Maine Emergency Management Agency

Dam Safety After Action Review Form

This information is for official use only

After Action Report Form (AAR)
Maine Emergency Management Agency

Exercise Name: Bucksport Mill LLC

Exercise Date: June 26, 2025

Exercise Location: Bucksport Public Safety Building

Agencies in Attendance

- Dam Owner – Bucksport Mill LLC.
- Hancock County EMA
- Haley Ward
- National Weather Service Caribou
- Bucksport Police
- Bucksport Fire
- Town of Bucksport
- Town of Orland
- Alamoosook Lake Association
- Toddy Pond Association
- Orland Community resilience Committee
- Orland Fire
- Hancock County Regional Communications
- MEMA
- American Red Cross

Description of Exercise

Review the existing Emergency Action Plans (EAP) for the Silver Lake dam in Bucksport and the Alamoosook and Toddy Pond Dams in Orland. Evaluate current response concepts, plans and capabilities involving a dam failure. Primary focus was on critical decisions, notifications, and the integration of assets necessary to save lives and protect public health and safety and minimize loss of property. Exercise scenario and questions covered potential issues at all three dams.

Exercise Objectives

Review the EAP and identify necessary changes to the plans. Reviewed the Inundation maps created by the Maine Emergency Management Agency and Haley Ward. The EAPs will be updated and distributed as necessary. Discussed and reviewed the steps to take in the event of a dam flooding/breach event while following your Emergency Action Plan for all three dams.

Identified Successful Outcomes from Exercise

- Identified the needed changes to the EAP
- Great review of the plan and identified expectations
- Identified roles responsibilities of all agencies
- Discussion across other agencies and thinking through the process
- Reviewed the evacuees list as a group and changes recommended
- Top priorities are life safety and evacuations
- Understanding the responsibilities the new dam owners will face
- Understanding how the EAP would work in a real-world situation

Changes to the Plan and Who Will Make the Changes

- The discussion brought out suggested edits to the Notification Flow Chart and the EAP:
    - Update the residential, business, and infrastructure tables on all plans
    - Add Bucksport Generation to the flowcharts (Dam Operator)
    - Update DPS Bangor land line
    - Add additional contact for Lake associations at Alamoosook and Toddy Dams
    - NWS can issue flash flood warning and watch.
- Orland responders would be toned out by County RCC

Other Lessons Learned or Corrective Actions

- Dam Operator and Back Up Dam Operator were not present
- Possibly create prepared messaging
- Resource mobilization could take an hour or two depending on event
- The transmission line to Castine comes through Bucksport (Maine Maritime Academy)
- American Red Cross (ARC) was concerned shelter identifications (pre event)
- ARC could also assist with shelter for utility crews

Other Comments

- Door to door notifications w/PA system would occur
- Use Less Acronyms
- Fairly realistic scenario, good job
- Excellent agency representation but would like to have seen additional
- Learned so much from other agencies and their procedures, Thanks.
- Excellent feedback. Local participation is crucial.
- Incident command most likely to be set up on both East and West sides (depending on impacts)
- NWS would continue to work closely with IC even after weather has passed
- Utilities would communicate with county to determine restoration priorities

Participant Comment

- Good review – informative to have additional eyes looking over the EAP.
- Allowed town staff to understand their roles for each level. Practical experience of clarifying duties
- Great working together to identify all the necessary changes
- The exercise helped to understand what the towns needs to do to be prepared.
- Good refresher on how the process will work

Water Supply System
5 Year Capital Repair/Improvement Budget
For the Fiscal Years Ending June 30

Water Supply (Dams)

Description	2021	2022	2023	2024	2025
Filter House- rebuild spare screen	$ 10,000	$ 10,200	$ 10,404	$ 10,612	$ 10,824
Alamoosook - repair scoured area under fishway and intake structure	$ -	$ -	$ -	$ -	$ -
Alamoosook Sleeve Replacement	$ 20,000	$ 20,400	$ 20,808	$ 21,224	$ 21,649
Alamoosook Stop Logs	$ 8,200	$ 8,364	$ 8,531	$ 8,702	$ 8,876
Alamoosook piping repairs	$ 10,000	$ 10,200	$ 10,404	$ 10,612	$ 10,824
Filter House Grating Replacement	$ 4,337	$ 4,424	$ 4,512	$ 4,602	$ 4,695
Patch/Repair Underground line from Silver Lake	$ 15,000	$ 15,300	$ 15,606	$ 15,918	$ 16,236
Screen Rod Replacement	$ 3,179	$ 3,243	$ 3,307	$ 3,374	$ 3,441
Silver Lake Pipeline Relining	$ -	$ -	$ 250,000	$ 255,000	$ 260,100
Dam and Lake Maintenance	$ 70,716	$ 72,130	$ 73,573	$ 75,044	$ 76,545

Escalation 2.00%

Water Supply System
5 Year Capital Repair/Improvement Budget
For the Fiscal Years Ending June 30

Water Supply (Dams)

Description	2022	2023	2024	2025	2026
Filter House- rebuild spare screen	$ 10,200	$ 10,404	$ 10,612	$ 10,824	$ 11,041
Alamoosook - repair scoured area under fishway and intake structure	$ -	$ -	$ -	$ -	$ -
Alamoosook Sleeve Replacement	$ 20,400	$ 20,808	$ 21,224	$ 21,649	$ 22,082
Alamoosook Stop Logs	$ 8,364	$ 8,531	$ 8,702	$ 8,876	$ 9,053
Alamoosook piping repairs	$ 10,200	$ 10,404	$ 10,612	$ 10,824	$ 11,041
Filter House Grating Replacement	$ 4,424	$ 4,512	$ 4,602	$ 4,695	$ 4,788
Patch/Repair Underground line from Silver Lake	$ 15,300	$ 15,606	$ 15,918	$ 16,236	$ 16,561
Screen Rod Replacement	$ 3,243	$ 3,307	$ 3,374	$ 3,441	$ 3,510
Silver Lake Pipeline Relining	$ -	$ -	$ 250,000	$ 255,000	$ 260,100
Dam and Lake Maintenance	$ 72,130	$ 73,573	$ 325,044	$ 331,545	$ 338,176

Escalation 2.00%

Water Supply System
5 Year Capital Repair/Improvement Budget
For the Fiscal Years Ending June 30

Water Supply (Dams)

Description	2023	2024	2025	2026	2027
Filter House- rebuild spare screen	$ -	$ 25,000	$ -	$ -	$ -
Filter House Roof/Masonry	$ 30,000	$ 30,000	$ -	$ -	$ -
Filter House Window Repairs	$ -	$ 10,000	$ -	$ -	$ -
Rebuild pump base	$ 8,000	$ 8,160	$ 8,323	$ 8,490	$ 8,659
Alamoosook Sleeve Replacement	$ 20,808	$ 21,224	$ 21,649	$ 22,082	$ 22,523
Alamoosook Stop Logs	$ 8,531	$ 8,702	$ 8,876	$ 9,053	$ 9,234
Alamoosook piping repairs	$ 10,404	$ 10,612	$ 10,824	$ 11,041	$ 11,262
Repack 30" Valve stem	$ -	$ 2,500	$ -	$ -	$ -
Filter House Grating Replacement	$ 4,512	$ 4,602	$ 4,694	$ 4,788	$ 4,884
Patch/Repair Underground line from Silver Lake	$ 15,606	$ 15,918	$ 16,236	$ 16,561	$ 16,892
Screen Rod Replacement	$ 3,307	$ 3,373	$ 3,441	$ 3,509	$ 3,580
Pressure Injection - Silver Lake Wing Walls	$ -	$ 15,000	$ -	$ -	$ -
Silver Lake Pipeline Relining	$ -	$ -	$ 250,000	$ 255,000	$ 260,100
Dam and Lake Maintenance	$ 101,168	$ 155,091	$ 324,043	$ 330,524	$ 337,135

Escalation 2.00%

Water Supply System
5 Year Capital Repair/Improvement Budget
For the Fiscal Years Ending June 30

Water Supply (Dams)

Description	2024	2025	2026	2027	2028
Filter House- rebuild spare screen	$ 25,000	$ -	$ -	$ -	$ -
Filter House Roof/Masonry	$ 30,000	$ -	$ -	$ -	$ -
Filter House Window Repairs	$ 10,000	$ -	$ -	$ -	$ -
Rebuild pump base	$ 8,160	$ 8,323	$ 8,490	$ 8,659	$ 8,833
Alamoosook Sleeve Replacement	$ 21,224	$ 21,648	$ 22,081	$ 22,523	$ 22,974
Alamoosook Stop Logs	$ 8,702	$ 8,876	$ 9,054	$ 9,235	$ 9,419
Alamoosook piping repairs	$ 10,612	$ 10,824	$ 11,041	$ 11,262	$ 11,487
Repack 30" Valve stem	$ 2,500	$ -	$ -	$ -	$ -
Filter House Grating Replacement	$ 4,602	$ 4,694	$ 4,788	$ 4,884	$ 4,981
Patch/Repair Underground line from Silver Lake	$ 15,918	$ 16,236	$ 16,561	$ 16,892	$ 17,230
Screen Rod Replacement	$ 3,373	$ 3,440	$ 3,509	$ 3,579	$ 3,651
Pressure Injection - Silver Lake Wing Walls	$ 15,000	$ -	$ -	$ -	$ -
Silver Lake Pipeline Relining	$ -	$ -	$ 250,000	$ 255,000	$ 260,100
Dam and Lake Maintenance	$ 155,091	$ 74,043	$ 325,524	$ 332,034	$ 338,675

Escalation 2.00%

Water Supply System
5 Year Capital Repair/Improvement Budget
For the Fiscal Years Ending June 30

Water Supply (Dams)

Description	2025	2026	2027	2028	2029
Filter House- rebuild spare screen	$ -	$ -	$ -	$ -	$ 30,000
Filter House Roof/Masonry	$ -	$ -	$ -	$ 30,000	$ 30,000
Filter House Window Repairs	$ -	$ -	$ -	$ 5,000	$ 5,000
Alamoosook Sleeve Replacement	$ 20,808	$ 21,224	$ 21,649	$ 22,082	$ 22,523
Alamoosook Stop Logs	$ -	$ 10,000	$ -	$ -	$ -
Repack 30" Valve stem	$ -	$ 2,500	$ -	$ -	$ -
Patch/Repair Underground line from Silver Lake	$ 15,606	$ 15,918	$ 16,236	$ 16,561	$ 16,892
Pressure Injection - Silver Lake Wing Walls	$ -	$ -	$ -	$ 15,000	$ 15,300
Silver Lake Pipeline Relining	$ -	$ -	$ 250,000	$ 255,000	$ 260,100
Dam and Lake Maintenance	$ 36,414	$ 49,642	$ 287,885	$ 343,643	$ 379,816

Escalation 2.00%

Water Supply System
5 Year Capital Repair/Improvement Budget
For the Fiscal Years Ending June 30

Water Supply (Dams)

Description	2026	2027	2028	2029	2030
Filter House- rebuild spare screen	$ -	$ -	$ -	$ 30,000	$ -
Filter House Roof/Masonry	$ -	$ -	$ 30,000	$ 30,000	$ -
Filter House Window Repairs	$ -	$ -	$ 5,000	$ 5,000	$ -
Alamoosook Stop Logs	$ 10,000	$ -	$ -	$ -	$ -
Repack 30" Valve stem	$ 2,750	$ -	$ -	$ -	$ -
Patch/Repair Underground line from Silver Lake	$ 15,606	$ 15,918	$ 16,236	$ 16,561	$ 16,892
Pressure Injection - Silver Lake Wing Walls	$ -	$ -	$ 15,000	$ -	$ -
Silver Lake Pipeline Relining	$ -	$ 250,000	$ 255,000	$ 260,100	$ 265,302
Dam and Lake Maintenance	$ 28,356	$ 265,918	$ 321,236	$ 341,661	$ 282,194

Escalation 2.00%

Water Supply System
Downstream Infrastructure Budget
For the Fiscal Year Ending June 30, 2021

Description	July	August	September	October	November	December	January	February	March	April	May	June	TOTAL
Maintenance Expenses													
Dam Annual Underwater Survey	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Furnace Cleaning (Alamoosook)	$ -	$ 300	$ -	$ -	$ -	$ -	$ -	$ 140	$ -	$ -	$ -	$ -	$ 440
Landscape/weedwhacking services for Dams	$ 1,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000
Total Operating and Maintenance	$ 1,000	$ 300	$ -	$ -	$ -	$ -	$ -	$ 140	$ -	$ -	$ -	$ -	$ 1,440
Capital Repairs and Improvements													
Filter House- rebuild spare screen	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ -	$ -	$ -	$ -	$ 10,000
Alamoosook - repair scoured area under fishway and intake structure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Alamoosook Sleeve Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000
Alamoosook Stop Logs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,200	$ -	$ -	$ 8,200
Alamoosook piping repairs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ 10,000
Filter House Grating Replacement	$ -	$ -	$ -	$ 4,337	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,337
Patch/Repair Underground line from Silver Lake	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000	$ -	$ -	$ 15,000
Screen Rod Replacement	$ -	$ -	$ -	$ 3,179	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,179
Total Capital and Improvement	$ 2,000	$ 600	$ -	$ 7,516	$ -	$ -	$ -	$ 10,280	$ -	$ 23,200	$ -	$ 30,000	$ 73,596

