LOT4A:

REHABILITATION OF IRRIGATION DAM AT TAMPION
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
A	**Contractural Requirements: (TAMPION & KESIESA)**				
A110	Allow for performance security as specified the Conditions of Contract.	Sum			
A120	Allow for insurance against loss or damage and third party as specified in the conditions of contract	Sum			
A 150	Insurance against accidents to Workmen, Clause 2d	Sum			
A250	Pay for Material Testing (concrete, earthworks compaction, etc)	Sum			
A279.1	Allow for the provision of sign post(s) with inscription as directed by the Site Engineer.	Nr			
A 229.2	Provide Progress photographs as per specification.	Set			
A290.2	Setting out of Works and additional works control	Sum			
	SPECIFIC REQUIREMENTS				
	Accomodation				
A211.2	Allow for Running and Maintainance of office accomodation for engineers and contractor	Prov. Sum			
A211.3	Allow for renting and maintainance of accomodation for project supervisor within 6 months	Prov. Sum			
	Equipment				
A221.3	Allow for cost in connection to running and maintenance of Resident Engineers vehicle at site within project period and defect liability	Prov. Sum			
A221.4	Provide a brand new motorbike asdetermined by Engineer	Prov. Sum			
A221.5	Procure Core i5 Laptops for the Resident Engineer and Project Manager/WWDA	Nr			
	Health and Safety Measures				
A420.1	Provide safe Drinking Water for Site employees. Rate includes storage facilities; Polytank, etc)	Sum			
A420.2	Provide and maintain protective clothing, safety equipment, and working equipment; hand tools needed for use by site employees and hand tools needed in accordance with best practices.	Sum			
A420.3	Provide and maintain temporary latrines, located as necessary and remove and backfill	Sum			
A420.4	Allow for cost for medical expenses including provision for First Aid kit and train First Aider.	Sum			
	Supervision and Monitoring				
A420.7	Provide for holding Stakeholders meeting throughout the project life cycle	Sum			
	Mobilisation and Demobilisation				
A420.9	Allow for the Mobilization and De-mobilization of Equipments required for the works: Bulldozer, Payloader, Roller & Trucks to Site and back to plant pool site.	Sum			
	Contractural Requirements: Carried to Summary				

LOT4A:

REHABILITATION OF IRRIGATION DAM AT TAMPION
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
B	**HEADWORKS: ROAD EMBANKMENT**				
B.1.1	Remove old/falling boulders at u/s slope and stockpile for re-use	m^2	1,600.00		
B.1.2	Fill and compact with approved laterite material on top of road serving as dam wall	m^3			
B.1.3	Fill and compact with approved material to eroded section to receive stone pitching	m^3	800.00		
B.1.4	Stone-pitch Rip Rap on U/S to prevent boulders from sliding	m^2	1,600.00		
B.1.5	Fill and compact with approved material at sections of road as dam wall	m^3	2,000.00		
B.1.6	Extend and fill with gravel material to road embankment to the top crest Level (in consultation with Ghana Highway Authority- Northern Region)	m^3	2,000.00		
B.1.7	Grade dam crest laterite to 1% camber to both side.	m^2	4,000.00		
B.1.8	Provide and Instal staff gauge in Reservoir as directed by the engineer	Nr	1.00		
	HEADWORK: ROAD EMBANKMENT TO SUMMARY				

LOT4A:

REHABILITATION OF IRRIGATION DAM AT TAMPION
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
C	CONCRETE WEIR: Weir Length=10.00m, Height to raise=0.5m, thickness=0.3m,				
C.1.1	hack the surface of existing weir to receive new reinforced concrete	sum			
C.1.2	drill bore 0.3m into concrete to receive dowel rebars	sum			
C.1.3	insert reinforcement bars into drilled holes and lap bars to increase cill of spillway by 0.5m	kg	288.00		
C.1.4	Provide fair-faced shuttering to culvert diversion weir	m^2	7.20		
C.1.5	Provide at site and place re-inforced concrete 1:2:4/19mm in aggregate in weir	m^3	1.80		
C.1.7	Provide and place 300mm thick Boulders behind the D/S culvert apron to prevent scouring	m^2	50.00		
	CULVERT WEIR TO SUMMARY				

LOT4A:

