

# Environmental Monitoring Report

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4<sup>th</sup> Semestral Report  
April 2022

## Cambodia: Integrated Urban Environmental Management in the Tonle Sap Basin Project

Prepared by the Ministry of Public Works and Transport for the Kingdom of Cambodia and the Asian Development Bank.

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# **Semi-Annual Environmental Monitoring Report**

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**KINGDOM OF CAMBODIA**

**Ministry of Public Works and Transport**

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## **Integrated Urban Environmental Management in the Tonle Sap Basin Project**

**Reporting Period:** *July-December 2021*

**Date:** *April 2022*

**SEMR Report Number:** *4*

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## 1 ENVIRONMENTAL SAFEGUARDS SUMMARY

1. The 4<sup>th</sup> Semi-annual Environment Monitoring Report (SEMR) covers the period of July to December 2021 for the Integrated Urban Environmental Management in the Tonle Sap Project. The SEMR has been prepared to fulfil the safeguard policy requirement of ADB.
2. The SEMR is prepared by the Project Management Implementation Support (PMIS) team and checked by the PMU for the Project.
3. For detailed information and background to the Project, please see main Project Documents. Only issues relevant to Environmental Safeguards are included in this report.
4. ADB undertook a Virtual Review Mission 28<sup>th</sup> September – 1<sup>st</sup> October 2021. This included Environmental Safeguards. The Corrective Action Plans for contractors discussed during the mission were duly issued and their impact reported on in this Monitoring report.

### 1.1 Summary of Project Progress

5. The following table gives a brief summary of the project progress for contract award, construction and key activities in this reporting period. Currently two contracts are actively running with construction activities taking place. This includes:
  - **CW-05 Pursat Drainage and Wastewater Treatment Plant** and includes the following variation orders
    - VO1 for additional culverts and WWTP site flood proofing
    - VO2 for Kaoh Village flood embankment reconstruction
    - VO3 for pavement reinstatement
    - VO4 for more Pavement reinstatement
  - **CW-06 Kampong Chhnang and Pursat Landfill Sites (Lot 1 and Lot 2)** and includes
    - Lot 1 Variation Orders (Kampong Chhnang)
      - VO1 for additional cell and site fencing
      - VO2 wetland and the balancing pond
    - Lot 2 Variation Orders (Pursat)
      - VO1 for additional cell and wetland
      - VO2 for weighbridge

**Table 1 Project Progress Summary- ALL subprojects**

| Safeguards Category               | Environment                                                                                                                                                                                                                                                                            | B                        |                    |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------|
| Reporting Period:                 | July-Dec 2021                                                                                                                                                                                                                                                                          | Date Last Report Issued: | Jul 2021 (amended) |
| <b>Contracts Awarded to Date:</b> | <b>CW-05</b> Pursat Drainage and WWTP awarded (31th December 2019) to Kiri Dangrek Construction Co. Ltd<br><br><b>CW-06</b> Kampong Chhnang and Pursat Landfill Sites awarded 30 <sup>th</sup> October 2019, Signed 31 <sup>st</sup> December 2019 to UNG SIMSIA CONSTRUCTION CO., LTD |                          |                    |
| <b>Forthcoming Contracts:</b>     | <b>CW-10</b> Kampong Chhnang Sewerage, WWTP and Drainage Improvement <ul style="list-style-type: none"> <li>• IESIA cleared by the MOE on 28 September 2021</li> <li>• IEE/EMP cleared by ADB</li> <li>• Bid Opening was 21 October 2021 – bid evaluation is underway.</li> </ul>      |                          |                    |

|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Construction Progress to Date:</b></p>                       | <p>As of December <b>2021</b>, the physical construction progress is as follows:</p> <p><b>CW-05:</b></p> <p><b>Overall Progress 72.5%</b><br/> <b>WWTP Progress 68%</b><br/> <b>Installation of New Combined Drainage Sewerage lines Progress 70%.</b><br/> The overall progress includes the additional works proposed under VO3 and VO4 and the proposed contract extension till 31 March 2022.</p> <p><b>CW-06:</b></p> <p><b>Kampong Chhnang landfill Overall Progress 86 %.</b> This includes the proposed works under VO2 (waiting approval by ADB) and contract extension till 28 February 2022</p> <p><b>Pursat landfill Overall Progress 84 %</b><br/> Overall progress includes the proposed works under VO1. VO2 is waiting for approval by ADB.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p><b>Key Sub-project Activities in this Reporting Period:</b></p> | <p><b>CW-05:</b></p> <p><b>a) Construction activities</b></p> <ul style="list-style-type: none"> <li>• 20 km of the total of 23.7 km pipe lines have been installed including manholes and lateral connection with the existing drainage lines</li> <li>• WWTP structural works are complete.</li> </ul> <p><b>b) Work in next reporting period includes:</b></p> <ul style="list-style-type: none"> <li>• Pump installation and other electro mechanical works to be started</li> <li>• Reed bed Filter installation and Reed plantation to be started</li> <li>• Construction of boundary wall to be completed at WWTP</li> <li>• Pavement reinstatement to be started. Damage of existing pavement, especially of roads with DBST pavement is more extensive than estimated. The extra quantities are included in VO3 and VO4</li> </ul> <p><b>CW-06:</b></p> <p><b>Kampong Chhnang Landfill:</b><br/> The majority of work is completed for the landfill construction with the most recent tasks including those outlined below:</p> <p><b>a) Construction activities</b></p> <ul style="list-style-type: none"> <li>• Internal access roads; leachate pond; landscaping (tree screen planting), repairs to asphalt in Cell 1, waste picker room footings, cell 2 construction and surfacing.</li> </ul> <p><b>b) Work in next reporting period includes:</b></p> <ul style="list-style-type: none"> <li>• Wetland construction, waste picker room and weighbridge installation.</li> </ul> <p><b>Pursat Landfill:</b><br/> The majority of work is completed for the landfill construction with the most recent tasks including those outlined below:</p> |



|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>a) Construction activities</b></p> <ul style="list-style-type: none"> <li>Leachate pond construction and completion, internal access road completion, cell 1 and 2 asphalt lining</li> </ul> <p><b>b) Work in next reporting period includes:</b></p> <ul style="list-style-type: none"> <li>waste picker room and weighbridge installation.</li> </ul> <p><b>Dumpsite Decommissioning:</b></p> <p><b>a) Preparatory works:</b></p> <ul style="list-style-type: none"> <li>A basic assessment has been made of the spread of the waste, the volume to be moved, and detailed survey requirements</li> </ul> <p><b>b) Planned works:</b></p> <ul style="list-style-type: none"> <li>Provision for survey and investigations for the remediation options for the Kampong Chhnang and Pursat dumpsites have been included in the PMIS VO5</li> </ul> <p><b>Permits or Consents Issued:</b><br/>No new permits or consents required in this reporting period.</p> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 1.2 Summary of EMP Implementation Jan-Jun 2021

6. EMP implementation is summarised in the following points, for this reporting period:
- The landfill construction contractors (CW06) made efforts to manage the Corrective Action Plans issued to them in October 2021. Not all actions are completed; no environmental monitoring was conducted.
  - The Pursat drainage contractor (CW05) did not respond to the Corrective Action Plan with regards environmental monitoring.
  - Health and safety remained a priority in the last six months in order to protect staff, beneficiaries and site workers. Contractors are implementing Health and Safety measures for COVID-19 protection, including:
    - Temperature checks before work. Over 37.5 °C and other symptoms must go to health care provider for a test/check up
    - Workers with ill health symptoms stay at home until test for COVID-19 is negative
    - Workers must wear masks and socially distance
    - Hand washing is mandatory and facilities provided
  - During routine testing, 26 construction workers tested positive for COVID-19 (CW05 staff). Appropriate procedures following national requirements were followed.
  - No major environmental concerns were raised or observed during project implementation in this reporting period other than the issues outstanding on the Corrective Action Plans.

## 1.3 Summary of EMP Monitoring (Observation Visits)

7. EMP monitoring is primarily undertaken by local PIU staff through site visits and observations:
- Number of Monitoring Visits to Construction Site and wider area:
    - PIU attend site three to four times per month on an ad hoc basis, for which dates are not available as unless site visits observe an issue they are not recorded.
    - PMU Project Management Team attend site once or twice per month

- Number of Environmental Samples Tested:
  - No sampling to date

#### **1.4 Summary of Complaints, Issues and Corrective Action**

8. Any complaints, issues and corrective action that have been identified or implemented is summarised in the following points:
- Issues Raised: No new issues were raised or brought to the attention of the team.
  - Grievances Raised with GRM: 0 grievances
  - Corrective Action issued by project to Contractor:
    - October 2021 - A Corrective Action Plan was issued to the Contractors for all CW packages to rectify the lack of monitoring (environmental quality sampling) which has been overlooked by the contractor since the contracts were awarded and other EMP compliance issues.
    - The Corrective Action deadline was 31<sup>st</sup> December 2021 for all civil works contractors
    - The Issues have been partially addressed however no environmental quality sampling has been undertaken for any contract.

## 2 SAFEGUARDS STAFF, TRAINING AND DOCUMENTATION

### 2.1 Implementation Arrangements

9. The EMP defines the Environmental Safeguards roles and responsibilities. The roles are required to be filled in order to meet the EMP requirements. The following table gives the status of the key roles for EMP implementation for all subprojects. In this reporting period, there are no vacancies in the staff positions i.e. all roles are filled. PMU and PMIS recognise that during this reporting period there were challenges regarding availability as their roles are all part time; however PMU and PMIS will work together on this issue for 2022, as noted in the Conclusions to this SEMR. The International environmental staff member remains unable to travel to Cambodia because of international travel uncertainties and regardless, her contract does not contain in country time; it was converted to home office time at the start of the COVID-19 pandemic.

**Table 2. Status of Environmental Safeguard Roles- ALL subprojects**

| Safeguards Role                                       | Status & Comment     |                                |                      |    |
|-------------------------------------------------------|----------------------|--------------------------------|----------------------|----|
| PMU- Environmental Safeguards Officer                 | <b>Date Started:</b> | -11 <sup>th</sup> May 2020     | Full Time/ Part Time | PT |
|                                                       | <b>Comment</b>       | Mr Penh Socheat                |                      |    |
| PIU Environmental Safeguard Counterpart (Focal Point) | <b>Date Started:</b> | -22 <sup>nd</sup> January 2020 | Full Time/ Part Time | PT |
|                                                       | <b>Comment</b>       | Mr. Bun Tainglay               |                      |    |
| National Environmental Specialist PMIS team           | <b>Date Started:</b> | September 2018                 | Full Time/ Part Time | PT |
|                                                       | <b>Comment</b>       | Mr. Chea Mong                  |                      |    |
| International Environmental Specialist PMIS team      | <b>Date Started:</b> | October 2018                   | Full Time/ Part Time | PT |
|                                                       | <b>Comment</b>       | Ms. Rachel Wildblood           |                      |    |

|                                                                                            |                      |                                       |                      |    |
|--------------------------------------------------------------------------------------------|----------------------|---------------------------------------|----------------------|----|
| Contractor Environment Health & safety Staff<br>(Ung Simsia Construction Co.,LTD) (CWO6)   | <b>Date Started:</b> | -22 <sup>nd</sup> January 2020        | Full Time/ Part Time | FT |
|                                                                                            | <b>Comment</b>       | Mr. Oum Seyhakmony                    |                      |    |
|                                                                                            | <b>Comment</b>       | Mr. Meng Sovida                       |                      |    |
| Contractor Environment Health & safety Staff<br>(Kiri Dangrek Construction Co. Ltd) (CWO5) | <b>Date Started:</b> | -22 <sup>nd</sup> January 2020        | Full Time/ Part Time | FT |
|                                                                                            | <b>Comment</b>       | Mr. San Sey (On site Project Manager) |                      |    |
| CW10 Contractor: To Be Confirmed                                                           | <b>Date Started:</b> | To Be Confirmed                       |                      |    |
|                                                                                            | <b>Comment</b>       | To Be Confirmed                       |                      |    |

## 2.2 Training & Capacity Building

10. The following table gives the environmental related training completed during this reporting period. The contractor for CW06 (Landfills) responded to the Corrective Action Plan by conducting emergency spill response training on site; this training was delivered in early January, missing the 31<sup>st</sup> December 2021 deadline but is reported in this Monitoring Report for ease of reference to Corrective Action Plan outcomes.
11. Training delivered by the Project Team is planned for 2022, including EMP monitoring refresher training with PIU and contractor, with a focus on real life situation in Pursat, given that CW10 will be starting as an active subproject.

**Table 3. Environmental Safeguards Training Provided and Planned- ALL subprojects**

| Training Course Title                                                                 | Training Date                         | Participants       | Training Provider        |
|---------------------------------------------------------------------------------------|---------------------------------------|--------------------|--------------------------|
| <b>Training Provided:</b><br>General Tool Box Talks and COVID-19 Awareness            | Daily/weekly during reporting period  | Contractor's staff | Contractors at all sites |
| <b>Training on Emergency Spill Response</b><br>In response to Corrective Action Plan. | December 2021 (actual early Jan 2022) | Contractor's staff | Contractor for CW05      |

| Training Course Title                                                                      | Training Date | Participants               | Training Provider                                                             |
|--------------------------------------------------------------------------------------------|---------------|----------------------------|-------------------------------------------------------------------------------|
| <b>Training Planned:</b><br>Affected person monitoring through consultation                | Q1 2022       | PIU and Contractor and PMU | To be conducted by PMIS at the provincial level for all Civil Works Packages. |
| <b>Training Planned:</b><br>EMP implementation and verification – monitoring and reporting | Q1 2022       | PIU and Contractor         | To be conducted by PMIS at the provincial level for all Civil Works Packages. |

## 2.3 ADB Clearances and Safeguard Document Status

12. The following table gives information on the status of the safeguards documents. To date all Variation Orders updates have been included in the safeguard documents and the updated versions of IEE and EMPs disclosed on ADB's website. In this reporting period, the environmental safeguards documents have been updated for:
- **CW10 – IEE and EMP updated** after ESIA. The DED version was disclosed in July 2021. Following this, the IEE/EMP was updated with the ESIA. The Ministry of Environment required a bespoke effluent standard during the IESIA review, which the team understand is due to changes in national standards. As a result the Environmental Safeguards Team confirmed with the engineering design team that the WWTP will meet the required bespoke effluent standard. This standard is in Annex 7 of this report.
  - **CW06 both lots - IEE and EMP updated** with two Variation Orders for landfill changes which will improve the environmental and technical performance through provision of additional wetlands for leachate and a weighbridge to improve operations. The design for no effluent/leachate discharge off site still remains unchanged.
  - **CW05 – IEE and EMP updated** with the requirements of two new variation orders (VO3 & 4) for pavement reinstatement additional budget. This is necessary to ensure the pavement is repaired to a safe standard; the costs and damage to existing pavement was more than expected, hence the Variation Orders were required. In this reporting period the updates for VO1 and 2 involving flood proofing the WWTP and Kaoh Village were also submitted to ADB and disclosed. These VOs support the long term performance of the WWTP and sanitation improvements to Kaoh village implemented by the Community Mobilising Environmental Improvement component of the project.
13. As of the end of this reporting period, no further variation orders are planned for the project.

