

Semi-Annual Report
Jan – June 2017

VIE: Renewable Energy Development and
Network Expansion and Rehabilitation for Remote
Communes Sector Project
(Nam Nghe Hydropower Project)

CURRENCY EQUIVALENTS

(as of 30 June 2017)

Currency unit	–	Vietnamese Dong (VND)
VND1.00	=	\$0.0000473
\$1.00	=	VND22,330

ABBREVIATIONS

ADB	-	Asian Development Bank
NPC	-	Northern Power Corporation
PDPMB	-	Power Development Project Management Board
DONRE	-	Department of Natural Resources and Environment
EMS	-	Environmental Monitoring System
ESDC	-	Environment and Social Development Cell
EVN	-	Electricity Vietnam
IEE	-	Initial Environmental Examination
SONRE	-	Section on Natural Resources and Environment
VIE	-	Viet Nam

{WEIGHTS AND MEASURES}

MW	–	Megawatt
Km	–	Kilometer
km ²	–	square kilometers
l/s	–	litres per second
m	–	metre
m ³	–	cubic metre
m ²	–	square metre
mm	–	millimeter
s	–	seconds
mg/l	–	milligram/litre
dBA	–	{Definition 3}

NOTE

In this report, "\$" refers to US dollars unless otherwise stated.

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I. INTRODUCTION

1. PROJECT INFORMATION

1. The Nam Nghe hydropower project is a sub-project of Loan 2517-VIE: Renewable Energy Development and Network Expansion and Rehabilitation for Remote Communes Sector Project which is funded by the Asian Development Bank (ADB). The implementing agency of this sub-project is Northern Power Corporation (NPC).
2. The Nam Nghe hydropower plant is constructed for rural electric system in Hua Bum Commune, Nam Nhun District, Lai Chau Province. Project location
3. The project is located in Nam Nghe stream in Hua Bum commune of Nam Nhun district, Lai Chau province (Figure 1) and will not affect the villages within the project implementation of Nam Nghe) and Nam Nghe (immediately down stream of the hydropower plant). It has been constructed on the Nam Nghe River which is the influent level I of Nam Bum river. The river originated from a mountainous region with the height of more than 1,000 m at coordinates of 103°56'55.5" East and 22°24'30.7" North. The rivers flow from the North toward the South, then merge into Nam Bum river. The Nam Nghe hydropower project is positioned at 103°56'44.4" East and 22°23'43.5" North. The reservoir of the Nam Nghe hydropower project has a small catchment area of 32,1 km².
4. The reservoir, headwork route, and energy route are in Nam Nghe, Pa Mu village, Hua Bum Commune, Nam Nhun District, Lai Chau Province.



Figure 1: Project location in the region

5. The sub-project is part of the small hydropower plant development plan in Lai Chau up to 2020, which was approved through Decision No 986/QĐ-UBND on July 17, 2008 by the PPC. Supplemented Decision No. 888/ QĐ-UBND 27 August, 2012 of the PPC.

Main work items

6. The Nam Nghe Hydropower sub-project will have 7.5 MW generating capacity and an annual average electricity production of 36,53 million KWh. The main elements are shown in Figure 2 and 3 and described as follows:

- A dam with maximum height of 20,5 m and reservoir with volume of 44.500m³;
- A canals long of 3.110m;
- A penstock of 780m in length, pipe section of 1.2 m and pipe-thickness from 1.2 to 2.0 cm;
- A powerhouse with three Francis - horizontal turbines;
- Outdoor electricity distribution station;
- A 35-KV transmission line to transfer electricity to the national grid through Muong Te-Nam Nhun; and
- Administration and management building

7. Below the dam, all the project components are on the right bank of the Nam Ngh river. The power from the Nam Nghe hydropower plant will provide electricity to the Hua Bum, Bum Nua, Pa VeSu Commune with a population of 6,880 persons, mostly ethnic Thai, Mong, Ha Nhi, Mảng.

8. To connect the Nam Nghe hydropower plant to the national electricity system, a new 35- kV line connection line is required, including one circuits: about 0.3 km in length, wire AC-70 35kV lines connected to Hua Bum – Muong Te.

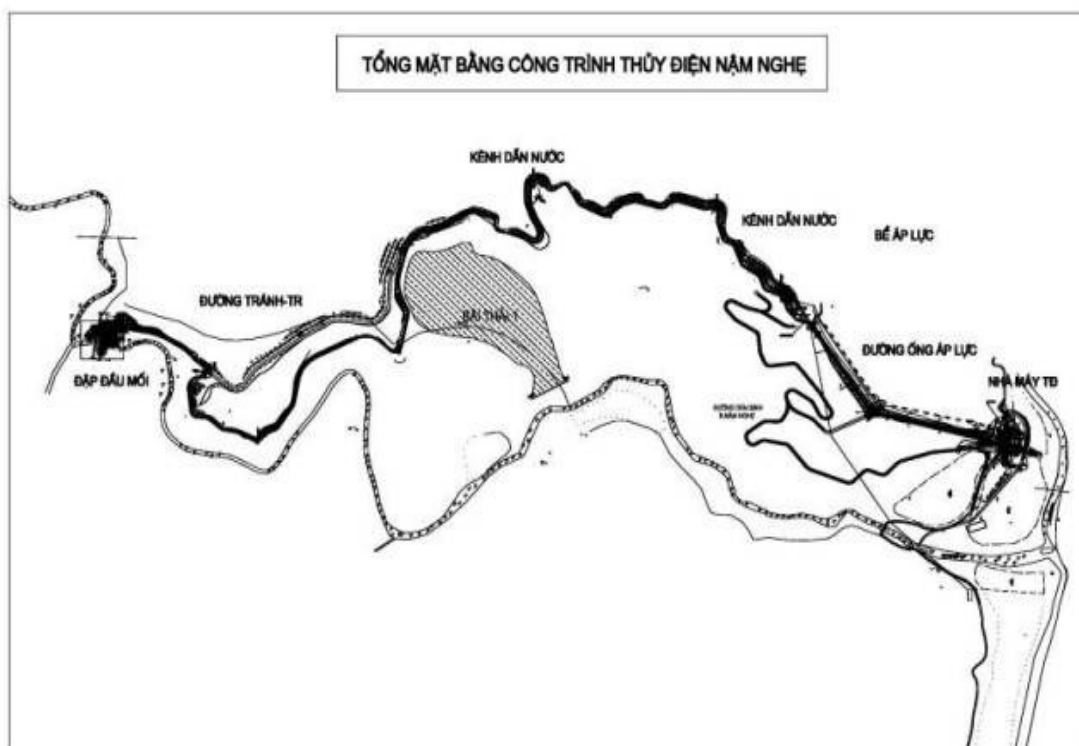
9. The water delivery system of the dam has a calculated head of 330,56m, which is designed to deliver a maximum of 2,74m³/s totwo turbines and generate 7.5 MW of power. As a result of the project, in the dry season, the Nam Nghe River will experience loss of water flow for approximately eight to nine months over the 5 km of the river between dam and powerhouse.

10. During low flow months with a flow rate of less than 0.5 m³/s, the plant will operate for only a few hours per day to provide for peak hour power requirements. The water regime will change immediately downstream of the dam.

11. Various access roads are required by the project:

- At the dam, 1.2 km of road with the upgrading of existing track road and about 800m temporary road on right and left bank for temporary construction access;
- In the surge tank, 420-m investment to serve the construction and subsequent operation;
- For powerhouse, upgrading of the existing 200-m track road to provide permanent access to the plant; and
- A 640-m track road along the penstock route for construction purposes.

Figure 2: Master Plan of Nam Nghe Hydropower Project



12. In addition to the main components, there are also auxiliary components for the Nam Nghe Hydropower project which are described in the table below:

Auxiliary components

Components	Area (ha)
Accommodation of workers	1.15
Concrete batching plant	0.4
Base crushing and screening material storage yard	0.75
Steel formwork base	0.4
Blasting materials warehouse	0.04
Park management and operation	0.6
Inventory	0.15
Base of underground components	0.5
Maintenance base and parking area	0.2
Oil storage	0.1
Installed machine base	0.03
Reserve land	0.4

13. The campsite is along the highway and close to local communities in Pa Mu village.

2. PURPOSE OF ENVIRONMENTAL MONITORING

14. The Power Development Project Management Board (PDPMB) of the Northern Power Corporation has been appointed as the department to undertake the management of the implementation of sub-projects of Loan 2517-VIE. The PDPMB consists of the Hydropower Section, directly monitoring the implementation of Nam Nghe Hydropower project. The PDPMB is also tasked to establish and assess the environmental performance of the sub-project and its contractors with a view of improving the environmental performance of the overall project.

15. Environmental Monitoring report presents the results of monitoring the construction of hydropower projects Nam Nghe period from Jan to June 2017. The document reports on the implementation of the project, in accordance with Accounting environmental management plan (EMP) , and is also consistent with the requirements of the environmental regulations of the Government of Vietnam. This report also aims to present the corrective measures or remedial environmental impacts observed during monitoring .

16. The PDPMB reviewed and monitored the implementation of the EMP based on the Initial Environmental Examination (IEE) report, which was cleared by ADB. The Environmental Compliance and Monitoring Form and Environmental Monitoring Checklist provided by ADB were used to assess the compliance of the contractors with the EMP and with ADB's Environment Safeguards. Site visits were carried out to validate implementation of the mitigation measures.

