Environmental Monitering Form for Construction Stage

Attachment EN3

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		No observations on the gas exhaust. colorless gas, no eyes irritation was left		every day before working	In order to avoid air pollution, a watering schedule was drawn up, it was a question of watering the section concerned by the work twice a day.
	construction site	visual observation of dust		Dust observed during the passage of vihicles, and a dust observation at the Meiteing II quarry. The study was conducted in the dry season		every day before working	
	storage facilities for dust generating						
	boundary of ROW nearest to construction site	SPM10		1,88 – 812,33	50 µg/m3 (WHO, average 24h)	2 times in dry season and 2times in rainy season	
		SPM2.5		0;92 – 227,37	25 µg/m3 (WHO, average 24h)		
		SO2		0 – 0,39	0.30 mg/m3 (MOE, average 24h)		
		NO2		0	0.10 mg/m3 (MOE, average 24h)		
		O3		0,0009 – 0,051			
water quality	rivers including Sanaga river, streams and other public water bodies where construction works are executed	visual observation		Flow of four (04) watercourses disturbed by the works without preventing their circulation,; the works prevent the good circulation of five (05) watercourses.		every day	In order not to interfere with the flow of water, deviations were created during the construction of the hydraulic structures and the company was asked to avoid pouring the remains of concrete into the watercourse. In addition, the section of road has been the subject of a regular watering schedule.
		analysis using potable pH and turbidity meter					
		pH		4,5 – 6,3	6.5-8.5	when any pollution is suspected	To minimize river pollution, the following measures have been taken: regular watering of the work area, installation of a biodegradable waste pit, a stone watering system has been installed on the crusher and a toilet has been built on the site of the stone quarry. In addition, a borehole was built in Meiteing village as a compensation measure.
		TSS		0 – 10	25–100 (mg/l)		
		TURB		6,1 – 223	<5 (NTU)		
		MES		3 – 400	50 – 100 (mg/l)		
		COND		0 – 70	<400 (µS.cm–1)		
		BOD		0 – 166,6	1–10 (mg/l)		
		COD		0 – 200	1–8 (mg/l)		
		PLOMB		0,01 – 2,31	≤0,01 (mg/l)		
		CADMIUM		0	≤0,0005 (mg/l)		
		CHROME		0	≤0,05 (mg/l)		
		ZINC		0	≤3.00 (mg/l)		
		CUIVRE		0	≤ 1 (mg/l)		
		CF		60 – 4090	< 2000 (UFC/100 ml)		
noise	boundary of land plot nearest to the construction site	Noise level		36,66 – 89,96	60dB(06:00–18:00) 60dB(06:00–18:00) 60dB(06:00–18:00) (MOE, residential area)	*when noise/ vibration level exceeding the standards is suspected *when local residents complain	In order to avoid noise pollution, the working hours have been distributed so that the work is carried out during the hours when the populations are in the field.
vibration		vibration level		0 – 2,44	65Hz(05:00–17:00) 60dB(17:00–05:00)		
general waste	waste storage at construction site	slurry and other construction waste	discharged amount			every domain	The measure taken was the recruitment of an approved consultant (SATE SARL) for waste management on the site
			recycled amount	0			
			the way of recycle	Storage at the staff housing site in Mangaï and recovery of some for reuse.			
			treated amount	0			
			location of final disposal				
		general waste	discharged amount	0			
			recycled amount	0			
			the way of recycle	Storage at the staff housing site in Mangaï pending collection by SATE SARL.			
			treated amount	0			
			location of final disposal				
Hydrology	rivers, streams and reservoirs where construction works are executed	visual inspection on volume and speed of water flow		Flow of four (04) watercourses disturbed by the works without preventing their circulation,; the works prevent the good circulation of five (05) watercourses.		every domain	In order not to interfere with the flow of water, deviations were created during the construction of the hydraulic structures and the company was asked to avoid pouring the remains of concrete into the watercourse. In addition, the section of road has been the subject of a regular watering schedule.
	lot 1						

Ecosystem	lot 2 lot 3 lot 4	visual observation of animals, reptiles and amphibious	Palm rats (Xerus erythropus), dwarf mongooses (Helogale parvula), blue duikers (Cephalophus monticoles) and Cob defassa (Kobus ellipsiprymmus), common grasscutter (Thryonomys swinderianus), porcupine (Hystrix cristata), squirrel (Myosciurus pumilio), Gambian rat (Cricetomys gambianus) and African arthritis (artherurus africanus), reptiles (naja, monitor lizards, python, viper). Several species of fish inhabit the rivers of the region, there are species such as Tilapia (Oreochromis niloticus), Catfish (Clarias gariepinus), Common carp (Cyprinus carpio) and Kanga (Heterotis niloticus)		every half year (1 time in dry season and 1 time in rainy season)	Awareness continued on a quarterly basis by an NGO recruited by the company

**Remarks; Past trend and current status including remedial measures if necesary