Department of Irrigation
and Drainage

Minutes of Meeting

The 25th Meeting of Malaysia - Thailand Joint Evaluation Team

on the Golok River Mouth Improvement Project

8 – 9 May 2014
Cameron Highlands
Malaysia

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AGENDA 1: OPENING ADDRESSES

Dato' Ir. Lim Chow Hock, the leader of the Malaysian Delegation, welcomed the Thai Delegation to the 25th Meeting of the Joint Evaluation Team (JET) on the Golok River Mouth Improvement Project on 8 – 9 May 2014 in Cameron Highlands, Malaysia.

Mr. Somkiat Prajamwong, the leader of the Thai Delegates expressed his appreciation for the warm welcome and arrangements for the meeting. Both sides introduced their delegates to the Meeting. The list of delegates is shown in **Appendix A.**

AGENDA 2: MATTERS FOR CONSIDERATION

2.1 Report of Monitoring and Evaluation of Golok River Mouth

The pre and post-monsoon survey for the 2013/2014 monsoon season was carried out by the Thai side in October 2013 and March 2014 respectively. The result and the comparison of the seabed level at the river mouth is shown Appendix B.

Progress Activities

NO.	ACTIVITIES	THAI	MAS	REMARK
1	The same datum will be used for future surveys. It is suggested that the co-reference datum should be located at TPB for convenient accessibility to surveyors of both sides.	Done	Done	Agreed
2	Thai side will provide the reference datum at TPB by transferring the elevation from T11.	Done	Done	TMB2 at TPB N : 691027.528, E : 178001.516 T11 at Thai side N : 690402.357, E : 177979.786 Note: Coordinate in UTM 48

3	The meeting agreed that all future survey works done by both sides should be officially informed to both RID and DID before the commencement of the work.	Mis Communication	-	The relevant information such as the number of surveyors, duration of works and working procedure should be provided.
4	The Thai side had modified the colors legend used in the pre-post monsoon survey 2013 follow 24 JET minute.	Done	Received	To be used in the next survey. See Appendix B.
5	Thai side has provided six coordinates of survey boundaries (both ends at Ch-0.700, Ch+0.00 and Ch+0.650).	Done	Received	To be used in the next survey. See Appendix C.
6	The data should be provided in acsii files for the next survey and so on.	Done	Received	
7	The cross-section should be at 25m interval	Done	Received	Agreed
8	The cross section at 25m interval (Ch-0.700 until Ch+0.650) will be used to calculate the erosion and sedimentation at the river mouth (design level is -3m MSL Thai)	Done	Received	Agreed

1. The maximum discharge of Golok River at Cableway (x119A) are as follows:
   - During non-monsoon season (April to October 2013) was approximately 103m^3/s, and
   - During monsoon season (November to December 2013) was approximately 420m^3/s
2. The sediment was flushed from the period of monsoon seasons and the river mouth is fully open.
3. The Meeting agreed that the sedimentation need to be further monitored and the sediment pattern at the river mouth need to be analyzed in more details i.e. rainfall intensity, maximum river discharge, sediment at the river mouth.

<u>Recommendation for JTWG</u>

1. The monitoring surveys should be continued for further analysis.
2. The sediment pattern at the river mouth should be further analyzed by JET i.e. rainfall intensity, maximum river discharge, sediment at the river mouth, etc.

2.2 Proposed Maintenance Dredging of Golok River Mouth

Current status

The river mouth is fully open. The riverbed level at the river mouth is between -3.0 to -3.9m MSL.

Opinion / Recommendations:

1. There is no need to carry out maintenance dredging at this stage for the purpose of navigation.
2. From the Joint Hydraulic Studies, there is the need to carry out maintenance dredging if the cross sectional flow area of the river mouth in between Thai and Malaysian breakwater tips is blocked up to 30%(Thai side) (Appendix D) or when the riverbed level at the river mouth is -2m MSL or shallower (Malaysian side), and the Meeting agreed that both studies should focus on the same area that is from Ch +0.200 to +0.500 (Appendix C)
3. The Meeting agreed that if dredging is required according to item no. 2, it has to be monitored for at least for two (2) consecutive monsoon seasons to ensure the needs.

Recommendation for JTWG

1. To propose JTWG to agree in principle that the recommendation no 2 and 3 should be the criteria for the dredging needs and these different criteria aspect (of Thai and Malaysia) should be further analyzed together by JET.

2.3 Cableway Stations across Golok River

Activities

NO.	ACTIVITIES	THAI	MAS	REMARK
1	Reference datum from T.11 for common rating curve	Done	Done	to be used to draw common rating curve only
2	Measure and plot a Golok river cross section at cableway station in every 3 to 4 months	Done. Similar as before.	Done (21st Sept 2013)	to observe the river bed changes.

3	The mutual flow measurement and calibration (verification) should continue	13 February 2014 (Msia) 12 March 2014 (mutual)		continue to do mutual measurement (May 2014 to May 2015)
4	Maintenance including calibration of Hornet System Gauging Equipment			agreed to calibrate separately

Opinions / Recommendation

1. The meeting agreed that both sides should make use of the data (flow measurement / cross section) either from Thai or Malaysian side to complete the rating curve if the mutual measurement cannot be done on site due to the flooding event or other unforeseen circumstances. The current rating curve of both sides is as shown in Appendix E.
2. The meeting agreed that hydrologists from both sides shall improve the current rating curve and generate a common rating curve before the next JTWG Meeting on 16th June 2014.
3. The persons in charge from Malaysian side are Mr Khirluddin Darus (khirluddin@water.gov.my) from Water Resources Management and Hydrology and Mr Hishamshury Ibrahim (hishamsury@water.gov.my) from Department of Irrigation and Drainage Kelantan, and from Thai side is Mr Somchai Imyoo (hydro8@mail.rid.go.th / chai_imyoo@yahoo.co.th).
4. The Meeting agreed to continue the mutual measurement until May 2016.

