



KINGDOM OF CAMBODIA

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)

PROJECT MANAGEMENT UNIT 3 (PMU3)

CAMBODIA NORTHWEST PROVINCIAL ROAD IMPROVEMENT PROJECT

(Improvement National Road 56B Km29+000 to Samraong)

EDCF LOAN NO. KHM-9

Environment Management

Monthly Monitoring Report (February 2014)



KOREA CONSULTANTS INTERNATIONAL



IN ASSOCIATION WITH YOOSHIN ENGINEERING CORPORATION



KUMHO E&C Co., LTD CONTRACTOR



KOREA CONSULTANTS INTERNATIONAL

IN ASSOCIATION WITH YOOSHIN ENGINEERING CORPORATION
EDCF LOAN NO. KHM-9: CAMBODIA NORTHWEST
PROVINCIAL ROAD IMPROVEMENT PROJECT
MINISTRY OF PUBLIC WORKS AND TRANSPORT

17 March 2014

H.E.Mr.PHENG Sovicheano

Project Director, PMU3

Under Secretary of State, MPWT

Corner Norodom Blvd. St. 106

Phnom Penh, Cambodia

Our Ref No.KCI-KHM-9-14- 365

Ref; EDCF Loan KHM-9: Cambodia Northwest Provincial Road Improvement Project

Subject: Monthly Monitoring Report for EMP on February 2014

Dear H.E,

It is pleasure to submit Two (2) copies of the Monthly Monitoring Report for Environmental Management on February 2014 in accordance with Section 6 Part B Special Technical Specification, Clause 1.10 Protection of the Environmental as described in Sub-Clause 1.10.2.9 Reporting.

Find attached the Environmental Management checklist for contractor's construction activities performed during the month of February 2014 in comply with all EMP by IEE to the caption Project.

Your continuous support and kind cooperation for the successful executing of Environmental Mitigation Measures would be highly appreciated.

Sincerely yours


Myung-Geun Lee

Team Leader

Korea Consultants International

EDCF Loan KHM-9



GMS: CAMBODIA NORTHWEST PROVINCIAL ROAD IMPROVEMENT PROJECT		
DATE RECD 17 MAR 2014		
FILE NO.	DOC NO.	
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Encl: Monthly Environmental Monitoring Report(February 2014)

GMS: Cambodia Northwest Provincial Road Improvement Project
EDCF Loan NO. KHM-9

**Assessment of the Contractor's Performance for Environment Management
in 56B on February 2014**

General:

Consultant regularly inspected the environment management activities of the contractor's Civil Works complied with Initial Environmental Evaluation (IEE) to ensure that all environmental checklists for **construction base camp site, borrow pits/quarries, cultural heritage, air pollution, noise, erosion, drainage and environmental safeguard** during this reporting month. This Monthly EMP report reflects the detail EMP activities to mitigate Environmental Impact undertaken by the contractor in this Month 2014. The Contractor's performance to implement EMP can be commenced as normal in this Month 2014.

There was no major problem to mention with task in this stage for this contract package except **Road maintenance of existing road for Public Traffic Safety due to this year's unusual Climate Condition by heavy rain and flood from Thailand**. The Contractor needs to control Civil Works Activities in case of Archaeological Artifacts are found in the project area, which requires that the discovery has to be reported to responsible agency as defined by law and has to be abide by the law as specified in the IEE/EMP. There is no **Archaeological Artifacts** are found in Bypass area during this Report period. **The Civil Works for BTC access road 11.50km is not yet inspected compiled with IEE/EMP, because the MEF disagreed justification for extension of time including this additional work recommended by EDCF's Consultant.**

Moreover, the Contractor have to pay more attention regularly for the timely and proper disposal **solid garbage, supplying drinking water and domestic water** at base camp workers and officers and work teams to use, and also to provide **sanitation through septic tanks** on permanent Camp Site for man and woman's toilets. The **Fuel Storage Tank** have been mounted on concrete hard standing with rain proofing roof following by EMP, Sub-clause 4.3.7 Fuel and Oils (Figure 4-1).

Therefore, the contractors should be monitoring the construction environmental management plans (CEMPs) contained specific information on location of various site activities as well as specific measures to be implemented at a certain location related to the Environmental Impacts Mitigation of construction activities **for complying with the requirements of last Quarterly EMP/CEMPs by ADB's Comments and MOU of ADB Mission Team after site visits for the Initial Environmental Examination (IEE).**

Outstanding matters:

- 1) No any serious outstanding matters issued relevant to EMP activities in this package 56B during the reporting period except maintenance of existing road for Public Traffic Safety damaged by flooding due to unusual climate change.
- 2) Emergency Repairs at inundated and eroded existing road at NR56 and BTC temple for Public Traffic Safety, villager's life and Catch up delayed Schedule by heavy rain and flood have been completed timely by contractor's organized Maintenance Teams.

Regards



Myung Geun Lee
Team Leader
For EDCF KHM-9 56B

PROJECT MANAGEMENT UNIT (PMU3)

Report Control Form

Project Name: Cambodia Northwest Provincial Road Improvement Project

EDCF Loan No. KHM-9

Report Name: Monthly Environmental Monitoring Report February 2014

PREPARATION, REVIEW AND AUTHORISATION

Prepared by: Myung-Geun Lee

Signature: *M. G. Lee*Position: Team Leader
EDCF Loan No. KHM-9

Date: 17. March. 2014

Reviewed by: Sok Sam An

Signature: *S. S. An*

Position: Project Manager, PMU3

Date: 18. March. 2014

Approved by: H.E. Mr. Pheng Sovicheano

Signature: *Pheng Sovicheano*Position: Project Director, PMU3
Under Secretary of State, MPWT

Date: 18. March. 2014.

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II. EXECUTIVE SUMMARY OF CEMP

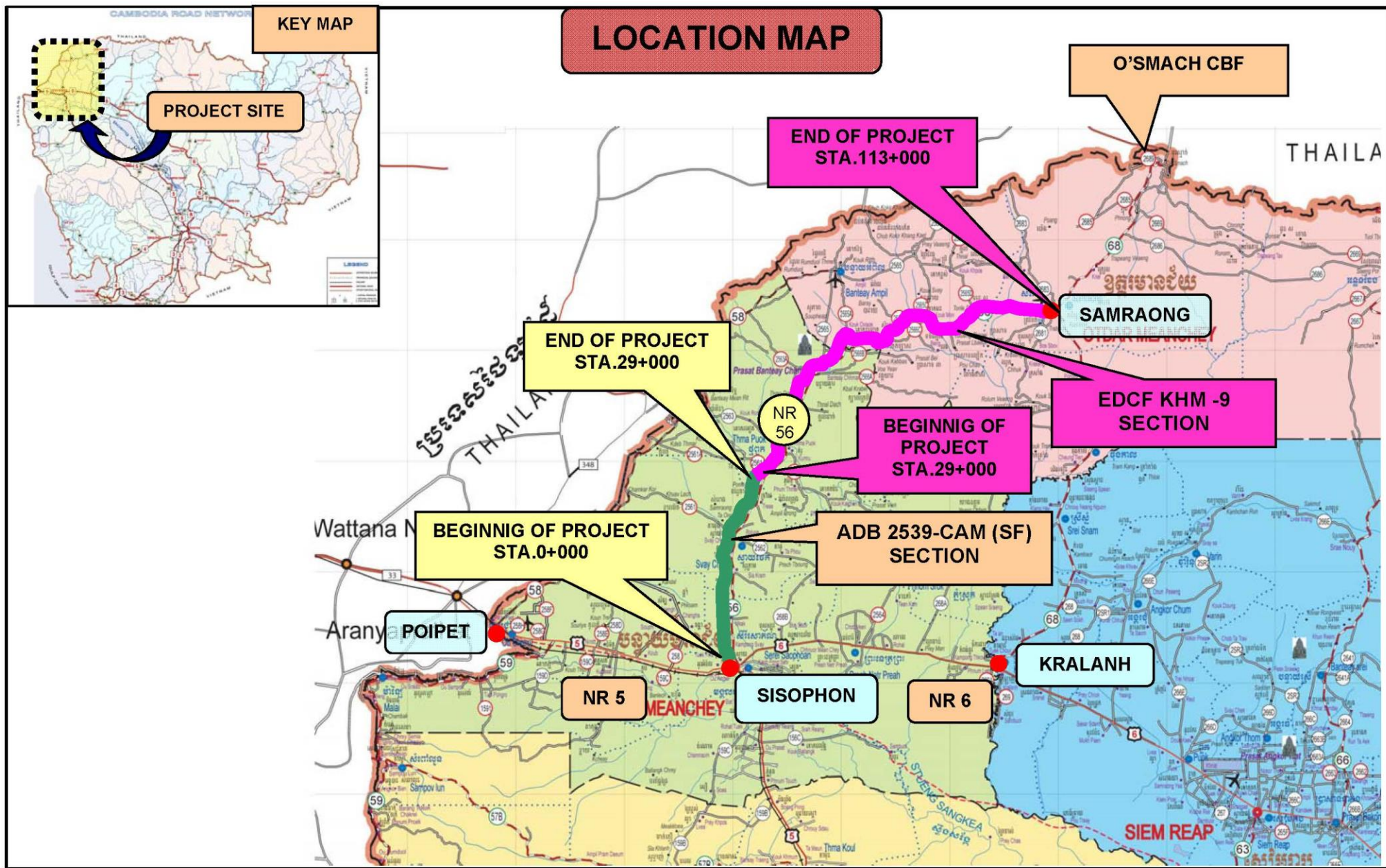
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- 10. Drainage and Flooding**
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APPENDIX

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ABBREVIATIONS

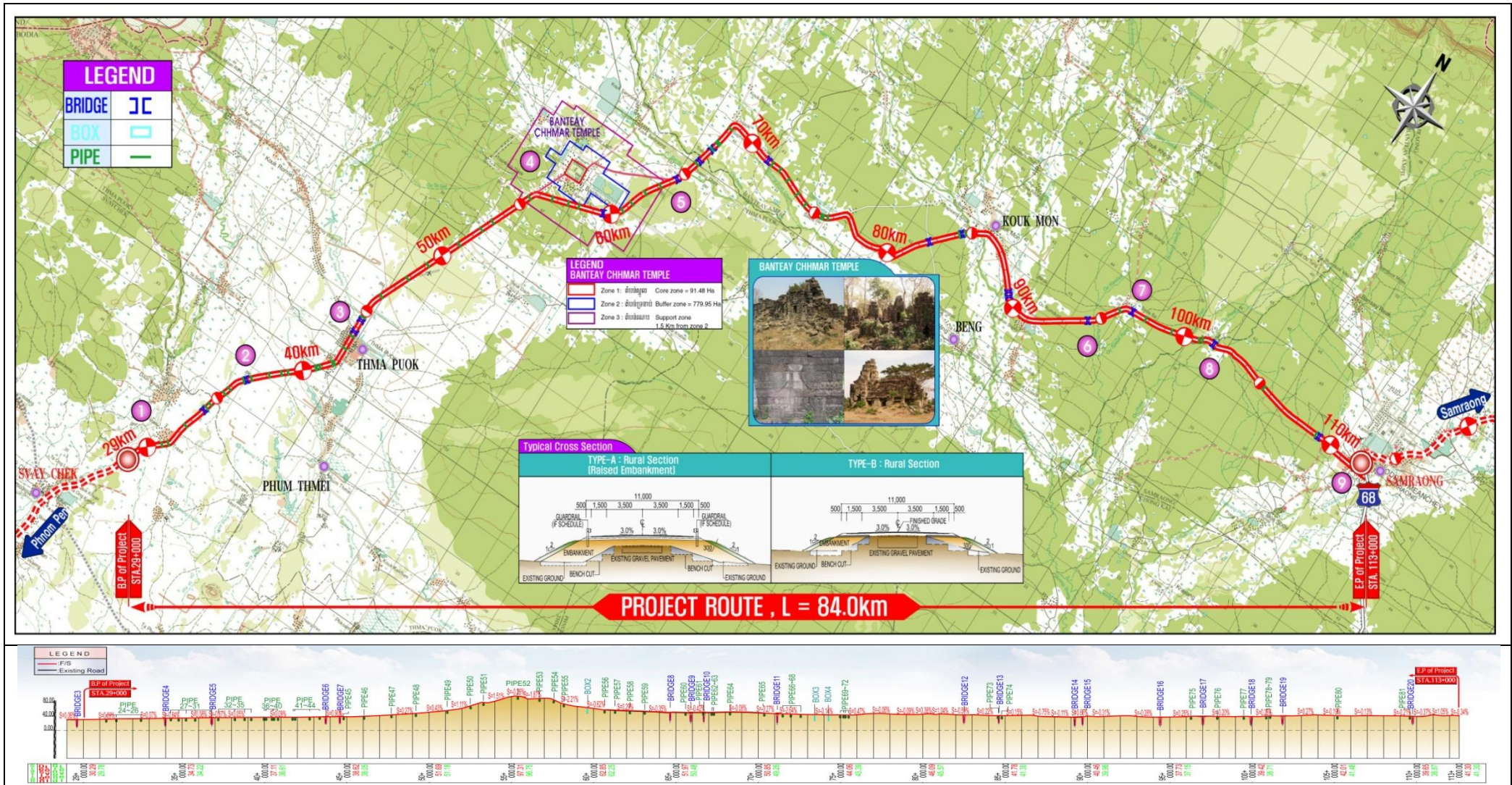
ADB	Asian Development Bank
APL	Angkor Protected Landscape
APSARA	Authority for Protection and Management of Angkor and the Region of Siem Reap
BCPL	Banteay Chhmar Protected Landscape
DDIS	Detailed Design and Implement Supervision Consultant
DoCF	Department of Culture and Fine Arts
DoE	Department of Environment (Provincial Level of MoE)
DPWT	Department of Public Works and Transport (Provincial Level of MPWT)
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
FA	Forestry Authority in MAFF
G	Gabion
Geo	Geo Textile
GoC	Government of Cambodia
GRM	Grievance Redress Mechanism
IEE	Initial Environment Examination
IRC	Inter-Ministerial Resettlement Committee
M	Mattress
MAFF	Ministry of Agriculture Forestry and Fisheries
MoCFA	Ministry of Culture and Fine Arts
MOE	Ministry of Environment
MoH	Ministry of Health
MoWM	Ministry of Water Resource and Metrology
MPWT	Ministry of Public Works and Transport
ROW	Right of Way
RP	Resettlement Plan
SEU	Social and Environment Unit (within MPWT)
TSBR	Tonle Sap Biosphere Reserve



