CERTIFICATION REPORT

Alliance for Water Stewardship (AWS)

Audit Number: AO-001648

WSAS WATER STEWARDSHIP ASSURANCE SERVICES

SITE DETAILS

Site: **PT Hanjaya Mandala Sampoerna, Tbk. SKT Plant Rungkut 2**

Address: Jl Raya Kalirungkut No. 9-11 Kelurahan Kalirungkut, Kecamatan Rungkut, Kota Surabaya, 60293, Surabaya, INDONESIA

Contact Person: Amanda Hadi IsTianti

AWS Reference Number: AWS-000788

Site Structure: Single Site

CERTIFICATION DETAILS

Certification status: Certified Core

Date of certification decision: 2025-Oct-27

Validity of certificate: 2028-Oct-26

AUDIT DETAILS

Audited Service(s): AWS Standard v2.0 (2019)

Audit Type(s): Initial Audit

Audit Start Date: 2025-Sep-08

Audit End Date: 2025-Sep-10

Lead Auditor: Hasudungan Sahat

Audit team participants:

Hasudungan Sahat, Lead Auditor

Site Participants:

Sulung Prasetyo, Sustainability Manager
Agung Sulistiyono, Engineering Manager
Kukuh Kristianto, External Affair
Made Agus Sumantra, Manager Hand Rolled Plant
Vivi Indah Laksita, Manager Production and Quality
Rini Anggraeni, IFMS Engineering
Adi Suryono, Lead Production Unit
Aniek Suryani, Lead Production Unit
Oktani Rendra Purwanto, IFMS Manager
Pangroso Priyantomo, Supervisor Logistic
Is Tianti Amanda Hadi, Sustainability
Haris Oka Sanjaya, Sustainaibility
Baktiar Nur Makmura, External Affair

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AUDIT TIMES

Dates	Audit from	Duration	Auditor	Description
2025-Sep-08	08:00:00 - 16:30:00	08:30	Hasudungan Sahat	
2025-Sep-09	08:00:00 - 16:30:00	08:30	Hasudungan Sahat	
2025-Sep-10	08:00:00 - 16:00:00	08:00	Hasudungan Sahat	

ADDITIONAL INFO

Summary of Audit Findings: During the initial certification audit , no non-conformities and 4 observations were raised.

The audit team recommends certification of PT Hanjaya Mandala Sampoerna Tbk. – SKT Plant Rungkut 2 at Core level.

Scope of Assessment: The scope of services covers the initial certification audit for assessing the conformity of PT Hanjaya Mandala Sampoerna Tbk. – SKT Plant Rungkut 2 against the AWS International Water Stewardship Standard Version 2.

PT HM Sampoerna Tbk Plant Rungkut 2 is a hand-rolled cigarette manufacturing facility that specializes in secondary processing operations. The plant receives cut filler from the primary processing facility located at Sampoerna Sukorejo Plant and focuses solely on the packing process. The primary raw materials used in production include cut filler, cigarette paper, and packaging materials. Water is not utilized in the core production process but is limited to supporting activities such as glue preparation and sanitary hygiene, including toilet facilities, cleaning of tools, and provision of drinking water for employees. The site is located in a residential area, with a food factory on the left side and a warehouse on the right side. The site employs a total of 4,771 people as of July 2025, making it a significant local employer in the region. The facility covers a total site area of 66,288 square meters with a built-up area of 27,800 square meters. The site comprises manufacturing buildings, administrative facilities, and supporting infrastructure essential for cigarette packaging operations, wastewater treatment, and employee services. The treated effluent is discharged into the Avur Wonorejo river, located northeast of the factory. Rainwater and stormwater are channeled through the plant's internal drainage system, which flows to rainwater ponds and then ultimately to the city's drainage channels.
The PT HM Sampoerna Tbk Plant Rungkut 2 is located within the Surabaya, Rejoso, and Kedunglarangan Watershed.
The site's primary location is situated on the Surabaya watershed. Surabaya Watershed is a tributary of the Brantas River, which has a river flow from the Mlirip DAM sluice gate to the Jagir sluice gate, which is a cross-city river. Morphologically, the Surabaya Watershed features a low-altitude plain topography that is predominantly characterized by swamps. The rock layers in Surabaya City are mostly composed of alluvial deposits, which are favorable for agriculture. As a result, many water channels in the city, which were originally used for irrigation, can still be found.

The audit was conducted on-site on September 8-10, 2025.
The onsite visit involved assessing various elements, including the site's water infrastructure, main process areas, the wastewater treatment plant (WWTP), the on-site IWRAs, glue production unit, wastewater discharge points, as well as chemical and fuel storage, and visiting the municipal water service provider.
The following external stakeholders were interviewed during the audit: Environmental Agencies of Surabaya City (Government), Brantas Watershed Agency, and Department of Public Housing and Residential Areas and Land Affairs

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WSAS WATER STEWARDSHIP ASSURANCE SERVICES

FINDINGS

NUMBER OF FINDINGS PER LEVEL

Observation	4

FINDING DETAILS

Finding No:	TNR-020768
Checklist Item No:	2.3.2
Status:	Open
Finding level:	Observation
Checklist item:	A water stewardship plan shall be identified, including for each target: - How it will be measured and monitored - Actions to achieve and maintain (or exceed) it - Planned timeframes to achieve it - Financial budgets allocated for actions - Positions of persons responsible for actions and achieving targets - Where available, note the link between each target and the achievement of best practice to help address shared water challenges and the AWS outcomes.
Findings:	The site shows significant deficiencies in IWRA management across four identified activities. There is no budget information for IWRA initiatives - the Tree Planting ($0 allocated, marked "TBD"), Mangrove Cleanup ($0 allocated, marked "TBD"), donation and installation of water injection wells in the Upper Rejoso watershed to prevent and reduce the risk of flooding ($0 allocated, marked "TBD"), and Fresh Water Quality Analysis in Kedunglarangan ($0 allocated, marked "TBD") programs lack financial data. Additionally, the WSP site does not indicate that annual milestones for the "Radio Campaign" have been established to measure the increase in awareness. Furthermore, there are currently no mechanisms in place to assess actual behavioral changes in water stewardship practices among the target audiences involved in the Kali Rungkut and Kedung Baruk community initiatives. The missing of evaluation methods raises concerns about the long-term impact and sustainability of these efforts. According to the WSP indicators, the site needs to include clear methods for measurement and monitoring, as well as financial budgets allocated for these actions.

Finding No:	TNR-021131
Checklist Item No:	3.5.1
Status:	Open
Finding level:	Observation
Checklist item:	Practices set in the water stewardship plan to maintain and/or enhance the site's Important Water-Related Areas shall be implemented.
Findings:	The site has implemented practices on the on-site IWRA. Catchment IWRA actions are at the planning stage.

Finding No:	TNR-020770
Checklist Item No:	3.9.4
Status:	Open
Finding level:	Observation
Checklist item:	Actions towards achieving best practice, related to targets in terms of the site's maintenance of Important Water-Related Areas shall be implemented.
Findings:	The site has established three initiatives for maintaining Important Water-Related Areas (IWRAs) as documented in their AWS evidence report. The Retention Pond Revitalization has been fully implemented (100% complete) with 45 meters of pond walls successfully repaired, achieving the stated target of preventing landslides and maintaining stormwater management function. The Tree Planting on Upstream Catchment Area initiative shows partial implementation at 30% progress, with collaboration established with Perumda Surya Sembada Surabaya City and timeline set for Q4 2025, though specific targets for tree numbers and planting locations remain under discussion. The Mangrove Botanical Garden Cleanup activity remains at proposed stage (0% implementation) with implementation scheduled for 2026-2027 and a target of removing 30 kilograms of waste from irrigation channels and the Kandangjati River area. While actions toward achieving best practice have been initiated as required by the indicator, the site has not provided baseline documentation (studies, data, photos, or videos) showing the status of IWRAs prior to interventions, which is necessary to verify whether the implemented practices effectively maintain or enhance these areas as per indicator 3.9.4.

Finding No:	TNR-020772
Checklist Item No:	4.1.1
Status:	Open
Finding level:	Observation
Checklist item:	Performance against targets in the site's water stewardship plan and the contribution to achieving water stewardship outcomes shall be evaluated.
Findings:	Not all actions and targets have quantified and clear measurement mechanisms. There are no mechanisms in place to assess actual behavioral changes in water stewardship practices among the target audiences involved in the Kali Rungkut and Kedung Baruk community initiatives. This missing evaluation method raises concerns about the long-term impact and sustainability of these efforts. Several proposed initiatives, including tree planting, injection well study, mangrove cleanup, and Kedunglarangan water quality analysis, remain in planning phases at 0-30% completion without established quantifiable outcome metrics.

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Report Details

Report	Value
Report prepared by	Hasudungan Sahat
Report approved by	Lorenzo Brioschi
Report approved on (Date)	14/10/2025

Surveillance

Proposed date for next audit
2026-Sep-07

Stakeholder Announcements

Date of publication	Location
11/07/2025	Memorandum Newspaper
12/06/2025	AWS website
12/06/2025	WSAS website

Catchment Information

Catchment Site.jpg

Site Primary Catchment.png

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Catchment Information

Catchment Name

The PT HM Sampoerna Tbk Plant Rungkut 2 is located within the Surabaya watershed.

Water Supply & Discharge Catchment

PT HM Sampoerna SKT Plant Rungkut 2 does not directly withdraw groundwater. The site receives clean water from Perumda Surya Sembada (City municipal water supplier), which sources surface water from the Surabaya River and Umbulan spring located in the Surabaya and Rejoso watersheds. Additionally, the site's drinking water is supplied by CV Sumber Gading, which sources its water from groundwater located in the Kedunglarangan Watershed. The water received from CV Sumber Gading is processed into drinking water using internal water purification technology and accounts for approximately 3% of the total water usage. All incoming water undergoes treatment through the site's water purification system before consumption. For discharge, the treated wastewater is released into the Avur Wonorejo River, which flows into the Madura Sea. The facility does not utilize desalination plants or discharge into maritime bodies.

Groundwater Aquifers

The site does not use groundwater

Catchment Water Service Providers

The site does not directly withdraw groundwater. Instead, its water supply comes from three watersheds: Surabaya, Rejoso, and Kedunglarangan.

The site has two primary water service providers:

1.Perumda Surya Sembada (Primary Supplier) - This provider supplies surface water sourced from the Surabaya River and Umbulan spring, drawing from the Surabaya and Rejoso watersheds.

2.CV Sumber Gading (Drinking Water Supplier) - This supplier provides drinking water, which is sourced from groundwater in the Prigen Sub-district, part of the Kedunglarangan Watershed.

All incoming water is treated through the site’s internal water purification system before consumption. Additionally, the site operates a Wastewater Treatment Plant (WWTP) to manage domestic wastewater generated from toilet use, handwashing, and equipment cleaning. The treatment process includes stages of equalization, anoxic treatment, aeration, and clarification.

Treated wastewater is discharged into the Avur Wonorejo River, located northeast of the factory, in compliance with the Permit for Liquid Waste Disposal into Water Bodies (IPLC), Permit No. 660.31/1569/436.7.12/2019. Stormwater is partially collected in infiltration ponds for irrigation, while the remaining runoff is channeled through the factory's drainage system into the city’s drainage network.

Catchment Features

The Surabaya watershed is characterized by flat terrain. Research and discussions with stakeholders have identified areas in the Kalirungkut and Kedung Baruk sub-districts, particularly around the Rungkut 2 plant, as prone to flooding. These areas are categorized as having a moderate to high risk of flooding. No inter-basin transfers. The watershed system operates within Indonesia's tropical climate zone, and the drainage basin characteristics include a mix of residential settlements, traditional markets, and industrial facilities.

Client Description and Site Details

Site Map.jpg

water sources.jpg

Client/Site Background

Site Location
PT Hanjaya Mandala Sampoerna Tbk Plant Rungkut 2 are located in Jl. Raya Kalirungkut No.Kav. 9 - 11, Kali Rungkut, Kec. Rungkut, Surabaya, Jawa Timur 60293

Briefly Describe Surroundings
The site is located in a residential area, with a food factory on the left side and a warehouse on the right side.

Describe What the Site Produces
PT HM Sampoerna Tbk Plant Rungkut 2 is a hand-rolled cigarette manufacturing facility that specializes in secondary processing operations. The plant receives cut filler from the primary processing facility located at Sampoerna Sukorejo Plant and focuses solely on the packing process. The primary raw materials used in production include cut filler, cigarette paper, and packaging materials. Water is not utilized in the core production process but is limited to supporting activities such as glue preparation and sanitary hygiene, including toilet facilities, cleaning of tools, and provision of drinking water for employees. The plant does not operate boilers or cooling towers and therefore does not consume water for energy production purposes.

Describe the Water-Related Infrastructure
The site maintains several water-related infrastructure systems on site:
1. Water sources: Municipal water
2. Water treatment facilities: Water purifier system for drinking water treatment, the drinking water buy from supplier.
3. Water use for production: Bottled water is utilized in supporting activities for glue-making processes
4. Water use in energy facilities: Not applicable as the facility does not operate boilers or cooling towers
5. Wastewater treatment facilities: Wastewater Treatment Plant (WWTP) with Biofil system for domestic wastewater processing
6. Cooling towers: Not present at the facility
7. Rainwater harvesting infrastructure: None
8. Stormwater management infrastructure: Storm drainage system are integrated with rainwater pond.
9. Fire water: Water sources comes from municipal water.
10. Other infrastructure: Biopore systems for rainwater infiltration.

Describe Where the Wastewater and Stormwater are Discharged
Wastewater at the ste is generated from domestic sanitation and hygiene activities, including toilet use, hand washing, and appliance cleaning. The wastewater is collected through five sum pit units located throughout the facility, which are connected by a sewage pipe system to the central Wastewater Treatment Plant (WWTP). Following treatment processes at the WWTP, the treated effluent is discharged into the Avur Wonorejo river, located northeast of the factory. Rainwater and stormwater are channeled through the plant's internal drainage system, which flow to rainwater ponds and the final go to the city drainage channels.

Provide a Short Description of the Site
The site employs a total of 4,771 people as of July 2025, making it a significant local employer in the region. The facility covers a total site area of 66,288 square meters with a built-up area of 27,800 square meters. The site consists of manufacturing buildings, administrative facilities, and supporting infrastructure necessary for cigarette packing operations, wastewater treatment, and employee services.

	Summary of Shared Water Challenges

Summary of Shared Water Challenges
Based on the analysis, five shared water challenges that impact the site and its catchment area have been identified: flood at the Surabaya watershed and the Rejoso Watershed, forest and land fires at the Rejoso watershed, water quality in the Surabaya watershed, unimproved/improper sanitation and hygiene at Rungkut district, and drought risk at the Surabaya watershed.

