

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, minimized - regular and controled watering, especially on dry and Windy days		Every day	Watering is being performed regularly throught construction site in the following areas: Main - Camp, Quarry, Sub - Camp, Villages, Work Fronts including detours and critical areas. (ongoing)
	Boundary of ROW nearest to construction site	No. of complaint		There are no complaints		Any time	Not yet reported during this period.
		SPM10		Not yet started monitoring measurements	0.02 mg/m ³ (Japan, average 24h)	2 times in dry season and 2 times in rainy season	The equipment has arrived from calibration. To date we are waiting to them to send us the manuals in English Language
		SO ₂		Not yet started monitoring measurements	0.04 mg/m ³ (Japan, average 24h)		N/A
		NO ₂		Not yet started monitoring measurements	0.10 mg/m ³ (Japan, average 24h)		N/A
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.		Every Month	The quality and quantity of water from all existent borehole the contractor is monitoring by conducting water anagnosis and they recording the quantities of water use. The water from River, stream the contractor is monitoring the quantities of extraction and they are searching for acredited company to conduct the water analysis. (ongoing)
Noise	Along N-13	No. of complaint		There are no complaints		Any time	Not yet reported during this period.
	Boundary of land plot nearest to the construction site	Noise Level		Not yet started monitoring measurements	70dB (06:00-21:00) 60dB (21:00-06:00) (Japan - Trunk Roads)	Every Month	The contractor has already provided the monitoring equipment. To date we are waiting to them to send us the manuals in English Language
	Sensitive Area (School, Hospital)			Not yet started monitoring measurements	55dB (Japan, Sensitive Area)		
General waste	Waste storage at construction site, Waste Disposal Site	Waste Oil and other construction waste	Store Condition	There are appropriate containers for diferent waste produced on site: Wast Oil - 200 L Drums; not appropriately stored. House keeping not satisfactory around the workshop Tires - Warehouse; Scrap, Metal - Warehouse containers. The Waste are stored correctly and cording to the Waste Management Plan of the project already approved.		Every day	Tires, filters and used oils were produced and 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	not yet			not yet
			Way of recycle	not yet			not yet
		General Waste	Recycling Status	not yel			not yet
			Way of recycle	not yet			not yet
			Way of treatment	Re-use (used by internal personal); Re-use in construction activities; Dumpsite.			The bottles were taken by the cleaners and reused as water drinking container and others they sell for communitie.
			Location of final disposal site	It's on going and almost finalized the process to define carefully with all parties involved in the project, the adequate desposal waste.			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, reptiles and amphibious		No record of perturbation or contamination of Fauna		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		No record of traffic accident at Construction Site		Every Month	Preliminary traffic accidents are reported within a maxumum of three days after occurance
		Visual obervation of accident with anim		No record of accident with animals			None to date
Land Acquisition	Along N-13	A: No. of land acquired/ B: to be aquired		A: 1 and B: 5	Progress Ratio: A/A+B	Every Month	A: 1 land was acquired during the Month at km 106+000 for borrow pit. B: 5 lands are in negotiations and all is for for borrow pit
		A: No. of HHs received compensation/ B: HHs to be compensated		A: 21 and B: 6	Progress Ratio: A/A+B		A: By contractor - 6 and Sub-contractor RAP 15. B: By contractor 6 and by Sub-contractor RAP 1
		Complaint received		In the places where the works will affect houses and other buildings, the owners require the payment of compensation before start of the work of the project. Sub-contractor for RAP has been on site assessing affected properties in the month oJanuary 2018.	In general, all affected people		There are 21 affected people already recived the compensation

