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SOIL AND GROUNDWATER MANAGEMENT PLAN

2	22/04/2015	Response LSP's Comments	ERM	See attachment of reviewer's signature	
1	23/02/2015	Response LSP's Comments	ERM	See attachment of reviewer's signature	
0	14/01/2015	Issue For Review	ERM	See attachment of reviewer's signature	
REV.	DATE (dd/mm/yyyy)	DESCRIPTION	PREPARED	CHECKED	APPROVED

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REVISION LOG

Rev.	Date (dd/mm/yyyy)	Revised Detail			
		Item	Page	Article	Description
0	14/01/2015	all	all	all	Issue For Review
0	14/01/2015	all	all	all	Issue For Review
1	23/02/2015	all	all	all	Response LSP's Comments
2	22/04/2015	all	all	all	Response LSP's Comments
3	18/08/2016	all	all	all	Project changes for review

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ACRONYMS


ASP	Air Separation Plant
BOC	Balance of Complex
CTU	Central Utility Plant
EHS	Environmental, Health and Safety
ESIA	Environmental and Social Impact Assessment
HDPE	High Density Polyethylene
HSE	Health, Safety and Environment
HSSE	Health, Safety, Security and Environment
IFC	International Finance Corporation
LLDPE	Linear Low Density Polyethylene
LSP	Long Son Petrochemical
MP	Management Plan
PP	Polypropylene
PS	Performance Standard
QCVN	National Technical Regulation
TCVNs	Vietnamese Standards
TSS	Total Suspended Solids

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DISCLAIMER

It is upon the Contractor to solicit, acquire and comply with all information, laws, rules, regulations, and Applicable Standards which is/are necessary and/or required for and applicable to the Contractor's performances of the works hereunder.

The Contractor hereby agrees and acknowledges that the Employer makes no representation or warranty, express or implied, regarding the accuracy or completeness of any or all information, laws, rules, regulations, and Applicable Standards which is/are necessary and/or required for and applicable to the Contractor's performances of the works hereunder. THE EMPLOYER HEREBY EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ALL RESPECTS, and the Contractor agrees that neither the Employer nor any of its affiliate(s), director(s), officer(s), employee(s), consultant(s), professional advisor(s), and duly authorised representative(s) shall have any liability to the Contractor or any of its affiliate(s), director(s), officer(s), employee(s), consultant(s), professional advisor(s), and duly authorised representative(s) in any way relating to those information, laws, rules, regulations, and Applicable Standards which is/are necessary and/or required for and applicable to the Contractor's performances of the works hereunder or the Contractor's or its affiliate(s)', director(s)', officer(s)', employee(s)', consultant(s)', professional advisor(s)', and duly authorised representative(s)' reliance thereupon and/or use thereof.

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1 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of this Soil and Groundwater Management Plan (MP) is to set out *[insert contractor name here]* approach to manage and mitigate the residual soil and groundwater impacts that they have control over, as identified in Chapter 9 of the project's Environmental and Social Impact Assessment (ESIA) and the Long Son Petrochemical's (LSP) Construction Health, Safety and Environment Management Plan (ref: LSP-1S01-005).

It should be noted the information in this Soil and Groundwater MP is based on relevant regulations, guidelines and standards at the time of writing of the ESIA dated December 2014. Should the contractor's activities change or new regulations, guidelines or standards apply the contractor will review, amend and resubmit this Soil and Groundwater MP to LSP.

[Note to contractor: If your onsite activities do not have the potential to cause soil and groundwater impacts, you do not need to complete this template but will need to provide justification as to why it is not applicable, e.g. you will be not undertaking activities associated with the potential sources of impacts on soil and groundwater detailed in Section 1.3.]


1.2 PROJECT OVERVIEW

The Long Son Petrochemicals Complex Project is located in Hamlet 2 and Rach Gia Hamlet, Long Son Commune, Vung Tau City, Ba Ria – Vung Tau Province, Vietnam. The Complex is spread over 464 ha, including area for its future expansion.

