



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

**IndahWater**  
*New Life for Water*



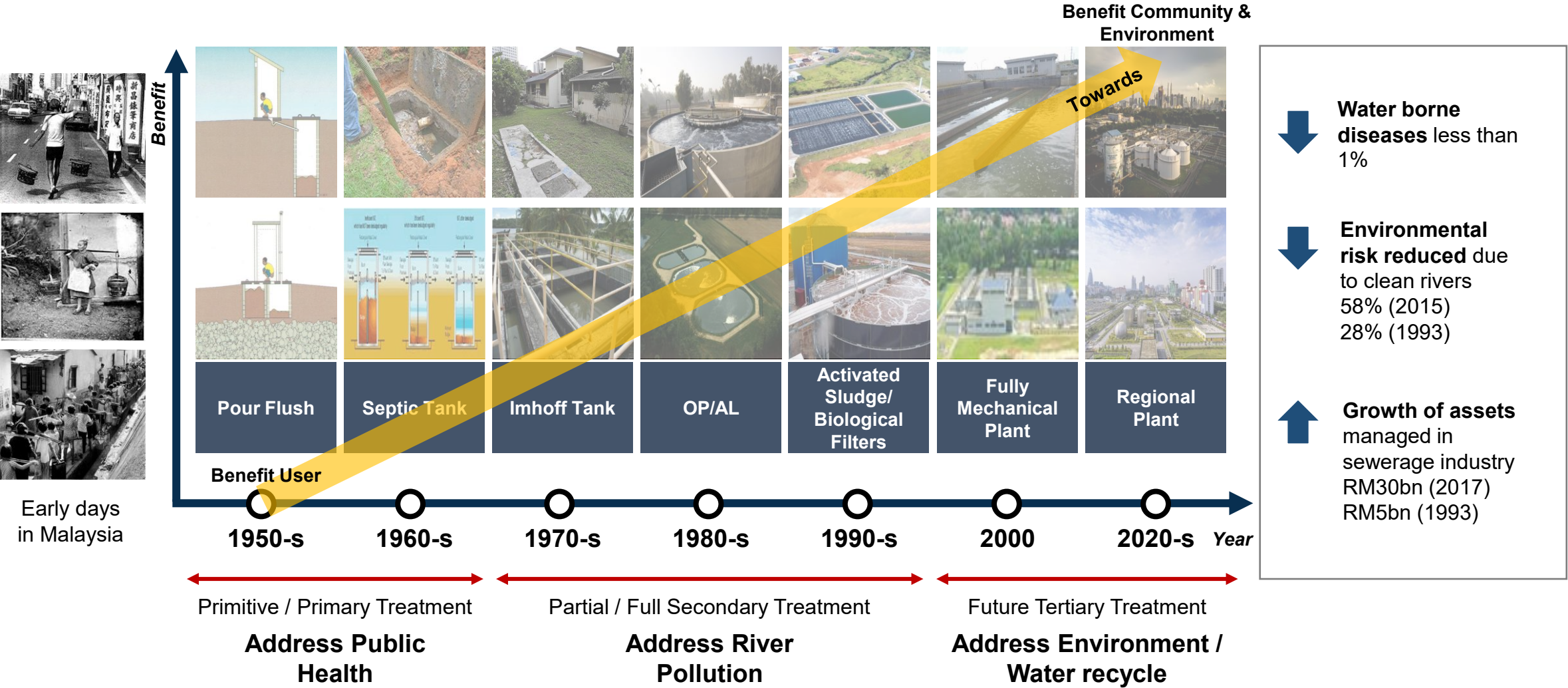
## **FORUM AIR 2026**

### **Indah Water Konsortium – Roles and Responsibilities**

**BY: Ts. Nabilah Bt Imran (CePSTPO/00230)**

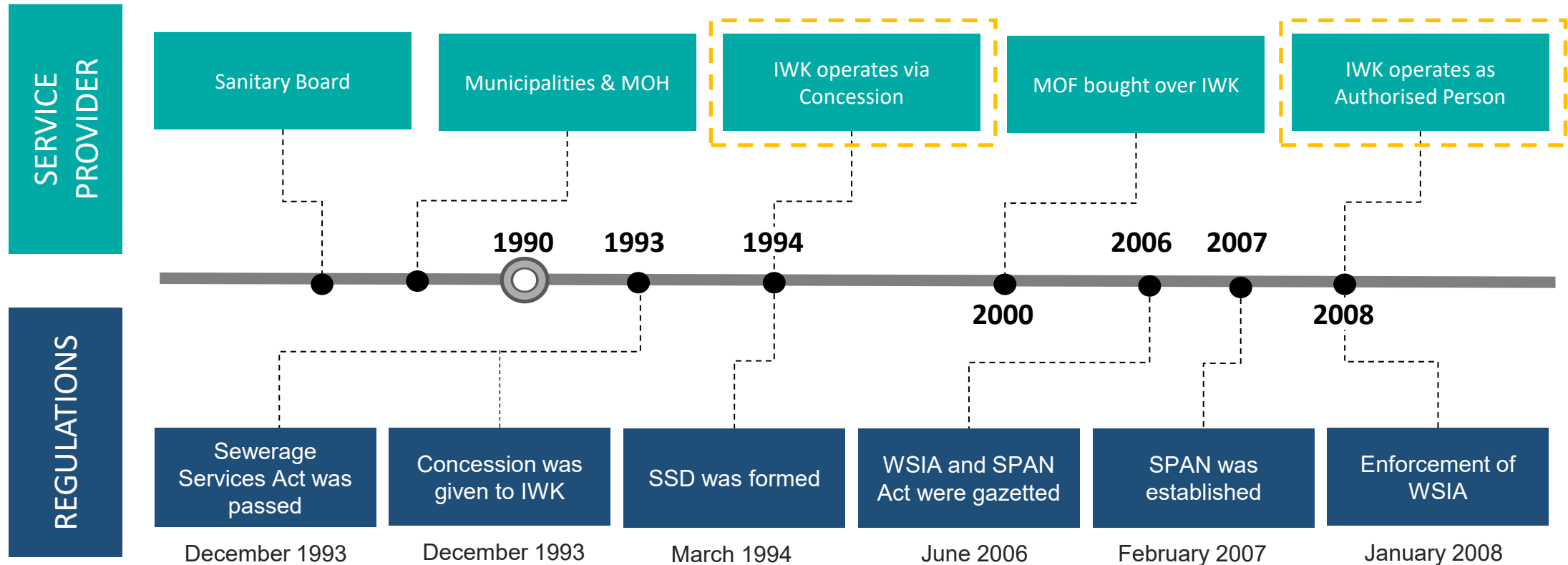
# **GETTING TO KNOW INDAH WATER KONSORTIUM**