Water Supply System
Downstream Infrastructure Budget
For the Fiscal Year Ending June 30, 2022

Description	July	August	September	October	November	December	January	February	March	April	May	June	TOTAL
Maintenance Expenses													
Dam Annual Underwater Survey	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Furnace Cleaning (Alamoosook)	$ -	$ 300	$ -	$ -	$ -	$ -	$ -	$ 140	$ -	$ -	$ -	$ -	$ 440
Propane - Filter House Heat	$ -	$ -	$ -	$ -	$ -	1,000	$ 2,000	$ 2,000	$ 2,000	$ 1,000	$ -	$ -	$ 8,000
Generator Propane	$ -	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Filter House - Belts, sprockets and bearings	$ -	$ 3,800	$ 1,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,300
Landscape/weedwhacking services for Dams	$ 1,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000
Total Operating and Maintenance	$ 1,000	$ 4,700	$ 1,500	$ -	$ -	$ 1,000	$ 2,000	$ 2,140	$ 2,000	$ 1,000	$ -	$ -	$ 14,740
Capital Repairs and Improvements													
Alamoosook - repair scoured area under fishway and intake structure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Alamoosook Sleeve Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000
Alamoosook Stop Logs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,200	$ -	$ -	$ 8,200
Alamoosook piping repairs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,000	$ 8,000
Filter House Grating Replacement	$ -	$ -	$ -	$ 4,400	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,400
Patch/Repair Underground line from Silver Lake	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000	$ -	$ -	$ 15,000
Steps/Screen Filter House	$ -	$ 2,400	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,400
Bar Screen Supply Line Replacement	$ -	$ 3,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,700
Filter House Shower Pump Replacement	$ -	$ 2,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,700
Screen Shaft and Bearing Replacement	$ -	$ 6,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,000
Total Capital and Improvement	$ 2,000	$ 24,200	$ 3,000	$ 4,400	$ -	$ 2,000	$ 4,000	$ 4,280	$ 4,000	$ 25,200	$ -	$ 28,000	$ 99,880

Water Supply System
Downstream Infrastructure Budget
For the Fiscal Year Ending June 30, 2023

Description	July	August	September	October	November	December	January	February	March	April	May	June	TOTAL
Maintenance Expenses													
Dam Annual Underwater Survey	$ -	$ -	$ -	$ -	$	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Furnace Cleaning (Alamoosook)	$ -	$ 300	$ -	$ -	$ -	$ -	$ -	$ 140	$ -	$ -	$ -	$ -	$ 440
Propane - Filter House Heat	$ -	$ -	$ -	$ -	$ -	$ 1,000	$ 2,000	$ 2,000	$ 2,000	$ 1,000	$ -	$ -	$ 8,000
Generator Propane	$ -	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Filter House - Belts, sprockets and bearings	$ -	$ 3,800	$ 1,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,300
Vibration measurement	$ -	$ 1,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,500
Maintenance of Traveling Screen	$ -	$ -	$ 1,000	$ -	$ -	$ 1,000	$ -	$ -	$ 1,000	$ -	$ -	$ 1,000	$ 4,000
Lubrication of continuous operation equipment	$ -	$ -	$ 1,500	$ -	$ -	$ 1,500	$ -	$ -	$ 1,500	$ -	$ -	$ 1,500	$ 6,000
Landscape/weedwhacking services for Dams	$ 1,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,000
Total Operating and Maintenance	$ 1,000	$ 6,200	$ 4,000	$ -	$ -	$ 3,500	$ 2,000	$ 2,140	$ 4,500	$ 1,000	$ -	$ 2,500	$ 26,240
Capital Repairs and Improvements													
Alamoosook - repair scoured area under fishway and intake structure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Alamoosook Sleeve Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000
Alamoosook Stop Logs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,200	$ -	$ -	$ 8,200
Alamoosook piping repairs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,000	$ 8,000
Filter House Grating Replacement	$ -	$ -	$ -	$ 4,400	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,400
Patch/Repair Underground Piping	$ -	$ 6,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000	$ -	$ -	$ 21,000
Steps/Screen Filter House	$ -	$ 2,400	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,400
Bar Screen Supply Line Replacement	$ -	$ 3,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,700
Filter House Shower Pump Replacement	$ -	$ 2,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,700
Screen Shaft and Bearing Replacement	$ -	$ 6,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,000
Total Capital and Improvement	$ 2,000	$ 33,200	$ 8,000	$ 4,400	$ -	$ 7,000	$ 4,000	$ 4,280	$ 9,000	$ 25,200	$ -	$ 33,000	$ 128,880

Water Supply System
Downstream Infrastructure Budget
For the Fiscal Year Ending June 30, 2024

Description	July	August	September	October	November	December	January	February	March	April	May	June	TOTAL
Maintenance Expenses													
Dam Annual Underwater Survey	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Furnace Cleaning (Alamoosook)	$ -	$ 310	$ -	$ -	$ -	$ -	$ -	$ 150	$ -	$ -	$ -	$ -	$ 460
Propane - Filter House Heat	$ -	$ -	$ -	$ -	$ -	$ 1,100	$ 2,100	$ 2,100	$ 2,100	$ 1,100	$ -	$ -	$ 8,500
Generator Propane	$ -	$ 625	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Filter House - Belts, sprockets and bearings	$ -	$ 3,900	$ 1,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,500
Vibration measurement	$ -	$ 1,650	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,650
Maintenance of Traveling Screen	$ -	$ -	$ 1,100	$ -	$ -	$ 1,100	$ -	$ -	$ 1,100	$ -	$ -	$ 1,000	$ 4,300
Lubrication of continuous operation equipment	$ -	$ -	$ 1,600	$ -	$ -	$ 1,600	$ -	$ -	$ 1,600	$ -	$ -	$ 1,500	$ 6,300
Landscape/weedwhacking services for Dams	$ 1,100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,100
Total Operating and Maintenance	$ 1,100	$ 6,485	$ 4,300	$ -	$ -	$ 3,800	$ 2,100	$ 2,250	$ 4,800	$ 1,100	$ -	$ 2,500	$ 27,810
Capital Repairs and Improvements													
Alamoosook - repair scoured area under fishway and intake structure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Alamoosook Sleeve Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,500	$ 22,500
Alamoosook Stop Logs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,300	$ -	$ -	$ 8,300
Alamoosook piping repairs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,100	$ 8,100
Filter House Grating Replacement	$ -	$ -	$ -	$ 4,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,500
Patch/Repair Underground Piping	$ -	$ 6,100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,250	$ -	$ -	$ 21,350
Steps/Screen Filter House	$ -	$ 2,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,500
Bar Screen Supply Line Replacement	$ -	$ 3,800	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,800
Filter House Shower Pump Replacement	$ -	$ 2,750	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,750
Screen Shaft and Bearing Replacement	$ -	$ 6,100	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,100
Total Capital and Improvement	$ 2,200	$ 34,220	$ 8,600	$ 4,500	$ -	$ 7,600	$ 4,200	$ 4,500	$ 9,600	$ 25,750	$ -	$ 35,600	$ 135,520

Water Supply System
Downstream Infrastructure Budget
For the Fiscal Year Ending June 30, 2025

Description	July	August	September	October	November	December	January	February	March	April	May	June	TOTAL
Maintenance Expenses													
Annual Furnace Cleaning (Alamoosook)	$ -	$ 310	$ -	$ -	$ -	$ -	$ -	$ 150	$ -	$ -	$ -	$ -	$ 460
Propane - Filter House Heat	$ -	$ -	$ -	$ -	$ -	$ 1,000	$ 2,000	$ 2,000	$ 2,000	$ 1,000	$ -	$ -	$ 8,000
Generator Propane	$ -	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Filter House - Belts, sprockets and bearings	$ -	$ 3,800	$ 1,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,300
Vibration measurement	$ -	$ 1,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,500
Maintenance of Traveling Screen	$ -	$ -	$ 1,100	$ -	$ -	$ 1,100	$ -	$ -	$ 1,100	$ -	$ -	$ 1,000	$ 4,300
Lubrication of continuous operation equipment	$ -	$ -	$ 1,550	$ -	$ -	$ 1,550	$ -	$ -	$ 1,550	$ -	$ -	$ 1,500	$ 6,150
Landscape/weedwhacking services for Dams	$ 1,250	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,250
Total Operating and Maintenance	$ 1,250	$ 6,210	$ 4,150	$ -	$ -	$ 3,650	$ 2,000	$ 2,150	$ 4,650	$ 1,000	$ -	$ 2,500	$ 26,960

Water Supply System
Downstream Infrastructure Budget
For the Fiscal Year Ending June 30, 2026

Description	July	August	September	October	November	December	January	February	March	April	May	June	TOTAL
Maintenance Expenses													
Annual Furnace Cleaning (Alamoosook)	$ -	$ 320	$ -	$ -	$ -	$ -	$ -	$ 155	$ -	$ -	$ -	$ -	$ 475
Propane - Filter House Heat	$ -	$ -	$ -	$ -	$ -	$ 3,500	$ 4,000	$ 4,500	$ 2,000	$ 500	$ -	$ -	$ 14,500
Generator Propane	$ -	$ 600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Filter House - Belts, sprockets and bearings	$ -	$ 3,800	$ 1,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,300
Vibration measurement	$ -	$ 1,750	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,750
Maintenance of Traveling Screen	$ -	$ -	$ 1,200	$ -	$ -	$ 1,200	$ -	$ -	$ 1,200	$ -	$ -	$ 1,200	$ 4,800
Lubrication of continuous operation equipment	$ -	$ -	$ 1,550	$ -	$ -	$ 1,550	$ -	$ -	$ 1,550	$ -	$ -	$ 1,500	$ 6,150
Landscape/weedwhacking services for Dams	$ 1,350	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,350
Total Operating and Maintenance	$ 1,350	$ 6,470	$ 4,250	$ -	$ -	$ 6,250	$ 4,000	$ 4,655	$ 4,750	$ 500	$ -	$ 2,700	$ 34,325

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2021

Balance as of July 1, 2020	$ 100,000.00
Cash Inflows	
Bucksport Mill - Funding at Sale	$ 50,000.00
Whole Oceans - Funding at Sale	$ 50,000.00
Total Inflows	$ 100,000.00
Cash Outflows	
Repairs and Maintenance	$ 82,657.66
Total Outflows	$ 82,657.66
Net Cash Inflow/(Outlflow)	$ 117,342.34
Balance as of June 30, 2021	$ 217,342.34

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2022

Balance as of July 1, 2021	$ 217,342.34	Includes contributions
Cash Inflows		
Bucksport Mill - Funding at Sale	$ -	
Whole Oceans - Funding at Sale	$ -	
Total Inflows	$ -	
Cash Outflows		
Repairs and Maintenance	$ 96,392.45	
Total Outflows	$ 96,392.45	
Net Cash Inflow/(Outlflow)	$ (96,392.45)	
Balance as of June 30, 2022	$ 120,949.89	

for FY 2021 - 22 made in June 2021

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2023

Balance as of July 1, 2022	$ 120,949.89
Cash Inflows	
Bucksport Mil	$ 82,042.74
Whole Oceans	$ 82,042.74
Total Inflows	$ 164,085.48
Cash Outflows	
Repairs and Maintenance	$ 109,403.27
Total Outflows	$ 109,403.27
Net Cash Inflow/(Outlflow)	$ 54,682.21
Balance as of June 30, 2022	$ 175,632.10

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2024

Balance as of July 1, 2023	$ 175,632.06
Cash Inflows	
Bucksport Mill	$ -
Total Inflows	$ -
Cash Outflows	
Repairs and Maintenance	$ 47,830.44
Bank Charges	$ 5,038.63
Total Outflows	$ 52,869.07
Net Cash Inflow/(Outlflow)	$ (52,869.07)
Balance as of June 30, 2024	$ 122,762.99

Water Supply System
Repair and Maintenance Account
For the Fiscal Year Ending June 30, 2020

Cash Inflows	
Bucksport Mill - Funding at Sale	$ 50,000.00
Whole Oceans - Funding at Sale	$ 50,000.00
Total Inflows	$ 100,000.00
Cash Outflows	
Repairs and Maintenance	$ -
Total Outflows	$ -
Net Cash Inflow/(Outlflow)	$ 100,000.00

Water Supply System
Repair and CAPEX Summary
For the Period Ending May 31, 2025

Balance as of July 1, 2023	$ 122,763.70
Cash Inflows	
Bucksport Mill	$ -
Total Inflows	$ -
Cash Outflows	
Repairs and Maintenance	$ 15,247.02
Bank Charges	$ 10,477.43
Total Outflows	$ 25,724.45
Net Cash Inflow/(Outlflow)	$ (25,724.45)
Balance as of June 30, 2024	$ 97,039.25

