

Environmental Monitoring Report

3rd Semestral Report
November 2021

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.

This environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

Semi-Annual Environmental Monitoring Report

KINGDOM OF CAMBODIA

Ministry of Public Works and Transport

Integrated Urban Environmental Management in the Tonle Sap Basin Project

Reporting Period: *Jan-June 2021*

Date: *November 2021*

SEMR Report Number: 3

Contents

1 ENVIRONMENTAL SAFEGUARDS SUMMARY	1
1.1 Summary of Project Progress.....	1
1.2 Summary of EMP Implementation Jan-Jun 2021	3
1.3 Summary of EMP Monitoring (Observation Visits).....	3
1.4 Summary of Complaints, Issues and Corrective Action	3
2 SAFEGUARDS STAFF, TRAINING AND DOCUMENTATION	1
2.1 Implementation Arrangements.....	1
2.2 Training & Capacity Building.....	2
2.3 ADB Clearances.....	3
2.4 National Approvals	4
2.5 Construction Environmental Management Plan (CEMP) Approvals.....	5
3 EMP IMPLEMENTATION.....	5
3.1 Environmental Performance	5
3.2 Health and Safety Performance	26
4 EMP MONITORING	28
4.1 Environmental Quality Monitoring	28
4.2 EMP Monitoring Site Visits	29
4.3 Construction Phase Affected People Consultation	29
5 DISCLOSURE, COMPLAINTS, CORRECTIVE ACTION.....	30
5.1 Information Disclosure	30
5.2 Grievance Redress Mechanism	31
5.3 Corrective Action Plans	32
6 CONCLUSION & RECOMMENDATION	34
Annex 1 Environmental Quality Monitoring Results	a
Annex 2 Construction Site Photographs CW05 (Kg Chhnang landfill).....	b
Annex 3 Construction Site Photographs CW06	h
Annex 4 : Approval letter for solid waste disposal in existing dam site (Pursat Province)	a
Annex 5 COVID-19 Measures implemented (QPR No. 18, June 2021).....	b
Annex 6 Corrective Action Plan.....	d
Annex 7 Monitoring and Reporting Templates.....	h

Tables

Table 1 Project Progress Summary- ALL subprojects.....	1
Table 2. Status of Environmental Safeguard Roles- ALL subprojects	1
Table 3. Environmental Safeguards Training Provided and Planned- ALL subprojects	2
Table 4. Status of Environmental Safeguard Documents- ALL subprojects.....	3
Table 5. Status of National Approvals for Environmental Documents- ALL subprojects.....	4
Table 6. Status of CEMP Approvals- ALL subprojects	5
Table 7. Status of EMP Compliance CW-05 Pursat Drainage & WWTP	6

Table 8. EMP– Actions Needed for Compliance CW-05 Pursat drainage & WWTP	13
Table 10. Status of EMP Compliance CW-06 - landfill sites Pursat (lot 2)	14
Table 11. EMP–Actions Needed for Compliance CW-06 – Pursat Landfill (Lot 2)	19
Table 12: Status of EMP Compliance CW-06 - landfill sites Kg Chhnang (lot 1).....	20
Table 13. EMP–Actions Needed for Compliance CW-06 – Kampong Chhnang Landfill (Lot 1)	26
Table 14. Status of Health and Safety Compliance - ALL subprojects.....	26
Table 15. Status of Health and Safety Actions Needed for Compliance - ALL subprojects	27
Table 16. EMP Environmental Quality Monitoring Requirements during Construction CW05 Pursat drainage	28
Table 17. EMP Environmental Quality Monitoring Requirements during Construction CW-06 - landfill sites	28
Table 18. EMP Environmental Quality Monitoring in this reporting period - ALL subprojects	29
Table 19. Construction Phase Affected People Consultation- ALL subprojects	30
Table 20. Information Disclosure- ALL subprojects.....	30
Table 21. Project Complaints or Issues- ALL subprojects.....	32
Table 22. Project Complaints or Issues – Not resolved from previous reports- ALL subprojects.....	32
Table 23. Corrective Action Issued- ALL subprojects	33

1 ENVIRONMENTAL SAFEGUARDS SUMMARY

1. The 3rd Semi-annual Environment Monitoring Report (SEMR) covers the period of January to June 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.

1.1 Summary of Project Progress

4. 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 include:
 - **CW-05 Pursat Drainage and Wastewater Treatment Plant** and include
 - Variation Order 1 (VO1) for additional culverts and WWTP flood protection; and
 - VO2 for Kaoh Village Flood embankment reconstruction.
 - **CW-06 Kampong Chhnang and Pursat Landfill Sites (Lot 1 and Lot 2)** and include
 - VO1 Pursat, for additional cell and wetland; and
 - VO1 Kampong Chhnang) for additional cell and site fencing

Table 1 Project Progress Summary- ALL subprojects

Safeguards Category	Environment	B	
Reporting Period:	January-June 2021	Date Last Report Issued:	Sept. 2020
Contracts Awarded to Date:	CW-05 Pursat Drainage and WWTP awarded (31th December 2019) to Kiri Dangrek Construction Co. Ltd CW-06 Kampong Chhnang and Pursat Landfill Sites awarded 30 th October 2019, Signed 31 st December 2019 to UNG SIMSIA CONSTRUCTION CO., LTD		
Construction Progress to Date:	As of June 2021 , the physical construction progress is as follows: CW-05: 66 % construction completed. Construction started January 22 nd 2020. CW-06: Kampong Chhnang landfill 85 % and Pursat landfill 78 % construction completed. Construction started April 11 th 2020.		
Key Sub-project Activities in this Reporting Period:	Construction Activities CW-05: WWTP: Reed Beds - Excavation completed Membrane Lining, Filter installation and Reed plantation to be started Soil filling, including addition filling for flood protection has been completed. Construction of boundary wall to be completed		

	Drainage: Installation of New Combined Drainage Sewerage lines 38% complete (to end of June). 11 km of the total of 23.7 km pipe lines have been installed for the new drainage system. This includes the installation of approximately 1400 manholes of which, approximately 800 manholes have been connected to the existing drainage system. Canal reshaping and embankment strengthening completed. 14 additional culverts have been installed in the canal embankment to improve drainage of the adjacent low lying areas (VO1). CW-06: 1. Kampong Chhnang Landfill: a) Construction activities • Construction of internal Access road in landfill • Fencing around the boundary (completed) • Construction of administration building and furniture (completed), • Construction of drainage system and installation of pipe culverts from main gate and front gate (completed), • Construction of leachate ponds (completed), installation of leachate pipe, • Construction of monitoring wells (Completed), • Installation of power supply (completed), • Septic tank and • Construction of cell 1. b) Remaining work • Internal access road • Leachate ponds • Construction of cell 1, 2, 3 and 4 Pursat Landfill: c) Construction activities • Construction of internal Access road in landfill • Fencing around the boundary (completed) • Construction of administration building and furniture (completed), • Construction of drainage system and installation of pipe culverts from main gate and front gate (completed), • Construction of leachate ponds (completed), installation of leachate pipe, • Construction of monitoring wells (Completed), • Installation of power supply (completed), • Septic tank and • Construction of cell 1. d) Remaining work • Internal access road • Leachate ponds • Construction of cell 1, 2, 3 and 4 Kaoh village embankment: The reconstruction of the embankment is no under CW06, VO2 and has been substantially completed. The finishing work
--	---

	and selective embankment protection works had to be suspended in June because of a COVID-19 outbreak in Kaoh village. Permits or Consents Issued: No new permits or consents required in this reporting period.
--	--