Recommendation for JTWG

1. The activity for mutual measurement shall continue for one year that is from May 2015 to May 2016 and shall be closely monitored by the persons in charge.
2. A river cross section at the cableway station to be measured in every three (3) to four (4) month, and to be used to plot a current rating curve.

2.4 Progress on Real Time Monitoring System in the Golok River Basin and the Joint Website and Proposed Flood Forecasting and Warning System of the Golok River Basin

2.4.1 Progress on Real Time Monitoring System in the Golok River Basin and the Joint Website

Proposed Additional Data Sharing

NO.	DATA	THAI	MAS	REMARK
1	Hydrological data in the upstream part of Golok river basin in terms of real-time monitoring should be implemented by both sides and shared in the joint website for the benefit of flood forecasting and warning	6 rainfall stations (underconstruction and expected to be completed in 2015)	3 rainfall stations (under process of budget approval)	Information to be uploaded by both sides by March 2016
2	Mutual rating curve of Golok river discharge at cableway station should also be shared in the joint website	Uploaded by June 2014 (Malaysia, Thai and Common rating curve)		The existing shared data from Malaysian side is updated until April 2014

- The person in charge from Malaysian side, Engr. Steven Poh Tze Wei from Water Resources Management and Hydrology Division will be replaced by Ms Aisyah Sakina Ahmad from Coastal Zone Division, DID Malaysia.

Recommendation for JTWG

1. The additional hydrological data to be shared and uploaded in the website by March 2016. (Thailand – six (6) new rainfall stations, Malaysia – three (3) new rainfall stations).
2. Both owned and mutual rating curve to be shared and uploaded in the website.

2.4.2 Proposed Flood Forecasting and Warning System of the Golok River Basin

Activities

NO.	ACTIVITIES	THAI	MAS	REMARK
1	The meeting agreed both sides to continue a flood forecasting and warning system modeling for the Golok River Basin using their own model.	Rainfall : Telemetering Runoff : TANK Model Hydrodynamic (Flood) : River Operational Model (ROM Model – developed by RID)	Rainfall : Telemetering Runoff : PDM Hydrodynamic (Flood) : OS Curve (stage relationship of rainfall – runoff)	Done by 2016
2	Both sides agreed upon exchanging of historical rainfall and water level data for flood forecasting model development.	Agreed to share data. The location map of the available stations should be produced and shared by both sides		
3	Thai side proposes Malaysia to set up more telemetry rainfall stations upstream of Rantau Panjang in the near future if possible. Both sides should share telemetry rainfall data in real time manner on the joint website for the accuracy of flood forecasting of both countries. Meanwhile for the flood forecasting contract of Thai side, rainfall from upstream part in Malaysia side has to be assumed	Under Construction	Request for budget	Done by 2016. The appropriate numbers and location of hydrological stations are to be discussed and agreed in details. (same as item 2.4.1 no.1).

Recommendation for JTWG

1. Both sides to run their own model for Flood Forecasting and Warning System at Sungai Golok and shared available historical data for rainfall and water level for the development of flood forecasting model.
2. The appropriate numbers and location for additional hydrological stations are to be discussed and agreed in details by JET.

2.5 Protection Works of Transit Point B

Opinion / Recommendations

1. The rehabilitation work at Transit Point B (TPB) was completed by Malaysian side in July 2012.
2. The Thai side proposed the concept of protection works at TPB, which is conform to the streamline using Joint Hydraulic Model that is 1) Oval Shape and 2) Hexagonal Shape, both with proposed vertical gabion with frame structure (Appendix G).

Recommendation for JTWG

1. The proposed concept by Thai side could be useful information for future plan for replacing the existing protection work at TPB which is already collapsed (settled).

2.6 Joint Hydraulic Modelling Studies

Opinion / Recommendations

1. Malaysian side reported that based on the latest survey, there may not be an urgent need to implement the Option 3 with dredging at this time due to river flushing and lesser littoral drift in this monsoon.
2. Thai side presented the summary of the selected option (Option 7 – Thai side, Option 3 – Malaysian side) and its impact on Thai shoreline (Appendix F).
3. Thai side reported their need to carry out an EIA Study according to law and Detailed Design before the implementation of the physical works, which will take at least two (2) years, and Malaysian side acknowledge the necessity EIA for THAI side.
4. The Meeting agreed that the proposed river mouth structure modification from the joint hydraulic model of both sides is considered as a long term solution.

Recommendation for JTWG

1. The proposed river mouth structure modification from the Joint Studies is a long term solution.
2. The necessity to carry out detailed design (both sides) and EIA Approval (Thai side) before project implementation.

2.7 Proposed Integrated River Basin Management (IRBM) plan for the Golok River

Opinion / Recommendations

1. It was agreed in the last JET Meeting for JET to propose to JTWG as follows;

   a) to suggest JTWG to propose to JSC, under the existing MOU, to modify JTWG and JET scope of area and function by;
      - Expanding area from Golok river mouth to Golok River basin and
      - Extending function to include joint website, data sharing, joint cableway, flood forecasting and the newly proposed IRBM.

   b) to suggest JTWG propose to JSC to assign another JTWG/JET to carry out IRBM.