**Table 4. Status of Environmental Safeguard Documents- ALL subprojects**

| Safeguards Documents                                                                                                                                                                                                                                                                            | Update Issued (Latest Version)                                                                      | Submitted to ADB                                                               | ADB Clearance Status  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------|
| <b>Consolidated IEE:</b><br><br>Several major revisions to change scope throughout 2018 and 2019, incorporating ADB comments and removing cancelled embankment project.<br><br>June 30 <sup>th</sup> 2020 update - filled gaps noted by ADB, and inclusion of IEIA data (baseline/consultation) | IEE_TS1Consolidated-25Oct18(SK)-rev_RCW-APRIL2019.docx<br><br>IEE_TS1Consolidated- 08 JULY 2020.doc | Version April 2019 to ADB<br><br>Version 8th July 2020 to ADB direct from PMIS | Cleared and disclosed |
| Variation Orders for Kampong and Pursat landfills Civil Works contracts (CW06/VO1 and CW06/VO2), and Pursat urban drainage and wastewater treatment Civil Works contract (Variation Order, CW05/VO1, VO2, VO3 and VO4).                                                                         | 2007-CAM-TS1 IEE Update 15Dec21.doc                                                                 | Version 15thDec 2021 to ADB direct from PMIS                                   | Cleared and disclosed |
| <b>EMP Kampong Chhnang Landfill</b><br><br>October 2018 version reviewed by ADB Nov 2018 and comments incorporated – minor amend April 2019 following ADB comment                                                                                                                               | EMP document issued by PMU                                                                          | 23 August 2018 (with tender document)                                          | Cleared and disclosed |
| CW06/ Lot 1 VO1 EMP Update 11/8/21                                                                                                                                                                                                                                                              | Update 11 Aug 21                                                                                    | to ADB direct from PMIS                                                        | Cleared and disclosed |
| CW06/ Lot 1 VO2 update EMP 08-11-21                                                                                                                                                                                                                                                             | Update 08-Nov-21                                                                                    | to ADB direct from PMIS                                                        | Cleared and disclosed |
| <b>EMP Pursat Landfill</b><br><br>October 2018 version reviewed by ADB Nov 2018 and comments incorporated– minor amend April 2019 following ADB comment                                                                                                                                         | EMP document issued by PMU                                                                          | 23 August 2018 (with tender document)                                          | Cleared and disclosed |
| CW06/ Lot 2 VO1 EMP Update 11/8/21                                                                                                                                                                                                                                                              | Update 11 Aug 21                                                                                    | to ADB direct from PMIS                                                        | Cleared and disclosed |
| CW06/ Lot 1 VO2 update EMP 08-11-21                                                                                                                                                                                                                                                             | Update 08-Nov-21                                                                                    | to ADB direct from PMIS                                                        | Cleared and disclosed |

| Safeguards Documents                                                                                                                                                                | Update Issued (Latest Version)                                                                           | Submitted to ADB                                                           | ADB Clearance Status                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>EMP Pursat Urban Drainage</b><br><br>Draft updated by PMIS April 2019 based on comments from ADB on previous EMPs                                                                | EMP document issued by PMU<br><br>Updated EMP with WWTP Flood Protection (VO1) and Kaoh Embankment (VO2) | 6 August 2019 (with tender document)<br>Update Submitted                   | Cleared and disclosed<br><br>Update due for disclosure in July 2021.                     |
| CW05 VO1 & CW05 VO2 EMP Update July 2021<br>April 21 agreed with ADB no IEE update needed                                                                                           | July 2021                                                                                                | to ADB direct from PMIS                                                    | Cleared and disclosed                                                                    |
| <b>CW05 VO3&amp;4 update EMP 08-11-21</b>                                                                                                                                           | 08-11-21                                                                                                 | to ADB direct from PMIS                                                    | Cleared and disclosed                                                                    |
| <b>CMEI Due Diligence Report</b><br><br>Environmental DDR completed by PMIS 28 <sup>th</sup> July 2020, First Draft. Final Draft completed Dec 2020.                                | Final Version Issued                                                                                     | To be completed and returned to ADB August 2020<br>Update issued Dec. 2020 | Cleared and disclosed                                                                    |
| <b>REA (Screening) Kampong Chhnang WWTP</b><br>submitted and revised further with change of site location. REA proposed the Major Scope change works as Category B for environment. | Latest:<br>TS1_KC WWTP ENV Screening DRAFT 31 July 2020.docx                                             | 31 July 2020 to ADB direct from PMIS                                       | ADB Chief Compliance Officer endorsed Categorization (ENV Cat. B) for major scope change |
| <b>CW10 IEE Kampong Chhnang WWTP</b>                                                                                                                                                | IEE DED Update June 2021                                                                                 | to ADB direct from PMIS                                                    | Cleared and disclosed                                                                    |
| <b>CW10 EMP Kampong Chhnang WWTP</b>                                                                                                                                                | EMP IESIA Update 20Dec21                                                                                 | to ADB direct from PMIS                                                    | Cleared and disclosed                                                                    |
| <b>Environmental Due Diligence Report Output 3, Community Mobilised Environmental Improvements</b>                                                                                  | Completed by PMIS 20 <sup>th</sup> July 2020 for Kaoh Village<br>Updated August 2020                     | To ADB direct from CMEI/PMU                                                | Cleared and disclosed                                                                    |

## 2.4 National Approvals

14. The following table gives an update on the necessary national approvals required for the project to proceed.

**Table 5. Status of National Approvals for Environmental Documents- ALL subprojects**

| Documents                                 | Submitted to MoE | Approved By MoE                | Status                                     | Comment                                                                                                            |
|-------------------------------------------|------------------|--------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| CW-05 IESIA Pursat Urban Drainage         | N/A              | 19 <sup>th</sup> November 2019 | Approved                                   |                                                                                                                    |
| CW-06 IESIA Landfills                     | N/A              | 19 <sup>th</sup> November 2019 | Approved                                   |                                                                                                                    |
| CW-05&06 UXO Clearance                    | N/A              | N/A                            | Clearance Given 26 <sup>th</sup> June 2020 | Clearance for all sub-projects                                                                                     |
| CW10 IESIA Kampong Chhnang Urban Drainage | N/A              | 28 September 2021              | Approved                                   | Bespoke effluent standard inserted by MoE during IESIA review as discussed in correspondence with ADB. See Annex 7 |

## 2.5 Construction Environmental Management Plan (CEMP) Approvals

15. The following table confirms the status of the Construction Environmental Management Plan (CEMP) for each CW package. Whilst the CEMPs are being approved, and after their approval, the environmental impacts of the project are managed through the EMP which was provided as part of the bidding documents and therefore the contractors are duly bound to follow the EMP detailed mitigation measures:

**Table 6. Status of CEMP Approvals- ALL subprojects**

| Civil Works Package/ Subproject                 | CEMP Given to PMU | Approved By PMU: | Comment:                                                                                                                                                                                                                                     |
|-------------------------------------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CW-06 Kampong Chhnang and Pursat Landfill Sites | July 2020,        | 09 February 2021 | Reviewed by National and International Environmental consultants of PMIS August 2020 and comments returned to PMU. Approval delayed by obtaining more detail and communication with contractor. No corrective action was required during the |



|                                          |                               |                  |                                                                                                                                     |
|------------------------------------------|-------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                          |                               |                  | delay. EMP mitigation measures were followed.                                                                                       |
| CW-05 Pursat Drainage and WWTP           | 17 <sup>th</sup> January 2020 | 25 February 2020 | Reviewed by National and International Environmental consultants of PMIS 4 <sup>th</sup> February 2020 and comments returned to PMU |
| Kampong Chhnang sewerage system and WWTP | N/A                           | N/A              | Will be submitted to PMU for approval after the contract is awarded according to any timescale in PAM.                              |

### 3 EMP IMPLEMENTATION

#### 3.1 Environmental Performance

16. The following table gives the environmental impact mitigation measures in the Borrower (Project) EMP and the corresponding CEMP and how the project is progressing with implementing the mitigation measures. The evidence for the compliance is obtained through a combination of site visits, documentation and discussion between the Contractor, PMIS, PIU and PMU:

**Table 7. Status of EMP Compliance CW-05 Pursat Drainage & WWTP**

| No.                               | EMP Requirement<br>(Mitigation Measure)              | Compliance &<br>Description<br>(Yes, No, Partial,<br>N/A at this stage) | Comment or<br>Further<br>Explanation if<br>Needed         | Reasons for Not Full<br>Compliance |
|-----------------------------------|------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------|
| <b>Before Construction Starts</b> |                                                      |                                                                         |                                                           |                                    |
| 1                                 | EMP in Bidding Documents                             | Yes                                                                     | EMP was included in procurement package.                  |                                    |
| 2                                 | GRM mechanism disseminated and functioning KC and PS | Yes                                                                     | Training provided                                         |                                    |
| 3                                 | GRM Sign Board at Construction Site entrance         | Yes                                                                     |                                                           |                                    |
| 4                                 | CEMP provided by contractor                          | Yes                                                                     | Supplied by contractor, and approved by PMU               |                                    |
| 5                                 | All licences and permits in place                    | Yes                                                                     | UXO certificate is awarded and letter to permit regarding |                                    |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                       |                                                             |  |
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|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                       | to disposal of waste from Pursat and Kampong municipality ( |  |
| Construction |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                       |                                                             |  |
| 6            | <b>Production, Transport and Use of Materials:</b> <ol style="list-style-type: none"> <li>1. Water will be sprayed at least twice per day on construction sites, material handling areas when fugitive dust is noticeably generated.</li> <li>2. All topsoil and overburden removed should be stockpiled for later restoration</li> <li>3. The contractor will provide a <b>Traffic Management Plan</b> to the PMU for approval which will include: <ol style="list-style-type: none"> <li>a) How the contractor will inform the community and businesses of construction traffic routes</li> <li>b) Any advice/information the contractor will give to affected people during construction</li> <li>c) How the contractor will manage traffic including any road closures specifying management around Pursat Market.</li> </ol> </li> <li>4. Trained traffic marshal will be used to direct vehicle movements on and around construction sites and in all urban areas.</li> <li>5. Minimize time that excavations and exposed soil are left open/exposed. Backfill immediately after work is completed</li> </ol> | Yes – see linked issue in Community Health and Safety |                                                             |  |
| 7            | <b>Earthworks and Excavations – in urban area:</b> <ol style="list-style-type: none"> <li>6. Develop plan of days and locations where outages in utilities and services will occur, or are expected.</li> <li>7. Contact local utilities and services providers with schedule, and identify possible contingency back-up plans for outages.</li> <li>8. Contact affected community to inform them of planned outages.</li> <li>9. For any unavoidable outages, schedule during low use time such between 24:00 and 06:00.</li> <li>10. Construction work should start at night time or section by section during working at dense population at Pursat market area.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                                                   | No outages reported.                                        |  |
| 8            | <b>Production, Transport and Use of Materials:</b> <ol style="list-style-type: none"> <li>11. Required aggregate volumes must be calculated prior to extraction to prevent wastage.</li> <li>12. Define and schedule how fabricated materials such as steel, wood structures will be transported and handled.</li> <li>13. Trucks carrying dry construction materials such as earth; aggregate will be covered</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes                                                   | Materials handled without impact on environment             |  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                                                           |  |
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|    | <p>with tarpaulins or other suitable cover.</p> <p>14. Driving on unmade roads, trucks will be limited to 15 kph. Warning sign to inform road users of turning heavy vehicles will be used where trucks cross or turn off the National Road #5.</p> <p>15. Asphalt and concrete batching facilities will be located at least 500m downwind from the nearest dwellings in order to reduce the impact of fumes on humans and to be fitted with necessary equipment such as bag house filters to reduce fugitive dust emissions.</p> <p>16. Water will be sprayed on material storage areas, and borrow pits where fugitive dust is generated and where vehicles are transporting materials on unmade roads, generating dust, where human receptors are within 300m.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |                                                           |  |
| 9  | <p><b>Machinery and Equipment:</b></p> <p>17. Maintain all exhaust systems in good working order; undertake regular equipment maintenance;</p> <p>18. Restrict construction activities using heavy machinery between 7 am-5 pm; In particular, are activities such as pile driving.</p> <p>19. Provide advance warning to the community on timing of noisy activities. Seek suggestions from community members to reduce noise annoyance, particularly related to noise sensitive activities at receptors</p> <p>20. Public notification of construction operations will incorporate noise considerations; information procedure of handling complaints through the Grievance Redress Mechanism will be disseminated.</p> <p>21. Ensure noise monitoring is undertaken near sensitive receptors, particularly dwellings when construction machinery is operational</p> <p>22. Construction vehicles and machinery will be maintained to a high standard to minimize emissions</p> <p>23. All construction workers will use appropriate Personal Protective Equipment (PPE) including ear defenders when operating machinery;</p> <p>24. No washing or repair of machinery within 50m of surface waters including river and irrigation canal.</p> <p>25. Maintain equipment in proper working order</p> <p>26. Replace unnecessarily noisy vehicles and machinery.</p> <p>27. Vehicles and machinery to be turned off when not in use.</p> <p>28. Construct temporary noise barriers around excessively noisy activity areas where possible.</p> | Yes | No observed issues with noise or pollution from machinery |  |
| 10 | <p><b>Spoil Management</b></p> <p>29. Measures in the sub-plan related to <b>spoil management</b> will include as a minimum:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes | No observations of poor spoil management                  |  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                                          |  |
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|    | <ul style="list-style-type: none"> <li>a) Preference must be given to use of spoil other construction sites, or disposed in spent quarries or borrow pits</li> <li>b) <b>Uncontaminated spoil</b> to be disposed of in Government approved sites, which will not be on agriculturally productive land, within 50m of a water course, including stream, river or irrigation channel, on sloped land, within 50 m of cultural heritage sites, within 100 m of any other culturally or ecologically sensitive feature.</li> <li>c) <b>Contaminated spoil</b> disposal must be tested for contaminants then follow Government regulations including handling, transport, treatment (if necessary), and disposal and will be isolated from human contact and environmental receptors by plastic sheeting or similar.</li> <li>d) A record of type, estimated volume, and source of disposed spoil must be recorded</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                                          |  |
| 11 | <p><b>Solid and Liquid Waste Management:</b></p> <p>30. Sub-plan will include measures to explain how the contractor will:</p> <ul style="list-style-type: none"> <li>a) Manage general solid and liquid waste from construction in line with Government regulations, and will cover, collection, handling, transport, recycling, and disposal of waste created from construction activities and worker force.</li> <li>b) Make clear arrangements for storage and transportation of all hazardous and non-hazardous waste to an authorised and approved disposal point (approved by Provincial Department of Environment).</li> <li>c) Segregate recyclables at source and given/sold to recycler (plastic, metal, card, paper as a minimum)</li> <li>d) Store all solid waste to be stored in containers with lids, within 25 m from all surface water, water supplies, and cultural and ecological sensitive receptors.</li> <li>e) Prohibit burning of waste at all times;</li> <li>f) Provide all vehicles/drivers with plastic bags for waste collection and prevent any unauthorized waste disposal with particular attention paid to prevention of waste entering water ways including drainage ditches</li> <li>g) Provide a schedule of solid and liquid waste pickup and disposal must be established and followed that ensures construction sites are as clean as possible.</li> <li>h) All spills must be cleaned up completely with all contaminated soil removed and handled in accordance with Spoil Sub-Plan A.</li> </ul> | Yes           | No observations of poor waste management |  |
| 12 | <p><b>Occupational Health and Safety:</b></p> <p>31. Occupational <b>H&amp;S measures</b> to be included in the management sub-plan will include:</p> <ul style="list-style-type: none"> <li>a) Assurance that all workers are equipped with, and use Personal Protective Equipment (PPE).</li> <li>b) Specifications for the PPE to be used on site and the contractors' approach to</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | See H&S table |                                          |  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |  |  |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--|--|
|    | <p>enforcement of its use by workers</p> <ul style="list-style-type: none"> <li>c) Sufficient signage giving occupational health and safety warnings and information disclosure within all construction sites – sub-plan to include example warnings.</li> <li>d) Details of worker education and awareness seminars for construction hazards will be given. A construction site safety program will be developed and distributed to workers.</li> <li>e) Details of daily toolbox meetings (safety briefings)</li> <li>f) Details of the site accident record book which will be maintained where all major or minor accidents and incidents are recorded with actions taken.</li> <li>g) An Environment Health and Safety qualified engineer or staff member will be engaged for the contract and adequate first aid equipment provided on site.</li> <li>h) Warning signs will be set up if mud is likely on public roads. Mud will be removed at the end of each day. Other spillages on public roads will be removed immediately.</li> <li>i) Drinking water must be provided at all construction sites</li> </ul> <p><b>Emergency Response:</b></p> <p>32. The <b>Emergency Response Plan</b> will set out detailed Preventative Measures for all types of incidents covered in the Emergency Plan. This will include:</p> <ul style="list-style-type: none"> <li>a) Prevention of Injury and Accidents – to include Personal Protective Equipment requirements for construction workers, training requirements</li> <li>b) Prevention of Spillage - All construction fluids such as oils, and fuels will be stored on hard standing with sealed drainage with a capacity of 110% of the largest fuel container, will include procedures on refueling and maintaining vehicles.</li> <li>c) Prevention of Fire – to include measures for Ignition Sources including prevention of smoking on construction site, management of flammable materials and liquid.</li> <li>d) Other Incidents – prevention measures relevant to other issues considered relevant by the contractor</li> </ul> <p><b>Emergency Procedures:</b></p> <p>33. The Contractor will develop <b>Emergency Response Procedures</b> prior to construction. The procedures will cover actions to be taken in case of:</p> <ul style="list-style-type: none"> <li>a) Worker injury (e.g. construction or traffic accident)</li> <li>b) Spillage (e.g. fuel spillage)</li> <li>c) Fire (e.g. fuel or chemicals storage area); and</li> <li>d) Any other incidents anticipated by the contractor.</li> </ul> |     |  |  |
| 13 | <b>Worker Camp Management:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes |  |  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |                                                                      |  |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------|--|
|    | <p>34. If a camp for construction workers is required, the contractor will set out a management plan which includes:</p> <ul style="list-style-type: none"> <li>a) A map showing camp lay out, welfare facilities, and first aid kit locations.</li> <li>b) Accommodation facilities including pit latrines for male and female workers, adequate drainage to prevent flooding, security including a no weapons policy and waste disposal areas.</li> <li>c) Pit latrines to be located at least 200m from surface waters, and in areas of suitable soil profiles and above the groundwater levels</li> <li>d) A clean-out or infill schedule for pit latrines must be established and implemented to ensure working latrines are available at all times.</li> <li>e) Worker camps will have adequate drainage.</li> <li>f) Providing fire fighting equipment will be provided in all camps and will have adequate signage and prescribed testing intervals.</li> <li>g) The septic should be provided in worker camp.</li> <li>h) Plan of how camp areas will be restored to original condition after construction completed</li> </ul> <p>35. If a construction camp is not required, the contractor will not require a Management Plan but will:</p> <ul style="list-style-type: none"> <li>a) Provide adequate waste disposal facilities including garbage cans for workers.</li> <li>b) Provide welfare facilities including water for washing, drinking and include facilities for male and female workers</li> <li>c) Provide toilets for male and female construction workers with a cleaning schedule</li> <li>d) The contractor will give priority to local labor force and retain evidence of how local labor recruitment efforts were undertaken.</li> </ul> <p>36. The contractor will ensure training is delivered to construction workers on the following and the contractor will provide a training schedule:</p> <ul style="list-style-type: none"> <li>a) HIV Aids education awareness</li> <li>b) Cambodian laws for foreign labor regarding: hunting, fishing and traffic rules</li> <li>c) Grievance Redress Mechanism – how to deal with affected people who make a complaint to a worker</li> <li>d) Occupational Health and Safety and Emergency Procedures.</li> </ul> |     |                                                                      |  |
| 14 | <p><b>Community Health and Safety:</b></p> <p>37. Community <b>H&amp;S measures</b> to be included in the management sub-plan will include:</p> <ul style="list-style-type: none"> <li>a) Details of appropriate fencing or protective barriers, lighting and buffer zones which will be provided around all construction sites including barriers with lighting</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes | Evidence of safer use of signs for traffic / road users is provided. |  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |                                                                                                                                                      |  |
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|    | <p>where needed on access roads and populated locations.</p> <p>b) Sufficient signage and information disclosure, and site supervisors and should be placed at all sites.</p> <p>c) Details of Warning signs which will be set up if mud is likely on public roads. Mud will be removed at the end of each day. Other spillages on public roads will be removed immediately.</p> <p>d) Details of signage and speed controls if public roads are to be affected by construction traffic.</p> <p>e) Details of sufficient signage giving community dangers / warnings and information disclosure outside all construction sites, include example warnings.</p> <p>f) Speed limits suitable for the size and type of construction vehicles, and current traffic patterns should be developed, posted, and enforced on all roads used by construction vehicles.</p> <p>38. For <b>urban excavations</b> measures to be included in the sub-plan will detail how the contractor will ensure:</p> <p>a) Access will be safely maintained for pedestrians and vehicles to schools, markets, houses, pagodas and commercial establishments</p> <p>b) Temporary safe access will be constructed by the contractor where needed.</p> <p>c) No temporary access shall be greater than 3:1 slope to allow access to all.</p> <p>d) For <b>WWTP</b> construction measures to be included in the sub-plan will detail how the contractor will ensure access to farm land surrounding the <b>WWTP</b>.</p> |     | See Annex 2 photographs                                                                                                                              |  |
| 15 | <p><b>Storage/Use of Chemicals/Fuels – Water and Soil Quality:</b></p> <p>39. Refuelling only in designated areas which are to be 50 m from a water course and drip trays to be used when refuelling or topping up / changing machinery fluids</p> <p>40. Construction fluids such as oils, and fuels should be stored and handled on a bunded impermeable surface; a bund will be provided around any above ground fuel storage tanks with a capacity of 110% of the largest single tank.</p> <p>41. All chemicals and fuels will be in labeled containers.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes | Fuels stored in bunded impermeable area                                                                                                              |  |
| 16 | <p><b>Restoration and rehabilitation:</b></p> <p>42. The contractor will repair any damage caused such as damage from heavy vehicles to local roads, on completion of construction. The repairs will be to pre-project condition or better at the cost of the contractor.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes | <p>Progress on road reinstatement is shown in Annex 2 photographs.</p> <p>Final full compliance with this will be checked on contract completion</p> |  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |                                                                              |  |
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| 17 | <b>Civil Works – sedimentation and erosion:</b><br><br>43. Ensure irrigation canal is protected from runoff and sedimentation through controlled construction site drainage using berms, or plastic sheet fencing around all excavations and earthwork areas.<br>44. Earthworks should be conducted during dry periods.<br>45. Maintain a stockpile of topsoil for immediate site restoration following backfilling.<br>46. Protect exposed or cut slopes with planted vegetation, and stabilize all slopes.<br>47. Rip rap at sensitive area especially high slope or in front of runoff area<br>48. Re-vegetate all areas of exposure soil immediately after work is completed. | Yes | Note: Extreme flooding of WWTP site challenging for sedimentation prevention |  |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------------------------------------------------|--|