0.0.1	Water Source & Discharge Locations

0.01 *Have any water source or discharge locations been visited during the audit, if so, which and where? If none were visited, please provide justification.*

Yes

Comment: During the audit, the auditor visited the municipal company and the discharge location. The location of discharge location was in the entry gate of the site, and for the Surabaya municipal location at Jl. Raya Mastrip No.56a, Warugunung, Kec. Karangpilang, Surabaya, Jawa Timur 60221.

1	STEP 1: GATHER AND UNDERSTAND	
1.1	*Gather information to define the site's physical scope for water stewardship purposes, including: its operational boundaries; the water sources from which the site draws; the locations to which the site returns its discharges; and the catchment(s) that the site affect(s) and upon which it is reliant.*	
1.1.1	*The physical scope of the site shall be mapped, considering the regulatory landscape and zone of stakeholder interests, including:* *- Site boundaries;* *- Water-related infrastructure, including piping network, owned or managed by the site or its parent organization;* *- Any water sources providing water to the site that are owned or managed by the site or its parent organization;* *- Water service provider (if applicable) and its ultimate water source;* *- Discharge points and waste water service provider (if applicable) and ultimate receiving water body or bodies;* *- Catchment(s) that the site affect(s) and is reliant upon for water.*	✓ Yes
Comment	The site has mapped and documented its boundaries, water infrastructure, and discharge points. The primary water sources for the site are municipal supplies from the Surabaya and Rejoso watersheds, which are used for general purposes. For drinking water, the site purchases water from a vendor that sources it from Prigen Spring, part of the Kedunglarangan watershed. The municipal water is stored in an underground tank with a total capacity of 153 m³, divided into three sections. The drinking water is stored in a separate tank with a capacity of 9 m³, divided into two compartments: one for the west and one for the east. The site applies a drainage and wastewater treatment system to maintain the surrounding environment. The plant has a pond area of approximately ±5,500 m², which functions to store rainwater before it is further discharged. The facility operates a WWTP that processes all site wastewater, with treated effluent discharged into the Avur Wonorejo river, . The site affects and depends upon three watershed areas: the Surabaya Watershed, Rejoso Watershed, and Kedunglarangan Watershed. The primary site watershed is the Surabaya Watershed.	
1.2	*Understand relevant stakeholders, their water related challenges, and the site's ability to influence beyond its boundaries.*	
1.2.1	*Stakeholders and their water-related challenges shall be identified. The process used for stakeholder identification shall be identified. This process shall:* *- Inclusively cover all relevant stakeholder groups including vulnerable, women, minority, and Indigenous people;* *- Consider the physical scope identified, including stakeholders, representative of the site's ultimate water source and ultimate receiving water body or bodies;* *- Provide evidence of stakeholder consultation on water-related interests and challenges;* *- Note that the ability and/or willingness of stakeholders to participate may vary across the relevant stakeholder groups;* *- Identify the degree of stakeholder engagement based on their level of interest and influence.*	✓ Yes

Comment

The site has identified 64 stakeholder organizations across internal, external institutional, and external industrial categories within the Surabaya Watershed (covering Surabaya City, Gresik City, Sidoarjo City, Mojokerto City) and Rejoso Watershed (Pasuruan City, East Java Province). The stakeholder composition includes: 27 government authorities (4 provincial agencies and 23 local government entities including environmental services, water resources management, health offices, public health centers, district and sub-district administrations, and river basin management); 2 academic institutions (universities engaged in baseline studies and hydrogeology research); 8 civil society organizations (1 community-based organization, 6 community groups including women's welfare associations and neighborhood councils, and 1 media association); 9 environmental and water infrastructure entities (1 mangrove conservation facility and 8 water service providers including the municipal water company supplying 93% from the Surabaya River and 5% from the spring source); 16 private sector industrial and commercial entities (retail, manufacturing, hospitality, tobacco production, beverage bottling, healthcare, and industrial estate management); and 12 internal stakeholders (employees, water stewardship team, labor union, and 9 service providers). The river basin management authority oversees four major rivers: Surabaya, Wonokromo, Kalimas, and Brantas.

The site conducted comprehensive two-way stakeholder consultations to identify shared water challenges through the Stakeholder Forum and Sharing Session held on May 27, 2025, with 117 participants representing 44 organizations. Stakeholders were asked to identify and articulate water challenges they experienced rather than simply validating pre-determined issues. Government authorities shared concerns about industrial/domestic waste pollution, illegal riverbank development, and enforcement challenges; PERUMDA Surya Sembada described upstream-downstream pollution impacts, infrastructure limitations (only 1 reservoir post-Kediri despite rainfall pattern shifts after 2023), and climate-induced changes; BBWS Brantas discussed riverbank erosion requiring reinforcement and flood control programs; Perum Jasa Tirta explained reservoir operations and water quality monitoring systems; health offices emphasized sanitation gaps and household liquid waste management needs; and industrial stakeholders confirmed water demand pressures and shared aquifer dependencies. Based on stakeholder feedback analysis, 90% agreed on water-related risks, with identified challenges including flooding (17.50%), sanitation/WASH issues (72.50%), and excessive water use (10.00%). The site maintains ongoing two-way communication through documented individual consultations (visits to PERUMDA Surya Sembada on June 26, 2025; Umbulan Spring on July 14, 2025; CV Sumber Gading; Prigen and Winongan Health Centers; Mangrove Botanical Garden) and participation in multi-stakeholder initiatives (East Java Forestry Department's Forum on July 31, 2025), ensuring shared water challenges reflect genuine stakeholder operational realities across the catchment.

Responding to sanitation challenges raised by stakeholders (72.50% of feedback), the site engaged vulnerable and minority communities through the Clean and Healthy Living Education Program on July 29, 2025, reaching 110 participants from health offices, health centers, district communities, and plant staff. This program utilized women's welfare movement members as community cadres to provide education on healthy latrine use, clean water quality standards, proper handwashing techniques, and household waste management practices to minority communities in two villages (Kali Rungkut and Kedung Baruk). The engagement confirmed that Indigenous peoples are not present in the watershed areas per the Indigenous Territory Registration Agency (BRWA) mapping, which documented only 9 Indigenous territories across Java island, none within the site's catchment area. The site has prioritized stakeholder engagement based on interest and influence levels identified through these two-way consultations, using an engagement matrix with four categories: 'Key Player Manage Closely', 'Keep Satisfied & Meet Need', 'Keep Informed & Show Consideration', and 'Monitor (Least Important Player)'.

1.2.2 *Current and potential degree of influence between site and stakeholder shall be identified, within the catchment and considering the site's ultimate water source and ultimate receiving water body for wastewater.*

Yes

Comment

The site has established a bidirectional influence framework to assess stakeholder relationships across the Surabaya, Rejoso, and Kedunglarangan watersheds. Using a Stakeholder Influence and Interest Matrix, the site evaluates both the level of influence the site has on each stakeholder and the influence the stakeholder has on the site, categorizing them as HIGH, MEDIUM, or LOW. All communication and documentation are stored in the "1.2.1-1.2.2 Stakeholder List & Communication Memorandum" document.

1.3 *Gather water-related data for the site, including: water balance; water quality, Important Water-Related Areas, water governance, WASH; water-related costs, revenues, and shared value creation.*

1.3.1 *Existing water-related incident response plans shall be identified.*

Yes

Comment

The Site has identified potential water-related emergencies and has documented a response plan to address them. These responses are integrated into the site's comprehensive Emergency Response Plan (ERP), which includes specific procedures and practical drills designed to address emergencies that could impact water resources, such as supply interruptions or contamination events. The emergency management structure is formally defined, with a designated Site Commander and coordinators for various functions, including safety, security, and medical response, to ensure a structured reaction to any incident.
The site maintains procedures for WWTP system failures, water supply emergencies, domestic water supply pumps, flood pump systems, fire pump systems, and Prigen drinking water quality issues, including tank leaks and pump failures. These procedures detail prevention and response systems, such as ensuring 24-hour facility security, maintaining adequate lighting and safety signage, having fire suppression equipment available, and establishing clear communication networks with the internal Emergency Response Team and external services like the local fire department.
According to the verification document from 2025, there have been no incidents that required a water-related emergency response.

1.3.2 *Site water balance, including inflows, losses, storage, and outflows shall be identified and mapped*

Yes

Comment

The site has identified and mapped all inflows, losses, storage, and outflows in its water balance system. The site uses a Sankey diagram to visualize the water balance. The primary water source for operations is municipal supply from PDAM Surya Sembada Surabaya, delivered at HO and SKT locations. This water originates from the Surabaya River, is processed at the Karang Pilang Installation, and also from Umbulan Spring via the Ketegan Pump House. Employee drinking water is supplied by vendors who obtain groundwater from Prigen Spring for water purifiers and gallon dispensers. Minor inflows include water from glue manufacturing processes and recycled water from an infiltration pond used for gardening.
The water balance tracks distribution through storage structures such as the HO Tank, SKT Tank, BS Tank, and several sump pits and water tanks at Prigen Timur and Prigen Barat. Water is distributed to production buildings, sanitary facilities, support facilities, fire safety systems, gardening operations, and specialized uses like solar panel cleaning and eye wash stations. The system accounts for water absorbed into glue products and evaporated during operations.
Outflows at the site are monitored through daily checking in the wastewater treatment plant, where the treated wastewater is then discharged into the ultimate water bodies. Additional outflow pathways include water absorbed by manufactured materials, irrigation water used for landscaping at both Head Office (HO) and SKT, water utilized for fire hydrants, drinking water consumption at Prigen facilities, and evaporative losses from cleaning processes. The water balance assessment also highlights unaccounted water resulting from leakages and unidentified losses within the distribution system.

1.3.3 *Site water balance, inflows, losses, storage, and outflows, including indication of annual variance in water usage rates, shall be quantified. Where there is a water-related challenge that would be a threat to good water balance for people or environment, an indication of annual high and low variances shall be quantified.*

Yes

Comment

The site has quantified the components of its water balance, tracking annual variance from 2022 to 2025. During the monitoring period from August 18 to September 4, 2025, total water inflows were measured at 103.39 m³ daily. This included 98.06 m³ from the PDAM municipal supply, 3.19 m³ from groundwater sources in Prigen, 0.33 m³ from Cleo bottled water, and 1.81 m³ from infiltration pond recirculation. The total outflows were quantified at 98.77 m³ daily, comprised of 92.06 m³ from the wastewater treatment plant discharge, 4.19 m³ for gardening irrigation, and other consumptive uses. Unaccounted water losses amounted to 4.63 m³ daily, representing system leakages and unidentified losses.
The annual variance in water usage rates shows year-over-year changes from FY2022 to FY2023, with water consumption increasing by 6.95%, while the water rate per production unit decreased by 2.45%. From FY2023 to FY2024, water consumption decreased by 2.97%, and the water rate declined by 24.86%. A year-to-date comparison for July 2024 versus July 2025 indicates that water consumption increased by 2.19%, while the water rate decreased by 2.7%. Monthly water rate variations within individual years show significant fluctuations, with 2022 ranging from 14.11 to 22.26 m³ per million cigarettes, 2023 spanning from 14.75 to 20.06 m³ per million cigarettes, 2024 ranging from 11.79 to 14.75 m³ per million cigarettes, and 2025 recording between 10.79 and 13.47 m³ per million cigarettes through August.
The total storage capacity includes PDAM HO at 30 m³, PDAM 14 Build at 30 m³, PDAM SKT at 96 m³, Raw Water Drinking Tank Prigen Timur at 6 m³, Raw Drinking Water Tank Prigen Barat at 3 m³, BS Tank at 5.75 m³, and an infiltration pond with a capacity of 5,711 m³. Additional storage is available in multiple sump pits distributed throughout the production areas. The site identified specific periods when water use KPI targets were exceeded: in October and December 2023 due to GIGA Deployment implementation, in February and March 2024 from monitoring GIGA glidepath capacity, and in April 2025 due to production downtime during the Eid al-Fitr holiday, which resulted in elevated water rates. To address monthly variations and prevent target exceedances, the site implements corrective actions, including water conservation awareness campaigns that are broadcast via radio three times a week.

1.3.4 *Water quality of the site's water source(s), provided waters, effluent and receiving water bodies shall be quantified. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be quantified.*

Yes

Comment

The site has identified and maintained water quality through scheduling water tests with the accredited laboratory EnviLab. Primary water sources include the municipal supply for HO and SKT locations and drinking water from Prigen sources, which undergo testing twice a year in accordance with Health Minister Regulation No. 02/2023. Recent monitoring confirms that the municipal supply at HO meets microbiological standards for E. coli and Total Coliform at 0 CFU/100 mL, with Total Dissolved Solids at 76 mg/L (well below the 300 mg/L limit) and a pH of 7.22 (within the 6.5-8.5 range), with all heavy metals below detection limits. The municipal supply at SKT also showed compliance, with TDS at 294 mg/L and all parameters within acceptable standards.
In 2024-2025, challenges included Total Coliform exceedances attributed to rainy season conditions and unsanitary sampling practices, as well as color and hexavalent chromium exceedances due to metal contamination from infrastructure. However, corrective measures, such as enhanced tank cleaning protocols and improved sampling methods, resulted in consistent compliance.
Drinking water from purified outlets across production areas is monitored monthly, consistently showing compliance. Recent tests indicate E. coli and Total Coliform levels at 0 CFU/100 mL, TDS between 108-230 mg/L (well below the 500 mg/L limit), turbidity below 0.88 NTU (under the 5 NTU limit), and color consistently at 0 Pt/Co (under the 15 Pt/Co limit), alongside a temperature range of 25.3-36°C reflecting seasonal variations.
Trend data from this period confirms zero microbiological contamination, with stable chemical parameters year-round, highlighting excellent quality control for all drinking water outlets, encompassing production buildings and Prigen locations.
Monthly monitoring of wastewater effluent from the IPAL against East Java Governor's Regulation No. 72/2013 Category IV indicates pH levels from 6.85-8.04 (within the 6.0-9.0 limit), TSS between 5-19 mg/L (below the 100 mg/L limit), BOD from 6-28 mg/L (below the 60 mg/L limit), COD ranging from 17-77 mg/L (below the 120 mg/L limit), and ammonium levels from 0.1-9.5 mg/L (below the 10 mg/L limit), all in compliance with regulations.
Data from the past indicate historical (year 2022) threats to water quality, including BOD exceedances and COD exceedances linked to improper chlorine dosing and reduced bacterial function due to decreased blower performance. The seasonal variance illustrated higher organic loads during transitional periods, showing improvement in treatment stability with the coefficient of variation for BOD decreasing from 61% to 42%.
Following corrective actions, including optimizing chlorine dosing and maintaining aerobic blowers, the site achieved zero exceedances during the monitoring period.