The Project will be comprised of two (2) main components:

1) **The Petrochemical Plant**, which consists of the following plants and units:

- Main Production Plants
 - Olefins Plant
 - High Density Polyethylene (HDPE) Plant
 - Linear Low Density Polyethylene (LLDPE) Plant
 - Polypropylene (PP) Plant
- Supporting Units
 - Central Utility Plant (CTU) (contains a Steam Generation Unit and Water Plant)
 - Tank Farm

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- Common Infrastructure

2) The Seaport, which consists of the following components:

- Hydrocarbon Jetty - to transfer feedstock and product for the Petrochemical Plant
- Construction Jetty - to import construction materials, including heavy lift modules.

The total land area that will be acquired for the Project is 464 ha, consisting of 398 ha for the Complex, and 66 ha for the specific port. In addition, there is a total water surface area of 194 ha that will be acquired for the seaport.

1.3

SOURCES OF IMPACTS ON SOIL AND GROUNDWATER

The potential sources of impacts on soil and groundwater during construction are as follows:

- Loss of topsoil as a result of land clearing and ongoing construction activities during the construction phase; and
- Soil and groundwater contamination due to unplanned events of spillages and leakages during the construction phase (refer to Hazardous Materials MP (ref: LSP-1S01-0016) and Emergency Response Plan (ref: LSP-1S01-0002));

The construction schedule for the potential impacts to soil and groundwater during construction is shown in Annex A.


[Note to contractor: Contractor to insert Gantt chart of construction schedule in Microsoft Project Office format in Annex A, which should include a breakdown of the tasks that give rise to the sources of impacts on soil and groundwater, as noted above]

1.4


APPLICABLE STANDARDS

The applicable soil and groundwater standards during construction are as follows and are provided in Annex B:

- Article 58 of the Law on Environmental Protection (2014);
- National technical regulation QCVN 09-MT:2015/BTNMT on ground water quality;
- Vietnamese Standard TCVN 5525:1995 General requirements for protection of groundwater;

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- National technical regulation QCVN 03-MT:2015/BTNMT on the allowable limits of heavy metals in soil;
- QCVN 40:2011/BTNMT: National Technical Regulation on Industrial Wastewater;
- International Finance Corporation (IFC) General Environmental, Health, and Safety (EHS) Guidelines (1.8 and 4.1): Contaminated land;
- IFC EHS Guidelines for Large Volume Petroleum-based Organic Chemicals Manufacturing (April 2007); and
- IFC EHS Guidelines for Thermal Power Plants (December 2008).

