

### Environmental and Social Monitoring Form for Construction Stage

Item	Location	Parameter/ Means of Monitoring	Result (Average / Max / Total, etc.)	Standard (Legal / International Standard)	Frequency	Remarks
Air quality	Construction site	Visual inspection of mechanical condition and exhaust gas	Equipment in good mechanical condition.		Every day before working	Everyday all equipment are inspected before any activity.
	Construction site	Visual observation of dust	Dust emission are minimized by regular and controlled watering, especially on dry and Windy days.		Every day	Watering is being performed regularly through construction site in the following areas: Main - Camp, Quarry, Sub - Camp, Villages, Work Fronts including detours and critical areas. Every month we are monitoring the dust with equipment (ongoing)
		No. of complaint	There is no complaint.		Any time	Not yet reported during this period.
	Boundary of ROW nearest to construction site	SPM10	For the results of measurements please see the Main Camp, Quarry Lilumile 1-hr PM10 Monitoring by Dust Meter - 13-12-2018 in separate doc.  Average: 2.4 µg/m³, Max: 14 µg/m³ at Main Camp, Average: 112.5 µg/m³, Max: 656 µg/m³, at Quarry, Average: 16.3 µg/m³, Max: 26 µg/m³, at Lilumile.	0.02 mg/m³ (Japan, average 24h)	2 times in dry season and 2 times in rainy season	The countermeasures taken against the high level of dust at the Quarry were: the contractor has already provided the big plastic tanks to keep water and using during the crash process on quarry to avoid dust. At the Main camp, Singewe and Lilumile, the contractor provided signs for restricted park, speed limit, speed hams were installed in sensitive areas to reduce the impact. Note that, in dry season the contractor uses the water boozers to watering all sensitive areas and critical access.
		SO <sub>2</sub>	Not yet started monitoring measurements	0.04 mg/m³ (Japan, average 24h)		We have already sent a letter to the contractor to provide equipment.
		NO <sub>2</sub>	Not yet started monitoring measurements	0.10 mg/m³ (Japan, average 24h)		We have already sent a letter to the contractor to provide equipment.
Water Pollution	River, stream, reservoir and other public water body where construction works are executed.	Visual observation	There is no record of activities with high potential for water pollution. Note that now we are in rain season		Every Month	The quality of water from all existent boreholes is monitored by the contractor. We have already sent letters to the contractor saying quantities of extraction from the boreholes and surface water should be measured since they are not currently measuring it because of rainy season.
Noise	Along N-13	No. of complaint	There is no complaint.		Any time	Not yet reported during this period.
	Boundary of land plot nearest to the construction site	Noise Level	For the full results of measurements please see the Noise Monitoring 14 Dec 2018 in separate doc.  Ave.: 61.25 dBA, Max: 70.6 dBA in Leq(5min), Ave.: 63.65 dBA, Max: 74.9 dBA in Leq (15min) at Main Camp. (14 Dec 2018, 12:30pm to 12:45pm, Main Camp)  Ave.: 68.05 dBA, Max: 69.0 dBA in Leq(5min), Ave.: 70.5 dBA, Max: 73.8 dBA in Leq (15min) at Quarry near Jaw Crasher. (14 Dec 2018, 9:04am to 9:19am, Quarry)-	70dB (06:00-21:00) 60dB (21:00-06:00) (Japan, Trunk Roads)	Every Month	For sensitive areas where the values were high we have provided the countermeasures to reduce the impact, such as main camp Lilumile, Signs for restricted park, speed limit and speed hams were installed in.  As a reference, In terms of occupational health and safety purposes, the countermeasures were taken at the Quarry: - No one is allowed to be on the plant without the proper use of PPE(personal protective equipment); - Training was provided on the correct use of ear protectors; - The rotation of workers so that they are not exposed to the noise for too long.
	Sensitive Area (School, Hospital)		For the results of measurements please see the Noise Monitoring 14 Dec 2018 in separate doc.  Ave.: 55.05 dBA, Max: 71.0 dBA in Leq(5min), Ave.: 52.9 dBA, Max: 58.4 dBA in Leq (15min), at Lilumile.	55dB (Japan, Sensitive Area)		
General waste	Waste storage at construction site, Waste Disposal Site	Waste Oil and other construction waste	Store Condition		Every day	Tires, filters and used oils have been stored in drums containers in the storage area of the workshop. They are reusing the remnants of metals to produce signal board, funnel and others. (ongoing)
			Recycling Status			
			Way of recycle			
		General Waste	Recycling Status			
			Way of recycle			
			Way of treatment			After drinking the water, the cleaners (local people) take the empty bottles for reuse in their houses.
			Location of final disposal site			The general waste had as final destination the site landfill area and non biodegradable, were stored in proper area.
Ecosystem	Along N-13	Visual observation of animals (mammals, birds, reptiles, amphibians)	The presence of some butterflies, chameleons, grasshoppers, birds and millipede are observed. (See attachment : photo Evidence of Ecosystem)		Every half year (1 time in dry season and 1 time in rainy season)	Snakes and Foxes are being observed during night hours; but nothing unusual has been noticed.
Accident	Along N-13	Checking Traffic Accident Report	Two road traffic accidents occurred in December. One was involving the Client (ANE) and one the contractor (Sinohydro). Both were due to excessive speed combined with poor road conditions (mud/rain). No other vehicles were involved and there were no injuries.		Every Month	Follow up investigation and training of those involved has taken place
		Visual observation of accident with animals	No record of accident with animals			None to date
Land Acquisition	Along N-13	A: No. of land acquired/ B: to be acquired	A: 15 and B: 0	Progress Ratio: A/A+B	Every Month	15 parcels of land were acquired to date, for use as borrow pits. During the reporting period, only 4 of the 15 were under exploitation.
		A: No. of HHs received compensation/ B: HHs to be compensated	A: 202 and B: 0	Progress Ratio: A/A+B		202 PAPs were paid. In January 2018, ANE and TTC made the first visit with the following objective:: - Visit of the impact area of the project for the implementation of the RAP. - Verify and confirm the affected persons and property. - Explanations of compensation and signatures of compensation agreements. The compensation payments were made in two phases: The first from 31 May to 15 June 2018 where 185 PAPs were paid. The second between September 12 and 15, 2018 where 17 PAPs were paid.
		Complaint received	No record of complains during this period.	In general, all affected people		All affected people have received their compensation. (completed on 15/09/2018)

Photo Waste Storage and housekeeping



Storage area with spill containment base



Now is labelled to facilitate segregation



Storage area for Scrap, Metal



Storage area for contaminated soil





Temporary storage for Metal, Glass at Quarry



Storage area for used tyres



The site now is clean



The site now is clean



waste containers with covers



Storage for recyclable waste



## Photo Evidence of Ecosystem

### Butterflies



(at km 91+100) Diversion Road



(at km 107+200)

### Chameleons



(km 146+060 ) Diversion Road



(access to Main camp km 107+200)



**Millipede**



(at km 81+520)

**Grasshopper**



Engineer Office

**Bird**



Around Main camp

**Beetle**



Nearest bridge at km 85+200



**Snakes**



At km 111+000 (was observed at night)



At km 111+000 (was observed at night)