

Project: Machalgho Multipurpose Project, Afghanistan

Specifications:

A.	Location	
	Country	Afghanistan
	Nearest City	Gardez
	River	Machalgho
	Basin	Hilmand
B.	Hydrology	
	Catchment Area at Dam Site	65 sq. km
	Precipitation	300 – 550 mm
	Temperature	
	a) Low	(-) 10 ⁰ C
	b) High	25 ⁰ C
	Water Availability	
	a) Average Dependability	21.532 MCM
	b) 75 % Dependability	13.131 MCM
	c) 90 % Dependability	9.728 MCM
C.	Reservoir	
	MWL	El. 2767 m
	FRL	El. 2765 m
	MDDL	El. 2730 m
	Area at FRL	0.31 sq. km
	Capacity at FRL	5.28 mcm
D.	Dam & Appurtenants	
	(i) Non-over flow Dam (NOF) - Rock fill	
	Type	Rockfill
	Length	286 m
	Top Level	El. 2768.5 m
	Top width	12 m
	MWL	El. 2767 m
	FRL	El. 2765 m
	MDDL	El. 2730 m
	TWL (Max)	El. 2720 m
	U/S Slope	
	○ For inner impervious clay core and filter zone	0.5 : 1
	○ For outer rock fill shale	2.3:1

	D/S Slope <ul style="list-style-type: none"> ○ For inner impervious clay core and filter zone ○ For outer rock fill shale Bed Level Deep Foundation Level Max. Height from deepest foundation level	0.5 : 1 2.3:1 El. 2717 m El. 2710 m 58.5 m
	(ii) Over flow Dam (OF) - Spillway Type Design Flood Length Height at deepest Foundation Crest Level Deepest Foundation Level Diversion Flood (lean period)	Ogee 425 cumec 70 m 55 m El. 2765 m El. 2710 m 8.5 cumec
	(iii) Energy Dissipation Arrangement Bucket invert level Bucket radius Lip angle Tangent point Gallery	El. 2711.70 El. 9.00m 45 0 El. 2715.76 2m x 2.5m
E.	Head Regulator & Weir Location Bed level Weir Crest level	RMC El. 2703 El. 2704.5
F.	Irrigation System Gross Command Area Cultivable Command Area Cropped Irrigated Area Irrigation Intensity Length of Main Canals RMC LMC Design discharge at head RMC LMC	2355 ha. 1824 ha. 2134 ha. 117% (21.5 km) 8.4 km 13.1 km 1.92 m3/s 1.185 m3/s
G.	Estimated Cost of Project (including Hydropower generation cost)	US \$ 28.4 million
H.	Net Annual Benefit from the project	
	i. Irrigation	US \$ 5.012 million
	ii. Power	US \$ 0.061 million
I.	Benefit Cost Ratio	2.47
J.	Internal Rate of Return	11.1 %

Thanks for your interest in our services.
Please do reach us at...

Design Group Project Consultants (P) Ltd.

110/4, M. Krishnappa Layout, Lalbagh Road,
Bangalore – 560 027.

India.

Phone: + 91 80 22238706, 22242658, 22242570

Fax: 22227308

Email: designgroup@vsnl.com