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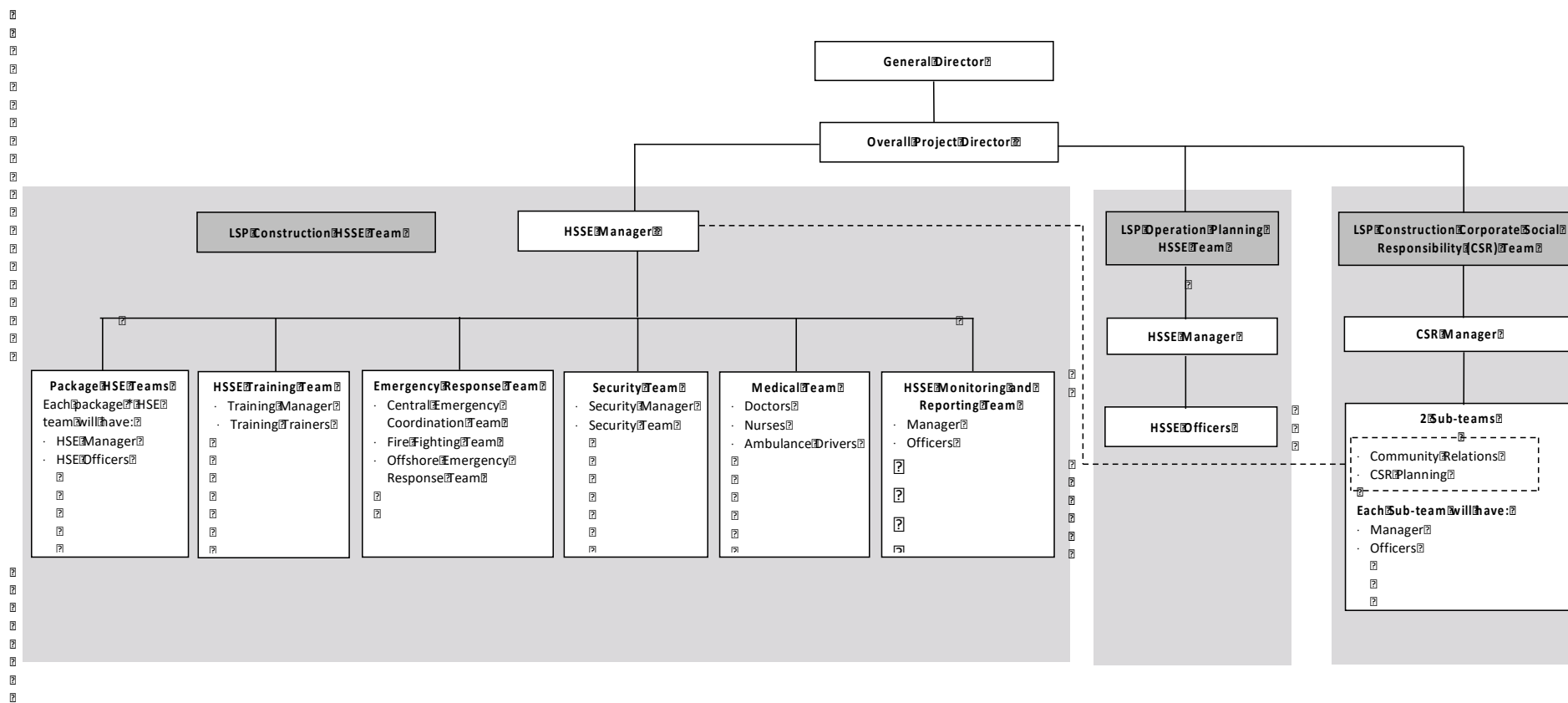
2 ROLES AND RESPONSIBILITIES

2.1 INTRODUCTION

Having an appropriate organisational structure in place, with all people having defined roles and responsibilities, is essential to ensuring the overall success of this Soil and Groundwater MP. This section provides details of LSP's and the contractor's organisational structure with regards to onsite delivery of the LSP project, and the various roles and responsibilities of those people in relation to delivering the clients EHS expectations, including meeting the requirements of the LSP Construction Health, Safety and Environment Management Plan (ref: LSP-1S01-005).

2.2 LSP CONSTRUCTION HSSE TEAM

LSP's health, safety, security and environmental (HSSE) team will lead the management of HSSE issues concerned with soil and groundwater impacts. The LSP organisational chart to implement the requirements of this Soil and Groundwater MP is shown in the figure below. The specific roles and responsibilities are shown in Chapter 5 of the LSP Construction Health, Safety and Environment Management Plan (ref: LSP-1S01-005).



Note:

Package A: Olefins Plant, Tank Farm, Complex Interconnecting Pipelines/pipe racks, Land development of tank farm area, Topside facilities of hydrocarbon jetties, Complex Wastewater treatment Unit and H2S Flare/LP Flare System

Package B: C/D: Polyolefins Plant (HDPE/PP/LLDPE)


Package C: Sea Port (excluding Topside of the Hydrocarbon jetties and Construction Jetty which are under the scope of the Contractor Package A and Package B respectively)

Package D: Central Utility Plant (including Steam Generation Unit and Water Plant)