# EVOLUTION OF MALAYSIA'S SANITATION SYSTEM



# JOURNEY OF INDIAH WATER KONSORTIUM

IWK has been appointed by the Federal Government as a Sewerage Services Concessionaire pursuant to the Concession Agreement dated 9 December 1993 and now operates as an Authorised Person pursuant to the Water Services Industry Act 2006



Note: SSD: Sewerage Services Department  
WSIA: Water Services Industry Act, 2006  
SPAN: National Water Service Commission

# OPERATIONS OF INDAH WATER



## OPERATION AND MAINTENANCE OF PUBLIC SEWERAGE SYSTEMS

Provide scheduled operation and maintenance of public STPs, NPSs and sewers within our service areas



## SEPTAGE MANAGEMENT AND DESLUDGING SERVICES

Perform scheduled desludging and demand desludging for septic tank users within our service areas



## SEWERAGE CAPITAL WORKS AND REFURBISHMENT MANAGEMENT

Provide project management and monitor capital works for both Government and SPAN-funded sewerage projects, and IWK's internal projects



## SEWERAGE PLANNING, SEWERAGE ASSET DATA MONITORING AND CERTIFYING SERVICES

Provide certification services: evaluating, certifying and approving sewerage facilities applications on behalf of SPAN



## WATER RECLAMATION PLANTS FOR NON-POTABLE USE

In collaboration with water operators, the Company has started producing reclaimed water to be sold and used by industries for non-potable usage.



## SEWERAGE TECHNICAL, OPERATIONAL AND ENVIRONMENTAL TRAININGS / CONSULTANCY SERVICES

Provide consultancy service and deliver professional technical and non-technical training on sewerage planning, engineering as well as operations and maintenance of sewerage systems



## TREATMENT OF INDUSTRIAL EFFLUENT SERVICES

Determine suitable and compatible industrial waste to be treated in existing STPs that comply with the effluent requirement and without additional modification costs to the STPs



## NON-CORE AND GREEN INITIATIVE

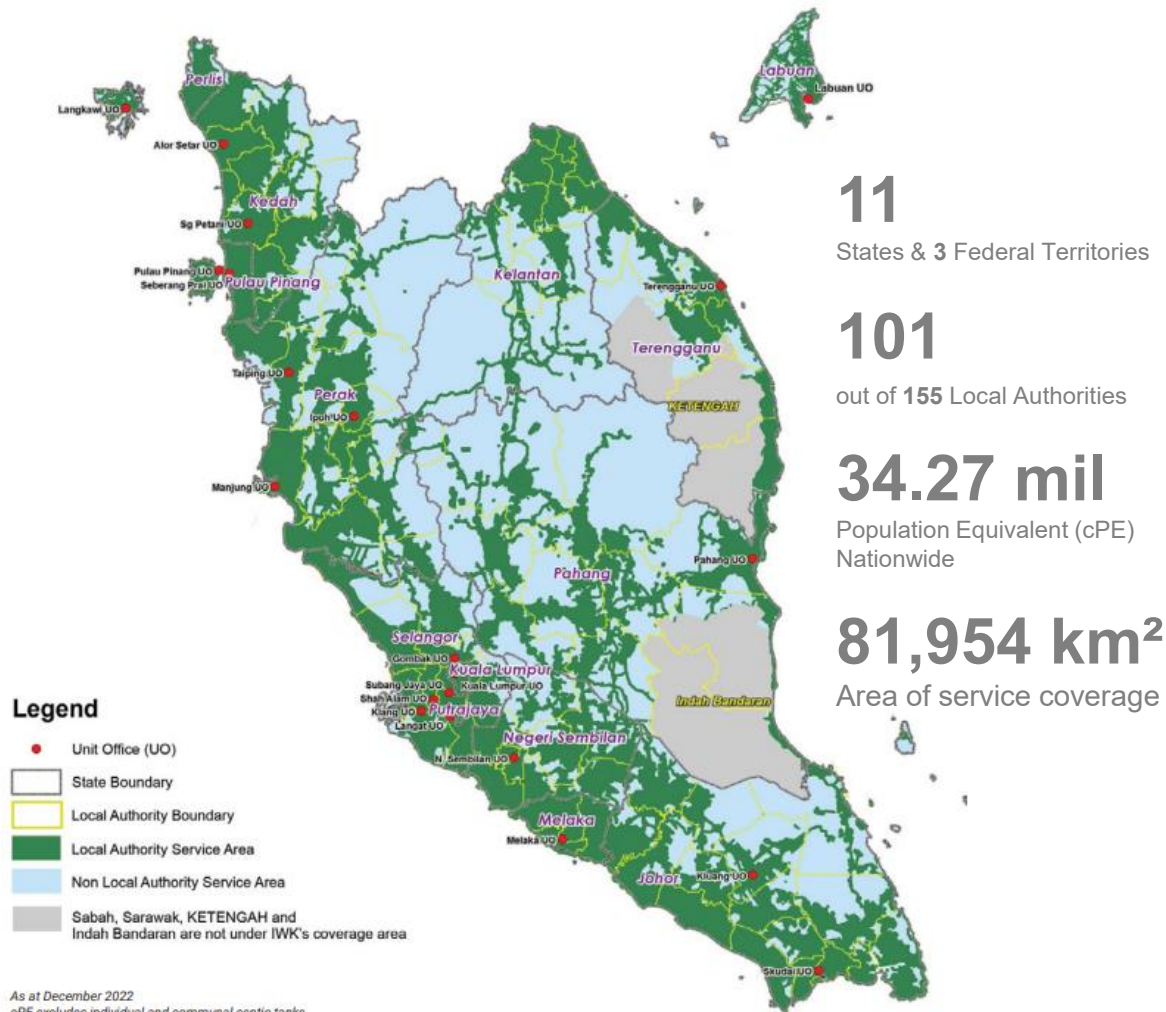
Implementation of non-core business and green initiatives to supplement IWK's main income stream and generate cost savings

