

Ref: 289 /TB-TDDHD

Lam Dong, December 06<sup>th</sup>, 2017.

**ENVIRONMENTAL MONITORING PUBLISHMENT**  
**DA NHIM HYDROPOWER PLANT EXPANSION PROJECT**  
**4<sup>th</sup> QUARTER, 2017**

**1. Responses/Actions to Comments and Guidance from Government Authorities and the Public**

| Monitoring item                                                        | Monitoring results during report period                                                          |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Responses/Actions to Comments and Guidance from Government Authorities | The Employer has carried out Monitoring Plan in compliance with Government Authorities Guidance. |

**2. Mitigation Measures**  
**[Pre-Construction Phase]**

**- Land Acquisition**

| Land Acquisition Activities               | Planned Total | Unit     | Progress in Quantity | Progress in % | Expected Date of Completion |
|-------------------------------------------|---------------|----------|----------------------|---------------|-----------------------------|
| <b>Progress of Compensation Payment</b>   |               |          |                      |               |                             |
| - Hydropower Station Expansion            | 17.29         | Bil. VND | 21.33                | 100%          | 28 August 2015              |
| - Valve House and its Access Road         |               |          |                      |               |                             |
| - Adit 1 and its Access Road Construction |               |          |                      |               |                             |
| - Intake Construction                     |               |          |                      |               |                             |
| <b>Progress of Land Acquisition</b>       |               |          |                      |               |                             |
| - Hydropower Station Expansion            | 31.25         | ha       | 29.48                | 100%          | 28 August 2015              |
| - Valve House and its Access Road         |               |          |                      |               |                             |
| - Adit 1 and its Access Road Construction |               |          |                      |               |                             |
| - Intake Construction                     |               |          |                      |               |                             |

**- Lost Assets**

| Progress of Compensation Payment              | Planned Total | Unit (No. of PAPs) | Progress in Quantity | Progress in % | Expected Date of Completion |
|-----------------------------------------------|---------------|--------------------|----------------------|---------------|-----------------------------|
| <b>Lost Tree</b>                              |               |                    |                      |               |                             |
| - Hydropower Station Expansion                | 30.3          | ha                 | 17.41                | 100%          | 28 August 2015              |
| - Valve House and its Access Road             |               |                    |                      |               |                             |
| - Adit 1 and its Access Road Construction     |               |                    |                      |               |                             |
| - Intake Construction                         |               |                    |                      |               |                             |
| <b>Lost Crop</b>                              |               |                    |                      |               |                             |
| - Hydropower Station Expansion                | 0.95          | ha                 | 12.07                | 100%          | 13 April 2015               |
| - Valve House and its Access Road             |               |                    |                      |               |                             |
| - Adit 1 and its Access Road Construction     |               |                    |                      |               |                             |
| - Intake Construction                         |               |                    |                      |               |                             |
| <b>Lost Assets (other than Tree and Crop)</b> |               |                    |                      |               |                             |
| - Hydropower Station Expansion                | NA            |                    | NA                   |               |                             |
| - Valve House and its Access Road             |               |                    |                      |               |                             |
| - Adit 1 and its Access Road Construction     |               |                    |                      |               |                             |
| - Intake Construction                         |               |                    |                      |               |                             |

**[Construction Phase]**

**- Air Quality (Emission Gas / Ambient Air Quality)**

| Monitoring item                                                                     | Measurement point | Frequency | Monitoring result during report period          |
|-------------------------------------------------------------------------------------|-------------------|-----------|-------------------------------------------------|
| Sprinkle water to control dust                                                      | Construction site | Daily     | The Employer instructed the Contractor at site. |
| Minimize travel distance                                                            | Construction site | Daily     | The Employer instructed the Contractor at site. |
| Regular checking of engine and exhaust of machinery and its recording and reporting | Construction site | Monthly   | The Employer instructed the Contractor at site. |
| Respiratory protection for worker at site                                           | Construction site | Daily     | The Employer instructed the Contractor at site. |

**- Water Quality (Effluent/Wastewater/Ambient Water Quality)**

| Item                 | Unit | Measured value (average) | Country's standards<br>QCVN 08:2015/BTNMT | Remarks (measurement point, frequency)                          |
|----------------------|------|--------------------------|-------------------------------------------|-----------------------------------------------------------------|
| pH                   | -    | 6.975                    | 6-8.5                                     | Intake, near construction site of new intake, tailrace: monthly |
| SS (Suspended Solid) | mg/l | 13.075                   | 30                                        | Intake, near construction site of new intake, tailrace: monthly |
| BOD5                 | mg/l | 8.5                      | 6                                         | Intake, near construction site of new intake, tailrace: monthly |
| DO                   | mg/l | 5.5                      | ≥5                                        | Intake, near construction site of new intake, tailrace: monthly |
| Ammonia Nitrogen     | mg/l | 0.125                    | 0.3                                       | Intake, near construction site of new intake, tailrace: monthly |
| Total Phosphorus     | mg/l | 0.023                    | 0.2                                       | Intake, near construction site of new intake, tailrace: monthly |

Based on the category of B1- for irrigation purpose or other purposes with demand for similar quality water or other purpose of B2 in NATIONAL TECHNICAL REGULATIONS ON SURFACE WATER QUALITY, QCVN 08:2015/BTNMT

