The Institution of Engineers, Malaysia

Bangunan Ingenieur, Lots 60/62, Jalan 52/4, Peti Surat 223, 46720 Petaling Jaya, Selangor Darul Ehsan
Tel: 03-79684001/2 Fax: 03-79577678 E-mail: sec@iem.org.my
IEM Homepage: http://www.myiem.org.my

TALK ON "MODELLING OF SALINE INTRUSION OF SEAWATER INTO RIVER SYSTEM"

Organised by Water Resources Technical Division, IEM

BEM Approved CPD/PDP Hours: Applying

Date : **29th June 2019 (Saturday)**
Time : **11.00 am to 1.00 pm *(Refreshments will be served)***
Venue : **Malakoff Auditorium, Ground Floor, Wisma IEM, Petaling Jaya**
Speaker : **Ir. Dr. Wong Wai Sam & Siti Zawani Binti Hashim**

SYNOPSIS

Saline intrusion is the movement of salt water from the sea into river systems, which can lead to contamination of drinking water sources and other consequences. Saline intrusion occurs naturally to some degree in most coastal aquifers. The factors that contribute to this phenomenon are due to the natural conditions and also from human's activities. Because salt water has a higher mineral content than freshwater, it is denser and has a higher water pressure. As a result, saltwater can push inland beneath the freshwater. Certain human activities such as damming of upper river catchment, water abstraction for irrigation and water supply, groundwater pumping from coastal freshwater wells, etc. have reduced the freshwater flows from upstream catchment and drop in levels of fresh groundwater, which have resulted in the increase of saltwater intrusion in many coastal areas. Other contributors to saline intrusion include the construction of navigation channels for agriculture and drainage which provide conduits for saltwater to move inland. Sea level rise and climate change have further aggravated the situation. Therefore there is a need to determine the causes and remedial measures for saline intrusion problem in coastal area. The talk is focusing on the general approach and the modelling of saline intrusion of river systems for the following objectives :

- To evaluate the extend of the salinity intrusion of seawater into the river system during low-flow conditions;
- To analyse and assess the impact of present and additional future freshwater abstraction as well as alteration (river straightening and diversion) of the river system; and
- To analyse and assess various mitigation measures to restore or reduce the salinity intrusion into the river system.

MIKE11 Advection-Dispersion Module has been adopted to assess the salinity intrusion from the sea due to various changes to the river regime and its effect towards the water abstraction points upstream. Extensive data collection had been carried out from site and relevant agencies. Model calibrations were then carried out based on the data collected to establish the relevant parameters in the models before they were used to simulate various conditions.

ANNOUNCEMENT TO NOTE

FEES FOR TALKS

Members

Registration Fee
Free of Charge - FOC

Administrative Fee
Online - RM15.00
Walk In-RM20.00

Non-Members
Registration Fee: RM50.00
Administrative Fee: RM20.00

Limited seats are available on a "first come first served" basis (maximum 100 participants).
To secure your seat, kindly register online at www.myiem.org.my

PERSONAL DATA PROTECTION ACT
I have read and understood IEM's Personal Data Protection Notice published on IEM's website at www.myiem.org.my and I agree to IEM's use and processing of my personal data

BIODATA OF SPEAKERS

Ir. Dr. Wong Wai Sam is a Director at MegaConsult Sdn. Bhd. and currently is the Advisor and Immediate Past Chairman of the Water Resources Technical Division (WRTD). His expertise is in Hydrology, Hydraulic & Hydrodynamic, Hydrogeologist and Water Quality. He actively involves in Stormwater Drainage and Flood Mitigation Studies, Sediment Erosion and Transport Studies, Flood Forecasting, Water Quality, Integrated River Basin & Water Resources Management studies, hydraulic design and computer modelling works.

Siti Zawani binti Hashim is a civil engineer graduated with Hons. from Universiti Teknologi PETRONAS, year 2012. She has been working with Dr. Nik & Associates Sdn. Bhd in Hydrology and Water Resources field for 7 years. She actively involves in Storm Water Drainage and Flood Mitigation studies, hydraulic design and computer modelling works.

Dato Ir. Hj. Mohd. Azmi bin Ismail
Chairman
Water Resources Technical Division, IEM