5. A future Civil Works contract for the project (outside this SEMR reporting period) will be issued during the next SEMR for CW10 Kampong Chhnang Sewerage, Drainage and WWTP

1.2 Summary of EMP Implementation Jan-Jun 2021

6. EMP implementation is summarised in the following points, for this reporting period:
- CW05 contractor has addressed an issue of mud on road as raised by affected people through social media channels (such as Facebook).
 - CW05 work camp is well run and has appropriate measures for COVID-19 protection and fire protection.
 - COVID-19 has slowed the field work for the project teams in terms of monitoring and training delivery.
 - Health and safety is a priority 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

1.3 Summary of EMP Monitoring (Observation Visits)

7. EMP monitoring is summarised in the following points, for this reporting period. These visits are for specific environmental monitoring visits however the engineering team has maintained its supervisory visits throughout the COVID-19 pandemic where local restrictions allow and has been able to bring to the attention of the environmental team, anything observed on their site visits that may be relevant to the EMP:
- 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
 - Project team and contractor joint consultation and disclosure visit to Pursat market June 21st.
 - 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 has been identified or implement is summarised in the following points, for this reporting period:
- Issues Raised: Some issues of mud on road raised via social media (Facebook) and problems with road reinstatement in Pursat town.
 - Grievances Raised with GRM: 0 grievances
 - Corrective Action issued by project to Contractor:

- PIU informed the contractor to clear the mud and it was subsequently removed, and a new VO (VO3) is being developed to address pavement reinstatement.
- Corrective Action Plan is 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. See Annex 6.

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 the remainder of the year and into 2022, as noted in the Conclusions to this SEMR.

Table 2. Status of Environmental Safeguard Roles- ALL subprojects

Safeguards Role	Status & Comment			
PMU- Environmental Safeguards Officer	Date Started:	-11 th May 2020	Full Time/ Part Time	PT
	Comment	Mr Penh Socheat		
PIU Environmental Safeguard Counterpart (Focal Point)	Date Started:	-22 nd January 2020	Full Time/ Part Time	PT
	Comment	Mr. Bun Tainglay		
National Environmental Specialist PMIS team	Date Started:	September 2018	Full Time/ Part Time	PT
	Comment	Mr. Chea Mong		
International Environmental Specialist PMIS team	Date Started:	October 2018	Full Time/ Part Time	PT
	Comment	Ms. Rachel Wildblood		
Contractor Environment Health & safety Staff (Ung Simsia Construction Co.,LTD) (CWO6)	Date Started:	-22 nd January 2020	Full Time/ Part Time	FT

	Comment	Mr. Oum Seyhakmony		
	Comment	Mr. Meng Sovida		
Contractor Environment Health & safety Staff (Kiri Dangrek Construction Co. Ltd) (CWO5)	Date Started:	-22 nd January 2020	Full Time/ Part Time	FT
	Comment	Mr. San Sey (On site Project Manager)		

2.2 Training & Capacity Building

10. The following table gives the environmental safeguards training courses that have been completed during this reporting period. It is recognised that the Project Team has not delivered any training this reporting period. However this will be addressed, as discussed in the Conclusions and Recommendations, by the PMIS/PMU team. In particular, the following types of refresher training would further support Project implementation:
- Consultation with affected people;
 - EMP verification and monitoring.
11. The templates for EMP verification and consultation, which were developed and included in training for PMU/PIU at the start of the project, are in the Annex 7. The English version is included in this SEMR but the Khmer version was used in training and was distributed to the provincial project team. Before refresher training, the forms will all be re-checked to ensure they are relevant to any changes in the project.

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

Training Course Title	Training Date	Participants	Training Provider
Training Provided: General Tool Box Talks and COVID-19 Awareness	Daily/weekly during reporting period	Contractor's staff	Contractors at all sites
Training Planned: Affected person monitoring through consultation	Q4	PIU and Contractor and PMU	To be conducted by PMIS at the provincial level for all Civil Works Packages.

Training Course Title	Training Date	Participants	Training Provider
Training Planned: EMP implementation and verification – monitoring and reporting	Q4	PIU and Contractor and PMU	To be conducted by PMIS at the provincial level for all Civil Works Packages.

2.3 ADB Clearances

12. The following table gives information on the status of the safeguards documents. Note that VO1 is up-coming for both landfills in order to improve their design. The safeguard documents for VO1 will be updated in July/August 2021.

Table 4. Status of Environmental Safeguard Documents- ALL subprojects

Safeguards Documents	Update Issued (Latest Version)	Submitted to ADB	ADB Clearance Status
Consolidated IEE: Several major revisions to change scope throughout 2018 and 2019, incorporating ADB comments and removing cancelled embankment project. June 30 th 2020 update - filled gaps noted by ADB, and inclusion of IEIA data (baseline/consultation)	IEE_TS1Consolidated-25Oct18(SK)-rev_RCW-APRIL2019.docx IEE_TS1Consolidated- 08 JULY 2020.doc	Version April 2019 to ADB Version 8th July 2020 to ADB direct from PMIS	Cleared and disclosed
EMP Kampong Chhnang Landfill 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
EMP Pursat Landfill 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)	Approved and disclosed

Safeguards Documents	Update Issued (Latest Version)	Submitted to ADB	ADB Clearance Status
EMP Pursat Urban Drainage Draft updated by PMIS April 2019 based on comments from ADB on previous EMPs	EMP document issued by PMU Updated EMP with WWTP Flood Protection (VO1) and Kaoh Embankment (VO2)	6 August 2019 (with tender document) Update Submitted	Cleared and disclosed Update due for disclosure in July 2021.
CMEI Due Diligence Report Environmental DDR completed by PMIS 28 th July 2020, First Draft. Final Draft completed Dec 2020.	Final Version Issued	To be completed and returned to ADB August 2020 Update issued Dec. 2020	Cleared and disclosed
REA (Screening) Kampong Chhnang WWTP submitted and revised further with change of site location. REA proposed the Major Scope change works as Category B for environment.	Latest: 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
IEE Kampong Chhnang WWTP submitted and revised further with change of site location	TS1_KC WWTP_ IEE_v1.2_ 310720.doc	31 July 2020 to ADB direct from PMIS	Cleared and disclosed

2.4 National Approvals

13. 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 IEIA Pursat Urban Drainage	N/A	19 th November 2019	Approved	
CW-06 IEIA Landfills	N/A	19 th November 2019	Approved	

CW-05&06 UXO Clearance	N/A	N/A	Clearance Given 26 th June 2020	Clearance for all sub-projects
IEIA Kampong Chhnang Urban Drainage	N/A	N/A	Approval Expected July 2021	

2.5 Construction Environmental Management Plan (CEMP) Approvals

14. 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.
CW-05 Pursat Drainage and WWTP	17 th January 2020	25 February 2020	Reviewed by National and International Environmental consultants of PMIS 4 th 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

15. 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 (Mitigation Measure)	Compliance Description (Yes, No, Partial, N/A at this stage)	& Comment or Further Explanation if Needed	Reasons for Not Full Compliance
Before Construction Starts				
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 to disposal of waste from Pursat and Kampong municipality (see Annex 4 for waste permission)	
Construction				
6	Production, Transport and Use of Materials: 1. Water will be sprayed at least twice per day on construction sites, material handling areas when fugitive dust is noticeably generated. 2. All topsoil and overburden removed should be stockpiled for later restoration	Yes – see linked issue in Community Health and Safety		