CAMBODIA NORTHWEST PROVINCIAL ROAD IMPROVEMENT PROJECT
EDCF Loan KHM-9

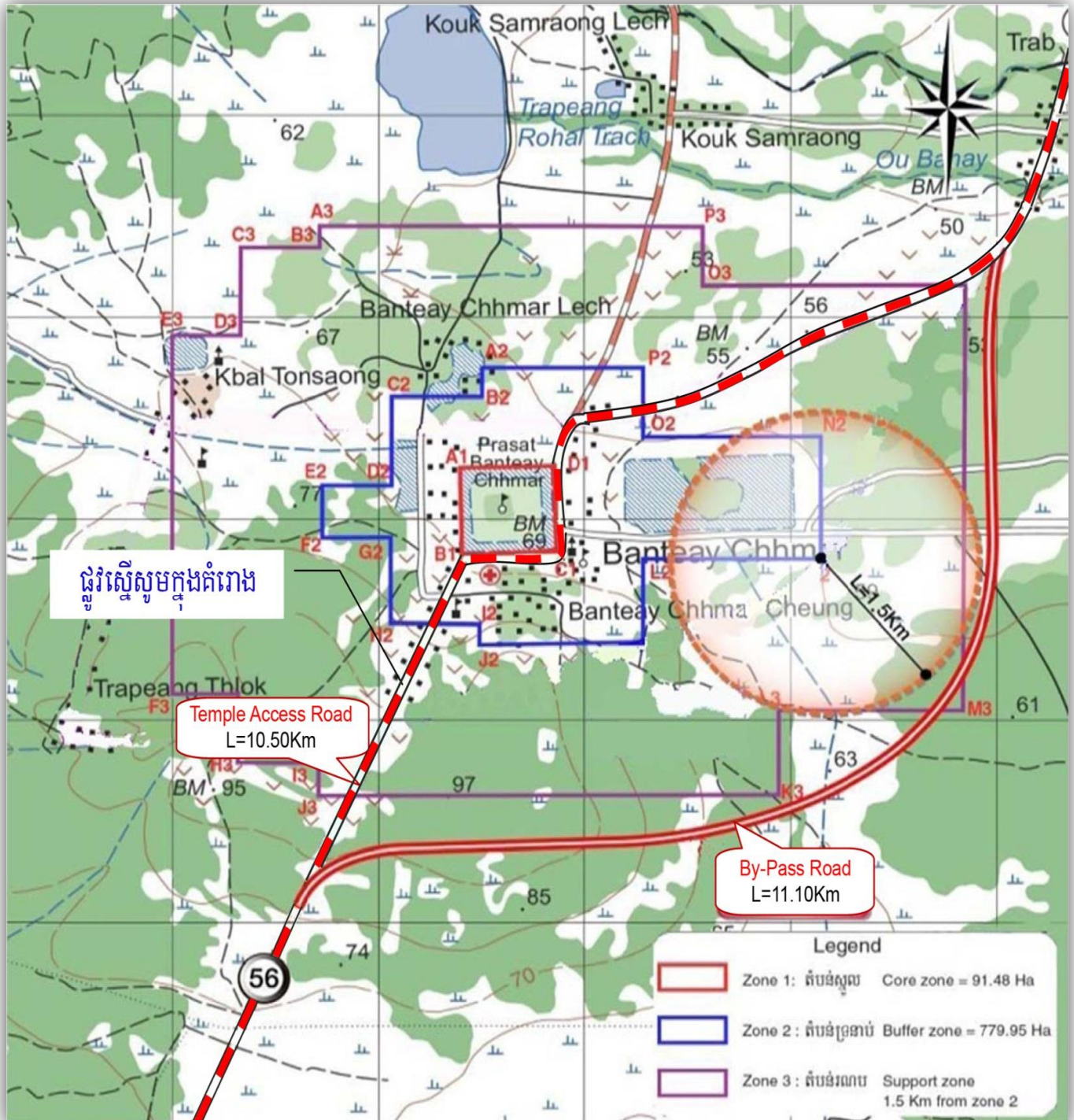
PROJECT ROAD

EDCF Loan KHM-9: Cambodia Northwest Provincial Road Improvement Project



By-pass Road Banteay Chhmar Temple Protected Area

EDCF KHM-9



I. EXECUTIVE SUMMARY OF EMP

1. The Project

1 The GMS Cambodia Northwest Provincial Road Improvement Project will be undertaken on the already classified NR56 from Sisophon to Samraong. The road has a length of about 113 km. The rehabilitation of the Sisophon to Samraong section of NR56 is an integral part in the upgrading of the GMS regional road network linking Thailand via Cambodia as well.

EDCF Loan KHM-9 will cover rehabilitation of 84km of NR 56 between 29km from Sisophon and Samraong, provision of equipment's for the CBF at O'smach and installation of ATCS at existing Tweigh station on NR.

2 In order to avoid impacts Banteay Chham temple (BCT) under consideration for World Heritage, 11km bypass which comes under the EDCF Loan KHM-9 financed Contract is planned. Three options for bypass were considered and the Alternative-1 in support zone from Buffer zone 1.5km selected. Therefore, there will be no impacts the BCT. (See Figure 1-2, By-pass Road Map at BCT)

3 The existing bridges and box culverts along NR56 have been improved under ADB Loan 1945-CAM, CRIP. Several pipe culverts were also replaced to improve access for the contractor and public. Two bridges on NR 56 will be widening but excepting these, the improvement for these roads will be limited to the road embankment, DBST pavement and the remaining drainage structures such as pipe culverts.

The improvement for this road will provide all-year, all weather access to remote and poorly serviced rural areas and improve community accessibility to markets and social infrastructure, while facilitating easier access to growing employment opportunities in the surrounding urban areas.

2. The EMP

4 This Environmental Management Plan (EMP) gives guidance on how to mitigate the environmental concerns identified in connection with this project. The project proponent is the General Department of Public Works, Ministry of Public Works and Transport, Royal Government of Cambodia (MPWT). The EMP has been prepared by MPWT with the assistance of the Supervision Consultant project. The EMP identifies potentially significant environmental impacts, appropriate mitigation measures, monitoring requirements and responsibilities. The EMP has been prepared in accordance with "Environmental Assessment Requirements of the Asian Development Bank" (ADB 1998) and taking cognizance of the requirements of the Cambodian Ministry of Environment.

5 The Initial Environmental Examination (IEE) details the environmental concerns with regard to the road improvement works in the transport Infrastructure Development for the MPWT, RGC. The Project has been classified as Category "B" and the IEE has been prepared in accordance with ADB Environmental Policy (2002) and ADB Environmental Assessment Guidelines (2003). The IEE provides an initial screening of the proposed project activates, identifies significant environmental impacts, proposes appropriate mitigation measures, and determines if any further environmental assessment is required.

3. Legislation

6 The contractor must comply with all laws, legislative instruments and regulations which are relevant to the project. The "Law on Environmental Protection and Natural Resource Management"

(1996) enables the Ministry of Environment to pass sub-decrees and regulations to protect the environment. The Environmental Impact Assessment (EIA) Sub-decree was enacted in July 01 2000 and has been adopted pursuant to the Law on Environmental Protection and Natural Resource Management. Even if the regulations are in draft form, the contractors must comply with them. These sub-decrees state parameters to be measured and levels to be met and include:

- 1) EIA Sub-degree is intended to:
 - Promote conservation, protection and appropriate use of natural resources to maintain sustainable economic development and enhance environmental quality
 - Integrate environmental impact assessment (IEIA) within project planning and decision making.
 - Promote public participation in the decision making process
- 2) Law of EP and NRM Sub- decrees (1996) encompass:
 - Sub-Degree on environmental impact assessment
 - Sub-Degree on Air and Noise Pollution Control
 - Sub-Degree on Water Pollution Control
 - Sub-Degree on Solid Waste Management

The contractor must also comply with laws on historical monuments, nature reserves and Wildlife.

4. Preservation of Historical Monuments

7 Banteay Chhmar Temple is located approximately 500 m from the NR56 road. The curtain wall is some 100 m from the road and the water moat lies between the outer wall and NR56, with a shoulder of 2-3 m between the road and the moat. All areas, the moat, the curtain wall and inner temple are protected by royal decree. Under this contract, there are no works near the temple. There will be no impacts from this contract on the Banteay Chhmar Temple.

8 In order to avoid impact on BCT temple, 11km bypass is planned. Three options of protection for Banteay Chhmar Temple were considered and Alternative 1 selected in Support Zone out of Buffer Zone 1.5km. Therefore, there will be no impacts on the Banteay Chhmar Temple.

5. Agricultural Land for Borrow Pits

9 Borrow pits will be located along NR56 as a source of earth for embankment material. Farmers have no objections to sitting pits on private land providing the land is returned in a usable fashion. On NR56B many material of borrow pit may be needed for embankment and 11km by-pass alignment for no impact BCT. The contractors will buy such material from the farmers. As borrow areas will be subject to private contract between the farmers and the contractor, the decision as to rehabilitation will be made on a case by case basis.

Many farmers stated during consultations that they wished borrow pits to be left open so that could be used for water reservoirs on dry season, duck pond or fish ponds. However, should the farmers specified rehabilitation the contractor must comply with this request as indicated in the borrow pit excavation plan, to the satisfaction of the engineer by the EMP.

10 If it is not possible to develop suitable uses, then the borrow pits shall be reinstated, re-vegetated and handed back to the owner. Contractor to check that location, use and closure plan of borrow pits is acceptable to the villagers. Also checks borrow roads. Check no grievances over land acquisition.

6. Quarries and Rock Material

11 One existing Market quarry and two possible rock formations have been identified. If existing market quarries which are under private ownership are used then the owner must have obtained permission from the relevant authorities. If new quarries are required then approval must be obtained permission from the relevant authorities.

12 Where rock extraction is to be by explosives blasting, normal industrial standards and safety practices must be followed to minimize noise and vibration impacts. The blasting method statement must be submitted to the RE in advance for his approval.

The contractor or his appointed blasting subcontractor must advise on the location of the drilling hole, depth of drilling, diameter of hole and charge per hole. The Details of the type of explosive and initiation must be stated. Local residents must be made aware of blasting taking place and warned in advance.

13 If explosives are to be stored on site. A license magazine must be used. This must have strict security and restricted access. An inventory of explosives transported in, used and stored must be kept and reported monthly to RE.

7. Construction Impact

14 Construction workers camps will be located away from communities, contractor will prepare a worker health and safety plan, including sanitation facilities, equipment, and medical care, workers will receive health and safety training, and workers will undergo pre-employment health screening. All sanitary waste will pass to septic tanks. Locally manufactured tanks are recommended. Wash water from cooking and showers will be kept separate from sanitary waste and will be treated with grease traps before discharge to water courses. When construction is completed, the contractors will clean up the construction site and workers camps by removing all equipment and buildings and carrying out site remediation work. Three mobile teams will move around NR 56 and occupy temporary quarters. They will be required to rent local accommodation rather than disturb the local community by constructing their own facilities.

15 Concrete structures for RCP will be fabricated in casting yard and be transported to site for installation. Quantities of cement and aggregate that would normally have been brought on site will be significantly reduced and Environmental Impact.

16 Materials such as soil, gravel, sand and rock will be required for road construction. Construction material will be hauled by trucks to the project sites. If contractor trucks exceed weight limits, there may be damage to bridges and road surfaces. Weight restrictions must be imposed on construction vehicles and equipment to prevent damage to structures.

17 Fuels and oil storage areas will have containment. Fuel stored on the site must follow industrial practices. Fuel suppliers must provide skid mounted tanks with a metered off take and pump mounted on concrete hard standing. The concrete base must have a perimeter curb to catch and retain any

minor leaks or spills from the main tank manifold by EMP (Figure 4-1) Spill Protection for Fuel Oil Storage. Waste oil will be stored and disposed in acceptable manner. Wherever possible, refueling and maintenance will be carried out at commercial fuel storage areas and maintenance shop to avoid impact on project area. Stored friable materials will have covers to control dust.

18 The Contractor must maintain dust abatement procedures by periodically water spray to dust control where roads construction site and access areas pass through villages and at the site where workers are employed. Dust abatement in rock quarries must be controlled by contractor unless privately owned.

19 Some blasting may be necessary to borrow rock and demolish structures. This will be strictly controlled for avoid disturbance to residents. Blasting method statements will be required to be submitted for prior approval. For safety reasons, close coordination with the UXO team in case of necessary will be enforced to avoid secondary initiation.

20 There are several nature reserves and protected areas have been identified in the general vicinity of the area. The two main protected areas of interest are Banteay Chhmar protected landscape and the Sarus Crane bird sanctuary. The Workers base camps, fabrication sites and borrow areas will not take place inside a protected area. The contractors will not be allowed any incursion into these areas.

8. Operational Impacts

i. Accidents

21 As a result of higher speeds accidents may increase. To date there do not appear to have been any major chemical spills. Vehicles carrying chemicals do follow "HAZCHEM" warning signs.

ii. Illegal Settlement along Row

22 The MPWT needs to establish RoW ownership by use of boundary markers and discourage illegal dwellings, encroachments and squatters.

iii. Accelerated Loss of Forest

23 Illegal logging is controlled by allowing communities to harvest forest products and trees for their own use. The Project is not expected to increase any forest loss as there is no timber yielding forest in the area.

iv. Accelerated Loss of Wildlife

24 There are two main protected areas of interest are Banteay Chhmar Protected Landscape and Sarus Crane bird sanctuary within the area of NR56 but no rare animal species. The Ang Trapang Thmor Sarus Crane Conservation Area (SCCA) lies to the north of NR No.6 at a distant of approximately 25 kms and to the east of NR56 at a distance of approximately 30kms. The "Roneam Doum Sam Wildlife Sanctuary" lies to the southwest of NR No.5 at a distance of 10 kms from the road. There will be no impacts on "Roneam Doum Sam Wildlife Sanctuary".

9. Social Issues

25 The project will have positive benefits which enhance the quality of life and living standards of the local population. The introduction of sexually transmitted diseases or other infections by immigrant workers is being addressed by a separate program.

10. Public Consultation

26 Many consultations have taken place with local authorities and community representatives during project preparation, and these will continue.

11. Social and Environment Unit

27 The Social and Environment Unit (SEU) is a team in MPWT who work in close cooperation with other authorities such as socio-economics, resettlement, environment, HIV Prevention program. Their current duty is to implement "the Resettlement Plan (RP)". SEU works in close cooperation with the IRC and liaises on regular basis. SEU will ensure that the contractors comply with all relevant legislation and follow monitoring and reporting schedules given in the EMP.

