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Phu My Site Water Stewardship Plan

Document No. HSE.MAN.01

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Contents

Introduction

The purpose of this plan is to define some key targets in relation to water management which will be reviewed regularly both internally and externally with key stakeholders.

This plan has been developed using the International Water Stewardship Standard as a basis and in collaboration with various stakeholder groups.

As Water Stewards, Phu My site, is committed to sustainable water management for our side as well as contributing to efforts within our catchment and region.

Background

Business and Site Description

Scale:
Total investment capital of 105 million USD in operation in 2005 & 264 employees
Phu My Site (midstream) is located in Ba Ria – Vung Tau province

NS BlueScope Vietnam has a nationwide presence with a full range of segments: Manufacturing, project, Residential Housing Brands: Colorbond®, Zincalume®, BlueScope Zacs®, Sumo

Figure 1: Phu My site overview

Phu My site site operates under investment license No. 492043000124 by BIZA and RSES confirmation certificate No. 3351/BTNMT-TĐ. Phu My site is certified under international ISO 14001 and 9001 standards.

Phu My site covers 12 hectares and is located in Phu My 1 industrial zone, Ba Ria Vung Tau province, about 75kms east of Ho Chi Minh city. Figure 2 below shows Phu My footprint and its boundaries.

Figure 2: Phu My site operational boundaries and area of influence.

Responsibilities

The Law on Biodiversity No. 20/2008/QH12 are the overarching legislation for the protection of native species and enhancement of their natural habitat including the waterways.

The *Law on Environment Protection No. 72/2020/QH14* aims to protect, restore and enhance the quality of the environment in NSW and combines regulation of air, land, noise and water pollution.

The Law on Water Resource No. 17/2013/QH13 and Decree No. 2/2023/ND-CP (guiding the implementation of Water Resource Law) also recognises the need to allocate and provide water for the environmental health of our rivers and groundwater ecosystems. Phu My Water Supply Joint Stock Company (PWC) and Toc Tien Water Supply manage drinking water catchments (Suoi Nhum spring and Dap Da Den reservoir) and supply this to IZICO (industrial zone infrastructure investment and operation company). IZICO manage both the domestic and industrial supply of water as well as manage the wastewater stream within Phu My 1 area.

Completed Projects

NS BlueScope Vietnam has completed some environment improvement projects (EIP), as summarised in Table 1 below.

Table 1: Examples of completed and in progress water related PRP's at BlueScope.

Project	Status	Overview
EIP1	Completed 2008	Installed 1 x150m3 tanks onsite to collect rainwater from Admin building roofs for domestic use at Phu My site.
EIP2	Completed 2022	Installed the 2nd layer of water gate at Phu My site rainwater draining system to avoid chemical spill going into the drainage during chemical pumping at WWTP.
EIP3	Completed Jan 2023	Installed 2 x500m3 tanks onsite to collect rainwater from building roofs to reuse the water for domestic and process activities at Phu My site.

Catchment Risks

Geographical Location, Catchment, River & Reservoir Description

Ba Ria - Vung Tau is located in the Southeast region, bordering Dong Nai province in the North, Ho Chi Minh City in the West, Binh Thuan province in the East, and the South China Sea.

This location is very special, this is the gateway to the East Sea of the provinces in the Southeast region. This location allows Ba Ria - Vung Tau province to converge many potentials to develop marine economic sectors such as: oil and gas exploitation at sea, seaport exploitation and shipping, seafood exploitation and processing, develop resort tourism and billboards. In this position, Ba Ria - Vung Tau has conditions to develop all traffic routes by road, air, waterway, railway and is a transshipment location to places in the country and the world.