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending May 31, 2025

Date	Expense	Amount	Description
6/16/2024	Commercial Divers	$ 27,826.00	Cleaning and maintenance - Underwater Infrastructure
7/11/2024	Sullivan & Merritt	$ 10,845.00	Actuator Lift Gate
7/5/2024	Just-in Caretaking	$ 1,150.00	Exterior Maintenance
7/19/2024	Commercial Divers	$ 27,826.00	Underwater Inspections
8/23/2024	Power Line Construction	$ 8,050.00	Power Pole Replacement
9/2/2024	Just-in Caretaking	$ 1,150.00	Exterior Maintenance/Grounds keeping
9/2/2024	Just-in Caretaking	$ 1,450.00	Exterior Maintenance/Grounds keeping
10/17/2024	Just-in Caretaking	$ 3,550.00	Exterior Maintenance/Grounds keeping
10/17/2024	Just-in Caretaking	$ 1,050.00	Exterior Maintenance/Grounds keeping
1/11/2025	Suburban Propane	$ 1,315.30	Propane for FH
1/11/2025	Suburban Propane	$ 1,049.49	Propane for FH
1/11/2025	Suburban Propane	$ 654.01	Propane for FH
1/11/2025	Suburban Propane	$ 575.95	Propane for FH
1/20/2025	Suburban Propane	$ 796.40	Propane for FH
1/27/2025	Suburban Propane	$ 1,014.10	Propane for FH
1/23/2025	Suburban Propane	$ 1,958.39	Propane for FH
1/30/2025	Suburban Propane	$ 1,203.90	Propane for FH
2/6/2025	Suburban Propane	$ 1,173.89	Propane for FH
2/13/2025	Suburban Propane	$ 827.59	Propane for FH
2/20/2025	Suburban Propane	$ 1,901.50	Propane for FH
2/27/2025	Suburban Propane	$ 770.58	Propane for FH
3/20/2025	Suburban Propane	$ 562.76	Propane for FH
3/13/2025	Suburban Propane	$ 578.84	Propane for FH
3/27/2025	Suburban Propane	$ 333.69	Propane for FH
4/3/2025	Suburban Propane	$ 278.83	Propane for FH
4/10/2025	Suburban Propane	$ 251.80	Propane for FH
	Total	$ 15,247.02	

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2021

Date	Expense	Amount
7/1/2020	Pump Valve - Belt Repair	$ 5,680.72
7/9/2020	Pump Valve - Belt Repair	$ 9,414.63
7/14/2020	Pump Overhaul - Filter House	$ 4,889.00
7/30/2020	Water Line Leak Repairs	$ 11,165.47
7/30/2020	Water Line Leak Repairs	$ 2,922.25
7/30/2020	Filter House - Hi Power V Belts	$ 566.26
8/27/2020	Filter House - Hi Power V Belt	$ 295.04
8/27/2020	Filter House - Pillow Block Bearing	$ 266.84
8/27/2020	Filter House Pump Repairs	$ 4,558.66
9/30/2020	Filter House - Pillow Block Bearings	$ 527.10
9/30/2020	Filter House - Hi Power V Belt	$ 304.47
11/30/2020	Generator Service - Filter House	$ 357.50
11/30/2020	Filter - 2nd Pump repair	$ 4,274.31
11/30/2020	Pump Repairs	$ 4,821.59
11/30/2020	Filter House - Pillow Block Bearings	$ 536.46
12/14/2020	Fuses - Filter House Power Feed	$ 2,653.70
12/14/2020	Emergency Propane - Power Outage	$ 1,102.39
12/31/2020	Emergency Propane - Power Outage	$ 1,210.57
12/31/2020	Propane - Filter House Heat	$ 477.19
1/15/2021	Propane - Filter House Heat	$ 1,005.26
1/29/2021	Propane - Filter House Heat	$ 254.54
1/29/2021	Propane - Filter House Heat	$ 462.69
1/29/2021	Tree on Overhead Transmission Line - Filter House	$ 5,155.16
1/29/2021	Filter House Pump Issues	$ 1,000.00
1/29/2021	Filter House Pump Issues	$ 309.00
1/31/2021	Propane - Filter House Heat	$ 358.79
2/12/2021	Propane - Filter House Heat	$ 713.85
3/1/2021	Propane - Filter House Heat	$ 875.54
3/10/2021	Propane - Filter House Heat	$ 396.36
3/17/2021	Propane - Filter House Heat	$ 317.05
3/17/2021	Propane - Filter House Heat	$ 360.23
3/25/2021	Filter House - Belt Replacement	$ 151.53
3/31/2021	Propane - Filter House Heat	$ 37.30
4/13/2021	Filter House Pump Repairs	$ 11,900.21
4/13/2021	Propane - Filter House Heat	$ 617.04
4/13/2021	Propane - Filter House Heat	$ 755.70
5/25/2021	Filter House Belt	$ 824.62
5/25/2021	Filter House Belt Repair	$ 762.12
6/25/2021	Fittings - Filter House Repairs	$ 285.29
6/30/2021	Oil/Silicone - Pumps, genaerator and screen - FH	$ 91.23
	Total	$ 82,657.66

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2022

Date	Expense	Amount	
6/30/2021	Greg Nutter	$ 91.23	oil for pumps and generator, silicone for screen at FH
6/23/2021	Fastco	$ 2,351.94	Steps/screen
6/23/2021	Fastco	$ 1,756.25	Pump belts
6/29/2021	Troy Industrial	$ 560.83	sprockets for FH
7/13/2021	Applied	$ 1,486.12	Filter House bearings
7/20/2021	Fastco	$ 10,926.17	Filter House issue
7/29/2021	Applied indusrial	$ 1,486.12	Bearings for FH
7/29/2021	Suburban Propane	$ 611.94	Generator propane
6/24/2021	Troy Industrial	$ 3,138.47	Shower Pump at FH
10/8/2021	Fastco	$ 10,274.63	Motor Frame Fab and Install FH
10/8/2021	Fastco	$ 4,648.92	Bar Screen Supply FH
10/6/2021	Fastco	$ 6,404.53	#1 Bearing Shaft FH
10/6/2021	Fastco	$ 3,443.03	#2 Bearing Replacement FH
10/6/2021	Fastco	$ 1,089.03	#2 Screen Support FH
10/31/2021	Greg Nutter	$ 25.28	cap for FH
10/25/2021	CMD Power Systems	$ 300.00	Generator service FH
11/12/2021	WESCO	$ 90.55	Mounting Bracket for heater for FH
12/7/2021	WESCO	$ 784.16	Heater for FH
12/16/2021	Suburban Propane	$ 568.07	Propane for Generator FH
12/16/2021	Suburban Propane	$ 1,097.12	Propane for heat FH
12/27/2021	Suburban Propane	$ 1,044.72	Propane for heat FH
1/4/2022	Suburban Propane	$ 776.39	Propane for heat FH
1/10/2022	Suburban Propane	$ 516.08	Propane for heat FH
1/18/2022	Suburban Propane	$ 1,359.03	Propane for heat FH
1/20/2022	Greg Nutter	$ 79.09	Brushholder for FH generator
1/25/2022	Suburban Propane	$ 1,286.11	Propane for heat FH
1/27/2022	FACS	$ 10,026.98	Screen repair FH
1/31/2022	Suburban Propane	$ 922.86	Propane for heat FH
2/7/2022	Suburban Propane	$ 749.46	Propane for heat FH
2/13/2022	Suburban Propane	$ 301.41	Propane for heat FH
2/15/2022	FACS	$ 5,650.00	Screen repair FH
2/18/2022	Suburban Propane	$ 519.95	Propane for heat FH
2/28/2022	Suburban Propane	$ 1,039.56	Propane for heat FH
3/7/2022	Suburban Propane	$ 885.42	Brush for filter house Generator
3/14/2022	Suburban Propane	$ 346.79	Propane for heat FH
12/17/2021	AC Electric	$ 705.75	Propane for heat FH
3/15/2022	Greg Nutter	$ 91.08	FH Generator Repair
3/31/2022	Whittens 2 Way	$ 645.91	Washers for FH Drives
5/31/2022	FACS	$ 18,311.47	Communications to FH
	Total	$ 96,392.45	

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2023

Date	Expense	Amount	
1/25/2022	Suburban Propane	$ 1,286.11	Propane for heat FH
1/27/2022	FACS	$ 10,026.98	Screen repair FH
1/31/2022	Suburban Propane	$ 922.86	Propane for heat FH
2/7/2022	Suburban Propane	$ 749.46	Propane for heat FH
2/13/2022	Suburban Propane	$ 301.41	Propane for heat FH
2/15/2022	FACS	$ 5,650.00	Screen repair FH
2/18/2022	Suburban Propane	$ 519.95	Propane for heat FH
2/28/2022	Suburban Propane	$ 1,039.56	Propane for heat FH
3/7/2022	Suburban Propane	$ 885.42	Brush for filter house Generator
3/14/2022	Suburban Propane	$ 346.79	Propane for heat FH
3/15/2022	Greg Nutter	$ 91.08	FH Generator Repair
3/31/2022	Whittens 2 Way	$ 645.91	Washers for FH Drives
5/31/2022	FACS	$ 18,311.47	Communications to FH
7/15/2022	Greg Nutter	$ 19.48	Keys and Brushes for FH
8/12/2022	Associated Machine	$ 16,002.10	Rebuild of Screen at FH
8/16/2022	Greg Nutter	$ 288.75	Battery for FH Generator
9/15/2022	Suburban Propane	$ 609.65	Propane for Generator FH
12/5/2022	Suburban Propane	$ 441.19	Propane for FH
12/12/2022	Suburban Propane	$ 281.19	Propane for FH
12/19/2022	Suburban Propane	$ 484.43	Propane for FH
12/27/2022	Suburban Propane	$ 665.78	Propane for FH
1/3/2023	Suburban Propane	$ 401.12	Propane for FH
1/5/2023	WESCO	$ 1,280.00	Fuses for Power feed to FH
1/10/2023	Suburban Propane	$ 583.61	Propane for FH
1/10/2023	Suburban Propane	$ 894.54	Propane for FH Generator
1/24/2023	Suburban Propane	$ 1,437.80	Propane for FH
1/26/2023	FACS	$ 15,519.54	Filter House Hood
1/26/2023	FACS	$ 19,815.00	Filter House Hood
2/4/2023	Suburban Propane	$ 1,154.17	Propane for FH
2/6/2023	Suburban Propane	$ 251.18	Propane for FH
2/9/2023	CMD Power Systems	$ 275.00	Generator FH service
2/13/2023	Suburban Propane	$ 549.57	Propane for FH
2/15/2023	Bucksport Generation	$ 427.72	Power Supply to FH
2/20/2023	Suburban Propane	$ 421.10	Propane for FH
3/2/2023	Suburban Propane	$ 1,202.53	Propane for FH
3/3/2023	Sullivan & Merritt	$ 3,874.75	Repair to FH power line
3/13/2023	Suburban Propane	$ 523.58	Propane for FH
3/14/2023	NECI	$ 1,222.49	Filter House Screen Repair
	Total	$ 109,403.27	

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2024

Date	Expense	Amount
6/23/2023	Bucksport Generation	$ 167.09
7/1/2023	Suburban Propane	$ 386.51
7/1/2023	Bucksport Generation	$ 377.06
7/1/2023	Suburban Propane	$ 641.88
7/1/2023	FACS	$ 2,143.00
7/1/2023	Clean Harbor	$ 1,347.96
7/1/2023	Bucksport Generation	$ 141.66
8/18/2023	Bucksport Generation	$ 353.88
8/25/2023	Sullivan & Merritt	$ 3,233.29
9/26/2023	FACS	$ 20,395.00
10/11/2023	Suburban Propane	$ 1,069.63
10/12/2023	Greg Nutter	$ 158.16
10/12/2023	Bucksport Generation	$ 292.80
2/5/2024	Suburban Propane	$ 628.81
2/12/2024	Suburban Propane	$ 432.41
2/15/2024	Bucksport Generation	$ 919.47
2/19/2024	Suburban Propane	$ 689.44
2/26/2024	Suburban Propane	$ 543.22
2/29/2024	Sullivan & Merritt	$ 7,272.04
3/7/2024	Suburban Propane	$ 375.37
3/15/2024	Bucksport Generation	$ 581.55
3/16/2024	Bucksport Generation	$ 554.88
3/16/2024	Bucksport Generation	$ 274.12
3/18/2024	Suburban Propane	$ 181.98
3/25/2024	Suburban Propane	$ 492.12
4/3/2024	Haley Ward	$ 3,857.50
4/9/2024	Suburban Propane	$ 319.61
	Total	$ 47,830.44

Description
Filter House Power Supply
Propane for FH
Filter House Power Supply
Propane for FH Generator
Water Filter Repair
Vacuum out Lift Pit
Filter House Power Supply
Filter House Power Supply
Filter house repair overhead line
Filter House-Replace Rails and Screen
Propane for FH Generator
Filter House Supplies
Filter House Power Supply
Propane for FH
Propane for FH
Filter House Power Supply
Propane for FH
Propane for FH
Filter house repair overhead line
Propane for FH
Filter House Power Supply
Filter House Power Supply
Filter House Power Supply
FH Propane
FH Propane
Dam Consultation
FH Propane

Water Supply System
Repair and CAPEX Summary
For the Fiscal Year Ending June 30, 2020

There were no Repair or CAPEX expenditures during the period ending June 30, 2020

FORESIGHT ENGINEERING P.C.
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Foresight Engineering P.C.