17. The objectives of the monitoring are:

- ✓ Monitor the sub-project's compliance with Vietnam Technical Regulations and Law on Environment
- ✓ Monitor the sub-project's compliance with ADB's Environment Safeguards requirements

- ✓ Monitor compliance of the contractors with mitigation measures to address construction impacts on the environment as per Contract Conditions and the EMP
- ✓ Determine corrective actions to minimize negative impacts on the environment during the construction phase.

II. STATUS OF LEGAL & POLICY COMPLIANCE

18. The Environment Impact Assessment (EIA) of Nam Nghe Hydropower project was approved by the People's Committee of Lai Chau District on 14 October, 2012. The IEE was also endorsed by ADB. The EMP as contained in the approved IEE was included in the bid document with the contractors. The responsibility of EMP implementation during the construction phase of the project was entrusted to the contractors of the project. The implementation of the EMP by the contractors is being monitored by the field officers of the PDPMB of NPC.

19. The Nam Nghe Hydropower Project has secured the following licenses and clearances for its implementation:

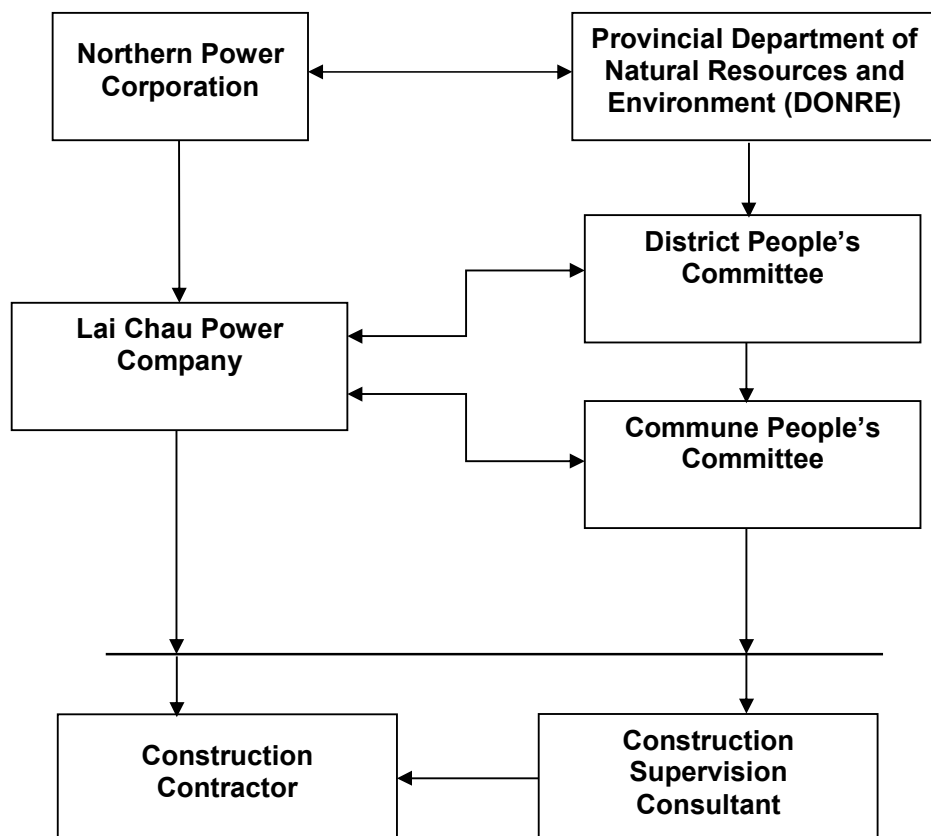
Table 1: Environmental Permits and Licenses Secured

License/Clearance	License/Clearance No.	Issued by	Date Issued
Approval of EIA	1417/QĐ UBND	People's Committee of Lai Chau Province	14 October, 2012
UXO license	10/2016/GP-SCT	People's Committee of Lai Chau Province	25/1/2016
Approving for alternative reforestation	1020/QĐ-UBND	People's Committee of Lai Chau Province	29 August, 2016
Hazardous waste Ownership registration	QLCTNH:12.000072.T	Lai Chau Provincial People Committee	16 th May , 2016
Extraction surface water license	Unfulfilled	Pending	

III. ENVIRONMENTAL MANAGEMENT SYSTEM

20. The Environment and Social Development Cell has not been created by NPC. Instead, a focal person on environmental matters has been appointed within PDPMB to audit the implementation of the EMP by the contractor and to coordinate activities related to the EMP implementation and monitoring. A monitoring system will be developed and implemented on a regular basis. Documentation of monitoring activities will be retained at the project site by the PDPMB.

21. Environmental management system is shown in the organizational chart as follow:



22. Parties in the EMS and respective responsibilities during construction & operation phases are presented in the table below.

Table 2: Parties and respective responsibilities in the EMS

Parties	Responsibilities
NPC/PMU	Manage for ensuring the implementation of the IEE and EMP
Construction Contractor	Implement contents of EMP following to the signed contract
Construction Supervision Consultant	Monitor the implementation of the EMP of the contractor and report to NPC/PMU
Provincial Department of Natural Resources and Environment (DONRE)	General management of natural resources and environment
District People's Committee	General management of natural resources and environment
Commune People's	General management of natural resources and environment

Parties	Responsibilities
Committee	

23. The following are the personnel assigned by NPC and the contractor to monitor compliance with environmental mitigation measures:

Table 3: List of contacts/members in EMS

Name of Personnel	Organization	Responsibilities
1/ Nguyen DucHieu 2/ Bui XuanQuyen 3/ Dao Quoc Duong	1/ Lai Châu Power Company 2/ Song Da commercial investment JSC. 3/ ToanPhat construction industry JSC.	Monitoring of dam
1/ Nguyen Thanh Tan 2/ Nguyen Viet Dam 3/ Nguyen Ngoc Tuat	1/ Lai Châu Power Company 2/ Song Da commercial investment JSC. 3/ Lung Lo Corporations build JSC.	Monitoring of canals
1/ Le Ha Tuyen 2/ Nguyen Van Cuong 3/ Le Van Mach	1/ Lai Châu Power Company 2/ Song Da commercial investment JSC. 3/ Binh Minh Investment Joint Stock Company Construction and VVV development and investment company shares.	Monitoring of factory

IV. WORK PROGRESS

24. Packages and construction contractors are listed in the table below.

Table 4: Information on packages and construction contractors

Construction Package	Description of work item in the package	Name of construction contractor	Contact
NPC-ADB - NN/W01	Construction of 35 kV line, 35/0.4 kV, 0.4kV substation	Duyen Ha Company Limited	0436621909
NPC-ADB - NN/ W02	Construction of 0.4 kV line	Duyen Ha Company Limited	0436621909
NPC-ADB -NN/W03	Construction of the headworks	Toan Phat construction industry JSC.	0435 379 424
NPC-ADB -NN/W04	Construction of headrace (sand trap, canal)	Lung Lo Corporations build JSC.	0435633582
NPC-ADB -NN/W05	Construction of penstock, powerhouse, tailrace, OPY substation, O&M house	Binh Minh Investment Joint Stock Company Construction and VVV development and investment company shares.	0435543180

25. Table below outlines the progress of the project construction:

Table 5 : Work progress until 30 June 2017

Project Component	Time started	Completion	Remarks
Construction of 35 kV line, 35/0.4 kV substation for unelectrified households	22/5/2015	100%	Complete
Construction of 0.4kV line for unelectrified households	22/5/2015	100%	Complete
Construction of the headworks	1/7/2015	50%	Contractor has been speeding up.
Construction of headrace (sand trap, canal)	30/6/2015	58%	Contractor has been speeding up.
Construction of penstock, powerhouse, tailrace, OPY substation, O&M house	30/6/2015	59%	Contractor has been speeding up.

V. ENVIRONMENTAL COMPLIANCE MONITORING

26. Environmental compliance monitoring is implemented by Construction Supervision Consultant and PDPMB to check if all construction activities implemented by Construction Contractors follow EMP, IEE and environmental impacts to local areas/local residents during construction.

27. Table below describes implemented mitigation measures for anticipated impacts from IEE as well as current environmental impacts. Compliance level and Effectiveness of the implemented mitigation measures from Construction Contractors are also assessed.

Lai Chau Power Company in collaboration with contractors and consultants to supervise construction contractor observed daily, check the level of compliance with environmental protection at construction sites with the naked eye. Report of the monitoring is sent to Lai Chau PC monthly.