	3. The contractor will provide a Traffic Management Plan to the PMU for approval which will include: a) How the contractor will inform the community and businesses of construction traffic routes b) Any advice/information the contractor will give to affected people during construction c) How the contractor will manage traffic including any road closures specifying management around Pursat Market. 4. Trained traffic marshal will be used to direct vehicle movements on and around construction sites and in all urban areas. 5. Minimize time that excavations and exposed soil are left open/exposed. Backfill immediately after work is completed			
7	Earthworks and Excavations – in urban area: 6. Develop plan of days and locations where outages in utilities and services will occur, or are expected. 7. Contact local utilities and services providers with schedule, and identify possible contingency back-up plans for outages. 8. Contact affected community to inform them of planned outages. 9. For any unavoidable outages, schedule during low use time such between 24:00 and 06:00. 10. Construction work should start at night time or section by section during working at dense population at Pursat market area.	Yes	No outages reported.	
8	Production, Transport and Use of Materials: 11. Required aggregate volumes must be calculated prior to extraction to prevent wastage. 12. Define and schedule how fabricated materials such as steel, wood structures will be transported and handled. 13. Trucks carrying dry construction materials such as earth; aggregate will be covered with tarpaulins or other suitable cover. 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. 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.	Yes	Materials handled without impact on environment	

	16. Water will be sprayed on material storage areas, and borrow pits where fugitive dust is generated and where vehicles are transporting materials on unmaded roads, generating dust, where human receptors are within 300m.			
9	Machinery and Equipment: 17. Maintain all exhaust systems in good working order; undertake regular equipment maintenance; 18. Restrict construction activities using heavy machinery between 7 am-5 pm; In particular, are activities such as pile driving. 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 20. Public notification of construction operations will incorporate noise considerations; information procedure of handling complaints through the Grievance Redress Mechanism will be disseminated. 21. Ensure noise monitoring is undertaken near sensitive receptors, particularly dwellings when construction machinery is operational 22. Construction vehicles and machinery will be maintained to a high standard to minimize emissions 23. All construction workers will use appropriate Personal Protective Equipment (PPE) including ear defenders when operating machinery; 24. No washing or repair of machinery within 50m of surface waters including river and irrigation canal. 25. Maintain equipment in proper working order 26. Replace unnecessarily noisy vehicles and machinery. 27. Vehicles and machinery to be turned off when not in use. 28. Construct temporary noise barriers around excessively noisy activity areas where possible.	Yes	No observed issues with noise or pollution from machinery	
10	Spoil Management 29. Measures in the sub-plan related to spoil management will include as a minimum: a) Preference must be given to use of spoil other construction sites, or disposed in spent quarries or borrow pits b) Uncontaminated spoil 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.	Yes	No observations of poor spoil management	

	c) Contaminated spoil 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. d) A record of type, estimated volume, and source of disposed spoil must be recorded			
11	Solid and Liquid Waste Management: 30. Sub-plan will include measures to explain how the contractor will: 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. 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). c) Segregate recyclables at source and given/sold to recycler (plastic, metal, card, paper as a minimum) 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. e) Prohibit burning of waste at all times; 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 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. h) All spills must be cleaned up completely with all contaminated soil removed and handled in accordance with Spoil Sub-Plan A.	Yes	No observations of poor waste management	
12	Occupational Health and Safety: 31. Occupational H&S measures to be included in the management sub-plan will include: a) Assurance that all workers are equipped with, and use Personal Protective Equipment (PPE). b) Specifications for the PPE to be used on site and the contractors' approach to enforcement of its use by workers c) Sufficient signage giving occupational health and safety warnings and information disclosure within all construction sites – sub-plan to include example warnings. 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. e) Details of daily toolbox meetings (safety briefings)	See table below		

	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. 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. 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. i) Drinking water must be provided at all construction sites Emergency Response: 32. The Emergency Response Plan will set out detailed Preventative Measures for all types of incidents covered in the Emergency Plan. This will include: a) Prevention of Injury and Accidents – to include Personal Protective Equipment requirements for construction workers, training requirements 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. c) Prevention of Fire – to include measures for Ignition Sources including prevention of smoking on construction site, management of flammable materials and liquid. d) Other Incidents – prevention measures relevant to other issues considered relevant by the contractor Emergency Procedures: 33. The Contractor will develop Emergency Response Procedures prior to construction. The procedures will cover actions to be taken in case of: a) Worker injury (e.g. construction or traffic accident) b) Spillage (e.g. fuel spillage) c) Fire (e.g. fuel or chemicals storage area); and d) Any other incidents anticipated by the contractor.			
13	Worker Camp Management: 34. If a camp for construction workers is required, the contractor will set out a management plan which includes: a) A map showing camp lay out, welfare facilities, and first aid kit locations. 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.	Yes		

	c) Pit latrines to be located at least 200m from surface waters, and in areas of suitable soil profiles and above the groundwater levels d) A clean-out or infill schedule for pit latrines must be established and implemented to ensure working latrines are available at all times. e) Worker camps will have adequate drainage. f) Providing firefighting equipment will be provided in all camps and will have adequate signage and prescribed testing intervals. g) The septic should be provided in worker camp. h) Plan of how camp areas will be restored to original condition after construction completed 35. If a construction camp is not required, the contractor will not require a Management Plan but will: a) Provide adequate waste disposal facilities including garbage cans for workers. b) Provide welfare facilities including water for washing, drinking and include facilities for male and female workers c) Provide toilets for male and female construction workers with a cleaning schedule d) The contractor will give priority to local labor force and retain evidence of how local labor recruitment efforts were undertaken. 36. The contractor will ensure training is delivered to construction workers on the following and the contractor will provide a training schedule: a) HIV Aids education awareness b) Cambodian laws for foreign labor regarding: hunting, fishing and traffic rules c) Grievance Redress Mechanism – how to deal with affected people who make a complaint to a worker d) Occupational Health and Safety and Emergency Procedures.			
14	Community Health and Safety: 37. Community H&S measures to be included in the management sub-plan will include: a) Details of appropriate fencing or protective barriers, lighting and buffer zones which will be provided around all construction sites including barriers with lighting where needed on access roads and populated locations. b) Sufficient signage and information disclosure, and site supervisors and should be placed at all sites. 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.	No	Mud on road was an issue – now resolved Contractor has since been warned by PIU and has rectified the problem by thoroughly cleaning the	Difficulties for road users are observed by PIU Env visit Road is not in suitable state for road users – no area is left adequately graded to allow easy access for traffic.