Data Sheet for 1/4-hr TSP Monitoring by Dust Meter

Monitoring Location		Lilumile village			
Details of Location		Nearest school and health centre, road access			
Samplers Identifications and positions		Fernado Saide - HSO	Company	Sinohydro Corporation, Lda	
		Fidel Castro - SES	Company	Nippon Koei Mozambique, Lda	
Date of Sampling		16th October 2018			
Time of Sampling		15minutes of sampling			
Elapsed-time	Start Time	5:25pm			
Meter Reading	End Time	5:40pm			
Total Sampling Time (min.)		SP10 Level ($\mu\text{g}/\text{m}^3$)	Standard (Legal / International Standard)	Standard (Legal / IMozambique)	SPM2.5 Level(mg/m^3) Standard)
		coment			
5:25pm		0,112	0.02 mg/m^3 (Japan, average 24h)	0.15 mg/m^3 (Mozambique, average 24h)	0,088
5:26pm		0,111	0.02 mg/m^3 (Japan, average 24h)	0.15 mg/m^3 (Mozambique, average 24h)	0,087
5:27pm		0,100	0.02 mg/m^3 (Japan, average 24h)	0.15 mg/m^3 (Mozambique, average 24h)	0,081
5:28pm		0,083	0.02 mg/m^3 (Japan, average 24h)	0.15 mg/m^3 (Mozambique, average 24h)	0,071
5:29pm		0,063	0.02 mg/m^3 (Japan, average 24h)	0.15 mg/m^3 (Mozambique, average 24h)	0,054
5:30pm		0,082	0.02 mg/m^3 (Japan, average 24h)	0.15 mg/m^3 (Mozambique, average 24h)	0,070

5:31pm	0,055	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,050	
5:33pm	0,124	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,080	
5:34pm	0,071	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,061	
5:35pm	0,067	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,057	
5:36pm	0,062	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,050	
5:37pm	0,061	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,054	
5:38pm	0,200	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,113	
5:39pm	0,430	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,182	
		0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)		
		0.02 mg/m ³ (Japan, average 24h)			
Weather Conditions	Night				
Site Conditions					
Observations / Remarks					

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Record by:	<u>Fernando Silva</u>	<u>[Signature]</u>	<u>19/10/2018</u>
Checked by:	<u>Diego Castro</u>	<u>[Signature]</u>	<u>19/10/2018</u>

Data Sheet for 1/4-hr TSP Monitoring by Dust Meter

Monitoring Location		Lilumile village				
Details of Location		Drilling area construction activities				
Samplers Identifications and positions		Fernado Saide - HSO	Company	Sinohydro Corporation, Lda		
		Fidel Castro - SES	Company	Nippon Koei Mozambique, Lda		
Date of Sampling		16th October 2018				
Time of Sampling		15minutes of sampling				
Elapsed-time	Start Time	6:00pm				
Meter Reading	End Time	6:15pm				
Total Sampling Time (min.)						
		SP10 Level (mg/m ³)	Standard (Legal / International Standard)	Standard (Legal / Mozambique)	SPM2.5 Level (mg/m ³) Standard	coment
6:01pm		0,102	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,081	
6:02pm		0,042	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,050	
6:03pm		0,096	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,078	
6:04pm		0,086	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,076	
6:05pm		0,080	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,069	
6:06pm		0,058	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,049	
6:07pm		0,072	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,064	

Paul Saide

6:09pm	0,059	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,050	
6:10pm	0,099	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,080	
6:11pm	0,052	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,049	
6:12pm	0,073	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,064	
6:13pm	0,074	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,065	
6:14pm	0,067	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,050	
6:15pm	0,072	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,064	
Weather Conditions	Fine / Sunny / Cloudy / Rainy				
Site Conditions					
Observations / Remarks					

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Record by:	<u>Fernando Leite</u>	<u>[Signature]</u>	<u>19/10/2018</u>
Checked by:	<u>Paulinho</u>	<u>[Signature]</u>	<u>19/10/2018</u>

Data Sheet for 1/4-hr TSP Monitoring by Dust Meter

Monitoring Location		Quarry				
Details of Location		Nearest jaw Crasher				
Samplers Identifications and positions		Fernado Saide - HSO	Company	Sinohydro Corporation, Lda		
		Fidel Castro - SES	Company	Nippon Koei Mozambique, Lda		
Date of Sampling		16th October 2018				
Time of Sampling		15minutes of sampling				
Elapsed-time	Start Time	7:37pm				
Meter Reading	End Time	7:51pm				
Total Sampling Time (min.)						
		SP10 Level (mg/m ³)	Standard (Legal / International Standard)	Standard (Legal / Mozambique)	SPM2.5 Level (mg/m ³) Standard)	coment
7:37pm		0,376	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,145	
7:38pm		0,414	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,157	
7:39pm		0,103	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,057	
7:40pm		0,085	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,053	
7:41pm		0,561	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,190	
7:42pm		0,482	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,186	
7:43pm		0,657	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,244	

7:45pm	0,065	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,044	
7:46pm	0,608	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,216	
7:47pm	0,087	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,049	
7:48pm	0,204	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,106	
7:49pm	0,370	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,157	
7:50pm	0,415	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,179	
7:51pm	0,558	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,209	
Weather Conditions	Fine / Sunny / Cloudy / Rainy				
Site Conditions					
Observations / Remarks					