17. For all 'Partial' or 'No' compliance issues in the table above, the actions needed to solve the compliance issues are in the table below:

**Table 8. EMP– Actions Needed for Compliance CW-05 Pursat drainage & WWTP**

| No. | EMP Requirement | Further Action to Take | Date for Action | Who will Implement Action | Was this in last SEMR? Yes/No |
|-----|-----------------|------------------------|-----------------|---------------------------|-------------------------------|
|     |                 |                        |                 |                           |                               |
|     |                 |                        |                 |                           |                               |

18. The following table gives the environmental impact mitigation measures in the Borrower (Project) EMP and the corresponding CEMP and how the project is progressing with implementing the mitigation measures. The evidence for the compliance is obtained through a combination of site visits, documentation and discussion between the Contractor, PMIS, PIU and PMU:

**Table 9. Status of EMP Compliance CW-06 - landfill sites Pursat (lot 2)**

| No.                               | EMP Requirement (Mitigation Measure) | Compliance & Description (Yes, No, Partial, N/A at this stage) | Comment or Further Explanation if Needed | Reasons for Not Full Compliance |
|-----------------------------------|--------------------------------------|----------------------------------------------------------------|------------------------------------------|---------------------------------|
| <b>Before Construction Starts</b> |                                      |                                                                |                                          |                                 |
| 1                                 | EMP in Bidding Documents             | Yes                                                            | EMP was included in procurement          |                                 |



|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |                                                                     |                                                                                                                                  |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     | package.                                                            |                                                                                                                                  |
| 2                         | GRM mechanism disseminated and functioning KC and PS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yes |                                                                     |                                                                                                                                  |
| 3                         | GRM Sign Board at Construction Site entrance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes |                                                                     |                                                                                                                                  |
| 4                         | CEMP provided by contractor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes | Supplied by contractor                                              |                                                                                                                                  |
| 5                         | Well drilling method statement for PS and KC landfills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No  |                                                                     | Requested again in the CEMP comments from PMIS [July 2020]<br>CAP not followed.<br><b>See Section 5.3</b>                        |
| 6                         | All licences and permits in place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes | UXO certificate is awarded                                          | No evidence of PDOE letter/permission regarding disposal of waste is provided to date.                                           |
| <b>Construction phase</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |                                                                     |                                                                                                                                  |
| 7                         | <b>Affected householder - House improvements:</b><br>1. For all 15 households 0-500 m of the landfill site that want to accept mitigation measures:<br>a) Installation of opening glass window frames and fly screens into a maximum of 8 windows within the house.<br>b) Provision of 50 viable tree or shrub saplings (native species, to be determined through consultation) to provide a vegetation screen around the front or back, and sides of the property; the resident is responsible for aftercare.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | N/A |                                                                     | PMU / PMIS will survey relevant households which were identified originally, and ensure measures are in place before completion. |
| 7a                        | <b>Production, Transport and Use of Materials:</b><br>2. Asphalt and concrete batching facilities will be located at least 500m downwind from the nearest dwellings in order to reduce the impact of fumes on humans and to be fitted with necessary equipment such as bag house filters to reduce fugitive dust emissions.<br>3. Water will be sprayed on material handling areas, and borrow pits where fugitive dust is generated if it will impact on workers or residents.<br>4. Trucks carrying dry construction materials such as earth will be covered with tarpaulins or other suitable cover.<br>5. Stockpiles and materials will be stored at least 50m from surface waters with drainage directed away from the irrigation canals or drainage channels<br>6. Driving on unmade roads, trucks will be limited to 15 kph. Warning sign to inform road users of turning heavy vehicles will be used where trucks cross or turn off National Road.<br>7. Construction traffic movements will be scheduled to avoid congested and/or | Yes | Implementation by contractor – no observations on dust noted by PIU |                                                                                                                                  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |                                                           |                                           |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------------------------------------------------|-------------------------------------------|
|    | <p>sensitive periods</p> <p>8. borrow site will be sign posted, fenced or contoured to ensure unauthorized/accidental access to any steep sided pits</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |                                                           |                                           |
| 8  | <p><b>Machinery and Equipment:</b></p> <p>9. Maintain all exhaust systems in good working order; undertake regular equipment maintenance;</p> <p>10. Restrict construction activities using heavy machinery work between 8am-6pm;</p> <p>11. Provide advance warning to the community on timing of noisy activities. Seek suggestions from community members to reduce noise annoyance, particularly related to noise sensitive activities at receptors</p> <p>12. Public notification of construction operations will incorporate noise considerations; information procedure of handling complaints through the Grievance Redress Mechanism will be disseminated.</p> <p>13. Ensure noise monitoring is undertaken near sensitive receptors, particularly dwellings when construction machinery is operational</p> <p>14. Construction vehicles and machinery will be maintained to a high standard to minimize emissions</p> <p>15. All construction workers will use appropriate Personal Protective Equipment (PPE) including ear defenders when operating machinery;</p> <p>16. No washing or repair of machinery within 50m of surface waters including irrigation canals.</p> <p>17. Project owner should prepare 1500 m fence with 2 m height around the project site.</p> <p>18. Growing trees to protect dust as well as noise and vibration.</p> | Yes | No observed issues with noise or pollution from machinery |                                           |
| 9  | <p><b>Access Road Vibration/Property Damage:</b></p> <p>19. The contractor will take and store a Pre-Condition photograph of all houses and other structures along the 1500m access road within 30 m of the road shoulder and make the photos available to MPWT should any dispute occur.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes |                                                           |                                           |
| 10 | <p><b>Landscaping - Flora</b></p> <p>20. Follow requirements in Technical Specification regarding tree size, planting and aftercare requirements</p> <p>21. Native species only to be approved by PDoE</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes |                                                           | Tree planting has begun and will continue |
| 11 | <p><b>Groundworks – water quality</b></p> <p>22. Provision of adequate short-term drainage away from construction sites to prevent contaminated run off.</p> <p>23. Installation of temporary storm drains or ditches for construction sites to manage and control the flow and direction of surface water run off</p> <p>24. Spray water on areas being worked if fugitive dust is generated if it will impact on workers or residents.</p> <p>25. If groundworks reveal cultural chance finds, the contractor will stop work immediately, fence off the area, and notify the PMU. Work will not commence until MPWT approval is given.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes |                                                           |                                           |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |  |                                                                                                                                                                    |
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| 12 | <b>Storage/Use of chemicals/fuels – water and soil quality:</b><br>26. Refueling only in designated areas which are to be 200m from a water course and drip trays to be used when refueling or topping up / changing machinery fluids<br>27. Construction fluids such as oils, and fuels should be stored and handled on a bunded impermeable surface; a bund will be provided around any above ground fuel storage tanks with a capacity of 110% of the largest single tank.<br>28. All chemicals and fuels will be labeled<br>29. Spill control measures will be included in emergency response measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Partial              |  | Contractor has now provided equipment for spill control<br>CAP not followed: Fuels storage remains not in an bunded and hard standing area. <b>See Section 5.3</b> |
| 13 | <b>Spoil, Solid and Liquid Waste Management action-plan:</b><br>30. The contractor will: <ul style="list-style-type: none"> <li>a) Follow the waste hierarchy and demonstrate how waste will be prevented and recycled and will show effective management of materials on site through good house-keeping and work planning</li> <li>b) Clear arrangements for storage and transportation of all hazardous and non-hazardous waste to an authorized and approved disposal point (approved by Provincial Department of Environment).</li> <li>c) Recyclables to be separated at source and given/sold to recycler (plastic, metal, card, paper as a minimum)</li> <li>d) All solid waste to be stored in containers with lids.</li> <li>e) Prohibit burning of waste at all times;</li> <li>f) Provide all vehicles/drivers with plastic bags for waste collection and prevent any unauthorized waste disposal with particular attention paid to prevention of waste entering water ways including drainage ditches</li> <li>g) Criteria for spoil disposal including levels of contamination and location for spoil disposal (to be approved by municipal authorities)</li> <li>h) No disposal of spoil on agriculturally productive land or within 50 m of a water course</li> </ul> | Yes                  |  |                                                                                                                                                                    |
| 14 | <b>Community Health and Safety</b><br>31. The contractor will <ul style="list-style-type: none"> <li>a) Provide appropriate fencing, protective barriers, and buffer zones which will be provided around all construction sites including barriers where needed on access roads and populated.</li> <li>b) Provide Safety measures, if required, to prevent access by members of the public and livestock to any borrow site excavations</li> <li>c) Provide Warning signs which will be set up if mud is likely on public roads. Mud will be removed at the end of each day. Other spillages on public roads will be removed immediately.</li> <li>d) Provide signage and speed controls if public roads are to be affected by construction traffic.</li> <li>e) Provide sufficient signage giving community dangers / warnings and</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                       | See H&S tables below |  |                                                                                                                                                                    |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|  | <p>information disclosure outside all construction sites, include example warnings.</p> <p><b>Occupational Health and Safety</b></p> <p>32. Measures will include:</p> <ul style="list-style-type: none"> <li>a) Assurance that all workers are equipped with, and use Personal Protective Equipment (PPE).</li> <li>b) PPE to be used on site and the contractors' approach to enforcement of its use by workers</li> <li>c) Sufficient signage giving occupational health and safety warnings and information disclosure within all construction sites – sub-plan to include example warnings.</li> <li>d) Worker education and awareness seminars for construction hazards will be given. A construction site safety program will be developed and distributed to workers.</li> <li>e) Daily toolbox meetings (safety briefings)</li> <li>f) Site accident record book which will be maintained where all major or minor accidents and incidents are recorded with actions taken.</li> <li>g) An Environment Health and Safety qualified engineer will be engaged for the contract and adequate first aid equipment provided on site.</li> <li>h) Warning signs will be set up if mud is likely on public roads. Mud will be removed at the end of each day. Other spillages on public roads will be removed immediately.</li> <li>i) Safety precautions when using 220 to 240V Electric Power tools if the workers are likely to be working within wet or flooded environments.</li> </ul> <p><b>The Emergency Response Plan</b></p> <p>33. Preventative measures will include:</p> <ul style="list-style-type: none"> <li>a) Prevention of Injury and Accidents – to include Personal Protective Equipment requirements for construction workers, training requirements</li> <li>b) Prevention of Spillage - All construction fluids such as oils, and fuels will be stored on hard standing with sealed drainage with a capacity of 110% of the largest fuel container, will include procedures on refueling and maintaining vehicles.</li> <li>c) Prevention of Fire – to include measures for Ignition Sources including prevention of smoking on construction site, management of flammable materials and liquid.</li> <li>d) Other Incidents – prevention measures relevant to other issues considered relevant by the contractor</li> </ul> <p><b>Emergency Response Procedures</b></p> |  |  |  |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |                        |                                                                         |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------|-------------------------------------------------------------------------|
|    | <p>34. The procedures cover actions to be taken in case of:</p> <ul style="list-style-type: none"> <li>a) Worker injury (e.g. construction or traffic accident)</li> <li>b) Spillage (e.g. fuel spillage)</li> <li>c) Fire (e.g. fuel or chemicals storage area); and</li> <li>d) Any other incidents anticipated by the contractor.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |                        |                                                                         |
| 15 | <p><b>Worker camp management</b></p> <p>35. A camp management plan will include:</p> <ul style="list-style-type: none"> <li>a) A map showing camp lay out, welfare facilities, and first aid kit locations. It will be at least 50m from the nearest house.</li> <li>b) Accommodation facilities including pit latrines for male and female workers, adequate drainage to prevent flooding, security including a no weapons policy and waste disposal areas.</li> <li>c) Pit latrines to be located at least 200m from surface waters, and in areas of suitable soil profiles and above the groundwater levels</li> <li>d) Schedule of HIV Aids education awareness to be given to workers.</li> <li>e) Training on relevant laws for foreign labor (including hunting, fishing and traffic rules);</li> </ul> <p>36. The contractor will give priority to local labor force and retain evidence of how local labor recruitment efforts were undertaken</p> | Yes | Supplies by contractor | Contractor has been two more toilets for workers in camp (see annex 3). |
| 16 | <p><b>Construction staging areas</b></p> <p>37. If staging area required (not within construction camp area) the contractor will:</p> <ul style="list-style-type: none"> <li>a) Provide a layout map of staging area and its location which will not be within 20m of any surface waterbody and not in an area liable to flood</li> </ul> <p>38. The site will not be at least 50m from a residential property</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes |                        |                                                                         |
| 17 | <p><b>Restoration and rehabilitation</b></p> <p>39. Topsoil from construction areas will be retained and used for landfill landscaping and rehabilitation</p> <p>40. The contractor will provide a clear plan of how the following sites will be restored to their original condition following the end of construction;</p> <ul style="list-style-type: none"> <li>a) Worker camp</li> <li>b) Staging area</li> <li>c) Access roads to landfill site</li> </ul> <p>41. Any damage shall be repaired as per the technical specification in the bidding documents</p> <p>42. All waste will be removed, and compacted ground restored.</p> <p>43. Revegetation of sloped areas such as access road slopes with natural grass species to prevent wet season erosion</p>                                                                                                                                                                                       | Yes |                        |                                                                         |