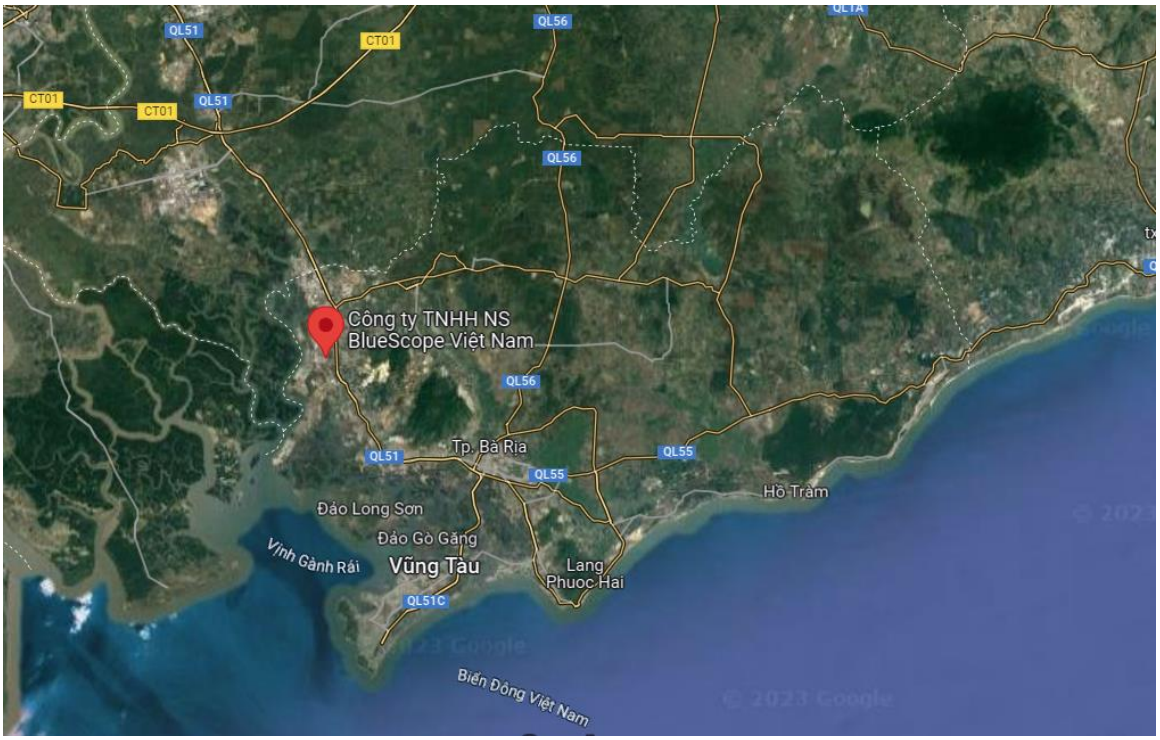

Figure 3: The red location pin symbol is the location where NSBV locates.

The surface water of Ba Ria - Vung Tau is mainly supplied by three major rivers, namely Thi Vai River, the section running through the province is 25 km long, Dinh River is 30 km long, and Ray River is 120 km long. On these rivers, there are 3 large reservoirs: Da Den lake, Ray river lake, Chau Pha lake...

Besides, the province's underground water source is also quite rich, with a total exploitable reserve of 70,000 m3/day, focusing on three main areas: Ba Ria - Long Dien 20,000 m3/day; Phu My - My Xuan 25,000 m3/day; Long Dat -

Long Dien 15,000 m3/day and night. In addition to the above three regions, the capacity of scattered groundwater extraction is about 10,000 m3/day. Groundwater in the province is located at a depth of 60 - 90 m, with an average flow capacity of 10 - 20 m3/s, so it is relatively easy to exploit. Underground water sources can be exploited to a maximum of 500,000 m3/day, ensuring sufficient water supply for agriculture, industry and daily life.

Figure 4: River and water lake mapping in Ba Ria Vung Tau

Catchment Challenges

NSBV has low risk of water-related environmental and social adverse impacts as it locates in a designated industrial zone with zero wastewater discharge to the river. 100% treated wastewater (B class) is discharged to the collected waste water piping to the central WWTP operated by IZICO to treat it again before discharging to the river. The site also does not locate in the water stressed location.

Water Quality

The results of surface water quality monitoring in 2019 in the area showed that the WQI water quality index of domestic water supply lakes in general met the purpose of domestic water supply. At the same time, water quality in irrigation and drainage reservoirs and surface water quality in large rivers are mainly contaminated with TSS, N-NH4 and Coliform. Lakes that do not directly supply domestic water at some time have low water quality index mainly due to microorganisms (Coliform) exceeding the standard and TSS suspended solids with high turbidity due to rain.

According to forecast, the water demand for daily life, industry and tourism of Ba Ria - Vung Tau province by 2020 will be about 240 million m3, surface water resources in the province are enough to meet the needs of economic development. - the province's society in the current period as well as in the coming years.

Water Quantity

As a locality with abundant and abundant water resources with 4 main river systems such as Thi Vai river, Dinh river, Ray river and Du Dua river, Ba Ria - Vung Tau province also has 31 medium-sized reservoirs. medium and small, has the function of supplying water for agriculture, domestic use, industry and service. The total amount of water stored in dams is 308.2 million m3, of which the useful capacity is about 276.06 million m3.