1.3.5 *Potential sources of pollution shall be identified and if applicable, mapped, including chemicals used or stored on site.*

Yes

Comment

The site has identified potential sources of water pollution and has compiled a list of chemical materials available during the audit. At every point that could potentially cause pollution, the site provides spill kits. Additionally, some points are also guarded by a ban wall to prevent spillage from spreading directly to the environment.

1.3.6 *On-site Important Water-Related Areas shall be identified and mapped, including a description of their status including Indigenous cultural values.*

Yes

Comment

The site has one on-site IWRA, which is an infiltration pond. The infiltration pond is used to temporarily store rainwater. It is equipped with a flood pump to regulate the inflow and outflow of rainwater into the infiltration pond and urban drainage channels. These infiltration ponds do not have cultural values. The IWRAs is still operational.

1.3.7 *Annual water-related costs, revenues, and a description or quantification of the social, cultural, environmental, or economic water-related value generated by the site shall be identified and used to inform the evaluation of the plan in 4.1.2.*

Yes

Comment

The site has identified and documented water-related costs in "1.3.7 Water related Cost Rungkut 2 Plant", which includes deep wells monthly payments, portable drinking water gallons, technological maintenance (such as piping system improvements, WWTP quality performance upgrades, rejuvenation, drinking water purifier system upgrades, etc.), wastewater treatment plant operations, water quality testing (drinking water monitoring, wastewater monitoring, environmental health monitoring, etc.), social activities (such as clean living behavior education, WASH assessment, social mapping, Donation for the Development of Community Hygiene Facilities, water bodies monitoring, AWS stakeholder forum 2025, Catchment baseline study by Brawijaya University, etc.), and others (AWS certification audit).

1.3.8 *Levels of access and adequacy of WASH at the site shall be identified.*

Yes

Comment

The site has identified and provided appropriate toilet facilities, as well as free and accessible drinking water, and the monitoring of all Water, Sanitation, and Hygiene (WASH) facilities by third parties (ISS). The site offers WASH amenities for 4,839 employees (comprising 51 males and 4,788 females), fulfilling the minimum requirements stipulated in Minister of Manpower Regulation No. 5/2018. The facility maintains a total of 153 toilets, surpassing the regulatory requirement of 125 toilets by 28 units, thus reflecting a surplus. The regulation mandates 1 toilet per 1-15 individuals, 2 toilets per 16-30 individuals, ascending to 6 toilets per 81-100 individuals, with an additional toilet required per 40 persons thereafter. The drinking water infrastructure encompasses two water tanks located in Prigen Timur and Prigen Barat, water purifiers, and drinking water stations situated in Buildings 2-3, 3, 5, 6, 7, 8, 9, and 12-13. Laboratory analyses conducted by EnviLab confirm that the water quality adheres to the Indonesian National Standard (SNI) criteria for microbiological and physicochemical parameters. Tool wash facilities are installed in Buildings 2, 3, 7, and 8, while handwashing stations are strategically distributed across the plant in accordance with site mapping. All toilet facilities are equipped with handwash wastafels, sanitary waste bins, closets, and urinals, with comprehensive cleaning checklists maintained for both drinking water and toilet facilities.

The site also conducts vector control monitoring for mosquito larvae by PT. Envilab Indonesia. Initial testing on 25 February 2025 detected larvae in six areas, while follow-up testing on 2 September 2025 found zero positive containers out of 32 examined, achieving the standard of Angka Bebas Jentik (≥95%) as per Minister of Health Regulation No. 2 Year 2023. Rat monitoring on 28 February 2025 showed no Salmonella murium infection, and a follow-up trap survey from 1-4 March 2025 recorded fewer than one infected rat per 102 traps, meeting the environmental health and hygiene standard of < 1. Fly density indices at three canteen locations on 26 February 2025 were 0.2, 0.4, and 0, all within the environmental health and hygiene standard of < 2. Cockroach monitoring identified three species, with a population index of 0.3, which also meets the < 2 standard.

The assessment also encompasses sanitation areas designated for the consumption of food and beverages through nine canteen operators, each possessing the requisite authorization from the Health Agency and certified as Food Handlers, in compliance with local health regulations. Hygiene monitoring by the Health Service Agency was conducted on 26 February 2025, inspecting all nine canteen operations. The cleaning checklists for the canteens document daily cleaning routines for tables, chairs, and floors, as well as weekly cleaning of shelves and monthly inspections of air circulation and lighting. The site actively implements WASH awareness campaigns, featuring educational materials on water conservation, proper handwashing techniques, and hygiene practices, which are prominently displayed throughout the site.

1.4 *Gather data on the site's indirect water use, including: its primary inputs; the water use embedded in the production of those primary inputs the status of the waters at the origin of the inputs (where they can be identified); and water used in out-sourced water-related services.*

1.4.1 *The embedded water use of primary inputs, including quantity, quality and level of water risk within the site's catchment, shall be identified.*

Yes

Comment	The site has identified and mapped 4 vendors that supply products, categorized into two types: LEAF and DIM (the packaging products). To gather information, the site sent out a questionnaire to all suppliers and outsourced services, asking about their location, water-related risks, water quality issues (such as water quality monitoring frequency), and water quantity (for example, water use per tonne of product manufactured). According to their location, all suppliers are outside the catchment area.

1.4.2 *The embedded water use of outsourced services shall be identified, and where those services originate within the site's catchment, quantified.* ✓ Yes

Comment	The site mapped and monitored indirect water consumption from 8 outsourced services used by the site. These services include cleaning, security, canteen operations, policlinic, WWTP operations, and maintenance and project buildings. The site inquired about their locations, water-related risks, water quality issues, such as monitoring frequency, and water quantity. All outsourced services use the same water source from the deep well on the site during their operations.

1.5 *Gather water-related data for the catchment, including water governance, water balance, water quality, Important Water-Related Areas, infrastructure, and WASH*

1.5.1 *Water governance initiatives shall be identified, including catchment plan(s), water-related public policies, major publicly-led initiatives under way, and relevant goals to help inform site of possible opportunities for water stewardship collective action.* ✓ Yes

Comment	The site has identified and documented water governance initiatives at both national and municipal levels. At the national level, Indonesia's National Medium Term Development Plan 2020-2024 (RPJMN), governed by Presidential Regulations 37/2023 and 18/2020, establishes National Water Security targets aligned with SDGs, mandating 100% access to safe drinking water and 90% access to sanitation by 2024, prioritizing the Brantas and Bengawan Solo watersheds among 15 critical river basins for restoration, and requiring 150,000 hectares of critical land reforestation. At the municipal level, Surabaya's Regional Development Plan 2021-2026 (RPJMD) under Regional Regulation 4/2021 focuses on maintaining river border green spaces, improving river water quality, developing proper sanitation infrastructure, including waste and sewage networks, implementing community-based sanitation programs (sanimas), and upgrading drainage systems toward a flood-free city.

1.5.2 *Applicable water-related legal and regulatory requirements shall be identified, including legally-defined and/or stakeholder-verified customary water rights.* ✓ Yes

Comment

The site upholds environmental compliance through Red-on-Line, a digital EHS solution designed for efficient regulatory monitoring and legal register management. This system enhances compliance tracking, facilitates proactive monitoring of potential water regulation non-compliances, and provides weekly email updates. The plant has designated personnel responsible for environmental oversight, ensuring that compliance actions are properly executed.
HM Sampoerna's Rungkut 2 facility operates in accordance with multiple layers of Indonesian regulations, including Government Regulation No. 22 of 2021 concerning environmental protection and management, Minister of Environment Regulation No. 5 of 2014 on wastewater quality standards, and East Java Governor Regulation No. 72 of 2013 on industrial wastewater standards. The facility must adhere to specific obligations such as monthly wastewater quality monitoring, quarterly reporting to relevant authorities, maintaining certified personnel for wastewater treatment operations, and complying with discharge limits established for cigarette manufacturing facilities categorized under Category IV standards. The facility also reports through Indonesia's SIMPEL (Environmental Electronic Reporting Information System) to the Ministry of Environment, ensuring transparency with regulatory authorities. Their legal register tracks 63 water-related regulatory articles, where 47 apply to the site, 13 are for information, and 3 are not applicable. The legal register includes wastewater discharge permits and quality standards for groundwater management and pollution control procedures. The site maintains all necessary certifications for wastewater treatment personnel, systematically reports any non-conformities, and submits mandatory quarterly reports to local environmental authorities along with semi-annual reports to the national Ministry of Environment, thereby ensuring comprehensive adherence to all water-related legal requirements.

1.5.3 *The catchment water-balance, and where applicable, scarcity, shall be quantified, including indication of annual, and where appropriate, seasonal, variance.*

Yes

Comment

The site has collaborated with Brawijaya University and Averroes to analyze the catchment water balance of three watersheds for the year 2025. The research document is titled "Water Stewardship Study (Clean Water Supply and Wastewater Disposal) PT HM Sampoerna SKT Plant Rungkut 2".
For Surabaya Watershed, surface water inflow totals 359,630,469 m³/yr from river debit (calculated using F.J. Mock Method with 80% reliability discharge based on 2010-2023 rainfall data), with constant outflow of 288,733,524 m³/yr (9.16 m³/s) for commercial water abstractions, resulting in an annual surplus of 70,896,972 m³/yr. Seasonal variance is significant: the wet season (January through June, Period III) shows a consistent surplus ranging from 1.55 m³/s to 14.12 m³/s, with peak availability in April (Period I, 23.28 m³/s potential). The dry season exhibits deficits from July Period II through December Period II, with the highest deficit values of 6.5 m³/s recorded in October Period I and November Periods I and II. The most severe dry season shortage occurs in October and November (2.61-2.84 m³/s potential). Groundwater balance was not calculated because industrial groundwater extraction is prohibited in Surabaya.
For the Rejoso Watershed, the surface water inflow is 195,477,000.00 m³/yr (river debit), with an outflow of 74,092,000.00 m³/yr for agriculture/irrigation and forestry, resulting in a surplus of 121,385,000.00 m³/yr. Groundwater inflow via infiltration (Thornthwaite-Mather method using 2012-2022 precipitation and temperature data) is 166,752,561.30 m³/yr, with outflow of 148,019,000.00 m³/yr (industrial abstractions 8,824,000.00 m³/yr plus human consumption 139,195,000.00 m³/yr), yielding an 18,733,561.30 m³/yr surplus.
For Kedunglarangan Watershed, surface water inflow is 255,150,979.99 m³/yr with outflow of 129,985,084.80 m³/yr (surplus 125,165,895.19 m³/yr), but groundwater shows a deficit: inflow of 206,500,000.00 m³/yr versus outflow of 334,078,628.91 m³/yr (deficit 127,578,628.91 m³/yr). The groundwater deficit is driven by industrial water abstractions totaling 332,750,000.00 m³/yr, which accounts for 99.6% of total groundwater outflow, far exceeding natural infiltration recharge capacity.

1.5.4	*Water quality, including physical, chemical, and biological status, of the catchment shall be identified, and where possible, quantified. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be identified.*	Yes

Comment

The site has identified water quality conditions across three watersheds through monitoring conducted during 2024-2025, testing physical, chemical, and biological parameters against Government Regulation No. 22 of 2021 (for surface water) and Ministry of Health Regulation No. 2 of 2023 (for drinking water sources).
In the Surabaya Watershed, monitoring indicates seasonal variations in water quality parameters. BOD and COD consistently surpassed Class III river standards across all monitoring periods: in June 2024, upstream BOD was 19 mg/L and downstream 22 mg/L (standard: 3 mg/L), with COD at 52 mg/L upstream and 54 mg/L downstream (standard: 25 mg/L). July 2024 showed similar exceedances, with upstream BOD at 15 mg/L and downstream 16 mg/L, and COD at 52 mg/L and 54 mg/L, respectively. By February 2025, BOD improved to 4 mg/L at both locations (meeting standards), while COD also decreased to 13 mg/L upstream and 10 mg/L downstream (within standards). The plant's outfall measurements reported BOD at 24 mg/L (June 2024) and 23 mg/L (July 2024), with COD at 77 mg/L and 86 mg/L, respectively, exceeding standards. Other parameters, including pH (7.10-8.54), DO (4-5 mg/L), TSS (9-24 mg/L), temperature (29.0-31.8°C), ammonia (0.21-2.52 mg/L), and total coliform (1700-7800 MPN/100 mL) displayed seasonal fluctuations but mostly remained within acceptable limits. Testing at Avur Wonorejo in 2025 showed Pollution Index values of 3.57 upstream and 3.78 downstream, categorizing water as "slightly contaminated."
For the Rejoso Watershed, collaborative testing with UPTPSDA Welang Pekalen at Umbulan Spring on August 22, 2025, showed all parameters below drinking water standards: pH 7.80, temperature 23.9°C, TDS 108 mg/L, nitrate 0.031 mg/L, iron ≤0.04 mg/L, and manganese ≤0.04 mg/L, confirming good water quality.
In the Kedunglarangan Watershed, the Prigen Water from CV Sumber Gading was monitored through a water laboratory analysis conducted by Envilab in January 2025. Samples were collected from six locations, including four deep wells (Deep Wells 1, 2, 4, and 5) and two groundwater points from CV Sumber Prigen. All tested parameters met the Ministry of Health standards. Key measurements included fluoride (1.5 mg/L), nitrate (0.07-3.0 mg/L), iron (0.07-0.2 mg/L), sulfate (250-267 mg/L), and temperature (25.2-30.7°C).
The seasonal water quality test has identified organic pollution from domestic and industrial sources as the main threat in the Surabaya Watershed. There was a measurable improvement in Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) parameters between mid-2024 and early 2025. Meanwhile, the Rejoso and Kedunglarangan watersheds maintained suitable water quality for their intended uses.

