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July 28, 2003
7731 F

RE: Resolute Bay Utilidor Assessment

Dear Mr. Slifka;

The purpose of this report is to document our understanding of the proposed scope of work and costs to repair and upgrade the utilidor system in Resolute Bay as discussed in the meeting of July 25, 2003.

The work will be done under four separate contracts as follows:

Contract 1 – Material Supply on Sealift

ADWEI is to arrange a contract with Adco North (Adco North is providing materials to Resolute Bay for the Fuel Facility Contract and because delivery to Montreal is needed by August 2, sole sourcing is the only means of achieving delivery) to supply the following materials:

Item	Commentary	Construction Cost
To purchase new pipe and ship it to Resolute to replace pipe used in repairs	12-50' lengths of 8" diameter 2" thick insulated water pipe to replace water pipe being used in the repairs.	$50,600
Supply glycol feed systems in both pumphouses.	Provide Axiom glycol feed systems.	$3,000
Purchase propylene glycol antifreeze for use in the two pumphouses.	Purchase 1 pallet (4 barrels) of Dowfrost HD 100% concentration.	$2,000
Total Cost		$55,600

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Contract 2 – Replace Utilidor Piping

ADWEI is to prepare a scope of work contract to do the replacement of the utilidor piping. This work will either be negotiated or tendered depending upon local Contractor availability and Government Contracting procedures. This work needs to be started as soon as possible.

Item	Commentary	Construction Cost
1.-5. Main water line to be fixed AV5-6 42m AV9-10 46m AV27-28 70m plus change elbow to long radius elbow using two 45 degree elbows AV27 change joint	To be fixed using pipe supplied by the community. Various items will need to be flown in for this work including fusion machine, pipe fittings, pipe saddles and valves. Contract will need to have unit rates for the amount of water line to be replaced.	$115,000
AV8-9 30m Test the water pipe between AV8 and 9 and replace as required.	Assume a unit cost for replacing water lines is $600/mter then contingency cost is $18,000.	$18,000
Total Cost		**$133,000**

Contract 3 – Replace Laterals

The materials for the laterals will not be in Resolute Bay until the arrival of the sealift. Details of this work are therefore considered of secondary importance and are part of a later contract. Materials are supplied by Housing Association and labor for installation is to be supplied by this Contract. It is assumed that Southcamp Inn will do the work for Southcamp Inn.

Item	Commentary	Construction Cost
7. Repair Lateral Pipes.	New saddles and valves are carried in item 1. This work may be tendered as part of Contract 2 or could be done by a separate Contractor. Assume 15 laterals to be replaced at $4,000 labour each.	$60,000

Contract 4 – Upgrade Heating in Pumphouses

Item	Commentary	Construction Cost
16. Install a glycol feed systems into both pumphouses.	Glycol feeders are being supplied by Contract 1 and will need to be installed under this contract	$1,000
Install side stream filters into the heating systems on both pumphouses.		$2,000
12. &19. Upgrade heating system for wet well heating and building heat in Char Lake pumphouse.	Leave the existing Superhot heat exchangers in place and install a new flat plate heat exchanger to heat wet well c/w a 60gpm boiler circulation pump to maintain 10ºC in wet well. The improved circulation and increased wet well temperatures should resolve the heating problem.	$38,000

19. Upgrade the heating system in Signal Hill pumphouse	Repipe the system to properly supply the existing flat plate heat exchanger to heat wet well c/w a 60 gpm boiler circulation.	$19,000
Construction Total		**$60,000**

Work to be Done by O&M

Item	Commentary
8. Reduce bleed line rates to about 3.5 gpm per bleeder and a total of 7 bleeders.	This should be done by O&M and should not be contracted out. Install approved backflow preventers on each bleeder, install watts flow meter on each bleeder, ensure there is an air gap between the bleeder and the sanitary main.
6. All vaults to be set up, cleaned properly and covered properly.	Most manholes are in good shape. Some insulated manhole covers need to be fixed. Manholes are to be cleaned out of any debris.
10. Make sure the Char lake ceiling circulation fan works properly.	Fan to be replaced by O&M an additional 1 or 2 fans to be added.
11./17. Maintain the boiler and burners. Add a new low water cut-off to the boilers. This is to occur in both Char lake and Signal Hill pumphouses.	Boilers have an annual maintenance contract which is to occur shortly. O&M to get miscellaneous work done on boiler s as part of the standard maintenance contract. A new boiler section is required on one of th boilers at the signal Hill reservoir as this boiler section has just starting leaking.
14. Remove valve on oil return lines from boilers in both Char Lake and Signal Hill pumphouses.	As above

15. Change relief vales on boiler so that they are individually piped rather than in a common pipe.	As above
Old School boilers	O&M to get parts to utilize these old boilers on an emergency basis if needed.

Engineering Fees

Engineering as Part of As and When Contract (hours and Disbursements to July 27, 2003		
Site Condition Survey and Report	Fees: $7,000 Disbursements: $3,300	$10,300

Estimated Engineering Fees for Items 1,2,3 and 4		
Prepare Drawings and Specifications	Fees: $16,000 Disbursements: $2,000	$18,000
Construction Services	Fees: $5,000 Disbursements: $ 150	$5,150
Site Review Following construction (one trip)	Fees: $3,000 Disbursements: $3,500	$6,500
Engineering Total		**$29,650**

Therefore total costs (excluding direct O&M costs) are as follows:

Construction Total		$308,6000
Engineering and Disbursements Total		39,950
Contingency	20%	$69,710
Grand Total		**$418,260**

Some of the items discussed in the meeting of July 25 are to be deferred until a future year. These include:

Item	Commentary
9. Char Lake Building Wall insulation to be upgraded.	Roof and wall area of about 2,000 sqft at $20/sqft or $40,000 total.
13. Set up new boiler (relocated existing boiler from Carmartatiq School) to heat the Char Lake Building.	If the bleeders are reduced as indicated then the installation of this boiler is superfluous. Installation of a boiler would likely cost about $19,000. Alternately heat could be added by using an oil-fired furnace. This would be more suitable and would surely be a less costly installation.

ADWEI has proceeded to get costing for Contract 1. This costing should be available for Monday July 28. We are also proceeding to put together a scope contract for Contract 2. A draft of this package should be available for Monday evening. We understand that there will be a meeting on Tuesday July 29, 2003 to discuss the above and get further direction.

Sincerely,
A.D. Williams Engineering Inc.

Brian George, P.Eng.
Senior Mechanical Engineer