	d) Details of signage and speed controls if public roads are to be affected by construction traffic. e) Details of sufficient signage giving community dangers / warnings and information disclosure outside all construction sites, include example warnings. 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. 38. For urban excavations measures to be included in the sub-plan will detail how the contractor will ensure: a) Access will be safely maintained for pedestrians and vehicles to schools, markets, houses, pagodas and commercial establishments b) Temporary safe access will be constructed by the contractor where needed. c) No temporary access shall be greater than 3:1 slope to allow access to all. d) For WWTP construction measures to be included in the sub-plan will detail how the contractor will ensure access to farm land surrounding the WWTP.		roads causing problems.	
15	Storage/Use of Chemicals/Fuels – Water and Soil Quality: 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 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. 41. All chemicals and fuels will be in labeled containers.	Yes	Fuels stored in bunded impermeable area	
16	Restoration and rehabilitation: 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.	No	Road reinstatement being managed through a new VO3.	
17	Civil Works – sedimentation and erosion: 43. Ensure irrigation canal is protected from run off and sedimentation through controlled construction site drainage using berms, or plastic sheet fencing around all excavations and earthwork areas. 44. Earthworks should be conducted during dry periods. 45. Maintain a stockpile of topsoil for immediate site restoration following backfilling. 46. Protect exposed or cut slopes with planted vegetation, and stabilize all slopes. 47. Rip rap at sensitive area especially high slope or in front of run off area 48. Re-vegetate all areas of exposure soil immediately after work is completed.	Yes	Note: Extreme flooding of WWTP site challenging for sedimentation prevention	

16. 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
16	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.	Variation Order is required to ensure reinstatement and temporary measures needed	Depending on completion of VO For Temporary solution, see Corrective Action Plan	Contractor will implement VO	No
14	Community Health and Safety: Access will be safely maintained for pedestrians and vehicles	Ensuring road users have safe use of roads and accessibility - temporary measures needed before VO implemented	15 th November	Contractor will implement – Corrective Action Plan issued	No

17. 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
Before Construction Starts				
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	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 again in the CEMP comments from PMIS [July 2020]
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.
Construction phase				
7	Affected householder - House improvements: 1. For all 15 households 0-500 m of the landfill site that want to accept mitigation measures: a) Installation of opening glass window frames and fly screens into a maximum of 8 windows within the house. 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	Production, Transport and Use of Materials: 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. 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. 4. Trucks carrying dry construction materials such as earth will be covered with tarpaulins or other suitable cover. 5. Stockpiles and materials will be stored at least 50m from surface waters with drainage directed away from the irrigation canals or drainage channels 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. 7. Construction traffic movements will be scheduled to avoid congested and/or sensitive periods 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	Machinery and Equipment: 9. Maintain all exhaust systems in good working order; undertake regular equipment maintenance; 10. Restrict construction activities using heavy machinery work between 8am-6pm; 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 12. Public notification of construction operations will incorporate noise considerations; information procedure of handling complaints through the Grievance Redress Mechanism will be disseminated. 13. Ensure noise monitoring is undertaken near sensitive receptors, particularly dwellings when construction machinery is operational 14. Construction vehicles and machinery will be maintained to a high standard to minimize emissions 15. All construction workers will use appropriate Personal Protective Equipment (PPE) including ear defenders when operating machinery; 16. No washing or repair of machinery within 50m of surface waters including irrigation canals. 17. Project owner should prepare 1500 m fence with 2 m height around the project site. 18. Growing trees to protect dust as well as noise and vibration.	Yes	No observed issues with noise or pollution from machinery	
9	Access Road Vibration/Property Damage:	Yes		

	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.			
10	Landscaping - Flora 20. Follow requirements in Technical Specification regarding tree size, planting and aftercare requirements 21. Native species only to be approved by PDoE	N/A		Not required yet
11	Groundworks – water quality 22. Provision of adequate short-term drainage away from construction sites to prevent contaminated run off. 23. Installation of temporary storm drains or ditches for construction sites to manage and control the flow and direction of surface water run off 24. Spray water on areas being worked if fugitive dust is generated if it will impact on workers or residents. 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	Storage/Use of chemicals/fuels – water and soil quality: 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 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. 28. All chemicals and fuels will be labeled 29. Spill control measures will be included in emergency response measures	Partial		Contractor need provides the equipment for spill control and ensure storage is in an appropriate bunded/hard standing area
13	Spoil, Solid and Liquid Waste Management action-plan: 30. The contractor will: 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 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). c) Recyclables to be separated at source and given/sold to recycler (plastic, metal, card, paper as a minimum) d) All solid waste to be stored in containers with lids. e) Prohibit burning of waste at all times; 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	Yes		

	g) Criteria for spoil disposal including levels of contamination and location for spoil disposal (to be approved by municipal authorities) h) No disposal of spoil on agriculturally productive land or within 50 m of a water course			
14	Community Health and Safety 31. The contractor will 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. b) Provide Safety measures, if required, to prevent access by members of the public and livestock to any borrow site excavations 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. d) Provide signage and speed controls if public roads are to be affected by construction traffic. e) Provide sufficient signage giving community dangers / warnings and information disclosure outside all construction sites, include example warnings. Occupational Health and Safety 32. Measures will include: a) Assurance that all workers are equipped with, and use Personal Protective Equipment (PPE). b) PPE to be used on site and the contractors' approach to enforcement of its use by workers c) Sufficient signage giving occupational health and safety warnings and information disclosure within all construction sites – sub-plan to include example warnings. d) Worker education and awareness seminars for construction hazards will be given. A construction site safety program will be developed and distributed to workers. e) Daily toolbox meetings (safety briefings) f) Site accident record book which will be maintained where all major or minor accidents and incidents are recorded with actions taken. g) An Environment Health and Safety qualified engineer will be engaged for the contract and adequate first aid equipment provided on site. 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.	See H&S tables below		

	i) Safety precautions when using 220 to 240V Electric Power tools if the workers are likely to be working within wet or flooded environments. The Emergency Response Plan 33. Preventative measures will include: a) Prevention of Injury and Accidents – to include Personal Protective Equipment requirements for construction workers, training requirements 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. c) Prevention of Fire – to include measures for Ignition Sources including prevention of smoking on construction site, management of flammable materials and liquid. d) Other Incidents – prevention measures relevant to other issues considered relevant by the contractor Emergency Response Procedures 34. The procedures cover actions to be taken in case of: a) Worker injury (e.g. construction or traffic accident) b) Spillage (e.g. fuel spillage) c) Fire (e.g. fuel or chemicals storage area); and d) Any other incidents anticipated by the contractor.			
15	Worker camp management 35. A camp management plan will include: a) A map showing camp lay out, welfare facilities, and first aid kit locations. It will be at least 50m from the nearest house. 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. c) Pit latrines to be located at least 200m from surface waters, and in areas of suitable soil profiles and above the groundwater levels d) Schedule of HIV Aids education awareness to be given to workers. e) Training on relevant laws for foreign labor (including hunting, fishing and traffic rules); 36. 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	Construction staging areas 37. If staging area required (not within construction camp area) the contractor will:	Yes		

	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 38. The site will not be at least 50m from a residential property			
17	Restoration and rehabilitation 39. Topsoil from construction areas will be retained and used for landfill landscaping and rehabilitation 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; a) Worker camp b) Staging area c) Access roads to landfill site 41. Any damage shall be repaired as per the technical specification in the bidding documents 42. All waste will be removed, and compacted ground restored. 43. Revegetation of sloped areas such as access road slopes with natural grass species to prevent wet season erosion	Yes		

18. 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.	Sept 2020	Contractor	Yes
12	Storage and Use of chemicals and fuels – measures for spill control	Contractor need provides the equipment for spill control and ensure storage is in an appropriate bunded/hard standing area	Jan 2021	Contractor	Yes
15	Construction worker camp management	Contractor need to provide one more toilet for workers in camp.	Jan 2021	Contractor	Yes

