

The features of promising potential sites for PSPP

Site Name		JN 9
Location (Name of River)		Upper dam/reservoir : Son La Province/ Bac Yen District / SinVang Commune (Nam Chim River) Lower dam/reservoir : Son La Province/ Bac Yen District / Hang Chu Commune (Nam Chim River)
Project Parameter	Installed Capacity P(MW) Design Discharge Qd(m ³ /s) Effective Head He(m) Peak Duration Time T(hrs)	1,000 190 680 7
Topography and Geology	(Overall geological condition)	-Regionally, this area belongs to Devonian to Jurassic volcanic area extruded through the basement Precambrian sedimentary rocks. -The oldest rocks in this area is Jurassic-Cretaceous quartz orthophyry (J-K?bh), in next stage of Cretaceous acidic volcanics of rhyolite and rhyolitic tuffs surround this porphyritic rocks. The last stage of the magmatic intrusion of syenite in Cretaceous. -There are no noticeable structures in this area. -The beddings of volcanic sedimentations are generally WNW-ESE. Syenite has the schistosity in N20~60E/60~80SE system.
	(Upper dam/reservoir)	- An existing approach is there from Bac Yen to the point near the upper reservoir via Co Bua village, which is un-paved and the length is about 40km. Since the road condition is quite bad, fundamental upgrade is necessary. And extension length of the road to the dam site is about 2km. -Upper dam site is located in V shaped valley of hard granite. Slope of the reservoir area is gentle with the slants of 20-30 degree, and the area is covered by surface soil. - Porphyritic feldspar and syenite of Jurassic / Cretaceous period is appeared around the dam site. These rocks are hard in flesh core. But at the ridge of the mountain, these are hardly weathered, which seems deep. -Core and Rock materials for fill type dam may available to be provided from the reservoir area. Therefore rockfill type dam is suitable. -Water discharge looks more than 1m ³ /s.
	(Waterway • Power Station)	-According to the geological maps, rock of the waterway seems Porphyritic feldspar and there are no major fault and fracture zone. -Since the downstream of the dam site is precipitous terrain and no road nearby, entrance of approach tunnels to underground powerhouse and tailrace are necessary to locate besides the lower reservoir, considering the route of approach road to the lower dam.
	(Lower dam/reservoir)	-Since existing road is only footpath, new approach road is necessary, which length is about 17km from the upper reservoir. -Rock of the dam site is mainly porphyritic feldspar and partially granite. These rocks hard and rigid enough for bedrock of concrete gravity type dam.
Natural and Social Environment	Natural Park / Protected Area	The project site and its surrounding areas are not in any existing or proposed protected area.
	Prosperous fauna / flora	The mountain slopes of the project site and its surrounding areas are heavily used by the local people, and small patches of forest are left around villages and as their small watersheds. Large mammals have been extinct by hunting pressure. It is assumed that no important flora exists.

	Minority	There are villages of Hmong ethnic group, and it is expected that they will receive negative impacts. Especially, the negative impact caused by loss of the gentle slope areas under the proposed upper reservoir is expected to be relatively large. This is because they are used as good agricultural land and pasture that are difficult to find in the area.
	Resettlement / Compensatory assets	There is a possibility that resettlement and compensation occur because of project activities such as expansion of an access road and construction of the reservoirs. If the local people in the proposed upper reservoir need to be resettled because of the loss of agricultural land, it may be difficult to find a new resettlement area, which could give negative impact to them.
	Historical / Cultural Heritage	There is no historical / cultural site in and around the project site.
	Road / Traffic condition	The road expanding works have been in process between Hanoi and Bac Yen for the Son La dam construction project. There is no good road to the project site from Bac Yen. Although there is a plan to pave part of the road, it is absolutely necessary to upgrade the road for the Project.
Others' Special Note	Distance from Son La 500kv substation is about 30km.	
Economic Value	820 mln US\$ (B/C=1.02)	

