



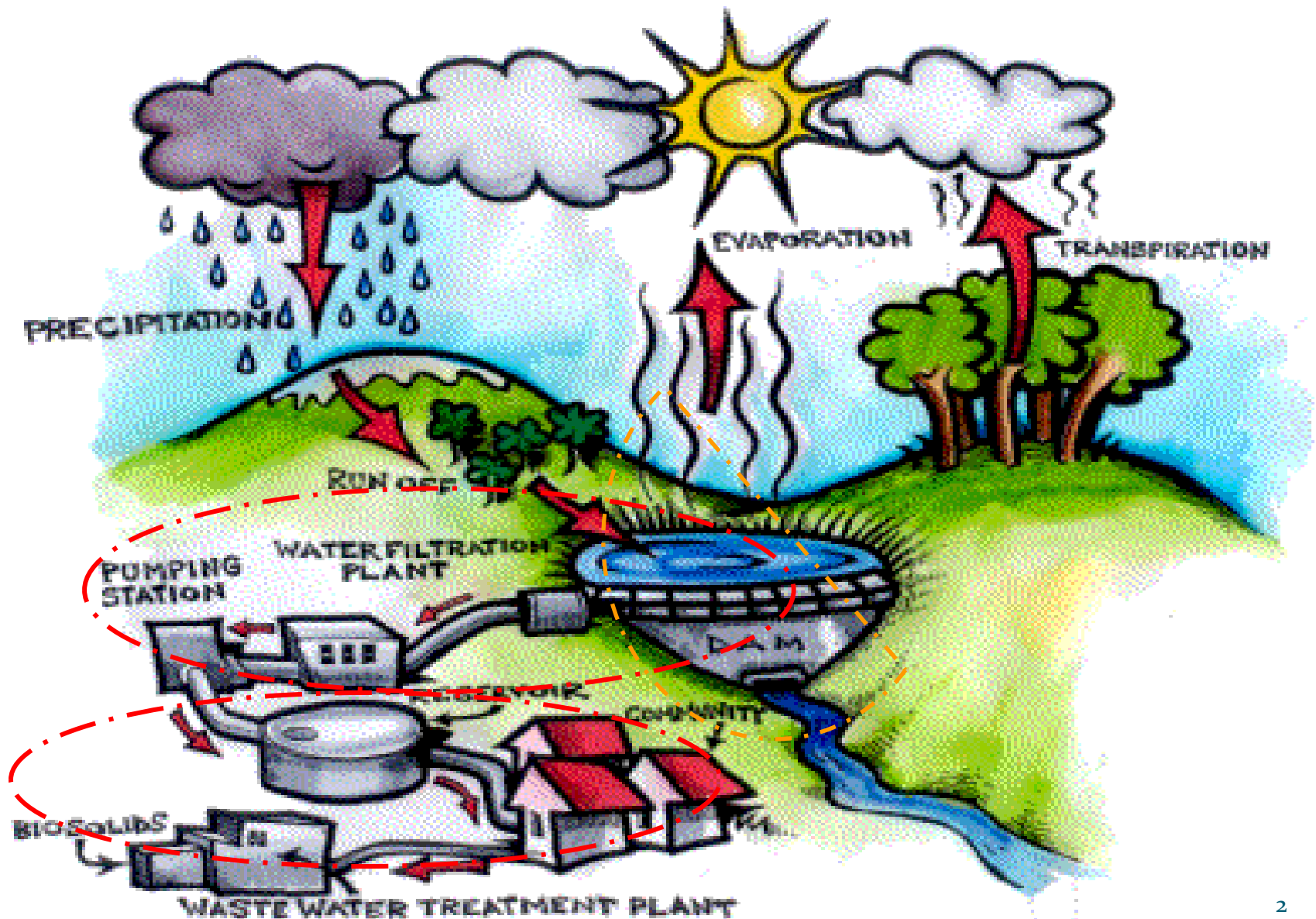
NATIONAL AUDIT DEPARTMENT OF MALAYSIA

Examples of Audit Topics and Audit Findings Regarding to Environmental Audit in Water Management Issues in Malaysia



WORKSHOP ON COOPERATIVE ENVIRONMENTAL AUDIT ON WATER MANAGEMENT, THE MEKONG RIVER BASIN MANAGEMENT

WATER AUDITING...The water cycle



FEDERAL CONSTITUTION

- **Water Services Industry Act (WSIA)**
- **National Water Services Commission (SPAN)**

Governing water industry services

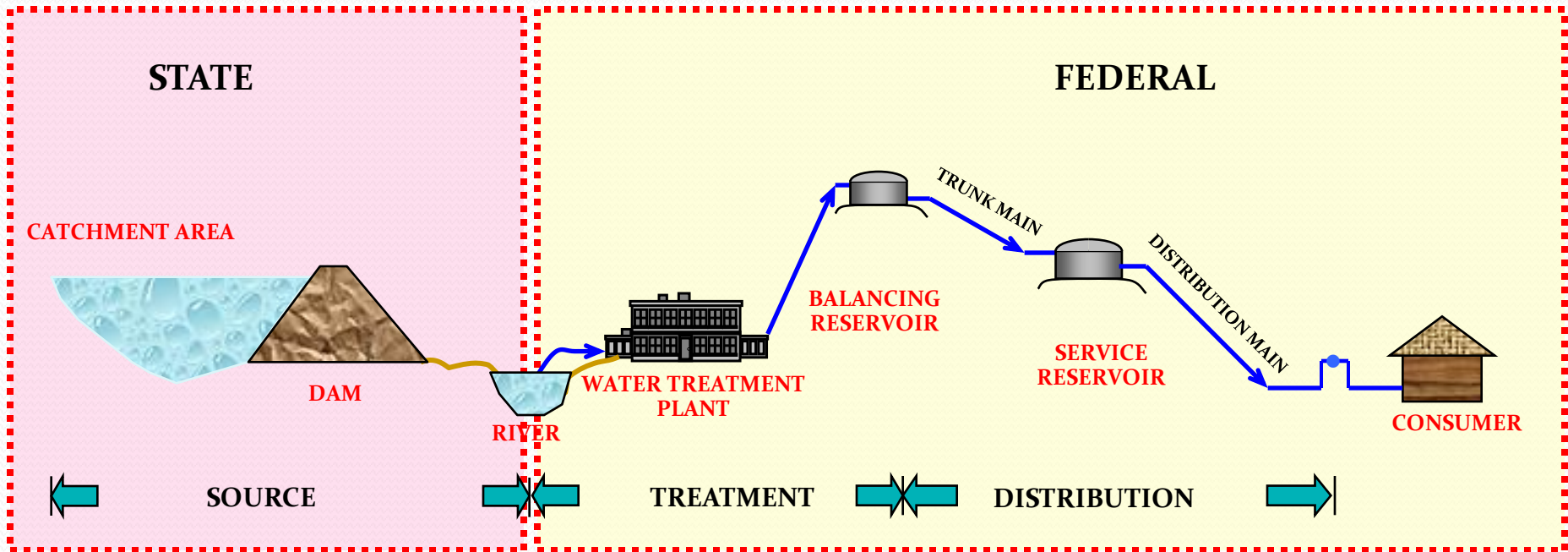
- **Federal Laws On Environment, Building, Health etc**
- **Federal Departments**