Note:

- ***Compliance level** and effectiveness level could be ranged from 1 to 5 (1: very good; 2: Good; 3: Fair; 4: Poor; 5: very poor);*
- ***“Compliance level”** refers the actions which had been implemented to see if the actions follow proposed IEE or not. In **“Compliance level”** column, the consultant should decide marks ranged from 1-5; other than that, short passage is necessary to explain why ranking that mark.*
- *Could the impacts be reduced by mitigation measures which had been implemented? How is the impact reduced by that actions/mitigation measures? **“Effectiveness level”** reflects these two questions. Short passage is also necessary for explanation in this column.*

Table 6: Assessment of environmental compliance

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
Construction Phase							
Earthworks for new access roads and construction of penstock on steep slopes leading to erosion & encroachment	Slopes along access roads & penstock will be provided with: ✓ Catchments/ cut-off drains, silt traps & chutes to minimize soil erosion. ✓ Masonry retaining structures. ✓ Formation of sediment basins & slope drains.	Contractor built masonry, cut-off drains, silt traps	3	3	Soil flowing down to the river/ spring while digging.	At the unloading site, contractors must flatten the soil to save space and must apply measures to stop soil from flowing down to river (Lung Lo construction company)	Contractor agreed
	Maximum usage of material in fill areas.	Yes	1	1		Continue this measure	Contractor agreed
	Spoils planning particularly on steep slopes with bench terracing for high cut areas & avoidance of any erosion and runoff of material on down slopes.	Yes	2	2		At the spoil site, the contractor have to level the soil to provide more space for dumping and apply adequate methods to prevent soil being leaked to the stream.	Contractor agreed
	Planting grass and revegetation on disturbed areas and maintaining of landscaping.	Yes	3	3	Tree shall be planted only after construction works finished	Requested contractor to plant grass and tree to maintain ecology system at the affected are, maintain view after construction works finished.	Contractor agreed

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
Use of Borrow Materials with potential for loss and degradation of land	No earth will be borrowed from cultivable and arable lands. Borrowing to take place from barren, wastelands, & riverbeds. For new borrow areas, all measures will be taken to avoid loss of any productive soil. Any borrow areas will be refilled, re-vegetated & landscaped.	Earth materials were taken only from the site. There were no materials taken from agricultural land.	1	1		Continue this measure	
Taking of Quarry Materials with loss and degradation of land	Quarry materials will be obtained from existing operating sites with proper licenses & environmental clearances. New quarries to be opened only with permission of respective authorities.	Existing quarries were used by the contractor.	1	1		Continue this measure	Contractor agreed
Operation of construction equipment and construction activities and contamination of soils, loss of water quality & water pollution	Fuel storage & refueling will have adequate containment, away from water bodies/channel.	Conditions included in contracts. Careful monitoring	3	3	- Some fuel drums are left open without caring about oil spill. The signs of oil spill were found at the drilling machine around the section K14.	Lai Chau PC requests contractor to apply adequate methods for controlling the risk of oil spill immediately.	Contractor agreed (Lung Lo construction company)
	Equipment will be properly maintained.		3	3	Used oil barrels has not been collected and treated properly. Oil leakage still happening.	Contractor must control the collecting of oil barrels, stop oil leakage.	Contractor agreed (Lung Lo construction company)
	Precautions to be taken to prevent water pollution due to increased siltation & turbidity for weir site & road construction particularly in dry month when flows are low.	yes	1	1		Continue this measure	Contractor agreed

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
	Approved sites defined for storage & disposal of wastes materials	yes	2	2			Contractor (Lung Lo construction company) must take action immediately
	Any waste petroleum products will be collected, stored, & disposed of at approved sites.	Careful monitoring of conditions included in contracts herein.	1	1	Contractor collected the storage at approved sites	Continue this measure	Binh Minh Investment Joint Stock Company Construction; Lung Lo corporations build JSC; Toan Phat construction industry JSC)
Construction activities causing disruption of existing surface drains.	Appropriate rain-storm-water channels will be constructed.	Rain-storm water channels were provided at the access road, construction area, clue dam	1	1		Continue this measure	
Construction Camp & Residential colony. Social impacts & pollution from wastewater & solid waste	Construction camps will be located adjoining the dam and powerhouse sites & away from any settlement.	Construction camps are located far from residential communities.	2	2	Inappropriate location and lack of hygienic facilities of CW05 package of BinhMinh company	<ul style="list-style-type: none"> - Remove the worker camp to ensure a distance of 200m from any water bodies/course; - Wastewater will not allowed to discharged to natural streams; - Provide the hygienic 	Contractor agreed

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
						facilities such as toilet, garbage bins on the site	
	Manual labor will be employed locally.	The contractor hired 20-30 workers from the community.	1	1		Continue this measure	Contractor agreed
	Camps & residential colony will have properly designed sewage treatment system for wastewater effluent. Likewise, solid waste collection system will be employed.	Septic tanks are provided at the camps; Rain-storm water channels front of camps are blocked	1	1	- Some worker camps in very poor conditions that do not meet even with the lowest living standard; the tents consist of thin canvas. - There is no first aid medicine box and sanitation facilities are poor. On such notable site at the subcontractor in penstock construction work. The Mission requested LC-PC to work with all contractors to improve worker camps facilities within December 2016.	Requested Lai Chau-PC to work with all contractors to improve worker camps facilities within December 2016.	Contractor agreed Lung Lo corporations build JSC;
Emission from Construction Vehicles &	Emission levels of all construction vehicles & equipment will conform to Vietnamese emission standards.	Contractors were required to maintain construction vehicles & equipment regularly.	1	1	The result are in compliance with Vietnamese standard	Continue this measure	Contractor agreed

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
Equipment causing air pollution	Pollutant parameters will be monitored during construction.	Ambient air quality samplings at the site were conducted on 7May,2016. Results show compliance with Vietnamese standards.	1	1			Monitor and Contractor agreed
	Crushing, & concrete plants will be away from population centres at dam and powerhouse sites.	Concrete plants are located away from population centers.	1	1		Continue this measure	Contractor agreed
Dust particulates causing health impacts for workers and villagers	All precautions to be taken to reduce dust level emissions from batching plants & portable crushers at dam and powerhouse sites.	The construction site itself is located away from residential community.	1	1			
	Regular water spraying at all mixing sites & temporary service roads will be undertaken.		2	2	Water spraying on roads and dusty areas were not being undertaken by the contractor regularly	Contractor must do regularly	Contractor agreed (Binh Minh Investment Joint Stock Company Construction; Lung Lo corporations build JSC; Toan Phat construction industry JSC)
	All delivery vehicles will be covered with tarpaulin.		1	1		Continue this measure	Contractor agreed
Construction	All construction equipment & plants will conform to Vietnamese noise standards.	Yes	1	1		Continue this measure	Contractor agreed

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
activity Noise from Vehicles, Plant & Equipment causing noise pollution	All vehicles & equipment to be fitted with noise abatement devices.	yes	1	1		Continue this measure	Contractor agreed
	Construction workers will be provided with personal protection.	yes.	2	2	Loss of personal protective equipment for workers, particularly ear-mufflers for workers who use drilling machine.	Contractor must provide additional protective tools, especially ear-butt for workers using driller.	Contractor agreed Lung Lo corporations build JSC;
Noise pollution from any blasting activities at dam and power tunnel and penstock,	Any blasting works will be in accordance with Vietnamese Explosives Act.	There was blasting done on the damsite, intake gate, water channel and surge tank.	1	1			Contractor agreed
	No blasting between dusk & dawn.		1	1			
	Residents close by will be informed well in advance of blasting times.	Contractor informed residents the blasting times. The blasting works were been in accordance with Vietnamese Explosives Act.	1	1	Contractor informed the time of blasting to residents	Continue this measure	Contractor agreed
	Workers associated with blasting sites will be provided with earplugs, helmets & other personal safety devices.	Inclusion of measures in contracts	1	1			Contractor agreed
Construction of dam, reservoir, tunnel, penstock with loss of vegetation & tree cover.	No trees to be removed without prior approval.	Inclusion of measures in contracts	1	1			
	Compensation for lost trees on private land.	Trees that were removed were compensated.	1	1	Compensated for lost trees on private land	Continue this measure	Contractor agreed
	Planting grass and maintaining temporary construction areas, roads and other elements of the project.	Tree plantation is implemented on the slopes of dam, road	1	1		Trees plantation to be undertaken after construction	Contractor agreed

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
Work force during construction causing impacts to wildlife	Construction workers to be educated for wildlife conservation with no hunting & poaching to be allowed for workers.	Construction workers are not allowed to hunt or poach for wildlife in the area.	1	1		Continue this measure	Contractor agreed
Construction Activities & Accident Risks	All blasting sites will have warning & clearance signals. Site will be inspected prior/after blasting.	Inclusion of measures in contracts and follow up monitoring	1	1	All blasting sites had warning & clearance signals. Site were inspected prior/after blasting.		Contractor agreed
	Workers will be provided with helmets, masks, safety goggles, etc.	Inclusion of measures in contracts and follow up monitoring	2	2	Some workers were not wearing helmets, masks, safety goggles, etc	Require contractor to provide helmets, masks, goggles for workers.	Contractor agreed
	A readily available first aid unit will be available with dressing materials etc.	First-aid kit is available at the administration office. Contractor to enforce measures included in contract	2	2	Some contractor don't provide Emergency box and Medicines	Contractor requested sub-contractor to provide these.	Contractor agreed (Binh Minh Investment Joint Stock Company Construction and VVV development and investment company shares; Lung Lo corporations build JSC; Toan Phat construction industry JSC)