Recommendation for JTWG

1. Option (a), because the current JET and JTWG has already carried out the activities concerning with the expanding function and area except IRBM.
2. It is unnecessary to assign another JET and JTWG to carry out IRBM. The additional function, IRBM is needed to integrate with the other functions, including the expanding area and related agencies.

AGENDA 3: OTHER MATTERS

3.0 Proposed date and venue for the 25th JET meeting

The meeting proposed the date and venue for the next JET meeting (26th JET meeting) as follows:

Date: November / December 2014

Venue: 1. Chang Island, Trat Province, Thailand

2. Khao Yai National Park, Nakhon Ratchasima Province, Thailand.

AGENDA 4: Matters to be referred to the JTWG Meeting

The meeting agreed to proposed the agenda for next JTWG meeting as follows;

Matters for Information

1. Report of monitoring and evaluation of Golok River Mouth
2. Cableway station across the Golok River
3. Progress of real time monitoring system in the Golok River Basin and the joint website, and Flood Forecasting and Warning System of the Golok River Basin.
4. Protection Work of Transit Point B

Matters for Consideration

5. Proposed maintenance dredging of Golok River Mouth
6. Joint Hydraulic Modeling Studies
    (i) Joint study on Coastal Flooding at Golok River Mouth
    (ii) Joint Hydraulic Model on the Assessment of the Golok River Mouth Improvement along Coastal Areas.
7. Integrated River Basin Management (IRBM) plan for the Golok River

AGENDA 5: ADOPTION OF MINUTES OF THE MEETING

The meeting agreed to adopt the minutes of meeting of the Twenty Fifth Meeting of Malaysia - Thailand Joint Evaluation Team on the Golok River Mouth Improvement Project.

(Dato' Ir. Lim Chow Hock) Co-Chairman Joint Evaluation Team, Malaysia	(Mr. Somkiat Prajamwong) Co-chairman Joint Evaluation Team, Thailand

APPENDIX A

Attendance List
The 25th Meeting of Malaysia – Thailand Joint Evaluation Team on the Golok River Mouth Improvement Project

8 – 9 May 2014
Cameron Highlands, Malaysia

MALAYSIAN DELEGATES

1.	Dato' Ir. Lim Chow Hock	Director River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia
2.	Ir. C. Poobalan	Senior Deputy Director River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia
3.	Mr Mohd Said in Dikon	Deputy Director (River Basin) River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia
4.	Mr Mohd Sor Othman	Senior Engineer River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia
5.	Hj. Khirluddin bin Darus	Water Resources Management and Hydrology Department of Irrigation and Drainage Malaysia
6.	Mr Steven Poh Tze Wei	Water Resources Management and Hydrology Department of Irrigation and Drainage Malaysia
7.	Mr Abdul Hafiz bin Mohammad	Water Resources Management and Hydrology Department of Irrigation and Drainage Malaysia
8.	Mr Mohd. Zulkifli bin Ahmad	Project Engineer Department of Irrigation and Drainage Malaysia
9.	Mr Hishamshury Ibrahim	Department of Irrigation and Drainage Malaysia Kelantan
10.	Hj Mohd Nasir Ibrahim	Department of Irrigation and Drainage Malaysia Kelantan
11.	Mr Wan Normizie Wan Yaacob	Department of Irrigation and Drainage Malaysia Kelantan
12.	Mdm Puteri Rozlina Abdul Rahman	Engineer River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia

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SECRETARIAT TEAM

1.	Ms Aisyah Sakina Ahmad	Engineer River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia
2.	Mdm Noorisah Mohd Isa	Technician River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia
3.	Mr Mohammed Hairey bin Md Salih	Technician River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia
4.	Mr Palani AL John	Technician River Basin and Coastal Zone Management Department of Irrigation and Drainage Malaysia

THAI DELEGATES

1.	Mr. Somkiat Prajamwong	Director, Office of Project Management, Royal Irrigation Department, Thailand
2.	Mr. Surasit Intarapracha	Director, Office of Engineering and Architectural Design, Royal Irrigation Department, Thailand
3.	Mr. Prinya Kamolsin	Expert on Hydraulic Engineering, Office of Research and Development, Royal Irrigation Department, Thailand
4.	Mr Waemamu Waehama	Director, Golok River Basin Operation and Maintenance Project, Regional Irrigation Office 17, Royal Irrigation Department, Thailand
5.	Mr. Somchai Imyoo	Director, Hydrology and Water Management Center for Southern Region Office of Hydrology and Water Management, Royal Irrigation Department, Thailand
6.	Mr Chumlarp Tejasen	Chief of Project Planning Group 3, Office of Project Management, Royal Irrigation Department, Thailand
7.	Mr. Attaporn Wonglimaswat	Senior Surveyor, Survey and Engineering Bureau, Marine Department
8.	Ms Chawee Wongprasittiporn	Chief of Project Planning Group 2, Office of Project Management, Royal Irrigation Department, Thailand
9.	Mr. Attapan Diloksopon	Civil Engineering, Professional Level, Office of Project Management, Royal Irrigation Department, Thailand