Package E: Common Infrastructure of the Complex (including Administration Building, Laboratory Building, Canteen Building, Emergency Center, First Aid Center and Polyolefins Product Warehouse)

Package F: Complex Road including Drainage, Street Lighting, CCTV, Green Area, Topside for Construction Jetty, Complex Truck Scale, and Blowdown System

Package G: Land Development work of the whole complex except Tank Farm area

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2.3 **CONTRACTORS HSSE TEAM**

The contractors HSSE team has established this Soil and Groundwater MP in accordance with the applicable standards. The contractors HSSE team will manage their contractors and suppliers in accordance with this Soil and Groundwater MP and liaise with the appropriate personnel within LSP's HSSE to ensure compliance with the overall aims of LSP's Construction Health, Safety and Environment Management Plan (ref: LSP-1S01-005).

The contractors onsite organisational chart to implement the requirements of this Soil and Groundwater MP is shown in the figure below.

[Note to contractor: Contractor to insert organisational chart for onsite team].

2.4 **DESCRIPTION OF ROLES AND RESPONSIBILITIES**

The contractor has committed to providing the necessary human resources to ensure that the organisational structure noted above can work to implement this Soil and Groundwater MP and achieve compliance with all relevant standards. A description of the key roles and their responsibilities are provided in *Table 2.1*, including the primary communication channel between LSP and contractor HSE teams. Employee contact details for each role associated with this Soil and Groundwater MP are provided in Annex C.



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Table 2.1 **ESH Roles and Responsibilities within Contractor's Project Team**

Role	Responsibilities
General Manager (Contractor)	
Senior Site Engineer (Contractor)	
Site Supervisor / Foreman (Contractor)	
Site EHS Officer (Contractor)	
Emergency Response Co-ordinator (Contractor)	
[Other]	
[Other]	

[Note to Contractor: Insert a description of the responsibilities of each role, with regards to the management of EHS and Soil and Groundwater. Delete roles that are not appropriate Include additional role here required.]

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3 **MITIGATION / MANAGEMENT PROCEDURES**

The mitigation / management procedures noted in this section provides the approach to managing the potential soil and groundwater impacts from the construction activities. The contractor is committed to implementing the identified mitigation / management procedures in order to not cause exceedance of the applicable soil and groundwater standards, and to avoid impacts on the local community.

The mitigation / management measures that are relevant to *[insert contractors name here]* onsite activities are shown in *Table 3.1*.

The mitigation / management procedures were identified within the ESIA as being appropriate for the environmental impacts resulting from the anticipated construction activities. Should soil and groundwater impacts arise from the contractor's activities, following the implementation of the procedures noted in *Table 3.1*, the contractor will review the need for additional measures to be taken and update this Soil and Groundwater MP accordingly.

Note to contractor: Delete mitigation / management measures which are not applicable or outside of your control. Insert the name of the responsible party from Table 2-1 for each mitigation / management measure.



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Table 3.1 Mitigation / Management Procedures

Aspect, Potential Impact / Issue	Reference Mitigation	Mitigation and / or Management Procedures	Contractors Responsibility	Related Plans
Impacts from Run-off Water to Surface Water Quality during Land Development	1.1	<p>a) Minimisation of the exposed and unmanaged soils within the disturbed footprint by phasing the works.</p> <p>b) Use of perimeter banks/diversions channels around disturbed/ cleared area to limit the amount of water flowing over disturbed soils. Separation of the various areas into clean and dirty water is a core consideration in surface water management. These diversion channels should be protected against erosion through a combination of engineering designs and use of concrete, rock armouring, lining and mulched vegetation as required.</p> <p>c) Soil erosion caused by wind and rainstorms will be reduced by adding surface protection measures, such as mulched vegetation, wherever possible. This is in addition to the requirement to minimise land clearing to the Project footprint, and conducting clearing progressively.</p>		Surface Water Management Plan – Terrestrial (ref: LSP-1S01-0010)
	1.2	Stockpile and overburden areas also represent a source of surface water quality impacts. The locations and management measures for these should take into account all of the requirements outlined above. In addition to these, either effective rehabilitation/revegetation (in the case of overburden disposal areas) or re-use strategies should be developed.		Surface Water Management Plan – Terrestrial (ref: LSP-1S01-0010)
	1.3	Handover schedules and long term maintenance of potential sources of TSS (such as the topsoil storage areas) are to be carefully defined and included within forward planning. Long-term storage of topsoil (>six (6) months to be in designed stockpiles to keep the soil aerated and compacted sufficiently to ensure run-off without generating TSS.		Surface Water Management Plan – Terrestrial (ref: LSP-1S01-0010)