19. 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
Before Construction Starts				
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 again 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
Construction phase				
7	Affected householder - House improvements 1. For all 8 households within 0-500 m of the landfill site that want to accept mitigation measures: a) Installation of opening glass window frames and fly screens into a maximum of 8 windows within the house. b) Provision of 50 viable tree or shrub saplings (native species, to be determined through consultation) to provide a vegetation screen around the	N/A		PMU / PMIS will survey relevant households which were identified originally, and ensure measures are in place before completion.

	front or back, and sides of the property; the resident is responsible for aftercare			
7a	Production, Transport and Use of Materials: 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. 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. 4. Trucks carrying dry construction materials such as earth will be covered with tarpaulins or other suitable cover. 5. Stockpiles and materials will be stored at least 50m from surface waters with drainage directed away from the irrigation canals or drainage channels 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. 7. Construction traffic movements will be scheduled to avoid congested and/or sensitive periods 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	Machinery and Equipment: 9. Maintain all exhaust systems in good working order; undertake regular equipment maintenance; 10. Restrict construction activities using heavy machinery work between 8am-6pm; 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 12. Public notification of construction operations will incorporate noise considerations; information procedure of handling complaints through the Grievance Redress Mechanism will be disseminated. 13. Ensure noise monitoring is undertaken near sensitive receptors, particularly dwellings when construction machinery is operational 14. Construction vehicles and machinery will be maintained to a high standard to minimize emissions 15. All construction workers will use appropriate Personal Protective Equipment (PPE) including ear defenders when operating machinery; 16. No washing or repair of machinery within 50m of surface waters including irrigation canals. 17. Project owner should prepare 1500 m fence with 2 m height around the project site. 18. Growing trees to protect dust as well as noise and vibration.	Yes	No observed issues with noise or pollution from machinery	

9	Access Road Vibration/Property Damage: 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	Landscaping - Flora 20. Follow requirements in Technical Specification regarding tree size, planting and aftercare requirements 21. Native species only to be approved by PDoE	N/A		
11	Groundworks – water quality 22. Provision of adequate short-term drainage away from construction sites to prevent contaminated run off. 23. Installation of temporary storm drains or ditches for construction sites to manage and control the flow and direction of surface water run off 24. Spray water on areas being worked if fugitive dust is generated if it will impact on workers or residents. 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	Storage/Use of chemicals/fuels – water and soil quality: 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 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. 28. All chemicals and fuels will be labeled 29. Spill control measures will be included in emergency response measures	Partial		Contractor need provides the equipment for spill control
13	Spoil, Solid and Liquid Waste Management action-plan: 30. The contractor will: 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 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). c) Recyclables to be separated at source and given/sold to recycler (plastic, metal, card, paper as a minimum) d) All solid waste to be stored in containers with lids. e) Prohibit burning of waste at all times;	Yes		

	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 g) Criteria for spoil disposal including levels of contamination and location for spoil disposal (to be approved by municipal authorities) h) No disposal of spoil on agriculturally productive land or within 50 m of a water course			
14	Community Health and Safety 31. The contractor will: 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. b) Details of Safety measures, if required, to prevent access by members of the public and livestock to any borrow site excavations 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. d) Details of signage and speed controls if public roads are to be affected by construction traffic. e) Details of sufficient signage giving community dangers / warnings and information disclosure outside all construction sites, include example warnings. Occupational Health and Safety 32. Measures will include: a) Assurance that all workers are equipped with, and use Personal Protective Equipment (PPE). b) Specifications for the PPE to be used on site and the contractors' approach to enforcement of its use by workers c) Sufficient signage giving occupational health and safety warnings and information disclosure within all construction sites – sub-plan to include example warnings. 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. e) Details of daily toolbox meetings (safety briefings) 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. g) An Environment Health and Safety qualified engineer will be engaged for the contract and adequate first aid equipment provided on site.	See H&S tables below		

	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. 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. The Emergency Response Plan 33. Preventative Measures will include: a) Prevention of Injury and Accidents – to include Personal Protective Equipment requirements for construction workers, training requirements 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. c) Prevention of Fire – to include measures for Ignition Sources including prevention of smoking on construction site, management of flammable materials and liquid. d) Other Incidents – prevention measures relevant to other issues considered relevant by the contractor Emergency Response Procedures 34. The procedures cover actions to be taken in case of: a) Worker injury (e.g. construction or traffic accident) b) Spillage (e.g. fuel spillage) c) Fire (e.g. fuel or chemicals storage area); and 35. Any other incidents anticipated by the contractor.			
15	Worker camp management 36. A camp management plan will include: a) A map showing camp lay out, welfare facilities, and first aid kit locations. . It will be at least 50m from the nearest house. 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. c) Pit latrines to be located at least 200m from surface waters, and in areas of suitable soil profiles and above the groundwater levels d) Schedule of HIV Aids education awareness to be given to workers. e) Training on relevant laws for foreign labor (including hunting, fishing and traffic rules);	Partial	Supplies by contractor	Contractor need to provide one more toilet for workers in camp.

	37. If a construction camp is not required, the contractor will not require a Management Plan but will: f) Provide adequate waste disposal facilities including garbage cans for workers. g) Provide welfare facilities including water for washing, drinking and include facilities for male and female workers h) Provide toilets for male and female construction workers with a cleaning schedule 38. The contractor will give priority to local labor force and retain evidence of how local labor recruitment efforts were undertaken			
16	Construction staging areas: 39. If staging area required (not within construction camp area) the contractor will: 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 40. The site will not be at least 50m from a residential property	Yes		
17	Restoration and rehabilitation 41. Topsoil from construction areas will be retained and used for landfill landscaping and rehabilitation 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; a) Worker camp b) Staging area c) Access roads to landfill site 43. Any damage shall be repaired as per the technical specification in the bidding 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	Yes		

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.	Sept 2020	Contractor	Yes
12	Storage and Use of chemicals and fuels – measures for spill control	Contractor need to prepare the storage area	Jan 2021	Contractor	Yes
15	Construction worker camp management	Contractor need to provide one more toilet for workers in camp.	Jan 2021	Contractor	Yes

3.2 Health and Safety Performance

20. 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.

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	Partial	CW05 Adequate clear repeated messages in Khmer on H&S issues	CW06 None seen in photographs provided. Needs follow up with contractor.
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		Needs follow up with contractor.
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	Partial		Fire fighting equipment and first aid kits on site (CW05) but require evidence of training and wider emergency procedures e.g. spill emergency for all CW contractors
9	COVID-19 Response	Yes	See Appendix for detail of response measures.	

21. 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?
3	CW06 - H&S signage around site	CW06 – clear repeated messages in Khmer on H&S issues on site	30-Sep-2020	Contractor	Yes – not yet resolved
8	Emergency Response Plan – in place, procedures visible and training given	CW05 & CW06 Need evidence that staff are aware of what to do in emergency and they have had training. E.g. emergency such as spillage of fuel or fire.	30-Sep-2020	Contractor	Yes – not yet resolved

22. The table above confirms additional follow up monitoring is required to check in detail on H&S issues on all sites. The COVID-19 measures, as reported in the Quarterly Project Report no. 18 (to June 2021) – are reported in this SEMR for clarity, see Annex 5.