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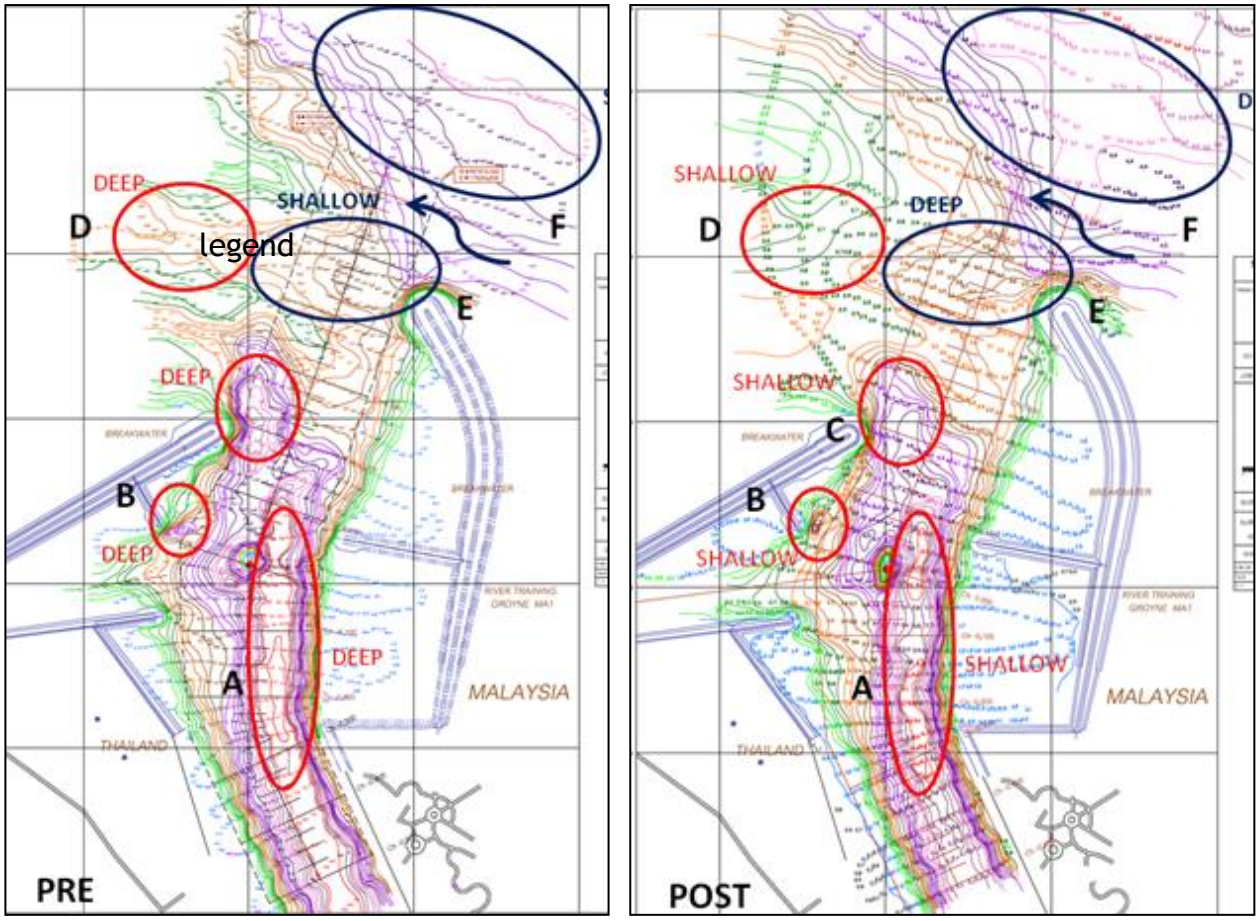
10.	Mrs Thayida Siritreeratomrong Van Corstanje	Chief of Foreign Activity Coordinating Branch, Office of Project Management, Royal Irrigation Department, Thailand
11.	Mrs. Jittra Boonrod	Foreign Relation Officer, Professional Level, Office of Project Management, Royal Irrigation Department, Thailand