12. Environmental Monitoring

28 The essence of monitoring is to ensure compliance with Environmental Legislation. The Contractors will have a "Duty of Care" to comply with the relevant legislation in the compliance with EMP and IEE by CEMP. The Supervising Consultant must check Contractors activities and report in ensuring that the environmental safeguard and social impact of EMP are implemented and provide assistance to mitigate any unforeseen environmental issues in the case of noncompliance with EMP associated with the NPRIP KHM-9 Project.

29 The Contractors should have an environmental specialist on their staff for monitoring who will advise on implementing the EMP. The inspector's responsibility will include environmental issues and also must check activities and progress against environmental checklist (See Appendix)

30 With regard to social impact, STD information and Education program was introduced by MPWT and was also monitored by Environment and Social Safeguard (ESS) during the implementation by consultation with commune council and the NGO.

31 The purpose of meeting with local authority (commune councils) is not only to hear complains, social and environmental impact and satisfaction with the maintenance project but also to verify and confirm whether or not HIV/AIDS campaign are conducted in the project influence area. In addition, it is an effective public disclosure of safeguard information to local authorities.

32 It is observed that there is no adverse environmental and social impact to local community along the project influence area during civil works of road construction.

13. Summarized Monitoring EMP

33 The summarized table of the environmental and social safeguards monitoring for February 2014.
Attached on Page No. (12-23)

II. EXECUTIVE SUMMARY OF CONTRACTOR'S EMP

The Government of Cambodia has applied for a loan from Economic Development Cooperation Fund (EDCF) the Export-Import Bank toward Cambodia Northwest Provincial Road Improvement Project, which will implement rehabilitation of (i) Sta.29 - Samraong, and (ii) rehabilitation of structures (iii) By-Passing Road Construction at Banteay Chhmar Temple.

The purpose of this Environmental Management Plan (EMP) is to give guidance on how to mitigate the environmental concerns identified in connection with this project by CEMP. It will form part of the contract between MPWT and the selected contractor and the requirements of the EMP will be contractually binding on the contractor.

In this regard, we would like to outline our Environmental Mitigation plan (EMP) by CEMP in project implementation by discussing the environmental impacts in each section.

1. Construction Camps
2. Borrow Pits/ Quarries
3. Erosion of Slopes
4. Air and Dust Pollution
5. Water Pollution
6. Agriculture
7. Land Contamination
8. Culture Heritage
9. Noise Pollution
10. Drainage and Flooding
11. Construction Camps Closure

- Appendix

Check List of EMP Implementation

1. Construction Camps

The campsite will be located at approved area for the Engineer's and Contractor's quarters including main laboratories, office, and accommodation, workshop, crusher site, asphalt plant site, and production. The area shall be graded as required so that all surface drains naturally bind with the natural terrain and are left in a condition that will facilitate natural re-vegetation, provide for proper drainage and prevent erosion. Sanitary wastes and garbage are the major waste products in the main camp.

Fencing and Site Security

- 1) The Contractor's office, workshops and storage compounds, campsites and all construction areas where exclusion of unauthorized personnel is necessary for safety and security, shall be adequately fenced, gated and guarded.
- 2) The Contractor shall employ an adequate force of properly trained security guards at the work site and the construction camp on 24-hour duty including Sundays and holidays. Storage areas shall be fenced, lighted and regularly patrolled by security guards. Warehouse buildings and explosive magazines shall be kept locked and keys accounted for at all times.

Mitigation of Impact Plan

- A. The place will be graded and left in a manner confirming to the natural appearance of the landscape.
- B. **Re-vegetation** will also be considered after making some adjustments to the drainage of the areas.
- C. **The solid wastes** should be disposed properly by segregate into the following:
 - 1). **Recycle things** (Non-Biodegradable wastes) such as paper, plastics, cans, bottles clothes and the like have to collected in dustbins and shall be given to domestic recyclers approved by local authorities
 - 2). **Organic** (Biodegradable wastes) such as food waste, etc. must be buried at sanitary landfill and covered with soils on a daily basis by garbage collector approved by local authorities and consultant Engineers.

The Camp Site shall be kept clean and free of refuse at all times .No waste shall be dumped in areas other those approved by the Engineer for waste disposal. No waste of any kind shall be deposited in any water courses.

The consultant's quarts will be handover to the client after completion of the works.

2. Borrow Pits/Quarries

• Borrow Pits

It is necessary to locate and exploit borrow pits for earthwork and detour constructions during the progress of the works. For this purpose, the contractor shall obtain site possessions for various borrow pits, which will be partially or fully exhausted. In most cases it is also necessary to construct access roads to this borrow pits. Both borrow pits and their access roads have negative impact on the surrounding environment since impacts on they represent the alteration of the existing natural system. Each borrow pit has its own specific impacts on the natural system of the surrounding. In most cases the contractor will try to work out best solutions in collaboration with land owner, the local agricultural and environmental authorities. The activity will be decided after consultation with the mentioned authorities.

After work is completed borrow areas (borrow pits and access road) must be reinstated to their original condition by the contractor, unless an agreement has been reached with the owner's and local villagers' that the excavated pits may be put to some other use, such as water reservoirs on dry season, duck pond or fish ponds, as to rehabilitation will be made on case by case base.

In this case the borrow areas must still be reinstated to such a condition that they do not pose a hazard to local residents.

• Quarries

It is necessary to locate and exploit quarry sites to obtain parent rocks for aggregate production for concrete chips, sub base course and surfacing aggregates for DBST

For this purpose the contractor shall obtain site possessions for quarry sites which will be partially or fully exhausted.

If existing market quarries which are under private ownership are used then the owner must have obtained permission from the relevant authorities. **(See Quarterly Report December 2012**

Appendix E: Opened Mines and Crushing Plant Certification by MOI, M&E)

In most cases it is also necessary to construct access roads to the quarry sites. Both quarry and their access roads shall have negative impact on the surrounding environment since they represent the alteration of the existing natural system.

3. Erosion of Slopes

Borrow pits, quarries, road embankments, culverts and bridge abutments and road diversions will expose bare soils where material can be eroded. These Areas must be re-vegetated as soon as possible after disturbance. Depending on the season this may require watering to ensure establishment of vegetation before the wet season arrives. Re-vegetation work may be carried out by project affected people within the Resettlement Plan as a form of income generation. Re-vegetation specifications have been included in the Detailed Design for Slop Protection. The contractor must take care to avoid unnecessary work within channels and avoid dumping of excavated

Material into flowing channels. If possible, work which could affect water channels must take place during the dry season, before heavy rainfall flows occur.

4. Air and Dust Pollution

Noise and dust from unpaved roads is a major nuisance for roadside residents and as traffic flows increase, this gets worse unless road surfaces are paved. The paving of the road will reduce noise and dust levels in the future.

During the construction of the works there is a possibility of dust pollution, which results from passing traffic on detours. This can have a negative impact on the adjacent environment such as atmosphere, cultivated fields, crops, residential house etc. sprinkling with or other means by road maintenance team, whenever necessary to reduce the dust nuisance, and to prevent dust which has originated from his operations from damaging crops, cultivated fields, and welling, or causing a nuisance to persons.

Mitigation of Impacts Plan

- A.** The detours will be sprayed with water at reasonable intervals so as to control the dust in the dry season to facilitate smooth of traffic.
- B.** Damaged crops or cultivated fields will be brought back to their original conditions by an appropriate means approved by the Engineer.
- C.** The emission of dust into the atmosphere shall be strictly controlled during the manufacturing, handling and storage of soil, concrete and road aggregates.

5. Water Pollution

The Contractor shall take all possible steps to prevent pollution of streams ,rivers, and other water supplies, at or in the vicinity of the Site and shall comply with applicable laws, orders and regulations in force in the country of the Works concerning the control and abatement of water pollution. Under no circumstances shall the sewage from the camps, or other contaminated water, be released directly into river or other natural streams or any open areas.

Structural works are found in this section. In this regard there may be a possibility of accidental spillage of solid matter, debris etc. into flowing or dry watercourses. Most pollutants in this works consist of demolished masonry and concrete.

Mitigation of impacts Plan

- A. The Demolished part of any existing structure will be transported by dump trucks to a dumping place where ever is suitable.
- B. Excavated materials will not be deposited in water sources. Instead they will be transported to other disposal places or reused as embankment material.
- C. Any structural works or earthwork operation adjacent to or encroaching on streams or watercourses shall be conducted in a manner to prevent muddy water and eroded materials from entering the stream or watercourses by construction of intercepting ditches, bypass channels, barriers, setting ponds any other means recommended by the Engineer.

6. Agriculture

The Contractor shall take all possible steps to prevent pollution of road encroachment on paddy / agricultural land, borrow pit located on agricultural land, spoil dump located on agricultural land, diversion of water channels and road construction resulting in inundation of agricultural land, irrigation channels broken / diverted due to project activities, streams, rivers, and other. There is no protected forest within the ambit of NR56 as NR56 only passes through degraded woodland areas. While the Project will improve access to the upper areas of Otdar Meanchey it is not expected to increase any forest loss beyond that taking place at the moment. The department of Agriculture, Forestry and Fisheries are active in controlling illegal logging and do impound vehicles if caught involved in such activities, oil, grease and fuel road run-off contaminating agricultural fields and any other project activities resulted in destruction of agricultural land

7. Land Contamination

The major land contaminants in the workshop are fuel, oils, grease etc. Considerable amount of solid soil is also available like different spare part packages, damaged tires and spare parts. The environmental impact of these wastes on the surrounding habitat is significant when compared to other operations of the project. Special care will be taken so that no waste fluid enters in to the surface water by filtration or other mechanism sine this can cause health damages to the community including plants and animals.

Mitigation of Impact Plan

- A. The majority of the solid waste will have to be removed by disposal to an approved dump area after making the necessary arrangements with the local authorities.
- B. Hazardous wastes (oily wastes, used batteries and fuel drums etc.) will be segregated from other wastes and its storage, transport and disposal shall not cause contamination/ pollution specially in order to prevent accidental spillages into nearby water streams and farmland. Since these wastes have negative influence on the biodiversity their disposal by collecting into special containers like barrel, or large rectangular pits which is impervious latter will be sent to the agency by national and local regulation.
- C. Non-combustible materials can also be removed by burying after arranging the land with the local authorities. The top surface of the burial will be covered with earthen material after completion.
- D. Sanitary wastes will be disposed in only disposal sites approved by local authorities.

8. Culture Heritage

There is a general law in Cambodia which covers all national monuments. This is the "Law on Protection of Cultural and National Heritage", (1996). This is supplemented by the "Decision on the Definition of 3 Zones to Protect Temple Surrounding Areas in All Provinces and Municipalities except Angkor Wat", 1996. These laws protect small temples or ancient structures.

In addition to the general laws there are some buildings which are considered sufficiently important to warrant a specific protective decree. This includes the "Royal Decree on Banteay Chhmar Temple Park", 2003 which lies alongside NR 56. No structures are to be constructed on the section of NR 56 which passes the temple park. The bypass has been added to the alignment to avoid this Temple Park. A new bypass road alignment has been selected to avoid any impact on the ancient structures at Bantheay Chhmar Temple. The Ministry of Culture and Fine Arts (MoCFA) raised no objections to this scheme in discussions.

9. Noise Pollution

Noise from road traffic is a nuisance for roadside residents. As traffic grows, with more heavy goods vehicles, noise levels will increase. However smoother road surfaces can reduce road / wheel interaction noise.

Pile driving, improper silencing of vehicles and equipment used on the road construction site may impact on communities. The Contractor should ensure that machinery is adequately silenced and operations are restricted to normal daylight hours. Blasting noise should also be controlled.

10. Drainage and Flooding

In rainy season, we will suffer from a flood. To minimize the flood damage, the raising of the embankment to a flood free height will avoid flooding of the road. It may cause runoff to be held behind the embankment and so additional cross drainage has been included. Borrow pits, quarries, road embankments, culverts and bridge abutments and road diversions will expose bare soils where material can be eroded. Work within channels and dumping of excavated material into flowing channels can cause blockage of drainage channels. Outflow from drainage structures Erosion of Lands below the roadbed receiving concentrated outflow carried by drainage structures– in contravention of Draft Sub-Decree on Water Quality.

Mitigation of Impacts Plan

- A.** Position drainage structures to avoid a cascade effect and to ensure that runoff is conveyed into natural drainage lines at controlled velocities.
- B.** Line receiving areas with stones or concrete to protect soils at outflow areas
- C.** Incorporate sufficient number of drainage outlets such that flow from any individual outlet is not excessive.

11. Construction Camp Closure

The campsite will be located at approved area for the Engineer's and Contractor's quarters including main laboratories, office, and accommodation, workshop, crusher site, asphalt plant site, and production .The area shall be graded as required so that all surface drains naturally bind with the natural terrain and are left in a condition that will facilitate natural revegetation, provide for proper drainage and prevent erosion. Sanitary wastes and garbage are the major waste products in the main camp.

Fencing and Site Security

- 1) The Contractor's office, workshops and storage compounds, campsites and all construction areas where exclusion of unauthorized personnel is necessary for safety and security, shall be adequately fenced, gated and guarded.
- 2) The Contractor shall employ an adequate force of properly trained security guards at the work site and the construction camp on 24-hour duty including Sundays and holidays. Storage areas shall be fenced, lighted and regularly controlled by security guards. Warehouse buildings and explosive magazines shall be kept locked and keys accounted for at all times.
- 3) All employers engaged in the execution and maintenance of the Works shall wear identification when at the work place.

Mitigation of Impacts Plan

- A. The place will be graded and left in a manner confirming to the natural appearance of the landscape.
- B. **Re-vegetation** will also be considered after making some adjustments to the drainage of the areas.
- C. Sanitary waste and garbage is disposed in only disposal sites approved by the Local Authorities.
- D. Disposal of combustible materials shall be segregated by recycle things and organic. The material to be burned shall be piled in designated areas approved by local authority in such a manner as will cause the least fire hazards. The contractor will take special precautions to prevent fire from spreading beyond the piles being burned.
- E. Material to be disposed by dumping shall be hauled to the selected dumping sites approved by local authorities.
- F. Material to be disposed by burial shall be buried in location, size and depth approved by local authorities.
- G. The Site shall be kept clean and free of refuse at all times. No waste shall be dumped in areas other than those approved by the Engineer for waste disposal. No waste of any kind shall be deposited in any watercourses.

The consultant's quarters will be handed over to the client after completion of the works.

