

4CAGAYAN DE ORO CITY WATER DISTRICT GUIDELINES	Document No. : GL-ENG-01	Eff. Date. : XX-XX-XXXX
	Revision No. : 00	Pages : 1 of 4
COST ESTIMATION		

I. OBJECTIVE

This document defines the process for the preparation of cost estimates for the Program of Works (POW) for Pipeline Design.

II. LIMITATIONS

The process described in these guidelines is limited to standard activities in the Engineering Department such as:

1. Pipeline Works
2. Concrete Pavement Demolition
3. Concrete Pavement Restoration
4. Hydrotesting Disinfection and Flushing
5. Installation of Appurtenances
6. Welding Works
7. Other Works

III. GUIDELINES

The Pipeline Systems Section Staff shall refer to the following guidelines for cost estimation:

Column 1: ITEM

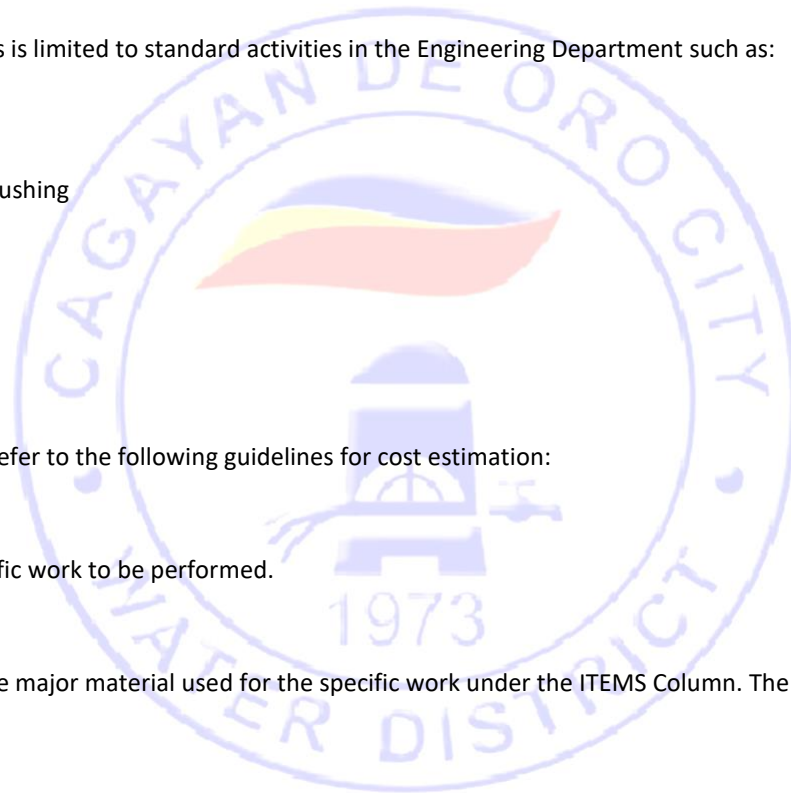
The ITEM Column contains the specific work to be performed.

Column 2: MATERIALS

The MATERIALS Column indicates the major material used for the specific work under the ITEMS Column. The standard output per day is indicated in the Quantity and Unit Sub-Columns.

Column 3: MANPOWER

The MANPOWER Column corresponds to the number of personnel required to perform the specified work in the ITEM and MATERIALS Columns within a period of One Day and or within a period of a number of hours.



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Column 4: EQUIPMENT

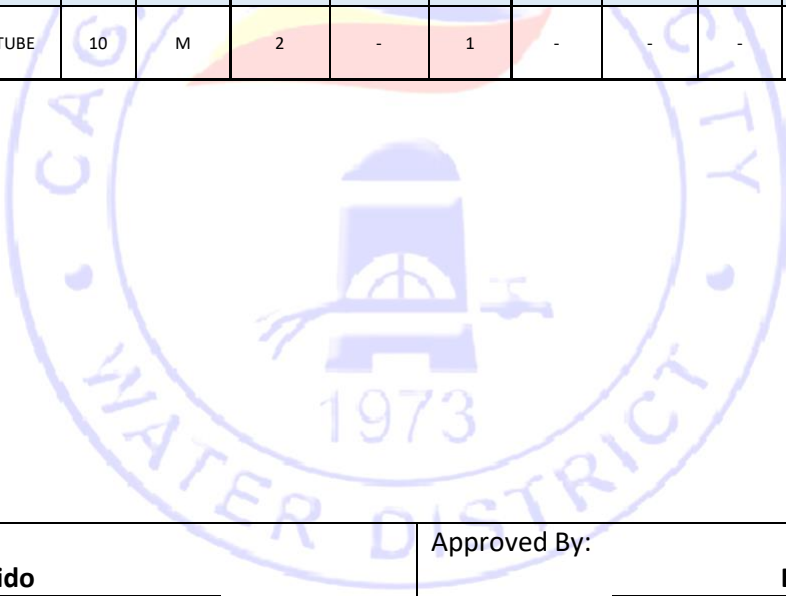
The EQUIPMENT column indicates the required machines and tools with corresponding number of units to be used during the performance of the specified activity in the ITEM and MATERIALS Columns.