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Aspect, Potential Impact / Issue	Reference Mitigation	Mitigation and / or Management Procedures	Contractors Responsibility	Related Plans
	1.4	The long term topsoil stockpile at the western part of the site represents a long term source of surface water quality impacts. All the surface water management measures detailed above are to be implemented throughout the life of this stockpile/storage area. Additionally, measures are to be considered to stabilise the topsoil and prevent any soil from becoming mobilised. This includes planting appropriate ground cover species.		Surface Water Management Plan – Terrestrial (ref: LSP-1S01-0010)
Impacts on Water Quality from Ground Water Disposal during the Construction Phase	1.5	Groundwater generated from the dewatering process at the construction areas (e.g. ash ponds, construction pits) should be discharged at water management structures to allow settlement of sediment load prior to discharge. This would reduce suspended solid levels in the water being discharged to the receiving waters.		Surface Water Management Plan – Terrestrial (ref: LSP-
Loss of Topsoil as a Result of Land Clearing and Ongoing Construction Activities during the Construction Phase	1.6	Delineation of clearance boundaries to limit the areas to be cleared.		-
	1.7	Scheduling clearance activities to avoid rainfall to the extent possible.		-
	1.8	Stabilisation of slopes and berms to prevent slumping.		-
Soil and Groundwater Contamination due to Unplanned Events of Spillages and Leakages during the Construction Phase	1.9	a) The source of any backfill is to be nominated prior to any site works		-
		b) An investigation (Phase One type) of the usage of the site from where the backfill material will be sourced, and surrounding areas, will be undertaken to determine if there are any past uses which may indicate potential for		-
		c) In the event that the Phase One investigation of historical usage indicates potential for contamination, a more detailed investigation (including a sampling programme) is to be undertaken. If contamination is detected, then the backfill is not to be used on the Project Site.		-
		d) All back fill brought to site is to have gone through these steps prior to being accepted. A log showing the source of all backfill brought to site is to be kept and continually updated.		-

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4 MONITORING

4.1 LSP HSSE TEAM

A soil and groundwater monitoring plan has been developed to track the effectiveness of the mitigation measures during construction. Details of LSP's monitoring plan are provided in Chapter 7 of LSP's Construction Health, Safety and Environment Management Plan (ref: LSP-1S01-005).

LSP may request additional monitoring if the monitoring programme records exceedences of the applicable soil and groundwater standards.

4.2 CONTRACTORS TEAM

In order to assess the effectiveness of the mitigation / management measures and identify the need for further action, the contractors soil and groundwater monitoring programme outlined in *Table 4.1* will be followed.

Should the monitoring programme note any non-compliances with the MP, corrective action will be taken to ensure the relevant activity returns to compliance in a timely manner and that any corrective action is appropriate and effective. Any corrective actions undertaken must be recorded on the daily report against the relevant activity.

Note to contractor: Delete rows that are not applicable or outside of your control and, in the second column, only include the reference to relevant mitigation / management measures. Insert the name of the responsible party from Table 2-1 for each of the separate monitoring requirements.