Core Operations

Non-Core Operations

# CAPACITY OF INDAH WATER

## OUR COVERAGE OF SERVICES



## CAPACITIES



**7,838**  
Sewage  
Treatment Plants



**1,585**  
Network  
Pump Stations



**23,967km**  
Pipelines  
Length



**4**  
Water  
Reclamation Plant

## RESOURCES



**3,425** Human Capital



**1** Research Center



**21** Unit Offices



**1** Training Center



**59** Reporting Centers



**1** Gallery



**643** Vehicles



**2** Eco Parks



**5** Laboratories

# STANDARD & REGULATIONS ADHERE BY INDAH WATER

## Water and Sewerage Services

- Water Services Industry (Amendment) Act 2025
- Water Services Industry (Sewerage Charges) Regulations 2022, (Amendment) 2025
- Water Services Industry (Sewerage Charges) Regulations 2022, (Amendment) 2024
- Water Services Industry (Desludging Services) Regulations 2021 (Amendment) 2023
- Water Services Industry (Licensing) Regulations 2007, (Amendment) 2022
- Water Services Industry (Sewerage Services Charges) Regulations 2022
- Water Services Industry (Desludging Services) Regulations 2021
- Water Service Industry (Prohibited Effluent) Regulations 2021
- Groundwater Quality Standard for Agricultural Use, Edition 2019 by DOE
- Groundwater Quality Standard for Industrial Use, Edition 2019 by DOE
- Groundwater Quality Standard for Conventional Raw Water Treatment (Drinking Water), Edition 2019 by DOE
- Water Services Industry (Licensing) Regulations 2007
- Water Services Industry Act 2006 (WSIA)

## Environmental Quality

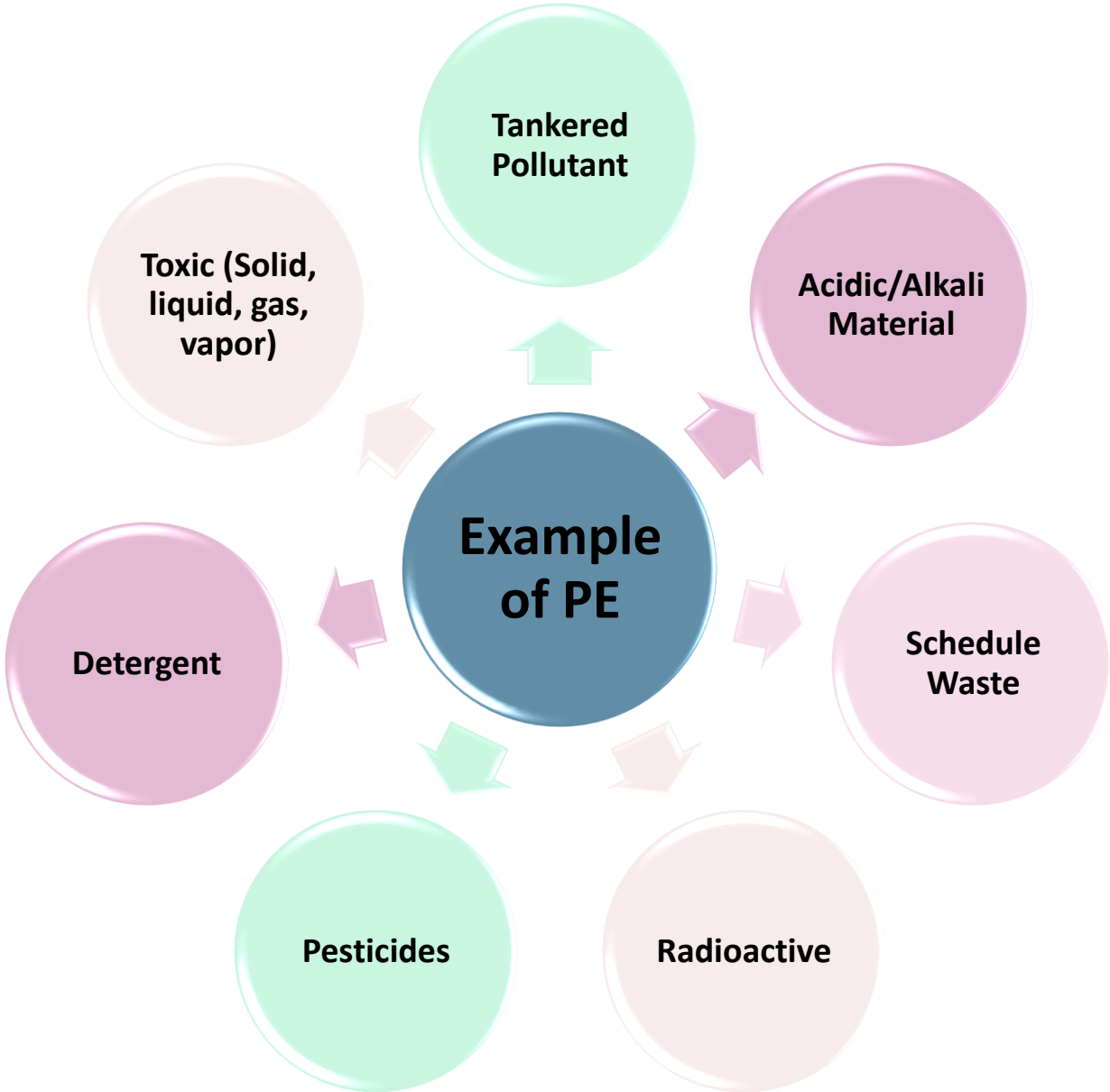
- Environmental Quality (Amendment) 2024
- Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015
- Environmental Quality (Clean Air) Regulations 2014
- Environmental Quality (Control of Diesel Engines) Regulations 1996 and Amendment 2000
- Environmental Quality (Sewage) Regulations 2009
- Solid Waste & Public Cleansing Act 2007
- Environmental Quality (Scheduled Wastes) Regulations 2005
- Environmental Quality Act 1974