Demobilization & Final Clean -Up

- 1) Upon the Completion of Works, or when any plant has completed its functions, the Contractor shall dismantle and demobilize all temporary facilities erected by himself or his subcontractors, and remove all debris, objectionable material, and all other refuse which may have been deposited on site during the construction period. Such material may be deposited properly segregated by recycle things and organic only in areas approved by the local authorities and consultant engineer. The contractor shall also remove from the site any plant and equipment which he finds at the commencement of the works in accordance with the instructions of the engineer by the EMP/IEE.
- 2) All excavated areas shall be filled, graded and dressed in a clean and orderly condition acceptable to the Engineer by the EMP/IEE. As far as possible, such areas should conform to the natural appearance of the landscape.

SUMMARISED POTENTIAL NEGATIVE IMPACTS, MITIGATION MEASURES and MONITORING EMP (For February 2014)

Activities related issue	Potential Negative Impacts	Required Mitigation Measures	Observations and Recommendation during Monitoring
1. Detail Design Stage			
(a) Road alignment	Damage to ancient temple on NR 58 in contravention of Law on Protection of Cultural and National Heritage (1996)	<ul style="list-style-type: none"> Road alignment was changed to give by-pass 11.10 Km on Support Zone around Banthey Chhmar Temple and now avoids historical areas on Core Zone. Decision made in collaboration with MoCF. 	Change already specified and included bypass alignment 11.1 Km in detail design stage to avoid impact of historical area at BTC Temple.
(b) Raising Road Affecting Hydrology, Drainage and fish migration.	Increase erosion, possible road failure due to impoundment of flood waters; prevention of fish migration. Irrigation in Agricultural Area.	<ul style="list-style-type: none"> All existing bridges stream flow area increased by 30%. Additional cross drainage Structure provided. Included in detailed design Stage and construction stage. 	Providing additional cross drainage was included in detail design and inundation Area on Dec 2012 in construction Stage
(c) Need for fill material	Loss of live hood, Loss of Agricultural Land for Borrow Pits.	<ul style="list-style-type: none"> Develop alternative uses for borrow pit areas with agreement of farmers and villagers. Some villagers request borrows pits to be left as water ponds for use by village. 	To be negotiated as private contract between villagers and contractor for borrow pits
(d) Cutting of roadside trees	Loss of roadside trees, loss of shade and utility.	<ul style="list-style-type: none"> Compensation to be paid under Resettlement Plan. No replanting is required by contractor, planting will be carried out, if appropriate, by MAFF 	Compensation to be paid under IRC/MEF
(e) Cut faces and borrow pits	Erosion and instability of cut faces and borrow pits	<ul style="list-style-type: none"> Road Design for cut slope used by Cambodia Highway Design standard to minimize instability. Use structural stabilization measures such as retaining walls and gabions, if necessary. Use adequate design, siting, and sizes of drainage structures. <p>All included in detailed design.</p>	<p>1) There is no high cutting faces to make erosion and instability in our Design.</p> <p>2) Cutting faces of Borrow Pits should be negotiated with Private villager by EMP/IEE</p>
(f) Outflow from drainage structures	Erosion of Lands below the roadbed receiving concentrated outflow carried by drainage structures– in contravention of Draft Sub-Decree on Water Quality.	<ul style="list-style-type: none"> Position of drainage structures to avoid a cascade effect and to ensure that runoff is conveyed into natural drainage lines at controlled velocities. Line receiving areas with stones or concrete to protect soils at outflow areas Incorporate sufficient number of drainage outlets such that flow from any individual outlet is not excessive. <p>Included in detailed design.</p>	<p>1) there is no erosion by drainage structure and contravention of Draft sub-Decree on water quality</p> <p>2) Sufficient number of drainage Structure to avoid a cascade effect to convey into natural drainage lines included in detail design and inundation Section by flooding area on Dec 2012 and Aug 2013.</p>

(g) Road alignment next to river/stream	Loss of riverside vegetation	<ul style="list-style-type: none"> Where road alignment is close to the rivers, widening or re-alignment should be on the side not adjacent to the river <p>Included in detailed design.</p>	Already considered not adjacent to the river in the detail design for Civil works
(h) Road widening	Loss of vegetation and habitat through road widening, realignment of right-of-way	Re-grass for slopes and embankments. Specification included in detailed design.	Re-grass already included in the Contract for Civil Works.
(i) Road alignment	Impacts on wildlife through interruption of migratory routes and other habitat disturbances– in contravention of Law on Environmental Protection and Natural Resource Management (1996)	Other than fish migration no impacts.	There is no alignment in Detail Design to impact on Wildlife in contravention of Law on EP and NRM (1996)
(j) Road alignment	Encroachment on irrigation structures from road widening and realignment	<ul style="list-style-type: none"> Use appropriate drainage structures to replace those presently used in irrigation systems. Avoid encroachment on irrigation systems in use. Consult with relevant government offices and villagers. <p>Already included in detailed design , if necessary</p>	Included in the Detail Design on irrigation systems for Drainage Structure of pipe culvert to use in future irrigation.
(k) Road Construction	Encroachment on water supply systems from road construction activities	<ul style="list-style-type: none"> Identify places where there are existing and planned water pipes and make appropriate arrangement avoid water pipes. Detailed design must include plans for avoidance of damage to water systems and replacement/repair of water systems where avoidance is not possible. Coordination should be exercised through the Inter-Ministerial Resettlement Committee, as well as normal inter-ministry liaison. 	Already Included in the Detail Design for avoidance of damage to water systems where there are existing and planned pipe culverts.
(l) Road widening onto agricultural land	Destruction of agricultural land through road widening and realignment	<ul style="list-style-type: none"> Minimize realignment through agricultural land. Ensure appropriate compensation by MEF/IRC for loss of agricultural lands. 	Compensation for loss of agricultural land by MEF/IRC
(m) Road widening	Encroachment on previously unidentified cultural sites– in contravention of Law on Protection of Cultural and National Heritage (1996)	<ul style="list-style-type: none"> Consult with villagers during detailed design to avoid encroachment on graveyard, and other unidentified sites of cultural importance. 	<p>1) No graveyard, and other National Heritage Culture to avoid encroachment except BTC Temple historical Area</p> <p>2) Already included in Detail Design for Civil Works</p>
2. Mobilization Stage			
(a) Mobilization of equipment and workforce	Accident risk during mobilizing construction equipment	<ul style="list-style-type: none"> Minimize the mobilization of heavy equipment to night time. Over-width and over-length vehicles should display adequate warnings such as flashing lights, signs, and flags on extending parts of equipment. 	Equipment are equipped with adequate warning tools; Up to now there is no accidents occurred

(b) Mobilizing workforce	The introduction of an outside workforce can have a negative impact on the health and social well-being of local people	<ul style="list-style-type: none"> Conduct special briefing or on-site training on environmental requirement of the project to workers. Strictly supervise workers not to interference with local affairs or quarrel with local people. In case of complaints from local people on the issues caused by workers, the complaints should be solved as soon as possible, by collaboration of contractor and village representatives or Commune Chief 	Up to now, No complaint was received from commune council and from Local people on the issues caused by workers
(c) Behavior of workers	Impacts on local wildlife by workforce—in contravention of Joint Prakas of the Ministry of Environment and the Ministry of Agriculture on Prohibition of Hunting and Catching of Wildlife Animals (1996)	<ul style="list-style-type: none"> Carry out awareness-raising campaigns on wildlife value for workers. Any worker conduct hunting, or buying wildlife from local people, will be dismissed from job. Supply workers with sufficient food from outside the project. 	<ul style="list-style-type: none"> there is no hunting, or buying Wildlife from local people in contravention of join Prakas of MOE and MOA on Prohibition
(d) Protecting workers safety	Accident risk from mobilizing	<p>The following safety precautions should be provided to workers.</p> <ul style="list-style-type: none"> Provide safety or warning signs and manuals at workplace and/or Camps. Provide full PPE; Helmets, boots, warning jackets etc. Conduct safety training on health and safety. Establishment of all relevant safety measures required by law and good engineering practices. 	<ul style="list-style-type: none"> Already Provided full PPE to Workers Conducted regularly Safety Training to workers by Contractor's Safety Trainer. Already installed for Warning Signs and Safety Manuals at Workplace and/or Base Camps.
(e) Health Aspects	Outbreak of disease	<ul style="list-style-type: none"> The contractor shall have all his workers undergo a medical screening prior to their arrival on site, to check for HIV/AIDS, socially transmitted diseases, and to provide an awareness program. Any workers screening positive for such diseases shall not be allow on the site. Site construction camps far away from local communities and rivers. Keep camps from becoming blight on the local environment. Provide enough water supplies for workers, and ensure sufficient sanitation for the camp: the proper location for solid waste disposal by IEE/ CEMP Make medical treatment available for workers by First Aid Kits. Provide workers mosquito nets and malaria-prevention medication, if needed, spray around camp area with chemicals against mosquitoes. 	<ul style="list-style-type: none"> A separate information education program of STD for HIV/AIDS is conducting monthly to workers by the SBK sub-contractor Provision of Adequate portable water and domestic water are supplying for workers. Sanitation for the camp and proper disposal of solid waste is disposal by requirement of IEE/EMP Up to now there is no outbreak of diseases from workers and around Base Camps.

(f) Providing fuel for workers	Depletion of natural resources through demand for building materials, fuel and food for workers– in contravention of Royal Decree on the Creation and Designation of Protected Areas (1993)	<ul style="list-style-type: none"> Do not harvest wood resources within protected area. Where local materials must be used, make agreements with local communities about the areas or the volume that can be harvested without significant impact. Support community development by paying an adequate price for any local resources used. All supplies for building camps should be brought from outside area. 	<ul style="list-style-type: none"> It is normal to use harvested fuel wood outside protected area for cooking in Cambodia for workers Up to now, there is no use harvested wood resources within protected area for building materials.
3. Construction Stage			
(i) Construction work area	Loss of water quality– in contravention of Sub-Decree on Water Quality	<ul style="list-style-type: none"> Revegetation of construction area. This relates to grass seeding of slopes of new embankments for soil stabilization and control of sediment run off. 	<ul style="list-style-type: none"> These grass seeding of slopes on new embankment for soil stabilization are not yet started The Contractor should provide completed slope for grass seeding by construction plan
(ii) Work in stream channels	Loss of water quality– in contravention of Sub-Decree on Water Quality	<ul style="list-style-type: none"> Limit work in channels to low flows. Diversionary works to be completed in dry season. 	<ul style="list-style-type: none"> There is no work plan in stream channels diversionary in our project in contravention of water quality.
(iii) Fuel, lubricants and asphalt	Loss of soil and water quality – in contravention of MOE Praka No. 992 on the Regulation of Industrial Solid and Liquid Waste Management (1994)	<ul style="list-style-type: none"> Fuel and asphalt storage in properly designed facilities and careful refueling systems following by EMP 	<ul style="list-style-type: none"> The Fuel Tank mounted on concrete slab with rain proofing roof and refueling system The asphalt storage tank should be installed in DBST Stage Up to now, there is no loss of soil water quality by fuel and lubricant
(iv) Solid waste disposal	Loss of soil, air and water quality– in contravention of Sub-Decree on Waste Management	<ul style="list-style-type: none"> Solid waste management procedures 	<ul style="list-style-type: none"> Solid waste material to loss of soil, air and water quality are not yet produced in this stage to disposal by CEMP
(v) Dust impact	Loss of quality of life values – in contravention of Sub-Decree on Air pollution Prevention.	<ul style="list-style-type: none"> Road watering for road maintenance and cover stock piles 	<ul style="list-style-type: none"> Maintenance Team is maintained periodically water spraying on construction Road Section and pass through villages. In rock quarry, raw material is watering to prevent dust being blow away No complaint was received from commune council and during house- to-house consultation.

(vi) Noise impacts	Loss of quality of life values– in contravention of Draft Sub-Decree on Noise Prevention	<ul style="list-style-type: none"> Vehicle and Equipment noise control, Timing of work, Give advance notice of time of blasting Low speed is maintained when moving heavy vehicle and/or equipment in front of village Blasting noise must also be controlled to minimize noise and vibration impact. Commune chief and village chief are informed of the construction activity. 	<ul style="list-style-type: none"> Speed limit of construction equipment is 40KPH when moving Equipment. Blasting noise control is followed to minimize noise and vibration by normal industrial standard pattern. The contractor should ensure that Equipment is adequately silenced.
(vii) Vibration impacts	Loss of quality of life values– in contravention of Draft Sub-Decree on Noise Prevention	<ul style="list-style-type: none"> Schedule of Work Method to minimize Vibration impact to villager. Commune and villager chief are informed of the construction Activities 	<ul style="list-style-type: none"> The Equipment is operating works Schedule in daylight hours. The contractor should be required to minimize vibrating impact at village section where equipment are employed.
(viii) Inadequate sanitation	Increased disease– in contravention of Law on Environmental Protection and Natural Resource Management (1996)	<ul style="list-style-type: none"> Provide sanitation through septic tanks; potable drinking water, domestic water by wells and tankers. Underground well to be drill on permanent campsites. Septic tanks to be installed on permanent campsites. 	<ul style="list-style-type: none"> The Permanent Camp Sites is providing sanitation treatment facilities through Septic Tanks Underground well is supplying domestic water for washing and cleaning in storage tanks on permanent base camp Adequate drinking water is supplying market bottled water to staff and worker No increased disease was occurred providing Sanitation by EMP.
(ix) Earthworks and operating of quarries and borrow pits	Erosion and instability of cut faces and borrow pits	<ul style="list-style-type: none"> No new side roads should be permitted in areas with steep slopes. Minimize major earthworks during the rainy season, to the extent feasible. Pile topsoil from digging of borrow pits carefully to one side, where it can be later used for reclamation. During construction, employ erosion prevention measures such as the use of hay bales. At the end of the construction phase, raconteur borrows pit walls, replace topsoil, and vegetate. 	<ul style="list-style-type: none"> We have no cut face with steep slopes and new side roads Topsoil from surface of borrow pits are piling to use later for reclamation negotiated with private land owner No erosion and instability on cut faces was occurred till now During the rainy season, the contractor cannot any digging of borrow pits.

