

## Water Treatment Plant

### Lime Sludge Filter Press



**Purpose:** To remove water from the lime sludge used to soften the drinking water. The WTP operates two of these filter presses which were installed in 1993.

The lime sludge is pumped into plates with filter cloth under high pressure which allows about 70 % of the water to be removed. The remaining “filter cake” is dropped into trucks directly below the press and trucked to the inert landfill for disposal. The press is operated using electricity powering hydraulic pumps to compress the plates, move the plates, and other hydraulic functions. Air pressure operates numerous valves controlling the sludge flow into the press.

**Current Condition:** Both filter presses have deteriorated 10” hydraulic cylinders with scoring of the cylinder shaft itself as well as hydraulic seal deterioration in other parts of the 29 year old machines. The current cylinders were rebuilt in 2018. One of the machines is only running at a reduced capacity and is showing signs of failure in the near future.



## Alternatives:

There are two alternatives for solving the likely failure of this vital aged machinery.

1. Total Rebuild of the machinery, including new rams, hydraulic system, valves and controls at an estimated cost of \$711,000 with no guarantees of extended life span. Estimated additional life 8 to 10 years.
2. Replace with new machines which also have a significant removal and installation effort at an estimated cost of \$1,638,000. Estimated life span 30 years.

This equipment is on the Department of Environment State Revolving Fund (DWSRF) intent list.

Attached: Opinion of Probable costs:

Prepared by: Joe Rowell, Water Department Supervisor

Darrell Hournbuckle, PE Interstate Engineering Inc.



CITY OF JAMESTOWN  
 LIME SLUDGE FILTER PRESS  
 OPIONION OF PROBABLE COST  
**REHABILITATION OF EXISTING PRESSES**



August-22  
 EC 22-03-071.04

Item No.	Description	Unit	# of UNITS	Unit Price	Amount
1	New 10" cylinders	Ea.	2	\$78,000.00	\$156,000.00
2	New minor cylinders	Ea.	2	\$10,000.00	\$20,000.00
3	Cylinder replacement Labor	LS	1	\$40,000.00	\$40,000.00
4	Misc. Parts	Ea.	2	\$10,000.00	\$20,000.00
5	Hydraulic Control Panel	Ea.	2	\$50,000.00	\$100,000.00
6	Flow Meters	Ea.	2	\$58,000.00	\$116,000.00
7	Control Integration	LS	1	\$5,000.00	\$5,000.00
8	Press Plates	LS	1	\$40,000.00	\$40,000.00
9	Manufacture Rep and Refurbish Crew	Ea.	2	\$20,000.00	\$40,000.00
10	Painting of Structural Supports	LS	1	\$10,000.00	\$10,000.00
11					
12					
13					
14					
15					
16					
	Opinion of Bid Cost				\$547,000.00
	Contingency				\$54,700.00
	Engineering, Legal and Administration				\$109,400.00
	<b>Opinion of Total Project Cost</b>				<b>\$711,100.00</b>

CITY OF JAMESTOWN  
LIME SLUDGE FILTER PRESS  
OPIONION OF PROBABLE COST  
**NEW FILTER PRESSES**



August-22  
EC 22-03-071.04

Item No.	Description	Unit	# of UNITS	Unit Price	Amount
1	New Filter Presses	Ea.	2	\$460,000.00	\$920,000.00
2	Installation	Ea.	2	\$150,000.00	\$300,000.00
3	Misc. Parts	LS	1	\$10,000.00	\$10,000.00
4	Control Integration	LS	2	\$5,000.00	\$10,000.00
5	Painting of Structural Supports	LS	2	\$10,000.00	\$20,000.00
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
	Opinion of Bid Cost				\$1,260,000.00
	Contingency				\$126,000.00
	Engineering, Legal and Administration				\$252,000.00
	<b>Opinion of Total Project Cost</b>				<b>\$1,638,000.00</b>