1.5.5	*Important Water-Related Areas shall be identified, and where appropriate, mapped,and their status assessed including any threats to people or the natural environment, using scientific information and through stakeholder engagement.*	Yes

Comment

The site has identified eleven Important Water-Related Areas (IWRAs) across three catchments: Surabaya, Rejoso, and Kedunglarangan. This identification was based on baseline studies, stakeholder interviews, and scientific sources, including the Brantas watershed website, report from water infrastructure agency analyses, SiPongi KLHK (Ministry of Forest and Environmental Information), and InaRisk data (National Disaster Portal) . The IWRAs were mapped at a scale of 1:150,000 and include the following:
- Brantas River (38 km from the plant)
- Surabaya River (4.1 km)
- Avur River (400 m)
- Two mangrove forests (7.4-7.8 km)
- Two city parks (3.4-6.4 km)
- Arjuno-Welirang Mountain (48 km)
- Umbulan Spring (51 km)
- Bromo Tengger Mountain (79 km)
- Plintahan Spring
- Sumbersono Spring

The identification process involved using GPS coordinates, satellite imagery, water quality laboratory analysis, and consultations with local governance entities.
The assessed status of these areas ranged from Status 2 (somewhat degraded and in need of restoration) to Status 4 (in good condition and requiring protection). The assessment results revealed that six IWRAs received a Status 2 due to river water quality degradation (with BOD concentrations to water quality standards (C/WQS) ratios of 4.89-5.17 for the Avur River) and forest fires (which occurred in July 2024 on Arjuno-Welirang and in June 2024 on Bromo Tengger). Five IWRAs received a Status of 3-4. Notably, the mangrove forests saw an increase of 115.87 hectares from 2017 to 2023, although they are facing threats from plastic waste pollution.
The identified water-related risks include contamination of water quality requiring control, flooding in drainage systems, waste and wastewater management issues affecting biodiversity, forest and land fires that lead to ecosystem degradation, and occurrences of drought. In particular, predictions indicate increases in drought conditions within the Rejoso catchment, which could adversely affect the Umbulan Spring water supply that serves about 3 million people.

1.5.6 *Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.*

Yes

Comment

The site has identified eleven water-related infrastructure facilities serving water supply, treatment, and sanitation functions. The mapped infrastructure includes five water supply facilities (PDAM-IPAM Karangpilang at 5.950 l/s, PDAM-IPAM Ngagel at 4.550 l/s, Pump House Ketegan at 300 l/s, Pump House Putat Gede at 450 l/s, and SPAM Umbulan at 4.000 l/s serving 310,000 people), one raw water provider (CV Sumber Gading at 181 m3/day), three wastewater treatment facilities (WWTP SIER at 10,000 m3/day, IPLT Keputih at 300 m3/day, and two communal wastewater treatment plants), one holding pond (SIER Holding Pond at 16 Ha), and communal sanitation facilities with 2-5 cubicles per point. The result of assessed conditions using a 0-5 scale shows seven facilities rated at status 5 (excellent condition requiring only maintenance), two at status 4 (good condition requiring little work apart from protection), and two at status 3 (acceptable condition benefiting from improvement).
Regarding exposure to extreme events, flooding has been identified as a specific risk for the SIER Holding Pond, which functions to collect rainwater and surface runoff to prevent flooding in the industrial area. The assessed infrastructure risks include water quality degradation and distribution water leakage for all water supply facilities, wastewater infrastructure leaks/failures for treatment facilities, and flooding for the stormwater management system. The SIER Holding (WWTP service provider) Pond requires regular depth monitoring to prevent silting that could compromise its flood control capacity. No drought-specific risks were mapped in the infrastructure assessment, though water quality concerns across all supply infrastructure indicate vulnerability to water scarcity impacts on source water quality.

1.5.7 *The adequacy of available WASH services within the catchment shall be identified.*

Yes

Comment

The site has identified and gathered data on WASH services within the catchment area, utilizing data obtained from the Central Statistics Agency (BPS) of East Java Province (2025) as well as local assessments.

Drinking Water Access:
In East Java Province, the access to drinking water is reported at 96.93%, serving a population of 41.81 million individuals. Within the Surabaya watershed, drinking water access is as follows: Surabaya City at 100%, Sidoarjo Regency at 98.07%, Gresik Regency at 97.65%, and Mojokerto Regency at 97.46%. In the Rejoso and Kedunglarangan watersheds, Pasuruan Regency demonstrates a drinking water access rate of 98.62%. Specifically, in Ring 1, encompassing the Kalirungkut and Kedung Baruk subdistricts, there is a 98.1% rate of easy access to drinking water; additionally, 87.6% of residents utilize the municipal water supply for sanitation, while 67.8% rely on it for cooking purposes.

Sanitation Access:
The overall access to sanitation in East Java Province stands at 85.56%. Within the Surabaya watershed, the breakdown reveals that Surabaya City has a sanitation access rate of 97.69%, Sidoarjo at 97.95%, Gresik at 93.22%, and Mojokerto at 91.14%. In the Rejoso and Kedunglarangan watersheds, Pasuruan Regency reflects an 86.36% access rate. In Ring 1, 95.7% of households possess their own toilets, and 99.1% utilize septic tanks for sanitation purposes.

Hygiene Practices (Ring 1, WASH Assessment 2025):
According to the WASH Assessment conducted in 2025 for Ring 1, 87.0% of individuals reported washing their hands before meals, while 73.0% stated that they use soap. Additionally, 61.9% of households reported having handwashing soap available at home.

1.6 *Understand current and future shared water challenges in the catchment, by linking the water challenges identified by stakeholders with the site's water challenges.*

1.6.1 *Shared water challenges shall be identified and prioritized from the information gathered.*

Yes

Comment

The site has identified five shared water challenges through consultations with stakeholders and the analysis of multiple data sources, including a Baseline Study and stakeholder interviews. The identified challenges are as follows:
1. Floods: These are primarily caused by low land elevation, a high percentage of impervious surfaces resulting from urban development, inadequate drainage systems, significant seasonal rainfall, and tidal fluctuations in the downstream areas of both the Surabaya and Rejoso watersheds.
2. Unimproved/Improper Sanitation: This challenge is characterized by a limited number of waste disposal sites in the Rungkut Tengah urban village and the proximity of wells to septic tanks, posing serious health risks.
3. Water Quality: The Border River (Kali Perbatasan) is classified as Water Class IV, exhibiting elevated total coliform levels due to domestic waste, poorly managed industrial waste, and runoff from rainfall.
4. Forest and Land Fires: These incidents in the Rejoso Watershed are driven by factors such as dry vegetation, steep slopes, high temperatures that accelerate soil moisture evaporation, and prevailing south-to-north winds.
5. Drought Risk: This issue is linked to land degradation stemming from deforestation and uncontrolled changes in land use that diminish the watershed's capacity for absorption and groundwater replenishment.
Prioritization of these challenges was based on a risk level assessment. Floods were assigned a high priority (ranked 1) due to their immediate impact across multiple watershed areas. Unimproved sanitation was also deemed a high priority (ranked 2) due to direct contamination risks associated with inadequate waste management. Water quality was classified as moderate priority (ranked 3), reflecting the concerns surrounding the Border River's classification. Conversely, forest and land fires were given a lower priority (ranked 5) as a localized issue, while drought risk was deemed of low priority (ranked 6) as a longer-term concern.

1.6.2	*Initiatives to address shared water challenges shall be identified.*	Yes

Comment

The site has identified both public sector and collaborative initiatives aimed at addressing the shared water challenges within the catchment area. Public sector initiatives include the Clean Lifestyle Program initiated by the Surabaya City Health Office to tackle sanitation issues; wastewater disposal monitoring conducted by the Department of Environment and Hygiene (DLH) of East Java Province; normalization of rivers and urban drainage by relevant authorities; the implementation of water bombing and construction of water ditches by forestry authorities for fire prevention; and the installation of additional pumps by local government. Furthermore, local government efforts include the provision of integrated waste bins, communal latrines, and support for the renovation of Temporary Waste Processing Sites (TPST) in the first ring area.
Site-specific actions consist of channeling wastewater to the SIER Wastewater Treatment Plant (WWTP) with routine monitoring to ensure compliance with PT SIER's quality standards; the dissemination of the AWS commitment through stakeholder forums and Water Stewardship campaigns utilizing social media, site radio, websites, and WIKI platforms; employee participation in initiatives for clean water optimization and biopore implementation; the water aerator program; WASH assessment social research conducted in the first ring area; baseline studies concerning the geographical and environmental conditions of the catchment; educational programs for local communities on clean living and the importance of healthy latrines; the installation of additional pumps to mitigate waterlogging; and the deployment of firefighting teams.
Collaborative initiatives include reforestation projects in upstream and fire-prone areas involving multiple stakeholders; education on watershed management and sluice gate utilization; normalization of rivers and drainage systems; community education focused on flood mitigation, watershed protection, and forest fire awareness; revitalization of water sources in conjunction with relevant agencies; and renovation of TPST infrastructure in collaboration with local government and community members.

1.7	*Understand the site's water risks and opportunities: Assess and prioritize the water risks and opportunities affecting the site based upon the status of the site, existing risk management plans and/or the issues and future risk trends identified in 1.6.*	
1.7.1	*Water risks faced by the site shall be identified, and prioritized, including likelihood and severity of impact within a given timeframe, potential costs and business impact.*	Yes

Comment

The site has identified 11 water risks using a prioritization framework assessing frequency of occurrence (almost never, unlikely once every 10 years, likely once every 3-5 years, very likely almost every year) and magnitude of impact (low: < 10K USD damage, medium: 10K-100K USD, serious: 100K-1M USD, catastrophic: >1M USD). Potential costs range from < 10K USD (< 162 million IDR) to >1M USD (>16 million IDR), with business impact evaluation for each risk.

The identified eleven water risks are as follows:

1. Flood Risk:
   - Frequency: Almost never
   - Magnitude: Medium
   - Priority: Very low
   - Factors: Contributing elements include low land elevation, impervious surfaces, inadequate drainage, and tidal fluctuations, which may disrupt production and result in economic losses.

2. Drought Risk:
   - Frequency: Likely (once every three to five years)
   - Magnitude: Low
   - Priority: Low
   - Factor: This risk stems from land degradation impacting the Umbulan Spring water source.

3. Forest and Land Fires:
   - Frequency: Likely (once every three to five years)
   - Magnitude: Medium
   - Priority: Moderate
   - Potential Cost: High
   - Impact: These events negatively influence water sources and contribute to significant maintenance costs.

4. River Pollution:
   - Frequency: Unlikely (once every ten years)
   - Magnitude: Low
   - Priority: Very low

5. Exceeding Wastewater Discharge Limits:
   - Frequency: Likely (once every three to five years)
   - Magnitude: Medium
   - Priority: Moderate

6. Unit/Piping Leakage:
   - Frequency: Likely (once every three to five years)
   - Magnitude: Medium
   - Priority: Moderate

7. Fresh Water Piping Leakage:
   - Frequency: Likely (once every three to five years)
   - Magnitude: Medium
   - Priority: Moderate
   - Note: This risk leads to excessive water consumption.

8. Wastewater Treatment System Failure:
   - Frequency: Unlikely (once every ten years)
   - Magnitude: Serious
   - Priority: Moderate
   - Potential Impact: Such a failure may result in a shutdown of production operations.

9. Unimproved Sanitation and Clean Water Facilities on Site:
   - Frequency: Very likely (almost every year)

- Magnitude: Low
- Priority: Moderate
- Risk: This condition could lead to non-compliance with regulatory standards and adversely affect water quality.

10. Unimproved Sanitation and Clean Water Facilities in the Catchment:
- Frequency: Very likely (almost every year)
- Magnitude: Medium
- Priority: High
- Risk: Similar to on-site facilities, this could result in regulatory non-compliance and degradation of water quality in the catchment area.

1.7.2 *Water-related opportunities shall be identified, including how the site may participate, assessment and prioritization of potential savings, and business opportunities.* Yes

Comment

The site has identified several water-related opportunities using a prioritization framework that evaluates two main criteria: the likelihood of successful execution (ranging from "almost never" to "very likely within a year") and the positive impact (from "insignificant" to "maximum mitigation of water risk/improvement of environmental performance"). Potential savings are categorized based on financial benefits as follows: less than $5,000 (81 million IDR), between $5,000 and $20,000 (325 million IDR), or over $20,000 (more than 325 million IDR).
The methodology also extends beyond site-specific implementation, considering collective action where the site can engage with catchment stakeholders to address shared water challenges in the Surabaya and Rejoso watersheds. The identified opportunities range from short-term actions (very likely to be executed within one year) to long-term initiatives (likely within three years, or unlikely within five years). The assessment includes forward-looking evaluations of both risk reduction through collective action and improvements in environmental performance.
The identification process revealed opportunities across various priority levels. Very high priority opportunities encompass increasing soil absorption capacity by preventing waste littering through tree planting in upstream areas, normalizing river and urban drainage in collaboration with stakeholders (likelihood: very likely, impact: significant mitigation), and enhancing the early detection of pipe leaks through system improvements (likelihood: very likely, impact: significant mitigation).
High and moderate priority opportunities include raising awareness of water risks through Water Stewardship socialization in Ring 1 communities (Kali Rungkut and Kedung Baruk), monitoring wastewater treatment, conducting WASH (Water, Sanitation, and Hygiene) campaigns on site, and providing education on Healthy Living and Behavior in local sub-districts. Low-priority opportunities focus on preventing forest fires through collaborative tree planting and promoting sanitation awareness through stakeholder forums.
Existing initiatives include monitoring the wastewater treatment system, installing flow meters, implementing biopores, and engaging in stakeholder forums.

1.8 *Understand best practice towards achieving AWS outcomes: Determining sectoral best practices having a local/catchment, regional, or national relevance.*

1.8.1 *Relevant catchment best practice for water governance shall be identified.* Yes

Comment

The site conducted an investigation into water governance best practices from over 15 organizations, including government agencies (e.g., Ministry of Environment, Water and Agriculture), regulatory bodies (PERMENLHK), research institutions (Brawijaya University), the Indonesian River Affairs Research Agency (BRUIN), and water utilities (Manila Water). The analysis examined governance frameworks from national ministries, provincial governments (like West Java's Regional Action Plan for Drinking Water and Environmental Health), local health agencies, and multi-stakeholder initiatives involving various partners. The site identified and adopted 8 specific governance best practices for catchment-level implementation. These include:

1. Baseline study data sharing covering geohydrological conditions, IWRA status, and water risks across Surabaya, Rejoso, and Kedunglarangan Watershed.
2. Stakeholder engagement forums.
3. Water quality monitoring data sharing from upstream and downstream locations on the Avur Wonorejo River and the Umbulan Spring.
4. Public-private partnership with the Surabaya City Environmental Service for hygiene facility donations.
5. Collaborative planning discussions with the local government for injection well installation in the Rejoso River Basin.
6. Cooperative tree planting program with the Municipal -Perumda Surya Sembada Surabaya City.
7. Community-based WASH Assessment involving respondents from 2 villages.
8. Catchment cleanup initiatives, including planned mangrove area restoration in the Kandangjati River.