19. Based on the table above, the following table highlights the outstanding actions needed for EMP compliance. The table also identifies if the non-compliance was also highlighted within the previous SEMR in order to identify trends in non-compliance or persistent issues of concern.

**Table 10. EMP–Actions Needed for Compliance CW-06 – Pursat Landfill (Lot 2)**

|    | EMP Requirement                                                     | Further Action to Take                                                                        | Date for Action        | Who will Implement Action | Was this in last SEMR? Yes/No |
|----|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------|---------------------------|-------------------------------|
| 5  | Well drilling method statement and results                          | As above, required as part of CEMP and any results of well drilling should be reported.       | <b>See Section 5.3</b> | Contractor                | Yes                           |
| 12 | Storage and Use of chemicals and fuels – measures for spill control | Contractor need provides to ensure storage is in an appropriate bunded and hard standing area | <b>See Section 5.3</b> | Contractor                | Yes                           |

20. The following table gives the environmental impact mitigation measures in the Borrower (Project) EMP and the corresponding CEMP and how the project is progressing with implementing the mitigation measures. The evidence for the compliance is obtained through a combination of site visits, documentation and discussion between the Contractor, PMIS, PIU and PMU:

**Table 11: Status of EMP Compliance CW-06 - landfill sites Kg Chhnang (lot 1)**

| No.                               | EMP Requirement (Mitigation Measure)                 | Compliance & Description (Yes, No, Partial, N/A at this stage) | Comment or Further Explanation if Needed                     | Reasons for Not Full Compliance |
|-----------------------------------|------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------|---------------------------------|
| <b>Before Construction Starts</b> |                                                      |                                                                |                                                              |                                 |
| 1                                 | EMP in Bidding Documents                             | Yes                                                            | EMP was included in procurement package.                     |                                 |
| 2                                 | GRM mechanism disseminated and functioning KC and PS | Yes                                                            |                                                              |                                 |
| 3                                 | GRM Sign Board at Construction Site entrance         | Yes                                                            | Contractor installs sign board in front of construction site |                                 |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |                                                                     |                                                                                                                                                      |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4                         | CEMP provided by contractor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes | Supplied by contractor                                              | PMIS team reviewed the CEMP and await a revised copy considering amendments to ensure it is compliant with the EMP requirements in bidding document. |
| 5                         | Well drilling method statement for PS and KC landfills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No  |                                                                     | Requested in the CEMP comments from PMIS [July 2020]                                                                                                 |
| 6                         | All licences and permits in place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes | UXO certificate is awarded                                          | Letter is provided by Pursat Municipality                                                                                                            |
| <b>Construction phase</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |                                                                     |                                                                                                                                                      |
| 7                         | <b>Affected householder - House improvements</b><br>1. For all 8 households within 0-500 m of the landfill site <b>that want to accept</b> mitigation measures:<br>a) Installation of opening glass window frames and fly screens into a maximum of 8 windows within the house.<br>b) Provision of 50 viable tree or shrub saplings (native species, to be determined through consultation) to provide a vegetation screen around the front or back, and sides of the property; the resident is responsible for aftercare                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | N/A |                                                                     | PMU / PMIS will survey relevant households which were identified originally, and ensure measures are in place before completion.                     |
| 7a                        | <b>Production, Transport and Use of Materials:</b><br>2. Asphalt and concrete batching facilities will be located at least 500m downwind from the nearest dwellings in order to reduce the impact of fumes on humans and to be fitted with necessary equipment such as bag house filters to reduce fugitive dust emissions.<br>3. Water will be sprayed on material handling areas, and borrow pits where fugitive dust is generated if it will impact on workers or residents.<br>4. Trucks carrying dry construction materials such as earth will be covered with tarpaulins or other suitable cover.<br>5. Stockpiles and materials will be stored at least 50m from surface waters with drainage directed away from the irrigation canals or drainage channels<br>6. Driving on unmade roads, trucks will be limited to 15 kph. Warning sign to inform road users of turning heavy vehicles will be used where trucks cross or turn off National Road.<br>7. Construction traffic movements will be scheduled to avoid congested and/or sensitive periods<br>8. borrow site will be sign posted, fenced or contoured to ensure unauthorized/accidental access to any steep sided pits | Yes | Implementation by contractor – no observations on dust noted by PIU |                                                                                                                                                      |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                           |                                                  |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------|--------------------------------------------------|
| 8  | <b>Machinery and Equipment:</b><br>9. Maintain all exhaust systems in good working order; undertake regular equipment maintenance;<br>10. Restrict construction activities using heavy machinery work between 8am-6pm;<br>11. Provide advance warning to the community on timing of noisy activities. Seek suggestions from community members to reduce noise annoyance, particularly related to noise sensitive activities at receptors<br>12. Public notification of construction operations will incorporate noise considerations; information procedure of handling complaints through the Grievance Redress Mechanism will be disseminated.<br>13. Ensure noise monitoring is undertaken near sensitive receptors, particularly dwellings when construction machinery is operational<br>14. Construction vehicles and machinery will be maintained to a high standard to minimize emissions<br>15. All construction workers will use appropriate Personal Protective Equipment (PPE) including ear defenders when operating machinery;<br>16. No washing or repair of machinery within 50m of surface waters including irrigation canals.<br>17. Project owner should prepare 1500 m fence with 2 m height around the project site.<br>18. Growing trees to protect dust as well as noise and vibration. | Yes     | No observed issues with noise or pollution from machinery |                                                  |
| 9  | <b>Access Road Vibration/Property Damage:</b><br>19. The contractor will take and store a Pre-Condition photograph of all houses and other structures along the 1500m access road within 30 m of the road shoulder and make the photos available to MPWT should any dispute occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes     |                                                           |                                                  |
| 10 | <b>Landscaping - Flora</b><br>20. Follow requirements in Technical Specification regarding tree size, planting and aftercare requirements<br>21. Native species only to be approved by PDoE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A     |                                                           |                                                  |
| 11 | <b>Groundworks – water quality</b><br>22. Provision of adequate short-term drainage away from construction sites to prevent contaminated run off.<br>23. Installation of temporary storm drains or ditches for construction sites to manage and control the flow and direction of surface water run off<br>24. Spray water on areas being worked if fugitive dust is generated if it will impact on workers or residents.<br>25. If groundworks reveal cultural chance finds, the contractor will stop work immediately, fence off the area, and notify the PMU. Work will not commence until MPWT approval is given.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes     |                                                           |                                                  |
| 12 | <b>Storage/Use of chemicals/fuels – water and soil quality:</b><br>26. Refueling only in designated areas which are to be 200m from a water course and drip trays to be used when refueling or topping up / changing machinery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Partial |                                                           | Contractor need provides the equipment for spill |



|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |  |         |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--|---------|
|    | <p>fluids</p> <p>27. Construction fluids such as oils, and fuels should be stored and handled on a bunded impermeable surface; a bund will be provided around any above ground fuel storage tanks with a capacity of 110% of the largest single tank.</p> <p>28. All chemicals and fuels will be labeled</p> <p>29. Spill control measures will be included in emergency response measures</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |  | control |
| 13 | <p><b>Spoil, Solid and Liquid Waste Management action-plan:</b></p> <p>30. The contractor will:</p> <ul style="list-style-type: none"> <li>a) Follow the waste hierarchy and demonstrate how waste will be prevented and recycled and will show effective management of materials on site through good house-keeping and work planning</li> <li>b) Clear arrangements for storage and transportation of all hazardous and non-hazardous waste to an authorized and approved disposal point (approved by Provincial Department of Environment).</li> <li>c) Recyclables to be separated at source and given/sold to recycler (plastic, metal, card, paper as a minimum)</li> <li>d) All solid waste to be stored in containers with lids.</li> <li>e) Prohibit burning of waste at all times;</li> <li>f) Provide all vehicles/drivers with plastic bags for waste collection and prevent any unauthorized waste disposal with particular attention paid to prevention of waste entering water ways including drainage ditches</li> <li>g) Criteria for spoil disposal including levels of contamination and location for spoil disposal (to be approved by municipal authorities)</li> <li>h) No disposal of spoil on agriculturally productive land or within 50 m of a water course</li> </ul> | Yes                  |  |         |
| 14 | <p><b>Community Health and Safety</b></p> <p>31. <b>The contractor will:</b></p> <ul style="list-style-type: none"> <li>a) Details of appropriate fencing, protective barriers, and buffer zones which will be provided around all construction sites including barriers where needed on access roads and populated.</li> <li>b) Details of Safety measures, if required, to prevent access by members of the public and livestock to any borrow site excavations</li> <li>c) Details of Warning signs which will be set up if mud is likely on public roads. Mud will be removed at the end of each day. Other spillages on public roads will be removed immediately.</li> <li>d) Details of signage and speed controls if public roads are to be affected by construction traffic.</li> <li>e) Details of sufficient signage giving community dangers / warnings and information disclosure outside all construction sites, include example warnings.</li> </ul> <p><b>Occupational Health and Safety</b></p>                                                                                                                                                                                                                                                                                  | See H&S tables below |  |         |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|  | <p>32. <b>Measures will include:</b></p> <ul style="list-style-type: none"> <li>a) Assurance that all workers are equipped with, and use Personal Protective Equipment (PPE).</li> <li>b) Specifications for the PPE to be used on site and the contractors' approach to enforcement of its use by workers</li> <li>c) Sufficient signage giving occupational health and safety warnings and information disclosure within all construction sites – sub-plan to include example warnings.</li> <li>d) Details of worker education and awareness seminars for construction hazards will be given. A construction site safety program will be developed and distributed to workers.</li> <li>e) Details of daily toolbox meetings (safety briefings)</li> <li>f) Details of the site accident record book which will be maintained where all major or minor accidents and incidents are recorded with actions taken.</li> <li>g) An Environment Health and Safety qualified engineer will be engaged for the contract and adequate first aid equipment provided on site.</li> <li>h) Warning signs will be set up if mud is likely on public roads. Mud will be removed at the end of each day. Other spillages on public roads will be removed immediately.</li> <li>i) Provision will be made for safety precautions when using 220 to 240V Electric Power tools if the workers are likely to be working within wet or flooded environments.</li> </ul> <p><b>The Emergency Response Plan</b></p> <p>33. Preventative Measures will include:</p> <ul style="list-style-type: none"> <li>a) Prevention of Injury and Accidents – to include Personal Protective Equipment requirements for construction workers, training requirements</li> <li>b) Prevention of Spillage - All construction fluids such as oils, and fuels will be stored on hard standing with sealed drainage with a capacity of 110% of the largest fuel container, will include procedures on refueling and maintaining vehicles.</li> <li>c) Prevention of Fire – to include measures for Ignition Sources including prevention of smoking on construction site, management of flammable materials and liquid.</li> <li>d) Other Incidents – prevention measures relevant to other issues considered relevant by the contractor</li> </ul> <p><b>Emergency Response Procedures</b></p> <p>34. The procedures cover actions to be taken in case of:</p> <ul style="list-style-type: none"> <li>a) Worker injury (e.g. construction or traffic accident)</li> </ul> |  |  |  |
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|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                        |                                                                 |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------|-----------------------------------------------------------------|
|    | b) Spillage (e.g. fuel spillage)<br>c) Fire (e.g. fuel or chemicals storage area); and<br>35. Any other incidents anticipated by the contractor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                        |                                                                 |
| 15 | <b>Worker camp management</b><br>36. A camp management plan will include:<br>a) A map showing camp lay out, welfare facilities, and first aid kit locations. . It will be at least 50m from the nearest house.<br>b) Accommodation facilities including pit latrines for male and female workers, adequate drainage to prevent flooding, security including a no weapons policy and waste disposal areas.<br>c) Pit latrines to be located at least 200m from surface waters, and in areas of suitable soil profiles and above the groundwater levels<br>d) Schedule of HIV Aids education awareness to be given to workers.<br>e) Training on relevant laws for foreign labor (including hunting, fishing and traffic rules);<br>37. If a construction camp is not required, the contractor will not require a Management Plan but will:<br>f) Provide adequate waste disposal facilities including garbage cans for workers.<br>g) Provide welfare facilities including water for washing, drinking and include facilities for male and female workers<br>h) Provide toilets for male and female construction workers with a cleaning schedule<br>38. The contractor will give priority to local labor force and retain evidence of how local labor recruitment efforts were undertaken | Partial | Supplies by contractor | Contractor need to provide one more toilet for workers in camp. |
| 16 | <b>Construction staging areas:</b><br>39. If staging area required (not within construction camp area) the contractor will:<br>a) Provide a layout map of staging area and its location which will not be within 20m of any surface waterbody and not in an area liable to flood<br>40. The site will not be at least 50m from a residential property                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes     |                        |                                                                 |
| 17 | <b>Restoration and rehabilitation</b><br>41. Topsoil from construction areas will be retained and used for landfill landscaping and rehabilitation<br>42. The contractor will provide a clear plan of how the following sites will be restored to their original condition following the end of construction;<br>a) Worker camp<br>b) Staging area<br>c) Access roads to landfill site<br>43. Any damage shall be repaired as per the technical specification in the bidding                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes     |                        |                                                                 |

|  |                                                                                                                      |  |  |  |
|--|----------------------------------------------------------------------------------------------------------------------|--|--|--|
|  | documents                                                                                                            |  |  |  |
|  | 44. All waste will be removed, and compacted ground restored.                                                        |  |  |  |
|  | 45. Revegetation of sloped areas such as access road slopes with natural grass species to prevent wet season erosion |  |  |  |

**Table 12. EMP–Actions Needed for Compliance CW-06 – Kampong Chhnang Landfill (Lot 1)**

|   | EMP Requirement                            | Further Action to Take                                                                  | Date for Action        | Who will Implement Action | Was this in last SEMR? Yes/No |
|---|--------------------------------------------|-----------------------------------------------------------------------------------------|------------------------|---------------------------|-------------------------------|
| 5 | Well drilling method statement and results | As above, required as part of CEMP and any results of well drilling should be reported. | <b>See Section 5.3</b> | Contractor                | Yes                           |

### 3.2 Health and Safety Performance

21. The following table gives the Health and Safety impact mitigation measures in the Borrower EMP and how the project is progressing with implementing the mitigation measures, for all subprojects.
22. During routine COVID-19 testing of construction workers, 26 people tested positive for COVID-19. These workers and the workers who had been in direct contract with them were put in quarantine. The provincial health Authorities were informed and allowed to contractor to continue the ongoing works with the workers that had no direct contract with the infected workers. The workers in quarantine receive full payment during this period in accordance with the applicable Government regulations.