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
	Road safety education will be given to construction vehicle drivers.		1	1	All of drivers have license for driving	Continue this measure	Contractor agreed
	Traffic management will be ensured during road construction periods.		1	1		Continue this measure	Contractor agreed to implement
	Traffic Safety		2	2	- Traffic safety at entry road, 0,4 km length, of first construction works. - The access road suffers from high dust pollution under dry weather conditions and sludgy in raining day	- Install standard Warning signboard and fence at high risk areas. -Request PC Lai Chau and contractor apply adequate safety measures that might include conducting survey to identify the section with high risks and install standard warning boards and protective handrails and spray water to reduce dust pollution.	Contractor agreed (Binh Minh Investment Joint Stock Company Construction; Lung Lo corporations build JSC; Toan Phat construction industry JSC)
	Information dissemination will take place through the Commune's People Committee regarding activities causing disruption.		1	1			
Construction Activities causing disruption to Public Utilities	Any public utilities likely to be impacted, such as water supply pipe system, power/phone lines etc. must be relocated to suitable places, in consultation with local beneficiaries.	Pay attention to mind the power/ phone line of the powerhouse	1	1		Continue this measure	Contractor agreed
Any discovery of artifacts or articles of historical interest and importance	For all finds of an historical or cultural value, work will be stopped and the find reported to the nearest office of the Department Culture, Sport and Tourism or the Department of Culture and Information	There were no historical or cultural sites affected by the project.	1	1		Continue this measure	Contractor agreed

Impacts & location	Mitigation measures from IEE	Mitigation measures implemented	Compliance level	Effectiveness	Impact observed/ location	More action required & responsibilities	Contractor response
Generated impacts							
Excavation soil fall on the Nam Nghe stream -	No soil excavation area on Nam Nghe Stream	No soil excavation area on Nam Nghe Stream	3	3	<ul style="list-style-type: none"> - A large amount excavated soil has been dumped on to the river below in the W04 construction site. - The excavated soil has been dumped at the assigned spoil area, but no method had been applied to control soil leakage since the trucks unload the solids from high elevation and soil has been overtopped the cofferdam at the foot of the hill and leaked to the Nam Nghe River 	<ul style="list-style-type: none"> - Develop a general soil management plan to control excavated soil on the site; - Expand capacity of current disposal areas by increasing the height of protect wall around these areas - Remove excavated soil are scattered out Nam Nghe stream and transport to disposal areas 	Co (Binh Minh Investment Joint Stock Company Construction; Lung Lo corporations build JSC; Toan Phat construction industry JSC) Contractor agreed
Interrupt irrigation canal and impacts on cultivation activities of people in Pa Mu and Chang Chao Pa villages, Hua Bum commune	Not affecting irrigation and the impact on the farming activities of people in Pa Mu, Chang Chao Pa village, commune Hua Bum	Not affecting irrigation and the impact on the farming activities of people in Pa Mu, Chang Chao Pa village, commune Hua Bum	2	2	There are impacts on annual trees of 02 households. Contractor had cooperated with local authorities to make compensation for local people.	Stop the works that impact to households farming activities.	Contractor agreed Binh Minh Investment and Development JSC.

VI ENVIRONMENT EFFECT MONITORING

AMBIENT AIR QUALITY & NOISE QUALITY

28. Ambient air, noise and surface water sampling works were conducted on: May 15, 2017; by Center for Research and Consultants Environmental Technology.

29. Air and noise samplings are measured at the construction site, the construction of the dam area and Measured directly at the point where the concrete batching plant, and waste dumps to assess impact of air, noise by construction activities on local residents and existing workers. Results are analyzed by comparing with Vietnam standard as QCVN 05:2013/BTNMT – National technical Regulations on Ambient Air Quality, QCVN 26:2010/BTNMT – National Technical Regulations on Noise which are presented in the table below.

30. Air environmental monitoring is performed at locations adjacent to the construction site where is effected by construction and installation works as well as transport materials of the working. The air samples were taken and measured at the constructive areas to test the environmental protection of contractors to ensure that the contractor complies with the terms of environmental protection on the construction contract.

Table 5: Results of Ambient Air Quality Sampling

No	Parameter	Unit	Result		QCVN 05:2013/BTNMT	Remarks
			KK1	KK2		
1	Temperature	°C	32	32,4	-	Pass
2	Humidity	%	69,6	71,2	-	Pass
3	Wind speed	m/s	0,1	0,3	-	Pass
4	Noise	—	64,2	65,3	70	Pass
5	NO ₂	µg/m ³	54	49	200	Pass
6	SO ₂	µg/m ³	62,5	51,3	350	Pass
7	CO	µg/m ³	1104	1250	30000	Pass

Noted:

- KK1: Measure directly at the construction sector, the dam site area (22°24'46.33"N; 102°57'2.28"E)
- KK2: Measure directly at the point where has concrete mixing plant, and dumps waste (22°24'35.48"N; 102°57'19.27"E)

31. Through special measurement results at the regional location of the project can be concluded that the air quality in the region is within the limits allowed by national technical standards on permissible limits in air standard workspaces and dust.

32. The basic indicators such pollution (CO, NO₂, SO₂ ...) are within permissible limits when compared to the QCVN 05: 2013 / BTNMT: National Technical Regulation on ambient air quality (average 1 hour).

33. About noise level positions are lower than the QCVN 26: 2010 / BTNMT: National Technical Regulations on noise at the time of sampling.

SURFACE WATER QUALITY

- Surface water samples were taken in the following conditions: Cloudy, without rain, the average temperature 21°C, relative humidity 80%;

34. Surface water quality monitoring, conducted at locations with large surface water. Surface water in the project area was observed in the construction phase to determine the current state of water quality in the project area at the time of construction to assess the degree of influence.

35. The results of surface water quality are presented in Table 8 :

Table 8: Surface Water Quality

No	Parameter	Unit	Result		QCVN 08:2015/BTNM T (column B1)	Remark
			NM-1	NM -2		
1.	pH	-	6.6	6.8	5.5-9	Pass
2.	Temperature	°C	23,5	29.5	-	-
3.	DO	mg/l	6,2	5.7	≥4	Pass
4.	TSS	mg/l	3,2	43.8	50	Pass
5.	COD	mg/l	8	16	30	Pass
6.	BOD ₅	mg/l	<1	5	15	Pass
7.	NO ₂ ⁻	mg/l	0.03	0.13	0.04	Pass
8.	NO ₃ ⁻	mg/l	1,2	2,32	10	Pass
9.	NH ₄ ⁺	mg/l	0,05	0.12	0.5	Pass
10.	PO ₄ ³⁻	mg/l	0.01	0.03	0.3	Pass
11.	Cl ⁻	mg/l	0.05	0.05	600	Pass
12.	Total oil	mg/l	<0.1	<0.1	0.1	Pass
13.	Conductivity	EC(us/	236	259	-	-

No	Parameter	Unit	Result		QCVN 08:2015/BTNM T (column B1)	Remark
			NM-1	NM -2		
		cm)				
14.	Turbidity	NTU	1	15	-	-
15.	As	mg/l	<0.002	<0.002	0.05	Pass
16.	Cd	mg/l	<0.0006	<0.0006	0.01	Pass
17.	Pb	mg/l	0.001	0.001	0.05	Pass
18.	Fe	mg/l	<0.02	<0.02	1.5	Pass
19.	Hg	mg/l	<0.0008	<0.0008	0.001	Pass

Noted:

- NM-1: at the spring where dam is constructing (Location: 22°24'45.04"N; 102°56'59.08"E)
- NM-2: At the Hua Bum spring, where after Turbine water is flowing to (Location: 22°23'40.01"N; 102°57'10.91"E)

36. From the results of analysis of surface water quality in the project area showed that most of the pollution parameters are achieved National Technical Regulation on surface water quality (QCVN 08: 2015 / BTNMT, column B1). Thus the surface water in the project area at the time of observation in the construction phase are within permissible limits.

WASTEWATER QUALITY

37. Wastewater samples were taken in the following conditions: Cloudy, without rain, the average temperature 21°C, relative humidity 80%; Sampling time construction activities, construction at the site proceed normally.

38. Quality monitoring, waste water, is done at locations with water sources are breaking from the works in the project area, the water generated in the process of living, and are processed through the preliminary Sump water samples were observed in the construction phase to determine the current state of water quality in the project area to assess the degree of influence.

39. Devices and methods for determining compliance with the provisions of the standards, environmental regulations, respectively by Ministry of Natural Resources and Environment issued.

40. Environmental regulations are used as a basis for comparison, collate considered national technical regulations on waste water quality (QCVN14: 2008 / BTNMT, column B).