1.8.2 *Relevant sector and/or catchment best practice for water balance (either through water efficiency or less total water use) shall be identified.*

Yes

Comment

The site conducted an investigation into water balance best practices from over 10 organizations, including international development agencies (USAID IUWASH), industrial companies (PT. BAT, PT Danone, PT TMMIN, Petrokimia Gresik), water utility providers, government agencies implementing technical standards, academic institutions (Politeknik Negeri Malang), and community-based organizations. The site then analyzed and reviewed how PMI affiliates and other companies improve water use. PMI Sukorejo has installed water-saving faucets, sensor-equipped taps, upgraded piping systems, enhanced stormwater management for cooling, and recycled wastewater for cleaning purposes. PT SIER utilizes IoT for real-time leak detection, started reusing wastewater, and follows the 4R approach (reduce, reuse, recycle, reclaim). Politeknik Negeri Malang is building biopores for water infiltration, while Kawasan Industri Suryacipta Karawang operates a wastewater treatment plant using green technology. PT KT&G monitors water use to spot trends and manage drought risks. The site identified and adopted 9 specific water balance best practices. These include:

1. Installation of water aerators on all water faucets.
2. Toilet renovation from wet to dry systems for reducing water.
3. Upgrade of piping system (phases 1 and 2).
4. Digitalization of 38 water meters with automatic leak detection capabilities.
5. Installation of 40 additional biopores on site to increase rainwater infiltration.
6. Revitalization of retention ponds to capture, store, and absorb rainwater.
7. Addition of a gardening pump for rainwater utilization distribution.
8. Revitalization of ex-sumpit into biofil pretreatment to increase wastewater treatment efficiency.
9. Water meter rejuvenation across multiple locations to improve water balance calculation accuracy.

1.8.3 *Relevant sector and/or catchment best practice for water quality shall be identified, including rationale for data source.*

Yes

Comment	The site investigated water quality best practices from over 20 organizations, including government agencies and industrial companies. It reviewed various management approaches, finding that industrial operations use green technology, such as WWTPs with aerobic bacteria, while government programs implement eco-friendly infrastructure to reduce pollution. The site identified and adopted 12 specific water quality best practices. These include: 1. Quarterly preventive maintenance and monitoring of water purifier systems. 2. UV lamp replacement in water purifier treatment units for enhanced disinfection. 3. Addition of 10-inch filter cartridges in all drinking water purifiers for improved filtration. 4. Proactive cleaning of clean water reservoirs and filter tanks to prevent contamination. 5. Replacing lamella media with bioballs in WWTP to increase biological processing efficiency. 6. Revitalization of the ex-sumpit into biofil pretreatment to reduce pollutant load before main treatment. 7. Construction of secondary containment at IPAL holding 110% of the maximum tank volume to prevent spills. 8. Addition of a submersible pump for the WWTP effluent emergency response system. 9. Biofil capacity expansion. 10. Separation of process wastewater and rainwater discharge systems. 11. Water reuse for primary cleaning activities. 12. Canteen relocation away from WWTP to reduce contamination risk. Catchment Water Quality Practices: 13. Analyzed water quality upstream and downstream in catchment rivers to address gaps in public data. 14. Conducted fresh water quality sampling in the catchment area from residents' wells and water utility sources. 15. Analyzed the clean water quality at spring sources used by water utility providers. 16. Collaborated with water utility providers to rejuvenate plumbing systems and address E. coli contamination.	
1.8.4	*Relevant catchment best practice for site maintenance of Important Water-Related Areas shall be identified.*	Yes

Comment

The site conducted an investigation into IWRA maintenance best practices from over 25 organizations, including government agencies (Ministry of Environment and Forestry, East Java Government, Satgas Citarum Harum), environmental research agencies, water utility providers, industrial companies, academic institutions, community-based organizations, and PMI affiliates.

The site analyzed and reviewed IWRA maintenance approaches implemented across different types of water-related areas in the sector and catchment. Environmental research agencies conducted mangrove cleanup and restoration planting hundreds of seedlings, while government programs implemented large-scale reforestation in mountainous areas, watersheds, and critical lands including 1,000 tree seedlings to protect spring sources. Industrial and government stakeholders constructed infiltration ponds and injection wells to increase groundwater recharge, normalized irrigation canals and drainage channels for improved water flow, and implemented sedimentation management programs for watershed maintenance.

The site identified and adopted 5 specific IWRA maintenance best practices. These include:
On-Site IWRA Practices:
1. Revitalization of retention ponds including 45 meters of wall repair to prevent erosion and optimize rainwater capture, storage, and absorption.
Catchment IWRA Practices:
2. Baseline Study completion mapping IWRA status, water quality status, and water risks in Surabaya, Rejoso, and Kedunglarangan Watershed.
3. Analysis of clean water quality at Umbulan spring water source to monitor IWRA health and raw water quality for water utility providers.
4. Tree planting collaboration with water utility providers on upstream catchment areas to increase recharge zones and improve watershed conditions.
5. Planned cleanup activity in Mangrove Botanical Garden Area to prevent biodiversity loss from waste accumulation in Kandangjati River area.

1.8.5 *Relevant sector and/or catchment best practice for site provision of equitable and adequate WASH services shall be identified.*

Yes

Comment

The site evaluated WASH best practices from more than eight organizations, including health agencies, regulatory bodies, community groups, and international health organizations. Based on the WASH assessment carried out by the site in partnership with local NGOs, the report shows that 4 out of 10 households in Rungkut Sub-District (Site neighbor) lack basic facilities for proper and hygienic handwashing. In Kalirungkut Community Unit 7, 41.7% of respondents reported cases of diarrhea, while in Community Unit 3, the figure reached 34.5%. These findings highlight issues of water contamination and poor hygiene habits in both areas.

As an initial step to address this problem, the site identified four best practices and adapted them for implementation at the site, which are:
1. Raising awareness and sharing basic principles of water management to implement clean and healthy living behavior at Kali Rungkut and Kedung Baruk Community.
2. Clean Living Behavior Education in Rungkut district.
3. Donation for the Development of Community Hygiene Facilities.
4. Toilet Renovation on the plant.

2	**STEP 2: COMMIT & PLAN - Commit to be a responsible water steward and develop a Water Stewardship Plan**	
2.1	*Commit to water stewardship by having the senior-most manager in charge of water at the site, or if necessary, a suitable individual within the organization head office, sign and publicly disclose a commitment to water stewardship, the implementation of the AWS Standard and achieving its five outcomes, and the allocation of required resources.*	
2.1.1	*A signed and publicly disclosed site statement OR organizational document shall be identified. The statement or document shall include the following commitments:* *- That the site will implement and disclose progress on water stewardship program(s) to achieve improvements in AWS water stewardship outcomes* *- That the site implementation will be aligned to and in support of existing catchment sustainability plans* *- That the site's stakeholders will be engaged in an open and transparent way* *- That the site will allocate resources to implement the Standard.*	✓ Yes
Comment	The site has displayed the AWS commitment statement on notice boards located in the office lobby, security area, production unit, and main hall. These areas are accessible to visitors and external parties entering the facility. The commitment documents are framed and positioned on bulletin boards throughout the operational areas that are open to the public. The AWS commitment document is titled "Rungkut 2 Plant Water Stewardship Commitment," dated January 2025. It is signed by Made Agus Sumartra, Manager of the Hand-Rolled Plant Rungkut 2, and features the official company stamp. The document includes all required commitments: 1. Implementation and disclosure of progress on water stewardship programs to achieve AWS outcomes: • Point 1 commits to support, sustain, and uphold the five water management goals of AWS: good water governance, sustainable water balance, water quality, important areas related to water and clean water, and sanitation and health for all (WASH) • Point 9 commits to disclose relevant information related to water to stakeholders and relevant parties in achieving improvements in water stewardship 2. Alignment to and support of existing catchment sustainability plans: • Point 4 explicitly commits to "Implement the AWS Standard in alignment and in support of existing catchment sustainability plans" 3. Stakeholder engagement openly and transparently: • Point 2 explicitly commits to "Engage and involve stakeholders openly and transparently" 4. Resource allocation to implement the Standard: • Point 7 commits to "Allocate necessary resources needed to complete the implementation and maintenance of all requirements on AWS standards" The commitment document also includes additional provisions for legal compliance, stakeholder collaboration, ongoing improvement of water stewardship efforts, and support for national and international water treaties.	
2.2	*Develop and document a process to achieve and maintain legal and regulatory compliance.*	
2.2.1	*The system to maintain compliance obligations for water and wastewater management shall be identified, including:* *- Identification of responsible persons/positions within facility organizational structure* *- Process for submissions to regulatory agencies.*	✓ Yes

Comment

The site maintains water and wastewater regulatory compliance through the Online System and updates information from External Affairs. The responsibilities have been documented in the "AWS Organization," and the person responsible for legal correspondence has also been documented. Each year, the site reviews all compliance regulations in the management review process. The site also used the Red-on-Line system, which is a global, comprehensive EHS solution for regulatory compliance to effectively maintain EHS compliance. The system tracks 88 total water-related regulations, with a compliance status breakdown of 43.18% compliant, 2.27% for information, and 54.55% not applicable, as of June 2025. Additionally, each month, the site reports all water activity to the government to ensure that all parameters meet the requirements.

2.3 *Create a water stewardship strategy and plan including addressing risks (to and from the site), shared catchment water challenges, and opportunities.*

2.3.1 *A water stewardship strategy shall be identified that defines the overarching mission, vision, and goals of the organization towards good water stewardship in line with this AWS Standard.*

Yes

Comment

The site has developed an AWS strategy that defines the company's vision, mission, and goals for water stewardship through a formal Water Stewardship Commitment with five specific objectives: (1) assess water-related risks and shared challenges at plant and catchment levels to identify mitigation opportunities, (2) ensure compliance with water-related laws and regulations, (3) ensure quality of water used and discharged meets local regulations and AWS standards, (4) create, maintain, and evaluate the Rungkut 2 Plant Water Management Strategy Plan including location and catchment-based actions targeting five AWS outcomes (good water governance, good water quality status, sustainable water balance, important water-related areas, and WASH), and (5) involve relevant stakeholders from various sectors for joint initiatives supporting catchment areas and shared water resources. The document was signed by Made Agus Sumartra, Manager of the Hand-Rolled Plant Rungkut 2.

2.3.2 *A water stewardship plan shall be identified, including for each target:*
- How it will be measured and monitored
- Actions to achieve and maintain (or exceed) it
- Planned timeframes to achieve it
- Financial budgets allocated for actions
- Positions of persons responsible for actions and achieving targets
- Where available, note the link between each target and the achievement of best practice to help address shared water challenges and the AWS outcomes.

Obs.

Comment	The site has planned 54 total initiatives across water stewardship activities. Of these, 36 initiatives are completed (S3 status), 14 initiatives are currently in progress (S2 status), and 4 initiatives remain as proposed ideas (S1 status). This distribution indicates that 66.7% of planned activities have been executed, 25.9% are actively being implemented, and 7.4% remain in the conceptual stage. The site shows significant deficiencies in IWRA management across four identified activities. There is no budget information for IWRA initiatives - the Tree Planting ($0 allocated, marked "TBD"), Mangrove Cleanup ($0 allocated, marked "TBD"), donation and installation of water injection wells in the Upper Rejoso watershed to prevent and reduce the risk of flooding ($0 allocated, marked "TBD"), and Fresh Water Quality Analysis in Kedunglarangan ($0 allocated, marked "TBD") programs lack financial data. Additionally, the WSP site does not indicate that annual milestones for the "Radio Campaign" have been established to measure the increase in awareness. Furthermore, there are currently no mechanisms in place to assess actual behavioral changes in water stewardship practices among the target audiences involved in the Kali Rungkut and Kedung Baruk community initiatives. The missing of evaluation methods raises concerns about the long-term impact and sustainability of these efforts. According to the WSP indicators, the site needs to include clear methods for measurement and monitoring, as well as financial budgets allocated for these actions.
2.4	*Demonstrate the site's responsiveness and resilience to respond to water risks*
2.4.1	*A plan to mitigate or adapt to identified water risks developed in co-ordination with relevant public-sector and infrastructure agencies shall be identified.* — Yes

Comment

The site developed water risk mitigation plans through coordination with public-sector and infrastructure agencies documented in the AWS Stakeholder Forum 2025 on May 27, 2025 and subsequent bilateral engagements.
Stakeholder Forum (May 27, 2025): 117 participants from 44 stakeholder organizations attended at Bumi Hotel, Surabaya. Participants included:
Public Sector Agencies:
- Environmental Agency East Java Province
- Environmental Agency - Surabaya City
- Surabaya City Water Resources and Highways Service
- Department of Public Works and Water Resources of East Java Province (PU SDA)
- BBWS Brantas
- Surabaya City Health Office
- Rungkut District, Kedung Baruk Sub-district, and Kali Rungkut Sub-district

Infrastructure Owners:
- PDAM Surya Sembada
- Perum Jasa Tirta Surabaya
- Management of Umbulan Spring

Forum Results:
- 90% of stakeholders identified water risks in the catchment.
- Main risks identified: Flooding and WASH issues in Surabaya and Rejoso Watersheds.
- 91% of stakeholders implemented water use initiatives.

Bilateral Coordination:
1. PDAM Surya Sembada: Site visits on June 26, 2025, discussed water sources, infrastructure, challenges, and mitigation actions.
2. Perum Jasa Tirta: Discussed water conservation, tree planting in upstream areas, and water quality monitoring.
3. BBWS Brantas: Discussed riverbank reinforcement, green open space utilization, and riverbank education programs.
4. UPT Welang Pekalen - Umbulan Spring Management: Site visit July 14, 2025, discussed water quality, infrastructure, and annual tree planting in Rejoso Watershed.
5. Surabaya City Health Office: Discussed household liquid waste management and PHBS socialization.
6. DSDABM - IPLT Keputih: Appointed as emergency wastewater service provider for system failures.

Mitigation Actions with Stakeholder Coordination:
- Tree planting with Perumda Surya Sembada in upstream catchment areas (planned Q4 2025).
- Injection well installation in Upper Rejoso River Basin with local government.
- Clean Living Behavior Education with Surabaya City Environmental Service.
- Hygiene facilities donation (15 trash bins, 2 waste banks) with Surabaya City Environmental Service.
- Urban drainage expansion via land donation (150x150x120 meters) for box culvert program with Surabaya City Government (completed December 2023).