4 EMP MONITORING

4.1 Environmental Quality Monitoring

23. 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 Urban receptor in town (Market, Pagoda, Hospital)	Contractor/ Laboratory	Every 6 months during construction	July and January
Noise	As above	Contractor/ Laboratory	Every 6 months during construction	July and January
Surface water quality	Point 1 Upstream & Downstream (1387711.00 m N 381990.00 m E)	Contractor/ 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 Site Boundary & Tuol Mkak village nearest residential receptor KC Site Boundary & Trapeang Sbov village nearest residential receptor	Contractor/ Laboratory	Every 6 months during construction	October and April
Noise	As above	Contractor/ Laboratory	Every 6 months during construction	October and April
Groundwater quality	PS Borehole drilled on site and Tuol Mkak village	Contractor/ Laboratory	Every 6 months during construction	October and April

	KC Borehole drilled on site and Trapeang Sbov village			
Surface water quality	PS Pond adjacent to access road: 12°31'29.89"N, 103°58'51.66"E KC Pond closest to site boundary: 12°13'50.38"N, 104°37'9.85"E	Contractor/ Laboratory	Every 6 months during construction	October and April

24. No monitoring has taken place since construction started. This is now subject to a Corrective Action Plan, as detailed in Annex 6. 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

25. 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

26. 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)
CW06 No consultation					
CW05 Pursat Drainage	21 st June 2021	Market traders and users – Market area	Disclosure and obtaining views of traders on market works by contractors and PMU in advance of starting works in the market area. See Annex 2 for Photographs No significant issues raised that are not already covered in the EMP.	No corrective action needed as a result of the consultation and disclosure in advance of market area civil works.	

27. 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

28. The following table gives information on any information disclosure activities undertaken so far for the project. For ease of reference it includes disclosure which is beyond this reporting period but which has taken place at the time of writing.

Table 19. Information Disclosure- ALL subprojects

Contract No.	Contract name	IEE Version	Notes	EMP version	Notes
--------------	---------------	-------------	-------	-------------	-------

CW06/ Lot 1	Kampong Chhnang Landfill	Consolidated IEE	Several major revisions to change scope throughout 2018 and 2019, incorporating ADB comments and removing cancelled embankment project. Last update June 2020, disclosed (ADB October 2021).	Updated with DED inputs Updated 11/8/21 with VO	Disclosed (ADB April 2019) Update not disclosed yet
CW05	Pursat Improvement Drainage in Pursat Town and Waste Water Treatment			Updated with DED Inputs Updated with WWTP flood protection and Kaoh Village embankment	Disclosed (ADB March 2019, Update July 2021)
CW06/ Lot 2	Pursat Landfill			Updated with DED inputs Updated 11/8/21 with VO	Disclosed (ADB March 2019) Update not disclosed yet
	Output 3 Community Mobilised Environmental Improvements	Environmental Due Diligence Report completed by PMIS 20 th July 2020 for Kaoh Village Updated August 2020 ADB approved and disclosed December 2020 https://www.adb.org/projects/documents/cam-42285-013-sddr-1			
CW10	Kampong Chhnang Sewerage, WWTP and Drainage Improvement	New subproject Separate IEE	Disclosed (ADB Oct 2020, updated version July 2021)	Updated with DED inputs	Disclosed (ADB July 2021)

5.2 Grievance Redress Mechanism

29. 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.

30. 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?
Mud on road in Pursat	Unknown – via Social Media	Supervision engineer addressed with Contractor	Yes
Quality of reinstatement of road pavement Pursat and poor road access.	Unknown.	New VO3 is being approved for pavement improvement for permanent solution. See Corrective Action Plan for temporary solution	Partial

31. 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

32. 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	Comment / Follow Up
CW05 Pursat Drainage			
1. No environmental monitoring	31 st October 2021		PMIS/PMU will Follow Up
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 st October 2021		PMIS/PMU will Follow Up
CW06 Landfills			
1. No environmental monitoring	31 st October 2021		PMIS/PMU will Follow Up
2. Health and Safety Clear H&S messaging in Khmer around site	31 st October 2021		PMIS/PMU will Follow Up
3. Emergency response procedures training and emergency equipment such as spill kits required			
4. Storage and Use of chemicals and fuels Storage area and spill kit required	31 st October 2021		PMIS/PMU will Follow Up
5. Camp sanitation – one more toilet required	31 st October 2021		PMIS/PMU will Follow Up

33. See Appendix 6 for full Corrective Action Plan. It is recognised that the Corrective Action Plan is outside the timing for this report (up to June 2021) however due to late submission it was advised by ADB to include the Corrective Action Plan in this monitoring report.

6 CONCLUSION & RECOMMENDATION

34. Conclusion:

- Overall the project team concludes that no significant or unanticipated environmental impacts were noted during this reporting period, apart from mud on road which was corrected informally by the supervision team and the issue of road reinstatement is being managed through a Variation Order at a contractual level.
- 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. Consultation is particularly important with affected people in the dense urban core, where issues from nuisance and access should be confirmed.
- PMU and PMIS conclude that they will further closely collaborate in order to ensure the Corrective Action Plan for the contractor is fulfilled and that safeguard observations on EMP implementation are more regularly recorded by those visiting site.

35. Recommendations:

- PMIS and PMU will develop a plan for training and capacity building activities, to ensure recording monitoring visits takes place and to facilitate the project's understanding of EMP compliance.
- 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.
- PIU will undertake Consultation with Affected People particularly for the urban areas affected by Pursat drainage works as a priority, only when COVID-19 risks allow;
- For consultation where site visits are not possible, it is recommended that the Project Team call local authority representatives such as Village Chief to check that no issues are overlooked.
- PMU/PMIS will follow up on the outstanding EMP compliance issues in this report.

Annex 1 Environmental Quality Monitoring Results

None available

Annex 2 Construction Site Photographs Pursat Drainage Works CW05

Clean water	Warning sign	
		
		



PPE using during working at construction site

Cleaning toilets in worker camp site

Kitchen in camp site



Traffic signs in construction site



Site observation from PIU team during construction period at drainage site





Public announcement of the construction activities before starting construction at the market area by PIU team and contractor (21st June 2021)





Public consultation meeting before starting construction at the market area by PIU team, Chief of Krong Pursat and contractor

Annex 3 Construction Site Photographs CW06
3.1 Kampong Chhnang Province



Covid-19 prevention (Checking temperature, Spraying alcohol and wearing mask)





Construction activities at landfill site



Toilet for men and women



First aid kit



Firefightings



Construction work equip with PPE during working in construction site

3.2 Pursat province





Worker equip with PPE during working in construction site



Site inspection from PIU team to Pursat landfill

Annex 4 : Approval letter for solid waste disposal in existing dam site (Pursat Province)

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

ខេត្តពោធិ៍សាត់
រដ្ឋបាលក្រុងពោធិ៍សាត់
លេខ ៣១៣/២០២១ ប្រកាស

ថ្ងៃ អង្គារ ១៣ ខែ ធ្នូ ឆ្នាំ ២០២១ ទោស័ក ព.ស ២៥៦៤
ក្រុងពោធិ៍សាត់ ថ្ងៃទី ១៣ ខែ ១២ ឆ្នាំ ២០២១

ជម្រាបជូន
លោកប្រធានក្រុមហ៊ុន អ៊ិនស៊ីមស៊ី ខនស្ត្រាក់សិន

កម្មវត្ថុ ៖ ករណីស្នើសុំប្រើប្រាស់ទីលានចាក់សំរាមចាស់របស់រដ្ឋបាលក្រុង ដែលមានទីតាំងនៅភូមិស្រះស្រង់ សង្កាត់ព្រៃញី ក្រុងពោធិ៍សាត់ ដើម្បីចាក់សំណល់ពីការដ្ឋានសាងសង់ទីលានចាក់សំរាមថ្មី ។