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Record by:	<u>Luís João</u>	<u>[Signature]</u>	<u>19/10/2018</u>
Checked by:	<u>Paulo Castro</u>	<u>[Signature]</u>	<u>19/10/2018</u>

Data Sheet for 1-hr TSP Monitoring by Dust Meter

Monitoring Location		Lipiche village				
Details of Location		Nearest Quarry				
Samplers Identifications and positions		Fernado Saide - HSO	Company	Sinohydro Corporation, Lda		
		Fidel Castro - SES	Company	Nippon Koei Mozambique, Lda		
Date of Sampling		16th October 2018				
Time of Sampling		15minutes of sampling				
Elapsed-time	Start Time	8:30pm				
Meter Reading	End Time	8:45pm				
Total Sampling Time (min.)						
		SP10 Level (µg/m³)	Standard (Legal / International Standard)	Standard (Legal / Mozambique)	SPM2.5 Level (mg/m³)	coment
8:30pm		0,067	0.02 mg/m³ (Japan, average 24h)	0.15 mg/m³ (Mozambique, average 24h)	0,062	
8:31pm		0,074	0.02 mg/m³ (Japan, average 24h)	0.15 mg/m³ (Mozambique, average 24h)	0,069	
8:32pm		0,081	0.02 mg/m³ (Japan, average 24h)	0.15 mg/m³ (Mozambique, average 24h)	0,075	
8:33pm		0,083	0.02 mg/m³ (Japan, average 24h)	0.15 mg/m³ (Mozambique, average 24h)	0,073	
8:34pm		0,098	0.02 mg/m³ (Japan, average 24h)	0.15 mg/m³ (Mozambique, average 24h)	0,085	
8:35pm		0,082	0.02 mg/m³ (Japan, average 24h)	0.15 mg/m³ (Mozambique, average 24h)	0,076	
8:36pm		0,090	0.02 mg/m³ (Japan, average 24h)	0.15 mg/m³ (Mozambique, average 24h)	0,076	

8:38pm	0,088	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,077	
8:39pm	0,086	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,078	
8:40pm	0,081	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,076	
8:41pm	0,078	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,073	
8:42pm	0,088	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,079	
8:43pm	0,086	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,078	
8:44pm	0,088	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,077	
Weather Conditions	Fine / Sunny / Cloudy / Rainy				
Site Conditions					
Observations / Remarks					

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Record by:	<u>Fouad Same</u>	<u>[Signature]</u>	<u>19/10/2018</u>
Checked by:	<u>Fidel Castro</u>	<u>[Signature]</u>	<u>19/10/2018</u>

Data Sheet for 1/4-hr TSP Monitoring by Dust Meter

Monitoring Location		Lione Campsite				
Details of Location		Nearest workshop				
Samplers Identifications and positions		Fernado Saide - HSO	Company	Sinohydro Corporation, Lda		
		Fidel Castro - SES	Company	Nippon Koei Mozambique, Lda		
Date of Sampling		16 th October 2018				
Time of Sampling		15minutes of sampling				
Elapsed-time	Start Time	9:30pm				
Meter Reading	End Time	9:45pm				
Total Sampling Time (min.)						
		SP10 Level (µg/m ³)	Standard (Legal / International Standard)	Standard (Legal / Mozambique)	SPM2.5 Level (mg/m ³) Standard)	coment
9:32pm		0,066	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,064	
9:33pm		0,075	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,064	
9:34pm		0,070	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,065	
9:35pm		0,068	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,064	
9:36pm		0,071	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,063	
9:37pm		0,079	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,069	

9:38pm	0,073	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,066	
9:40pm	0,069	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,064	
9:41pm	0,066	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,061	
9:42pm	0,069	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,066	
9:43pm	0,068	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,061	
9:44pm	0,071	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,067	
9:45pm	0,069	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,066	
9:46pm	0,074	0.02 mg/m ³ (Japan, average 24h)	0.15 mg/m ³ (Mozambique, average 24h)	0,069	
Weather Conditions	Night				
Site Conditions					
Observations / Remarks					

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Record by:	<u>Senam Sime</u>	<u>[Signature]</u>	<u>19/10/2018</u>
Checked by:	<u>Fidel Aboiso</u>	<u>[Signature]</u>	<u>19/10/2018</u>