APPENDIX B

PRE AND POST MONSOON SURVEY 2013/2014

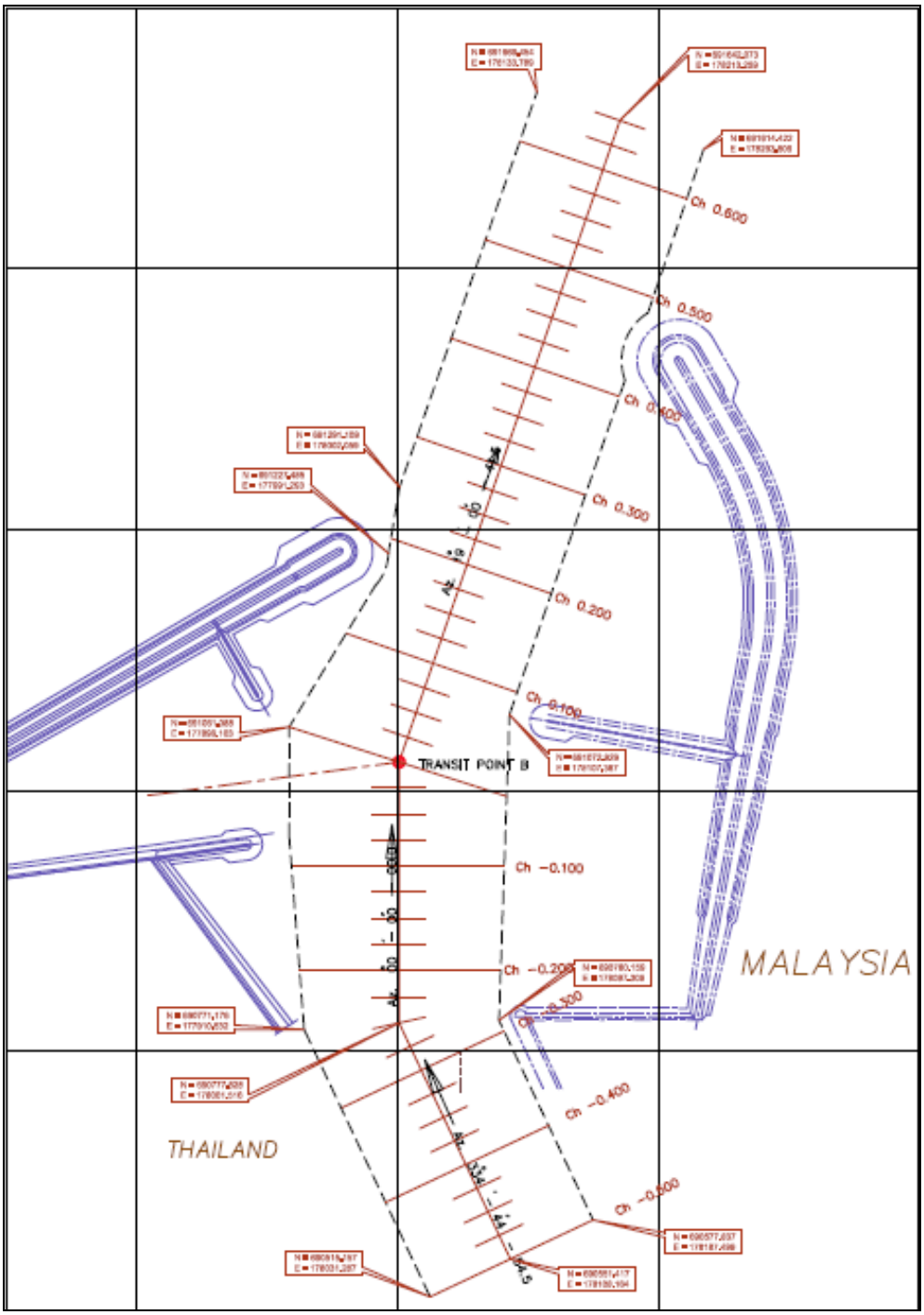
COMPARISON OF SEABED LEVEL PRE AND POST MONSOON 2013/2014 AT THE RIVERMOUTH



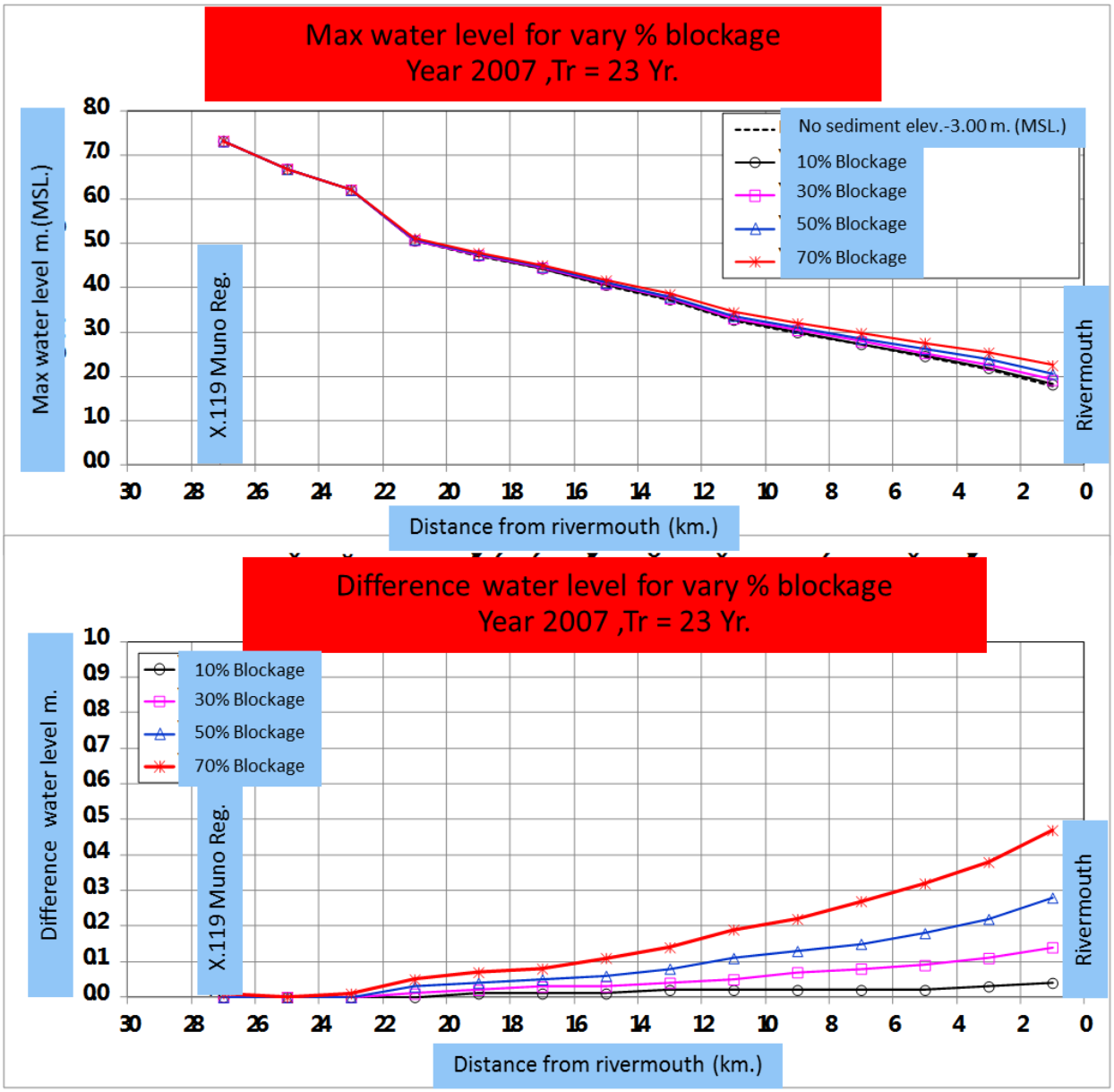
Colour Legend :