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Table 4.1 **Monitoring Programme**

Aspect, Potential Impact / Issue	Impact / Issue Reference of Relevant Mitigation Measure *	Sampling Location	Sampling Parameters	Sampling Frequency	Applicable Standards	Responsibility	Reporting
Impacts from Run-off Water to Surface Water Quality	1.1, 1.2, 1.3	Construction site area under contractors	Visual inspection	Daily	N/A – based on visual assessment		Daily (refer to Annex D for report example)
	1.4	Stockpile at western part of site under	Visual inspection	Daily	N/A – based on visual assessment		Daily (refer to Annex D for report example)
Impacts on Water Quality from Ground Water Disposal	1.5	Ash pond/construction pits under contractors	TSS, Metals	Before any batch discharge	Refer to Annex B for Project Standards for Treated		Laboratory Report
Loss of Topsoil as a Result of Land Clearing and Ongoing Construction Activities	1.6, 1.7, 1.8	Construction site area under the contractors control	Visual inspection	Daily	N/A – based on visual assessment		Daily (refer to Annex D for report example)
Soil and Groundwater Contamination due to Unplanned Events of Spillages and Leakages	1.9	Construction site area where backfill will be used	Completion of Phase One investigation. Completion of more detailed investigation if required. Completion of log for backfill brought to site and updated	All times when backfill is brought to site	QCVN-09:2008/BTNM T (refer to Annex B)		Backfill log

* See Table 3-1 for mitigation measure.

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5 AUDITING AND REPORTING

An Auditing and Reporting Programme is required to ensure that the mitigation / management measures are appropriate in controlling the identified soil and groundwater impacts.

5.1 LSP HSSE TEAM

To ensure compliance with the requirements of this Soil and Groundwater MP, internal inspections and audits will be undertaken by LSP. The LSP auditing and reporting programme is shown in Chapter 9 of the LSP Construction Health, Safety and Environment Management Plan (ref: LSP-1S01-005).

CONTRACTORS TEAM

The programme will comprise of the following:

- Internal Audit and Reporting Programme to be undertaken by the contractor's EHS Officer; and
- External Audit and Reporting Programme, to be conducted by the LSP's representative.

The scope of the internal auditing and reporting programme to be undertaken by the contractor is shown in *Table 5.1*.

Note to contractor: In the second column, only include the reference to relevant mitigation / management measures. Ensure the job title for the responsible party is correct for your organisation



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Table 5.1 Auditing and Reporting Programme

Inspection / Auditing Interval	Reference of Relevant Mitigation Measure*	Responsibility	Scope of Inspection / Audit	Report Submissi / Record Keeping
Daily Inspection (Internal)	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10. 1.11	Contractor's Onsite EHS Officer	Review the submitted daily monitoring reports to assess the compliance status of relevant operations that may give rise to soil and groundwater impacts and provide support to identifying appropriate corrective actions and ensuring they are: introduced in a timely manner; appropriate; and effective	Archive Daily Monitoring Report in an orderly manner for external auditing All reports are to be maintained at the project site for as long as the Contractor is working at the site
Ad hoc Daily Inspection (Internal) when discharge is occurring	1.5 (when discharge is occurring) 1.9 (when backfill is brought onto site)			
Weekly Review of Daily Inspection Reports (Internal)	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10. 1.11	Contractor's General Manager	A weekly report is to be provided to the Contractor's Onsite General Manager, which is to include: the compliance status of relevant operations that may give rise to soil and groundwater impacts; identifying any non-compliances that have arisen over the previous weeks monitoring program; detailing the corrective actions that have been taken when a failure has been noted; and noting the appropriateness and effectiveness of any corrective actions	Archive Weekly Report in an orderly manner for external auditing All reports are to be maintained at the project site for as long as the Contractor is working at the site


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Inspection / Auditing Interval	Reference of Relevant Mitigation Measure*	Responsibility	Scope of Inspection / Audit	Report Submissi / Record Keeping
Biannual Inspection (External)	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9	LSP's Representative	LSP's Representative will review the Contractor's onsite activities to assess compliance with the management plan and review all records of the Contractor's internal audit programme to review historic compliance and the use of appropriate corrective actions	<p>A copy of the External Audit Report is to be provided to the Contractor for reference and, where necessary, implementation of any identified corrective actions</p> <p>All reports are to be maintained at the project site for as long as the subcontractor is working at the site</p>


* See Table 3-1 for mitigation measure.