41. The monitoring parameters wastewater on May 15, 2017 samples are presented in the following table:

Table 9: The results of analysis of wastewater samples

No	Parameter	Unit	Result		QCVN 14:2008/BTNM T	Remark
			NT-1	NT -2		
1	pH	-	6.5	6.6	5.5-9	Pass
2	Temperature	°C	29,6	29,8	-	-
3	COD	mg/l	28	25	30	Pass
4	BOD ₅	mg/l	11	9	50	Pass
5	NO ₂ ⁻	mg/l	3,7	4,3	-	-
6	NO ₃ ⁻	mg/l	12,6	17.4	50	Pass
7	NH ₄ ⁺	mg/l	5,5	5,3	10	Pass
8	PO ₄ ³⁻	mg/l	1,1	1,37	10	Pass
9	Cl ⁻	mg/l	3.3	3.5		-
10	Total oil	mg/l	<0,3	<0,3	20	Pass
11	As	mg/l	<0.002	<0.002	-	-
12	Mn	mg/l	<0.002	<0.002	-	-
13	Pb	mg/l	<0.02	<0.02	-	-
14	Cu	mg/l	0.01	0.01	-	-
15	Fe	mg/l	0.03	0.03	-	-
16	Coliform	NPN/100ml	4600	4800	5000	Pass

Note:

42. NT-1: The wastewater in the area near the worker camps (22°24'28.33"N; 102°57'26.40"E)

43. NT-2: The wastewater at the operating area (22°24'28.33"N; 102°57'26.40"E)

44. From the analysis of domestic wastewater quality in the project area showed that most of the parameters are achieved QCVB 14: 2008 / BTNMT: National Technical Regulation on wastewater quality. Thus the quality of waste water in the project area at the time of observation in the construction phase are within permissible limits.



The map of environmental monitoring areas belonging to Nam Nghe Hydropower

VII. KEY ENVIRONMENTAL ISSUES & ACTIONS

45. According to the Environmental Assessment and Review Framework (EARF) of this loan, the sub-project should also not involve activities located in the core zone, or as much as possible, in or near the buffer zone of designated special use forests consisting of national parks, protected landscapes and nature reserves or nature conservation areas and other protected areas where the proposed development is prohibited. The sub-project should as much as possible not involve activities located in or near ecologically sensitive and significant areas as recognized by the Government or any area that is internationally significant. In addition, the sub-project should, as much as possible, not involve activities located in or near any cultural heritage and historical sites designated by the Government or by international agencies such as UNESCO.

46. The Nam Nghe hydropower subproject and its components were designed after detailed surveys to ensure strict compliance with the above conditions. The Nam Nghe hydropower project and components are not passing through any wildlife sanctuary or national park. There are no sensitive areas or monuments of cultural and historical importance that is affected by the project activities.

47. During construction works of pressure pipe, Contractor of package W05 have caused soil to drop to manioc farm of 02 households and their annual farming area. Lai Chau Electricity Company had requested W05 contractor to cooperate with Hua Bum Commune People committee to check and verify the farming value to be compensated using newest price list of

Lai Chau People committee. 03 year compensation has been agreed and paid after household and Hua Bum people committee acceptance.

VII. 1. Key environmental issues

48. The following are the key issues and follow-up actions that were identified:

- **Traffic safety issue:** There is high traffic safety risk on 0,4 km long section of the access road to the headworks. This narrow section is located at a high elevation with steep slope is unstable geotechnical conditions on both sides. The access road suffers from high dust pollution under dry weather conditions and sludgy in raining day. The mission requested LC-PC to work with construction supervisor and contractor to immediately apply adequate safety measures that might include conducting survey to identify the section with high risks and install standard warning boards and protective handrails and spray water to reduce dust pollution, etc. All of these actions need to be undertaken immediately.
- **Protective Equipment:** The mission also requested LC-PC to ensure the contractors: Lung Lo corporations build JSC and Toan Phat construction industry JSC; provide sufficient personal protective equipment for their workers, particularly ear-mufflers for the workers who use drilling machine. These actions need to be undertaken immediately.
- **Excavated soil Management:** The mission found that a large amount excavated soil has been dumped on to the river below in the W04 construction site. The excavated soil has been dumped at the assigned spoil area, but no method had been applied to control soil leakage since the trucks unload the solids from high elevation and soil has been overtopped the cofferdam at the foot of the hill and leaked to the Nam Nghe River. The mission requested LC-PC to ensure contractors stop dumping soil on to the Nam Nghe River, and remove the dumped soil out of the stream. At the spoil site, the contractor have to level the soil to provide more space for dumping and apply adequate methods to prevent soil being leaked to the stream. These actions need to be done before 31 January 2017.
- **Fuel management:** Some fuel drums are left open without caring about oil spill. The signs of oil spill were found at the drilling machine around the section K14. The Mission urged LC-PC to request contractor to apply adequate methods for controlling the risk of oil spill immediately.
- **Worker camp:** The Mission found some worker camps (Subcontractor of Package W04) in very poor conditions that do not meet even with the lowest living standard; the tents consist of thin canvas, there is no first aid medicine box and sanitation facilities are poor. On such notable site at the subcontractor in penstock construction work. The Mission requested LC-PC to work with all contractors to improve worker camps facilities within June 2017.

VII.2. FOLLOW-UP ACTIONS REQUIRED

49. Table below summarizes the key issues, follow-up actions and the timeframe for implementation:

Table 7: Environmental issues and follow-up actions required

Follow-up Actions Required	Timeframe	Responsible Parties	Reporting to
- LC-PC to work with construction supervisors and the constructor to apply adequate safety measures that might include conducting survey to identify the section with high risks and install standard warning boards and protective handrails and spray water to reduce dust pollution, etc.	immediately	PPMU Lai Chau, contractor	Construction Supervision Officer NPC/PMU
- Requested Contractors to provide safety tools for their own workers, ear protection are especially for using driller.	immediately	ALL Contractors.	Construction Supervision Officer, NPC/PMU
- Stop dumping soil on to the Nam Nghe River, and remove the dumped soil out of the stream. At the spoil site, the contractor have to level the soil to provide more space for dumping and apply adequate methods to prevent soil being leaked to the stream.	immediately	Lung Lo corporations build JSC, Sub Contractors .	Construction Supervision Office, NPC/PMU
- Request contractor to apply adequate methods for controlling the risk of oil spill immediately.	immediately	Lung Lo corporations build JSC, Sub Contractors.	Construction Supervision Office, NPC/PMU
- Request Lai Chau-PC to work with all contractors to improve worker camps facilities.	immediately	PPMU Lai Chau, contractor	Construction Supervision Office, NPC/PMU

VII.3. PUBLIC CONSULTATION AND GRIEVANCE REDRESS MECHANISM

50. From Jan to June 2017 there were 02 cases of claims by 02 families whose farm affected by construction work at W-05 Pressure pipe. Lai Chau Power Company cooperated with W05 contractor and local authorities to conduct a meeting to agree on the resolution at the Minutes of Meeting held on June 2017
51. The affected families agreed with the solution by Investor and Contractor, only the amount of compensation is not concluded yet. Lai Chau Power Company requested Contractor of W05 to finalize before 10th March 2017.

VIII. CONCLUSIONS& RECOMMENDATION

52. Until 30 June 2017 The project has accomplished 100% of the 35kV line , 35/0.4 kV substation for unelectrified households and Construction of 0.4kV line for unelectrified households; Construction of head works, intake and pipe 50%; Construction of water-conveying system (power alignment) (tunnel and surge tank) 58% and Construction of penstock, valve house, hydropower plant, tailrace, OPY station, road for O&M, house for O&M 59%

In terms of implementation of the environmental management plan, some lapses of the contractor were noted such as:

- *Traffic safety issue:* There is high traffic safety risk on 0,4 km long section of the access road to the headworks. This narrow section is located at a high elevation with steep slope is unstable geotechnical conditions on both sides. The access road suffers from high dust pollution under dry weather conditions and sludgy in raining day.
- *Protective Equipment:* The mission also requested LC-PC to ensure the contractors provide sufficient personal protective equipment for their workers, particularly ear-mufflers for the workers who use drilling machine.
- *Excavated soil Management:* The mission found that a large amount excavated soil has been dumped on to the river below in the W04 construction site. The excavated soil has been dumped at the assigned spoil area, but no method had been applied to control soil leakage since the trucks unload the solids from high elevation and soil has been overtopped the cofferdam at the foot of the hill and leaked to the Nam Nghe River.
- *Fuel management:* Some fuel drums are left open without caring about oil spill. The signs of oil spill were found at the drilling machine around the section K14.
- *Worker camp:* The Mission found some worker camps in very poor conditions that do not meet even with the lowest living standard; the tents consist of thin canvas, there is no first aid medicine box and sanitation facilities are poor. On such notable site at the subcontractor in penstock construction work.

53. As of 30 June 2017, the contractor implemented the following measures

- The LC – PC is requested LC-PC to work with construction supervisor and contractor to immediately apply adequate safety measures that might include conducting survey to identify the section with high risks and install standard warning boards and protective handrails and spray water to reduce dust pollution, etc. All of these actions need to be undertaken immediately.