**HOW IWK MANNAAGE CRISIS SUCH AS PROHIBITED  
EFFLUENT?**

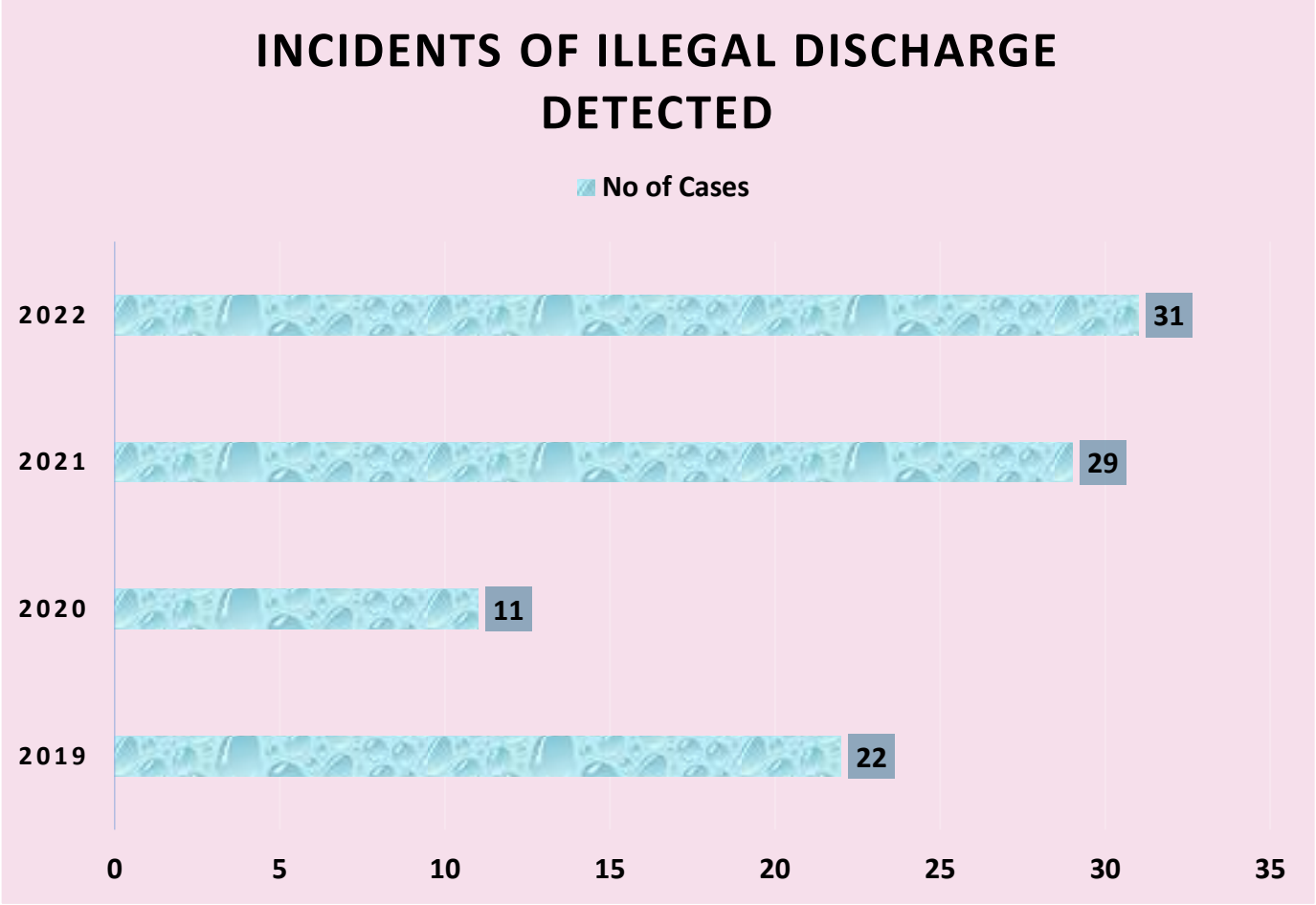
# WHAT IS PROHIBITED EFFLUENT?

ANY DISCHARGES AND SUBSTANCES THAT AFFECT THE DISPOSAL OF SEWAGE SLUDGE AS ORGANIC COMPOUND

DISCHARGES HAS A TOXIC EFFECT IN THE WATER COURSE THAT CONSTITUTE A HAZARD TO HUMANS OR ANIMALS.



# IWK CHALLENGES IN HANDLING PROHIBITED EFFLUENT



Excessive FOG



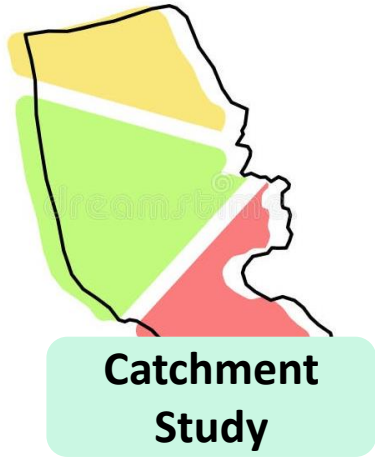
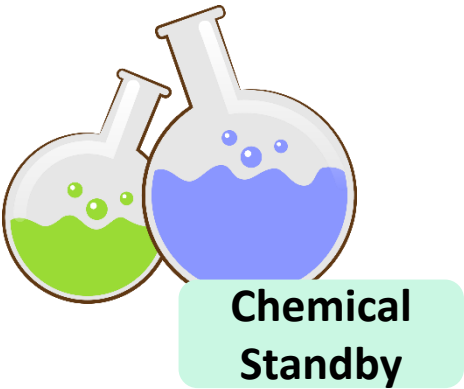
Chemical & Food Waste



Chicken blood

# HOW IWK MANAGE PROHIBITED EFFLUENT

PREVENTIVE ACTION



# HOW IWK MANAGE PROHIBITED EFFLUENT

## PREVENTIVE ACTION



|                                                                                    |                     |                                    |                     |
|------------------------------------------------------------------------------------|---------------------|------------------------------------|---------------------|
|  |                     |                                    |                     |
| INTEGRATED MANAGEMENT SYSTEM PROCEDURE                                             |                     |                                    |                     |
| MONITORING OF SEWAGE TREATMENT PLANT (STP)                                         |                     |                                    |                     |
| RECEIVING <b>PROHIBITED EFFLUENT</b>                                               |                     |                                    |                     |
| Doc. Ref<br>IWK/OMD/TRE/PR/04                                                      | Rev No<br><b>02</b> | Issue Date:<br><b>01 JULY 2022</b> | Page No.<br>1 of 16 |

### 1. OBJECTIVE

- 1.1 The objective of this procedure is to guide operational staffs on handling and reporting issue regarding STP/NPS/STF exposed to **prohibited effluent**.
- 1.2 This procedure highlights initiative/actions to be taken by Unit Offices to control and handle the impact of **prohibited effluent discharge** into treatment process of STP.