**Table 13. Status of Health and Safety Compliance - ALL subprojects**

|   | Health and Safety Requirement                                       | Compliance & Description (Yes, No, Partial, N/A at this stage) | Comment or Further Explanation if Needed                                                                                                    | Reasons for Not Full Compliance    |
|---|---------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| 1 | Community Health and Safety Measures – barriers, signs, mud removal | Yes                                                            | Mud on road was an issue raised by affected people (Pursat urban centre) Contractor was informed by Supervision team and made improvements. |                                    |
| 2 | PPE provision and use                                               | Yes – all sites                                                |                                                                                                                                             | PPE has been provided and is worn. |

|   |                                                                           |                          |                                                                                                                                                                                                                                                                         |                                                       |
|---|---------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 3 | H&S signage around site                                                   | CW05 Yes<br>CW06 Yes     | Adequate clear repeated messages in Khmer on H&S issues shown                                                                                                                                                                                                           |                                                       |
| 4 | H&S training delivered for staff                                          | Yes                      |                                                                                                                                                                                                                                                                         | Training provided and contractor provided photographs |
| 5 | H&S Accident Book on site and used                                        | Not known/unclear        | PMU/PMIS need to check accident / incident recording process with all contractors.                                                                                                                                                                                      |                                                       |
| 6 | An Environment Health and Safety qualified engineer engaged and on site   | Yes – all sites          |                                                                                                                                                                                                                                                                         |                                                       |
| 7 | Electrical safety on site is considered by contractor                     | Yes                      |                                                                                                                                                                                                                                                                         |                                                       |
| 8 | Emergency Response Plan – in place, procedures visible and training given | CW05 Yes<br>CW06 Partial | CW05 Fire fighting equipment and first aid kits on site and have demonstrated training on wider emergency procedures e.g. fire prevention. See photographs in Annex.<br><br>CW06 – landfill contractors have not demonstrated emergency procedures or training on them. | <b>CW06 see Section 5.3</b>                           |
| 9 | COVID-19 Response                                                         | Yes                      |                                                                                                                                                                                                                                                                         |                                                       |

23. For all 'Partial' or 'No' compliance issues in the table above, the actions needed to solve the compliance issues are in the table below:

**Table 14. Status of Health and Safety Actions Needed for Compliance - ALL subprojects**

|  | Health and Safety Requirement | Further Action to Take | Date for Action | Who will Implement Action | Action Identified In Previous SEMR (Y/N) – Resolved? |
|--|-------------------------------|------------------------|-----------------|---------------------------|------------------------------------------------------|
|--|-------------------------------|------------------------|-----------------|---------------------------|------------------------------------------------------|

|   |                                                                           |                                                                                                                                                          |             |            |                        |
|---|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------------------------|
| 8 | Emergency Response Plan – in place, procedures visible and training given | CW06 Need evidence that staff are aware of what to do in emergency and they have had training. E.g. emergency such as spillage, physical injury or fire. | 15 FEB 2022 | Contractor | Yes – not yet resolved |
|---|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------------------------|

24. The table above confirms additional follow up monitoring is required to check in detail on H&S issues on all sites. Ensuring staff on site are aware of what to do in an emergency is an important issue for the health and welfare of staff and environmental protection and both contractors will be required to provide evidence of this training and its procedures.

## 4 EMP MONITORING

### 4.1 Environmental Quality Monitoring

25. Environmental quality monitoring requirements are defined in the Monitoring Plan section of the EMP. The following table gives a summary of the environmental quality monitoring requirements for each subproject. The monitoring requirements for the project are influenced by the domestic ESIA which set out nationally expected requirements which were reflected in the EMPs.

**Table 15. EMP Environmental Quality Monitoring Requirements during Construction CW05 Pursat drainage**

| Environmental Issue Monitored | Location                                                                    | Responsible Organisation  | Frequency                          | Monitoring Timing During Construction |
|-------------------------------|-----------------------------------------------------------------------------|---------------------------|------------------------------------|---------------------------------------|
| Ambient Air Quality           | Housing near WWTP site<br>Urban receptor in town (Market, Pagoda, Hospital) | Contractor/<br>Laboratory | Every 6 months during construction | July and January                      |
| Noise                         | As above                                                                    | Contractor/<br>Laboratory | Every 6 months during construction | July and January                      |
| Surface water quality         | Point 1 Upstream & Downstream<br>(1387711.00 m N 381990.00 m E)             | Contractor/<br>Laboratory | Every 6 months during construction | July and January                      |

**Table 16. EMP Environmental Quality Monitoring Requirements during Construction CW-06 - landfill sites**

| Environmental Issue Monitored | Location                                                                                                                                             | Responsible Organisation  | Frequency                          | Frequency         |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------|-------------------|
| Ambient Air Quality           | PS<br>Site Boundary & Tuol Mkak village nearest residential receptor<br><br>KC<br>Site Boundary & Trapeang Sbov village nearest residential receptor | Contractor/<br>Laboratory | Every 6 months during construction | October and April |
| Noise                         | As above                                                                                                                                             | Contractor/<br>Laboratory | Every 6 months during construction | October and April |
| Groundwater quality           | PS<br>Borehole drilled on site and Tuol Mkak village<br><br>KC<br>Borehole drilled on site and Trapeang Sbov village                                 | Contractor/<br>Laboratory | Every 6 months during construction | October and April |
| Surface water quality         | PS<br>Pond adjacent to access road:<br>12°31'29.89"N, 103°58'51.66"E<br><br>KC<br>Pond closest to site boundary:<br>12°13'50.38"N, 104°37'9.85"E     | Contractor/<br>Laboratory | Every 6 months during construction | October and April |

26. No monitoring has taken place since construction started. This is now subject to a Corrective Action Plan, as detailed in Annex 5 It is the responsibility of the Contractor to undertake (or organise) the environmental quality monitoring and a budget for this was allocated in the EMP.

**Table 17. EMP Environmental Quality Monitoring in this reporting period - ALL subprojects**

| Subproject | Environmental Issue Monitored | Location | Monitoring Date | Comment On Results / Compliance |
|------------|-------------------------------|----------|-----------------|---------------------------------|
| CW06       | None                          |          |                 |                                 |

|      |      |  |  |  |
|------|------|--|--|--|
| CW05 | None |  |  |  |
|------|------|--|--|--|

## 4.2 EMP Monitoring Site Visits

27. The PIU conduct ad hoc site visits to the construction sites. In general PIU provide reports on findings to the PMIS team in Khmer language when issues are identified; much of the advice provided to the contractor is verbal. This SEMR summarises the issues that PIU and PMIS engineering team visits to site have identified. The monitoring site visit process will be formalised following refresher training with PIU and reiterating the use of monitoring checklist for recording the site visits.

## 4.3 Construction Phase Affected People Consultation

28. During the construction phase, the following table gives information on the consultations that were undertaken in order to understand the impact of the project on Affected People and how effective the EMP Mitigation measures are for residents, businesses and other affected people around the construction sites.

**Table 18. Construction Phase Affected People Consultation- ALL subprojects**

| Subproject                                                                 | Consultation Date | Person Consulted / Location | Outcome / Issues | Corrective Action Needed | Action Implemented by (person/date) |
|----------------------------------------------------------------------------|-------------------|-----------------------------|------------------|--------------------------|-------------------------------------|
| No environmental specific consultation took place in this reporting period |                   |                             |                  |                          |                                     |
|                                                                            |                   |                             |                  |                          |                                     |

29. The project team recognise a lack of community engagement during the reporting period, which was primarily due to lack of field work because of COVID-19 inhibiting movement and both the project team and community's concerns over attending public events or travelling.

# 5 DISCLOSURE, COMPLAINTS, CORRECTIVE ACTION

## 5.1 Information Disclosure

30. The following table gives information on any information disclosure activities undertaken in this reporting period. .



**Table 19. Information Disclosure- ALL subprojects**

| Contract No.            | Subproject                                     | Safeguard Document                                    | Disclosure on ADB website                            |
|-------------------------|------------------------------------------------|-------------------------------------------------------|------------------------------------------------------|
| CW05                    | Pursat Drainage and WWTP                       | EMP                                                   | March 2019<br>Update July 2021                       |
| CW06 both lots and CW05 | Landfills                                      | Consolidated IEE                                      | July 2020<br>Update December 2021                    |
| CW06 Lot 1              | Kampong Chhnang Landfill                       | EMP                                                   | April 2019<br>Update December 2021                   |
| CW06 Lot 2              | Pursat Landfill                                | EMP                                                   | March 2019<br>Update December 2021                   |
| CW10                    | Kampong Chhnang Sewerage, WWTP and Drainage    | IEE                                                   | Oct 2020<br>Update July 2021<br>Update December 2021 |
| CW10                    | Kampong Chhnang Sewerage, WWTP and Drainage    | EMP                                                   | Update December 2021                                 |
| Output 3                | Community Mobilised Environmental Improvements | Due Diligence Report                                  | December 2020                                        |
| SEMR Jan-June 2020      |                                                | Semi-Annual Environmental Safeguard Monitoring Report | Sept 2020                                            |
| SEMR July-Dec 2020      |                                                |                                                       | November 2021                                        |
| SEMR Jan-Jun 2021       |                                                |                                                       | November 2021                                        |

## 5.2 Grievance Redress Mechanism

31. The following table gives information on complaints about the project the Project Team is aware of, during this reporting period. The table includes:
- Complaints made thorough GRM entry points
  - Issues raised in consultation;
  - Issues raised any other way that the project team is aware of.
32. For issues that have already been solved, this is confirmed in the final column of the table. Where possible the project tries to solve all issues as quickly as possible through informal discussions between the affected people and the contractor.

**Table 20. Project Complaints or Issues- ALL subprojects**

| Details of Complaint / Issue Raised                                    | Detail of Person (Date, Name, Contact Details) | Action Needed & Date                                                                                                                | Comment / Resolved? |
|------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Quality of reinstatement of road pavement Pursat and poor road access. | General Pursat related Social Media discussion | New VO3 is being approved for pavement improvement for permanent solution.<br><br>See Corrective Action Plan for temporary solution | Partial             |

33. The following table gives information on all issues raised in previous SEMRs which are not yet resolved:

**Table 21. Project Complaints or Issues – Not resolved from previous reports- ALL subprojects**

| Details of Complaint | Detail of Person (Date, Name, Contact Details) | Action Needed & Date | Reason this is still not resolved |
|----------------------|------------------------------------------------|----------------------|-----------------------------------|
| Not applicable       |                                                |                      |                                   |

### 5.3 Corrective Action Plans

34. The following table summarises any formal corrective action plans that have been issued to the contractor in order to improve environmental performance. This is regarding formal corrective actions i.e. persistent non-compliances, rather than the outstanding actions required for EMP compliance as presented in the EMP Implementation section of this SEMR:

Table 22. Corrective Action Issued- ALL subprojects

| Reason for Corrective Action                                                                                                                                                                                                                                                | Date Issued                   | Outcome                                                                                                                                                                                                                   | Follow Up Action Needed                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CW05 Pursat Drainage</b>                                                                                                                                                                                                                                                 |                               |                                                                                                                                                                                                                           |                                                                                                                                                                                               |
| 1. No environmental monitoring                                                                                                                                                                                                                                              | 31 <sup>st</sup> October 2021 | <b>1. OPEN.</b> No environmental monitoring has been conducted.                                                                                                                                                           | PMIS/PMU will Follow Up and will further request that monitoring is conducted quickly and thoroughly.<br><br><b>Date for Submission of Completion by Contactor: 31 March 2022</b>             |
| 2. A priority schedule for pavement repair should be prepared as soon as possible and the contractor will use the available quantities for pavement reinstatement in the original BOQ for this repair work, in advance of the contract variation order for this CW package. | 31 <sup>st</sup> October 2021 | <b>2. OPEN</b> Dependent on VO implementation.                                                                                                                                                                            | PMIS/PMU site engineer will follow up on obtaining a schedule as required in the CAP.<br><br><b>Date for Submission of Completion by Contactor: 15 February 2022</b>                          |
| <b>CW06 Landfills</b>                                                                                                                                                                                                                                                       |                               |                                                                                                                                                                                                                           |                                                                                                                                                                                               |
| 1. No environmental monitoring                                                                                                                                                                                                                                              | 31 <sup>st</sup> October 2021 | <b>1. OPEN.</b> No environmental monitoring has been conducted.                                                                                                                                                           | Both sites: PMIS/PMU will Follow Up and will further request that monitoring is conducted quickly and thoroughly.<br><br><b>Date for Submission of Completion by Contactor: 31 March 2022</b> |
| 2. Health and Safety<br>Clear H&S messaging in Khmer around site<br><br>3. Emergency response procedures training and emergency equipment such as spill kits required                                                                                                       | 31 <sup>st</sup> October 2021 | <b>2. CLOSED.</b> Evidence of improved H&S information posted around the site.<br><br><b>3. OPEN</b> -Kampong Chhnang. No emergency response training was in evidence for Kampong Chhnang and no other emergency response | <br><br><br><br><br><br><br><br><br><br><b>Date for Submission of Completion by Contactor: 15 February 2022</b>                                                                               |

|                                                                                  |                               |                                                                                                                                                           |                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                  |                               | training was provided.<br><b>CLOSED</b> – Pursat. Pursat landfill provided evidence of training in using a spill procedure (using sand to contain fuel).  |                                                                                                                                                                                                                                                                                               |
| 4. Storage and Use of chemicals and fuels<br>Storage area and spill kit required | 31 <sup>st</sup> October 2021 | 4. <b>CLOSED</b> . Kampong Chhnang. No fuel storage on site. Filling station is used.<br><br>4. <b>OPEN</b> . Pursat fuel storage tank remains unchanged. | Pursat: PMU/PMIS will Follow Up<br>Kampong Chhnang: Closed<br><br><b>Date for Submission of Completion by Contactor: 15 February 2022</b>                                                                                                                                                     |
| 5. Well drilling method statement                                                | 31 <sup>st</sup> October 2021 | 5. <b>OPEN</b> . This has not been supplied.                                                                                                              | The wells are drilled and complete. The method statement will no longer serve much useful purpose. The PMU will consider further requesting the method statement and any test results from water supply wells.<br><br><b>Date for Submission of Completion by Contactor: 15 February 2022</b> |
| 6. Camp sanitation – one more toilet required                                    | 31 <sup>st</sup> October 2021 | 6. <b>CLOSED</b> . Toilets have been added to the camps (2xnew facilities per camp)                                                                       | Closed                                                                                                                                                                                                                                                                                        |

35. See annex 5 for full original Corrective Action Plan. The table above shows the status as of end of 2021 with the progress on the Corrective Actions required of the contractors.
36. Pursat Landfill example of spill response training is shown below, as required in the Corrective Action Plan; with sand and shovels supplied for spill response. This also shows fuel leaking from a storage drum and the main tank not on hard standing (note that the main tank may be double skinned but this has not been confirmed by the contractor). A double skinned tank will mitigate from some damage to the tank but will not affect loss of control outside the tank e.g. on re-fuelling.