Currently, the main source of water for domestic use and people in the whole province of Ba Ria - Vung Tau is taken from Da Den reservoir and Song Ray lake. In addition to these two water supply lakes, other lakes such as Da Bang lake, Suoi lake, Kim Long lake, Chau Pha lake, Song Hoa lake, Nhum stream and Xuyen Moc lake are also put into operation for domestic water supply. for local people.

Site Challenges

The possible site risk and challenges associated with the Phu My site include:

Water Supply

There are currently 2 main supply sources of water for NSBV. These include industrial and bottled drinking water supply, while rainwater could be considered a 3rd source, but it is not replied upon during the manufacturing process and seasonal manner. IZICO is the industrial water choice only so it is a challenge during water outage due to piping maintenance or incident.

In addition, the low cost to purchase water is also a challenge to manage when operating a business. While a holistic approach to assessing upgrades in processes is adopted on site, a cost benefit analysis tends to favour cheaper options.

Furthermore, NSBV is currently in a medium risk water stress area.

The World Resources Institute (WRI) has just released the Aqueduct Water Risk Map and ranks water stress, drought risk and riparian flood risk in 189 countries and territories. . Of these, 17 countries are facing very high water stress. Also according to this map, Vietnam ranks 105th and is in the group with low water stress.

Water Quality

The site discharges to IZICO's wastewater collecting drainage system then waste water will be treated at IZCO centralized WWTP before discharging to Thi Vai river.

Wastewater has been treated at our onsite WWTP to B class meeting water quality limits is an ongoing challenge due to process change or new chemicals used. The site has a well-established monitoring program which includes various sampling regimes to meet the regulatory standards. Although a robust monitoring schedule is in place it does not stop unexpected incidents occurring.

The Site has contract with IZICO to treat the wastewater but lack of water quality surveillance program at discharge point to ensure that water quality meets legal requirements as per our expectation.

Important Water-related Areas (IWA)

Within the operating boundary there are Important Water-related Areas (IWA) including:

- Process cooling tower tanks (WWTP)
- Fire fighting water tank (WWTP)
- Emergency water tank tower (MCL)
- Cleaning section (MCL)
- Rainwater tanks (MCL)
- Demin water tanks in process lines (MCL/CPL)
- Overflowing treated water tank (gate 3)

External to the operating boundary, there are the following IWAs: Thi Vai river, Phu My port …

Site Objectives

The water related site objectives have been assessed based on catchment and site risks. The Site will focus on the following high-level objectives:

- Reduce water quantity on site and downstream, and
- Assess and improve water quality on site and leaving the site

Actions to Address Objectives and Manage Risks

NSBV seeks to ensure that water quantity/intensity and water quality on site remains low by implementing the following practises:

- Reduce water quantity on site and downstream
    - Reduce dam water intensity by:
        - Working with the water supplier to ensure continued and stable industrial water supply
        - Implementing a water related business improvement project
        - Mapping water inflows and outflows per department
- Assess and improve water quality on site and leaving the site
    - Comply with RSES agreements by:
        - Monitoring water quality at our onsite WWTP
        - Working with IZICO to monitor discharged water test process to ensure it is treated to required standard before discharging to Thi Vai river

The NSBV Action plan is presented in Table 2 below and will be reviewed a minimum of every 12 months

Table 2: Phu My site water stewardship action plan

Objective	Target	Metric(s)	Action	Cost/Benefit	Link(s) to Desired Results	Responsibility	Start Date	End Date	Comment
Reduce water quantity on site and downstream	Reduce dam water intensity	Monitoring Reports	Continue work with IZICO to ensure constant supply of Industrial water	Ensure dam water intensity remains low	Reduced consumption of potable water	Phu My site MSS team	Ongoing	Ongoing	
		Business Improvement Register	Reuse rainwater for domestic and process activities	Contributes to business targets	Reduced consumption of water	VP Manufacturing	Ongoing	Ongoing	Completed in Jan 2023
		Process flow	Mapping inflows and outflows of water per department	Ensure dam water intensity remains low	Reduced consumption of water	VP Manufacturing	July 2022	July 2023	
		NSBV Environment Plan	Yearly water reduction target – Reduce total water use by 1% from FY18.	Contributes to business targets	Reduced consumption of water	VP Manufacturing	Ongoing	Ongoing	
Assess and improve water quality on site and leaving the site	Comply with RSES agreements	Monitoring Reports	Monitoring water quality within the NSBV footprint	Demonstrates compliance with legal requirements	Ensure water quality is not impacted by NSBV's activities	Phu My site MSS team	Ongoing	Ongoing	
			Monitor water discharge volume to drive reduction 1% (using output meter at discharge point)	Demonstrate commiment to responsible Steel requirement	Ensure water discharge volume at mimimal level	Phu My site MSS team	Ongoing	Ongoing	
			Work with IZICO to establish governance mechanism to audit the discharged water quality at discharge points external to our site boundary	Ensure compliance with legal requirements	Ensure water quality is not impacted by NSBV's activities	VP HSE	Dec 2022	Mar 2023	Ongoing