Governing environmental, building, health

- **State Water Enactment (raw water)**
- **State Water Department**

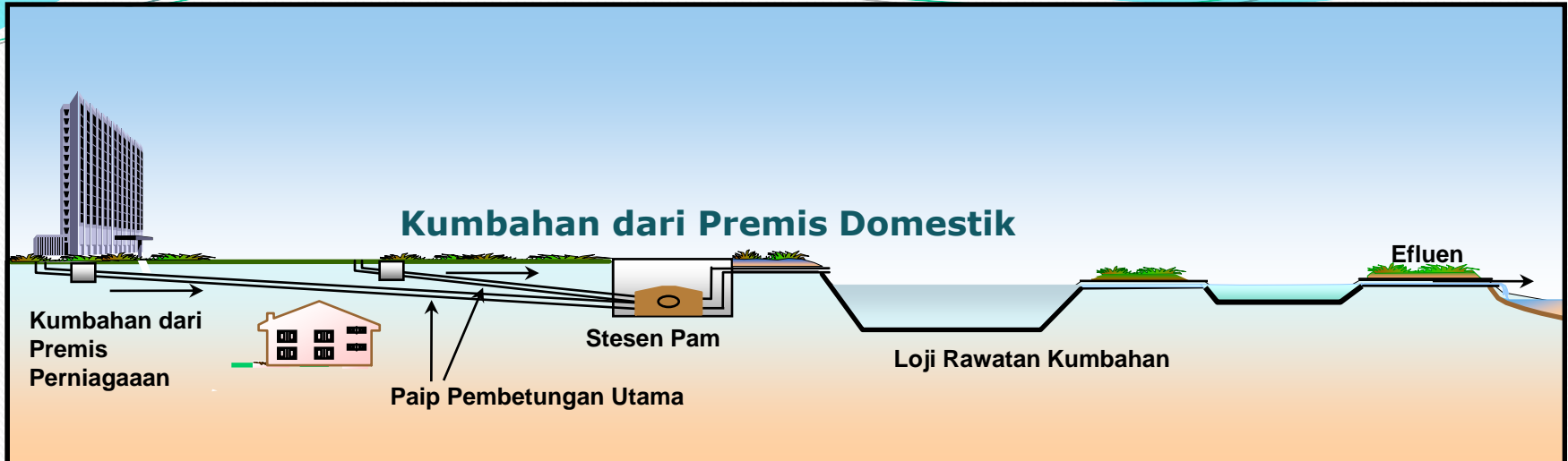
Governing water basin, extraction and conservation of raw water supply

WATER SUPPLY SYSTEM

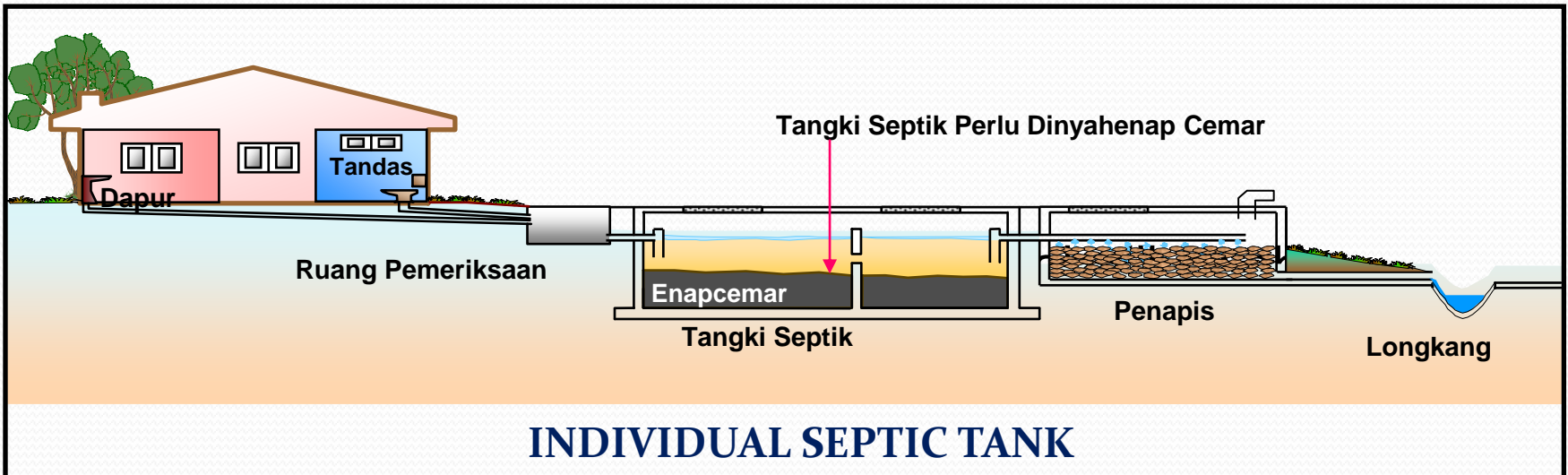


After Federal Constitution Amendment

SEWERAGE SYSTEM



CONNECTED SEWERAGE SYSTEM



INDIVIDUAL SEPTIC TANK

Sewerage services remain under the jurisdiction of Federal Government

AUDITEE



NATIONAL AUDIT DEPARTMENT
OF MALAYSIA



**Water
Resource
Management**

**Water Supply
Management**

**Flood
Mitigation**

**MAIN TOPICS IN
WATER
MANAGEMENT**

**Erosion
Control And
Management**

**Waste Water
And Sewage
Management**

1

Portable Water Supply Management

- Drinking Water Quality
- Non Revenue Water
- Billing Management
- Project Management