- -1 to -1.9m
- -2 to -2.9m
- -3 to -3.9m
- -4 to -4.9m
- -5 to -5.9m
- -6m and under

SURVEY BOUNDARIES COORDINATE


Ch 0.600
Ch 0.500
Ch 0.400
Ch 0.300
Ch 0.200
Ch 0.100
TRANSIT POINT B
Ch −0.100
Ch −0.200
Ch −0.300
Ch −0.400
Ch −0.500
MALAYSIA
THAILAND

SEDIMENT BLOCKAGE – THAI SIDE



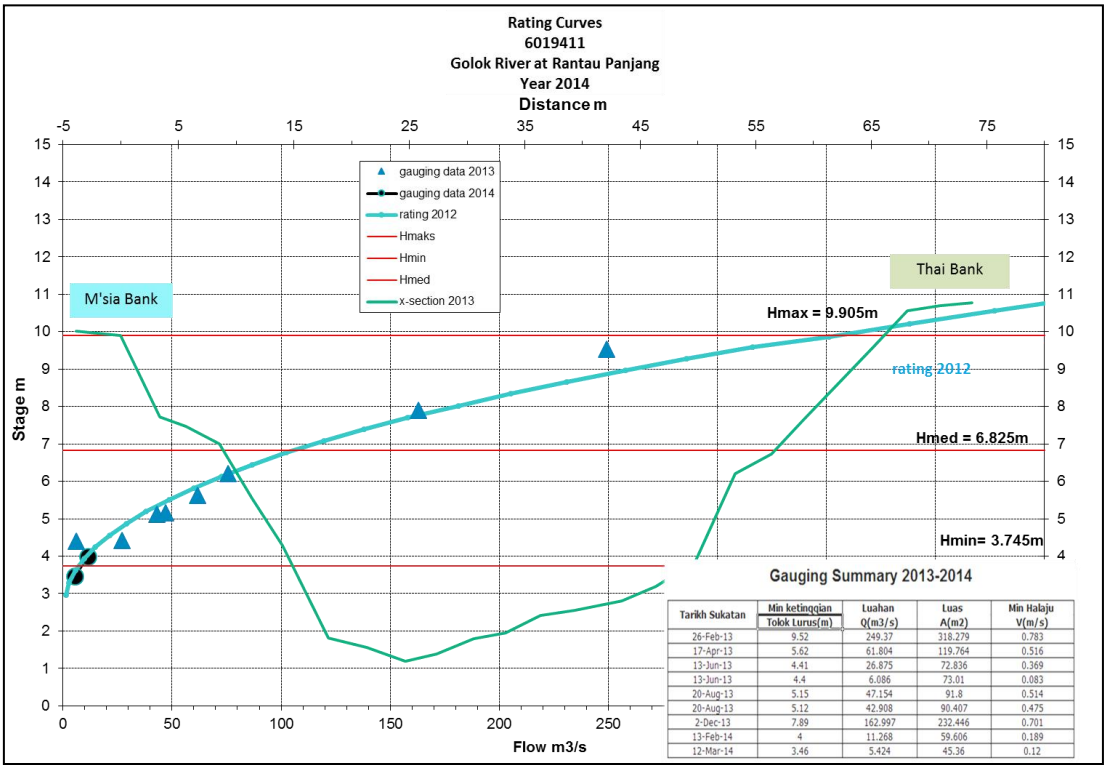
Sediment 10-30 % blockage
waterlevel rised up **1-15** cm.

Sediment 50 % blockage
waterlevel rised up **10-30** cm.