3	STEP 3: IMPLEMENT - Implement the site's stewardship plan and improve impacts

3.1 *Implement plan to participate positively in catchment governance.*

3.1.1 *Evidence that the site has supported good catchment governance shall be identified.* ✓ Yes

Comment: The site has demonstrated active participation in catchment governance through several measurable activities. The site conducted a comprehensive Baseline Study (Q3 2024-Q2 2025) that included hydrological assessment, IWRA status, water quality evaluation, and water risk identification within the catchment area. The site organized and hosted the AWS Stakeholder Forum 2025 (17 May 2025), which engaged stakeholders, including East Java Environmental Service, Brawijaya University, Environmental Agency - Surabaya City, the watershed management authority, and multiple government agencies. During the stakeholder forum, the site shared information about shared water challenges and the water quality laboratory results for both upstream and downstream areas.

3.1.2 *Measures identified to respect the water rights of others including Indigenous peoples, that are not part of 3.2 shall be implemented.* ✓ Yes

Comment: No Indigenous Peoples have been identified in the site's operational area, which is located in the center of the city. Residents access water through a combination of municipal supply, private wells, and community-based water providers.

3.2 *Implement system to comply with water-related legal and regulatory requirements and respect water rights.*

3.2.1 *A process to verify full legal and regulatory compliance shall be implemented.* ✓ Yes

Comment: All national and local legal requirements and regulations have been met by the operational processing plant on the site, including the wastewater discharge requirements. The permission documents are appropriately documented and up to date. The site maintains water and wastewater regulatory compliance through the Red-On-Line digital system. This global EHS solution provides weekly monitoring emails and dashboard notifications for new or updated regulations. The site conducts monthly internal meetings to evaluate compliance status updates in the Red-On-Line platform and monitor regulatory changes through both the platform and government websites. Environmental permit tracking is maintained by the sustainability team, which monitors active periods and the status of all water-related permits.

3.2.2 *Where water rights are part of legal and regulatory requirements, measures identified to respect the water rights of others including Indigenous peoples, shall be implemented.* ✓ Yes

Comment: No specific indigenous groups are located within the site plant catchment areas. All national and local legal requirements and regulations have been met by the operational processing plant on the site, including the wastewater discharge requirements.

3.3 *Implement plan to achieve site water balance targets.*

3.3.1 *Status of progress towards meeting water balance targets set in the water stewardship plan shall be identified.* ✓ Yes

Comment

The site has implemented specific annual targets and actions to achieve a sustainable water balance in response to water loss and efficiency challenges. Actions include: comprehensive piping system upgrades to reduce leakage and prevent direct discharge to water bodies, digitalization of 38 water meters for automatic leak detection and accurate consumption measurement, systematic rejuvenation of damaged or problematic meters at critical measurement points including wastewater inlet/outlet and clean water supply locations, installation of water aerators in all water faucets to regulate water use efficiency, quarterly maintenance of pump house systems to ensure reliable water distribution, biofil capacity expansion to increase wastewater storage efficiency by 0.4 m³, and installation of 40 biopores to increase rainwater infiltration into the ground.
The site has established measurable targets through the two-phase piping improvement program, achieving a progressive reduction in unaccounted water from 38.39% (Phase 1) to 4.47% (Phase 2), and has demonstrated improved water efficiency by reducing usage from 11.11 to 10.18 m³ per million cigarettes through the installation of aerators. The water meter digitalization and rejuvenation program further improved water balance calculation accuracy, reducing unaccounted water to between 3.91% and 24.13% across different measurement points.

3.3.2 *Where water scarcity is a shared water challenge, annual targets to improve the site's water use efficiency, or if practical and applicable, reduce volumetric total use shall be implemented.*

Yes

Comment

The site has identified Drought Risk as a shared water challenge in document 1.6.1. Based on the baseline study, land degradation from deforestation or uncontrolled land use change reduces the upper watershed's ability to absorb rainwater and replenish groundwater reserves. This increases drought impact during the long dry season when downstream water flow decreases significantly. Poor management of upstream vegetation reduces the soil's ability to retain moisture, increasing future drought risk.
To address water scarcity, the site has set annual targets to improve water use efficiency, achieving the following results:
Water Use Efficiency Improvements:
1. Water Aerator Program
- Installed aerators in all faucets, saving 12 m³/day.
- Improved water efficiency from 11.11 to 10.18 m³ per million cigarettes.

2. Employee Water Awareness Program
- Launched a Water Stewardship Campaign through various communication channels.
- Promoted awareness of AWS at stakeholder forums and engagement activities.
- Conducted internal programs on water conservation.

3. Biopore Installation
- Installed 40 biopores to enhance rainwater infiltration and reduce runoff.

4. Leakage Reduction and Water Loss Prevention
- Upgraded piping system, reducing unaccounted water from 38.39% to 4.47%.
- Digitized 38 water meters with automatic leak detection.
- Rejuvenated meters at critical points, bringing unaccounted water down to between 3.91% and 24.13% in various locations.

3.3.3 *Legally-binding documentation, if applicable, for the re-allocation of water to social, cultural or environmental needs shall be identified.*

Yes

Comment

The site does not reallocate water savings for external benefits or uses. After conducting interviews and visiting the site, no legal issues were found. There is no diversion of water for social, cultural, or environmental purposes.

3.4 *Implement plan to achieve site water quality targets*

3.4.1 *Status of progress towards meeting water quality targets set in the water stewardship plan shall be identified.*

Yes

Comment

The site conducted a Baseline Study from July 2024 to June 2025 to assess geohydrological conditions and water risks in the catchment area. The study identified water quality in the catchment as a moderate risk, with river water classified as Water Class IV under PP 22/2021 Appendix VI Surface Water Quality Standard, showing high total coliform contamination from domestic waste, industrial waste, and rainfall runoff. Based on these findings, the site established water quality targets within its water stewardship plan and implemented specific actions to achieve these targets.
The targets set by the site include maintaining wastewater effluent quality that meets regulatory standards, ensuring zero water purifier breakdown, maintaining freshwater quality standards, and preventing contamination in water storage reservoirs. The actions taken to meet these targets include:
On-Site Actions:
- Replacing lamella media with bioballs in the wastewater treatment system to support microorganism growth that decomposes organic pollutants more effectively (completed February 2025).
- Revitalizing 1 existing sumpit infrastructure into a biofil pre-treatment facility to reduce BOD, COD, and solids content before entering the main treatment system (completed February 2025).
- UV lamp replacement in water purifier systems to maintain drinking water quality (ongoing).
- Cleaning HO and SKT clean water reservoirs by draining and filter maintenance to prevent contamination (completed December 2024).
- Adding 10-inch cartridge filters to all water drinking purifiers to increase filtration effectiveness (completed April 2025).
- Quarterly monitoring and maintenance of water purification systems to ensure optimal operation.
- Quarterly monitoring and maintenance of pump house systems to ensure water distribution reliability.

Catchment Level Actions:
- Fresh water quality analysis in the catchment area, collecting 2 sets of annual data from residents' well water based on Permenkes No. 2 year 2023 (completed June 2025).

Current performance data show that wastewater monitoring results meet regulation standards every month, freshwater monitoring meets regulation standards on a semi-annual basis, and drinking water monitoring meets regulation standards every month. No water purifier breakdowns occurred during drinking water distribution. No contaminants were found in water reservoirs. The site maintains compliance with national regulations of effluent quality limits and prevents contamination to the environment.

3.4.2 *Where water quality is a shared water challenge, continual improvement to achieve best practice for the site's effluent shall be identified and where applicable, quantified.*

Yes

Comment

The site has identified Water Quality in the Catchment as a shared water challenge (Moderate risk, Priority 3). Catchment monitoring data indicates:
Surabaya Watershed baseline status:
- Discharge point vicinity: BOD 22 mg/L, COD 66 mg/L
- Avur Wonorejo: Pollution Index 3.57-3.78 (slightly contaminated), BOD 36-41 mg/L exceeds Class III standard (6 mg/L) per PP 22/2021
- Surabaya River: BOD, COD, TSS, ammonia exceed Class II standards per PP 22/2021
- Primary contamination sources: domestic waste, poorly managed industrial waste, rainfall runoff

Current site effluent performance:
- Regulatory limits: [specific limits from permit, e.g., BOD ≤50 mg/L, COD ≤100 mg/L]
- Actual monthly discharge: meets regulatory limits
- Performance level: compliance with legal requirements
- Operational controls implemented: bioball treatment system, biofil pretreatment, UV treatment systems

Rejoso and Kedunglarangan watersheds:
- Umbulan Spring: all parameters meet Ministry of Health Regulation No. 2/2023
- Prigen deep wells: all parameters meet Ministry of Health Regulation No. 2/2023

The current site effluent performance achieves regulatory compliance at the initial audit. The site recognizes that addressing the shared water quality challenge in Surabaya Watershed may require voluntary performance targets beyond legal minimums in subsequent certification cycles.

3.5 *Implement plan to maintain or improve the site's and/or catchment's Important Water-Related Areas.*

3.5.1 *Practices set in the water stewardship plan to maintain and/or enhance the site's Important Water-Related Areas shall be implemented.*

Obs.

Comment

The site has implemented IWRA practices on the on-site level by doing Retention Pond Revitalization with repaired 45 meters of infiltration pond walls between June-August 2025, preventing landslides and enhancing stormwater management capacity. This action directly maintains the pond's function as an IWRA for rainwater capture and storage.

However, two-thirds of the planned IWRA practices remain unimplemented:
Catchment Level - Partial Progress:
- Tree Planting on the Upstream of Catchment Area Collaboration established with Perumda Surya Sembada Surabaya.
- Number of trees and planting locations not yet determined, planned for Q4 2025.
- No trees planted to date.

Catchment Level - Not Implemented:
- Clean up Activity in Mangrove Botanical Garden Area (Proposed Idea - 0%)
- Target: 30 kilograms of waste removal.
- Timeline: Q1 2026 - Q4 2027.
- No cleanup activities conducted.

The AWS indicator requires that practices set in the water stewardship plan "shall be implemented," not just planned or proposed (on-site and off-site catchment).

3.6 *Implement plan to provide access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers at all premises under the site's control.*

3.6.1 *Evidence of the site's provision of adequate access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers onsite shall be identified and where applicable, quantified.*

Yes

Comment

The site has identified and quantified the WASH facilities for all workers onsite through the implementation of sanitation infrastructure, drinking water systems, and hygiene programs with quantified targets and achievement metrics.
Sanitation Facilities:

The site offers toilet facilities throughout the plant, supported by an ongoing renovation program aimed at upgrading 153 toilet cubicles. As of the current reporting period, 65 cubicles have transitioned from wet to dry toilets between September 2024 and December 2027. This initiative has led to an enhancement in water efficiency, decreasing usage from 13.74 to 12.96 cubic meters per million cigarettes produced. Additionally, the canteen was relocated from its previous proximity to the wastewater treatment plant to a new site between July and September 2025, resulting in zero occurrences of disease vectors, such as cockroaches and rats, within the new facility. This relocation has effectively upheld hygiene and sanitation standards for all employees utilizing the dining amenities.

Safe Drinking Water Provision:

The site maintains drinking water quality through a series of operational measures. Monthly quality monitoring confirms adherence to regulatory standards as stipulated by Permenkes No. 2 of 2023. The water purification system is subject to quarterly monitoring and maintenance, with no recorded breakdowns during the reporting period, thereby ensuring the uninterrupted distribution of drinking water. Upgrades to the system include the replacement of UV lamps in water treatment units, while all water reservoirs (HO and SKT clean water tanks) were thoroughly cleaned in December 2024, revealing no contaminants. Furthermore, in April 2025, an additional 10-inch filter cartridges were installed in all drinking water purifiers to enhance filtration efficacy for fine particles and contaminants.

Protective Hygiene:

The site has established waste management infrastructure, including the creation of two waste banks in September 2025, each collecting a minimum of 7 kilograms of sorted plastic bottle waste monthly. In collaboration with the Surabaya City Environmental Service, 15 trash bins and three waste banks were implemented in the Kedung Baruk and Kali Rungkut sub-districts in August 2025, facilitating segregated waste disposal for organic, non-organic, and hazardous waste categories.

Assessment and Compliance:

A thorough WASH Assessment was conducted between January and June 2025, which involved a survey of 330 respondents from two villages (Kali Rungkut and Kedung Baruk) situated in the ring 1 area surrounding the plant. This assessment evaluated hygiene and sanitation conditions against applicable standards. Educational initiatives reached 110 participants through Clean Living Behavior Education in July 2025, 40 individuals through Water Stewardship Socialization in February 2025, and 30 participants through Reusable Sanitary Napkin Education in September 2025. Furthermore, radio campaigns promoted water stewardship messages three times per week (surpassing the target of once weekly) from November 2024 to December 2025, and 14 employees participated in socialization sessions in November 2024.

3.6.2 *Evidence that the site is not impinging on the human right to safe water and sanitation of communities through their operations, and that traditional access rights for indigenous and local communities are being respected, and that remedial actions are in place where this is not the case, and that these are effective.*

Yes

Comment

During the visit, interviews with the site staff, and field observations, no evidence was found indicating that the site infringes upon the human right to water and sanitation. The information provided by the site and stakeholder demonstrated that their effluents do not impact anyone's ability to access water or sanitation.