(x) Disposal of overburden	Erosion from disposal of cut spoil	<ul style="list-style-type: none"> Dispose of spoil only where there is vegetated strip at least 50m wide between the disposal site and the nearest water body. To the extent feasible, avoid disposal on slopes greater than 30%. Where spoil disposal in vegetated sites cannot be avoided, select areas with scrub growth over areas of healthy forest. No disposal in the area of the BCPL. No disposal into gullies or watercourses. No disposal in or adjacent to cultivated areas, unless such areas lie within the road reserve width, in which case owner will be compensated under the Resettlement Plan. No disposal by direct tipping of spoil down slope. Vegetate spoil dumps to maintain the soil stability. 	<ul style="list-style-type: none"> We have no any Spoil Deposal Soil to make erosion from disposal of cut spoil in our Project.
(xi) Construction near riverside	Loss of riverside vegetation	<ul style="list-style-type: none"> Avoid clearing riverside vegetation during road construction except where absolutely necessary. Revegetate river banks where clearing is unavoidable. 	<ul style="list-style-type: none"> We have no any road construction near riverside to make loss of riverside vegetation in our project
(xii) Construction of detour	Loss of vegetation from detour construction	<ul style="list-style-type: none"> In flat areas, leave enough of a roadside edge for vehicle to pass on the other half of the roadway. Remove the base soil of any necessary detours and revegetate after road construction. Avoid use of detour where at all possible. Where realignments are being built, use the existing roadway for traffic to pass. Where detour are unavoidable, as in areas where bridges are being built, limit the length and impact of each detour to the degree possible. Limit the width of any necessary detours to a minimum. 	<ul style="list-style-type: none"> We have only one existing UN Bridge widening, when bridges are being built to use the existing bridge to pass on the other half on the road for public traffic. BTC Temple Bypass realignment are being built, the public traffic used the existing roadway to pass Its recommended where drainage Pipe are being build, contractor should be avoided loss of vegetation by making detours within road width.
(xiii) Construction near forests	Loss of vegetation and habitat through road widening, realignment of right-of-way, quarries and borrow pits– in contravention of Royal Decree on the Creation and Designation of Protected Areas (1993)	<ul style="list-style-type: none"> Do not allow side roads in forested area. There must be no new quarries within the BCPL nor in any of the provincial or district prohibited areas. Do not cut any trees outside of the construction zone. In case of new quarries operation, the environmental authorities – DoE - must approve the quarries. Where possible, avoid cutting trees along the edge of the construction zone. Quarrying activity should be limited to a minimum of necessary sites, with previously used sites preferred. 	<ul style="list-style-type: none"> There is no side roads construction in forested area in our project Do not cutting any trees outside the construction Zone, where possible No any New Quarry and borrow pits is in the BCPL nor prohibited area The cutting tree along the edge along the edge of construction Zone have been finished in accordance with contract construction Specification.

(xiv) Construction near Areas Protected by Royal Decree	Impacts on wildlife through interruption of migratory routes and other habitat disturbances– in contravention of Royal Decree on the Creation and Designation of Protected Areas (1993)	<ul style="list-style-type: none"> ▪ Strict monitoring in this area should be used to prevent opportunistic "salvage" logging or illegal timber harvest. If observed, notify relevant authorities or police. ▪ No side roads should be built in the BCPL, as may encourage poaching of wildlife. If observed, notify BCPL rangers or police. 	<ul style="list-style-type: none"> ▪ Our Project have no side roads Plan to build in BCPL, as can encourage poaching of wildlife. ▪ there is no impact on wildlife and opportunistic "salvage" logging or illegal timber harvest and no side roads at BCPL ▪ It's recommended if contractor observed impact on wildlife, notify MOC and BCPL rangers.
(xv) Construction near village water supplies	Encroachment on water supply systems from road construction activities	<ul style="list-style-type: none"> ▪ Contractors should pay a fee to villagers for damage to water system, perhaps based on number of days without water until the system is fixed. ▪ Fees might be specifically targeted toward women's groups, since they are usually the ones who will have the main burden of carrying water when the system is down. 	<ul style="list-style-type: none"> ▪ Contractor is supplying only domestic water for washing and Cleaning by digging wall ▪ Drinking Water is supplying market bottled water to workers and Staffs ▪ Contractor is supplying spray water and construction water at river bed by water tank. ▪ There is no encroachment on villager's water supply systems to make damage from civil works activities.
(xvi) Construction near cultural sites	Encroachment on previously unidentified cultural heritage sites– in contravention of Law on Protection of Cultural and National Heritage (1996)	<ul style="list-style-type: none"> ▪ Alert local authority upon discovery of any objects of possible archaeological significance that may be uncovered during construction. ▪ Construction activity affecting the area of the find should stop until qualified site assessment has been made and contractors have been given permission to proceed. ▪ Bring in a qualified archaeologist as needed. 	<ul style="list-style-type: none"> ▪ The MoCFA have been finished salvage for archaeological artifact at Bypass by MoCFA Expert Team on 31 Dec 2013. ▪ There is no anymore artifacts and relics on previously unidentified cultural heritage sites during Civil works till now ▪ Its recommended civil works activities should be stop until discovery has been made by MoCFA Expert Team.
(xvii) Construction Causing Air Pollution	Dust / Air pollution– in contravention of Draft Sub-Decree on Air Pollution Prevention	<ul style="list-style-type: none"> ▪ Use water bowsers to water spray on the road when dust occurs, particularly in the dry season. ▪ Maintain all construction Vehicles and Equipment to minimize vehicle emission. 	<ul style="list-style-type: none"> ▪ The contractor is maintaining properly existing road causing Air Pollution by Water Spray Trucks by maintenance Team ▪ The Consultant didn't see Contractor's Construction Equipment to make Air Pollution ▪ It's recommended the Contactor should be checked regularly all Construction Equipment Maintenance to minimize air pollution by Sub-Decree on Air Pollution.

(xviii) Construction Causing Noise	Noise and Vibration– in contravention of Draft Sub-Decree on Noise Prevention	<ul style="list-style-type: none"> ▪ All road construction vehicles must have working mufflers and be properly maintained. ▪ Time blasting activities so as not to disrupt local people. ▪ Avoid working at night near village areas. ▪ Inform people of possible damage from vibration before using Vibrating Rollers near to village area. ▪ Avoid, as much as possible, using Vibration Rollers for soil compaction in settled areas 	<ul style="list-style-type: none"> ▪ All Construction Vehicles and Equipment have equipped working Mufflers and properly maintained. ▪ Time blasting Method is using so as not to disrupt local people at quarry. ▪ The Contractor never working to using Vibrating Roller at night time near to village area ▪ It's recommended making communication Net to inform civil works in the case of using Vibration Rollers near to village
(xix) Excavation of Borrow pits	Creation of stagnant water bodies in borrow pits, quarries	<ul style="list-style-type: none"> ▪ Incorporate adequate drainage and fill in borrow pits and quarries. ▪ Maintain borrow pits and quarries by landscaping and revegetating after operation. 	<ul style="list-style-type: none"> ▪ There is no any stagnant water in borrow pits and quarries to need drainage system and soil back filling. ▪ Topsoil of borrow pits and quarries piled to use landscaping and revegetating after operation. ▪ Borrow pits have been left open to use water reservoirs for Farmer's needs. ▪ It's recommended the Contractor should be required landscaping Quarry by approved condition from Authority after finished operation. ▪ There is no Borrow Pits and Quarries to need adequate drainage structure and backfill till now.
(xx) Construction of by-pass	Accidental risks by traffic disruption during construction	<ul style="list-style-type: none"> ▪ Employ "flag men" to regulate the traffic flow. ▪ Where new alignments are being built, allow traffic to continue on old alignments. ▪ Where possible, as in flat areas, provide enough edge space for one-way traffic flow. 	<ul style="list-style-type: none"> ▪ Whenever new by-pass alignment 11.5 Km at BTC Temple are being built, all public traffic should be used existing NR 56 ▪ Contractor have been installed Traffic Control Sign with "flagman" to control Public Traffic during Civil Works ▪ There is no accident risks during civil works till now.

(xxi) Visual impact of construction	Visual Impact of road cut, spoil disposal, borrow pits, and quarries.	<ul style="list-style-type: none"> Where feasible, quarries should be sited away from the road. In sites where quarries must be close to the road, trees and other vegetation should be left between the quarry/crushing plant sites and the road. 	<ul style="list-style-type: none"> Our Project have no road cut and Spoil disposal in detail design close to the NR 56. The contractor should be explored more additional Borrow Pits and Quarries away from the road Already approved all Borrow Pits and one Quarries is not in near our road to make Visual Impacts.
(xxii) Setting up and operating an asphalt bitumen operation area.	Water pollution by oil, grease, and fuel around gas stations and parking areas— in contravention of Draft Sub-Decree on Hazardous Substances	<ul style="list-style-type: none"> Locate storage areas for diesel and bitumen at least 500 meters from watercourses. Employ safe practices in filling bitumen distributor tanks and in heating bitumen. Do not allow smoking or fire of any kind in the vicinity of bitumen and kerosene blending tanks. Provide a carbon dioxide fire extinguisher at the bitumen tank site for fire-fighting. Collect and recycle all lubricants and take precautions to prevent accidental spills. Prohibit road asphaltting activities during rainfall. Develop and implement plans for safe storage of all toxic and potentially toxic materials into construction planning and design. 	<ul style="list-style-type: none"> Our DBST Pavement Schedule will star on next year 2013. The Consultant will monitor contractor's Setting up Operating Methods for DBST to required mitigation Measure by CEMP/IEE. There is no sign operating an aslant bitumen operation area for DBST till now.
(xxiii) Construction activities near prime agricultural lands	Destruction of agricultural land through spoil and construction waste disposal— in contravention of Draft Sub-Decree on Waste Management	<ul style="list-style-type: none"> Do not dispose cut spoil and construction waste at agricultural land. 	<ul style="list-style-type: none"> We have no any cut spoil and construction waste disposal for civil works to make destruction of prime agricultural lands in our project
(xxiv) Construction Camps Operation	Solid waste— in contravention of Draft Sub-Decree on Waste Management	<ul style="list-style-type: none"> Provide garbage bins & sanitary facilities for workers. Waste in the bins should be cleared periodically. Special attention should be paid to the sanitary condition of camps. 	<ul style="list-style-type: none"> The contractor is providing plastic garbage bins in base camp to collect segregated by recycle things and Material. The sanitation facilities by septic tank have been installed at base camp.

(xxv) Residual Effects from Construction Camps	Depletion of natural resources through demand for building materials, fuel and food for workers– in contravention of Law on Environmental Protection and Natural Resource Management (1996)	<ul style="list-style-type: none"> Do not harvest wood resources within the BCPL Do not allow construction camps to become permanent settlements. Remove camps prior to project completion. Use non-wood fuels such as Liquid Propane Gas or kerosene for cooking food. Where local materials must be used, make agreements with local communities about the areas or the volume that can be harvested without significant impact. Support community development by paying an adequate prices for any local resources used. All supplies for building camps should be brought from outside the area. Upon close of construction, consider transferring camp structures to local people for community or government use. 	<ul style="list-style-type: none"> All Construction Base Camp material have been brought from outside market material approved by consultant Market Liquid Propane Gas tank for cooking food is supplying 10 no for Consultant Permanent Base Camp have been built by contracted BOQ in DPWT office premises to transfer camp to DPWT. All workers material for fuel, food and living material are brought from local Market selling material and foods. All facilities and furniture for Base Camp constructed by contract building drawing schedule following specification.
(xxvi) Health Effect from Construction Camps	Creation of a new pathway for disease vectors affecting humans	<ul style="list-style-type: none"> All workers will have a medical screening conducted by "Cambodian Red Cross", to check for HIV/AIDS, sexually transmitted diseases, etc. Keep camps from becoming blight on the local environment. Provide enough water supplies for workers, and ensure sufficient sanitation for the camp: the proper drainage systems and the proper location for solid waste disposal. Make medical treatment available for workers. Provide workers mosquito nets and malaria-prevention medication. If needed, spray around camp area with chemical against mosquitoes. Plan post-construction clean-up activities to assure no unsanitary or otherwise hazardous debris are left behind at camp sites. 	It is observed there is no creation of Health Effect from construction camps by disease vectors
(xxvii) First aid Kits at Camp Site	Response to injury, and illness at Camp Site	<ul style="list-style-type: none"> Provide First aid kit for all worker's Camp Site to make Emergency Medical Treatment available for workers Keep medical emergency measure system and networks for response to injury, and illness on site identifying nearest medical facilities 	<ul style="list-style-type: none"> First aid kits were provided at all camp site for EMT. Training to the Workers is conducting by Contractor's Safety Trainer. Nearest Medical Facilities for EMT were identified with medical Capacities size and doctors.

(xxviii) Fire Fighting facilities	The fire extinguisher is installed at Camp Site for prevention of fire disaster	<ul style="list-style-type: none"> Fire extinguisher should be place in convenience and reachable place. 	<ul style="list-style-type: none"> The chemical Fire Extinguisher were installed at Camp site and Fuel tanks It is recommended that Comical extinguisher should be check regularly it's functioning by maker.
4. Operation and Maintenance Stage			
(a) Better quality road and higher speeds	Increase in road accidents to people and livestock	<ul style="list-style-type: none"> Speed limits enforced. Driver and community awareness; road signs 	<ul style="list-style-type: none"> Road sign for speed limit by Cambodia Standard already included in the Civil works Not yet installed in this stage for Civil Works Stage Police should be enforced speed limit to Driver decreasing Traffic Accident
(b) More traffic volume	Increased air pollution and noise – in contravention of Draft Sub-Decree on Noise and Air Pollution Prevention	<ul style="list-style-type: none"> Control of vehicle air and noise emissions from vehicles. Paved road will decrease noise and dust. 	<ul style="list-style-type: none"> The MoE/DoE should be control of air prolusion, noise and emission
(c) Poor control of increased traffic volume with more vehicles carrying hazardous chemicals.	Accidental Risk of Toxic Spills – in contravention of Draft Sub-Decree on Hazardous Substances	<ul style="list-style-type: none"> Enforcement of transport regulations and HAZCHEM procedures 	<ul style="list-style-type: none"> The DoE, Police should be enforced vehicle carrying hazardous chemicals by transport regulations and HAZCHEM procedures
(d) Increased access	Illegal settlement along RoW	<ul style="list-style-type: none"> Restriction of development within Row; offer of alternative sites for activities 	<ul style="list-style-type: none"> SEU/MPWT/DPW should be supervised and monitored development along ROW
(e) Increased access	Accelerated Loss of Forests and Wildlife's – in contravention of Joint PraKas of the MoE and the MoA on prohibition of Hunting and Catching of Wildlife Animals (1996)	<ul style="list-style-type: none"> Not anticipated as no wildlife conservation areas near to Project Roads. BCPL contains no rare Spices; Crane conservation area is 5Kms away 	<ul style="list-style-type: none"> The MoE/DoE, MAFF should be supervised and monitored Loss of Forests and Wildlife's.
(f) Increased vehicular traffic	Overexploitation of forest resources through illegal and unsustainable harvesting – in contravention of Royal Decree on the creation and designation of Protected Areas (1993)	<ul style="list-style-type: none"> Strengthen enforcement of existing laws regulating Timber harvest, achieved through inputs in training, staffing, resources and regulatory powers of Forestry officials at all levels 	<ul style="list-style-type: none"> The implementing Organization at all levels should be reviewed strengthen enforcement of existing laws of forest resources

(g) Increased vehicular traffic	Impact of wildlife through increased pressure from illegal trade – in contravention of Joint Prakas of the MoE and the MoA on prohibition of Hunting and Catching of Wildlife Animals (1996)	<ul style="list-style-type: none"> ▪ Enforce of existing wildlife regulations prohibiting trade in endangered species. ▪ Build Cambodia Government Capacity for enforcement of wildlife laws through training, resources, and increased staffing. ▪ Improved boarder area controls on all sides (Thailand and Cambodia) with increased staffing, training and resources 	<ul style="list-style-type: none"> ▪ The FA/MAFF and DoE/ MoE at all level should be reviewed strengthen for wildlife regulations prohibiting trade and wildlife laws ▪ The CBF and CBE at O'smarch boarder included improved new border facility to control illegal trade by Bag and Container Scanner by MPWT
(h) Increased vehicular traffic	Loss of cultural resources and tradition – in contravention of Law on the Protection of Cultural and National Heritage (1996)	<ul style="list-style-type: none"> ▪ Support well- planed Eco-tourism that involves solicitation of continuous feedback from both local residents and travelers ▪ Support the development of village cultural preservation groups, as already occur in several villages along the Project road 	<ul style="list-style-type: none"> ▪ The MoCF/DoCF should be supported well-planed Eco- tourism and cultural preservation along the Project road ▪ The MPWT will support rehabilitation of BTC temple access road for Cambodia Tourism Industry approved by ADB's IEE/EMP.