Monitoring and Compliance

Performance Monitoring

These targets will be integrated into the HSEC Plan and therefore performance against the water stewardship targets will be evaluated monthly in the Manufacturing Management meeting.

In addition, the monitoring data required under RSES needs to be made publicly accessible. The monitoring data can be accessed through website (the following address to be provided ASAP).

Emergency/Incident Response

BlueScope has an extensive Crisis and Emergency Management (CEM) System. This CEM System is summarised below:

- Crisis Management Plan – BlueScope Corporate Level
- Emergency Management Plan – Business Level
- Incident Management Plan – site level

As required under Law on Environment Protection 2020 a Pollution Incident Response Management Plan (PIRMP) must be created and maintained. The PIRMP has been developed in accordance with the requirements set out in the article 21-Environment Protection Law. This document covers the Emergency management process which NSBV follows and includes water-related emergency scenarios. This document is reviewed annually and/or within 1 month of any pollution incident event occurring which results in material harm to the environment. This document can be found at the following web address (the following address to be provided ASAP). Any updates made to this plan must be publicly accessible.

Communications Plan

Identify Stakeholders

NSBV have a Community and Stakeholder Engagement Plan which identifies relevant stakeholders both internal and external to the business. This plan is used to track various forums in which stakeholders are engaged.

An additional Stakeholder Register for Water Stewardship is utilised by BlueScope to track water-related discussions with stakeholders, outline level of engagement and record any challenges or concerns that may be addressed, as shown in Appendix 3.

Identify Key Messages from the Water Stewardship Plan

The water stewardship plan aligns with BlueScope's compliance responsibilities under the various licenses. This plan simply brings these requirements together into a simple plan of action. This plan also strives to pull together other actions that are not compliance bases but are being used to strive for continuous improvement in our environmental and social performance.

Notifying relevant stakeholders of the site's water stewardship plan

Stakeholders have been notified of NSBV's Water Stewardship Plan by letter of invitation to discuss opportunities for improved water management in the catchment. In addition, stakeholders will be progressively invited to discuss water management at their established meetings held.

References

Law on environment protection 2020

Law on water resource 2012

Law on biodiversity 2008

Decree 02/2023 guiding the implementation of law on water resource 2012

BlueScope, 2021, Sustainability Report 2020/2021

Appendices

Appendix 1: Water-related Environmental and Social adverse Impact Assessment

Categories	Current / Future	Potential Impact	Inherent Significance	Key Management Measures	Residual Significance
Environmental Impacts	**Current**	Contamination of surface water and/or groundwater by environmental incidents from steel manufacturing operations	Moderate	• The site has identified applicable water-related legal and regulatory requirements • The site monitors and keeps records of water intensity and efficiency of processes and water quality upstream and downstream of the site. • The site records and applies corrective action in case of water pollution incidents in compliance with Environmental Protection Law • NSBV pollution incident response management plans. • Phu My site has only 01 water monitoring/discharge points connecting to IZICO waste water drainage system • Phu My site locates within designated industrial zone	Low
		Uncontrolled discharges to Thi Vai river by IZICO from main discharge point causing adverse impact to biodiversity	Moderate	• IZICO operates centralized WWTP with large scale capacity (7,200m3/day & night) • The IZ WWTP has environment and operation licenses • Treated waste water is tested to A class at the discharge point to Thi Vai River	Low
		Potential for stormwater to become polluted from discharges of liquid (Water) from areas around WWTP, hazardous waste store, paint store, operational lines.	Moderate	• WWTP containment collects leaks and spills which are then pumped to the process tanks • Bunds and sumpits have been built around waste water and hazardous waste stores • Stormwater drainage system has been built around the site and critical area to avoid flooding • Storm water gate has been installed at the storm water discharge point to stop the contaminated water running off the site in case of spill or leaks.	Low
		Water pollution as a result of chemical production and storage incidents and/or waste storage spills causing adverse impact to land	Moderate	• The site has identified potential pollution sources such as storages areas for chemicals and fuels, areas for machinery maintenance and by-products. • Chemicals are stored in bounded tanks and areas to minimise pollution incidents. • Spill kits are laid at potential areas for immediate responses e.g MCL cleaning section, MCL surface treatment, paint store, chemical store, chemical transmission at WWTP…	Low