3.7	*Implement plan to maintain or improve indirect water use within the catchment:*	
3.7.1	*Evidence that indirect water use targets set in the water stewardship plan, as applicable, have been met shall be quantified.*	Yes
Comment	The site does not set any targets in its water stewardship plan, as all suppliers and service providers are outside the site's catchment area, and their water withdrawals do not impact the site's catchment water availability. For the eight service providers that work on the site, their water consumption is already accounted for with the site's direct water withdrawal and is part of the on-site water efficiency program.	
3.7.2	*Evidence of engagement with suppliers and service providers, as well as, when applicable, actions they have taken in the catchment as a result of the site's engagement related to indirect water use, shall be identified.*	Yes
Comment	The site engaged with suppliers and service providers about indirect water use through emails and questionnaires. A standardized questionnaire was created and distributed online, collecting 18 data points such as rganization identification and location, contact information, water needs and impacts, main water resource types, water usage intensity in m^3/ton for raw material provision, water consumption in cubic meters per ton of material production, water quality regulation compliance, water quality assessment methods, monitoring frequency for clean water and wastewater, seasonal variability in water consumption, water-related risks perception, water-sensitive infrastructure presence, water quality issues experience, and AWS Standard awareness. Two groups were contacted: 1. Outsourced Service Providers: An email on August 19, 2025, was sent to 9 on-site service providers, including those in polyclinic, cleaning, wastewater treatment, security, maintenance, canteen, and pump system services. 2. Raw Material Suppliers: An email on July 7, 2025, was sent to 4 suppliers of leaf and DIM suppliers. The emails outlined the Alliance for Water Stewardship certification program, requested participation in the indirect water use survey, and included the questionnaire with a response deadline of August 21, 2025. This engagement provided indirect water use data from 12 suppliers: 8 on-site providers with consumption between 2500 and 23750 m^3/month, and 4 off-site suppliers with varying consumption rates.	
3.8	*Implement plan to engage with and notify the owners of any shared water-related infrastructure of any concerns the site may have.*	
3.8.1	*Evidence of engagement, and the key messages relayed with confirmation of receipt, shall be identified.*	Yes

Comment

The site conducted engagements with owners of water-related infrastructure through visits in 2025. On June 26, the team consulted with the Production Manager at Perumda Air Minum Surya Sembada in Surabaya, discussing pertinent issues regarding water sources, infrastructure, and associated challenges. The same day, the team toured IPAM Karangpilang III, which provides water to the PT HM Sampoerna Rungkut 2 Factory, to collect information on water distribution systems and mapping of the Umbulan Water Spring.
On July 14, 2025, the team visited the Umbulan SPAM (Drinking Water Supply System) to assess water quality and gather further information.
Key challenges identified during these engagements included:

- Significant pollution in the Brantas River, contributing to adverse water quality.
- Insufficient dam infrastructure in the Kediri area, with only one unit operational following 2023.
- A constrained water supply in Surabaya city, where conservation measures are implemented with the lowest PDAM pricing in the region.
- A reliance on the Surabaya River for 93% of the water supply, with only 5% derived from the Umbulan source.
- Inadequacies in wastewater processing by certain companies, resulting in increased water load on the system.
- Climate change impacts affecting rainfall patterns and their management in existing dam structures.

Documentation of these engagements includes photographic evidence from site visits and records of meetings with officials from Perumda Surya Sembada.

3.9 *Implement actions to achieve best practice towards AWS outcomes: continually improve towards achieving sectoral best practice having a local/catchment, regional, or national relevance.*

3.9.1 *Actions towards achieving best practice, related to water governance, as applicable, shall be implemented.*

Yes

Comment

The site has established a clear connection between the practices outlined in indicator 1.8.1 and the actions implemented as part of its water stewardship plan under indicators 3.1.1 and 3.9.1. Several best practices for water governance from document 1.8.1 have been successfully implemented:
Best Practice: "Conducting comprehensive catchment assessments, including IWRA mapping, water quality analysis, and water risk identification." This practice aims to understand the geohydrological conditions, water availability, and associated risks in the catchment area to inform water management decisions. The site completed a Baseline Study covering three watersheds—Surabaya, Rejoso, and Kedunglarangan—from July 2024 to June 2025. This study provided detailed mapping of the catchment, an assessment of IWRA status, an evaluation of water quality, and the identification of water-related risks. The study delivered valuable insights into shared water challenges that affect both catchment and site-specific conditions.
Best Practice:"Multi-stakeholder engagement and collaboration for water stewardship through forums and consultative processes." This practice encourages transparent dialogue among water users, government agencies, and communities to address shared water challenges and develop collaborative solutions. In May 2025, the site conducted the AWS Stakeholder Forum 2025, surpassing the target of 30 stakeholders by engaging 117 participants from 44 stakeholder organizations, including government agencies (Environmental Services, Water Resources Department, BBWS Brantas), infrastructure owners (PDAM Surya Sembada, Perum Jasa Tirta), academic institutions (Brawijaya University), and community representatives. The forum facilitated the sharing of water-related risks, discussions on water risk mitigation implementation, an exchange of best practices, and the identification of collaboration opportunities for water sustainability. Survey results revealed that 90% of stakeholders acknowledged the water risks in the catchment, and 91% have implemented water use initiatives.

3.9.2 *Actions towards achieving best practice, related to targets in terms of water balance shall be implemented.*

Yes

Comment

The site has established a clear link between the practices identified in indicator 1.8.2 and the actions implemented as part of their water stewardship plan under indicators 3.3.1 and 3.3.2. Several water balance best practices from document 1.8.2 have been implemented:
Best Practice: "Improvement of the water piping system, including the upgrade of flow meters to reduce water leaks." This practice focuses on enhancing infrastructure to detect and prevent water losses through systematic piping improvements and improved monitoring. The site's two-phase piping improvement program connected disconnected pipelines, linked wastewater lines to drainage, and cleaned waterways, achieving a progressive reduction in unaccounted water from 38.39% (Phase 1) to 4.47% (Phase 2). The digitalization of 38 water meters provides automatic reading capability and leak detection technology. The systematic rejuvenation program replaced damaged meters at the wastewater inlet/outlet, sumpit outlets, PDAM SKT/HO meters, and 24 additional locations, reducing unaccounted water to between 3.91% and 24.13% across different measurement points.

Best Practice: "Installation of water-efficient fittings (water aerators, sensors on water taps) for potable water reduction." This practice promotes water conservation by regulating water flow efficiency to minimize water consumption. The site's installation of aerators in all water faucets achieved 12 m³/day water savings and improved water efficiency from 11.11 to 10.18 m³ per million cigarettes, generating USD 9.09 cost avoidance in August 2025.
Best Practice: "Rainwater harvesting through infiltration systems." This practice involves capturing and infiltrating rainwater into the ground to increase water availability and reduce surface runoff. The site's biopore program installed 40 additional biopores to increase rainwater infiltration into the soil and reduce waterlogging during the rainy season.

3.9.3 *Actions towards achieving best practice, related to targets in terms of water quality shall be implemented.*

Yes

Comment

The site has established a clear link between the practices identified in indicator 1.8.3 and the actions implemented as part of their water stewardship plan under indicator 3.4.2. They have put into practice several water quality best practices from document 1.8.3, which include:
1. Systematic Monitoring of Water Quality: The site conducts regular monitoring of freshwater, wastewater, and drinking water quality to ensure compliance with regulatory standards. Specifically, they perform semesterly monitoring of freshwater, monthly monitoring of wastewater, and monthly monitoring of drinking water, all of which meet regulatory standards. Additionally, they conduct annual freshwater quality analyses in the catchment area by collecting two sets of data from residents' well water, in accordance with Permenkes No. 2 of 2023.
2. Upgrading Wastewater Treatment Systems: To enhance wastewater treatment effectiveness, the site has replaced one lamella media system with bioballs. This upgrade supports the growth of microorganisms that decompose organic pollutants more effectively, resulting in cleaner effluent that meets quality standards.
3. Installing Pre-treatment Systems: The site has revitalized an existing sump pump infrastructure into a biofil pre-treatment facility. This facility treats wastewater at the initial stage by removing coarse waste, thereby reducing biological oxygen demand (BOD), chemical oxygen demand (COD), and solids content. This not only increases the efficiency of the main treatment system but also extends its operational life, thus reducing the potential for environmental pollution.
4. Regular Maintenance and Upgrades of Water Purification Systems: To ensure safe drinking water quality for employees, the site has implemented a systematic approach to maintain, monitor, and upgrade water purification equipment according to health standards. This includes quarterly monitoring and maintenance of water purification systems, replacing UV lamps in water treatment units, adding 10-inch cartridge filters to all purifiers to enhance filtration effectiveness, and cleaning the clean water reservoirs. As a result, there have been zero breakdowns of water purifiers and no contaminants found in the water reservoirs.

3.9.4 *Actions towards achieving best practice, related to targets in terms of the site's maintenance of Important Water-Related Areas shall be implemented.*

Obs.

Comment

The site has established three initiatives for maintaining Important Water-Related Areas (IWRAs) as documented in their AWS evidence report. The Retention Pond Revitalization has been fully implemented (100% complete) with 45 meters of pond walls successfully repaired, achieving the stated target of preventing landslides and maintaining stormwater management function. The Tree Planting on Upstream Catchment Area initiative shows partial implementation at 30% progress, with collaboration established with Perumda Surya Sembada Surabaya City and timeline set for Q4 2025, though specific targets for tree numbers and planting locations remain under discussion. The Mangrove Botanical Garden Cleanup activity remains at proposed stage (0% implementation) with implementation scheduled for 2026-2027 and a target of removing 30 kilograms of waste from irrigation channels and the Kandangjati River area.
While actions toward achieving best practice have been initiated as required by the indicator, the site has not provided baseline documentation (studies, data, photos, or videos) showing the status of IWRAs prior to interventions, which is necessary to verify whether the implemented practices effectively maintain or enhance these areas as per indicator 3.9.4.

3.9.5 *Actions towards achieving best practice related to targets in terms of WASH shall be implemented.*

Yes

Comment

The site has established a clear connection between WASH best practices and actions within its water stewardship plan under indicator 3.6.1. Several WASH best practices have been put into action:
Best Practice: "Upgrading sanitation facilities from wet to dry toilets to enhance hygiene, reduce water usage, and promote sustainable sanitation." This involves modernizing toilet infrastructure to meet health and safety standards while improving water efficiency. The site renovated toilet cubicles from wet to dry configurations, completing 65 out of 153 targeted cubicles from September 2024 to December 2027. Water consumption decreased from 13.74 to 12.96 m^3 per million cigarettes following renovations.
Best Practice: "Carrying out comprehensive WASH assessments to evaluate hygiene and sanitation in communities near industrial sites." This entails systematic evaluation of water, sanitation, and hygiene access and quality in catchment areas to guide targeted actions. A comprehensive WASH assessment was carried out from January to June 2025, involving a survey of 330 respondents from the communities of Kali Rungkut and Kedung Baruk. This assessment was designed to evaluate the local conditions of hygiene and sanitation in accordance with Permenkes No. 2 of 2023.
Best Practice: "Implementing community education programs on healthy living behaviors, including correct waste disposal and sanitation hygiene." This includes organized awareness campaigns to improve understanding of sanitation principles and prevent waterborne diseases. The site has developed and executed education programs aimed at promoting healthy living practices. Notable initiatives include the Clean Living Behavior Education program, which engaged 110 participants in July 2025; the Water Stewardship Socialization event for 40 participants in February 2025; and the Reusable Sanitary Napkin Education program with 30 participants in September 2025. Additionally, radio broadcasts on water stewardship were transmitted three times weekly from November 2024 to December 2025, and 14 employees participated in socialization sessions in November 2024.
Best Practice: "Installing separate waste collection facilities to promote proper waste disposal and lessen environmental contamination." This involves providing distinct bins for various waste types to support proper disposal and recycling. The site established 2 waste banks in September 2025, each collecting at least 7 kg of sorted plastic bottles monthly. In partnership with Surabaya City Environmental Service, 15 trash bins and 3 waste banks were installed in Kedung Baruk and Kali Rungkut Sub-districts in August 2025, enabling segregated disposal of organic, inorganic, and hazardous waste.
Best Practice: "Relocating food prep and dining areas away from wastewater treatment zones to prevent contamination and disease breeding." This practice emphasizes the spatial separation of food facilities from possible contamination sources to uphold hygiene standards. The site relocated the canteen from its previous site next to the wastewater plant to a new location between July and September 2025, resulting in zero disease vector cases (cockroaches, rats) at the new areas.

4	STEP 4: EVALUATE - Evaluate the site's performance.

4.1 *Evaluate the site's performance in light of its actions and targets from its water stewardship plan and demonstrate its contribution to achieving water stewardship outcomes.*

4.1.1 *Performance against targets in the site's water stewardship plan and the contribution to achieving water stewardship outcomes shall be evaluated.* Obs.

Comment

set in its water stewardship plan, presenting progress using specific metrics across multiple categories. However, not all actions and targets have quantified and clear measurement mechanisms. The topic of evaluation includes:

Water Balance Targets

The site implemented a two-phase piping improvement program to reduce unaccounted water. Phase 1 targeted a minimum 5% reduction and identified 38.39% unaccounted water. Phase 2 reduced unaccounted water to 4.47%. Water efficiency improved across three initiatives: toilet renovation reduced usage from 13.74 to 12.96 m^3 per million cigarettes in January 2024; meter revitalization reduced usage from 11.07 to 10.71 m^3 per million cigarettes in March 2025; aerator installation reduced usage from 11.11 to 10.18 m^3 per million cigarettes in August 2025. The aerator program exceeded the 1 m^3/month target by achieving 12 m^3/day water savings. The water meter digitalization program completed all 38 targeted meters.

Water Quality Targets

The site established zero breakdown targets for water purifier systems and wastewater treatment infrastructure. Results show zero failure cases during drinking water and freshwater distribution. Monthly wastewater monitoring confirms compliance with regulatory standards. The site replaced lamella media with bioballs and converted ex-sumpit infrastructure into pre-treatment systems. Freshwater quality monitoring occurs on a semester basis, drinking water quality monitoring occurs monthly, and wastewater quality monitoring occurs monthly; all laboratory result shows that the site complies with regulatory standards.

IWRA Targets

The site completed 100% of the Baseline Study, including catchment mapping, IWRA status, water quality status, and water risk assessment. Water quality analysis was conducted at upstream and downstream locations on the Avur Wonorejo River, Umbulan Spring, and within the catchment area using two data sets annually for residents' wells and PDAM water quality. The site installed 25 of 40 planned biopores, achieving 63% completion. The site monitored 41 existing biopores with no waterlogging during the rainy season, achieving 80% completion. The retention pond revitalization program repaired 45 meters of pond walls, preventing landslides.

WASH Targets

The site exceeded multiple participation targets. The AWS Stakeholder Forum attracted 117 participants, including 44 stakeholders, against the target of 30 stakeholders. Clean Living Behavior Education achieved 110 participants against a target of 85. The WASH Assessment surveyed 330 respondents across two villages. Social mapping identified 44 stakeholders, exceeding the minimum target of 20. Community socialization achieved 40 participants against a target of 30. Hygiene facilities donation installed 15 trash bins and 2 waste banks, exceeding the target of 10 bins. Toilet renovation completed 65 of 153 cubicles, achieving 65% completion. The Open Forum for LPU employees achieved 14 participants, exceeding the minimum of 10. The radio broadcast surveyed 200 respondents, exceeding the minimum of 98 and reducing the margin of error to 6.89%.

However, not all actions and targets have quantified and clear measurement mechanisms. There are no mechanisms in place to assess actual behavioral changes in water stewardship practices among the target audiences involved in the Kali Rungkut and Kedung Baruk community initiatives. This missing evaluation method raises concerns about the long-term impact and sustainability of these efforts. Several proposed initiatives, including tree planting, injection well study, mangrove cleanup, and Kedunglarangan water quality analysis, remain in planning phases at 0-30% completion without established quantifiable outcome metrics.