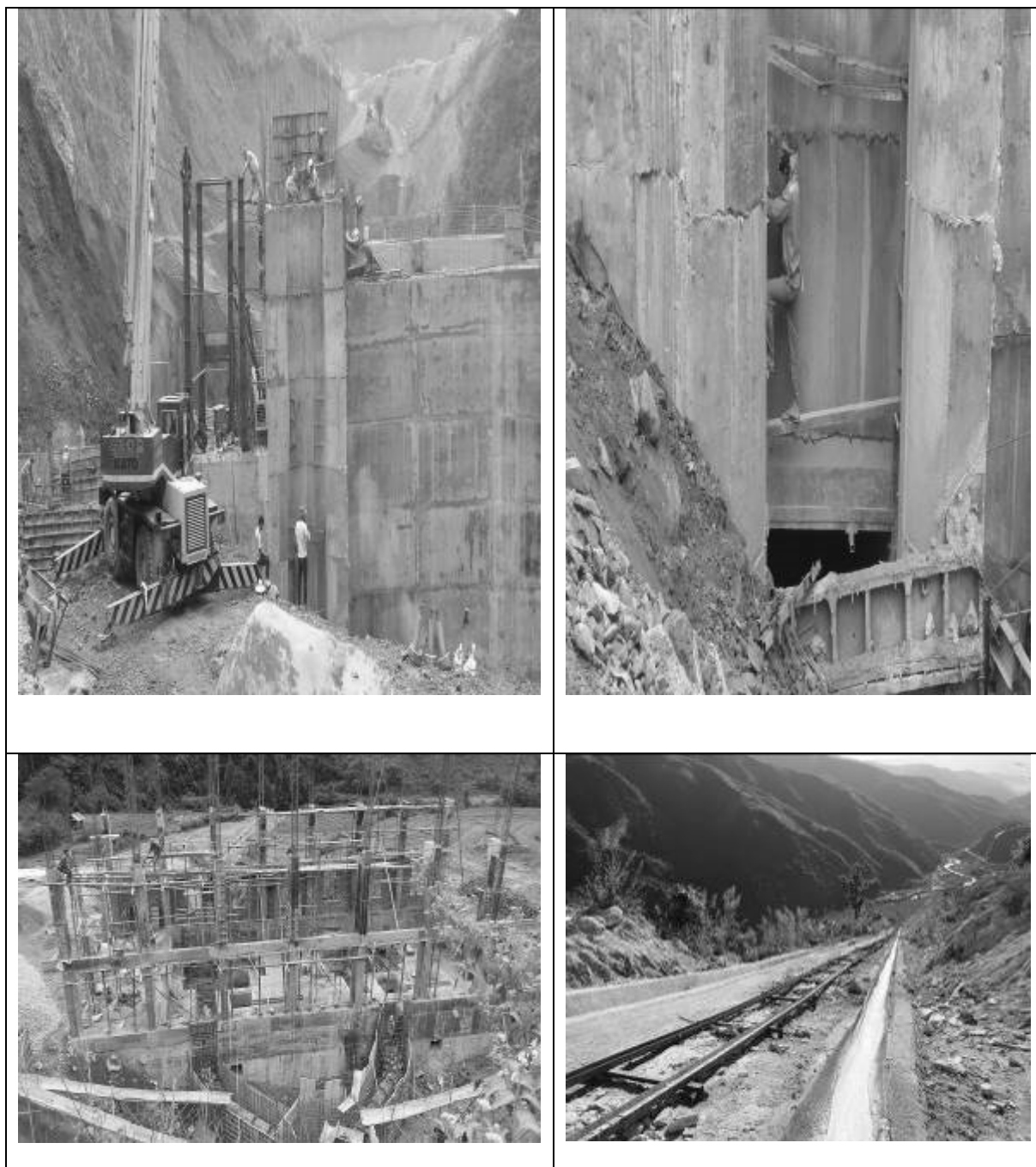
- The mission also requested LC-PC to ensure the contractors provide sufficient personal protective equipment for their workers, particularly ear-mufflers for the workers who use drilling machine. These actions need to be undertaken immediately.
- The mission requested LC-PC to ensure contractors stop dumping soil on to the Nam Nghe River, and remove the dumped soil out of the stream. At the spoil site, the contractor has to level the soil to provide more space for dumping and apply adequate methods to prevent soil being leaked to the stream. These actions need to be done before 31 January 2017.
- The Mission urged LC-PC to request contractor to apply adequate methods for controlling the risk of oil spill immediately.
- The Mission requested LC-PC to work with all contractors to improve worker camps facilities within December 2016.

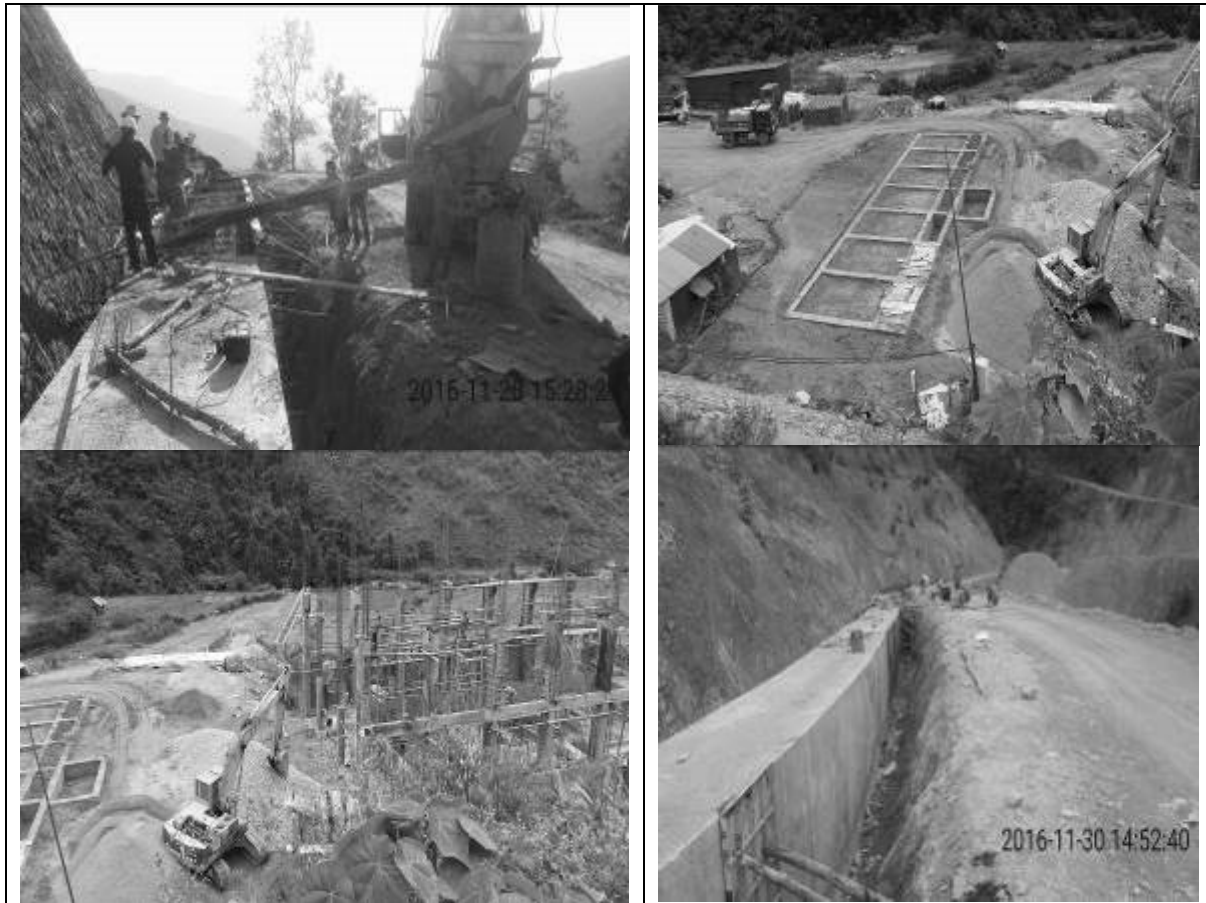
54. Jan to June 2017, the main environmental problems are detected and timely warnings such as was mentioned above. PDPMB, contractors will solve these problems immediately. Although, some of the anticipated environmental impacts during the construction period have been mitigated by implementing the EMP. The main environmental problems are detected and timely warnings in June - December 2016 mission such as was mentioned above. PDPMB, contractors will solve these problems immediately Lai Chau Power Company will continue to monitor the contractor's performance in terms of sustaining the implementation of the EMP

APPENDICES

- a) Appendix 1: Photos of the Nam Nghe project site
- b) Appendix 2: The registration of hazardous waste owner
- c) Appendix 3: Approval of disposal area
- d) Appendix 4: Results of environmental monitoring
- e) Appendix 5: Monthly environmental monitoring report of construction contractor

Appendix 1: Photos of the Nam Nghe project site






Appendix 2: The registration of hazardous waste owner

UBND TỈNH LAI CHÂU
SỞ TÀI NGUYÊN VÀ MÔI TRƯỜNG

BỘ HỒ SƠ SỔ ĐĂNG KÝ
CHỦ NGUỒN THẢI CHẤT HẠI NGUYỄN HẠI
(Kèm theo Sổ đăng ký chủ nguồn thải có mã số QLCTNH 12.000072.T do
Sở Tài nguyên và Môi trường cấp lần đầu, ngày 16 tháng 5 năm 2016)



Tên chủ nguồn thải CTNH: Công ty Điện Lực Lai Châu
Cơ sở phát sinh CTNH: Thủy điện Nậm Ngệ

Lai Châu, tháng 5 năm 2016

Appendix 3: Approval of disposal area

ỦY BAN NHÂN DÂN
HUYỆN NẬM NHÙN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 517^{SV}/TB-UBND