2

Flood Mitigation

- Construction of dam
- Maintenance Management – SMART Tunnel

3

Waste Water & Sewage Management

- Project Management – Construction of Sewage Treatment Plant (STP) and sewer network.
- STP Maintenance
- Effluent Compliance

WATER MANAGEMENT

4

Erosion Control Management

- Erosion Control Management – Rock Revetment, Breakwater, Bund Structure and Beach Nourishment

5

Water Resources Management

- Water Resources Management – pollution, catchment area, river basin

Water User Sectors



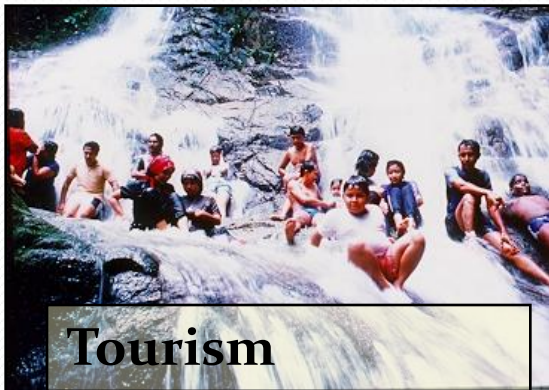
Environment



Fishery



Religion



Tourism



Sports



Energy



Transportation



Water supply



Agriculture

NEW STRAITS TIMES

EARTH MATTERS

WEDNESDAY, JUNE 15, 2005 3

Time to manage our rivers better

A fresh approach is needed to arrest the damaging effects of development in river basins, but can it be done? asks IDROS ISMAIL.

IT IS a harsh time. We know this from the recent floods in the country. Even as the national government departments are working to manage the crisis, the private sector is also working to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

WITHIN A RIVER BASIN

All of us live in a river basin. Its sustainability depends on how well we manage the forested land and water resources found within its confines.



The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

The longer it takes to manage the crisis, the more damage is done. The government's role is to manage the crisis, but the private sector's role is to manage the crisis. The government's role is to manage the crisis, but the private sector's role is to manage the crisis.

TheStar

FRIDAY 5 November 2004

Gazette water catchments'

as soon as possible, states ordered



Najib Razak says water resources must be protected because demand for water is rising

Malaysia had been recognised as one among the 12 countries in the world with rich biodiversity where there were 12,500 species of plants, 300 species of flower, 300 species of mammals, 750 species of birds, 350 species of reptiles, 165 species of amphibians, 300 species of freshwater fish and millions of invertebrates.

Najib also said the council was getting the cooperation of the Malaysian Council for Remote Sensing to supply satellite and aerial photographs to state governments to check on illegal logging activities.

"This will make it easier to detect illegal logging activities and enforcement could be beefed up to eventually curbed it totally."

FOCUS

JULY 4, 2004

WATER abundant and scarce

The country's abundant water resources, being finite, cannot sustain us into the future indefinitely unless they are prudently managed. But a shift in the national management approach from the 'old ways' is taking shape, albeit slowly, writes IDROS ISMAIL.



Water, more than oil, will be scarce of the future. The country's abundant water resources, being finite, cannot sustain us into the future indefinitely unless they are prudently managed. But a shift in the national management approach from the 'old ways' is taking shape, albeit slowly, writes IDROS ISMAIL.

AUDIT TOPICS IN ENVIRONMENTAL AUDIT



2008

- ❖ Management of Forest and the Impact to Environment

2009

- ❖ Mining and Sand Extraction Activities and the Impact to Environment
- ❖ Solid Waste Management and the impact to Environment

2010

- ❖ Management of Mangrove, Marine and the Impact to the Environment – Straits of Malacca (cooperative audit between SAI Malaysia and Indonesia)

WATER MANAGEMENT REPORT

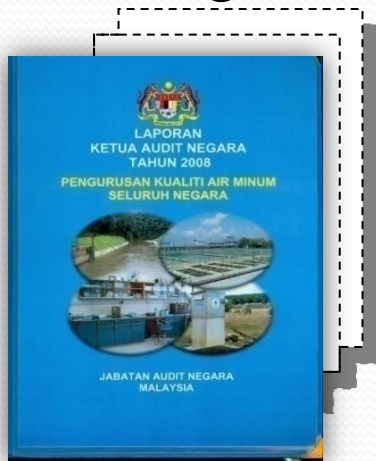


2008

2009

2010

2011



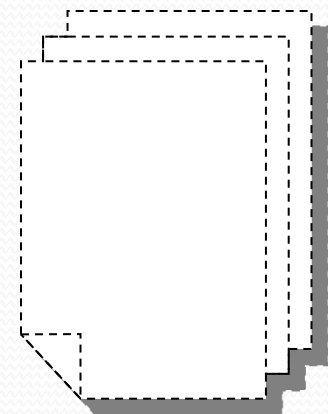
- Management of Drinking Water Quality



- Non-Revenue Water Management
- Irrigation and Drainage Project



- Water Billing Management
- Construction of Bengoh Dam



- Rural Water Supply
- Management of National Sewerage Company
- Management of Water Asset

2001 & 2005- Privatization of Water Treatment Plant

AUDIT APPROACH/METHODOLOGY



- Division For Water Management Audit;
- Engagement with Authorities;
- *In Situ* test with Authorities;
- Equipment and apparatus test - properly calibrated and verified by the Authorities;
- Data Analysis;
- Questionnaires – customer feedback;
- Site visit.

Division For Water Management Audit

Establish on middle year 2007.