REHABILITATION OF IRRIGATION DAM AT TAMPION
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
D	MAIN DRAIN--SPILLWAY CHANNEL: Length=422m, Width=20.0m				
D.1.1	Excavate in spillway channel to define the bed level of spillway	m^3	683.64		
D.1.2	Stock-piled material to place and compact to form spillway protective dyke (L=422.0m, TW=2m and DW=4m)	m^3	1,200.00		
D.1.3	Train mani drain to discharge spill water away from road embankment. stockpile material to be used for spillway dyke.	m^3	4,000.00		
D.1.4	Spread and compact excavated material to form protective dyke along spillway channel	m^3	1,200.00		
	MAIN DRAIN CARRIED TO SUMMARY				

LOT4A:

REHABILITATION OF IRRIGATION DAM AT TAMPION
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
	SUMMARY				
A	**Contractural Requirements (Tampion & Kasiesa)**			-	-
B	HEADWORKS			-	-
C	WEIR SPILLWAY				-
D	MAIN DRAIN				-
	TOTAL BILL				-
	ALLOW FOR CONTINGENCIES	**10% of TOTAL BILL**			-
	TOTAL CARRIED TO GRAND SUMMARY			**USD**	-

LOT4B: REHABILITATION OF IRRIGATION DAM AT KASIESA
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
	GENERAL ITEMS (FILL THE ONE FOR LOT4A ONLY)				
	Contractural Requirements:				
A110	Allow for performance security as specified the Conditions of Contract.	Sum			
A120	Allow for insurance against loss or damage and third party as specified in the conditions of contract	Sum			
A250	Pay for Material Testing (concrete, earthworks compaction, etc)	Sum			
A279.1	Allow for the provision of sign post(s) with inscription as directed by the Site Engineer.	Nr			
A 229.2	Provide Progress photographs as per specification.	Set			
A290.2	Setting out of Works and additional works control	Sum			
	SPECIFIC REQUIREMENTS				
	Accomodation				
A211.3	Allow for renting and maintainance of accomodation for project supervisor within 6 months	Prov. Sum			
	Equipment				
A221.3	Allow for cost in connection to running and maintenance of Resident Engineers vehicle at site within project period and defect liability	Prov. Sum			
A211.4	Procure Core i5 Laptops for the Resident Engineer and Project Manager/WWDA	Nr			
	Health and Safety Measures				
A420.1	Provide safe Drinking Water for Site employees. Rate includes storage facilities; Polytank, etc)	Sum			
A420.2	Provide and maintain protective clothing, safety equipment, and working equipment; hand tools needed for use by site employees and hand tools needed in accordance with best practices.	Sum			
A420.3	Provide and maintain temporary latrines, located as necessary and remove and backfill	Sum			
A420.4	Allow for cost for medical expenses including provision for First Aid kit and train First Aider.	Sum			
	Supervision and Monitoring				
A420.7	Provide for holding Stakeholders meeting throughout the project life cycle	Sum			
	Mobilisation and Demobilisation				
A420.9	Allow for the Mobilization and De-mobilization of Equipments required for the works: Bulldozer, Payloader, Roller & Trucks to Site and back to plant pool site.	Sum			
	Contractural Requirements: Carried to Summary				**0.00**

LOT4B: REHABILITATION OF IRRIGATION DAM AT KASIESA
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
B	**HEADWORKS:**				
B.1	**DAM EMBANKMENT**				
B.1.1	Clear dam embankment section along axis of weeds and small trees (L=545m, Width=21.0m)	m^2	11,445.00		
B.1.2	Dam Embankment	Ha	0.49		
B.1.3	Spillway Channel and approaches and Dyke	Ha	0.29		
B.1.4	Reservoir (Borrow Area)	Ha	1.29		
B.1.5	Irrigable Area	Ha			
B.1.5	Fell undesirable trees and dispose off them from site, girth:				
B.1.6	2400 - 1500mm	No	2.00		
B.1.7	1500 - 500mm	No	14.00		
B.1.8	300 - 500mm	No	21.00		
B.1.3	Scurify the surface of the dam axis to receive new fill material	m^2	2,180.00		
B.1.4	Fill and compact with approved fill material to the d/s, u/s and top of dam	m^3	10,844.14		
B.1.6	Provide and place Rip-Rap on U/S face of damwall (30% add up)	m^2	1,716.15		
B.1.7	Re-grassing with vertiva of the D/S of dam to check erosion (50% add up)	m^2	1,516.65		
B.1.8	Provide and place 150mm thick topsoil cover to downstream slope of dam	m^2	1,516.65		
B.1.9	Fill and compact with approved gravel fill material on top of dam (average fill=0.3m)	m^3	420.00		
B.1.10	Grade dam crest laterite to 1% camber to both side.	m^2	1,400.00		
B.1.11	Provide and Instal staff gauge in Reservoir as directed by the engineer	Nr	1.00		
	HEADWORK: EMBANKMENT TO SUMMARY				