យោង ៖ លិខិតលេខៈ អសស/CW06/00១ ចុះថ្ងៃទី១៦ ខែមីនា ឆ្នាំ២០២១ របស់ក្រុមហ៊ុន អ៊ិនស៊ីមស៊ី ខនស្ត្រាក់សិន ។

សេចក្តីដូចមានចែងក្នុងកម្មវត្ថុ និងយោងខាងលើ ខ្ញុំសូមជម្រាបជូន **លោកប្រធានក្រុមហ៊ុន អ៊ិនស៊ីមស៊ី ខនស្ត្រាក់សិន** ជ្រាបថា៖ ដើម្បីសម្រួលដល់ក្រុមហ៊ុន ក្នុងការទុកដាក់សំណល់ដែលកើតមាន ក្នុងដំណើរការសាងសង់ និងឈូសឆាយសំរាមពីទីលានចាក់សំរាមថ្មី មានទីតាំងបិតនៅភូមិទួលម្កាក់ សង្កាត់រលាប ក្រុងពោធិ៍សាត់ ឲ្យបានត្រឹមត្រូវ និងបញ្ចៀសផលប៉ះពាល់បរិស្ថាន រដ្ឋបាលក្រុងសម្រេចអនុញ្ញាតឲ្យក្រុមហ៊ុន **អ៊ិនស៊ីមស៊ី ខនស្ត្រាក់សិន** ប្រើប្រាស់ ទីលានចាក់សំរាមចាស់ របស់រដ្ឋបាលក្រុងពោធិ៍សាត់ ដែលមានទីតាំងនៅភូមិស្រះស្រង់ សង្កាត់ព្រៃញី ក្រុងពោធិ៍សាត់ ដើម្បីចាក់សំណល់ពីការដ្ឋានសាងសង់ទីលានចាក់សំរាមថ្មី ។ ប៉ុន្តែក្រុមហ៊ុន ត្រូវគោរពតាមការណែនាំរបស់រដ្ឋបាលក្រុង ដូចខាងក្រោម៖

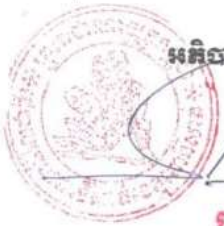
- ត្រូវចូលរួមជួសជុល និងថែទាំផ្លូវចូលទីលានដើម្បីឲ្យអាចដំណើរការបានគ្រប់រដូវ។
- ត្រូវធានាថា កាកសំណល់ដែលដឹកយកទៅចោលនៅទីលានចាស់នេះ គឺជាសំណល់ដែលយកចេញតែពីទីលានដែលកំពុងសាងសង់ប៉ុណ្ណោះ ។
- ត្រូវចាក់សំណល់ក្នុងទីលាន តាមទីតាំងដែលកំណត់ដោយរដ្ឋបាលក្រុង ។
- ត្រូវគោរពតាមការណែនាំរបស់រដ្ឋបាលក្រុង លើបច្ចេកទេសក្នុងការប្រមូល ដឹកជញ្ជូនកាកសំណល់រឹង ដើម្បីធានាមិនឲ្យប៉ះពាល់ដល់សណ្តាប់ធ្នាប់សាធារណៈ និងប្រជាពលរដ្ឋ។

អាស្រ័យដូចបានជម្រាបជូនខាងលើ សូម **លោកប្រធានក្រុមហ៊ុន** ជ្រាប និងចាត់ចែងអនុវត្តតាមការគួរ។

សូម **លោកប្រធាន** ទទួលនូវការរាប់អានដ៏ជ្រាលជ្រៅពីខ្ញុំ។

ចម្លងជូន៖

- ក្រុមប្រឹក្សាក្រុងពោធិ៍សាត់
- ក្រុមយុវជនដើម្បីបរិស្ថាន
- ឯកសារកាលប្បវត្តិ



អគ្គិបាលក្រុង
ចាប ដាច

Annex 5 COVID-19 Measures implemented (QPR No. 18, June 2021)

COVID-19 Mitigation Measures for EMP		Actions
1. Form a joint team to plan and organize return to work	- Develop or convene a joint occupational safety and health committee with members representing the employer and workers. - Train team members on the basic principles for the formulation and implementation of occupational safety and health preventive and control measures. - Develop and communicate a work plan on safe working for COVID-19.	- Safety and health are monitored jointly by the PIU, Construction supervision, and the Contractor - Training on safety and health protocols with a focus on safe working for COVID is regularly provided
2. Risk assessment to decide when to work, who works and how	- Undertake a risk assessment to determine the preventive and control measures. - Ensure preventative measures are in place before resuming or beginning construction work.	- Risk assessment has been done - Preventive measures have been put in place
3. Adopt engineering, organizational and administrative measures	- Avoid physical interaction and remain socially distant. - Ventilate enclosed workplaces including work camps and communal spaces. - Avoid concentration of workers - limit the capacity of common areas such as work camp dining rooms and changing rooms to allow the minimum separation of 2 meters and organize one-way systems. This includes sleeping areas which must be a minimum of 2 meters between beds. - Put in place training and information on COVID-19 and measures required for its management. - The construction site is to be segregated to the extent possible in zones or other methods to keep different crews physically separated at all time. - Stagger break and lunch schedules to minimize the number of people in close proximity to one another. - increase the frequency of cleaning and disinfection, in particular heavily trafficked areas and common areas, including work camps.	- Social distancing is being observed - Ventilation is provided - The works are equipment intensive and the number of workers at site is limited, therefore there is no high concentration of workers - Training on COVID measures is being provided - Because of the limited number of workers there is no need to stagger breaks and lunch schedules - Frequent cleaning is being practiced - Frequent cleaning of all areas is being practiced
4. Regularly clean and disinfect	- All door handles, railings, ladders, switches, controls, eating surfaces, shared tools and equipment, taps, toilets, and personal areas are wiped down at least twice a day with a disinfectant. - Discourage the sharing of items such as cups, glasses, plates, tools.	
5. Promote personal hygiene	Provide workers with the conditions and means necessary for frequent hand washing (soap, water or alcohol gel) with a posted hand washing protocol at site entries, exits,	Toilets and washing facilities are provided at the construction site and workers camps and are regularly cleaned