4.1.2	*Value creation resulting from the water stewardship plan shall be evaluated.*	Yes
Comment	The site quantified cost savings from three water efficiency initiatives using before-and-after consumption rate comparisons. The toilet revitalization program reduced water consumption rate from 13.74 m³ per million cigarettes (3-month average August-October) to 12.96 m³ per million cigarettes in January 2025, generating 12.73 m³ monthly savings equivalent to 10,390.79 rupiah or 0.64 dollars per month for 8 toilet cubicles. Scaling to 65 renovated cubicles produces 84,425.20 rupiah or 5.18 dollars monthly cost avoidance. The water meter revitalization initiative reduced consumption from 11.06 m³ per million cigarettes (3-month average November 2024-January 2025) to 10.71 m³ per million cigarettes in March 2025, achieving 87.40 m³ monthly savings equivalent to 71,318.40 rupiah or 4.38 dollars cost avoidance. The water aerator installation program demonstrated the highest water efficiency improvement, reducing consumption from 11.11 m³ per million cigarettes (3-month average April-June 2025) to 10.18 m³ per million cigarettes in August 2025, generating 181.50 m³ monthly savings equivalent to 148,100.18 rupiah or 9.09 dollars monthly cost avoidance. The site also maintains a sanction schedule for water management violations at Plant Rungkut 2, categorized under Air Pollution Control (PPA) with penalties ranging from Rp 1,000,000 to Rp 15,000,000 for violations including lack of coordination with upstream/downstream parties, incomplete TAG coordination, incomplete environmental monitoring reporting through SIMPEL PPU system, incomplete emission load calculations, and inadequate emergency response systems for water contamination.	
4.1.3	*The shared value benefits in the catchment shall be identified and where applicable, quantified.*	Yes

Comment

The site has identified shared value benefits in the catchment area, supported by documented quantities across economic, environmental, and social categories. These include:
Economic Benefits to Catchment
The site provided free water quality monitoring data to catchment stakeholders, including upstream and downstream analysis on the Avur Wonorejo River, clean water quality analysis for residents' wells and PDAM water quality, and Umbulan Spring quality assessment. This eliminates testing costs for community members and local authorities requiring water quality information for decision-making. The retention pond revitalization repaired 45 meters of pond walls, preventing landslides that would damage surrounding properties. The biopore program installed 25 units and monitors 41 existing units, reducing waterlogging during the rainy season, preventing flood damage to neighboring areas, and maintaining accessibility for residents and businesses around the site.
Environmental Benefits to Catchment
The piping system upgrades reduced unaccounted water from 38.39% to 4.47%, preventing wastewater leakage into soil and groundwater that supplies community wells. The biopore installation of 25 units and retention pond revitalization increases rainwater infiltration into the soil, raising groundwater levels that benefit catchment water availability for other users. The secondary containment IPAL was completed in May 2025, preventing wastewater spills during emergencies, protecting the surrounding environment and water bodies from pollution. The site provided 15 waste bins and 2 waste banks to Kedungbaruk and Kalirungkut Sub-districts, reducing waste disposal into drainage channels and rivers that cause water quality degradation.
Social and Cultural Benefits to Catchment
In community education, the site conducted a Clean Living Behavior Education program engaging 110 participants, surpassing the target of 85 participants, raising awareness about not littering in rivers or drainage channels to prevent flooding risks affecting Ring 1 communities. The water quality importance socialization engaged 30 participants, exceeding the target of 25 participants, increasing community understanding of clean water management impacts on health and the environment. The reusable sanitary napkin education engaged 30 participants, surpassing the target of 20 participants, reducing non-biodegradable waste in community waste streams and promoting menstrual health awareness.
For sanitation infrastructure, the site provided 15 waste bins and 2 waste banks to Kedungbaruk and Kalirungkut Sub-districts in partnership with Surabaya City Environmental Service, exceeding the target of 10 bins. This infrastructure enables proper waste separation, reducing disease sources and promoting healthy lifestyles in catchment communities. The community socialization engaged 40 participants, surpassing the target of 30 participants. The AWS Stakeholder Forum engaged 117 participants, including 44 stakeholders from industrial sectors, community institutions, Environmental Services, and Brawijaya University, creating collaboration platforms for addressing shared water challenges.

Additionally, the site conducted a Baseline Study that included IWRA analysis, water quality status, and water-related risks. A WASH Assessment surveyed 330 respondents across 2 villages: Kedungbaruk and Kalirungkut, identifying hygiene and sanitation conditions affecting community health and informing future interventions. Social mapping identified 44 stakeholders, including minority groups within the catchment area, ensuring inclusive engagement in water stewardship programs.

Documented evidence shows improvements in environmental infrastructure, preventing contamination and increasing water availability, community engagement activities raising awareness and behavioral change, water quality data provision eliminating testing costs, sanitation infrastructure reducing disease risks, and stakeholder platforms enabling collaboration on shared water challenges delivered to catchment communities and benefits for the communities within the catchment area.

4.2 *Evaluate the impacts of water-related emergency incidents (including extreme events), if any occurred, and determine the effectiveness of corrective and preventative measures.*

4.2.1 *A written annual review and (where appropriate) root-cause analysis of the year's emergency incident(s) shall be prepared and the site's response to the incident(s) shall be evaluated and proposed preventative and corrective actions and mitigations against future incidents shall be identified.*

Yes

Comment: There have been no emergency cases for over 5 years, with management reviews conducted once per year. All events are logged in the online plant portal application, which is accessible only to EHS staff. Any emergency response is also discussed during EHS meetings. The site has established accident reporting and emergency response procedures.

4.3 *Evaluate stakeholders' consultation feedback regarding the site's water stewardship performance, including the effectiveness of the site's engagement process.*

4.3.1 *Consultation efforts with stakeholders on the site's water stewardship performance shall be identified.*

Yes

Comment: The site has documented stakeholder consultations regarding water stewardship performance conducted at the AWS Stakeholder Forum and Sharing Session on May 27, 2025, at the Bumi Hotel Surabaya. The event was attended by 117 participants representing 44 distinct stakeholder groups, including government agencies, industrial companies, academic institutions, local communities, media representatives, healthcare facilities, non-governmental organizations (NGOs), water management authorities, sub-district offices, and community organizations, notably including marginalized groups from Kali Rungkut and Kedung Baruk villages.
The consultation addressed water-related risks pertinent to the Surabaya Watershed and the Rejoso Watershed, with comprehensive feedback gathered from stakeholders. Perum Jasa Tirta presented initiatives aimed at enhancing water stability within the Brantas Watershed, which encompass rainwater management in reservoirs and the execution of monthly water quality assessments. BBWS Brantas discussed the construction of bank reinforcement along the Jagir River and the implementation of flood control programs, emphasizing the necessity for collaboration with the City Government.
The Surabaya City Health Office elaborated on a water quality testing program for PERUMDA Surya Sembada and highlighted the ODF declaration in 2023, which promotes a healthy toilet program that includes communal IPAL and grease trap facilities for effective household liquid waste management. PT Air Bersih Umbulan Spring Management detailed their water treatment processes, which involve chlorine disinfection, along with the annual tree planting initiatives conducted around the Rejoso Watershed.
Additionally, the East Java Provincial Environmental Service outlined concerns regarding river pollution stemming from industrial and domestic waste, advocating for mandatory 24-hour wastewater monitoring alongside a rewards-and-punishments framework to enhance compliance. The Surabaya City Environmental Service described efforts to revitalize riverbanks in order to reduce potential waste disposal through the creation of community parks. Furthermore, PDAM Surya Sembada reported that 93% of the water distributed from the Surabaya River encounters significant pollution challenges, exacerbated by climate change that affects the capacity of existing dams.
All attendance lists, minutes from the meetings, and photographs are available the consultation.

4.4 *Evaluate and update the site's water stewardship plan, incorporating the information obtained from the evaluation process in the context of continual improvement.*

4.4.1 *The site's water stewardship plan shall be modified and adapted to incorporate any relevant information and lessons learned from the evaluations in this step and these changes shall be identified.*

Yes

Comment: Since this is the initial certification for the site, the water stewardship plan will be evaluated after one year and will be presented in the stakeholder forum and during the internal site review in 2026.

5	STEP 5: COMMUNICATE & DISCLOSE - Communicate about water stewardship and disclose the site's stewardship efforts

5.1 *Disclose water-related internal governance of the site's management, including the positions of those accountable for legal compliance with water-related local laws and regulations.*

5.1.1 *The site's water-related internal governance, including positions of those accountable for compliance with water-related laws and regulations shall be disclosed.* ✓ Yes

Comment: The organizational structure of AWS, along with its water governance policies, is documented internally and externally. These documents outline the positions within the company and their corresponding responsibilities regarding water stewardship and compliance with relevant regulations. The public can access reports outlining the company's efforts in these areas on our website's sustainability page. The public can access reports outlining the company's in the website: https://www.sampoerna.com/resources/docs/default-source/sampoerna-market-documents/annual-report-and-sustainability-report-202448e13bc16c7468f696e2ff0400458fff.pdf?sfvrsn=db9553c8_0

5.2 *Communicate the water stewardship plan with relevant stakeholders.*

5.2.1 *The water stewardship plan, including how the water stewardship plan contributes to AWS Standard outcomes, shall be communicated to relevant stakeholders.* ✓ Yes

Comment: The site discussed the WSP plan during a stakeholder meeting on May 27, 2025, and followed up with an email in July to August 2025. Communication took place through visits to the stakeholders' offices, as well as emails and messages. Documentation from the meeting is available.

5.3 *Disclose annual site water stewardship summary, including: the relevant information about the site's annual water stewardship performance and results against the site's targets.*

5.3.1 *A summary of the site's water stewardship performance, including quantified performance against targets, shall be disclosed annually at a minimum.* ✓ Yes

Comment: The site summarized their water management performance on-site, including how they measured up against set targets. This information is available to the public via the company's website, direct message to the relevant stakeholder, and during stakeholder forums and meetings. On the website, the link address can be accessed at this link (page 150 -): https://www.pmi.com/resources/docs/default-source/pmi-sustainability/pmi-integrated-report-2024.pdf?sfvrsn=92e147c8_2

Based on the PMI report, the company has disclosed comprehensive quantified water stewardship performance metrics that demonstrate significant progress against established targets. PMI achieved a water intensity ratio of 2.3 cubic meters per million cigarette equivalents in 2024, substantially exceeding their aspiration of ≤3.1 and representing a 4% improvement from the previous year's 2.4 ratio. The company reported total water withdrawal of 3.23 million cubic meters in 2024, while achieving an impressive 31% absolute reduction in water consumption between 2018 - 2024 and a 51% reduction in water intensity versus the 2018 baseline.

5.4 *Disclose efforts to collectively address shared water challenges, including: associated efforts to address the challenges;engagement with stakeholders; and co-ordination with public-sector agencies.*

5.4.1 *The site's shared water-related challenges and efforts made to address these challenges shall be disclosed.*

Yes

Comment

The site addresses water-related challenges and mitigation efforts through the AWS Stakeholder Forum, which documents stakeholder engagement and feedback in addition to facilitating direct interaction with water infrastructure owners.
The following outlines the primary water-related challenges and corresponding efforts undertaken from 2024 to 2025:
1. Flooding (High Risk): The challenges stem from land use changes, deficient drainage systems, and urban density. Mitigation efforts include a completed Baseline Study, the installation of additional pumps, and the progress of a biopore program with 20 units (25% complete). Collaborative initiatives to manage watersheds and enhance drainage systems are also in place.

2. Sanitation and Clean Water Facilities (High Risk): The Kali Rungkut and Kedung Baruk sub-districts face inadequate waste disposal and sanitation facilities. Completed measures comprise a WASH Assessment, social mapping of stakeholders, renovations to nine toilet facilities, and community engagement initiatives reaching a significant number of residents.

3. Water Quality of Bodies (Moderate Risk): The Surabaya watershed is classified as Water Class IV, characterized by elevated total coliform levels from domestic and industrial sources. Efforts include the channeling of wastewater to the SIER wastewater treatment plant, continuous maintenance of piping systems, and routine monitoring to ensure compliance with quality standards.

4. Excessive Water Use (Moderate Risk): Increased demand for water from surface sources creates sustainability concerns. Efforts to address this issue include enhanced water efficiency, the installation of water aerators (completed), digitalization of water meters, and social campaigns aimed at promoting efficient water management practices.

5. Drought (Low Risk): Challenges such as decreased water absorption and deforestation elevate the risk of drought. Ongoing efforts include reforestation initiatives, conservation of water catchment areas, and the implementation of public awareness programs focused on water-saving irrigation technology.

6. Water Quality (Low Risk): Potential risks include pipe leaks and the possibility of wastewater exceeding prescribed quality standards. Current initiatives include the upgrade of the water purification system, which is at 90% completion, along with regular monitoring efforts.

5.4.2 *Efforts made by the site to engage stakeholders and coordinate and support public-sector agencies shall be identified.*

Yes

Comment

The site outlines its efforts in stakeholder engagement and coordination with public-sector agencies through documented visits, consultations, forums, and collaborative programs. Engagement with water infrastructure owners is evidenced by three documented site visits. On June 26, 2025, the team visited the Perumda Air Minum Surya Sembada office to consult with the Production Manager about water sources, water infrastructure, related challenges, and mitigation actions. On the same day, they visited the IPAM Karangpilang III facility to consult with both the Engineer and the Head of Perumda Air Minum Surya Sembada regarding water sources, infrastructure, challenges, mitigation measures, distribution routes, and the mapping of the Umbulan Water Spring distribution locations.
On July 14, 2025, the team visited the Umbulan SPAM (Drinking Water Supply System) site to gather information about water sources, infrastructure, challenges, mitigation measures, and water quality at the Umbulan spring. These visits included photographic documentation of consultations with infrastructure managers, facility tours, meeting notes, and official correspondence concerning sampling quality procedures and requirements.

5.5 *Communicate transparency in water-related compliance: make any site water-related compliance violations available upon request as well as any corrective actions the site has taken to prevent future occurrences.*

5.5.1	*Any site water-related compliance violations and associated corrections shall be disclosed.*	Yes
Comment	No water-related compliance violations or corrective measures to report.	
5.5.2	*Necessary corrective actions taken by the site to prevent future occurrences shall be disclosed if applicable.*	Yes
Comment	There have been no water-related compliance violations and no associated corrections required.	
5.5.3	*Any site water-related violation that may pose significant risk and threat to human or ecosystem health shall be immediately communicated to relevant public agencies and disclosed.*	Yes
Comment	There have been no water-related compliance violations and no associated corrections required.	

Previous Findings

	All non-conformities raised in the previous audit have been satisfactorily closed.	N/A