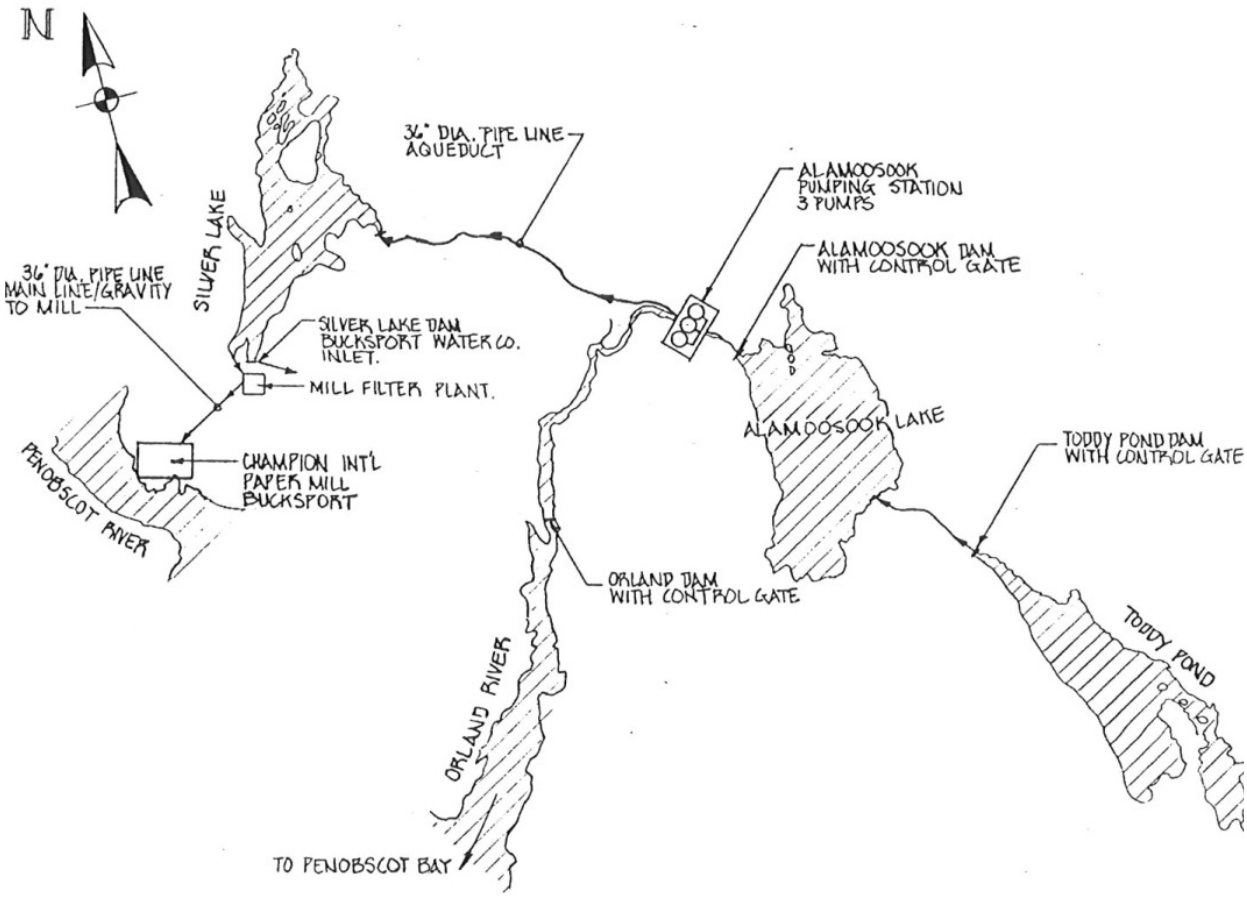
Downstream Engineering Assessment of Bucksport Mill Water System Silver Lake to Bucksport Mill

(Project # 19023Ra)

5-12-2019

1.0 Purpose of Report:

1.1 The purpose of this report is to provide an engineering assessment of the general condition of the Bucksport Mill's Water System. The following maps show an overview of the entire water intake system. This report will evaluate from Silver Lake to the Bucksport Mill. The report also includes: Design capacity, life expectancy, spare parts, and operational / maintenance budgets.



2.0 Silver Lake Dam

2.1 Silver Lake Dam provides the lake water storage for the Bucksport Mill & the Town of Bucksport. The dam consists of an earthen embankment with masonry core and a concrete spillway and gate section.

2.2 The concrete and earthen dam had no spalling or earth movement and is in good condition.

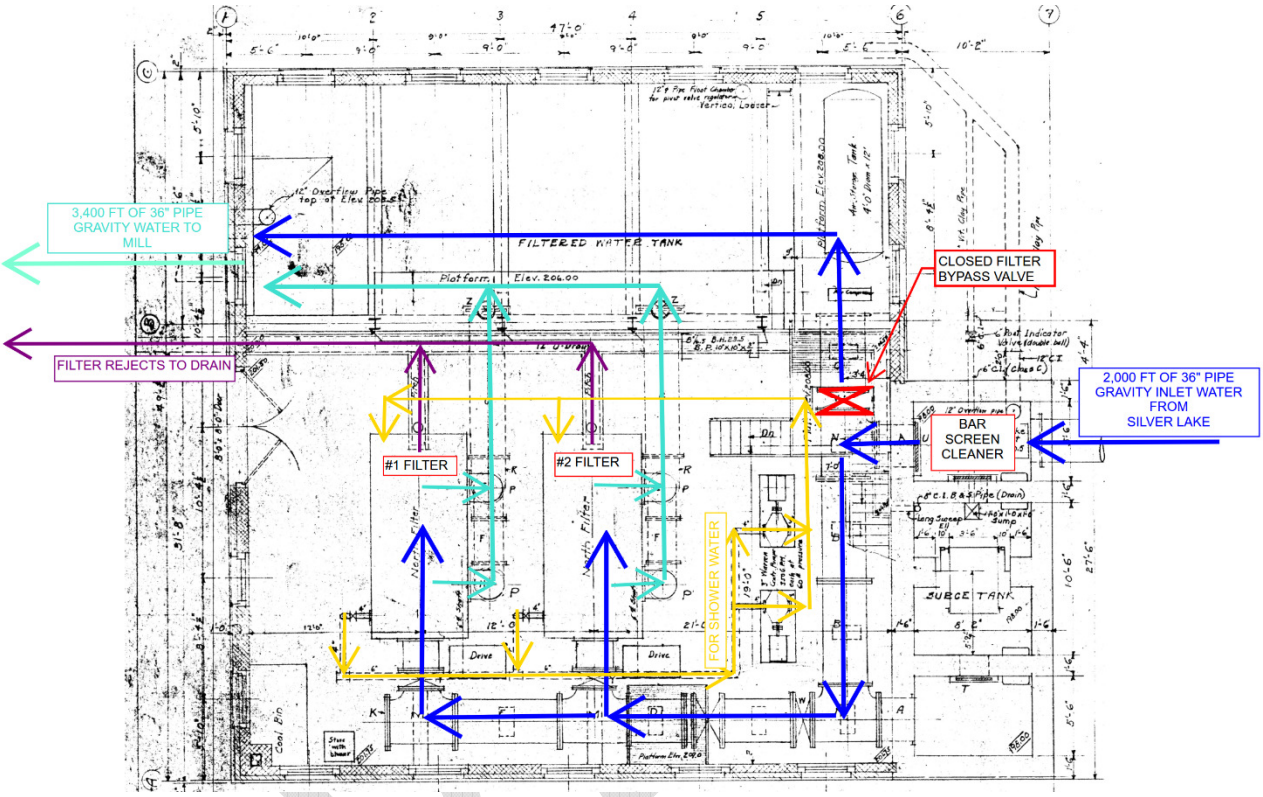
2.3 The concrete wing walls shows water leaks thru the concrete cracks. To protect the rebar in the concrete, these cracks should be pressure injected.

3.0 Piping System from Silver Lake to Filter House

3.1 From the drawings, in 1930 about 2,000 ft of 36" diameter steel pipe was installed to the Mill's Water Filter Plant. The piping is completely underground. We could not see any leaks on the day of our inspection.

4.0 Filter House

4.1 The Filter House will be reviewed using the following flow diagram. Attachment 2 is a larger version of this drawing



4.2 The 36" piping inlets to the Filter House traveling screen. This equipment is an automatic screen cleaner shown in the following pictures. If this screen is plugged, the water just outlets thru the surge tank.

4.3 The red valve shown above in the flow diagram is a 36" valve that is presently closed. This valve allows by pass of the remainder of the filter plant. The issue with by passing is at 5 MGD flow rate the velocity is only 1.14 ft/sec. Therefore, the sand and heavy material will settle in the bottom of the gravity piping to the Mill.

4.4 The water to the filters has two valves in series on the main line.

4.5 The inlet water to filter #2 needs its stem packing replaced. See photo.

4.6 Each filter is design for 10 MGD. This picture is of the #2 filter. The inlet is on the left side. The clean water flows thru the screens on the front side. The spray water is on the top back side which pushes the debris to an internal outlet gutter. The debris and spray water drains on the right side.

4.7 The screen slowly rotates and is powered by a 3 HP motor. The drive rotates a gearbox and a chain which drives the shaft.

4.8 The shaft is support by bearing on both ends. The shaft turns the two small plastic pinion gears which rotates the two cast iron bull gears. The pinion gears and bearings need to be replaced.

4.9 This is the #1 filter which has not run for several years.

4.10 This picture shows the built up of rust on the bull gears. This can be cleaned up. The shower spray bar is visible in this picture.

4.11 This motor and gearbox is quite new. The chain guard is missing.

4.12 The shower water is provided by a Goulds 3196 3x4-13 pump with a 40HP motor. The system has an inline spare. A pump can supply 230 gpm @ 90 psi. Each filter needs 94 gpm. The motor are above the floor in case the room floods. One pump base is so corroded that it needs to be replaced.

4.13 The building is heated by a propane heater. It was not running during our evaluation.

4.14 It was raining the day of our inspection. The original 1930s brick building has a leaking roof system. Also the dark stain on the CMU wall is an area that the masonry needs to be repointed.

4.15 The addition on the left was built in 2006 for the chemical treatment of the water. This build is in good condition.

4.16 The brick with the dark stain needs to be repointed.

4.17 The second story shown in the previous pictures has several cracks in the walls. This photo shows the cracks in corner. About six windows are so damaged that it is better to replace them.

4.18 The filter house has a backup generator. It is propane powered. We did not see this equipment running.

5.0 Expected Life Expectancy

5.1 The filters are 89 years old. They can be rebuilt to maintain good reliability. Since they run so slowly, the age has little impact on future expected life. The major question is can new cast iron gears be obtained. The existing bull gears still have at least 5 years of remaining life.

5.2 I can only find that the pumps were installed before 2006. They did replace the original Warren Pumps. Yearly vibration analysis will determine the life to rebuild. Power ends for Goulds 3196 are very common.

5.3 As for the 2,000 feet of carbon steel 36" diameter piping from Silver Lake and the 3,400 feet of carbon steel 36" diameter pipe to the Mill, you should expect a leak about every other year. These repairs are typical done with a stainless steel pipe repair clamp (see photo). If the leak is a small hole, this type of repair allows you to do the repair on the run. This type of underground water system are very common for Mills in the State of Maine. I personally know of raw water intake systems still in use that are over 100 years old. The Bucksport piping system is 89 years old. The expected life is that least 10 years.

6.0 Spare Parts

6.1 The filter has one spare screen drum that is stored outside. The screens are new on this filter.

6.2 This picture is a close up of the bull gear. Each filter has one bull gear on each end. Of the three screen drums, this one is in the worst condition. The rust flaking is typically 5 times greater than the actual corrosion. Due to the very slow turning rate, the drum still has life, but needs to be cleaned up and stored inside the 2006 addition.

6.3 Currently the Mill does or does not have the parts in Mill stores for the Goulds 3196 shower pumps.

6.4 Since the pipeline can have routine leaks, I would recommend that least one 36" SS repair clamp be on site. Presently none are on site.

7.0 Operational Budget:

7.1 At $120 /MWH, the cost to run 1 HP for one year is around $1,088. To run the traveling screen, one filter and one shower pump is around 25 HP. This equals $27,200 per year.

8.0 Maintenance Budget:

8.1 The following is the recommended maintenance:

- Replace the lubricants quarterly for equipment running continuously. Budget $6.000
- Measure vibration once per year. Budget $1,500
- Patch the piping once per year. Budget $6,000
- Maintenance for traveling screen. Budget $4,000
- Rebuild one filter screen. Budget $25,000 (1st two years)
- Rebuild one pump base, Budget $8,000 (1st two years)
- Repack the stem of the 30"valve. Budget $2,500 (1st year only)
- With the yearly total maintenance budget of $53,000

8.2 A motor will need to be replaced about every 10 to 15 years. The motor for the shower pumps is a 40 HP 1800 RPM 460 volt TEFC 1.15 SF. The price for this motor is around $2,500.

8.3 A capital job is the pressure injection at the Silver Lake Dam Wing walls. The budget price for this project is $15,000. This is expected to be done within 2 years.

8.4 Another capital job is the roof repair on the brick & masonry building. The budget price for this project is $60,000. This is expected to be done within 1 year.

8.5 And another capital job is the replace the broken windows in the brick building and pointing of the masonry. The budget price for this project is $10,000. This is expected to be done within 2 years.