**- Waste**

| Monitoring item                                                                                | Measurement point                                                                                                          | Frequency | Monitoring result during report period                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dispose of material to approved area so as not to disturb scenery and not to contaminate water | Construction site (New Intake, Adit Tunnel, Headrace Tunnel, Surge Tank, Valve House, Penstock, Powerhouse, Worker's Camp) | Monthly   | -The Contractor has settled containers at some fixed locations at the construction site to collect and classify domestic waste including: Recycle waste, organic waste and hazardous waste.<br>- The disposed material was gathered at approved areas. |

**- Soil contamination**

| Monitoring item                                                                | Measurement point | Frequency | Monitoring result during report period                                                |
|--------------------------------------------------------------------------------|-------------------|-----------|---------------------------------------------------------------------------------------|
| Capture insulation oils in barrel and use oil proof sheet to avoid any leakage | Construction site | Monthly   | The Contractor has been instructed to keep oil in the oil tanks to avoid any leaking. |

**- Noise / Vibration**

| Monitoring item                             | Measurement point | Frequency | Monitoring result during report period                        |
|---------------------------------------------|-------------------|-----------|---------------------------------------------------------------|
| Instruction to driver to comply speed limit | Construction site | Monthly   | The Contractor installed signs to limit speed of construction |

|                                             |                   |         |                                                                                      |
|---------------------------------------------|-------------------|---------|--------------------------------------------------------------------------------------|
|                                             |                   |         | vehicles at site.                                                                    |
| Check proper material loading and uploading | Construction site | Monthly | The Contractor was requested to check proper material loading and uploading at site. |
| Use silencer and muffler for equipment      | Construction site | Monthly | The Contractor was requested to use silencer and muffler for equipment at site.      |

**- Flora, Fauna and Biodiversity**

| Monitoring item                             | Measurement point   | Frequency | Monitoring result during report period |
|---------------------------------------------|---------------------|-----------|----------------------------------------|
| Regular water sampling and quality analysis | (See Water Quality) |           |                                        |

**- Landfill Site Management**

| Monitoring item                                               | Measurement point | Frequency | Monitoring result during report period       |
|---------------------------------------------------------------|-------------------|-----------|----------------------------------------------|
| Construction waste soil needs disposed of the designated site | Construction site | Monthly   | The Contractor disposed waste soil properly. |

**- Topography and Geology**

| Monitoring item                                                                                            | Measurement point | Frequency | Implementation phase                     | Monitoring result during report period     |
|------------------------------------------------------------------------------------------------------------|-------------------|-----------|------------------------------------------|--------------------------------------------|
| Site rehabilitation with topsoil recovery, reshaping, re-vegetation and remediation with site cleanup work | Construction site | -         | At finishing stage of construction phase | This works will be executed at next steps. |

**- Existing Social Infrastructures and Services**

| Monitoring item                         | Measurement point | Frequency | Monitoring result during report period                                   |
|-----------------------------------------|-------------------|-----------|--------------------------------------------------------------------------|
| Check proper amount of material loading | Construction site | Monthly   | The Contractor carried out checking material loading for every delivery. |

**- Sanitation**

| Monitoring item                                                                                                       | Measurement point               | Frequency | Monitoring result during report period             |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------|----------------------------------------------------|
| Provision of proper sanitation with septic facilities (prohibition of untreated human waste to enter any watercourse) | Construction site/Worker's camp | Monthly   | The Contractor provided proper sanitation at site. |

**[Operation Phase]**

- Flora, Fauna, and Biodiversity/Hydrology/Social and Economic Environment/Public Safety/Water Usage or Water Rights of Common

| Monitoring item                                                 | Measurement point* | Frequency | Monitoring result during report period |
|-----------------------------------------------------------------|--------------------|-----------|----------------------------------------|
| Minimum water requirement requested from DARD shall be observed | Hydropower Station | Daily     | NA                                     |

**- Water Quality**

| Item                 | Unit | Measured value (Mean)                              | Measured value (Max.) | Country's standards | Remarks (measurement point, frequency, implementation phase) |
|----------------------|------|----------------------------------------------------|-----------------------|---------------------|--------------------------------------------------------------|
| pH                   | -    | This work will be executed at the operation phase. |                       | 5.9-9               | Intake, New intake, Tailrace: Monthly                        |
| SS (Suspended Solid) | mg/l |                                                    |                       | 50                  | Intake, New intake, Tailrace: Monthly                        |
| BOD5                 | mg/l |                                                    |                       | 1.5                 | Intake, New intake, Tailrace: Monthly                        |
| DO                   | mg/l |                                                    |                       | ≥4                  | Intake, New intake, Tailrace: Monthly                        |
| Ammonia Nitrogen     | mg/l |                                                    |                       | 0.5                 | Intake, New intake, Tailrace: Monthly                        |
| Total Phosphorus     | mg/l |                                                    |                       | 0.3                 | Intake, New intake, Tailrace: Monthly                        |

Based on the category of B1- for irrigation purpose or other purposes with demand for similar quality water or other purpose of B2 in NATIONAL TECHNICAL REGULATIONS ON SURFACE WATER QUALITY, QCVN 08:2008/BTNMT

**Da Nhim Hydropower Plant Expansion**

**Project Management Board**

**Director**



**Nguyễn Đình Chiến**

C/c:

- Director General (for report);
- Store: Achieves, DNEX.