37. New toilet facilities are below, provided in each landfill worker camp in response to the Corrective Action Plan.



38. In response to the Corrective Action Plan, health and safety messages in Khmer are on site, and this example below is from Pursat landfill.



## 6 CONCLUSION & RECOMMENDATIONS

### 39. Conclusion:

- Overall the project team concludes that no significant or unanticipated environmental impacts were noted during this reporting period however the team will remain vigilant with monitoring and checking the contractor's progress.
- The PIU and PMIS teams continue to visit the construction sites, for monitoring and supervisory activities. As a result of these visits, to no significant environmental non-compliance are identified on the ground.
- The team recognise that the issue of no consultation and environmental monitoring persists, as mentioned in the previous Monitoring report; the situation remains unchanged. Consultation is particularly important with affected people in the dense urban core, where issues from nuisance and access should be confirmed. The Contractor's have not responded to the Corrective Action Plans fully and as such no monitoring has been undertaken.

- Landfill construction is nearing completion, the final mitigation measures will need to be implemented.

**40. Recommended Actions: FIVE actions are required:**

1. **Outstanding Corrective Actions Plan actions.** PMU/PMIS will follow up on the outstanding EMP compliance issues in this report, several of which are now critical:
  - **Environmental quality monitoring for all active construction contracts**
  - **Fuel storage conditions for Pursat landfill**
  - **Health and safety messaging at landfill construction sites in Khmer language**
2. **Accident / Incident Recording.** The EMP requires contractors to record any accidents or incidents including injury to staff, spillages or other environmental incidents. There has been no evidence of a record being maintained. The PMU will contact the Civil Works Contractors (CW05 and CW06) to ask for evidence of their accident/incident recording procedure.
3. **Landfill house improvement Mitigation Measures** will be progressed by PMU / PMIS. This is a critical part of the Landfill mitigation measures. The PIU Municipal Government member has requested the Provincial Department of Environment to restrict new house development along the new landfill access roads, within a 500m buffer zone. This has not happened, and therefore the number of new dwellings/businesses continue to grow around the landfill sites. The Municipality will support the PIU in identifying the original dwellings and liaising with the owners to discuss the house improvement measures. These can only be provided to the original houses, present at the time of the project design.
4. **Consultation.** PMIS and PMU will work closer with PIU to encourage consultation of affected people – particularly in the Pursat urban core. For consultation where site visits are not possible, it is recommended that the local PIU Team call local authority representatives such as Village Chief to check that no issues are overlooked.
5. **Reporting.** The reporting (monitoring) templates developed by the PMIS team for project implementation should be re-introduced again to the project staff, through refresher training at the province level, or other mechanisms, which is possible noting COVID-19 restrictions.

**Annex 1 Environmental Quality Monitoring Results**

**None available**



## Annex 2 Construction Site Photographs Pursat Drainage Works CW05



Training on Health and Safety and Emergency Procedures



Training activities in Pursat province on HIV, COVID-19 preventing and hygiene





Site Checking of PIU team and PISM consultant

Site of chief of Pursat municipality





PPE using during working at construction site







Traffic signs in construction site



Site visit from ADB social safeguard consultant

Public meeting with affected people  
along the road 202 and 203

Public meeting by PIU staff



Public consultation meeting before construction starting of road 202 and 203 by social safeguard team



### Annex 3 Construction Site Photographs CW06

#### 3.1 Kampong Chhnang Province



Site visit of Pursat governor to Landfill on 28<sup>th</sup> December 2021 and broadcast by Fresh News (FN)



New toilets (Corrective Action Plan)

Covid-19 prevention (Checking temperature &

Using alcohol spray/masks & Use of PPE



Asphal concrete pavement in cell 1 and finishing work of cell 1



Finished internal road



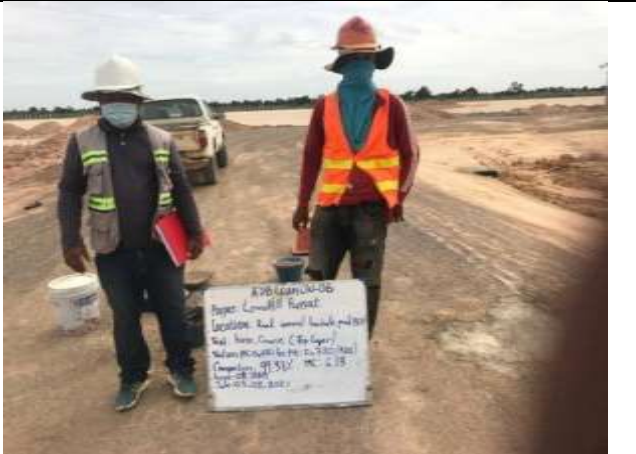
Tree Screen growing at landfill boundary and landscaping/planting



Finishing of main gate of landfill

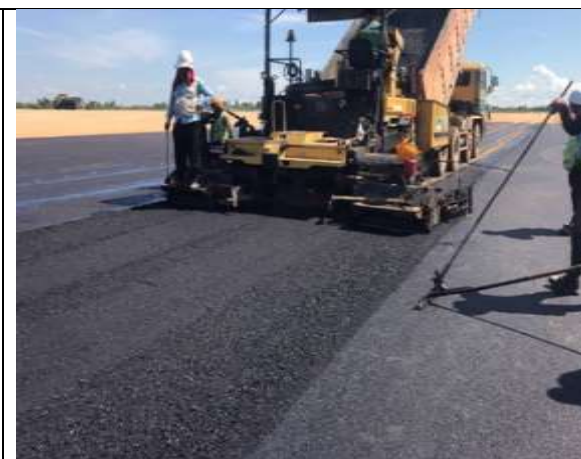


### 3.2 Pursat province

|                                                                                    |                                                                                      |                                                                                      |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|   |    |   |
| <p>New toilets (required under Corrective Action Plan)</p>                         | <p>Covid-19 prevention (Checking temperature, Spraying alcohol and wearing mask)</p> |                                                                                      |
|  |   |  |
| <p>Growing tree in around landfill boundary</p>                                    |                                                                                      |                                                                                      |







Alphalt concrete pavement road in landfill area

AC pavement for cell 2



H&S messages in Khmer - examples from Pursat Landfill



Annex 4 : MoE ESIA 11 Licence on Kampong Chhnang WWTP



**ព្រះរាជាណាចក្រកម្ពុជា**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**



**ក្រសួងបរិស្ថាន**  
**លេខៈ១៣០៥/ស.រ.ជ.ប.ស្ត**

**សូមគោរពជូន**  
**ឯកឧត្តមទេសរដ្ឋមន្ត្រី រដ្ឋមន្ត្រីក្រសួងសាធារណការ និងដឹកជញ្ជូន**

**កម្មវត្ថុ:** ករណីពិនិត្យ និងផ្តល់យោបល់លើរបាយការណ៍វាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមដំបូង (IESIA) សម្រាប់អនុគម្រោងសាងសង់ប្រព័ន្ធលូ និងស្ថានីយប្រព្រឹត្តិកម្មទឹកកខ្វក់ក្រុងកំពង់ឆ្នាំង នៃគម្រោងកែលម្អការគ្រប់គ្រងបរិស្ថានក្នុងជុំវិញបឹងទន្លេសាបរបស់ក្រសួងសាធារណការ និងដឹកជញ្ជូន នៅខេត្តកំពង់ឆ្នាំង

**យោង :**

- ព្រះរាជក្រមលេខ នស/រកម/១២៩៦/៣៦ ចុះថ្ងៃទី២៤ ខែធ្នូ ឆ្នាំ១៩៩៦ ដែលប្រកាសឱ្យប្រើច្បាប់ស្តីពីកិច្ចការពារបរិស្ថាន និងការគ្រប់គ្រងធនធានធម្មជាតិ
- អនុក្រឹត្យលេខ៧២ អនក្រ.បក ចុះថ្ងៃទី១១ ខែសីហា ឆ្នាំ១៩៩៩ ស្តីពីកិច្ចដំណើរការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន
- ប្រកាសលេខ២៣០ ប្រក.ប.ស្ត ចុះថ្ងៃទី២៩ ខែមិថុនា ឆ្នាំ២០២១ ស្តីពីនីតិវិធី និងការអនុវត្តគោលការណ៍ណែនាំសម្រាប់តារាងផ្ទៀងផ្ទាត់ក្នុងការរៀបចំរបាយការណ៍វាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមដំបូងលើគម្រោងរោងចក្រជូនស្រោល និងមធ្យម
- លិខិតលេខ២២៣ សក.កបទ១ ចុះថ្ងៃទី២៥ ខែកុម្ភៈ ឆ្នាំ២០២១ របស់ក្រសួងសាធារណការ និងដឹកជញ្ជូន
- លិខិតលេខ១៨១០ សក.កបទ១ ចុះថ្ងៃទី៤ ខែមិថុនា ឆ្នាំ២០២១ របស់ក្រសួងសាធារណការ និងដឹកជញ្ជូន
- លិខិតលេខ២២៥ វ.ហ.ប.ស្ត ចុះថ្ងៃទី១៨ ខែឧសភា ឆ្នាំ២០២១ របស់នាយកដ្ឋានវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន

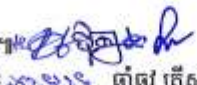
សេចក្តីដូចមានចែងក្នុងកម្មវត្ថុ និងយោងខាងលើ ខ្ញុំសូមគោរពជម្រាបជូន ឯកឧត្តមទេសរដ្ឋមន្ត្រី មេត្តាជ្រាបថា ក្រសួងបរិស្ថានឯកភាពលើរបាយការណ៍វាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមដំបូង សម្រាប់អនុគម្រោងសាងសង់ប្រព័ន្ធលូ និងស្ថានីយប្រព្រឹត្តិកម្មទឹកកខ្វក់ក្រុងកំពង់ឆ្នាំង នៃគម្រោងកែលម្អការគ្រប់គ្រងបរិស្ថានក្នុងជុំវិញបឹងទន្លេសាប នៅលើផ្ទៃដីទំហំ ៥០ហិកតា (ហាសិបហិកតា) ដែលមានទីតាំងភូមិសាស្ត្រស្ថិតនៅក្នុងសង្កាត់កំពង់ឆ្នាំង សង្កាត់ប្តូរ សង្កាត់ដូនត្នោត និងសង្កាត់ខ្សាច់ ក្រុងកំពង់ឆ្នាំង ខេត្តកំពង់ឆ្នាំង របស់ក្រសួងសាធារណការ និងដឹកជញ្ជូន (ម្ចាស់គម្រោង) ដោយម្ចាស់គម្រោងត្រូវគោរពតាមកិច្ចសន្យាការពារបរិស្ថានលេខ៣១០១ សក.កបទ១ ចុះថ្ងៃទី១៤ ខែកញ្ញា ឆ្នាំ២០២១ របស់ក្រសួងសាធារណការ និងដឹកជញ្ជូន។

អាស្រ័យដូចបានគោរពជម្រាបជូនខាងលើ សូម ឯកឧត្តមទេសរដ្ឋមន្ត្រី មេត្តាទទួលអនុវត្ត និងចាត់ចែងដោយក្តីអនុគ្រោះ។

សូម ឯកឧត្តមទេសរដ្ឋមន្ត្រី មេត្តាទទួលនូវសេចក្តីគោរពពីខ្ញុំ។

ថ្ងៃទី១៣ ខែ ឧសភា ឆ្នាំ២០២១ ធ្វើនៅ ព្រឹត្តិស័ក ព.ស.២៥៦៥  
រាជធានីភ្នំពេញ ថ្ងៃទី ២៤ ខែ កុម្ភៈ ឆ្នាំ២០២១

**រដ្ឋមន្ត្រី**  
**រដ្ឋលេខាធិការ**




**សាម៉ូ អូឡាណូ**

ចម្លងជូន៖  
 - ទីស្តីការគណៈរដ្ឋមន្ត្រី  
 - ក្រសួងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ  
 - ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់  
 - ក្រសួងសាធារណការ និងដឹកជញ្ជូន  
 - អង្គជំនាញបរិស្ថានកំពង់ឆ្នាំង  
 - មន្ទីរពិសោធន៍បរិស្ថានកំពង់ឆ្នាំង  
 - ឯកសារ របាយការណ៍



**ព្រះរាជាណាចក្រកម្ពុជា**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**  
**ព្រះរាជាណាចក្រកម្ពុជា**

**ក្រសួងសាធារណការ និងដឹកជញ្ជូន**

លេខ: ៣១៧.០.១.....សក.កប១១

**គោរពជូន**

**ឯកឧត្តមរដ្ឋមន្ត្រីក្រសួងបរិស្ថាន**

ម្ចាស់គម្រោង តំណាងដោយ **ឯកឧត្តមរដ្ឋមន្ត្រី រដ្ឋមន្ត្រីក្រសួងសាធារណការ និងដឹកជញ្ជូន** មានអាសយដ្ឋាន ផ្លូវលេខ៥៩៨ សង្កាត់ប្រាំងចំរេះ២ ខណ្ឌឫស្សីកែវ រាជធានីភ្នំពេញ។

**សូមធ្វើកិច្ចសន្យាការពារបរិស្ថាន**

ដើម្បីរួមចំណែកធានានូវនិរន្តរភាពបរិស្ថានក្នុងកិច្ចដំណើរការអភិវឌ្ឍន៍ប្រទេសជាតិ ខ្ញុំសូមធ្វើកិច្ចសន្យា ការពារបរិស្ថានចំពោះក្រសួងបរិស្ថានសម្រាប់ អនុគម្រោងសាងសង់ប្រព័ន្ធលូ និងស្ថានីយប្រព្រឹត្តិកម្មទឹកកខ្វក់ ក្រុងកំពង់ឆ្នាំងនៃគម្រោងកែលម្អការគ្រប់គ្រងបរិស្ថានក្រុងជុំវិញបឹងទន្លេសាប នៅលើផ្ទៃដីទំហំ ៥០ហិកតា (ហាសិបហិកតា) ដែលមានទីតាំងភូមិសាស្ត្រស្ថិតនៅក្នុងសង្កាត់កំពង់ឆ្នាំង សង្កាត់ប្រេរ សង្កាត់ផ្សារឆ្នាំង និងសង្កាត់ខ្យាន ក្រុងកំពង់ឆ្នាំង របស់ក្រសួងសាធារណការ និងដឹកជញ្ជូន តាមប្រការដូចខាងក្រោម៖

**ប្រការ១..**

ធានាទទួលខុសត្រូវ និងអនុវត្តន៍ខ្លឹមសារដែលបានរៀបរាប់នៅក្នុងរបាយការណ៍វាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមដំបូង (IESIA) សម្រាប់អនុគម្រោងសាងសង់ប្រព័ន្ធលូ និងស្ថានីយប្រព្រឹត្តិកម្មទឹកកខ្វក់ ក្រុងកំពង់ឆ្នាំងនៃគម្រោងកែលម្អការគ្រប់គ្រងបរិស្ថានក្រុងជុំវិញបឹងទន្លេសាប ដែលក្រសួងបរិស្ថានបានឯកភាព។

**ប្រការ២..**

ធានាផ្តល់របាយការណ៍អង្កេតតាមដានបរិស្ថាន (Environmental Monitoring Report) រៀងរាល់ ០៦ខែម្តង នៅក្នុងដំណាក់កាលសាងសង់ និង០១ដងនៃឆ្នាំដំបូង នៅដំណាក់កាលប្រតិបត្តិគម្រោងជូន ក្រសួងបរិស្ថាន ដើម្បីពិនិត្យ និងវាយតម្លៃ។