				• Spill response plan in place and prominent at potential locations • Spill exercises are conducted on regular basic to test the preparedness and readiness.	
		Potential emissions to water systems and reservoirs from air pollution incidents and process disturbances	Low	• NSBV pollution incident response management plans. • Phu My site locates far from the water system/reservoirs and inside designated industrial zone • Emergency response plan (ERP) is in place	Low
		Particulate emissions due to large scale material handling and stockpiling activities that may impact water bodies	Low	• Most of materials store inside roofed warehouse • Zinc/Aluminium ingots store on concrete yard • Outdoor Layard only stores steel materials	Low
		Water quality impacts from transport incidents including road or shipping of raw and final materials	Moderate	• Collaboration with logistics providers and contractors to improve road safety. • Maintenance program and plans for transport modes. • Operation procedures and site management plans.	Low
		Water-related emergencies impacting workers, emergency responders, government agencies and communities.	Low	• NSBV pollution incident response management plans and safety management plan. • Monitoring of health and safety risks and emerging trends. • Technical innovation to provide safer working environment to NSBV community. • Building health, safety and environment (HSE) capability through expert-run leadership workshops. • Incident reporting, training, site inductions, PPE, plans and work procedures. • Use of automation technology to make operations safer and more efficient.	Low
		Contamination of seawater due to uncontrolled water pollution incident impacting wildlife of the river and the sea.	Low	• Wastewater treatment plant on-site. • Monthly licence monitoring data at discharge points. • NSBV pollution incident response management plans. • NSBV discharges waste water to the IZ waste water collection drainage – not directly discharge to the river. • Phu My site locates far away from the sea or harbour	Low

		Increase of water stress in Phu My area due to high consumption of water in the steel manufacturing process.	Low	• The site monitors and keeps records of water intensity and efficiency of processes and water quality upstream and downstream of the site. • Ba Ria Vung Tau province has high volume of water resource from lakes and reservoirs • NSBV implements rainwater reuse projects at Phu My site to reduce using fresh water for domestic and process activities. • Water reduction and recycling programs that shows commitment to sustainable steel production;	Low
		Surface water and groundwater quality impacts as a result of disruptions in water related infrastructure	Low	• Leak detection • Infrastructure management and controls • Site monitoring of water quality conditions • Identification of contaminated areas and its measures to recover	Low
	Future	Urban water security challenge in the catchment in the presence of drought events	Low	• Catchment water pollution prevention program has been launched by BRVT people committee to protect the water resources. • Reduction of dam water used by NSBV's operations and reducing community water supplies. • Environmental improvement initiatives at NSBV related to reduction in water use at process lines	Low
		Extreme temperatures and increasing solar radiation cause localised extreme heat around Phu My area which cause unworkable conditions for their employees, contractors or equipment causing operational disruptions.	Low	• No additional actions are required as Phu My area does not have extreme temperature so far as a result tropical climate conditions.	Low