8.6 Another option is to put the filter plant bypass mode, and install two grit chambers in parallel to remove the sediment. This system would be gravity.

9.0 Conclusion:

9.1 The lake water system from Silver Lake to the Mill is in adequate condition but needs an initial rebuild to maintain its reliability. As any mechanical system, it will need yearly maintenance to remain system.

9.2 This study is being conducted to understand if the current water supply will be adequate for the future Salmon Farm on the Bucksport Mill Site. The projected Salmon Water usage is:

- Year 1: 1 MGD
- Year 5: 3 MGD

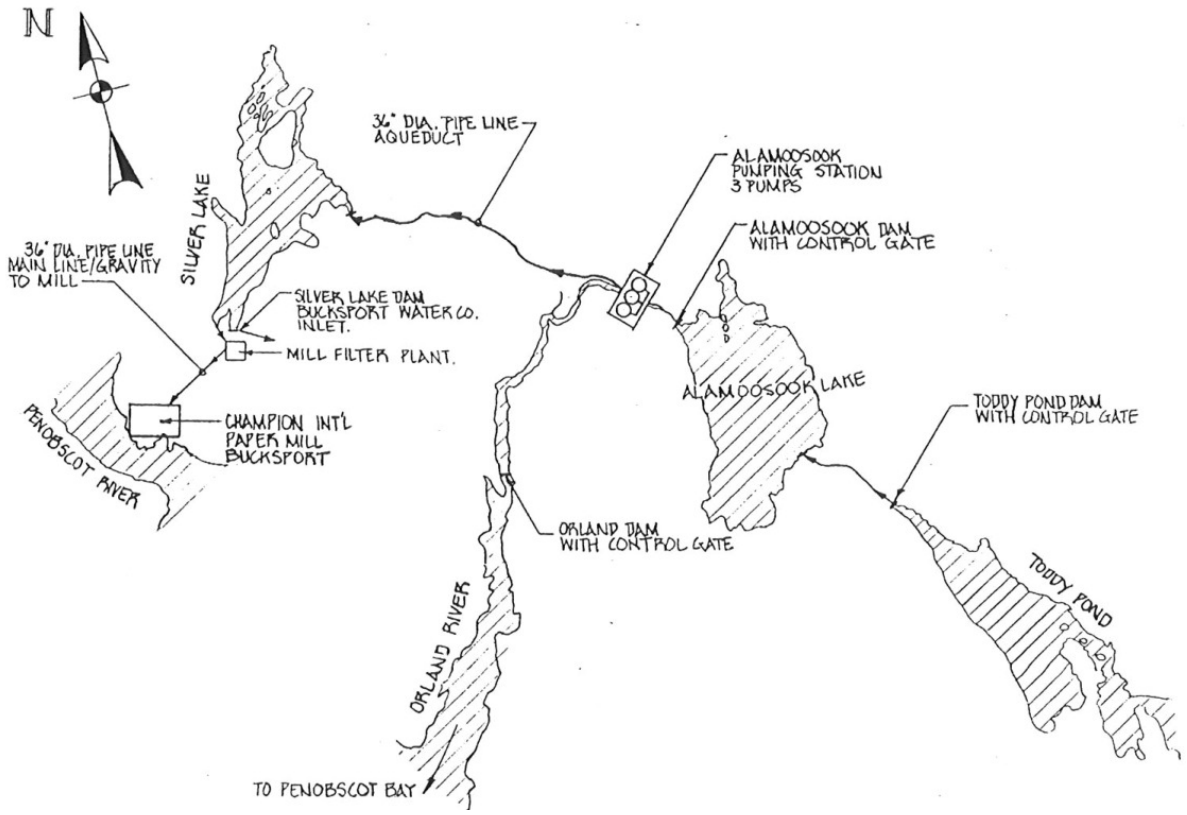
- Year 10: 5 MGD

9.3 The gravity water system has historically provided the Mill with 12.6 MGD.

9.4 A 1967 Process Water Study by Dr Kleinschmidt P.E. provided an estimate that Silver Lake has an estimate useful drawdown of 9.5 feet with a storage of 2,000 MG. The Town of Bucksport average usage is 0.3 MGD. At 5.3 MGD per day, water is available for 377 days.

9.5 Therefore, It is a rare opportunity that this high quality lake water system is available for high demand use with its abundant water storage. The mechanical system can be maintained with money. The Lake Water System is a gift of nature.

9.6 In conclusion, we believe this part of the Lake Water System, will easily supply a sustainable quality and quantity of water as required by the future Salmon Farm.



Ted Ocana P.E.

Theodore E. Ocana, P.E.
Registered Professional Engineer

Attachment:
1) Water System Block Diagram
2) Filter Plant Flow Diagram

FORESIGHT ENGINEERING P.C.
10 Fleming Street
Lincoln, ME 04457 (207) 794-2775

Foresight Engineering P.C.

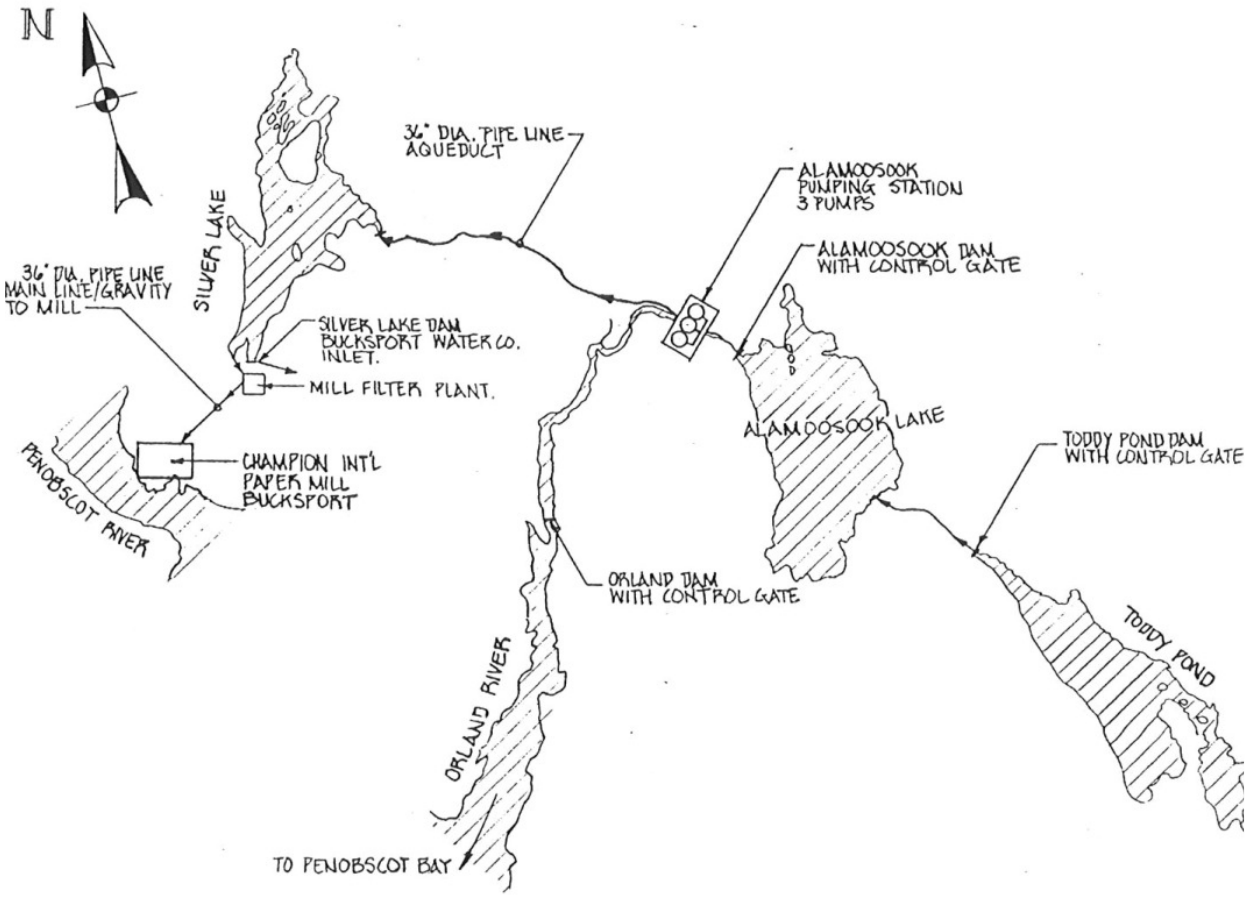
Upstream Engineering Assessment of Bucksport Mill Water System Alamoosook Pump House to Silver Lake

(Project # 19023Ra)

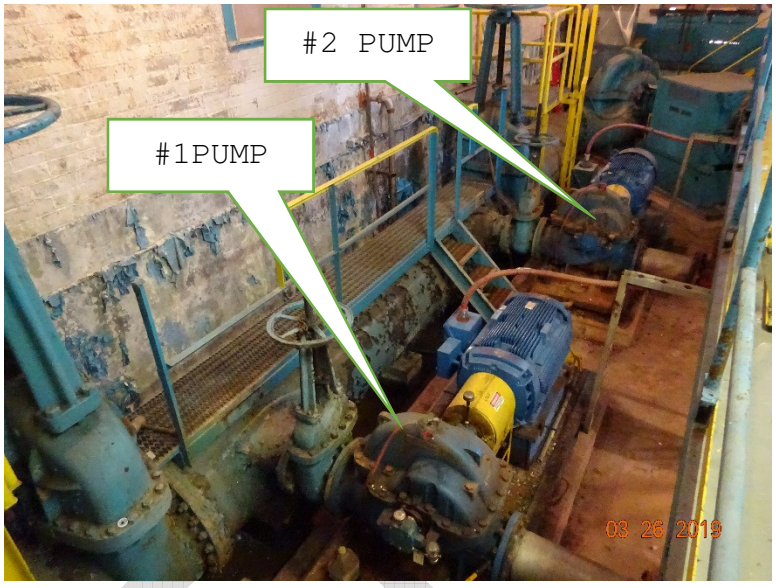
5-12-2019

1.0 Purpose of Report:

1.1 The purpose of this report is to provide an engineering assessment of the general condition of the Bucksport Mill's Water System. The following maps show an overview of the entire lake water system. This report will evaluate from the Alamoosook Pump House to Silver Lake. The report also includes: Design capacity, life expectancy, spare parts, and operational / maintenance budgets.



2.0 Pumping Capacity



2.1 The following picture shows the 3 pumps in the pump house. The #3 pump is not usable. The #1 & #2 pumps are operational.

2.2 The pumps are only run seasonally when Silver Lake level is low (See Atch 2: Water System Block Diagram).

2.3 The equipment file shows that pumps #1 & #2 are Goulds 3410 Size 10x12x17L with a 14.5" bronze impellor. The pumps are a premium brand which was installed in mid-2001.

2.4 Per the original pump curve (see atch 2), one pump could pump 4,200 gpm. Using the amp meters on the MCC, we back calculated that one existing pump is pumping around 4,055 gpm or 5.8 MGD. By using both pump #1 & #2, the flow rate will be around 8,000 gpm or 11.5 MGD. The flow rate is nearly double due to most of the head is caused by the static head component.

2.5 We did witness both pumps running. They ran with no excessive vibration and typical packing leakage.

3.0 Piping System to Silver Lake

3.1 The discharge piping is 36" diameter carbon steel piping with an exterior tar based coating. This piping is about 12,000 feet long which travels above and below the ground.

3.2 During the pump tests, we found several pipe leaks as seen in the photo. A close look shows the pipe has been patched in the past.

3.3 This next picture shows outlet which flows to Silver Lake. We measured the wall thickness of this pipe to be:

- At 12:00 X.xx Inches
- At 3:00 X.xx Inches
- At 6:00 X.xx Inches
- At 9:00 X.xx Inches

3.4 The original pipe thickness is 0.375". Therefore the pipe has only lost XX % due to corrosion. Most of the leaks are occurring that the welds which is typical and will continue.

3.5 The concrete under the end of the pipe is undermining and will eventually need a repair.

4.0 Pump House Structure

4.1 The 1930s pump house is a typical brick mill building. The structure shows no cracked bricks. The wall does show efflorescent which means water is leaking thru the wall.

5.0 Expected Life Expectancy

5.1 The Gould Pumps have an average pump bearing life of 10 continuous years.

5.2 The pump were installed in 2001 and the mill closed in 2015. Using an average run time of 3 months per year, the pumps are about 35% used or 65% life remaining. This means the drive or power end will be to be rebuild in around 20 years due to the low usage with proper lubrication. Yearly vibration analysis will determine the life to rebuild. The original pump's life was 60 years.

5.3 As for the 12,200 feet of carbon steel 36" diameter piping, you should expect annual leak patching.

6.0 Spare Parts

6.1 Attachment 3 is the recommended spare parts list for the Goulds 3410L pump. The list shows startup and recommended spare parts. It is typical for the mill to have purchased the parts or have a complete power end in stores. Currently the Mill does or does not have the parts in Mill stores.

6.2 Since the pipeline has routine leaks, a couple sheet of A36 rolled steel plate should be on site.

7.0 Operational Budget:

7.1 At $120 /MWH, the cost to run 1 HP for one year is around $1,088. To run one pump at the Alamoosook Pump Station will cost about $657/day per pump.