### 2. SCOPE

- 2.1 In the event of **prohibited effluent** is detected entering IWK's plant, Head of Operatic of Section (HOS) are required to carry out proper planning on actions to redu compliance for STP and improve the quality of effluent.

### 3. REFERENCE

- 3.1. IWK/OMD/TRE/G/01: Interpretation of Final Effluent Test Results and Analysis
- 3.2. IWK/OMD/TRE/G/03: Alternative Process Mitigation Action.
- 3.3. IWK/OMD/TRE/PR/09: Application of LTC
- 3.4. **Water Services Industry (Prohibited Effluent) Regulations 2021**

### 4. INPUT

- 4.1. Receive **prohibited effluent**



|                                                                                     |                     |                                    |                     |
|-------------------------------------------------------------------------------------|---------------------|------------------------------------|---------------------|
|  |                     |                                    |                     |
| INTEGRATED MANAGEMENT SYSTEM PROCEDURE                                              |                     |                                    |                     |
| MONITORING OF SEWAGE TREATMENT PLANT (STP)                                          |                     |                                    |                     |
| RECEIVING <b>PROHIBITED EFFLUENT</b>                                                |                     |                                    |                     |
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| Activity                                                                                                                                                                                                                                                                                                                                                                          | Process Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Responsibility                                                                                                                                  | Records / Reference Documents |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <pre>graph TD     A[Start] --&gt; B{7. Source is known?}     B -- No --&gt; C[10. Report to DOE/SPAN/Local Authority.]     B -- Yes --&gt; D{Direct from premises / Other sources}     D -- Direct from premises --&gt; C     D -- Other sources --&gt; E[8. Install manhole with special key.]     E --&gt; F[9. Identify transporter.]     F --&gt; C     C --&gt; G[End]</pre> | <p>7) Unit to identify source either direct from premises or other sources. Other sources can be from illegal desludging tanker, direct <b>prohibited effluent discharge</b> into manhole, etc. If unit unable to identify, repeat step 6.</p> <p>8) UO to install manhole cover lock at the identified manhole to prevent future <b>prohibited effluent discharge</b> through manhole (prioritize to isolated manhole with history of <b>prohibited effluent discharge incident</b>).</p> <p>9) Unit to investigate the transporter that discharge throw the <b>prohibited waste</b>.</p> <p>10) Unit to report to DOE / SPAN /Local Authority on the identified source.</p> | <p>HOS Tre/ Engineer/ Executive</p> <p>HOS Tre/ Engineer/ Executive</p> <p>HOS Tre/ Engineer/ Executive</p> <p>HOS Tre/ Engineer/ Executive</p> | <p>Report</p>                 |

#### 9.1. Lodge Police Report

- 9.1.1. Once prohibited effluent is detected, consideration to make a police report is required and HOO to refer to Head of Regional Operation (HRO) for decision before a police report is made.
- 9.1.2. Police Report shall be prepared in a standardised format (as sample in Attachment C), vetted and approved by HRO. The police report shall be made by a staff minimum of Manager position.



Chemical  
Standby

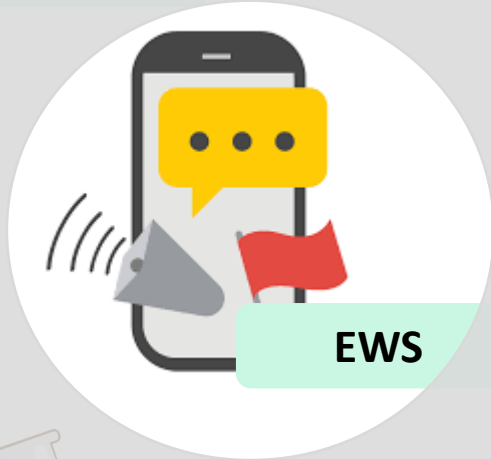


Risk  
Identification

IGIS

# HOW IWK MANAGE PROHIBITED EFFLUENT

## PREVENTIVE ACTION



10:35

### EWS Notification

 Dashboard

 Alarm

 Recovery

 History

SKUDAI

|        |        |
|--------|--------|
| JBR206 | JBT332 |
| JBT336 | JKT045 |
| PSG052 | JBR235 |
| JBR211 | JBR149 |
| JBR226 | JBR230 |
| JBR231 | JBR234 |
| JBR068 | JBR236 |
| JBR237 | JBR254 |
| JBT148 | JBT153 |
| JBT194 | JBR135 |

Created by Promosys Technology

10:35

### EWS Notification

 Dashboard

 Alarm

 Recovery

 History

HISTORY

User only received history for registered sites.

Search

PSG007 BLOWER 1 TRIP

Received Time: 28-11-2023 13:37:46  
Ack By: System Admin  
Ack Time: 28-11-2023 14:58:14  
Resolved Time: 2023-11-28 14:58:14  
Remark:

PSG007 BLOWER 1 TRIP

Received Time: 28-11-2023 09:34:04  
Ack By: System Admin  
Ack Time: 28-11-2023 09:35:03  
Resolved Time: 2023-11-28 09:35:03  
Remark:

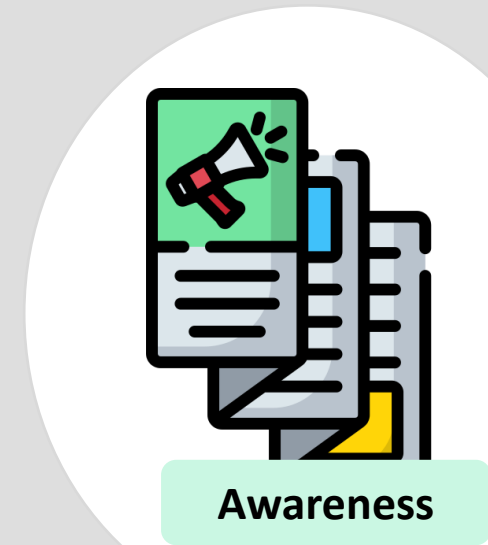
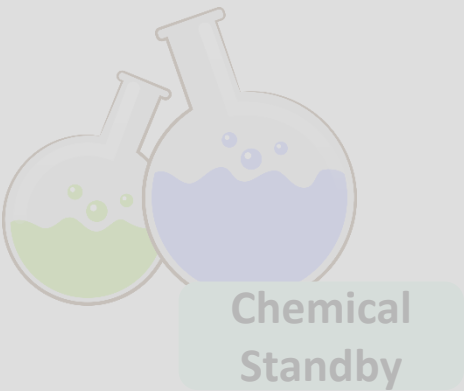
PSG007 BLOWER 1 TRIP

