







Ban Mae Khuan

Ban Mae Suat

0 500m
Fig. 14-4 AFFECTED AREA IN SUB-DISTRICT
SOP MOEI DUE TO RESERVOIR
WATER LEVEL OF 165m



Photo-14-1 Forest Condition in Dry Season



Photo-14-2 Forest Condition in Rainy Season

CHAPTER 15

FURTHER INVESTIGATION

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CHAPTER 15 FURTHER INVESTIGATIONS

15.1 Geological Survey

(1) Nam Ngao Dam

The drillings and an adit shown in Table 15-1 are proposed for the further investigation. The locations are shown in Fig. 6-3 in Chapter 6. Further, the proposed drilling works should be done in accordance with the priority. It is necessary that the drilling given the first priority should be completed by the time of start of definite design. The necessity of borings of the second, third priority and the adits should be reviewed after the results of the drillings of the first priority.

The primary purpose of the above additional survey is to determine the geological distribution, properties, permeability, ground water level, etc. at the prince concrete part of concrete facing dam, the foundations of the spillway and power plant, and the ridges on the right and left banks of the dam site.

(2) Mae Lama Luang Dam

The adits shown in Table 15-2 are proposed for the further investigations. The locations are shown in Fig. 6-8 in Chapter 6. The primary purpose of the adit, AR-1, is to determine the geological distribution and properties at the elevation of dam crest, particularly the condition of erosion of calcareous rock on the right bank, the ground water level of which is low and which shows high permeability. Furthermore, the purpose of AL-1 is to check the geological conditions of the area of the foundation of the spillway at the left bank ridge section which is reported to show a noticeable degree of weathering.

Table 15-1 ADDITIONAL GEOLOGICAL INVESTIGATION WORKS IN NAM NGAO DAM

-- DRILL HOLE --

Location	Hole. No.	Coordinates		Elevation (m)	Angle from horizontal and Direction	Length (m)	Permeability test	Priority			Purpose	Remark
		Northing	Easting					1	2	3		
Right bank	DR-9	1,967.002	393.912	233	90°	70	○	○			Geology, Permeability (As basement for plinth concrete)	
	DR-10	1,966.958	393.820	224	90°	70	○		○			
	DR-11	1,966.863	393.765	167	60° S 45° W	100	○	○				
Right bank Side ridge	DR-12	1,966.810	394.440	342	90°	100	○	○			Geology (Distribution of limestone) Permeability, Groundwater level { Investigation for reservoir } { watertightness }	
	DR-13	1,966.690	394.420	290	90°	80	○		○			
	DR-14	1,967.015	394.450	270	90°	60	○			○		
	DR-15	1,967.135	394.750	363	90°	100	○	○				
	DR-16	1,966.945	394.920	275	90°	70	○		○			
	DR-17	1,967.350	394.560	270	90°	60	○			○		
Left bank	DL-7	1,966.843	393.647	176	90°	90	○		○		Geology, Permeability (As basement for plinth concrete)	
	DL-8	1,966.855	393.550	204	90°	80	○	○				
	DL-9	1,966.855	393.447	223	90°	70	○		○			
Left bank Side ridge	DL-10	1,966.892	393.178	303	90°	70	○	○			Geology, Permeability, Groundwater level { Investigation for reservoir } { watertightness }	
	DL-11	1,966.841	393.210	275	90°	60	○		○			
	DL-12	1,966.949	393.145	275	90°	60	○			○		
	DL-13	1,966.650	393.060	275	90°	60	○		○			
	DL-14	1,966.725	392.966	275	90°	60	○			○		
Intake	DI-1	1,966.920	393.981	264	90°	40	-		○		Geology (As basement for Intake structure)	
Power house	PH-1	1,967.253	393.704	212	90°	30	-			○	Geology (As basement for penstock)	
	PH-2	1,967.213	393.575	177	90°	50	-	○			Geology (As basement for power house)	
Spillway	SP-1	1,966.913	393.340	273	90°	60	○			○	Geology, Permeability (As basement for spillway)	
	SP-2	1,967.062	393.384	205	90°	30	-		○		Geology (ditto)	
	SP-3	1,967.196	393.421	187	90°	30	-			○	Geology (ditto)	
Total						23 holes	1500m	Sub Total				
								First	priority	7 holes	570m	
								Second	priority	9 holes	570m	
								Third	priority	7 holes	360m	

-- ADIT --

Location	Adit No	Elevation	Direction	Length(m)	Remark
Left bank	AL-1	250	S15° W	60	Basement for spillway

Table 15-2 ADDITIONAL GEOLOGICAL INVESTIGATION WORKS IN MAE LAMA LUANG DAM

— ADIT —

Location	Adit No	Elevation	Direction	Length(m)	Remark
Right bank	AR-1	168	N40° E	100	
Left bank	AL-1	145	S25° E	50	Basement for spillway
Total 2 adits				150	

15.2 Environmental Investigation

(1) Water Quality

The water quality of the Yuam river will change due to impoundment in the Mae Lama Luang reservoir. The following objects will cause pollution or putrefaction of the reservoir water and result in impacts on aquatic biology, on which some study will be required.

- Solid waste from villages along the Yuam river
- Mineral resources scattered in the vicinity of project area
- Leachate of chemicals used in agricultural practice

(2) Merchantable Wood

There are plentiful merchantable forests in the mountainous or hilly areas.

These are Tectona grandis Linn.f., Shorea obtusa Wall, Shorea siamensis Miq. and Sindora siamensis Teijsm ex Miq.

It will be necessary to survey the economic value of those merchantable woods to be logged out in future.

(3) Fish Cultivation

After completion of the Mae Lama Luang reservoir, fishery is commonly developed in the stable water basin. Further study items are as follows.

- Freshwater fish species suitable for the reservoir environment.
- Plankton, benthic animal and aquatic weed which will give impacts on fishery in the reservoir.

(4) Tourism Resources

The project will be beneficial to the tourism industry as dam and reservoir will create a recreation zone in the area.

Further investigation thereon will be recommended to encourage or promote the tourism resources or tourism activities.

(5) Potential Resettlement Areas

Further investigation will be required as follows in the selected potential resettlement area.

- Soil survey
- Surface or underground water resources
- Preliminary reclamation scheme and land utilization
- Promising crops in the resettlement areas

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