LOT4B: REHABILITATION OF IRRIGATION DAM AT KASIESA
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
B.2	**SPILLWAY Main spillway : Width=44.00m, Length=160.m**				
B.2.1	Excavate in earth for foundations for beam (L=32m, W=0.5m and D=0.8m)	m^3	12.80		
B.2.2	Provide formwork for spillway	m^2	12.80		
B.2.3	Provide 100mm Blinding to receive reinforced concrete	m^2	3.20		
B.2.4	Provide reinforcement bars to spillway control beam	kg	1,075.20		
B.2.5	Provide at site and place re-inforced concrete 1:2:4/19mm in aggregate in spillway beam	m^3	6.72		
B.2.6	Push stock-piled material to place and compact to form spillway protective dyke (L=200m, TW=2m and DW=4m)	m^3	600.00		
B.2.7	Fill, compact and level gullies to create level spillway channel to receive gabion from a borrow pit material not more than 1km	m^3	2,513.71		
B.2.8	Procure 300mm gabion basket	m^2	1,800.00		
B.2.9	Provide and place 300mm thick boulders in gabion basket in gullies of the spillway channel (L=60 and W=30m)	m^2	1,800.00		
	SUB-TOTAL SPILLWAY CARRIED TO SUMMARY				

LOT4B: REHABILITATION OF IRRIGATION DAM AT KASIESA
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
C.2	**LATERALS :**				
C.2.1	Clear all vegetation along laterals. Rate include disposal from site to designated spot. Total Length: 350m	m^2	700.00		
C.2.2	Demolish damage blockwork lateral and stockpile good ones for reuse and stockpile backfilling material for reuse	m^2	202.00		
C.2.3	Provide and Place concrete 1:2:4 mix in aggregates for leteral base lining.	m^3	6.06		
C.2.4	Construct blockwork lateral per the desgin provided by the project manager	m^2	202.00		
C.2.5	Backfill and compact to lateral	m^3	15.15		
	SUB-TOTAL LATERALS CARRIED TO SUMMARY				
D	**MAIN AND SECONDARY DRAINS-400m**				
D.1	Excavate for the construction of main drain and dispose off materials	m^3	800.00		
D.2	Excavate for the construction of secondary drain and dispose off materials	m^3	75.00		
	MAIN AND SECONDARY DRAINS TO SUMMARY				

LOT4B: REHABILITATION OF IRRIGATION DAM AT KASIESA
ADAPTATION FUND PROJECT

Bill of Quantities

Item No	Description	Unit	Quantity	Rate USD	Amount USD
	SUMMARY				
B	HEADWORKS				
B.1	EMBANKMENT				
B.2	SPILLWAY				
C.2	LATERALS				
D	MAIN AND SECONDARY DRAINS				
	TOTAL BILL				
	ALLOW FOR CONTINGENCIES 10%				
	TOTAL KESIESA				

LOT 4: REHABILITATION OF IRRIGATION DAM AT TAMPION & KASIESA
ADAPTATION FUND PROJECT

GRAND SUMMARY

Item No	Description				Total Amount GH¢
A	TAMPION				0.00
B	KASIESA				0.00
	GRAND TOTAL (D+ E)			GHS	-

REHABILITATION OF DAMS AND DUGOUTS IN NORTHERN GHANA

PRINCIPAL QUANTITIES

LOT	Project Name	BD IDENTIFICATION No.	Earthworks (Excavation) m^3	Earthworks (Fill) m^3	Spillway Length m	Concrete volume m^3	Reserior Volume m^3
LOT4	REHABILITATION OF IRRIGATION DAM AT KESIESA & TAMPION	MESTI/UNDP/05/18/4	15,710.0	14,388.0	50	120	664,424.0