➤ Abbreviations

G	: Gabion
M	: Mattress
Geo	: Geo Textile
RP	: Resettlement Plan
DoE	: Department of Environment, MoE = Ministry of Environment
BCPL	: Bantey Chhmar Protected Landscape
FA	: Forestry Administration, MAFF
MAFF	: Ministry of Agriculture, Forestry and Fisheries
DoCF	: Department of Culture and Fine Arts, MoCF = Ministry of Culture and Fine Arts
SEU	: Social and Environment Unit
MPWT	: Ministry of Public Works and Transport
IRC	: Inter-Ministerial Resettlement Committee
MoH	: Ministry of Health
MoWM	: Ministry of Water Resource and Meteorology

APPENDIX

- A. CHECK LIST OF EMP
(FEBRUARY 2014)**
- B. PHOTOGRAPH OF EMP
(FEBRUARY 2014)**

APPENDIX A

CHECK LIST OF EMP (FEBRUARY 2014)



Kingdom of Cambodia
Ministry of Public Works and Transport
Project Management Unit 3

Cambodia Northwest Provincial
Road Improvement Project
EDCF Loan No. KHM-9

Activity of Environment Mitigation (February, 2014)

Consultants : KCI/Yooshin

Contractor : Kumho E&C/Hwang Bo

Environmental Specialist :

In charge Person : Jung Woong Doo

Construction Activities

1. Mobilization
2. Mine/UXO Clearance Work
3. Survey Work
4. Maintain Safe Traffic Operation

5. Engineer Site Camp
6. HIV/AIDS Prevention Program

Summary of Inspection Result

No	Category	Activities	Remark
1	Construction Camp	· Routine Observation by checklist : 4, 11, 18, 25 February 2014	Every Tuesday
2	Borrow Pits / Quarries	· Routine Observation by checklist : 4, 11, 18, 25 February 2014	Every Tuesday
3	Erosion of Slopes	No complaint	
4	Air Pollution	· Routine Observation by checklist : 4, 11, 18, 25 February 2014	Every Tuesday
5	Water Pollution	No complaint	
6	Agriculture	No complaint	
7	Land Contamination	No complaint	
8	Cultural Heritage	No complaint	
9	Drainage and Flooding	No complaint	
10	Construction Camps Closure	No complaint	

Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo

Kumho E&C
Chief.Con.Manager

P.M of Kumho E&C

IME of KCI

R.E II of KCI

Checklist 1 Construction Camp (Main Contractor)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56-B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: 4 Feb 2014	Time: 8:00 AM
Location / Road Distance: Kumho's Site Office	
Weather Condition: Sunny, clear & bright	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: The camp is not located next to the community water source. It is about 500m.			
Are the camp / yard being properly maintained?			
Contractor's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard (Not Available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank (Not Available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater is being disposed of properly through the drainage system which was installed around the buildings.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell? The septic tanks have been installed in the camp to keep the wastewater. They are working correctly.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>The solid waste is being disposed of properly every week by the city-sanitation truck comes to remove it from the office.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>The cooks and cleaners always paid attention to the sanitation in the camp.</i>			
Are the contractor's vehicles being maintained at the campsite / yard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>It doesn't have any vehicle's maintenance activity in the camp and</i> How is waste from vehicle maintenance being disposed of? <i>there is no any waste from the maintenance.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>The fuel storage is not installed in the camp.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>The community doesn't have any issues with the camp.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo

Jung.w.d

Chief Con. Manager
Of Kumho E&C

[Signature]

P.M of Kumho E&C

[Signature]

I.M.E of K.C.I

[Signature]

R.E-2 of KCI

Checklist 1 Construction Camp (Engineering Site Camp)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: 4 Feb 2014	Time: 08:05 AM
Location / Road Distance: Engineer's Site Camp	
Weather Condition: Clear, bright & Sunny	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: The camp/yard is located far from a community water source. It is about 500m from each other.			
Are the camp / yard being properly maintained?			
KCI's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard (Not Available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank (Not Available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater is being disposed of by flowing into the drainage system which was installed around the buildings in the camp.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell? The septic tanks were installed to keep the wastewater from daily sus in the camp. They are working correctly.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>The solid waste was removed to disposed of properly by a city-sanitation truck in every week.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>The staff, cook and cleaner were taught about the "Good Housekeeping" and how to keep clean & hygiene in the camp.</i>			
Are the KCI's vehicles being maintained at the campsite / yard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>It doesn't have any vehicle's maintenance activity in the camp.</i> How is waste from vehicle maintenance being disposed of? <i>There is no any waste from the maintenance in the camp.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>The fuel storage is not installed in the camp. All the vehicles have to go to fill the petrol/diesel in the private station.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>There is no any issues / concerns from the nearby community about the camp.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo

Jung.w-11

Chief Con. Manager
Of Kumho E&C

[Signature]

P.M of Kumho E&C

[Signature]

I.M.E of K.C.I

[Signature]

R.E-2 of KCI

Checklist 1 Construction Camp (Team - 1)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: 4 Feb 2014	Time: 13:10 PM
Location / Road Distance: Construction Site Camp (team I)	
Weather Condition: Clear & Sunny	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: The camp is not next to a community water source.			
Are the camp / yard being properly maintained?			
Contractor's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater is being disposed of properly from the camp. It was kept into the septic tanks.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell? The septic tanks were installed in the camp and they are working correctly.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>The solid waste is being disposed of properly from the camp. It was kept in garbage-bins before it was buried or burnt.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>The staffs and workers were taught about how to keep clean and hygiene for the camp.</i>			
Are the contractor's vehicles being maintained at the campsite / yard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>Yes, they are but after the maintenance, the mechanics and workers</i> How is waste from vehicle maintenance being disposed of? <i>always collected the waste and used sand to scatter on the oil-traces.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>The fuel storage with a containment kerb was installed in the camp and it was equipped with a fire extinguisher.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>There is no any issues/concerns from the nearby community with the camp.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo

Jung.w.d

Chief Con. Manager
Of Kumho E&C

[Signature]

P.M of Kumho E&C

[Signature]

I.M.E of K.C.I

[Signature]

R.E-2 of KCI

Checklist 1 Construction Camp (Team - 2)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56B			
Observer: Saing Soveana (M.E of K.C.I)			
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.			
Date: 4 Feb 2014	Time: 10:30 AM		
Location / Road Distance: Construction Site Camp (team II)			
Weather Condition: Clear & Sunny			

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: The yard is not located next to a community water source.			
Are the camp / yard being properly maintained?			
Contractor's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater was kept properly before it was disposed of into septic tanks.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell?</p> <p>The septic tanks were built in the camp to keep the waste. They are working correctly.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>The staff and worker always kept the solid waste into garbage-bins and after they removed the waste to disposed of from the camp.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>All staffs were taught about how to keep the waste properly and how to keep clean and hygiene in the camp.</i>			
Are the contractor's vehicles being maintained at the campsite / yard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>Yes, they are but after repairing, the mechanics & workers collected the waste from the maintenance and used the sand to scatter on the oil.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>A fuel storage with a containment kerb was installed in the camp and a fire extinguisher was equipped with it.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>The nearby community doesn't have any issues/concerns with the camp.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Jung.w.d

Chief Con. Manager
Of Kumho E&C

Checked by:
Yoon, Ki Joo

[Signature]

P.M of Kumho E&C

Checked by:
Hyun mo Cho

[Signature]

I.M.E of K.C.I

Confirmed by:
Gun Suck Yoo

[Signature]

R.E-2 of KCI

Checklist 1 Construction Camp (Team - 3)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: 4 Feb 2014	Time: 9:00 AM
Location / Road Distance: Construction Site Camp (team III)	
Weather Condition: Clear & Sunny	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: The camp is far from a community water source.			
Are the camp / yard being properly maintained?			
Contractor's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater is being disposed of by flowing through a channel to a septic tank.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell? The septic tanks were built in the camp to keep wastewater. They are working correctly.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>Yes, it was kept into garbage-bins before it was removed to dispose of from the camp.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>The staffs and workers were taught about how to keep clean and hygiene in the camp and how to dispose of the waste properly.</i>			
Are the contractor's vehicles being maintained at the campsite / yard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>The vehicle maintenance activity is being done in the camp but after repairing the waste is being collected and used sand to scatter on oil-trace.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>A fuel storage with a containment kerb was built in the campsite. It was equipped with two fire extinguishers.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>The community doesn't have any issues/concerns with the camp.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo

Jung-w.d

Chief Con. Manager
Of Kumho E&C

[Signature]

P.M of Kumho E&C

[Signature]

I.M.E of K.C.I

[Signature]

R.E-2 of KCI

Checklist – weekly or in response to complaint

Checklist 2 **Borrow Pit**

(N.B. There is no specific regulation for this activity)

Project Site: Improvement of NR56AB			
Observer: Saing Soveana (M.E of K.C.I)			
Frequency: Check weekly during preparation of borrow pit, at opening, then weekly or in response to complaint.			
Date: 4 Feb 2014	Time: 15:10 PM		
Location / Road Distance: Borrow Pit at PK: 37+300 LHS-50m.			
Weather Condition: Clear and Sunny			

Checklist Question	Yes	No	Additional Data needs
Is the borrow pit located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: This borrow pit is far from a community water source.			
Is the borrow pit being properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, state what is not being done : Kumho's staff always checks the borrow pit every day. This borrow pit is being maintained properly			
Is there adverse visual impact due to the borrow pit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment how: No, there isn't. This borrow pit is next to the construction road, we always spray water on the access road to this borrow pit, too.			
Is borrow pit excavation / mining adequately employing drainage and fill methodology to avoid any water pools formation during rains?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment: This borrow pit is in good condition for excavation/mining, we only take care about the dust and access road.			
Is the borrow pit properly rehabilitated at least partially before the start of the rainy season?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, comment on what needs to be done: This borrow pit is new we just use it during this month, so it is no need to be rehabilitated.			

Checklist Question	Yes	No	Additional Data needs
Are there any signs of erosion and instability?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what seems to be the reason? <i>No, there are not. This borrow pit doesn't have any signs to recognize the size, distance and location.</i>			
Are the cut faces stabilized with appropriate materials and methods?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, what are the impacts? <i>Yes, the cut faces are stabilized with appropriate materials and methods.</i>			
Is the borrow pit to be closed and rehabilitated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, Is there a closure plan? <i>There is no reason to be closed and rehabilitated this borrow pit.</i>			
Are the borrow pit operations creating excessive dust / noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
What measures are being undertaken to minimize dust and noise? <i>Water is being sprayed to minimize the dust during operation. The noise is not a problem because it is far from the community.</i>			
Do the communities have any concerns / issues with borrow pit during operation or after closure?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are those concerns / issues? <i>The community doesn't have any issues/concerns with this borrow pit.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo

Jung-w.d

Chief Con. Manager
Of Kumho E&C

[Signature]

P.M of Kumho E&C

[Signature]

I.M.E of K.C.I

[Signature]

R.E-2 of KCI

Checklist 4 Air Pollution

(N.B. The contractor must carry out his activities to ensure compliance with the regulations stated in draft Sub Decree on Air and Noise Pollution Control)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I.)	
Frequency: Check weekly or in response to complaint.	
Date: 4 Feb 2014	Time: 14:30 PM
Location / Road Distance: Water spray at Pk: 34+500 to 36+900.	
Weather Condition: Clear and Sunny	

Checklist Question			
What is the nature of air pollution?			
Dust from road			<input checked="" type="checkbox"/>
Dust from stock piled materials			<input type="checkbox"/>
Generator, batching plant emissions			<input type="checkbox"/>
Vehicular emissions			<input checked="" type="checkbox"/>
Checklist Question	Yes	No	Additional Data needs
Is the problem significant enough to warrant attention?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, did the contractor take appropriate measure to mitigate the problem?			
We sprayed water on the main road to minimize the dust during working day.			
What is / are the measures taken?			
Periodic water sprays on road surface / borrow pits			<input checked="" type="checkbox"/>
Vehicle tire washing facilities at borrow pits and other locations			<input type="checkbox"/>
Speed limit enforced on project vehicles			<input type="checkbox"/>
Vehicles speeding checked by posting signs on roads, and awareness raising of staff and local communities			<input checked="" type="checkbox"/>
Covering of stock piled materials			<input type="checkbox"/>
Vehicles regularly maintained			<input type="checkbox"/>
Equipment regularly maintained			<input checked="" type="checkbox"/>

Is air pollution creating problems for the surrounding communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what type of problems? <i>No, the air pollution is not the serious problem for the traffic-flow, because the water is being sprayed to minimize the dust.</i>			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho


Confirmed by:
Gun Suck Yoo




Chief Con. Manager
Of Kumho E&C



P.M of Kumho E&C



I.M.E of K.C.I



R.E-2 of KCI

Checklist 1 Construction Camp (Main Contractor)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56-B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: 25 Feb 2014	Time: 7:40 AM
Location / Road Distance: Kumho's Site Office	
Weather Condition: Clear & Sunny	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: The camp is not located next to a community water source. It is over 500 m from the office to a water source.			
Are the camp / yard being properly maintained?			
Contractor's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard (Not Available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank (Not Available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater is being disposed of through the drainage system which was installed around the building.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell? The septic tanks have been installed to stock wastewater from daily use. They are working normally.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>The solid waste was removed to dispose of from the office every two times a week by a City-sanitation truck.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>We are always taking care about hygiene/sanitation in the camp, because if it is not good, it will cause the problems with our health.</i>			
Are the contractor's vehicles being maintained at the campsite / yard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>No, they are not. All vehicles need to be repaired, they have to repair at private garage at Samraong or Siem Reap.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>A fuel storage is not installed at the camp.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>There is no any complains about the camp from a community.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung



Chief Con. Manager
Of Kumho E&C

Checked by:
Yoon, Ki Joo



P.M of Kumho E&C

Checked by:
Hyun mo Cho



I.M.E of K.C.I

Confirmed by:
Gun Suck Yoo



R.E-2 of KCI

Checklist 1 Construction Camp (Engineering Site Camp)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: 25 Feb 2014	Time: 7:50 AM
Location / Road Distance: Engineer's Site Camp	
Weather Condition: Clear & Sunny	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: A community water source is far from the Engineer's Site Camp. It is about over 500m from each other.			
Are the camp / yard being properly maintained?			
KCI's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard (Not Available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank (Not Available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater is being disposed of by flowing through the drainage system into the septic tanks.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell? Septic tanks have been installed in the camp to stock wastewater from daily use. They are working properly.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>Engineer always checked the solid waste when a truck came to remove the solid waste from the office.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>All staffs were taught about the disadvantage of the waste after using and how to keep and dispose it properly from the camp.</i>			
Are the KCI's vehicles being maintained at the campsite / yard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>Vehicles maintenance was not done at the camp. It was always done at the private garage in Samraong or Siem Reap</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>There is no fuel storage at the camp, so filling diesel/gasoline for vehicles at private station.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>There is no any complains with the camp from a community.</i>			
Any additional comments:			

Inspector's name and signature:


Prepared by:
Woong Doo Jung


Checked by:
Yoon, Ki Joo


Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo


Chief Con. Manager
Of Kumho E&C


P.M of Kumho E&C


I.M.E of K.C.I


R.E-2 of KCI

Checklist 1 Construction Camp (Team - 1)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: <u>25 Feb 2014</u>	Time: <u>13:50 PM</u>
Location / Road Distance: <u>Construction Site Camp (team I)</u>	
Weather Condition: <u>Clear and Sunny</u>	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment:			
Are the camp / yard being properly maintained?			
Contractor's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
<u>The wastewater is being disposed of by disposing into septic tanks in the camp.</u>	<p>If no, comment on. Have septic tanks been installed? <u>Yes, they have.</u> Are they working correctly, that is not overflowing, or emitting smell? <u>The septic tanks have been installed in the camp. They are working correctly.</u></p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>Before the solid waste was removed to dispose of from the camp, it was kept into rubbish-bins properly every day.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>The staffs and workers were taught about how to keep and dispose of the solid waste after using it.</i>			
Are the contractor's vehicles being maintained at the campsite / yard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>Yes, they are. Maintenance activity was done at the camp, but the waste was collected to dispose of properly after working day.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>A fuel storage with a containment kerb was installed in the camp. One fire extinguisher was equipped with the tank.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>There is no any complains/ issues with the camp from a community.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo

Jung-w-d

Chief Con. Manager
Of Kumho E&C

[Signature]

P.M of Kumho E&C

[Signature]

I.M.E of K.C.I

[Signature]

R.E-2 of KCI

Checklist 1 Construction Camp (Team - 2)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: 25 Feb 2014	Time: 10:00AM
Location / Road Distance: Construction Site Camp (team II)	
Weather Condition: Clear and Sunny	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: The camp/yard is far from a community water source.			
Are the camp / yard being properly maintained?			
Contractor's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater is being disposed of from the camp by disposing into septic tanks.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell?</p> <p>There are septic tanks, have been installed in the camp to stock the wastewater. They are working correctly.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>The solid waste was kept into rubbish-bins properly and after that it was removed to bury or burn.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>The staffs and workers were always taught about how to keep clean with hygiene properly and how to dispose the waste.</i>			
Are the contractor's vehicles being maintained at the campsite / yard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>Yes, they maintain/repair the vehicles/heavy equipment in the camp, How is waste from vehicle maintenance being disposed of? but after repairing they keep the waste properly.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>A containment kerb was built around the diesel tank and there are two fire extinguishers with the tank.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>There is no any complains/issues with the camp from community.</i>			
Any additional comments:			


Inspector's name and signature:


Prepared by:
Woong Doo Jung

Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo


Chief Con. Manager
Of Kumho E&C


P.M of Kumho E&C


I.M.E of K.C.I


R.E-2 of KCI

Checklist 1 Construction Camp (Team - 3)

(N.B. There is no specific regulation for this activity.

"Good Housekeeping" must be observed and "General Industry Practice" followed)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of camp, at opening of camp, then weekly or in response to complaint.	
Date: 25 Feb 2014	Time: 9:10 AM
Location / Road Distance: Construction Site Camp (team III)	
Weather Condition: Clear and Sunny	

Checklist Question	Yes	No	Additional Data needs
Is the camp / yard located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: The camp/yard is not located next to a community water source.			
Are the camp / yard being properly maintained?			
Contractor's office building	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casting yard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's accommodation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worker's toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The areas where construction vehicles/equipment pass constantly is covered with gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compact and proper grade of the camp ground	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, describe details what is not being done properly and what is requested for mitigation:			
Is the wastewater being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how the wastewater is being disposed	If no, comment on how it is being disposed and what are the impacts:		
The wastewater is being disposed of from the camp by disposing it into septic tanks.	<p>If no, comment on. Have septic tanks been installed? Yes, they have. Are they working correctly, that is not overflowing, or emitting smell? The septic tanks have been installed to keep water from daily use. They are working well.</p>		

Checklist Question	Yes	No	Additional Data needs
Is the solid waste being disposed of properly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how it is being disposed and the impacts of such disposal: <i>The solid waste was kept in garbage-bins properly before it was removed to dispose from the camp every day.</i>			
Is attention being paid to "Good housekeeping"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what is not being done: <i>All staffs and workers always paid attention to "Good Housekeeping" and how to keep their health well.</i>			
Are the contractor's vehicles being maintained at the campsite / yard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment on What appropriate precautions are taken to avoid water and land contamination? <i>Yes, they repair the heavy equipment/ vehicles in the camp every day.</i> How is waste from vehicle maintenance being disposed of? <i>The waste is being kept and disposed of properly.</i>			
Is the fuel storage area properly surfaced and has a containment kerb around it?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on how the surrounding area is being affected: <i>A diesel tank was installed and a containment kerb was built around a diesel tank. 2 fire extinguishers with the tank.</i>			
Health and hygiene			
Are occupational health and hygiene precautions being taken?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers provided with enough clean water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers adequately protected from the elements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are workers' quarters well-lighted and well-ventilated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there enough sanitary toilets and bathrooms?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on where they are being neglected:			
Does the community have any issues with the camp?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are the issues? <i>There is no any complains/issues with the camp from community.</i>			
Any additional comments:			

Inspector's name and signature:


Prepared by:
Woong Doo Jung


Checked by:
Yoon, Ki Joo


Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo


Chief Con. Manager
Of Kumho E&C


P.M of Kumho E&C


I.M.E of K.C.I


R.E-2 of KCI

Checklist – weekly or in response to complaint

Checklist 2 **Borrow Pit**

(N.B. There is no specific regulation for this activity)


Project Site: Improvement of NR56AB			
Observer: Saing Soveana (M.E of K.C.I)			
Frequency: Check weekly during preparation of borrow pit, at opening, then weekly or in response to complaint.			
Date: 25 Feb 2014	Time: 9:35 AM		
Location / Road Distance: Borrow Pit at PK: 108+900, LHS-200m			
Weather Condition: Clear and Sunny			

Checklist Question	Yes	No	Additional Data needs
Is the borrow pit located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: This borrow pit is far from a community water source.			
Is the borrow pit being properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, state what is not being done : The staff from Kumho E&C always check it during operation.			
Is there adverse visual impact due to the borrow pit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment how: No, there is not. It is good for excavation/mining, we only spray water on the access road to minimize the dust on the road.			
Is borrow pit excavation / mining adequately employing drainage and fill methodology to avoid any water pools formation during rains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, comment: There is no matter with this borrow pit excavation/mining, we did the removing top soil and made access road, we can use it.			
Is the borrow pit properly rehabilitated at least partially before the start of the rainy season?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, comment on what needs to be done: There is no need to be rehabilitated this borrow pit, because we only use it in this month.			


Checklist Question	Yes	No	Additional Data needs
Are there any signs of erosion and instability?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what seems to be the reason? <i>There is no fence, signs to recognize the borrow pit's size, location, distance, etc.</i>			
Are the cut faces stabilized with appropriate materials and methods?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, what are the impacts? <i>The cut faces of this borrow pit is up to the land owner's need.</i>			
Is the borrow pit to be closed and rehabilitated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, Is there a closure plan? <i>This borrow pit is no needed to be closed and rehabilitated because it is being used every day.</i>			
Are the borrow pit operations creating excessive dust / noise?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
What measures are being undertaken to minimize dust and noise? <i>The noise does not the matter for the community and for the dust, we spray water to minimize it.</i>			
Do the communities have any concerns / issues with borrow pit during operation or after closure?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are those concerns / issues? <i>The community doesn't have any complains/issues with this borrow pit.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung


Chief Con. Manager
Of Kumho E&C


Checked by:
Yoon, Ki Joo


P.M of Kumho E&C

Checked by:
Hyun mo Cho


I.M.E of K.C.I

Confirmed by:
Gun Suck Yoo


R.E-2 of KCI

Checklist – weekly or in response to complaint

Checklist 2 **Quarries**

(N.B. There is no specific regulation for this activity)

Project Site: Improvement of NR56AB	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of borrow pit, at opening, then weekly or in response to complaint.	
Date: 25 Feb 2014	Time: 15:45 PM
Location / Road Distance: Quarry at PK: 19 + 400, LHS - 5km	
Weather Condition: Clear and Sunny	

Checklist Question	Yes	No	Additional Data needs
Is the quarry located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: This quarry is not located next a community water source.			
Is the quarry being properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, state what is not being done : Yes, it is being maintained strictly during working time.			
Is there adverse visual impact due to the quarry?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment how: Yes, it is. The adverse visual impact is noise and dust, but luckily, it doesn't affect to a community because it is very far.			
Is the quarry excavation / mining adequately employing drainage and fill methodology to avoid any water pools formation during rains?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment: There is no problem with the excavation/mining operation at this quarry.			
Is the quarry properly rehabilitated at least partially before the start of the rainy season?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment on what needs to be done: Last year during rainy season, the owner took some measures to protect his quarry.			

Checklist Question	Yes	No	Additional Data needs
Are there any signs of erosion and instability?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what seems to be the reason? <i>There is no any signs to recognize the erosion and instability with this quarry at all.</i>			
Are the cut faces stabilized with appropriate materials and methods?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, what are the impacts? <i>Because of this quarry is far from a community, so the cut faces are not the problem.</i>			
Is the quarry to be closed and rehabilitated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, Is there a closure plan? <i>This quarry is maintained properly, so there is no need to be closed and rehabilitated it</i>			
Are the quarry operations creating excessive dust / noise?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
What measures are being undertaken to minimize dust and noise? <i>Yes, they are. Especially, dust and noise from the quarry operation, but they don't affect to a community.</i>			
Do the communities have any concerns / issues with quarry during operation or after closure?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are those concerns / issues? <i>There is no any complains/issues with this quarry from a nearby community.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung

Jung

Chief Con. Manager
Of Kumho E&C

Checked by:
Yoon, Ki Joo

[Signature]

P.M of Kumho E&C

Checked by:
Hyun mo Cho

[Signature]

I.M.E of K.C.I

Confirmed by:
Gun Suck Yoo

[Signature]

R.E-2 of KCI

Checklist — weekly or in response to complaint

Checklist 2 **Quarries**

(N.B. There is no specific regulation for this activity)


Project Site: Improvement of NR56AB	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of borrow pit, at opening, then weekly or in response to complaint.	
Date: 25 Feb 2014	Time: 12:20 PM
Location / Road Distance: Quarry at PK: 81+900, RHS-18 km.	
Weather Condition:	

Checklist Question	Yes	No	Additional Data needs
Is the quarry located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: It is not next to a community water source.			
Is the quarry being properly maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, state what is not being done : It will be maintained properly when it start operating.			
Is there adverse visual impact due to the quarry?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment how: Maybe it doesn't matter with the quarry.			
Is the quarry excavation / mining adequately employing drainage and fill methodology to avoid any water pools formation during rains?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, comment: This quarry will be started next month and the quarry mining/ excavation will not be a problem.			
Is the quarry properly rehabilitated at least partially before the start of the rainy season?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If no, comment on what needs to be done: We will check it again after running next month, because now it is not running, it is being installed.			