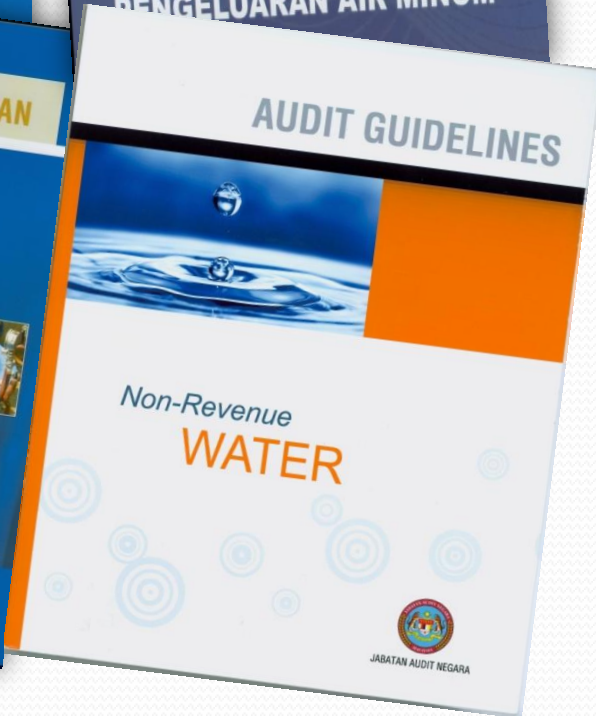
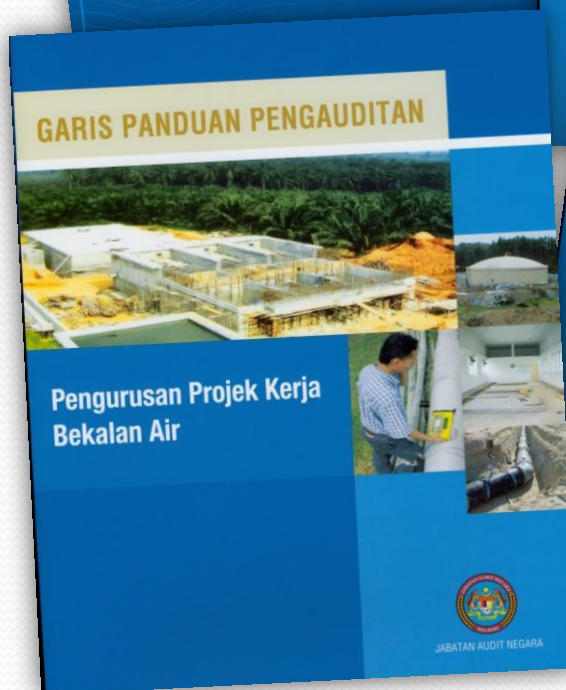
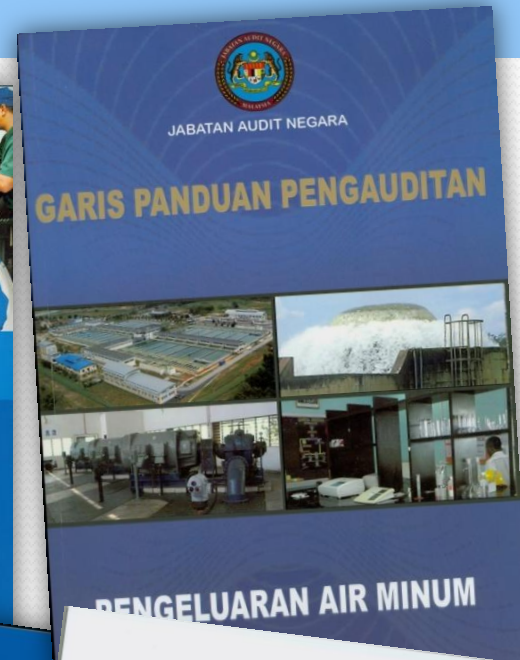
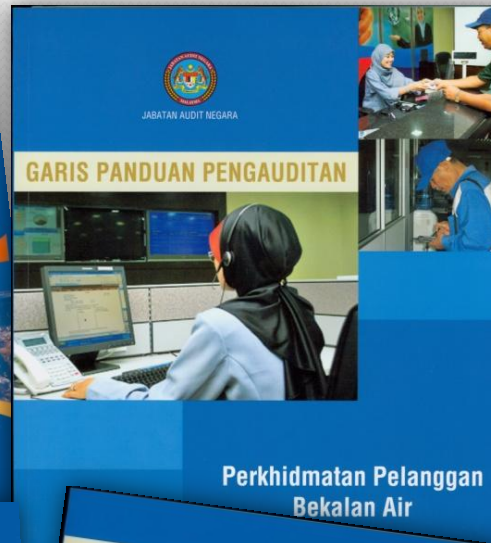
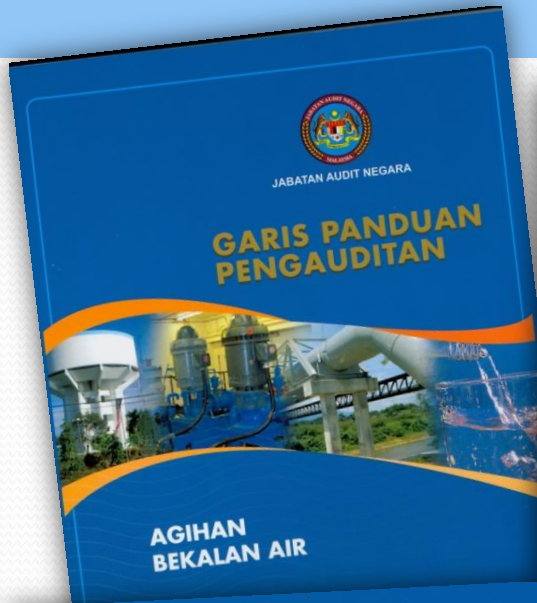
Responsible to give technical advice to the Auditors on Water Industries.

Technical advice to the Audit team for all sector on the field of water supplies, irrigation & drainage and sewerage system.

To carry out Water Management Audit Technical study.