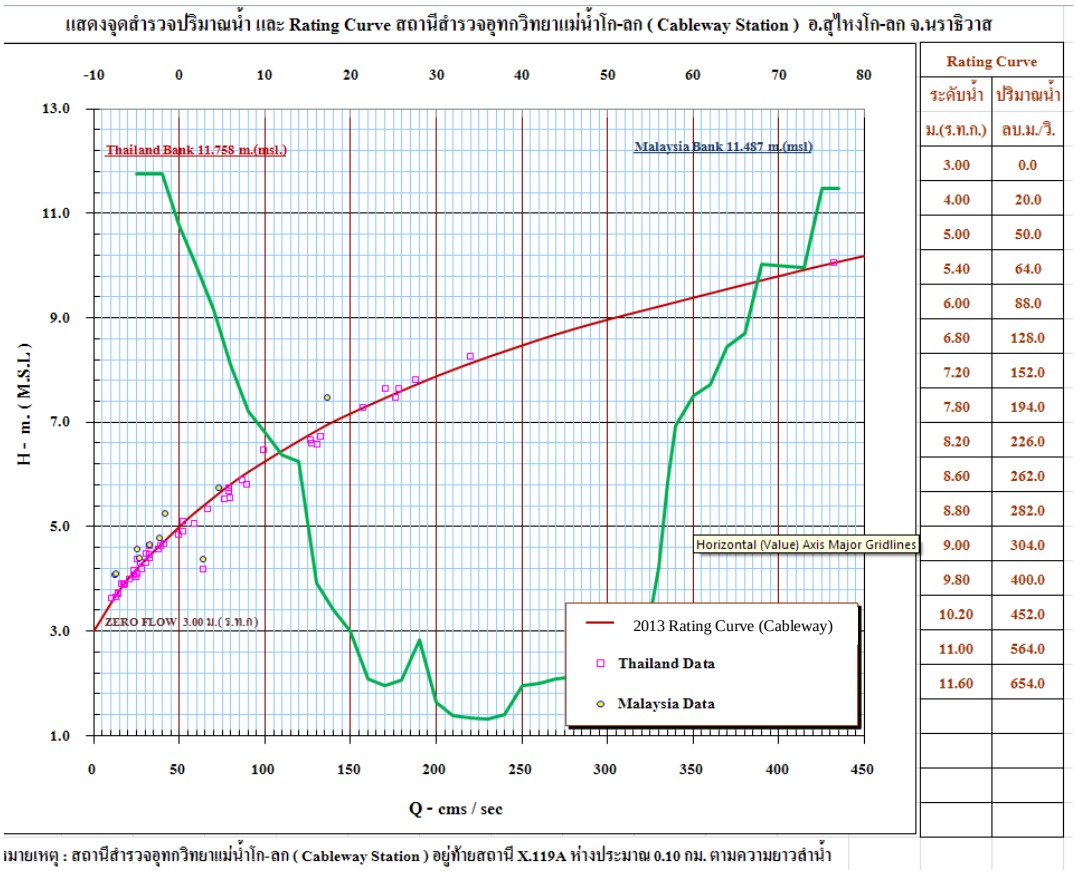
Sediment 70 % blockage
waterlevel rised up **20-50** cm.