Site Name: JN9



Lower reservoir
HWL: 470m
LWL: 450m

Upper reservoir
HWL: 1180m
LWL: 1160m

Power House

Original map No. 5851-I
Scale: 1:50,000

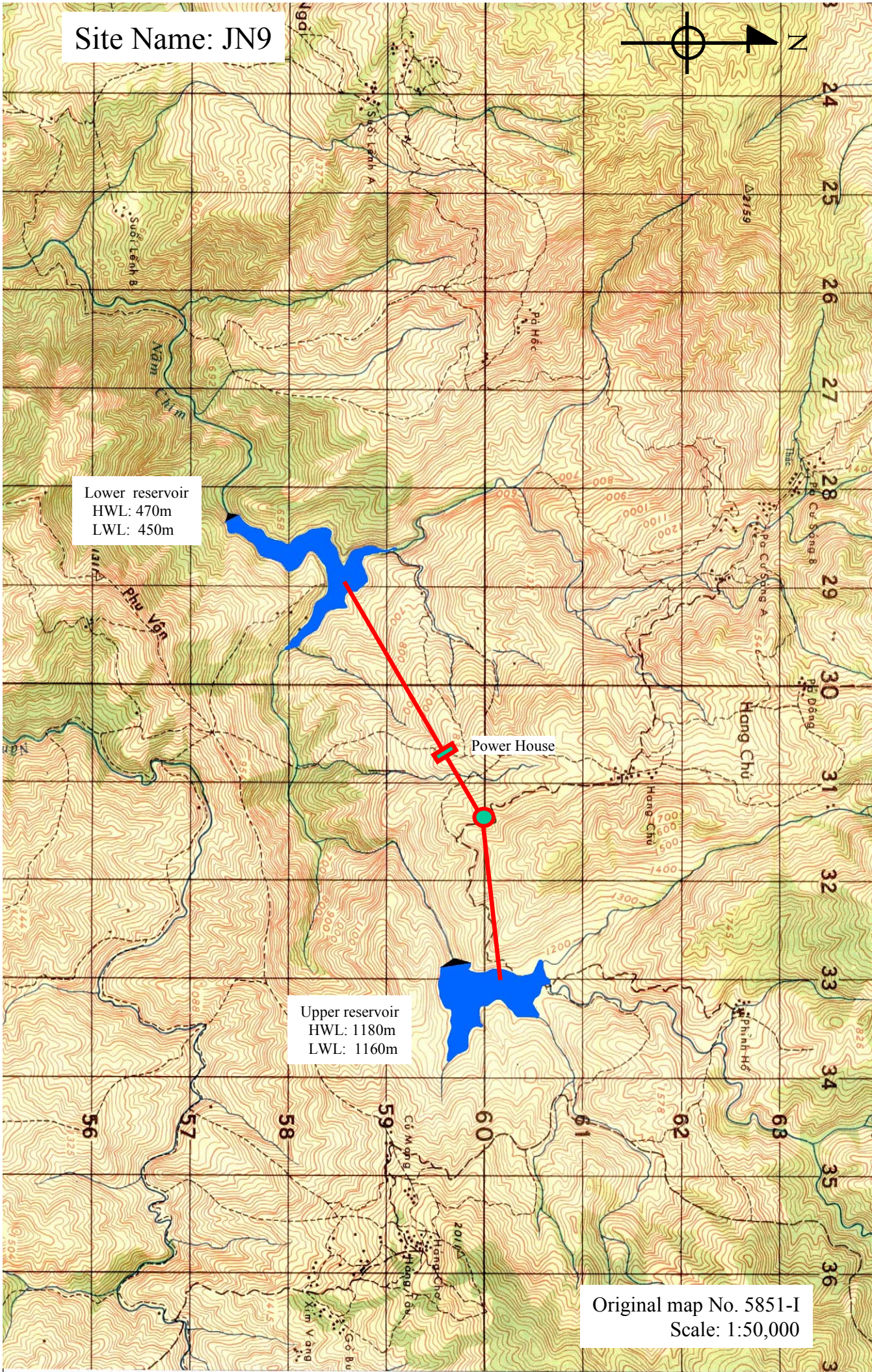




Photo 1

Upper dam site is located in V shaped valley of hard granite.



Photo 2

Hang Chu Streamline flows through upper and lower reservoirs.



Photo 3

Slope of the reservoir area is gentle and the area is covered by surface soil.

JN9 – Lower Reservoir



Photo 4

Around the right bank of the planned dam axis.
(View from the left bank of the dam axis)



Photo 5

Reservoir area
(View from the upstream of the reservoir)



Photo 6

This road runs around the upper reservoir area. It comes from Bac Yen, crossing Xim Vang Commune and goes up to Hang Chu commune.



Photo 7

There is no forest left the area around the lower dam site. The local ethnic group cultivates steep slope of the mountains.



Photo 8

There are secondary forests only around the villages and their upstream as a watershed.



Photo 9

A view of the proposed upper reservoir. There are better agricultural lands than other steep slope arable lands for the local people.



Photo 10

The local people usually cultivate steep slope of the mountains. Laws prohibit these activities.