Coordinate with ministry, water regulator commission and water operator (Government Department, Statutory Bodies and Private Agencies).

TECHNICAL WATER MANAGEMENT GUIDELINE



A STUDY ON MANAGEMENT OF DRINKING WATER QUALITY IN MALAYSIA - 2008



Background

- 13 states in Malaysia
- Means and ways to monitor drinking water quality base on Ministry Of Health drinking water quality standard.
- Period covered = Year 2006 up to 2008.
- 42 water treatment plant sample in several states.
- Questionnaires were conducted to evaluate the feedback of water quality from users.

Objective of the Study.

The audit objective is to assess whether planning, implementation and monitoring of drinking water are in accordance with The National Standard for Drinking Water Quality set by The Ministry Of Health.

AUDIT FINDINGS.....



- **Catchment Area Not Gazetted.**
 - **Substantial Cost Involved (cost of surveying, land compensation)**
- **Raw Water Quality Index by Department Of Environment**
 - **Deterioration in water quality – classification.**
 - **Urbanization & Development**
 - **Leachete from landfill**

Catchment Area Not Gazetted

Areas Encroached by Dredging Activities



Leachate from landfill

Landfill Hulu Langat River

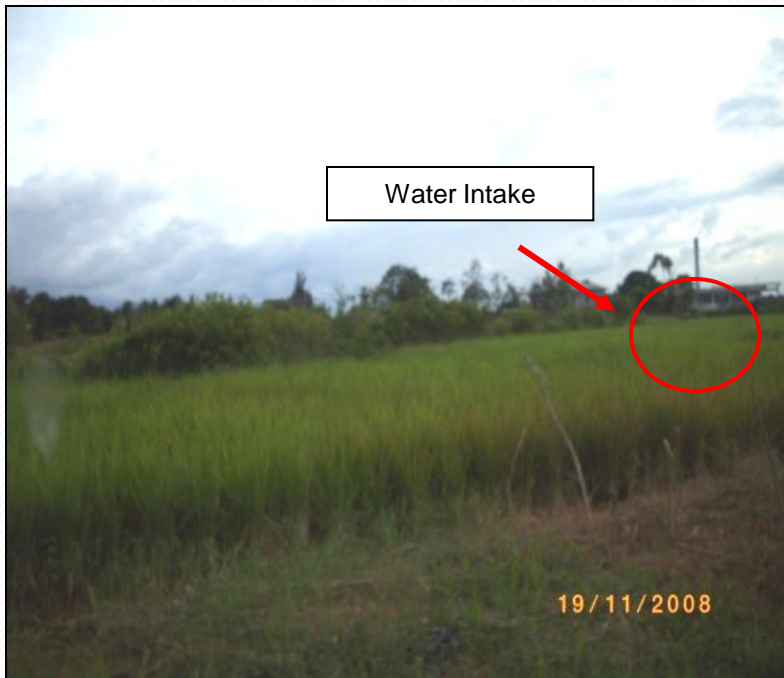


Leachate flowing to Beranang River Hulu Langat



Biggest Obstacles

1. Protection of Catchment Area, Waterways And Water Intake Area
2. Relocation of Affected Peoples



Sibu – cultivation of crops too near to Intake



Kapit – Settlement too near to intake

LESSONS LEARNT

- 1. Focus & Holistic Management. – Emphasis On Water Resources Management.**
- 2. Monitoring On Water Quality Be It At The Raw Water Resources And At The Treated Water.**
- 3. Schedule Maintenance – Must Be Followed .**
- 4. Continues Monitoring.**
- 5. KPI must be strictly followed.**
- 6. Verification & Calibration Meter Test Bench – has to be done by qualified personnel/agencies.**

CONSTRUCTION OF BENGOH DAM

- Bengoh Dam was constructed to serve as a water reservoir to supply raw water to the Kuching Water Board Treatment Plant about 40 km away from the capital city of Sarawak state till the year 2030. Water is channelled there through open channel.
- The Dam will increase the safe yield of raw water to 2,047MLD.
- Reservoir when fully impounded will cover 8.77 sq km.
- Catchment area is 127 sq km affecting 4 villages and more than 1500 villagers.

Environmental Impact

1. People/villagers

4 villages with over 1500 villagers have to be resettled

Pain Bojond



Taba Sait





Semban



2. Effect on birds

Some 50 species birds (7 protected and 2 totally protected) from 22 families recorded.



3. Effect on flora and fauna

14 species from 9 families recorded

7 species of bats and 1 species of flying squirrel

Many species of fish are also affected



3. Effect on flora and fauna

Many species also affected



Areas To Be Flooded After Impounding Reservior covers 8.77 sq km



WASTE WATER REGULATIONS

- Water Service Industry Act 2006
- Environmental Quality Act 1974
- Environmental Quality (Sewage) Regulations, 2009
- Environmental Quality (Clean Air) Regulations, 2009

FINDINGS

- **Sewage not treated due to:**
 - **Upgrading/refurbishment work at Sewage Treatment Plant**
 - **Human error**
 - **Illegal Discharge (oil & grease from restaurant, paint and industrial waste)**



Upgrading work at Sewage Treatment Plant
-Sewage received were pump out from main inlet



Sewage received not treated at Aeration Tank



- Untreated Sewage being discharged to public drainage/river

- Human Error



- Effluent Discharge to drainage contain high level of detergent

Illegal Discharge



Oil at Aeration Tank

Aeration Tank



FINDINGS

- Old Sewage Treatment Plant were build without proper guidelines – unable to comply with effluent standard.
- Ageing and Outdated Sewerage Infrastructure – major upgrading and refurbishment.
- Theft and vandalism at Sewage Treatment Plant

Retaining Wall Cracked and Leaked



Clarifier Broken

Lightning Arrester Was Stolen



Mechanical Screen Chain Was Stolen

Stolen Grating



Stolen Hand Railing



Site Visit



Foto Lawatan Tapak
Flowmeter Di Loji Sg. Johor Dan Simpang Rengam pada
26 & 27 September 2007