		Flooding damage including property inundation and road disruption as a result of increases in frequency and intensity of heavy, flood-causing rainfall events likely to differ from its effects on seasonal or average rainfalls	Low	• Stormwater management plan and infrastructure. • Phu My site locates inside industrial zone with good and capable drainage system to drain the flood. • Ba Ria Vung Tau province has not experienced flooding in the last 50 years thanks to its geographical location	Low
		Storm surge disrupts immediate operations and might cause damage to the Phu My site, interrupting supply, transportation, distribution and regular functioning	Moderate	• NSBV has analysed different climate scenarios and its impacts on their operations and resilience plan • NSBV has in place a climate risk strategy	Low
		Water availability risk in the catchment due to projected long-term changes in rainfall patterns under climate change effects	Moderate	• The site has climate change risk assessments including water related impacts and risks that might affect their processes. • BRVT has plan to protect and preserve water resource; IZICO collaborated with many water supply companies to guarantee the sustainable water supply.	Low
		Increases in production leading to increases in embodied water in raw materials, broadening the contribution of water crisis	Moderate	• Phu My site is a midstream process so it does not consume a lot of water per ton compared with that of steelmaking • BRVT has plan to protect and preserve water resource; IZICO collaborated with many water supply companies to guarantee the sustainable water supply.	Low
Social Impacts	**Current**	Road traffic, road accidents, incidents or fatalities on the site access road and the public roads, between site and public road, sea users affected by water-related incidents.	Moderate	• Driver training and competency checks. • Community traffic safety awareness program. • Vehicle safety standards and inspections. • Chemical and hazardous liquid waste spill kits on the vehicle • Vehicles are certified and licensed by local authorities	Low

		Spread of communicable diseases within the workforce and between the workforce and the community through water and sanitation facilities	Low	• Health, Safety, Environment and Community (HSEC) Policy. • Health, Safety & Environment risks, controls, management and reporting. • Create safe, healthy, and inclusive workplaces. • Providing financial assistance to a national leadership program focusing on the mental health, safety and wellbeing of rural communities. • Inclusive, positive and engaging culture. • Drinking water quality tests	Low

Appendix 2: Water-related Cumulative Environmental and Social adverse Impact Assessment in the area of influence

Categories	Current / Potential	Potential Impact	Inherent Significance	Potential Management Measures
Environmental Impacts	**Current**	Greater quantity of water needed to meet water demands for different sites in Phu My 1 IZ	Low	Potential to be identified as shared water related challenge and addressed under the water stewardship plan/program
		Greater impacts on groundwater extraction and potential contamination	Low	Potential to be identified as shared water related challenge and addressed under the water stewardship plan/program
		Degradation of Thi Vai river water quality conditions as a result of uncontrolled historical pollution and potential incidents from industrial activities	Moderate	BIZA Environment authority
		Flooding events impacting industrial area, property damage and posed a high hazard to the residents living in close proximity to the major drainage channels in the area	Low	BIZA Environment authority
	Future	Water quality and quantity concerns for increasing industrial activity in Phu My IZ	Low	Potential to be identified as shared water related challenge and addressed under the water stewardship plan/program
Social Impacts	**Current**	Social concerns related to water pollution of Phu My IZ and its recovery	Low	BIZA Environment authority

Appendix 3: BlueScope Stakeholder Register for Water Stewardship

Key groups	Name	Members who attend	Location	Reason for being a Stakeholder & Method of Influence	Interest *(How interested the stakeholder is in the site? (low, medium, high))*	Influence/ power *(How much influence do they have over the site? (low, medium, high))*	Influence *(How much does the site influence or impact them? (low, medium, high))*	Water-related concerns or challenges they face and what is important to the stakeholder	How could the stakeholder contribute to or influence the site for water-related issues?	Stakeholder group	Engagement approach	Engagement Strategy
Regulatory	BIZA	Site senior leader Site administrator HSE manager VP HSE Site Procurement	Ba Ria city	Working collaboratively on local water issues	Medium	Medium	Low	Challenges managing many IZs in the province dealing with overall management	Further engagement on local water quality issues in local area	Subject	Keep satisfied, gain insights, meet needs.	Face to face seminar organized by BIZA
	IZICO	Site senior leader Site administrator HSE manager VP HSE Site Procurement	Phu My town	Partner, consult and water supplier and wastewater treatment	High	High	Medium	Challenges consistent of supply and customer driven Infrastructure Regulation	Influence and contribution is water quantity and quality supply and waste water discharge	Key Player	Keep fully engaged, involve in decision making	Face to face meetings, formal submissions Phone calls for clarity or explanation
	Environment Pollution Prevention Department - DoNRE Local Regulatory Authority	HSE manager VP HSE	Vung Tau city	Local Regulatory Authority Water incidents or serious environment pollution	Medium	High	Low	Water pollution	Investigation Prosecution Penalties or operational license withdrawal	Subject	Keep satisfied, gain insights, meet needs.	formal submissions and collaboration when required
	Phu My Water	MMS team Procurement	Phu My town	Partner and water supply	High	High	High	Water quality	Regulate water quality leaving the site	Key Player	Keep fully engaged, involve in decision making	Face to face meeting, formal submissions
External												
Special Interest Groups												