	bathrooms, communal areas, offices, and any other areas with commonly touched surfaces. • Inform workers of the need to avoid physical contact when greeting, and avoid touching eyes, nose and mouth. • Inform workers of the need to cover the mouth and nose with a disposable handkerchief when coughing or sneezing or the crook of their arm. • Dispose of tissues in a lined and covered waste bin and wash hands afterwards.	• Workers and contractor staff have been instructed to follow all health protocols and training has been provided
6. Provide personal protective equipment (ppe) and inform workers of its correct use	• Identify appropriate PPE related to the tasks and health and safety risks faced by workers according to the results of risk assessment and the level of risk, and provide it to workers free of charge and in sufficient number, along with instructions, procedures, training and supervision. • Non-medical face-coverings (such as homemade cloth masks) should be worn as mitigation for catching and transmitting the virus, but are not to be treated as substitutes for proper handwashing.	• PPE equipment is made available for all contractor staff and workers • Face coverings are mandatory for all contractor staff and workers
7. Health surveillance	• Before entering the site, staff and visitors must confirm that they are not currently exhibiting flu-like symptoms. • Monitor the health status of workers, develop protocols for cases of suspected and confirmed contagion. • Identify workers who have had close contact with people infected with COVID-19 and follow national medical guidance. • Communicate confirmed cases of COVID-19 infection to the appropriate authorities.	• Temperature is checked when entering the construction site or at the start of work at temporary construction sites • Contact tracing is carried out • No COVID infections have occurred amongst the workers.
8. Consider other hazards, including psychosocial	• Promote a safe and healthy working environment free from violence and harassment. • Encourage health promotion and wellbeing in the workplace through enough rest, balance of physical and mental activity and adequate work-life balance. • Implement prevention and control measures for the use and storage of chemicals, particularly those used for disinfection during COVID-19.	• Safe and health working environment has been established • health promotion and wellbeing is being promoted through training • Safe storage for chemicals has been established
9. Review emergency preparedness plans	• Develop an emergency plan adapted to COVID-19 and regularly review it.	• Emergency plan are available and are regularly reviewed
10. Review and update preventive and control measures as the situation evolves	• Periodically monitor prevention and control measures to determine whether they have been adequate to avoid or minimize risk, and identify and implement corrective actions for continuous improvement. • Establish and maintain records related to work-related injuries, illnesses and incidents, worker exposures, monitoring of the work environment and workers' health. • Construction Workers and Camp Management.	• Periodic monitoring is being done • Records are being maintained • Construction workers camps are being carefully managed to mitigate health risks

Annex 6 Corrective Action Plan

CW05 Pursat Drainage and WWTP

CORRECTIVE ACTION PLAN FOR:	CW05 Pursat Drainage and WWTP		
PMU Staff Responsible: (name and role)	Name: Mr Socheat Penh	Role: PMU Environment Specialist	
Date this form issued to Contractor:	31 st October 2021		
Deadline for Corrective Action:	31 st December 2021		
Is there an immediate risk to health and safety of people?	Yes	☐	No ☒
Is there an immediate risk to the environment?	Yes	☐	No ☒
Correct Action(s) Required:			
Details of the non-compliance with EMP:	1) Non-compliance with environmental quality monitoring requirements in EMP supplied as part of Bidding Document 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.		
Corrective Action	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. 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. ACTION 2B) Use the available quantities for pavement reinstatement in the original BOQ for the repair work.		
Corrective Action is required by (CW package and Date)	1) Environmental Monitoring: 31st December 2021 2A) Priority Schedule for Pavement Repair: 5th November 2021 2B) Implementing priority repair using existing BOQ: 31st December		
Environmental quality monitoring requirements: CW05 Pursat drainage			
Environmental Issue Monitored	Parameter (Bidding Document EMP)	Location	Responsible Organisation
Ambient Air Quality	CO, NO2, SO2, TSP, O3, Pb, PM10	Housing closest to WWTP site Urban receptor in town (Market, Pagoda, Hospital)	Contractor/ Laboratory

Noise	Lmax, Lmin, Leq	As above	Contractor/ 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/ Laboratory

CW06 Landfill site construction (Lot 1 and Lot 2)

CORRECTIVE ACTION PLAN FOR:	CW06 Landfill site construction (Lot 1 and Lot 2)		
PMU Staff Responsible: (name and role)	Name: Mr Socheat Penh	Role: PMU Environment Specialist	
Date this form issued to Contractor:	31 st October 2021		
Deadline for Corrective Action:	31 st December 2021		
Is there an immediate risk to health and safety of people?	Yes	☐ No	☒ X
Is there an immediate risk to the environment?	Yes	☐ No	☒ X
Correct Action(s) Required:			
Details of the non-compliance with EMP:	1) Non-compliance with environmental quality monitoring requirements in EMP supplied as part of Bidding Document 2) Health and Safety. Non compliance with requirements in EMP supplied as part of Bidding Document for Clear H&S messaging in Khmer around site 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. 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 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.		

	6) Worker Camp Management. Non compliance with requirements in EMP supplied as part of Bidding Document for provision of adequate sanitation.		
Corrective Action	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. ACTION 2) Provision of health and safety signage e.g. warnings and information in Khmer language at key points of risk around the construction sites and work camp areas. ACTION 3) Provide documented emergency response training to all workers. Provide evidence of training and training materials and a plan for 2022 for ensuring regular emergency response training, to PMU. ACTION 4) Store all chemicals and fuels 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. ACTION 5) Provide a detailed method statement for well drilling 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. ACTION 6) Provision of a minimum of one further toilet at each construction camp following the standards already used for the existing toilets.		
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 Site Boundary & Tuol Mkak village nearest residential receptor KC	Contractor/ Laboratory

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

Annex 7 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	
Interview Site: <i>Where is the interview held? In school, on the road, in shop, meeting place</i>		Stakeholder Name & Status: <i>Full name, status is business owner, school teacher, religious leader, resident</i>	
Construction Site & Date Construction Started (sub-project) <i>Which location, GPS location if available</i>		Has this stakeholder been interviewed before? <i>Yes (when were they interviewed) No</i>	

Interview Discussion Points:

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

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

<i>Ground water? Surface Water? During rain only? Did it last an hour or a month?</i>	
6b. During the project, is the person's HOUSE or BUSINESS affected by flooding? If yes, explain how long for and when. <i>Ground water? Surface Water? which Water source? How is quality being affected?</i>	
6c. If flooding during construction is a problem, what changes does the person suggest are made?	
7. OTHER ISSUES	Record of Discussion
7a. Any other issues about the construction sites that the person wants to discuss? <i>Examples: wastewater concerns waste disposal impact on livelihood/business labour force & social issues 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		
Communication		Comment/Observation
1. Is the Project Hotline Notice board up outside all construction sites	None ☐ Some ☐ All ☐	
2. Do construction staff have Contact Card with GRM details on?	None ☐ Some ☐ All ☐	
Waste Management		Comment/Observation
3. Are there separate places for recyclable waste to be collected on site/work camp?	No ☐ Yes ☐	
4. Do all waste containers have lids and more than 25m from water source?	No ☐ Yes ☐	
5. Any spilled waste or litter seen on site?	No ☐ Yes ☐	
6. Is any disused soil (spoil) dumped anywhere that will cause a problem to people or the environment?	No ☐ Yes ☐ Not Observed ☐	
Occupational Health and Safety		Comment/Observation
7. Are all people on site wearing high visibility?	None ☐ Some ☐ All ☐	
8. Are all people on site wearing protective boots?	None ☐ Some ☐ All ☐	
9. Are people operating machinery using hard hats / ear protectors?	None ☐ Some ☐ All ☐	
10. Can you see fire-fighting equipment on site?	No ☐ Yes ☐	
11. Can you see the Accident Book for the site?	No ☐ Yes ☐	

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

28. Can you see evidence of soil eroded by rain water from the construction site?	No ☐ Yes ☐	
29. Is any stream near the site changing colour because of construction activities e.g. soil erosion?	No ☐ Yes ☐	
Vegetation removal		Comment/Observation
30. Have any trees been cut down that were not planned to be?	No ☐ Yes ☐	
31. Any unexpected impacts on other vegetation?	No ☐ Yes ☐	
32. Any other observations:		