Received Time: 02-11-2023 12:45:55  
Ack By: System Admin  
Ack Time: 02-11-2023 12:47:48  
Resolved Time: 2023-11-02 12:47:48  
Remark:

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# HOW IWK MANAGE PROHIBITED EFFLUENT

PREVENTIVE ACTION



# HOW IWK MANAGE PROHIBITED EFFLUENT

PREVENTIVE ACTION



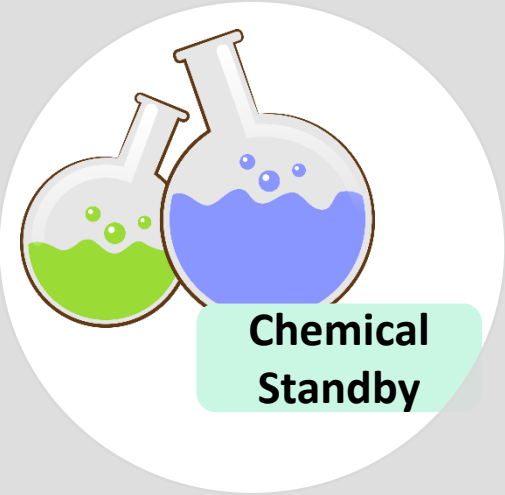
LIME STONE



FOG DEGRADE POWDER



OIL BOOM



Chemical Standby



CHLORINE



CHP



MICROBES/ENZYME

Surveillance team

# HOW IWK MANAGE PROHIBITED EFFLUENT

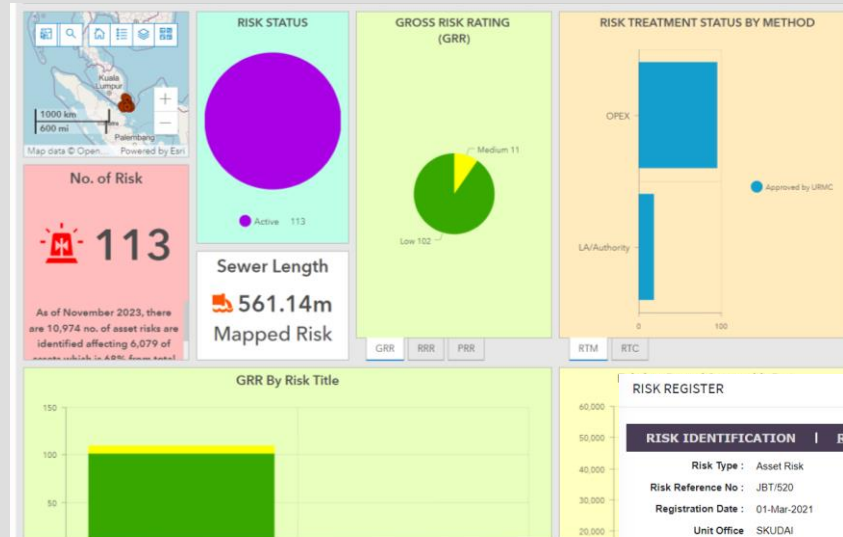
PREVENTIVE ACTION



IWK Risk Management  
System  
IRMS



Risk  
Identification



Awareness

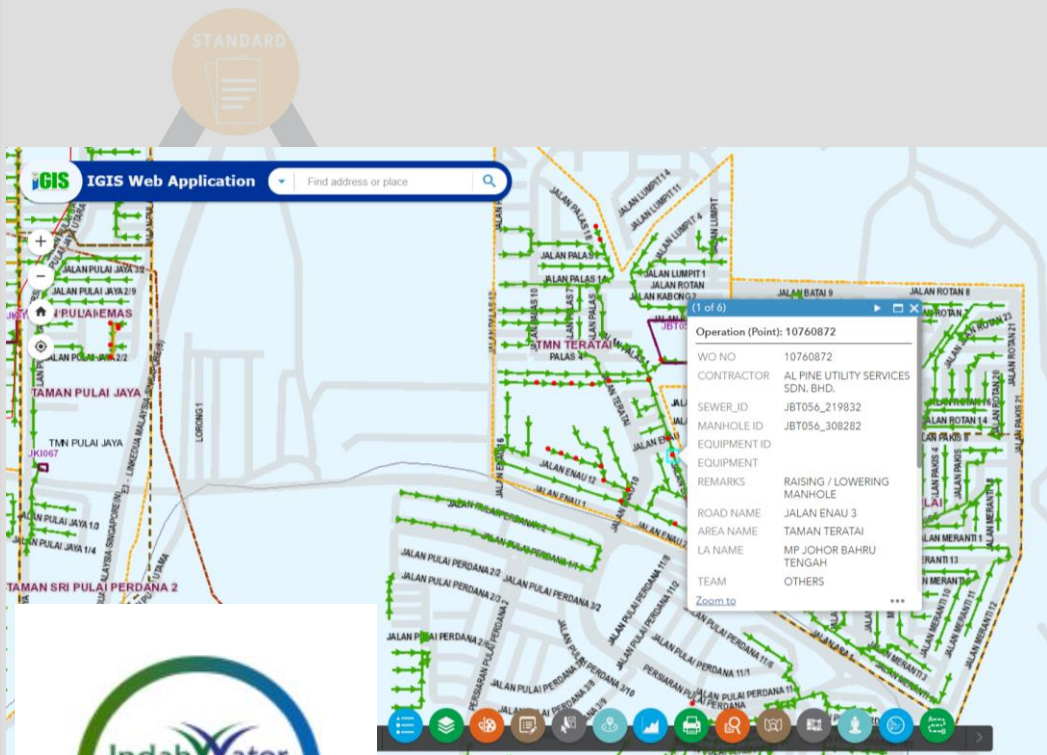


**RISK REGISTER**

| RISK IDENTIFICATION                                                                                                                                                                                                                                     |            | RISK TREATMENT PLAN                                                                                                                     |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>Risk Type :</b> Asset Risk                                                                                                                                                                                                                           |            | <b>* Date Identified :</b> 10-Oct-2019                                                                                                  |                      |
| <b>Risk Reference No :</b> JBT/520                                                                                                                                                                                                                      |            | <b>Expiration Date :</b> 01-Jan-1999                                                                                                    |                      |
| <b>Registration Date :</b> 01-Mar-2021                                                                                                                                                                                                                  |            |                                                                                                                                         |                      |
| <b>Unit Office :</b> SKUDAI                                                                                                                                                                                                                             |            |                                                                                                                                         |                      |
| <b>ASSET INFORMATION</b>                                                                                                                                                                                                                                |            |                                                                                                                                         |                      |
| <b>* Asset No :</b> JBT291                                                                                                                                                                                                                              |            | <b>State :</b> JOHOR                                                                                                                    |                      |
| <b>AMIS Plant Status :</b> ACTIVE                                                                                                                                                                                                                       |            | <b>Plant Type :</b> IDEA                                                                                                                |                      |
| <b>Location :</b> RSTP NUSAJAYA-MEDINI                                                                                                                                                                                                                  |            | <b>Connected PE :</b> 104721                                                                                                            |                      |
| <b>Takeover Date :</b> 5/15/2014                                                                                                                                                                                                                        |            | <b>Design PE :</b> 166666                                                                                                               |                      |
| <b>Source Code :</b> T04 - DESIGN AS PER GUIDELINES                                                                                                                                                                                                     |            | <b>DOE Category :</b> PARA (i) - NEW SEWAGE TREATMENT SYSTEM APPROVED AFTER 10TH DEC 2009 (SECOND SCHEDULE (REGULATION 7) OF EQAR(2009) |                      |
| <b>Effluent Standard DOE :</b> B                                                                                                                                                                                                                        |            | <b>Old Asset No :</b>                                                                                                                   |                      |
| <b>Object ID :</b> J1241                                                                                                                                                                                                                                |            |                                                                                                                                         |                      |
| <b>RISK IDENTIFICATION</b>                                                                                                                                                                                                                              |            |                                                                                                                                         |                      |