Nậm Nhùn, ngày 29 tháng 5 năm 2015

THÔNG BÁO

Về việc chấp thuận vị trí đổ thải đất, đá của dự án thành phần “Thủy điện Nậm Nghe, xã Hua Bum, huyện Nậm Nhùn” thuộc cấu phần 1 dự án “Phát triển năng lượng tái tạo và mở rộng, cải tạo lưới điện cho các xã vùng sâu, vùng xa” vay vốn Ngân hàng Phát triển Châu Á

Sau khi xem xét bản cam kết vị trí đổ thải đất, đá của dự án thành phần “Thủy điện Nậm Nghe, xã Hua Bum, huyện Nậm Nhùn” thuộc cấu phần 1 dự án “Phát triển năng lượng tái tạo và mở rộng, cải tạo lưới điện cho các xã vùng sâu, vùng xa” vay vốn Ngân hàng Phát triển Châu Á, UBND huyện Nậm Nhùn thông báo như sau:


1. Vị trí đổ thải đất, đá trong quá trình thi công Dự án “Thủy điện Nậm Nghe, xã Hua Bum, huyện Nậm Nhùn” đã được UBND huyện Nậm Nhùn chấp thuận.
2. Ban Quản lý dự án (thuộc Công ty Điện lực Lai Châu) có trách nhiệm thực hiện đúng và đầy đủ những nội dung nêu trong bản cam kết vị trí đổ thải đất, đá.
3. Vị trí đổ thải đất, đá được chấp thuận và thông báo này là căn cứ để các cơ quan quản lý Nhà nước về bảo vệ môi trường giám sát, kiểm tra, thanh tra việc thực hiện bảo vệ môi trường trong quá trình thực hiện việc đổ thải.
4. Ban Quản lý dự án (thuộc Công ty Điện lực Lai Châu) phải báo cáo với UBND huyện Nậm Nhùn khi có những thay đổi, điều chỉnh nội dung bản cam kết vị trí đổ thải đất, đá của dự án và chỉ được thực hiện khi có sự chấp nhận bằng văn bản của UBND huyện Nậm Nhùn.

Ủy ban nhân dân huyện Nậm Nhùn Thông báo đến các cơ quan, đơn vị liên quan và UBND xã Hua Bum biết, triển khai thực hiện./.

Nơi nhận:

- Chủ tịch, PCT UBND huyện (d/c: Duy);
- Phòng Tài nguyên và Môi trường huyện;
- Ban Quản lý dự án (thuộc Công ty Điện lực Lai Châu);
- UBND xã Hua Bum;
- Lưu: VT.

TM. ỦY BAN NHÂN DÂN
KT. CHỦ TỊCH
PHÓ CHỦ TỊCH


Lò Văn Duy

Appendix 4: Results of environmental monitoring

TRUNG TÂM NGHIÊN CỨU VÀ ỨNG DỤNG CÔNG NGHỆ MÔI TRƯỜNG
PHÒNG PHÂN TÍCH CHẤT LƯỢNG MÔI TRƯỜNG (VILAS 871 – VIMCERTS 136)
Địa chỉ: Tòa N3, lô 13, khu dự án Xuân La, phường Xuân La, quận Tây Hồ, TP Hà Nội
Điện thoại: (84 4) 3 21 21 223 Email: cetra.vn@gmail.com

PHIẾU KẾT QUẢ THỬ NGHIỆM
Số: A1705.1530/KQPT

Tên khách hàng/Customer : Nhà máy thủy điện Nậm Nghẹ
Địa chỉ/Address : Xã Hua Bum, huyện Nậm Nhùn, tỉnh Lai Châu
Địa điểm quan trắc/Monitoring sites : Nhà máy thủy điện Nậm Nghẹ
Loại mẫu/Sample name : Không khí xung quanh Số mẫu/Sample quantity: 02
Ngày lấy mẫu/Sampling date : 15/05/2017
Ngày thử nghiệm/Analysis date : 16/05/2017 Ngày hoàn thành /Complete date: 25/05/2017

Kết quả phân tích mẫu không khí xung quanh:

Stt No	Chỉ tiêu Parameters	Đơn vị Unit	Kết quả phân tích Analysis Result		Phương pháp phân tích Analysis Method	QCVN 05:2013 /BTNMT
			K1	K2		
1	Nhiệt độ	°C	32	32,4	QCVN 46:2012/ BTNMT	-
2	Độ ẩm	%	69,6	71,2	Cetra, HD-HT	-
3	Tốc độ gió	m/s	0,1	0,3	TCVN 7878-2:2010	70 ⁽¹⁾
4	Tiếng ồn	dBA	64,2	65,3	TCVN 6137:2009	0,2
7	NO ₂	mg/m ³	54	49	TCVN 5971:1995	0,35
6	SO ₂	mg/m ³	62,5	51,3	SOP-CO	30
5	CO	mg/m ³	1104	1250		

Ghi chú:
- Vị trí lấy mẫu:
+ K1: Mẫu không khí tại khu vực thi công, công trường khu vực tuyến đập
Tọa độ: 22°24'46,33"N; 102°57'2,28"E
+ K2: Mẫu không khí tại điểm đặt trạm trộn bê tông, và bãi thải
Tọa độ: 22°24'35,48"N; 102°57'19,27"E
- Tiêu chuẩn so sánh:
+ QCVN 05:2013/BTNMT: Quy chuẩn kỹ thuật Quốc gia về chất lượng không khí xung quanh (trung bình 1 giờ);
+⁽¹⁾QCVN 26:2010/BTNMT: Quy chuẩn kỹ thuật quốc gia về tiếng ồn,
- (-): Không có quy định,

Hà Nội, ngày 25 tháng 05 năm 2017

Phòng phân tích chất lượng môi trường Kiểm soát


Nguyễn Thị Sang *Đào Thị Diệu Lan*

NGUYỄN THỊ SANG ĐÀO THỊ DIỆU LAN

PHÓ GIÁM ĐỐC
Đặng Ngọc Linh

1. Phiếu kết quả này chỉ có giá trị đối với mẫu thử nghiệm.
2. Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng
3. Các chỉ tiêu đánh dấu (*) được thực hiện bởi nhà thầu phụ.
4. Quá thời hạn lưu mẫu, Trung tâm không giải quyết việc khiếu nại kết quả xét nghiệm.

BM 08/01 Lần ban hành: 01 Trang 1/1



VILAS 871

PHIẾU KẾT QUẢ THỬ NGHIỆM

Số: W1705.1530/KQPT

Tên khách hàng/Customer : Nhà máy thủy điện Nậm Nghệ
 Địa chỉ/Address : Xã Hua Bum, huyện Nậm Nhùn, tỉnh Lai Châu
 Địa điểm quan trắc/
 Monitoring sites : Nhà máy thủy điện Nậm Nghệ
 Loại mẫu/Sample name : Mẫu nước mặt Số mẫu/Sample quantity: 02
 Ngày lấy mẫu/ Sampling date : 15/05/2017
 Ngày thử nghiệm/Analysis date : 16/05/2017 Ngày hoàn thành /Complete date: 25/05/2017

Kết quả phân tích mẫu nước mặt:

Stt No	Chỉ tiêu Parameters	Đơn vị Unit	Kết quả phân tích Analysis Result		Phương pháp phân tích Analysis Method	QCVN 08- MT:2015/BTNMT (cột B1)
			NM-1	NM -2		
1	pH	-	6,6	6,8	TCVN 6492:2011	5,5-9
2	Nhiệt độ	°C	23,5	29,5		-
3	DO	mg/l	6,2	5,7	TCVN 5499:1995	≥4
4	TSS	mg/l	3	43,8	TCVN 6625:2000	50
5	COD	mg/l	8	16	SMEWW 5220C:2012	30
6	BOD ₅ (20°C)	mg/l	<1	5	TCVN 6001- 1:2008	15
7	NO ₂ -N	mg/l	0,03	0,13	TCVN 6178-1996	0,04
8	NO ₃ -N	mg/l	1,2	2,32	TCVN 6180-1996	10
9	NH ₄ ⁺ -N	mg/l	0,05	0,12	SMEWW4500F:20 12	0,9
10	PO ₄ ³⁻ -P	mg/l	0,01	0,03	TCVN6202:2008	0,3
11	Clorua (Cl ⁻)	mg/l	0,05	0,05	TCVN 6494-1999	600
12	Tổng dầu, mỡ	mg/l	<0,3	<0,3	TCVN 5070:1995	1
13	Độ dẫn điện	μs/cm	236	259	APHA 2510	-
14	Độ đục	NTU	1	15	TCVN 6184:1996	-
15	As*	mg/l	<0,0002	<0,0002	TCVN 6626:2000	0,05
16	Cd*	mg/l	<0,0006	<0,0006	TCVN 6193:1996	0,005
17	Pb*	mg/l	0,001	0,001		0,01
18	Fe	mg/l	<0,02	<0,02	TCVN 6177:1996	1,5
19	Hg*	mg/l	<0,0008	<0,0008	TCVN 7877:2008	0,001

1. Phiếu kết quả này chỉ có giá trị đối với mẫu thử nghiệm.
 2. Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng.
 3. Các chỉ tiêu đánh dấu (*) được thực hiện bởi nhà thầu phụ.
 4. Quá thời hạn lưu mẫu, Trung tâm không giải quyết việc khiếu nại kết quả xét nghiệm