Column 5: FUEL

The FUEL column specifies the type of fuel and its quantity to be used by the corresponding equipment used in the specific work in the ITEM and MATERIALS columns.

NO.	ITEM	MATERIALS			MANPOWER			EQUIPMENT				FUEL					
	ACTIVITY	ITEM	QTY	UNIT	PERSONNEL	NO. OF HOURS	NO. OF DAYS	EQUIPMENT	QTY	UNIT	OXYGEN	ACETYLENE	FUEL	QTY	UNIT	NO. OF HOURS	NO. OF DAYS
I.	PIPELAYING WORKS (INCLUDES EXCAVATION, BACKFILLING & COMPACTION)																
	PIPELAYING OF 50MMØ uPVC PIPE	50MMØ PIPE	10	LM	2	-	1	-	-	-	-	-	-	-	-	-	-
	PIPELAYING OF 75MMØ uPVC PIPE	75MMØ PIPE	6	LM	2	-	1	-	-	-	-	-	-	-	-	-	-
	PIPELAYING OF 100MMØ uPVC PIPE	100MMØ PIPE	6	LM	2	-	1	-	-	-	-	-	-	-	-	-	-
	PIPELAYING OF 150MMØ uPVC PIPE	150MMØ PIPE	90	LM	4	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	PIPELAYING OF 200MMØ uPVC PIPE	200MMØ PIPE	90	LM	6	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	PIPELAYING OF 200MMØ STEEL PIPE	200MMØ PIPE	36	LM	8	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	PIPELAYING OF 250MMØ STEEL PIPE	250MMØ PIPE	24	LM	6	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	PIPELAYING OF 300MMØ STEEL PIPE	300MMØ PIPE	12	LM	6	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	PIPELAYING OF 400MMØ STEEL PIPE	400MMØ PIPE	12	LM	8	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	PIPELAYING OF 500MMØ STEEL PIPE	500MMØ PIPE	12	LM	8	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	PIPELAYING OF 600MMØ STEEL PIPE	600MMØ PIPE	12	LM	8	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	PIPELAYING OF 800MMØ STEEL PIPE	800MMØ PIPE	12	LM	8	-	1	BACKHOE	1	UNIT	-	-	DIESEL	30	LI	6	1
	DEWATERING OF TRENCH FOR PIPELAYING	-	-	-	1	-	1	WATER PUMP	1	UNIT	-	-	OIL	5	LI	6	1
	GASOLINE																
II.	CONCRETE / PAVEMENT / DRIVEWAY DEMOLITION WORKS																
	ONE (1) SQUARE METER OF CONCRETE (0.10M)	-	-	-	1	6	1	CONCRETE CUTTER	1	UNIT	-	-	GASOLINE	4	LI	6	1
		-	-	-	1	6	1	JACKHAMMER	1	UNIT	-	-	GASOLINE	20	LI	6	1
		-	-	-	-	-	-	COMPRESSOR	1	UNIT	-	-	GASOLINE	15	LI	6	1
	ONE (1) SQUARE METER OF CONCRETE (0.15M)	-	-	-	1	6	1	CONCRETE CUTTER	1	UNIT	-	-	GASOLINE	4	LI	6	1
		-	-	-	1	6	1	JACKHAMMER	1	UNIT	-	-	GASOLINE	20	LI	6	1
		-	-	-	-	-	-	COMPRESSOR	1	UNIT	-	-	GASOLINE	15	LI	6	1

VIII.	INSTALLATION OF BLOW-OFF VALVE ASSEMBLY																
	(75MMØ) WITH INTERCONNECTION WORKS	VARIOUS	1	ASSY	4	-	1	-	-	-	-	-	-	-	-	-	-
IX.	INSTALLATION OF FIRE HYDRANT ASSEMBLY																
	(100MMØ) WITH INTERCONNECTION WORKS	VARIOUS	1	ASSY	4	-	1	-	-	-	-	-	-	-	-	-	-
X.	INSTALLATION OF FIRE HYDRANT ASSEMBLY																
	(150MMØ) WITH INTERCONNECTION WORKS	VARIOUS	1	ASSY	4	-	1	-	-	-	-	-	-	-	-	-	-
XI.	INSTALLATION OF METER STUB-OUT ASSEMBLY																
	PIPELAYING OF 50MMØ PE TUBE (PER 10-METER LENGTH OF PE TUBE)	PE TUBE	10	M	2	-	1	-	-	-	-	-	-	-	-	-	-



Prepared By: _____ <p style="text-align: center;">Rhona Kim U. Ferido Process Owner</p>	Approved By: _____ <p style="text-align: center;">Bienvenido V. Batar, Jr. General Manager</p>
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