8.0 Maintenance Budget:

8.1 Since this system is only expect to be used seasonally during droughts, the maintenance for this system is low. The following is the recommended maintenance:

- Beginning of the pumping season, rotate the pump shaft by hand. It should turn easily. Budget: $700
- Replace the lubricants annually. Budget $800
- Measure vibration once per year. Budget $1,000
- Patch the piping once per year. Budget $6,000
- Megger the motors during drought years Budget 1,500
- The yearly maintenance budget is $10,000

8.2 A motor will need to be replaced about every 10 to 15 years. The motor for the pumps is a 250 HP 1800 RPM 2300 volt 449T frame TEFC 1.15 SF. The price for this motor is around $18,000. During the 2001 project, they put in Reliance motors. Presently one motor is still a Reliance.

8.3 Another capital job will be reface the concrete outfall of the piping system. The budget price for this project is $30,000. This is expected within 5 years.

9.0 Conclusion:

9.1 The pumping system from Alamoosook Lake to Silver Lake is in adequate condition to provide the backup water during low levels at Silver Lake. As any mechanical system, it will need yearly maintenance to remain a reliable pumping system.

9.2 This study is being conducted to understand if the current water supply will be adequate for the future Salmon Farm on the Bucksport Mill Site. The projected Salmon Water usage is:

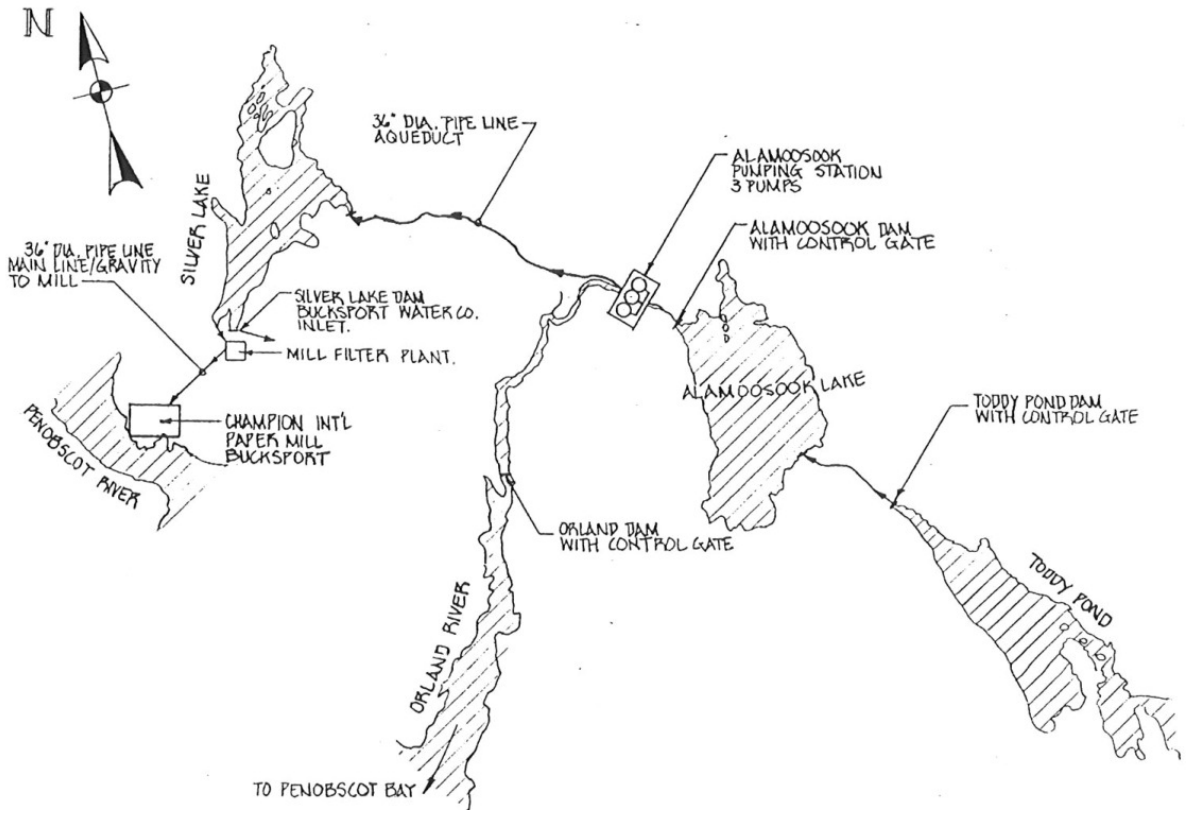
- Year 1: 1 MGD
- Year 5: 3 MGD
- Year 10: 5 MGD

9.3 The pumping system is able to provide 5.8 to 11.5 MGD.

9.4 A 1967 Process Water Study by Dr Kleinschmidt P.E. provided an estimate that Alamoosook Lake has an estimate useful drawdown of 6 feet with a storage of 1,900 MG. At 5 MGD per day plus 0.3 MDG for the Town of Bucksport, water is available for 358 days.

9.5 Therefore, It is a rare opportunity that this high quality lake water system is available for high demand use with its abundant water storage. The pumping system is just money. The Lake Water System is a gift of nature.

9.6 In conclusion, we believe this part of the Lake Water System, will easily supply a sustainable quality and quantity of water as required by the future Salmon Farm.



Ted Ocana P.E.

Theodore E. Ocana, P.E.
Registered Professional Engineer

Attachment:
1) Water System Block Diagram
2) Pump Curve / Pump Pricing in 2000
3) Pump Recommended Spare Parts

FORESIGHT ENGINEERING P.C.
10 Fleming Street
Lincoln, ME 04457 (207) 794-2775

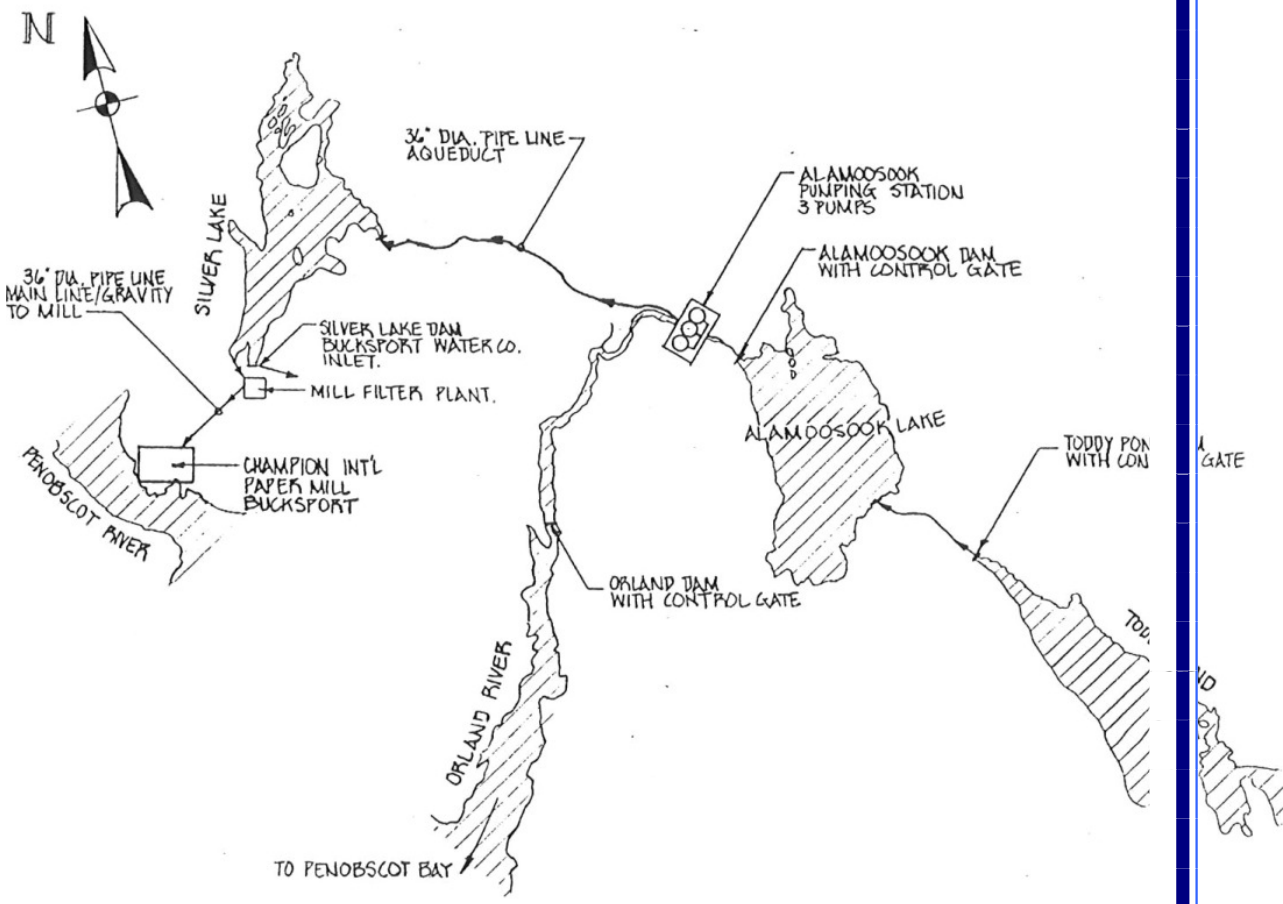
Upstream Engineering Assessment of Bucksport Mill Water System Alamoosook Pump House to Silver Lake

(Project # 22027R0)

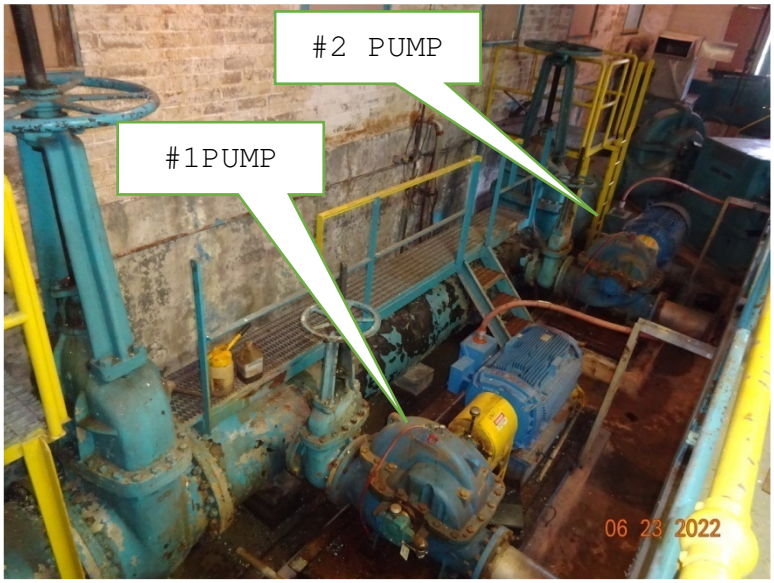
10-30-2022

1.0 Purpose of Report:

1.1 The purpose of this report is to provide an engineering assessment of the general condition of the Bucksport Mill's Water System. The following maps show an overview of the entire lake water system. This report will evaluate from the Alamoosook Pump House to Silver Lake. The report also includes: Design capacity, life expectancy, spare parts, and operational / maintenance budgets.



2.0 Pumping Capacity



2.1 The following picture shows the 3 pumps in the pump house. The #3 pump is not usable. The #1 & #2 pumps are operational.

2.2 The pumps are only run seasonally when Silver Lake level is low (See Atch 2: Water System Block Diagram).

2.3 The equipment file shows that pumps #1 & #2 are Goulds 3410 Size 10x12x17L with a 14.5" bronze impellor. The pumps are a premium brand which was installed in mid-2001.

2.4 Per the original pump curve (see atch 2), one pump could pump 4,200 gpm. Using the amp meters on the MCC, we back calculated that one existing pump is pumping around 4,300 gpm or 6.2 MGD. By using both pump #1 & #2, the flow rate will be around 8,400 gpm or 12.1 MGD. The flow rate is nearly double due to most of the head is caused by the static head component.

2.5 We did witness both pumps running. They ran with no excessive vibration and typical packing leakage.

3.0 Piping System to Silver Lake

3.1 The discharge piping is 36" diameter carbon steel piping with an exterior tar-based coating. This piping is about 12,000 feet long which travels above and below the ground.

3.2 During the pump tests, a leak was found in the pipe that go worse as time went on. The pipe was repaired and we reinspected the piping.

3.3 This next picture shows outlet which flows to Silver Lake after the leak was fixed. We measured the wall thickness of this pipe to be:

- At 12:00 0.480 Inches
- At 3:00 0.448 Inches
- At 6:00 0.269 Inches
- At 9:00 0.469 Inches

3.4 The original pipe thickness is 0.5". Therefore the pipe has lost 47 % due to corrosion. Most of the leaks are occurring that the welds which is typical and will continue. The pipe is pitted on the bottom half.

3.5 The concrete under the end of the pipe is undermining and will eventually need a repair.

<u>4.0 Pump House Structure</u>

4.1 The 1930s pump house is a typical brick mill building. The structure shows no cracked bricks. The wall does show efflorescent which means water is leaking thru the wall.