| <b>Context Diagram :</b> External & Internal Issue which may involve Politics/ Legal Issues, Regulatory/ Compliance Issues, Financial, External Providers Issues, Lifecycle of Asset, Customer Issues, Socio-Cultural Issues or Environmental Condition |            | <b>Sub Risk Category :</b> Illegal Discharge                                                                                            |                      |
| <b>Risk Category :</b> Asset Risk                                                                                                                                                                                                                       |            |                                                                                                                                         |                      |
| <b>* Risk Title :</b> STP/NPS & STF: Prohibited Effluent                                                                                                                                                                                                |            |                                                                                                                                         |                      |
| Any disapproved discharge to the plant other than domestic sewage from third party lead to non-compliance of plant performance (basic parameters i.e. O&G, BOD, COD, pH, AN & SS).                                                                      |            |                                                                                                                                         |                      |
| <b>Location :</b>                                                                                                                                                                                                                                       |            | <b>Sewer Length (m) :</b>                                                                                                               |                      |
| <b>From Longitude (x):</b>                                                                                                                                                                                                                              |            | <b>From Longitude (y):</b>                                                                                                              |                      |
| <b>RISK EVALUATION</b>                                                                                                                                                                                                                                  |            |                                                                                                                                         |                      |
| <b>GROSS RISK RATING</b>                                                                                                                                                                                                                                |            |                                                                                                                                         | <a href="#">View</a> |
| Impact                                                                                                                                                                                                                                                  | Likelihood | Gross Risk Rating                                                                                                                       |                      |
| Minor                                                                                                                                                                                                                                                   | Rare       | Low                                                                                                                                     |                      |
| <b>PLANNED RISK RATING</b>                                                                                                                                                                                                                              |            |                                                                                                                                         | <a href="#">View</a> |
| Impact                                                                                                                                                                                                                                                  | Likelihood | Planned Risk Rating                                                                                                                     |                      |
| Minor                                                                                                                                                                                                                                                   | Rare       | Low                                                                                                                                     |                      |
| <b>RESIDUAL RISK RATING</b>                                                                                                                                                                                                                             |            |                                                                                                                                         | <a href="#">View</a> |
| Impact                                                                                                                                                                                                                                                  | Likelihood | Residual Risk Rating                                                                                                                    |                      |
| Minor                                                                                                                                                                                                                                                   | Rare       | Low                                                                                                                                     |                      |