Foto Lawatan Tapak
Laluan ke muka sauk Sg. Palai, Perak pada 6 September 2007



Foto Lawatan Tapak
Kajian JPS Perlis pada 5 Disember 2007

5 12 2007

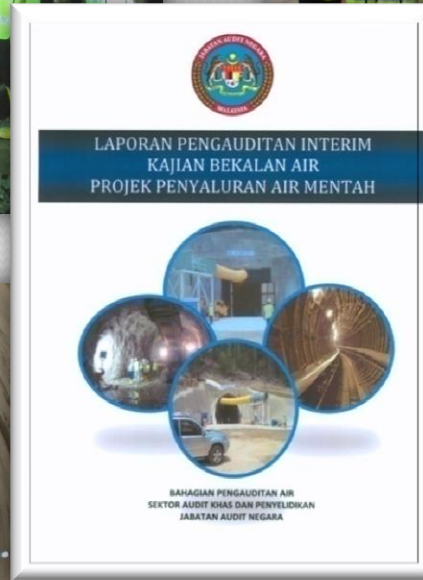


Foto Lawatan Tapak
Ujian Fizikal Air September 2007



Raw Water Transmission Project From Pahang To Selangor

2010



Irrigation And Drainage Project

Foto Lawatan Tapak Kajian Pengairan & Saliran
Hakisan Pantai Bagan Datoh Perak



Foto Lawatan Tapak Kajian Pengairan & Saliran
Hakisan Pantai Melaka (Kg Telok Gong)



Foto Lawatan Tapak Kajian Pengairan & Saliran
Hakisan Pantai Melaka (Kg Telok Gong)



Foto Lawatan Tapak Kajian Pengairan & Saliran
Hakisan Pantai Melaka (Kg Telok Gong)

NEWSPAPER CUTTING ON WATER AUDIT

Star Metro

Ladies' day out at the races courtesy of Turt Club

Water foul-up

The Auditor-General's report has revealed that none of the reservoirs in Selangor were cleaned last year, resulting in poor water quality.

Service failure

The report found that the water supply in Selangor was not up to standard. The Auditor-General's report also revealed that the water supply in Selangor was not up to standard. The Auditor-General's report also revealed that the water supply in Selangor was not up to standard.

N32 NATION THE STAR THURSDAY 22 OCTOBER 2008

Water quality in Kelantan not up to standard

AUDITOR-GENERAL'S REPORT

The Auditor-General's report on the water supply in Kelantan revealed that the water quality was not up to standard. The report also revealed that the water supply in Kelantan was not up to standard. The Auditor-General's report also revealed that the water supply in Kelantan was not up to standard.

30 sen vs three cents

Johor charges inconsistent rates for raw water

The Auditor-General's report on the water supply in Johor revealed that the water quality was not up to standard. The report also revealed that the water supply in Johor was not up to standard. The Auditor-General's report also revealed that the water supply in Johor was not up to standard.

EPF: Almost 9,000 errant bosses dealt with

The Employees Provident Fund (EPF) has taken action against nearly 9,000 errant bosses who failed to contribute to the Employees Provident Fund (EPF). The EPF has taken action against nearly 9,000 errant bosses who failed to contribute to the Employees Provident Fund (EPF).

Illegal logging along highway

Illegal logging has been discovered along the Kuala Lumpur-Selangor Highway. The Malaysian Forestry Department has taken action against the illegal loggers. The Malaysian Forestry Department has taken action against the illegal loggers.

2008 Drinking Water Quality In Malaysia

STARSDAY, WEDNESDAY 21 OCTOBER 2008

Operators fail to follow Auditor-General's report reveals that no reservoirs were cleaned last year

Operator's failure to follow Auditor-General's report reveals that no reservoirs were cleaned last year

The Auditor-General's report on the water supply in Selangor revealed that the water quality was not up to standard. The report also revealed that the water supply in Selangor was not up to standard. The Auditor-General's report also revealed that the water supply in Selangor was not up to standard.

Jumping action

The Auditor-General's report on the water supply in Selangor revealed that the water quality was not up to standard. The report also revealed that the water supply in Selangor was not up to standard. The Auditor-General's report also revealed that the water supply in Selangor was not up to standard.

Relocation blues

The Auditor-General's report on the water supply in Selangor revealed that the water quality was not up to standard. The report also revealed that the water supply in Selangor was not up to standard. The Auditor-General's report also revealed that the water supply in Selangor was not up to standard.

Cleaning it up

The Auditor-General's report on the water supply in Selangor revealed that the water quality was not up to standard. The report also revealed that the water supply in Selangor was not up to standard. The Auditor-General's report also revealed that the water supply in Selangor was not up to standard.

NIEX'09

NIEX'09 is a biennial exhibition and conference for the water and wastewater industry. It is the largest and most influential event of its kind in the region. The exhibition and conference will be held at the Kuala Lumpur Convention Centre from 21 to 23 October 2009.

Water Tank Cleaning Programme for 2005 to 2008

Water Tank	Year	Number of Tanks	Number of Reservoirs	Number of Tanks Cleaned	Number of Reservoirs Cleaned
Kuala Lumpur	2005	17	2	0	0
Kuala Lumpur	2006	215	5	23	0
Kuala Lumpur	2007	219	11	4	0
Kuala Lumpur	2008	219	11	4	0
Kuala Lumpur	2009	219	11	4	0
Kuala Lumpur	2010	219	11	4	0
Kuala Lumpur	2011	219	11	4	0
Kuala Lumpur	2012	219	11	4	0
Kuala Lumpur	2013	219	11	4	0
Kuala Lumpur	2014	219	11	4	0
Kuala Lumpur	2015	219	11	4	0
Kuala Lumpur	2016	219	11	4	0
Kuala Lumpur	2017	219	11	4	0
Kuala Lumpur	2018	219	11	4	0
Kuala Lumpur	2019	219	11	4	0
Kuala Lumpur	2020	219	11	4	0
Kuala Lumpur	2021	219	11	4	0
Kuala Lumpur	2022	219	11	4	0
Kuala Lumpur	2023	219	11	4	0
Kuala Lumpur	2024	219	11	4	0
Kuala Lumpur	2025	219	11	4	0
Kuala Lumpur	2026	219	11	4	0
Kuala Lumpur	2027	219	11	4	0
Kuala Lumpur	2028	219	11	4	0
Kuala Lumpur	2029	219	11	4	0
Kuala Lumpur	2030	219	11	4	0

Ball Watch Exhibition

21 - 25 Oct 09, 10am - 10pm | Concourse Area

Water Billing Management

Selangor to fight Syabas in court over water tariffs

SHAH ALAM: The Selangor government is prepared to face Syarikat Bekalan Air Selangor (Syabas) in court if the water concessionaire sues the state for preventing an increase in water tariffs.