<u>5.0 Expected Life Expectancy</u>

5.1 The Gould Pumps have an average pump bearing life of 10 continuous years.

5.2 The pump were installed in 2001 and the mill closed in 2015. Using an average run time of 3 months per year, the pumps are about 35% used or 65% life remaining. This means the drive or power end will be to be rebuild in around 20 years due to the low usage with proper lubrication. Yearly vibration analysis will determine the life to rebuild. The original pump's life was 60 years.

5.3 As for the 12,200 feet of carbon steel 36" diameter piping, you should expect annual leak patching.

6.0 Spare Parts

6.1 Attachment 3 is the recommended spare parts list for the Goulds 3410L pump. The list shows startup and recommended spare parts. It is typical for the mill to have purchased the parts or have a complete power end in stores. Currently the Mill does not have the parts in Mill stores.

6.2 Since the pipeline has routine leaks, a couple sheet of A36 rolled steel plate should be on site.

7.0 Operational Budget:

7.1 At $120 /MWH, the cost to run 1 HP for one year is around $1,088. To run one pump at the Alamoosook Pump Station will cost about $657/day per pump.

8.0 Maintenance Budget:

8.1 Since this system is only expect to be used seasonally during droughts, the maintenance for this system is low. The following is the recommended maintenance:

- Beginning of the pumping season, rotate the pump shaft by hand. It should turn easily. Budget: $1,050
- Replace the lubricants annually. Budget $1,200
- Measure vibration once per year. Budget $1,500
- Patch the piping once per year. Budget $9,000
- Megger the motors during drought years Budget $2,250
- The yearly maintenance budget is $14,000

8.2 A motor will need to be replaced about every 10 to 15 years. The motor for the pumps is a 250 HP 1800 RPM 2300 volt 449T frame TEFC 1.15 SF. The price for this motor is around $27,000. During the 2001 project, they put in Reliance motors. Presently one motor is still a Reliance.

8.3 Another capital job will be repair the concrete outfall of the piping system. The budget price for this project is $45,000. This is expected within 5 years.

9.0 Conclusion:

9.1 The pumping system from Alamoosook Lake to Silver Lake is in adequate condition to provide the backup water during low levels at Silver Lake. As any mechanical system, it will need yearly maintenance to remain a reliable pumping system.

9.2 This study is being conducted to understand if the current water supply will be adequate for the future Salmon Farm on the Bucksport Mill Site. The projected Salmon Water usage is:

- Year 1: 1 MGD
- Year 5: 3 MGD
- Year 10: 5 MGD

9.3 The pumping system is able to provide 6.2 to 12.1 MGD.

9.4 A 1967 Process Water Study by Dr Kleinschmidt P.E. provided an estimate that Alamoosook Lake has an estimate useful drawdown of 6 feet with a storage of 1,900 MG. At 5 MGD per day plus 0.3 MDG for the Town of Bucksport, water is available for 358 days.

9.5 Therefore, It is a rare opportunity that this high quality lake water system is available for high demand use with its abundant water storage. The pumping system is just money. The Lake Water System is a gift of nature.

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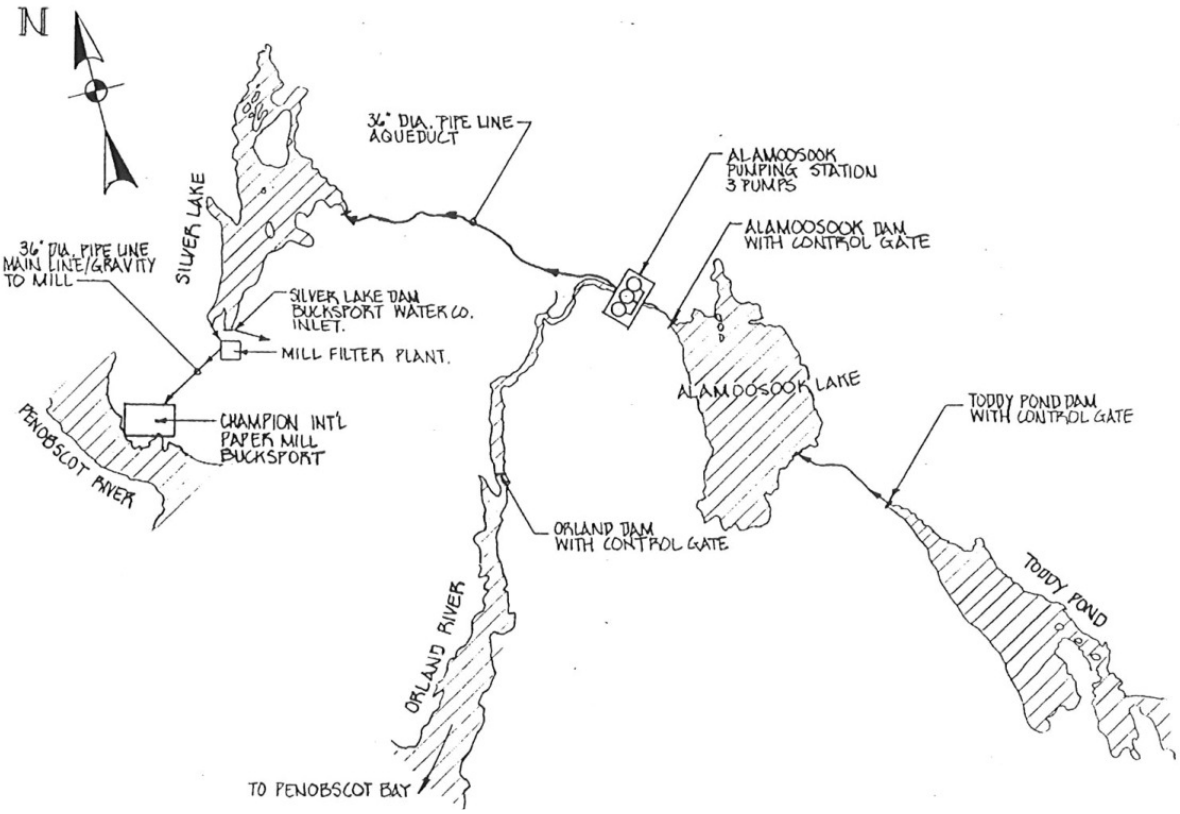


Jed Ocana P.E.

Theodore E. Ocana, P.E.
Registered Professional Engineer

Attachment:
1) Water System Block Diagram
2) Pump Curve / Pump Pricing in 2000
3) Pump Recommended Spare Parts

FORESIGHT ENGINEERING P.C.
10 Fleming Street
Lincoln, ME 04457 (207) 794-2775

ATTACHMENT 1

VERSO PAPER
BUCKSPORT WATER SYSTEM

TODDY POND – ORLAND

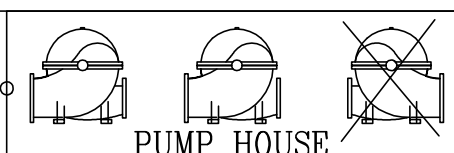
Physical Characteristics
Pond Area = 2,360 Acres.
Elevation drop of 9 feet
= 6,400 MG

Lake level is controlled by a dam and a manual gate.
Toddy Pond feeds the Alamoosook Lake through an unnamed stream.

ALAMOOSOOK LAKE – BUCKSPORT

Physical Characteristics
1,180 Acres at 120' El.
Elevation change from 120' to 114' (6 ft drop) = 1,900 MG

There are 3 pumps of which 2 are working and can run seasonally.



Lake level is controlled by a dam and a manual gate that overflows into the Narramissic river. When Silver Lake levels are low we run an electric pump through 12,200 feet of pipe that travels above/below the ground through residential areas to maintain level.

SILVER LAKE – BUCKSPORT

Physical Characteristics
610 Acres at 123' El.
734 Acres at 129.5' El. (Full Pond)
Elevation change from 129.5' to 123' (6.5 ft drop) = 2,000 MG

Lake level is controlled by a dam and a manual gate that overflows into the Mill stream. Silver Lake feeds the filter house by gravity through 2,000 feet of 36"ø gravity pipe.

FILTER HOUSE – BEHIND LAND FILL

There are 2 rotary screens rated for 10MGPD each. There is 1 traveling screen to remove debris. Shower water pumps cleans the rotary screens. The system can be bypassed.

The Filter House feeds the Bucksport Mill by gravity through 3,400 feet of 36"ø gravity pipe.

BUCKSPORT MILL

The Bucksport Mill used an average of 12.6 MGPD of fresh water in the paper making process. The effluent flow average was 11.54 MGPD in 2009 against a goal of 11 MGPD.

PREVIOUS VERSO DWG =S-19559

NOT FOR CONSTRUCTION
FOR PERMITTING ONLY
REV A

DATE: 5/13/19
SCALE: NOTED
DRAWN: TEO
JOB NO: 19023

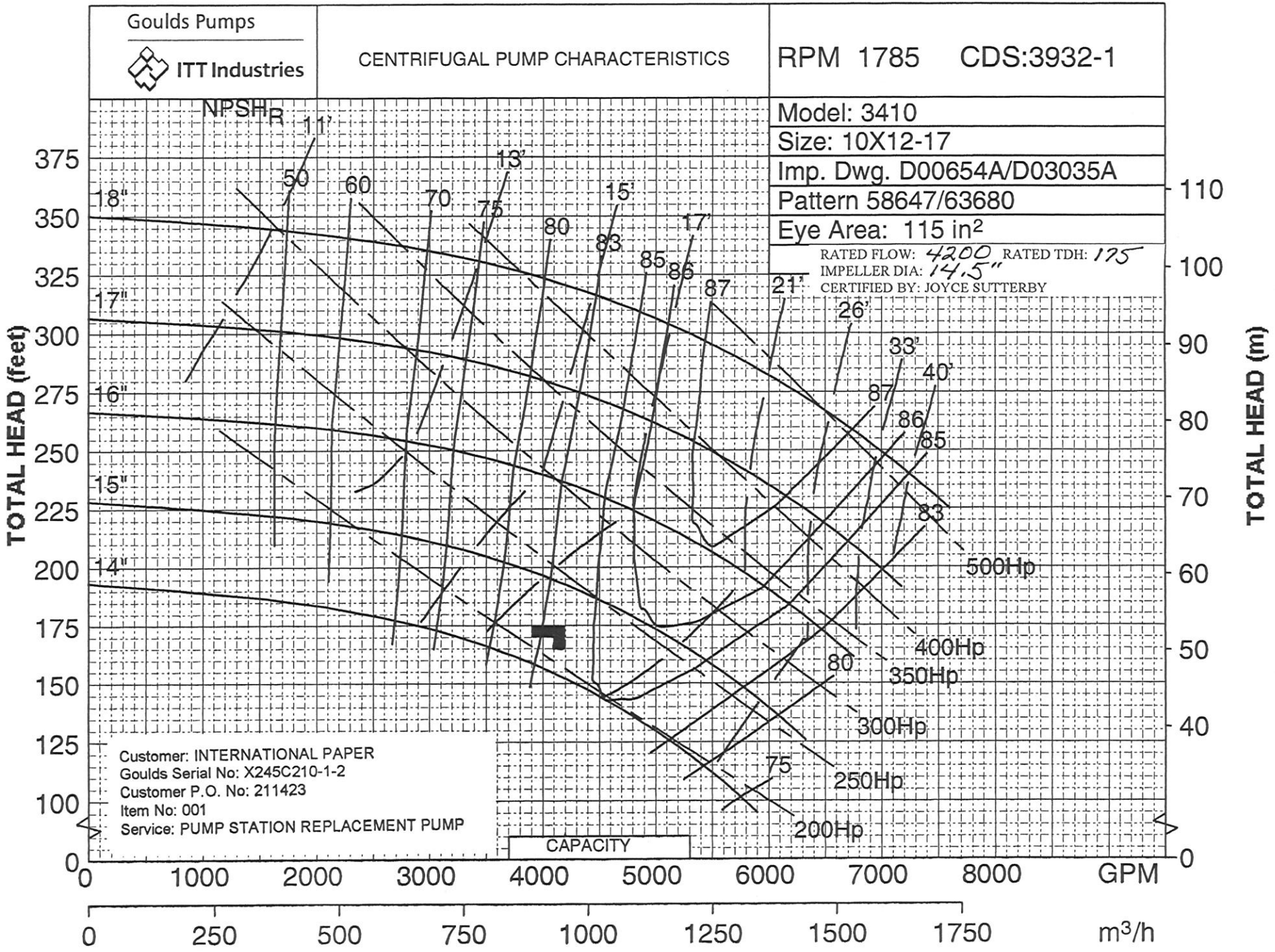
BUCKSPORT MILL LAKE WATER SYSTEM BLOCK FLOW DIAGRAM

BUCKSPORT GENERATION
2 RIVER RD.
BUCKSPORT, ME 04416

FORESIGHT ENGINEERING P.C.
10 FLEMING STREET
LINCOLN, MAINE 04457
(207) 794-2775
(PHONE OR FAX)

FORESIGHT ENGINEERING P.C.
10 Fleming Street
Lincoln, ME 04457 (207) 794-2775

ATTACHMENT 2


Goulds Pumps
ITT Industries
CENTRIFUGAL PUMP CHARACTERISTICS
RPM 1785 CDS:3932-1
Model: 3410
Size: 10X12-17
Imp. Dwg. D00654A/D03035A
Pattern 58647/63680
Eye Area: 115 in²
RATED FLOW: 4200 RATED TDH: 175
IMPELLER DIA: 14.5"
CERTIFIED BY: JOYCE SUTTERBY
NPSHR
11'
13'
15'
17'
21'
26'
33'
40'
50
60
70
75
80
83
85
86
87
18"
17"
16"
15"
14"
500Hp
400Hp
350Hp
300Hp
250Hp
200Hp
Customer: INTERNATIONAL PAPER
Goulds Serial No: X245C210-1-2
Customer P.O. No: 211423
Item No: 001
Service: PUMP STATION REPLACEMENT PUMP
CAPACITY
TOTAL HEAD (feet)
TOTAL HEAD (m)
0 1000 2000 3000 4000 5000 6000 7000 8000 GPM
0 250 500 750 1000 1250 1500 1750 m³/h
0 100 125 150 175 200 225 250 275 300 325 350 375
0 40 50 60 70 80 90 100 110

GOULDS PUMPS

GOULDS PUMPS
ITT INDUSTRIES
22 MADISON ROAD
FAIRFIELD, NJ 07004
MARIE DIMARCO - APPLICATION ENG
PHONE: 800-664-6312
FAX: 800-850-8883
EMAIL: MDiMarco@flulds.ittind.com

23 March 2000

Attn:GEREMY CHUBBUCK

CHAMPION INTERNATIONAL CORP.