**ប្រការ៣..**

ធានាផ្តល់របាយការណ៍សង្ខេបនៃការសិក្សាលម្អិត (Summary Detailed Design Report) សម្រាប់ អនុគម្រោងសាងសង់ប្រព័ន្ធលូ និងស្ថានីយប្រព្រឹត្តិកម្មទឹកកខ្វក់ក្រុងកំពង់ឆ្នាំងនៃគម្រោងកែលម្អការគ្រប់គ្រងបរិស្ថានក្រុងជុំវិញបឹងទន្លេសាប ដែលមិនបានលម្អិតនៅក្នុងរបាយការណ៍វាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងសង្គមដំបូង (IESIA) ដើម្បីដាក់ជូនក្រសួងបរិស្ថានពិនិត្យ និងផ្តល់យោបល់។

**ប្រការ៤..**

ក្នុងករណីក្រសួងបរិស្ថាន តម្រូវឱ្យម្ចាស់គម្រោងធ្វើការកែប្រែនូវបច្ចេកទេសបរិស្ថានណាមួយ ដើម្បីឱ្យសមស្របទៅតាមគោលការណ៍ណែនាំ និងកម្រិតបង្គោលបរិស្ថាន ម្ចាស់គម្រោងនឹងទទួលបានអនុវត្ត ទៅតាមគោលការណ៍ណែនាំនោះទាំងស្រុង។

**ប្រការ៥..**

ទៅថ្ងៃអនាគត បើម្ចាស់គម្រោងមានគម្រោងពង្រីកបន្ថែម ឬផ្លាស់ប្តូរ ឬកែសម្រួលរបាយការណ៍ សិក្សាសមិទ្ធិលទ្ធភាព (Feasibility Study Report) ឬផ្អាកសកម្មភាព ម្ចាស់គម្រោងនឹងរាយការណ៍ជូន ក្រសួងបរិស្ថានឱ្យបានមុន០១ខែ។

**ប្រការ៦..**

អនុញ្ញាតឱ្យមន្ត្រីជំនាញពីក្រសួងបរិស្ថាន ឬមន្ទីរបរិស្ថានខេត្តកំពង់ឆ្នាំង ដែលមានលិខិតបញ្ជា បេសកកម្មត្រឹមត្រូវ ដើម្បីធ្វើការត្រួតពិនិត្យនៅទីតាំងតំបន់គម្រោង។

**ប្រការ៧..**

ក្នុងករណីដែលម្ចាស់គម្រោងពុំបានគោរពតាមប្រការណាមួយ ឬអនុវត្តផ្ទុយពីកិច្ចសន្យានេះ ឬ លិខិតបទដ្ឋានគតិយុត្តចូលជាធរមានផ្សេងៗទៀត ម្ចាស់គម្រោងនឹងទទួលខុសត្រូវចំពោះមុខច្បាប់ជាធរមាន។

ថ្ងៃពុធ ១៤ ខែ កក្កដា ឆ្នាំឆ្លូវ ត្រីស័ក ព.ស.២៥៦៥

រាជធានីភ្នំពេញ ថ្ងៃទី១៧ ខែ កញ្ញា ឆ្នាំ២០២១

**ជ. រដ្ឋមន្ត្រីក្រសួងសាធារណការ និងដឹកជញ្ជូន**

**រដ្ឋមន្ត្រី**



**ស៊ុយ សារ៉ា**

បានឃើញ និងគោរពជូន

**ឯកឧត្តមរដ្ឋមន្ត្រីក្រសួងបរិស្ថាន មេត្តាពិនិត្យ និងសម្រេច**

លេខៈ ១១៥ វ.ហ.ប.ស្ត

ថ្ងៃ ២០ កញ្ញា ឆ្នាំឆ្លូវ ត្រីស័ក ព.ស.២៥៦៥

រាជធានីភ្នំពេញ ថ្ងៃទី២៣ ខែ កញ្ញា ឆ្នាំ២០២១

**ប្រធាននាយកដ្ឋាននាយកម្ល៉េះហេតុប៉ះពាល់បរិស្ថាន**

  
**ជាតិ សេរី**

បានឃើញ និងឯកភាព

ថ្ងៃ ២៣ កញ្ញា ឆ្នាំឆ្លូវ ត្រីស័ក ព.ស.២៥៦៥

រាជធានីភ្នំពេញ ថ្ងៃទី២៦ ខែ កញ្ញា ឆ្នាំ២០២១

**ជ. រដ្ឋមន្ត្រីក្រសួងបរិស្ថាន**

**រដ្ឋមន្ត្រី**



**សាម៉ូ អូឡាណូ**



Kingdom of Cambodia  
National Religion King

Ministry of Environment  
No. 1307 SCHNBST

Attention

His Excellency Senior Minister, Minister of Ministry of Public Works and Transportation

Subject: Regarding to the request for approval on the Initial Environmental and Social Impact Assessment for the sub-project of Water Treatment Plan and drainage system sub-project of the Integrated Urban Environmental Management in the Tonle Sap Basin Project (TS 1) MPWT in Kampong Chhnang Province.

Ref.:

- Royal Code No. NS/RKM/1296/36, dated December 24, 1996, promulgating the Law on Environmental Protection and Natural Resource Management,
- Sub-Decree No. 72 ANKR.BK, dated August 11, 1999, concerning the Environmental Impact Assessment Process
- Prakas No. 230 BrBK dated on 29<sup>th</sup> June 2021 on procedures and implementation of guideline for the verification table to for the preparation of the first Environmental and Social Impact Assessment Report on small and medium plant project.
- Letter No. 623 SK.KBT 1, dated 25 February, 2021 of Ministry of Ministry of Public Works and Transportation
- Letter No. 1810 SK.KBT 1, dated 04 June, 2021 of Ministry of Ministry of Ministry of Public Works and Transportation
- Letter No. 625 VHBST, dated 18 May, 2021 of General Department of EIA of Ministry of Environment

With Regard to the subject and references cited above, I would like to inform Your Excellency Senior Minister that the Ministry of Environment approved the Initial Environmental and Social Impact Assessment (IESIA) report for the sub-project of Sewerage and Wastewater treatment sub-project of the Integrated Urban Environmental Management in the Tonle Sap Basin Project on 50 ha which is located in Sangkat Kampong Chhnang, Sangkat Barér, Sangkat Psar Chhnang and Sangkat Ksam, Krong Kampong Chhnang, Kampong Chhnang Province which own by Ministry of Ministry of Ministry of Public Works and Transportation (project owner) must comply with the Environmental Protection Contract No.3101 SK.KBT , dated 14<sup>th</sup> September 2021 of MPWT.

As mentioned above, please Your Excellency Senior Minister, be implemented and managed as appropriate.

Please Your Excellency Senior Minister, accept the assurances of my highest regards.

Phnom Penh, 28<sup>th</sup> September 2021  
Secretary of state

CC:

Integrated Urban Environmental Management in the Tonle Sap Project

- Office of the Council of Minister
- Ministry of Economic and Finance
- Ministry of Land management, Urban Planning and Construction
- Ministry of Water Resources and Meteorology
- Kampong Chhnang administration
- Department of Environment in Kampong Chhnang
- Chronological Document

Kingdom of Cambodia  
National Religion King

Ministry of Public Works and Transportation  
No. 3101 SK.KBT1

His Excellency Minister of Ministry Environment

Project owner represented by His Excellency Senior Minister, Minister of Ministry of Public Works and Transportation, ST 598, Sangkat Chhang Chamsre 2, Kan Russey Keo, Phnom Penh Municipality.

Environmental Protection Contract

To ensure environmental sustainability in the process of national development, I would like to do an environmental protection contract with the Ministry of Environment (MoE) for the sub-project of Sewerage and Wastewater treatment sub-project of the Integrated Urban Environmental Management in the Tonle Sap Basin on total land of 50 ha which is located in Sangkat Kampong Chhnang, Sangkat Barér, Sangkat Psar Chhnang and Sangkat Ksam, Krong Kampong Chhnang, Kampong Chhnang Province of MPWT as follows:

Article 1:

To ensure and implement the described content in the Initial Environmental and Social Impact Assessment (IESIA) Report for of Sewerage and Wastewater treatment sub-project of the Integrated Urban Environmental Management in the Tonle Sap Basin approved by the Ministry of Environment (MoE).

Article 2:

Submitted the Environmental Monitoring Report every six months (6 months) during the construction phase and one times of first year during the implementation of the project to the Ministry of Environment to review and evaluate.

Article 3:

Responsible on providing the summary of detailed report Sewerage and Wastewater treatment sub-project of the Integrated Urban Environmental Management in the Tonle Sap Basin which is not detail in IESIA report and submit to MoE for checking and advise.

Article 4:

In case the Ministry of Environment requires the project owner to modify some technical in accordance to the guidelines and environmental standards, the project owner will fully comply with the guidelines.

Article 5:

In the future, if the owner plans to extend or change or revise the Feasibility Study Report or delay the activities, the project owner will inform to the Ministry of Environment one month in advance.

Article 6:

Integrated Urban Environmental Management in the Tonle Sap Project



Allowing the specialist from the Ministry of Environment or Department of Environment of Kampong Cham province to monitor in the project area during their mission.

Article 7:

In case that the project owner does not comply with any of the articles above or in contrast to this contract or other regulatory frameworks, the project owner will face to the law.

Phnom Penh, 18<sup>th</sup> September 2021  
In the name of Senior Minister of Ministry of Public Works,  
Transportation  
Secretary of state

See and Respect to  
H.E minister of Environment check and approved

No. 1188 VHBST  
Dated 23 September 2021

Director of Department of Environmental Impact Assessment

Seen and Approved  
Phnom Penh, 28th September 2021  
Minister of Ministry of Environment  
Secretary of state

## Annex 5 Corrective Action Plan

### CW05 Pursat Drainage and WWTP

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                      |                                        |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------|
| <b>CORRECTIVE ACTION PLAN FOR:</b>                                         | <b>CW05 Pursat Drainage and WWTP</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                      |                                        |
| <b>PMU Staff Responsible:</b><br>(name and role)                           | Name: Mr Socheat Penh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Role: PMU Environment Specialist                                                     |                                        |
| <b>Date this form issued to Contractor:</b>                                | 31 <sup>st</sup> October 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                      |                                        |
| <b>Deadline for Corrective Action:</b>                                     | 31 <sup>st</sup> December 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                      |                                        |
| <b>Is there an immediate risk to health and safety of people?</b>          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/>                                                             | No <input checked="" type="checkbox"/> |
| <b>Is there an immediate risk to the environment?</b>                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <input type="checkbox"/>                                                             | No <input checked="" type="checkbox"/> |
| <b>Correct Action(s) Required:</b>                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                      |                                        |
| <b>Details of the non-compliance with EMP:</b>                             | <p>1) Non-compliance with environmental quality monitoring requirements in EMP supplied as part of Bidding Document</p> <p>2) Non-compliance with EMP requirement that access will be safely maintained for pedestrians and vehicles. Until a Variation Order for road pavement is implemented, priority works are needed.</p>                                                                                                                                                                                                                                                                  |                                                                                      |                                        |
| <b>Corrective Action</b>                                                   | <p>ACTION 1) Environmental Monitoring. Environmental quality monitoring and provision of laboratory analysis reports to PMU for the parameters and locations shown in the section below.</p> <p>ACTION 2A) Develop a priority schedule for pavement repair. List the priority roads that require repair and a date by which the repair can take place, using the original BOQ. Schedule will explain how priorities are established. PMU/PMIS will approve the schedule.</p> <p>ACTION 2B) Use the available quantities for pavement reinstatement in the original BOQ for the repair work.</p> |                                                                                      |                                        |
| Corrective Action is required by (CW package and Date)                     | <p>1) Environmental Monitoring: <b>31<sup>st</sup> December 2021</b></p> <p>2A) Priority Schedule for Pavement Repair: <b>5<sup>th</sup> November 2021</b></p> <p>2B) Implementing priority repair using existing BOQ: <b>31<sup>st</sup> December</b></p>                                                                                                                                                                                                                                                                                                                                      |                                                                                      |                                        |
| <b>Environmental quality monitoring requirements: CW05 Pursat drainage</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                      |                                        |
| <b>Environmental Issue Monitored</b>                                       | <b>Parameter (Bidding Document EMP)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Location</b>                                                                      | <b>Responsible Organisation</b>        |
| Ambient Air Quality                                                        | CO, NO <sub>2</sub> , SO <sub>2</sub> , TSP, O <sub>3</sub> , Pb, PM <sub>10</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Housing closest to WWTP site<br>Urban receptor in town<br>(Market, Pagoda, Hospital) | Contractor/<br>Laboratory              |

|                       |                                                                                                |                                                                                                 |                           |
|-----------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------|
| Noise                 | Lmax, Lmin, Leq                                                                                | As above                                                                                        | Contractor/<br>Laboratory |
| Surface water quality | pH, TSS, Fe, BOD5, COD, Oil and Grease, Detergent, SO4, NH3, TN, TP, Pb, AS, Cd, Hg, Coliform. | Point 1 Upstream & Downstream of drainage canal adjacent to WWTP (1387711.00 m N 381990.00 m E) | Contractor/<br>Laboratory |

#### CW06 Landfill site construction (Lot 1 and Lot 2)

|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                  |                                        |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|
| <b>CORRECTIVE ACTION PLAN FOR:</b>                                | <b>CW06 Landfill site construction (Lot 1 and Lot 2)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                        |
| <b>PMU Staff Responsible:</b><br>(name and role)                  | Name: Mr Socheat Penh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Role: PMU Environment Specialist |                                        |
| <b>Date this form issued to Contractor:</b>                       | 31 <sup>st</sup> October 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |                                        |
| <b>Deadline for Corrective Action:</b>                            | 31 <sup>st</sup> December 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                        |
| <b>Is there an immediate risk to health and safety of people?</b> | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/>         | No <input checked="" type="checkbox"/> |
| <b>Is there an immediate risk to the environment?</b>             | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/>         | No <input checked="" type="checkbox"/> |
| <b>Correct Action(s) Required:</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                  |                                        |
| <b>Details of the non-compliance with EMP:</b>                    | <p>1) Non-compliance with environmental quality monitoring requirements in EMP supplied as part of Bidding Document</p> <p>2) Health and Safety. Non compliance with requirements in EMP supplied as part of Bidding Document for Clear H&amp;S messaging in Khmer around site</p> <p>3) Health and Safety. Non compliance with requirements in EMP supplied as part of Bidding Document for emergency response procedures training for all site workers.</p> <p>4) Storage and Use of chemicals and fuels. Non compliance with requirements in EMP supplied as part of Bidding Document for provision of adequate storage area for all liquid fuels and chemicals with provision of spill kits</p> <p>5) Well Drilling. Non compliance with requirements in EMP supplied as part of Bidding Document for provision of method statement for well drilling – including any well drilled for groundwater monitoring or water supply.</p> |                                  |                                        |

|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                |                           |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------|
|                                                                       | 6) Worker Camp Management. Non compliance with requirements in EMP supplied as part of Bidding Document for provision of adequate sanitation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                |                           |
| Corrective Action                                                     | <p>ACTION 1) <b>Environmental Monitoring.</b> Environmental quality monitoring and provision of laboratory analysis reports to PMU for the parameters and locations shown in the section below.</p> <p>ACTION 2) Provision of <b>health and safety</b> signage e.g. warnings and information in Khmer language at key points of risk around the construction sites and work camp areas.</p> <p>ACTION 3) Provide documented <b>emergency response training</b> to all workers. Provide evidence of training and training materials and a plan for 2022 for ensuring regular emergency response training, to PMU.</p> <p>ACTION 4) Store all <b>chemicals and fuels</b> in a labelled bunded hard standing/impermeable area. Provide this area and other key risk areas on site with spill kits / equipment for containing and managing spills.</p> <p>ACTION 5) Provide a detailed <b>method statement for well drilling</b> at both landfill sites. Include all wells e.g. water supply, and groundwater monitoring. For all wells which have been constructed, provide details of pumps installed, discharge and drawdown results, and water chemistry analysis results from an approved laboratory.</p> <p>ACTION 6) <b>Provision of a minimum of one further toilet</b> at each construction camp following the standards already used for the existing toilets.</p> |                                                                                |                           |
| Corrective Action is required by (CW package and Date)                | 31st December 2021 for all Actions 1 to 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                |                           |
| Environmental quality monitoring requirements: CW-06 - landfill sites |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                |                           |
| Environmental Issue Monitored                                         | Parameter (Bidding Document EMP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Location PS=Pursat KC=Kampong Chhnang                                          | Responsible Organisation  |
| Ambient Air Quality                                                   | PM10, SO2, NO2, CO2, O3, CH4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | PS<br>Site Boundary & Tuol Mkak village nearest residential receptor<br><br>KC | Contractor/<br>Laboratory |

|                       |                                                                                                   |                                                                                                                                                  |                           |
|-----------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                       |                                                                                                   | Site Boundary & Trapeang Sbov village nearest residential receptor                                                                               |                           |
| Noise                 | Lmax, Lmin, Leq                                                                                   | As above                                                                                                                                         | Contractor/<br>Laboratory |
| Groundwater quality   | pH, COD, Total hardness, total coliform, NH <sub>4</sub> -N, Total P, DO, TDS, Fe, As, Pb, Cr.    | PS<br>Borehole drilled on site and Tuol Mkak village<br><br>KC<br>Borehole drilled on site and Trapeang Sbov village                             | Contractor/<br>Laboratory |
| Surface water quality | pH, COD, BOD, TSS, NH <sub>4</sub> -N, Total Nitrogen, Total Phosphorus, oil and grease, Coliform | PS<br>Pond adjacent to access road:<br>12°31'29.89"N, 103°58'51.66"E<br><br>KC<br>Pond closest to site boundary:<br>12°13'50.38"N, 104°37'9.85"E | Contractor/<br>Laboratory |

