in Agreement B	WKK and LC 1 Chairman on behalf of Landlord	18-Apr-19	18-Apr-19	WKK	
		A4	Grass thatched hut No.3 obstructed to the drainage		approx. dia.2.5m	Not required - collapsed at the end of 2017	---	---	---	---	
		A5	Area of Temporary access road	N/A	approx.250m2 (W10m x L25m)	Signed in Agreement B	WKK and LC 1 Chairman on behalf of Landlord	18-Apr-19	18-Apr-19	WKK	
Land B	Wetland / GMC	B1	Area of Drainage to be constructed	N/A	approx.60m2 (W2m x L30m)	Not required - area within the Wetland	---	---	---	---	
		B2	Bananas	N/A	7 stumps	Signed in Agreement B	WKK and LC 1 Chairman on behalf of Owner	18-Apr-19	18-Apr-19	WKK	
		B3	Cabbages	N/A	in numbers	approx. 300m2 (10m x 30m)	Signed in Agreement B	WKK and LC 1 Chairman on behalf of Owner	18-Apr-19	18-Apr-19	WKK
		B4	Area of Temporary access road	N/A	approx. 300m2 (10m x 30m)	Not required - area within the Wetland	---	---	---	---	