Mentri Besar Tan Sri Khalid Ibrahim told a press conference yesterday Syabas' solicitors had sent a notice dated Feb 12 seeking RM339mil as compensation for not allowing the increase in water tariffs for the whole of 2009.

The notice threatened legal action unless payment was made within 14 days.

However, Khalid said the state

»Syabas has breached several important terms in the agreement«

TAN SRI KHALID IBRAHIM

legal adviser had conceded the claimant's claim.

He said the concessionaire was believed there was compensation and was

LAPORAN PENGAUDITAN BAGI PELARASAN TARIF AIR SYARIKAT BEKALAN AIR SELANGOR SDN BHD (SYABAS) BAGI TEMPOH OPERASI KETIGA (2009-2011)



OLEH:
JABATAN AUDIT NEGARA
NO 15, ARAS 4, PERUBAAN PERDANA,
FASIS 2,
62510 PUTRAJAYA, KERAJAAN PERSEKUTUAN
MALAYSIA

www.audit.gov.my

Syabas audit reports referred to AG

The Sun
5/3/09

THE Energy, Water and Communications Ministry has referred the numerous discrepancies in Syarikat Bekalan Air Selangor (Syabas) audit reports to the auditor-general.

"If the company has done one wrong, we will allow the law to take its course. It is not up to us to decide whether it was right or wrong," Minister Datuk Shaziman Abu Mansor said.

"But the restructuring has to go on," he said in responding to questions raised by Khalid Abd Samad (PAS-Shah Alam) and Charles Santiago (DAP-Klang) on the water restructuring exercise in Selangor.

Shaziman said concession companies whose performance was not up to the mark would have their licences - which are reviewed every three years - terminated.

He also said Selangor which is governed by the Pakatan Rakyat is not being discriminated against.

"The water industry model introduced in Selangor is the same as in Barisan Nasional-ruled

states," he said, refusing to discuss the issue further and ignoring questions while debating the royal address.

The Sun reported on Jan 30 that an audit had revealed Syabas breached several key terms of a 30-year concession agreement, and that the Selangor government was using this to press for the termination of the lucrative contract.

Syabas, which is owned by Puncak Niaga (70%) and Selangor investment arm Kumpulan Darul Ehsan Bhd (30%), had failed to comply fully with the requirement that contracts be awarded by open tender.

The audit had shown that more than 72% of contracts worth a total RM600 million were awarded to selected companies through direct negotiations and only 25% by open tender.

It also found discrepancies involving more than RM325 million between the summary of contracts awarded in 2005, 2006 and 2007, and Syabas' review document (referring to general accounts).

The audit was a requirement before the company could be allowed to implement a tariff hike scheduled for Jan 1. That has since been deferred, with the Pakatan Rakyat state government still in negotiations with the federal and related issues.

The Sun learnt that the state has written to the ministry asking for the concession agreement to be terminated.

Non Revenue Water Management (2009)



Page 1 of 2

Non-revenue water in Negri poorly managed

theStar online

SHAPE UP Your Lifestyle 14 Day Challenge

News

Non-revenue water in Negri poorly managed

THE management of non-revenue water in Negri Sembilan remains among the poorest in the country despite a RM160m allocation given by the Government to correct this under the North Malaysia Plan.

Non-revenue water (NRW) for 2007 and 2008 remained at more than 50% compared with the national rate of 37%.

The Auditor General Report said estimates by Syarikat Air Negri Sembilan showed that losses from NRW in 2008 totaled some RM100m.

"Several issues were observed, such as the rate of NRW not meeting the targeted Key Performance Indicator of the National Water Services Commission (SPAN), water balance calculations not being accurate and increasing NRW rate.

"These weaknesses were due to the lack of staff in carrying out continuous maintenance and monitoring as well as the lack of expertise and equipment," the report said.

The A-G's Report said NRW in Negri Sembilan was unsatisfactorily managed and had to be improved to reduce the rate in accordance with the objectives of SPAN.

The report said the Negri Sembilan Foundation, which provided education loans to some during tertiary education, also needed to improve its loan-repayment system.

As of 2009, the arrears on loan repayment was RM55.10m or 12.5% of total loans amounting to RM565.50m and involving 3,321 borrowers.

"The failure by the foundation to act against defaulters resulted in an increase in arrears on loan repayment. As such, it should evaluate its ability to provide loans in future if it wishes to remain as a provider of the facility," he said.

On a separate matter, the report said sand extraction in the state was also not satisfactorily managed and this had caused deterioration in the quality of water and erosion along river banks.

The report said operators also did not adhere to rules set by the Department of Environment and this had caused damage to the environment.

"The state's Water Regulatory Authority had failed to enforce the Water Act 1920 (Amendment 2007), which serves to protect the river from pollution," it said, adding that laws should be enforced to ensure no further deterioration to the environment.

The report said the maintenance of bridges on state roads were also not satisfactory. Among the weaknesses observed was the failure by the Public Works Department to follow guidelines on the inspection of bridges on state roads.

html-file://G:/Non-revenue water in Negri poorly managed

Page 1 of 3

Constant non-revenue water monitoring needed

theStar online

Look for EXPLOSIVE Stocks with MyRealTrade

Business

Constant non-revenue water monitoring needed

KUALA LUMPUR: Continuous monitoring effort is required to manage non-revenue water (NRW) in the country, said Malaysian Water Association president Anand Zaidi, Jan 1.

"It's not a project, it's a process. Even if we have found an ideal solution to bring down NRW in the country, without continuous monitoring, the NRW rate will again," he explained to Star2 after the opening of Water Loss Free 2010 conference.

Themed "Managing Water Loss: The Asian Way", the conference attracted more than 300 delegates from 14 countries such as China, India, Iran, European Union and the United States.