## Annex 6 Monitoring and Reporting Templates

### Form1: Affected Person Monitoring Consultation WWTP/Sewage/Drainage

For Drainage / Sewage Collection / WWTP in Pursat

#### When to use this form:

- 1. Informal consultation - Interviews** - individual answers recorded when consulting individual Affected People.
- 2. Formal Consultation - Focus Group Discussion** – groups of 8 to 12 people (maximum 12)

| Date of Interview                                                                                                          |  | Interviewer Name                                                                                                                |  |
|----------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Interview Site:</b><br><i>Where is the interview held? In school, on the road, in shop, meeting place</i>               |  | <b>Stakeholder Name &amp; Status:</b><br><i>Full name, status is business owner, school teacher, religious leader, resident</i> |  |
| <b>Construction Site &amp; Date Construction Started (sub-project)</b><br><i>Which location, GPS location if available</i> |  | <b>Has this stakeholder been interviewed before?</b><br><i>Yes (when were they interviewed) No</i>                              |  |

#### Interview Discussion Points:

| 1. NOISE                                                                                                                                                                                                                                                                                                                                      | Record of Discussion |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>1a. Before the project started, was the person disturbed by noise? If yes, explain how and when.</b><br><i>Where did the noise come from? E.g. traffic, machinery, people, music</i><br><i>When did it disturb the person? E.g. all day, at night, intermittently</i>                                                                      |                      |
| <b>1b. During the construction, is the person disturbed by noise from the project? If yes, explain how and when.</b><br><i>What type of noise and where did the noise come from? All day, at night, intermittently?</i>                                                                                                                       |                      |
| <b>1c. If noise from construction is a problem, what changes does the person suggest are made?</b>                                                                                                                                                                                                                                            |                      |
| 2. AIR QUALITY                                                                                                                                                                                                                                                                                                                                | Record of Discussion |
| <b>2a. Before the project started, was the person affected by air pollution or dust? If yes, explain how and when.</b><br><i>Where did the pollution or dust come from? E.g. traffic, machinery, construction, burning garbage, cooking stoves</i><br><i>When was the dust or pollution a problem? E.g. all day, at night, intermittently</i> |                      |
| <b>2b. During the project, is the person disturbed</b>                                                                                                                                                                                                                                                                                        |                      |

|                                                                                                                                                                                                                                                                                                                                            |                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <p><b>by dust or pollution? If yes, explain how and when.</b><br/> <i>What type of noise and where did the noise come from? E.g. increased traffic congestion, construction machinery, construction workers, burning construction garbage etc</i><br/> <i>When did it disturb the person? E.g. all day, at night, intermittently</i></p>   |                                    |
| <p><b>2c. If dust or air pollution from the construction is a problem, what changes does the person suggest are made?</b></p>                                                                                                                                                                                                              |                                    |
| <p><b>3. COMMUNITY SAFETY</b></p>                                                                                                                                                                                                                                                                                                          | <p><b>Record of Discussion</b></p> |
| <p><b>3a. Before the project started, can you describe the community safety situation in the project area?</b><br/> <i>E.g. no problems, some accidents, difficulty crossing the roads</i></p>                                                                                                                                             |                                    |
| <p><b>3b. During the project, has the person found the community safety situation has changed? If yes, explain how and when.</b><br/> <i>Slower traffic so easier to cross the roads, construction vehicles are making a crossing harder / easier, more accidents / less accidents, construction site dangers, river bank unstable</i></p> |                                    |
| <p><b>3c. If change in road safety is unacceptable, what changes does the person suggest are made?</b></p>                                                                                                                                                                                                                                 |                                    |
| <p><b>4. WATER QUALITY</b></p>                                                                                                                                                                                                                                                                                                             | <p><b>Record of Discussion</b></p> |
| <p><b>4a. Before the project started, was the person affected by poor water quality? If yes, explain how and when.</b><br/> <i>Ground water? Surface Water? which Water source? How was it polluted?</i></p>                                                                                                                               |                                    |
| <p><b>4b. During the project, is the person affected by water pollution? If yes, explain how and when.</b><br/> <i>Ground water? Surface Water? which Water source? How is quality being affected?</i></p>                                                                                                                                 |                                    |
| <p><b>4c. If water quality from the construction is a problem, what changes does the person suggest are made?</b></p>                                                                                                                                                                                                                      |                                    |
| <p><b>5. ACCESS</b></p>                                                                                                                                                                                                                                                                                                                    | <p><b>Record of Discussion</b></p> |
| <p><b>5a. During the project, is the person affected by reduced access to their business, home or land? Access to what is limited, and how?</b></p>                                                                                                                                                                                        |                                    |
| <p><b>5b. If access limitations are not acceptable, please suggest changes which can be made?</b></p>                                                                                                                                                                                                                                      |                                    |
| <p><b>6. FLOODING</b></p>                                                                                                                                                                                                                                                                                                                  | <p><b>Record of Discussion</b></p> |
| <p><b>6a. Before the project started, was the person's HOUSE or BUSINESS affected by flooding? If yes, explain how long for and when.</b><br/> <i>Ground water? Surface Water? During rain only? Did it last an hour or a month?</i></p>                                                                                                   |                                    |
| <p><b>6b. During the project, is the person's HOUSE or BUSINESS affected by flooding? If yes, explain</b></p>                                                                                                                                                                                                                              |                                    |



|                                                                                                                                                                                                                                                                                                     |                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>how long for and when.</b><br><i>Ground water? Surface Water? which Water source?</i><br><i>How is quality being affected?</i>                                                                                                                                                                   |                             |
| <b>6c. If flooding during construction is a problem, what changes does the person suggest are made?</b>                                                                                                                                                                                             |                             |
| <b>7. OTHER ISSUES</b>                                                                                                                                                                                                                                                                              | <b>Record of Discussion</b> |
| <b>7a. Any other issues about the construction sites that the person wants to discuss?</b><br><i>Examples:</i><br><i>wastewater concerns</i><br><i>waste disposal</i><br><i>impact on livelihood/business</i><br><i>labour force &amp; social issues</i><br><i>Change to vegetation or land use</i> |                             |

## Form2: EMP VERIFICATION: PIU Site Visit Monitoring

To be sent to PMU  
Reporting Frequency: Within 1 day of each visit

|                          |  |                                   |  |
|--------------------------|--|-----------------------------------|--|
| Date of this site visit  |  | Name of Person completing visit:  |  |
| Site/CW Package visited: |  | Name of Contractor(s) met on site |  |

| Site Verification – Observations from site visit                                                       |                                                                                                |                            |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------|
| <b>Communication</b>                                                                                   |                                                                                                | <b>Comment/Observation</b> |
| 1. Is the Project Hotline Notice board up outside all construction sites                               | None <input type="checkbox"/> Some <input type="checkbox"/> All <input type="checkbox"/>       |                            |
| 2. Do construction staff have Contact Card with GRM details on?                                        | None <input type="checkbox"/> Some <input type="checkbox"/> All <input type="checkbox"/>       |                            |
| <b>Waste Management</b>                                                                                |                                                                                                | <b>Comment/Observation</b> |
| 3. Are there separate places for recyclable waste to be collected on site/work camp?                   | No <input type="checkbox"/> Yes <input type="checkbox"/>                                       |                            |
| 4. Do all waste containers have lids and more than 25m from water source?                              | No <input type="checkbox"/> Yes <input type="checkbox"/>                                       |                            |
| 5. Any spilled waste or litter seen on site?                                                           | No <input type="checkbox"/> Yes <input type="checkbox"/>                                       |                            |
| 6. Is any disused soil (spoil) dumped anywhere that will cause a problem to people or the environment? | No <input type="checkbox"/> Yes <input type="checkbox"/> Not Observed <input type="checkbox"/> |                            |
| <b>Occupational Health and Safety</b>                                                                  |                                                                                                | <b>Comment/Observation</b> |
| 7. Are all people on site wearing high visibility?                                                     | None <input type="checkbox"/> Some <input type="checkbox"/> All <input type="checkbox"/>       |                            |
| 8. Are all people on site wearing protective boots?                                                    | None <input type="checkbox"/> Some <input type="checkbox"/> All <input type="checkbox"/>       |                            |
| 9. Are people operating machinery using hard hats / ear protectors?                                    | None <input type="checkbox"/> Some <input type="checkbox"/> All <input type="checkbox"/>       |                            |
| 10. Can you see fire-fighting equipment on site?                                                       | No <input type="checkbox"/> Yes <input type="checkbox"/>                                       |                            |
| 11. Can you see the Accident Book for the site?                                                        | No <input type="checkbox"/> Yes <input type="checkbox"/>                                       |                            |
| <b>Worker Camp</b>                                                                                     |                                                                                                | <b>Comment/Observation</b> |

|                                                                                      |                                                                                                                                     |                            |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| 12. Can you see a first aid kit at the camp?                                         | No <input type="checkbox"/> Yes <input type="checkbox"/>                                                                            |                            |
| 13. Are the toilets clean and in good order?                                         | No <input type="checkbox"/> Partly <input type="checkbox"/> Yes <input type="checkbox"/>                                            |                            |
| 14. Is the accommodation clean and in good order?                                    | No <input type="checkbox"/> Partly <input type="checkbox"/> Yes <input type="checkbox"/>                                            |                            |
| 15. Can you see fire fighting equipment at the camp site?                            | No <input type="checkbox"/> Yes <input type="checkbox"/>                                                                            |                            |
| <b>Community Health and Safety &amp; Access</b>                                      |                                                                                                                                     | <b>Comment/Observation</b> |
| 16. Are construction trenches in urban areas protected with signs, lights, barriers? | None <input type="checkbox"/> Some <input type="checkbox"/> All <input type="checkbox"/><br>Not Applicable <input type="checkbox"/> |                            |
| 17. Is access to any building or business difficult because of construction?         | None <input type="checkbox"/> Some <input type="checkbox"/> All <input type="checkbox"/><br>Not Applicable <input type="checkbox"/> |                            |
| 18. Can you see any risks to community health and safety from the construction?      | No <input type="checkbox"/> Yes <input type="checkbox"/>                                                                            |                            |
| <b>Air Pollution</b>                                                                 |                                                                                                                                     | <b>Comment/Observation</b> |
| 19. Is the site generating visible dust?                                             | None <input type="checkbox"/> Some <input type="checkbox"/> A lot <input type="checkbox"/>                                          |                            |
| 20. Are stock piles covered?                                                         | No <input type="checkbox"/> Yes <input type="checkbox"/> Not Observed <input type="checkbox"/>                                      |                            |
| 21. Are vehicles carrying earth etc covered?                                         | No <input type="checkbox"/> Yes <input type="checkbox"/> Not Observed <input type="checkbox"/>                                      |                            |
| 22. Can you see a working water sprayer on site?                                     | No <input type="checkbox"/> Yes <input type="checkbox"/>                                                                            |                            |
| 23. Are the public roads around the construction areas kept clean of mud?            | No <input type="checkbox"/> Partly <input type="checkbox"/> Yes <input type="checkbox"/>                                            |                            |
| <b>Noise</b>                                                                         |                                                                                                                                     | <b>Comment/Observation</b> |
| 24. Are vehicles idling on site (engine on, not being used)?                         | No <input type="checkbox"/> Yes <input type="checkbox"/>                                                                            |                            |
| <b>Fuels and Chemicals</b>                                                           |                                                                                                                                     | <b>Comment/Observation</b> |
| 25. Are fuels and chemicals all stored in one areas?                                 | No <input type="checkbox"/> Yes <input type="checkbox"/> Not Observed <input type="checkbox"/>                                      |                            |
| 26. Is the storage area made of concrete or impermeable surface?                     | No <input type="checkbox"/> Yes <input type="checkbox"/>                                                                            |                            |
| 27. Any observed spills of liquids e.g. fuel on site?                                | No <input type="checkbox"/> Yes <input type="checkbox"/>                                                                            |                            |
| <b>Soil erosion &amp; Water Quality</b>                                              |                                                                                                                                     | <b>Comment/Observation</b> |
| 28. Can you see evidence of soil eroded by rain water from the construction site?    | No <input type="checkbox"/> Yes <input type="checkbox"/>                                                                            |                            |

|                                                                                                       |                                                          |                            |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------|
| 29. Is any stream near the site changing colour because of construction activities e.g. soil erosion? | No <input type="checkbox"/> Yes <input type="checkbox"/> |                            |
| <b>Vegetation removal</b>                                                                             |                                                          | <b>Comment/Observation</b> |
| 30. Have any trees been cut down that were not planned to be?                                         | No <input type="checkbox"/> Yes <input type="checkbox"/> |                            |
| 31. Any unexpected impacts on other vegetation?                                                       | No <input type="checkbox"/> Yes <input type="checkbox"/> |                            |
| 32. Any other observations:                                                                           |                                                          |                            |

### Annex 7 Kampong Chhnang WWTP Bespoke Effluent Standard

The following is the IESIA bespoke standard, as prescribed by MoE, compared to the Sub-decree No. 27 which was the standard in force at the time of WWTP design. The WWTP was confirmed to be able to meet the bespoke IESIA standard by the design engineer.

| No. | Parameter       | Unit   | STANDARD in IESIA -<br>changed by MoE during<br>IESIA review | STANDARD Sub-decree<br>No. 27 For Public Water<br>Body |
|-----|-----------------|--------|--------------------------------------------------------------|--------------------------------------------------------|
| 1   | pH              | -      | 6-9                                                          | 5-9                                                    |
| 2   | TSS             | mg/l   | <60                                                          | <120                                                   |
| 3   | Oil /Grease     | mg/l   | <5                                                           | <15                                                    |
| 4   | BOD5            | mg/l   | <50                                                          | <80                                                    |
| 5   | COD             | mg/l   | <80                                                          | <100                                                   |
| 6   | Detergent       | mg/l   | <5                                                           | <15                                                    |
| 7   | T-N             | Mg-N/l | <20                                                          | Nitrate NO <sub>3</sub> <20<br>Ammonia <7              |
| 8   | T-P             | Mg-P/l | <6                                                           | Phosphate PO <sub>4</sub> <6                           |
| 9   | NH <sub>3</sub> | mg/l   | <5                                                           | <7                                                     |