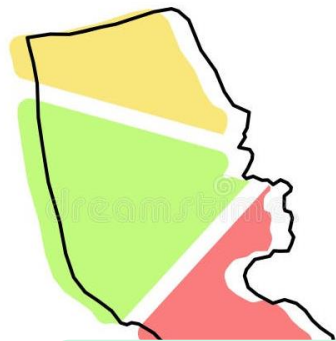
# HOW IWK MANAGE PROHIBITED EFFLUENT

## PREVENTIVE ACTION



IGIS

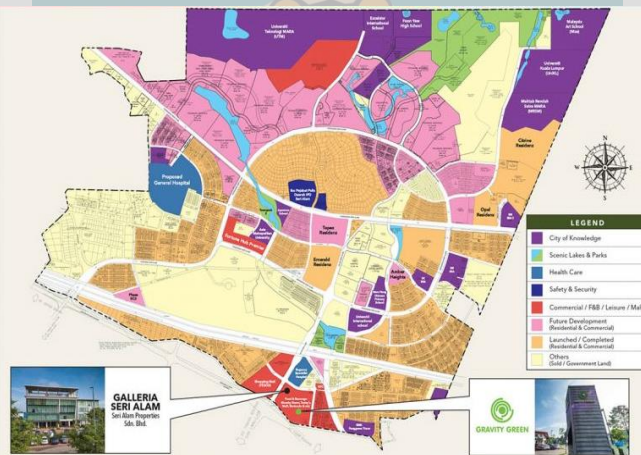
GIS-IGIS



Catchment Study

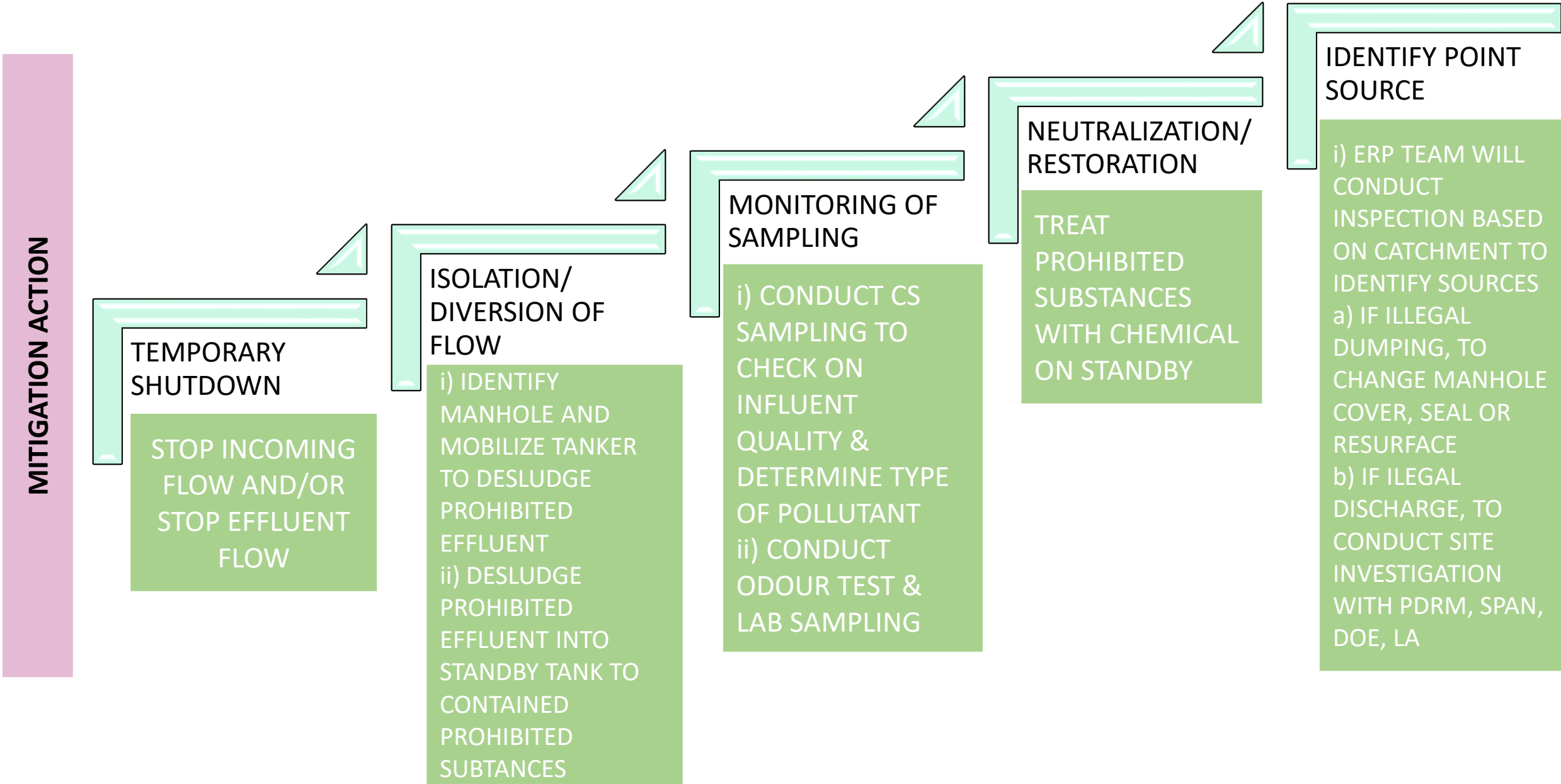


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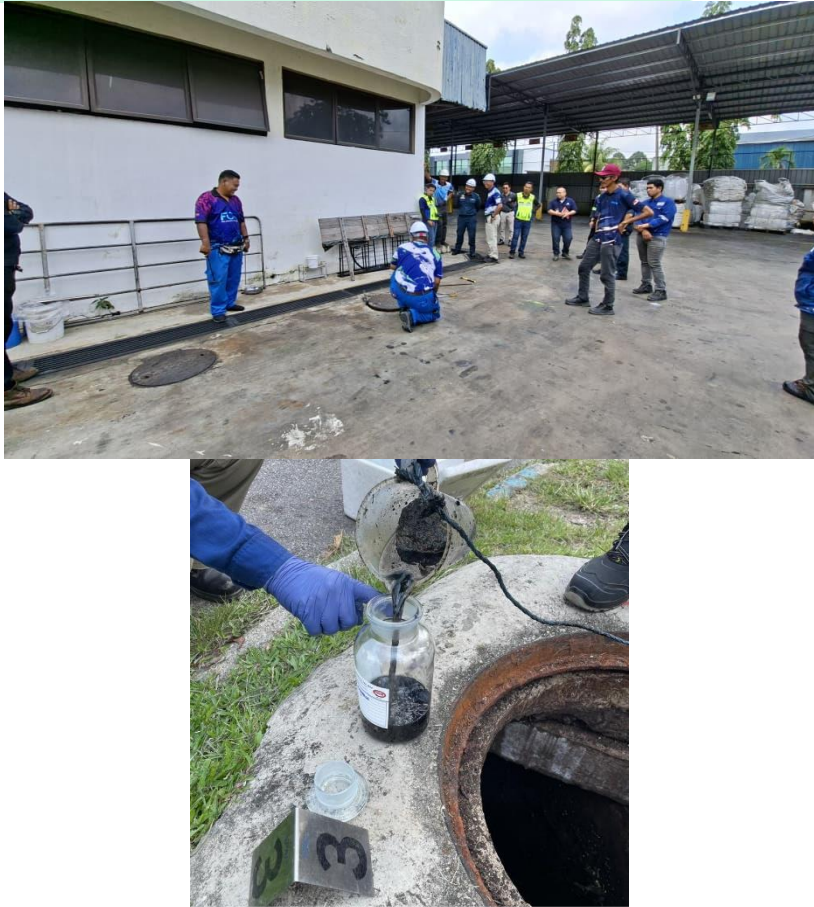




# HOW IWK MANAGE PROHIBITED EFFLUENT



# CASE STUDY IN IWK JOHOR BAHRU – KWSN PERINDUSTRIAN PASIR GUDANG



On 23<sup>rd</sup> June 2026, team found abnormal influent in STP. Police report was lodged and authority was informed.

Visit with authority (DOE, SPAN & MBPG) was conducted on 14<sup>th</sup> July 2026 to identify responsible person/premise.

Manhole checking at nearby responsible premise to confirm prohibited effluent.

# PUBLIC RESPONSIBILITY FOR PROHIBITED EFFLUENT ISSUE

- Upon seeing any suspicious activity at river, manhole, industrial area ect.
  - Record time and date
  - Record location and address (street name, TNB pole number, etc)
  - Record license plate & type of vehicle
  - Take photo and/or video (only if it safe for you to do so)
  - Contact below agency with evidence you have gathered



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