Noise Monitoring Program

Details of the activity

Name of Organizer	Sinohydro Corporation, Lda
Date	16 th October 2018
Time	5:25pm to 9:45pm
Venue	
Programme	Noise monitoring activity
Noise Control Measures Adopted	Sampling

Noise Monitoring equipment and personnel

Sound Level Meter	Brand	Model
	Smart Sensor Digital sound	AS8153
Noise Monitoring Staff	Name	Position
	Fernando Saide	HSO
	Fidel Castro	SES

Noise Monitoring results

Location of Noise Monitoring Point	Lilumile – nearest school and health centre						
Time Period (e.g. 8pm-8:15pm)	Background noise level (measured before the activities)	Noise level of the activity (dBA)					
		in Leq(5min)			in Leq(15min)		
		Min	Ave	Max	Min	Ave	Max
5:25pm to 5:40pm					52.08	58.04	64.0
Coment:							

Location of Noise Monitoring Point	Drilling area construction activities						
Time Period (e.g. 8pm-8:15pm)	Background noise level (measured before the activities)	Noise level of the activity (dBA)					
		in Leq(5min)			in Leq(15min)		
		Min	Ave	Max	Min	Ave	Max
6:00pm to 6:15pm					60.8	64.25	67.7
Coment:							



Location of Noise Monitoring Point	Quarry (nearest Jaw Crasher)						
Time Period (e.g. 8pm-8:15pm)	Background noise level (measured before the activities)	Noise level of the activity (dBA)					
		in Leq(5min)			in Leq(15min)		
		Min	Ave	Max	Min	Ave	Max
7:36pm to 7:51pm		60.0	63.65	67.3	63.6	68.05	72.5
Coment:	The max level increased when dumping stones in jaw crusher						



Location of Noise Monitoring Point	Lipiche village nearest Quarry						
Time Period (e.g. 8pm-8:15pm)	Background noise level (measured before the activities)	Noise level of the activity (dBA)					
		in Leq(5min)			in Leq(15min)		
		Min	Ave	Max	Min	Ave	Max
8:30pm to 8:41pm		37.7	53.7	69.7	37.7	48.8	59.9
Coment:							

Location of Noise Monitoring Point	Lione Campsite						
Time Period (e.g. 8pm-8:15pm)	Background noise level (measured before the activities)	Noise level of the activity (dBA)					
		in Leq(5min)			in Leq(15min)		
		Min	Ave	Max	Min	Ave	Max
9:30pm to 9:45pm		34.0	54.2	74.4	34.3	51.65	69.0
Coment:	The max level increased when truck driving nearest sample position						

Fernando Fide
19/10/2019

Paulo Lobo
19/2019/10



Water Quality Monitoring - Km 115, Chicalo River

Location		Km 115, Chicalo river		
Date		17 th October 2018		
Start Time (hh:mm)		5:42pm		
Weather		Sun		
Sea Conditions		N/A		
Tidal Mode		N/A		
Water Depth (m)		N/A		
Monitoring Depth		Surface	Middle	Bottom
Salinity		N/A		
Temperature	(°C)	N/A		
DO Saturation	(%)	N/A		
DO	(mg/l)	N/A		
Turbidity	(NTU)	Only visual observation		
SS Sample Identification		N/A		
SS	(mg/l)	N/A		
Observed Construction Activities	<100m from location			
	>100m from location	The water from River stream the contractor is monitoring the quantities of extraction.		
Other Observations		The colour of water is not clean.		
				

Juan Carlos Salda
19/10/2018

Fred Castro
19/10/2018

Water Quality Monitoring - Km 142, Lunguena river

Location		Km 142, Lunguena river		
Date		17 th October 2018		
Start Time (hh:mm)		11:00		
Weather		Sun		
Sea Conditions		N/A		
Tidal Mode		N/A		
Water Depth (m)				
Monitoring Depth		Surface	Middle	Bottom
Salinity		N/A		
Temperature	(°C)	N/A		
DO Saturation	(%)	N/A		
DO	(mg/l)	N/A		
Turbidity	(NTU)	Only visual observation		
SS Sample Identification		N/A		
SS	(mg/l)			
Observed Construction Activities	<100m from location			
	>100m from location	The water from River stream the contractor is monitoring the quantities of extraction.		
Other Observations		The colour of water is not clean.		
				

Fernando Szwed
19/10/2018

Fred Castro
19/10/2018