RATING CURVE

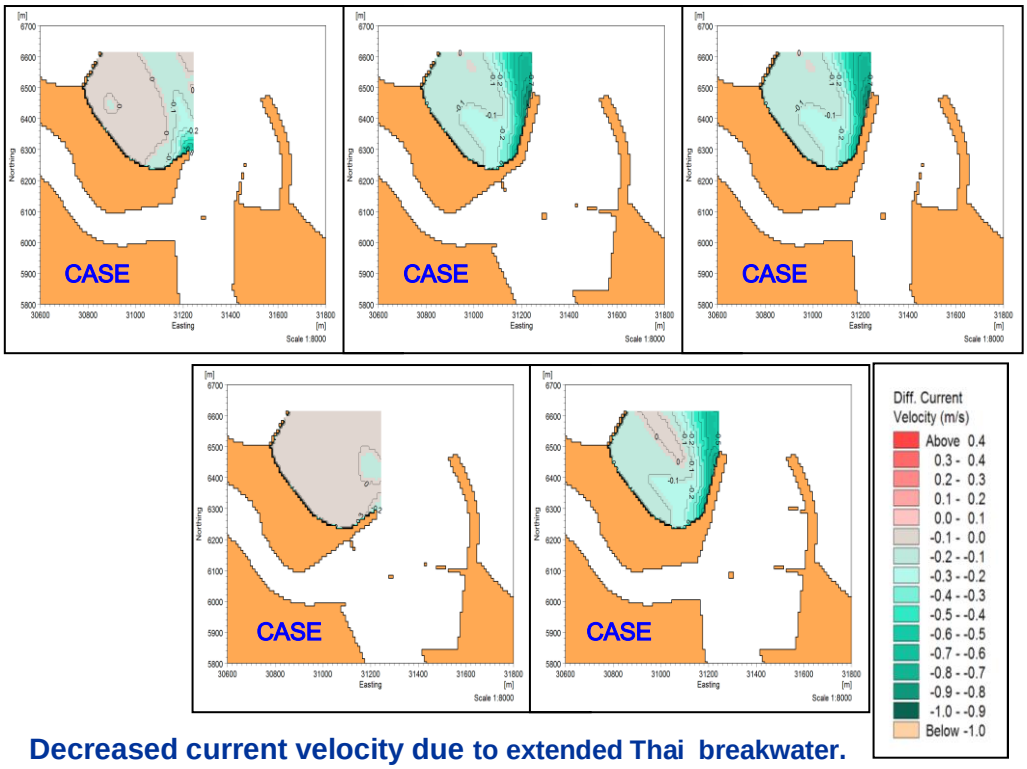
MALAYSIA



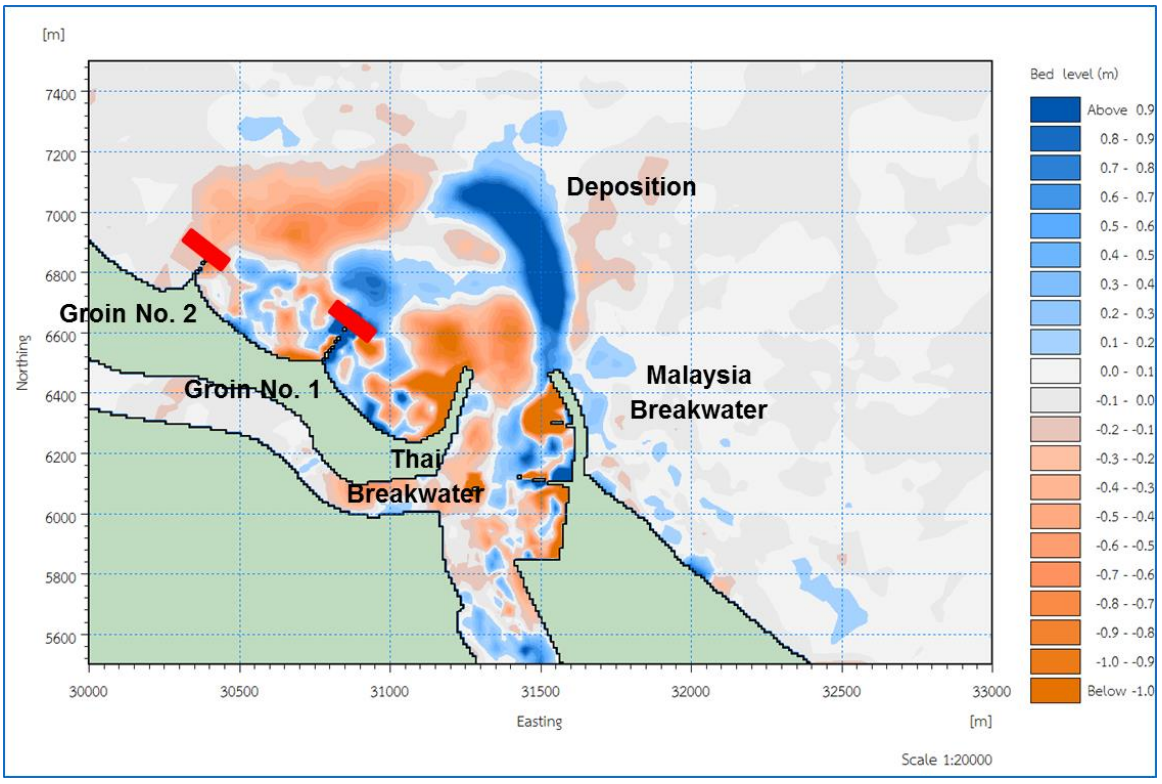
THAILAND



JOINT HYDRAULIC STUDIES
Impact on Thai Shoreline

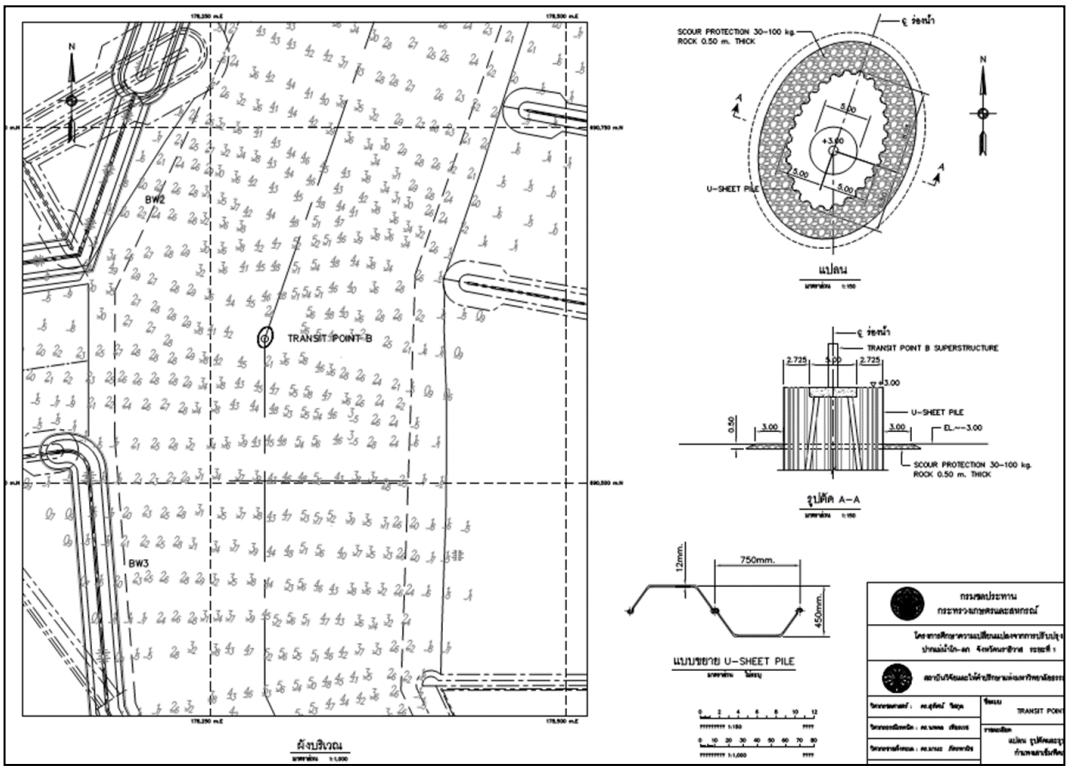


Decreased current velocity due to extended Thai breakwater.



PROTECTION WORKS AT TRANSIT POINT B

OVAL SHAPE



Hexagonal Shape