Reducing NRW – in water that's been produced but not due to leakage, theft or inefficient distribution among other causes, before it reaches consumers – in the country has been highlighted as one of the critical key performance indicators of the Ministry of Energy, Geology, Technology and Water.

"NRW is a profound issue in many developing countries," the ministry's water supply director-general Dr Hassan Mohamed Sultan told the conference.

For instance, according to the Asian Development Bank, NRW in the Asian region is conservatively estimated at 30% to 60% of utility inputs, or around US\$100 each year.

Malaysia's NRW is currently estimated to average at 36% of utility inputs, while that of Singapore at 5%.

"Our Government is very concerned about the present level of NRW, and we want to bring it down to a realistic and economic target to mitigate unnecessary wastage and damage to the environment," he said.

The Government had indicated that it intended to bring the NRW down to 20% by 2020.

Among efforts that have been in place to lower NRW in Malaysia were replacement of pipes and old meters, as well as the incorporation of Pergerakan Ajar Air (PAA) to oversee and finance water projects in the country.

"Changing meters is the way forward, pipe replacement can be very expensive and cannot guarantee effectiveness in reducing NRW," Hassan said.

"And to manage active leakage control, we must invest in human capital, developing the necessary skills and expertise in our people for this area," he added.

Anand Zaidi pointed out that while NRW was still a challenge in Malaysia, the situation has progressively improved over the years. For instance, he pointed to Johor, where NRW had reduced from 45% five years ago to the present average of 26%.

He told Star2 that Sultan at present, was the state with the highest level of NRW at 65%, while Penang had the lowest of less than 20% on average. He hoped that at the end of the two-day conference.

http://biz.thestar.com.my/news/story.asp?file=/2010/10/15/business/7228761&sec=busine... 12/15/2010

Page 1 of 2

Reduce NRW to 25%

theStar online

Been in the job too long? Get a new one at MyStarJob.com

News Star2 Business Multimedia Interactive Metro Sports Lifestyle Entertainment Tech Education MyStar

Metro Home Metro North

Monday September 27, 2010

Reduce NRW to 25%

PERAK Water Board (LAP) workers have been challenged to reduce the non-revenue water (NRW) to 25% this year from 30% last year.

The challenge was thrown by Menteri Besar Datuk Seri Dr Zambrzy Abdul Kadir who is also LAP chairman.

"For every 1% of NRW reduced, we will be able to save RM2mil," he said in his opening speech at the LAP Workers Union's biennial annual general meeting.

His speech was read by Perak Energy and Water Committee chairman Datuk Ramli Zahari on Thursday.

Dr Zambrzy said he believed that the LAP board of directors would agree to provide a special incentive payment to the staff if the target of 25% NRW for this year was achieved.

"I hope everyone will welcome the challenge and consider the NRW as the main enemy of LAP," he added.

He also said workers should be proud of LAP's financial performance for the past decade.

"Our profit in 2000 was RM10mil and it had risen to RM72.83mil last year. For 2010, we are expecting the LAP to generate more than RM95mil in profit," he said.

lmy/metro/story.asp?file=/2010/9/27/north/7098687&sec=north 12/15/2010

Latest Incident In Sarawak March 2012

Relocation order for plants

DOE wants premix plants to move away from water intake area, company agrees in principle

By Cecilia B Sman and Philip Kiew
reporters@theborneopost.com

MIRI: The Department of Environment (DOE) has recommended that the two premix plants near the Sungai Liku water treatment plant to be relocated following the contamination of the river by diesel leaked from the plants' fuel pipeline forcing the Lambir Treatment Plant to shut down last Saturday.

Head of the Department of Environment here, Siva Nathiran Subramanian said the company owning the plants had agreed in principle to the relocation but requested for time to do so.

The company has also agreed to bear the cost incurred to mitigate the pollution and clean up the river.

A trench at the site of the leakage has been dug to trap the diesel and collected in drums for disposal and removal of tainted earth are the immediate remedial measures taken to contain the pollution.

Sungai Liku is the source of raw water intake for the Lambir Treatment plant.

"Since the last three days up to late this evening, we have collected 102 drums of diesel and contaminated water, and 40 drums of contaminated soil from the area," Siva said when contacted by the Borneo Post yesterday.

He said other immediate measures taken were getting the plant owner to provide the department without delay their Standard Operating Procedure



MITIGATION MEASURE: Reinforced trench being dug to collect the leaked diesel and prevent it from seeping into the river

(SOP) of the plant.

At the same time the operator of the plant is required to take other immediate precautionary measures like limiting the

amount of diesel stored during non-operating hours to only 500 litres.

Siva Nathiran added that the department would monitor the

operation at the plant closely for the coming month.

The department had cooperated with other relevant agencies including Shell, Petronas and

the Northern Region Water Board (Laku) in controlling the pollution from worsening.

♦ Turn to Page 4, Col 1

HUMAN CAPITAL DEVELOPMENT

- Technical Training and Course.
- Water Symposium (2009).
- Secondment of engineer.

SIMPOSIUM PENGAUDITAN AIR

2009

SIMPOSIUM PENGURUSAN DAN PENGAUDITAN INDUSTRI AIR 2009

Date: 2nd to 3rd November 2009
Venue: SACC Convention Centre, Shah Alam, Selangor
Theme: "Keberkesanan Pengauditan Meningkatkan Prestasi Bekalan Air"

OBJEKTIF SIMPOSIUM

1. Pendedahan pengauditan air kepada semua entiti bekalan air.
2. Memahami fungsi pengauditan sebenar.
3. Pencapaian pengauditan yang efektif, efisien dan ekonomik melalui komunikasi dan koordinasi yang berkesan.
4. Menyediakan platform kepada auditor dan auditi ke arah *mutual understanding*.

Number of Participants: 500 people



2010



Drainage and Irrigation Course

Kedah/ Perlis on 5- 7 October 2010



Sarawak on 27- 29 October 2010



Water Billing Management Course

National Audit Academy on 27- 29 July 2010



Site Visit on 9- 11 December 2010



Thank You...
Save Forests,
Save Rivers,
Safe Water.