Checklist Question	Yes	No	Additional Data needs
Are there any signs of erosion and instability?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what seems to be the reason? <i>This quarry is not yet oprating, we will check it next time.</i>			
Are the cut faces stabilized with appropriate materials and methods?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If no, what are the impacts? <i>Right now, it is no problem with cut faces.</i>			
Is the quarry to be closed and rehabilitated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, Is there a closure plan? <i>It is a new quarry and it will start in the near future.</i>			
Are the quarry operations creating excessive dust / noise?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
What measures are being undertaken to minimize dust and noise? <i>There is no dust and noise, because it is not yet finished the installation.</i>			
Do the communities have any concerns / issues with quarry during operation or after closure?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what are those concerns / issues? <i>There is no any concerns/issues with this quarry because it is not located next to a community.</i>			
Any additional comments:			

Inspector's name and signature:


Prepared by:
Woong Doo Jung


Chief Con. Manager
Of Kumho E&C


Checked by:
Yoon, Ki Joo


P.M of Kumho E&C

Checked by:
Hyun mo Cho


I.M.E of K.C.I

Confirmed by:
Gun Suck Yoo


R.E-2 of KCI

Checklist – weekly or in response to complaint

Checklist 2 **Quarries**

(N.B. There is no specific regulation for this activity)


Project Site: Improvement of NR56AB	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly during preparation of borrow pit, at opening, then weekly or in response to complaint.	
Date: <i>25 Feb 2014</i>	Time: <i>13:55 PM</i>
Location / Road Distance: <i>Quarry at PK: 47+000, RHS-19 Km.</i>	
Weather Condition:	

Checklist Question	Yes	No	Additional Data needs
Is the quarry located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment: <i>A community water source is not located next to this quarry.</i>			
Is the quarry being properly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If no, state what is not being done : <i>This quarry will run the operation in March. 2014.</i>			
Is there adverse visual impact due to the quarry?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, comment how: <i>There is no any adverse visual impact due to the quarry.</i>			
Is the quarry excavation / mining adequately employing drainage and fill methodology to avoid any water pools formation during rains?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If no, comment: <i>There is not any problem with quarry excavation/mining.</i>			
Is the quarry properly rehabilitated at least partially before the start of the rainy season?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If no, comment on what needs to be done: <i>We will accelerate the installation progress to finish this month and we plan to start running in March.</i>			


Checklist Question	Yes	No	Additional Data needs
Are there any signs of erosion and instability?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, what seems to be the reason? <i>There is no any signs to recognize the erosion and instability of this quarry.</i>			
Are the cut faces stabilized with appropriate materials and methods?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If no, what are the impacts? <i>The cut faces are not the problem now, because it is not yet running</i>			
Is the quarry to be closed and rehabilitated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, Is there a closure plan? <i>This quarry is new, it will start in March.</i>			
Are the quarry operations creating excessive dust / noise?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
What measures are being undertaken to minimize dust and noise? <i>There is no noise, no dust at this quarry.</i>			
Do the communities have any concerns / issues with quarry during operation or after closure?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, what are those concerns / issues? <i>This quarry had some problem with the Forestry Communities, but now all the problem was cleared already.</i>			
Any additional comments:			

Inspector's name and signature:

Prepared by:
Woong Doo Jung


Chief Con. Manager
Of Kumho E&C

Checked by:
Yoon, Ki Joo


P.M of Kumho E&C

Checked by:
Hyun mo Cho


I.M.E of K.C.I

Confirmed by:
Gun Suck Yoo


R.E-2 of KCI

Checklist 4 Air Pollution

(N.B. The contractor must carry out his activities to ensure compliance with the regulations stated in draft Sub Decree on Air and Noise Pollution Control)

Project Site: Improvement of NR56B	
Observer: Saing Soveana (M.E of K.C.I)	
Frequency: Check weekly or in response to complaint.	
Date: <i>25 Feb 2014</i>	Time: <i>8:55 AM</i>
Location / Road Distance: <i>Water spray from PK: 106+500 - 107+900.</i>	
Weather Condition:	

Checklist Question			
What is the nature of air pollution?			
Dust from road			<input checked="" type="checkbox"/>
Dust from stock piled materials			<input type="checkbox"/>
Generator, batching plant emissions			<input type="checkbox"/>
Vehicular emissions			<input checked="" type="checkbox"/>
Checklist Question	Yes	No	Additional Data needs
Is the problem significant enough to warrant attention?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, did the contractor take appropriate measure to mitigate the problem? <i>We always sprayed water to minimize the dust on the road where /when we were working</i>			
What is / are the measures taken?			
Periodic water sprays on road surface / borrow pits			<input checked="" type="checkbox"/>
Vehicle tire washing facilities at borrow pits and other locations			<input type="checkbox"/>
Speed limit enforced on project vehicles			<input type="checkbox"/>
Vehicles speeding checked by posting signs on roads, and awareness raising of staff and local communities			<input checked="" type="checkbox"/>
Covering of stock piled materials			<input type="checkbox"/>
Vehicles regularly maintained			<input type="checkbox"/>
Equipment regularly maintained			<input checked="" type="checkbox"/>

Is air pollution creating problems for the surrounding communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>If yes, what type of problems?</p> <p>The air pollution does not a problem for traffic flow because we always spray water to minimize the dust every day.</p>			

Inspector's name and signature:

Prepared by:
Woong Doo Jung


Checked by:
Yoon, Ki Joo

Checked by:
Hyun mo Cho

Confirmed by:
Gun Suck Yoo




Chief Con. Manager
Of Kumho E&C



P.M of Kumho E&C



I.M.E of K.C.I



R.E-2 of KCI

APPENDIX B

**PHOTOGRAPH OF EMP
(FEBRUARY 2014)**

Improvement of National Road No. 56B from Km 29+000 to Samraong
EDCF Loadn No. KHM-9

Subject: Environment Management Plan for February 2014

Date: 04 February 2014






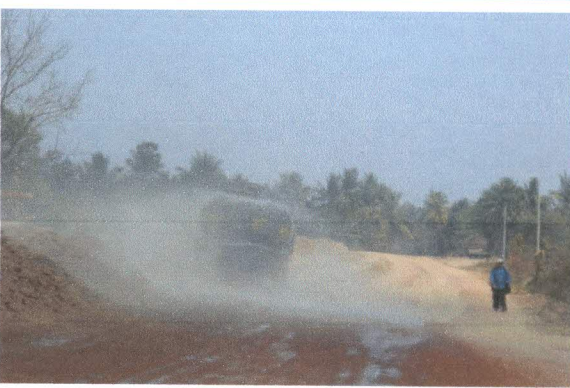



					
Engineer Site Camp's Office		Sanitation Activity at Engineer Site Camp			
					
Kumho's Site Office (Former)		Sanitation Activity at Kumho's Site Office			
					
Borrow Pit at PK: 37+300, LHS 50m		Water spray at PK: 34+500 to 36+900			
Prepared by (Contractor)		Checked by (Consultants)		Confirmed by (Consultants)	
					
Yoon, Ki Joo		Hyun mo Cho		Gun Suck Yoo	
Project Manager		IME		Resident Engineer 2	

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loan No. KHM-9

Subject: Environment Management Plan for February 2014

Date: 11 February 2014

					
Engineer Site Camp's Office		Sanitation Activity at Engineer Site Camp			
					
Kumho's Site Office (New)		Sanitation Activity at Kumho's Site Office			
					
Borrow Pit at PK: 70+900, LHS-100m		Water spray at PK: 70+000 to 7+650			
Prepared by (Contractor)		Checked by (Consultants)		Confirmed by (Consultants)	
					
Yoon, Ki Joo		Hyun mo Cho		Gun Suck Yoo	
Project Manager		IME		Resident Engineer 2	

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loan No. KHM-9

Subject: Environment Management Plan for February 2014

Date: 18 February 2014



Engineer Site Camp's Office



Sanitation Activity at Engineer Site Camp



Sanitation Activity at Kumho's Site Office



Kumho's Bathroom



Borrow Pit at PK: 93+400, LHS-100m



Water spray at PK: 84+100 to 85+500






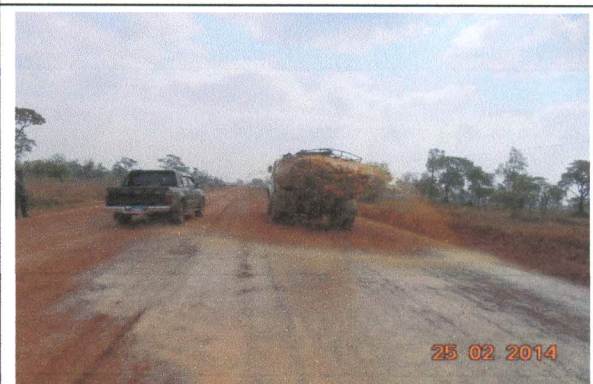



Prepared by (Contractor)	Checked by (Consultants)	Confirmed by (Consultants)
		
Yoon, Ki Joo	Hyun mo Cho	Gun Suck Yoo
Project Manager	IME	Resident Engineer 2

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loan No. KHM-9

Subject: Environment Management Plan for February 2014

Date: 25 February 2014

			
Sanitation Activity at Engineer Site Camp		Sanitation Activity at Engineer Site Camp	
			
Sanitation Activity at Kumho's Site Office		Kumho's Bathroom	
			
Borrow Pit at PK: 108+900, LHS-200m		Water spray at PK: 106+500 to 107+900	
Prepared by (Contractor)	Checked by (Consultants)	Confirmed by (Consultants)	
			
Yoon, Ki Joo	Hyun mo Cho	Gun Suck Yoo	
Project Manager	IME	Resident Engineer 2	

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loadn No. KHM-9

Subject: Environment Management Plan for February 2014

Other activities in February 2014

			
Drainage System around KCI's buildings		Drainage System around KCI's buildings	
			
Septic Tanks at Engineer's Site Camp		Water Reservoir at KCI	
			
Water Supply to Engineers		Water Supply to Engineers	
Prepared by (Contractor)	Checked by (Consultants)	Confirmed by (Consultants)	
			
Yoon, Ki Joo	Hyun mo Cho	Gun Suck Yoo	
Project Manager	IME	Resident Engineer 2	

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loadn No. KHM-9

Subject: Environment Management Plan for February 2014

Other activities in February 2014







 <p>25 02 2014</p>		
<p>Cleaning activity in Engineer's Site Camp</p>	<p>Cleaning activity in Kumho's Office</p>	
		
<p>Cleaning activity in Kumho's Office</p>	<p>Maintenance's Kumho's Site Camp</p>	
		
<p>Maintenance's Kumho's Site Camp</p>	<p>Maintenance's Kumho's Site Camp</p>	
<p>Prepared by (Contractor)</p>	<p>Checked by (Consultants)</p>	<p>Confirmed by (Consultants)</p>
		
<p>Yoon, Ki Joo</p>	<p>Hyun mo Cho</p>	<p>Gun Suck Yoo</p>
<p>Project Manager</p>	<p>IME</p>	<p>Resident Engineer 2</p>

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loan No. KHM-9

Subject: Environment Management Plan for February 2014

Other activities in February 2014






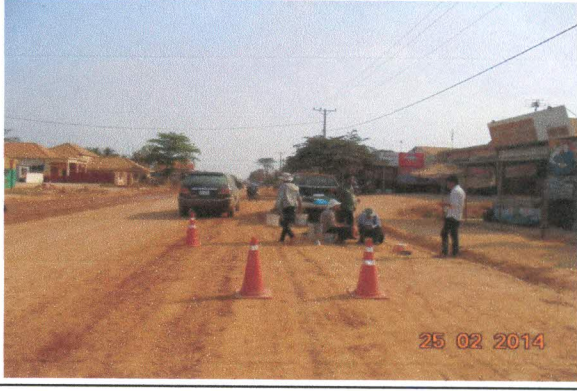



 <p>25 02 2014</p>		 <p>25 02 2014</p>			
Construction Site Camp (team III)		Diesel Tank at team III			
 <p>25 02 2014</p>		 <p>25 02 2014</p>			
Construction Site Camp (team II)		Diesel Tank at team II			
 <p>25 02 2014</p>		 <p>25 02 2014</p>			
Construction Site Camp (team I)		Diesel Tank at team I			
Prepared by (Contractor)		Checked by (Consultants)		Confirmed by (Consultants)	
					
Yoon, Ki Joo		Hyun mo Cho		Gun Suck Yoo	
Project Manager		IME		Resident Engineer 2	

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loadn No. KHM-9

Subject: Environment Management Plan for February 2014

Other activities in February 2014

			
Personal Protective Equipment		Traffic Signs	
			
Personal Protective Equipment		Traffic Signs	
			
Personal Protective Equipment		Traffic Signs	
Prepared by (Contractor)	Checked by (Consultants)	Confirmed by (Consultants)	
			
Yoon, Ki Joo	Hyun mo Cho	Gun Suck Yoo	
Project Manager	IME	Resident Engineer 2	

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loadn No. KHM-9

Subject: Environment Management Plan for February 2014

STD-HIV/AIDS, Gender & Human Trafficking Training in February 2014



HIV/AIDS, Gender & Human Trafficking Training Session at Section II (Kuok Morn)



HIV/AIDS, Gender & Human Trafficking Training Session at Kumho's Site Office on 23 Jan 2014



HIV/AIDS, Gender & Human Trafficking Training Session at Kumho's Site Office on 23 Jan 2014





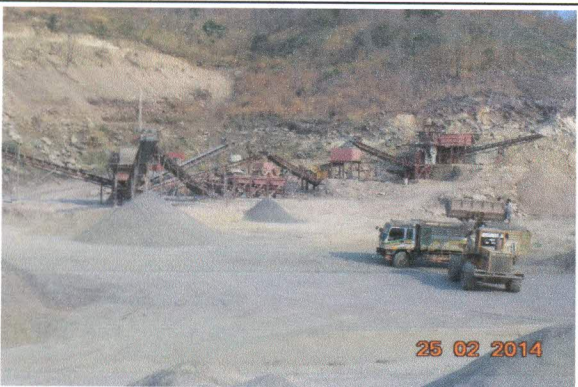
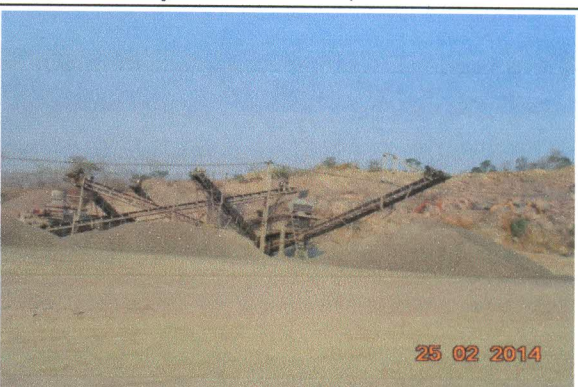



Prepared by (Contractor)	Checked by (Consultants)	Confirmed by (Consultants)
		
Yoon, Ki Joo	Hyun mo Cho	Gun Suck Yoo
Project Manager	IME	Resident Engineer 2

Improvement of National Road No. 56B from Km 29+000 to Samraong

EDCF Loadn No. KHM-9

Subject: Environment Management Plan for February 2014

Quarry Pictures in February 2014

			
New Quarry at PK: 47+000, RHS 19Km		Access road to Quarry at PK: 47+000, RHS 19Km	
			
Quarry at PK: 81+900, RHS 18KM		Quarry at PK: 81+900, RHS 18KM	
			
Quarry at PK: 19+400, LHS 5Km		Quarry at PK: 19+400, LHS 5Km	
Prepared by (Contractor)	Checked by (Consultants)	Confirmed by (Consultants)	
			
Yoon, Ki Joo	Hyun mo Cho	Gun Suck Yoo	
Project Manager	IME	Resident Engineer 2	