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ANNEX A – CONSTRUCTION SCHEDULE FOR THE SOURCES OF SOIL AND GROUNDWATER IMPACTS

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[Note to contractor: Contractor to insert Gantt chart of construction schedule in Microsoft Project Office format in Annex A]


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ANNEX B – APPLICABLE STANDARDS

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QCVN 09-MT: 2015 – National technical regulation on Ground Water Quality


No.	Parameter and pollutant	Unit	Limitation Value
1	pH value	-	5.5 - 8.5
2	Permanganate index	mg/l	4
3	Total dissolved solids (TDS)	mg/l	1500
4	Total hardness (as CaCO ₃)	mg/l	500
5	Ammonium (NH ₄ ⁺ as N)	mg/l	1
6	Nitrite (NO ₂ as N)	mg/l	1
7	Nitrate (NO ₃ as N)	mg/l	15
8	Chloride (Cl ⁻)	mg/l	250
9	Fluoride (F ⁻)	mg/l	1
10	Sulfate (SO ₄ ²⁻)	mg/l	400
11	Cyanide (CN ⁻)	mg/l	0.01
12	Arsenic (As)	mg/l	0.05
13	Cadmium (Cd)	mg/l	0.005
14	Lead (Pb)	mg/l	0.01
15	Chromium VI (Cr ⁶⁺)	mg/l	0.05
16	Copper (Cu)	mg/l	1
17	Zinc (Zn)	mg/l	3
18	Nickel (Ni)	mg/l	0.02
19	Manganese (Mn)	mg/l	0.5
20	Mercury (Hg)	mg/l	0.001
21	Iron (Fe)	mg/l	5
22	Selenium (Se)	mg/l	0.01
23	Aldrin	µg/l	0.1
24	Benzene hexachloride (BHC)	µg/l	0.02
25	Dieldrin	µg/l	0.1
26	Total Dichloro diphenyl trichloroethane (DDTs)	µg/l	1
27	Heptachlor & Heptachlor epoxide	µg/l	0.2
28	Total Phenol	mg/l	0.001
29	Gross alpha activity	Bq/l	0.1
30	Gross beta activity	Bq/l	1
31	Coliform	MPN or CFU/100ml	3
32	E.Coli	MPN or CFU/100ml	Not detected

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Applicable Wastewater Standards

Parameter	Unit	Vietnamese Standards ¹	IFC LVOC Effluent Guideline ²	IFC Thermal Power Plant Effluent Guideline ³	Project Standards for Treated Wastewater ⁴
Temperature	°C	40	Temperature increase ≤ 3	Site specific requirement to be established by the EA.	Temperature ≤ 40 and Temperature increase ≤ 3
Colour	Pt/Co	150	-	-	150
pH	-	5.5 to 9	6-9	6-9	6-9
BOD ₅ (20°C)	mg/l	58.50	25	-	25
COD	mg/l	175.50	150	-	150
Total Suspended Solids	mg/l	117.0	30	50	30
Arsenic	mg/l	0.1170	-	0.5	0.117
Mercury	mg/l	0.01170	0.01	0.005	0.005
Lead	mg/l	0.5850	0.5	0.5	0.5
Cadmium	mg/l	0.1170	0.1	0.1	0.1
Chromium (total)	mg/l	-	0.5	0.5	0.5
Chromium (VI)	mg/l	0.1170	0.1	-	0.1
Chromium (III)	mg/l	1.170	-	-	1.170
Copper	mg/l	2.340	0.5	0.5	0.5
Zinc	mg/l	3.510	2	1	1
Nickel	mg/l	0.5850	0.5	-	0.5
Manganese	mg/l	1.170	-	-	1.170
Iron	mg/l	5.850	-	1	1
Total cyanide	mg/l	0.1170	-	-	0.1170
Total phenol	mg/l	0.5850	0.5	-	0.1170
Oil & Grease	mg/l	11.70	10	10	10
Sulphide	mg/l	0.5850	1	-	0.5850
Fluoride	mg/l	11.70	-	-	11.70
Ammonium (as N)	mg/l	11.70	-	-	11.70
Total nitrogen	mg/l	46.80	10	-	10
Total phosphorus (as P)	mg/l	7.020	2	-	2
Residual Chlorine	mg/l	2.340	-	0.2	0.2
Total organochlorine pesticides	mg/l	0.1170	-	-	0.1170
Total organophosphorus pesticides	mg/l	1.170	-	-	1.170
Total PCB	mg/l	0.01170	-	-	0.01170