BM 08/01 Lần ban hành: 01 Trang 1/2

Stt No	Chỉ tiêu Parameters	Đơn vị Unit	Kết quả phân tích Analysis Result		Phương pháp phân tích Analysis Method	QCVN 08- MT:2015/BTN (cột B1)
			NM-1	NM -2		
20	Coliform*	MPN/100 ml	4600	5500	TCVN 6187- 2:1996	7500

Ghi chú:

- **Vị trí lấy mẫu:**

+ **NM-1:** Nước mặt tại khu vực suối xây dựng tuyến đập

Tọa độ 22°24'45.04"N; 102°56'59.08"E

+ **NM-2:** Mẫu lấy tại điểm suối Hua Bun, nơi tiếp nhận nước sau Tua-bin

Tọa độ : 22°23'40.01"N; 102°57'10.91"E

- **Tiêu chuẩn so sánh:**

+ **QCVN 08-MT:2015/BTNMT:** Quy chuẩn kỹ thuật quốc gia về chất lượng nước mặt

Cột B1 - Dùng cho mục đích tưới tiêu thủy lợi hoặc các mục đích sử dụng khác có yêu cầu chất lượng nước tương tự hoặc các mục đích sử dụng như loại B2,

- (-): Không có quy định,

Hà Nội, ngày 25 tháng 05 năm 20

Phòng phân tích chất lượng
môi trường

Kiểm soát

GIÁM ĐỐC

Nguyễn Thị Sang

Đào Thị Diệu Lan



PHÓ GIÁM ĐỐC

Đặng Ngọc S

1. Phiếu kết quả này chỉ có giá trị đối với mẫu thử nghiệm.
2. Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng
3. Các chỉ tiêu đánh dấu (*) được thực hiện bởi nhà thầu phụ.
4. Quá thời hạn lưu mẫu, Trung tâm không giải quyết việc khiếu nại kết quả xét nghiệm

BM 08/01

Lần ban hành: 01

Trang 2/2



TRUNG TÂM NGHIÊN CỨU VÀ ỨNG DỤNG CÔNG NGHỆ MÔI TRƯỜNG
PHÒNG PHÂN TÍCH CHẤT LƯỢNG MÔI TRƯỜNG (VILAS 871 – VIMCERTS 136)
 Địa chỉ: N3, lô 13, khu dự án Xuân La, phường Xuân La, quận Tây Hồ, TP Hà Nội
 Điện thoại: (84 4) 3 21 21 223 Email: cetra.vn@gmail.com

VILAS 871

PHIẾU KẾT QUẢ THỬ NGHIỆM

Số: W1705.1532/KQPT

Tên khách hàng/Customer : **Nhà máy thủy điện Nậm Ngệ**
 Địa chỉ/Address : **Xã Hua Bum, huyện Nậm Nhùn, tỉnh Lai Châu**
 Địa điểm quan trắc/
 Monitoring sites : **Nhà máy thủy điện Nậm Ngệ**
 Loại mẫu/Sample name : **Mẫu nước thải sinh hoạt** Số mẫu/Sample quantity: 02
 Ngày lấy mẫu/ Sampling date : **15/05/2017**
 Ngày thử nghiệm/Analysis date : **16/05/2017** Ngày hoàn thành /Complete date: **25/05/2017**

Kết quả phân tích mẫu nước thải:

Stt	Chỉ tiêu Parameters	Đơn vị Unit	Kết quả phân tích Analysis Result		Phương pháp phân tích Analysis Method	QCVN 14:2008 /BTNMT (cột B)
			NT-1	NT -2		
1	pH	-	6,5	6,6	TCVN 6492:2011	5,5-9
2	Nhiệt độ	$^{\circ}\text{C}$	29,6	29,8	TCVN 4557:1988	-
3	COD	mg/l	28	25	SMEWW 5220C:2012	50
4	BOD ₅	mg/l	11	9	TCVN 6001-1:2008	30
5	NO ₂ ⁻ -N	mg/l	3,7	4,3	TCVN 6178-1996	-
6	NO ₃ ⁻ -N	mg/l	12,6	17,4	TCVN 6180-1996	50
7	NH ₄ ⁺ -N	mg/l	5,5	5,3	SMEWW4500F:2012	10
8	PO ₄ ³⁻ - P	mg/l	1,1	1,37	TCVN6202:2008	10
9	Tổng dầu mỡ	mg/l	<0,3	<0,3	TCVN 5070:1995	20
10	Cl ⁻	mg/l	3,3	3,5	TCVN 6494-1999	-
11	As*	mg/l	<0,0002	<0,0002	TCVN 6626:2000	-
12	Mn	mg/l	<0,15	<0,15	TCVN 6658:2000	-
13	Pb*	mg/l	<0,0006	<0,0006	TCVN 6193:1996	-
14	Cu*	mg/l	0,01	0,01		-
15	Fe	mg/l	0,03	0,03	TCVN 6177:1996	-
16	Coliform *	MPN/100ml	4600	4800	TCVN 6187-2:1996	5000

Ghi chú:

- Vị trí lấy mẫu:

+ NT-1: Nước thải tại khu vực gần lán trại công nhân

Tọa độ: 22°24'28.33"N; 102°57'26.40"E

+ NT-2: Nước thải tại khu nhà điều hành

Tọa độ: 22°23'40.07"N; 102°57'7.91"E

1. Phiếu kết quả này chỉ có giá trị đối với mẫu thử nghiệm.

2. Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng

3. Các chỉ tiêu đánh dấu (*) được thực hiện bởi nhà thầu phụ.

4. Quá thời hạn lưu mẫu, Trung tâm không giải quyết việc khiếu nại kết quả xét nghiệm

- *Tiêu chuẩn so sánh:*

+ *QCVN 14:2008/BTNMT:* Quy chuẩn kỹ thuật quốc gia về nước thải sinh hoạt

Cột B: quy định giá trị C của các thông số ô nhiễm trong nước thải sinh hoạt khi xả vào nguồn nước không dùng cho mục đích cấp nước sinh hoạt;

- (-): Không có quy định,

Phòng phân tích chất lượng
môi trường

Nguyễn Thị Sang

Nguyễn Thị Sang

Kiểm soát

Đào Thị Diệu Lan

Đào Thị Diệu Lan

Hà Nội, ngày 25 tháng 05 năm 2017

GIÁM ĐỐC



PHÓ GIÁM ĐỐC

Đặng Ngọc Linh

1. Phiếu kết quả này chỉ có giá trị đối với mẫu thử nghiệm.
2. Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng
3. Các chỉ tiêu đánh dấu (*) được thực hiện bởi nhà thầu phụ.
4. Quá thời hạn lưu mẫu, Trung tâm không giải quyết việc khiếu nại kết quả xét nghiệm

BM 08/01

Lần ban hành: 01

Appendix 5: Monthly environmental monitoring report of construction contractor

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

**BÁO CÁO GIÁM SÁT MÔI TRƯỜNG
THÁNG 05 NĂM 2017**

DỰ ÁN: THỦY ĐIỆN NẬM NGHỆ
GỢI THẦU: NPC-ADB-NN/W03

CHỦ ĐẦU TƯ: TỔNG CÔNG TY ĐIỆN LỰC MIỀN BẮC
NHÀ THẦU THI CÔNG: CÔNG TY CỔ PHẦN CÔNG NGHIỆP
XÂY DỰNG TOÀN PHÁT

Lai Châu, tháng 05 năm 2017

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc



BÁO CÁO GIÁM SÁT MÔI TRƯỜNG TRONG QUÁ TRÌNH THI CÔNG

(Tháng 05 năm 2017)

TIỂU DỰ ÁN : CÔNG TRÌNH THỦY ĐIỆN NẬM NGHE

GÓI THẦU NPC-ADB-NN/W05: THI CÔNG ĐƯỜNG ỐNG ÁP LỰC; BỂ ÁP LỰC; NHÀ MÁY; KÊNH DẪN RA, XÂY LẬP TRẠM OPY; KHU NHÀ QUẢN LÝ VẬN HÀNH

ĐỊA ĐIỂM : XÃ HUA BUM - HUYỆN NẬM NHÙN - TỈNH LAI CHÂU

Lai Châu: năm 2017

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập – Tự do – Hạnh phúc

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BIỂU GIÁM SÁT MÔI TRƯỜNG TRONG QUÁ TRÌNH THI CÔNG

TIỂU DỰ ÁN: CÔNG TRÌNH THỦY ĐIỆN NÀM NGHE

GÓI THẦU: NPC-ADB-NN/04 THI CÔNG TUYẾN NẮNG LƯỢNG (KÊNH, CÔNG TRÌNH TRÊN KÊNH, CÔNG XÁ CẮT TRÊN KÊNH)

ĐƯỜNG QUẢN LÝ VẬN HÀNH

ĐỊA ĐIỂM: XÃ HUA BÚM, HUYỆN NÀM NHÙN, TỈNH LAI CHÂU

ĐƠN VỊ THI CÔNG: TỔNG CÔNG TY XÂY DỰNG LÔNG LỒ – BQP

ĐẠI DIỆN CHỦ ĐẦU TƯ: TỔNG CÔNG TY ĐIỆN LỰC MIỀN BẮC - CÔNG TY ĐIỆN LỰC LAI CHÂU

Lai Châu, tháng 5 năm 2017