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Parameter	Unit	Vietnamese Standards ¹	IFC LVOC Effluent Guideline ²	IFC Thermal Power Plant Effluent Guideline ³	Project Standards for Treated Wastewater ⁴
Benzene	mg/l	-	0.05	-	0.05
Vinyl Chloride (VCM)	mg/l	-	0.05	-	0.05
1,2 Dichloroethane (EDC)	mg/l	-	1	-	1
Adsorbable	mg/l	-	1	-	1
Coliform	bacteria/100	5000	-	-	5000
Gross α activity	Bq/l	0.1	-	-	0.1
Gross β activity	Bq/l	1	-	-	1

Note: ¹ Vietnamese Standards from QCVN 40:2011/BTNMT National Technical Regulation on Industrial Wastewater Quality. With a discharge flow of 743 m³/hr, the discharge wastewater factor Kf=0.9; and with discharge to Ganh Rai Bay, the receiving water body factor Kq=1.3. The factors are not applicable to Vietnamese Standards from QCVN 40:2011/BTNMT National Technical Regulation on Industrial Wastewater Quality. With a discharge flow of 743 m³/hr, the discharge wastewater factor Kf=0.9; and with temperature, pH, colour, coliform, gross α activity and gross β activity. Ganh Rai Bay is characterised as a coastal water body used for aquatic life protection.


² According to Environmental, Health and Safety (EHS) Guidelines for Large Volume Petroleum-based Organic Chemicals Manufacturing.

³ According to Environmental, Health and Safety (EHS) Guidelines for Thermal Power Plants.

⁴ The more stringent value between QCVN 40:2011/BTNMT and IFC Standards.

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ANNEX C – EMPLOYEE CONTACT DETAILS ASSOCIATED WITH MANAGEMENT PLAN

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Role	Responsibilities	Contact Details*
General Manager (Contractor)		<ul style="list-style-type: none"> • Mobile Number: • Email:
Senior Site Engineer (Contractor)		<ul style="list-style-type: none"> • Mobile Number: • Email:
Site Supervisor / Foreman (Contractor)		<ul style="list-style-type: none"> • Mobile Number: • Email:
Site EHS Officer (Contractor)		<ul style="list-style-type: none"> • Mobile Number: • Email:
Emergency Response Co-ordinator (Contractor)		<ul style="list-style-type: none"> • Mobile Number: • Email:
[Other]		
[Other]		

*Any change in respect to employees, the contact details will need to amended as soon as the role has been reassigned.

[Note to Contractor: Insert a description of the responsibilities of each role, with regards to the management of EHS and Noise and Vibration. Delete roles that are not appropriate. Include additional roles where required.]

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ANNEX D – DAILY REPORTING FORM

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[Note to contractor: The below table provides an example of the details to be included on a Daily Reporting Form.]

Date of Observation	Contact Details / Role of Individual Reporting the Observation	Details of Observation / Location	Mitigation Action to be Taken	Date Mitigation Action was Implemented

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