Inquiry No:

Proposal No: BL00019 Rev.# 1

Item No : 001

MODEL: 3410 Size: 10x12-17 L QTY: 2

Operating conditions

SERVICE	*PUMP STATION REPLACEMENT PUMP*
LIQUID	*Water*
CAPACITY N/R	*4200.0 / 4200.0 GPM (60 Deg F, 1.000 SP.GR 1.12 cp Viscosity)*
HEAD	*175.0 ft*

Performance at 1800 RPM

PUBLISHED EFFY	*85.0% (CDS)*
RATED EFFY	*85.0%*
RATED HP	*218.4 ,Max at run out 234.0*
NPSHR (ft)	*18.6*
DISCH PRESSURE	*75.8 PSI (92.2 @so) (Based on 0.0 PSI Suc.press)*
PERF.CURVE	*3932 (Rotation CW viewed from coupling end)*
SHUT OFF HEAD	*213.0 ft*
MIN FLOW	*1582.0 GPM*

Prices In USD	
Pump Unit	14,164
Testing	
Driver	16,342
Box, & Frt	
Total Unit	30,506
Tot. 2 Un.	61,012

Shipment: 14 Weeks Ex-works

Materials

CASING	*CAST IRON max.casing pres.@ rated temperature 175 psi*
CASING WEAR RING	*BRONZE*
ST.BOX	*CAST IRON*
IMPELLER	*BRONZE -Enclosed-Between Bearings (14.5000 rated (Inches) max=18.0000 min=14.0000)*
SHAFT	*SAE 4140*
SHAFT SLEEVE	*BRONZE*
LUBRICATION	*FLOOD OIL*
BEARINGS	*6211 (Radial) 5309 (Coupling end)*
COUPLING	*FALK DISC PACK 1080FD06N20*
COUPLING GRD	*STEEL*
BASE PLATE	*CAST IRON D=12.5;B=27.5;A=25.5;AB=37.5 (inches) D00062A* *Current motor frame is 449T. Baseplate is sized to accommodate 449T future motor size*

Sealing Method

PACKING	*NON-ASBESTOS*

Driver MOTOR

FURNISHED BY	*GOULDS*
RATING	*250.0 HP (186.5 KW)*
PHASE/HZ/VOLTS	*3/60/2300*
INSULATION/SF	*F / 1.15*

Manufacturer: RELIANCE

MOUNTED BY	*GOULDS*
ENCLOSURE	*TEFC MILL & CHEM HIGH EFFY*
SPEED	*1800 RPM*
FRAME	*449T*

Weights and Measurements

TOTAL NET UNIT WEIGHT 4,334 Lbs

FORESIGHT ENGINEERING P.C.
10 Fleming Street
Lincoln, ME 04457 (207) 794-2775

ATTACHMENT 3

ITT Industries
Goulds Pumps

REPLACEMENT PARTS DATA SHEET

6/19/01 Page : 1

Customer PO # : 211423
Serial number : X245C210
Pump Quantity : 2.000 QUOTE IS VALID FOR 30 DAYS
Price is in : United States Dollars
Model/Group/Size. 3410/L /10X12-17
Construction..... CAST IRON/BRZ
S.B.Arrangement.. PACKMASTER 1 (STANDARD)
Imp.Diameter..... 14.5000
Lubrication..... FLOOD OIL
Service..... PUMP STATION REPLACEMT PU
Equipment Number. ITEM# 001
Salesman Rep... 295000
B. LYNCH

Customer: INTERNATIONAL PAPER
Goulds Serial No: X245C210-1-2
Customer P.O. No: 211423
Item No: 001
Service: PUMP STATION REPLACEMENT PUMP

Comments.. EQUIP No. 18331 & 18332

	Item Number	Qty	Part Number	Part Name	Material Description	Price
	100	001	0E00349A211003	CASING,ASSY	CAST IRON	8806.194
#	101	001	245C210M	IMPELLER,6V D00654A01 1101	SILICON BRZ	5040.291
*	103	002	C01293A11 1618	RING,WEAR	FEDERALLOY III BRZ ASTM B584	231.984
*	105	002	RB01144A	RING,LANTERN ASSEMBLY		72.417
*	106	001	A01063A45	PACKING,SB PACKMASTER 2		79.587
	107	002	RC02474A 1203	GLAND,ASSEMBLY	316SS	186.420
	109	002	B02001A 1000	COVER,END BRG	CAST IRON	156.306
	109A	001	A01186A02	PLUG,SOFT THST HSG		16.491
*	112	001	8049-30900	BEARING,BALL SKF 5309 AHC3		82.399
	113A	002	72416 0300	OIL/GRS FTG		2.652
#	122	001	RD02747A012238	SHAFT,ASSEMBLY	ALLOY STL 4140	208.552
#	124	002	RB02008A 1618	NUT,SLEEVE ASSY	FEDERALLOY III BRZ ASTM B584	49.473
#	125	002	B00474A05 3211	BUSHING,THROAT	316 STN STL	35.133
*	126	002	C02450A 1618	SLEEVE,SHAFT	FEDERALLOY III BRZ ASTM B584	149.250

Note: * = Startup Spare # = Recommended Spare

ITT Industries
Goulds Pumps

REPLACEMENT PARTS DATA SHEET

Customer PO # : 211423
Serial number : X245C210
Pump Quantity : 2.000 QUOTE IS VALID FOR 30 DAYS
Price is in : United States Dollars

Customer: INTERNATIONAL PAPER
Goulds Serial No: X245C210-1-2
Customer P.O. No: 211423
Item No: 001
Service: PUMP STATION REPLACEMENT PUMP

Model/Group/Size. 3410/L /10X12-17
Construction..... CAST IRON/BRZ
S.B.Arrangement.. PACKMASTER 1 (STANDARD)
Imp.Diameter..... 14.5000
Lubrication..... FLOOD OIL
Service..... PUMP STATION REPLACEMT PU
Equipment Number. ITEM# 001
Salesman Rep... 295000
B. LYNCH

Comments..

	Item Number	Qty	Part Number	Part Name	Material Description	Price
	134	002	D02641A 1000	HOUSING,BRG	CAST IRON	122.607
*	168	001	8050-21160	BEARING,BALL SKF 6211		24.378
#	178	001	49568 329 2226	KEY	303SS	19.359
	183	001	E02530A 3201	BASEPLATE	CARBON STEEL	REFER FACTORY
	190A	001	49528 00846501	PIPE,NIPPLE	BLK STL SCH 40	27.963
	195E	001	49528 00506502	PIPE NIPPLE	GALV STL SCH 40	3.585
	222B	004	49514 202 2229	SCREW,SET	316SS	1.434
	232A	001	245C210CG	ORDERED COUPLING		REFER FACTORY
	251	002	072531 14 8683	OILER,SIGHT #5 8 OZ CAPACITY	OILER,SIGHT	87.474
#	332	001	D08717A17 6241	SEAL,LABY OUTBOARD	PTFE COMPOUND 10% FILLED	89.460
#	333	002	D08717A15 6241	SEAL,LABY INBOARD	PTFE COMPOUND 10% FILLED	89.460
	340A	008	B02395A08	MOTOR ADJUSTER		60.228
*	351D	001	C02471A02 5108	GASKET,DISCHARGE	NON-ASBESTOS	17.253
*	351S	001	C02471A01 5108	GASKET,SUCTION	NON-ASBESTOS	17.253

Note: * = Startup Spare # = Recommended Spare

ITT Industries
Goulds Pumps

REPLACEMENT PARTS DATA SHEET

Customer PO # : 211423
Serial number : X245C210
Pump Quantity : 2.000 QUOTE IS VALID FOR 30 DAYS
Price is in : United States Dollars

Customer: INTERNATIONAL PAPER
Goulds Serial No: X245C210-1-2
Customer P.O. No: 211423
Item No: 001
Service: PUMP STATION REPLACEMENT PUMP

Model/Group/Size. 3410/L /10X12-17
Construction..... CAST IRON/BRZ
S.B.Arrangement.. PACKMASTER 1 (STANDARD)
Imp.Diameter..... 14.5000
Lubrication..... FLOOD OIL
Service..... PUMP STATION REPLACEMT PU
Equipment Number. ITEM# 001
Salesman Rep... 295000
B. LYNCH

Comments..

	Item Number	Qty	Part Number	Part Name	Material Description	Price
	353	004	3-46 181 2228	STUD	304SS	8.806
	355	004	49507 7 2228	NUT,HEX	304SS	2.327
*	360	002	B01143A 5130	GASKET,COVER END	VELLUMOID	1.853
#	361	001	58102 177	RING,RTNG 5102 177		2.151
	371C	008	49511 110 2210	SCREW,HHC 3/8"-16 X 3"LG	CARBON STEEL	.717
	372U	004	49511 256 2210	SCREW,HHC 5/8"-11 X 2-1/2"LG	CARBON STEEL	1.434
#	400	001	49568 307 2213	KEY,SQUARE END	CARBON STEEL	7.815
	408B	002	63122 2 2210	PLUG PIPE HEX HD .250" 18NPT	CARBON STEEL	1.434
	424A	004	91778 3	PIN,NAMEPLATE		.251
*	428	002	90282 14 5180	GASKET,SHAFT SLEEVE	NON-ASB GLK 3000	13.419
	443T	001	B02055A 2210	SPACER,BEARING	CARBON STEEL	21.510
	445A	004	80860 9	PIN,ROLL		.717
*	497	002	C02495A36 5302	O-RG AS568-36	BUNA-N	2.364
*	497F	001	C02495A1385304	O-RG AS568-138	VITON	10.863

Note: * = Startup Spare # = Recommended Spare

GOULDS PUMPS
ITT Industries

SENECA FALLS, NEW YORK 13148

HYDROSTATIC TEST REPORT

PUMP SERIAL NO. X245C210-1-2

MODEL 3410 L

SIZE 10X12-17

PART NAME Casing

Customer Data

Customer: INTERNATIONAL PAPER
Goulds Serial No: X245C210-1-2
Customer P.O. No: 211423
Item No: 001
Service: PUMP STATION REPLACEMENT PUMP

A SATISFACTORY HYDROSTATIC TEST HAS BEEN PERFORMED AT STATED PRESSURE AND AMBIENT TEMPERATURE IN ACCORDANCE WITH THE REFERENCED QUALITY CONTROL PROCEDURE:

Quality Control Procedure Number: QCP *550* REV *17*

Pressure: *263 PSIG* / *1813 kPa*

Duration: 10 MIN

Additional Information:

GOULDS Q.A. REPRESENTATIVE: Doug Nichols — QA Auditor

CUSTOMER WITNESS: Non-Witness

CERTIFICATION DATE: June 27, 2001

GOULDS PUMPS
ITT Industries

SENECA FALLS, NEW YORK 13148

CERTIFICATE OF COMPLIANCE

PUMP SERIAL NO. X245C210-1-2

MODEL 3410 L

SIZE 10X12-17

Customer Data

Customer: INTERNATIONAL PAPER
Goulds Serial No: X245C210-1-2
Customer P.O. No: 211423
Item No: 001
Service: PUMP STATION REPLACEMENT PUMP

We certify that the customer's Purchase Order requirements have been complied with and that the materials used in the construction of the above described pump(s) and, or part(s) are in accordance with the specifications.

Applicable for repair parts: We certify that the repair parts are new and unused and that they are equivalent and, or interchangeable with the original parts supplied on the original pump order.

Additional Information:

ROTORS HAVE BEEN BALANCED PER ISO G1.0

UNIT#	PLANE#1	PLANE#2
1	.245 OZ / IN	.173 OZ / IN
2	.252 OZ / IN	.197 OZ / IN

GOULDS Q.A. REPRESENTATIVE: Doug Nichols QA Auditor

CERTIFICATION DATE: **June 27, 2001**

FORESIGHT ENGINEERING P.C.
10 Fleming Street
Lincoln, ME 04457 (207) 794-2775

Foresight Engineering P.C.

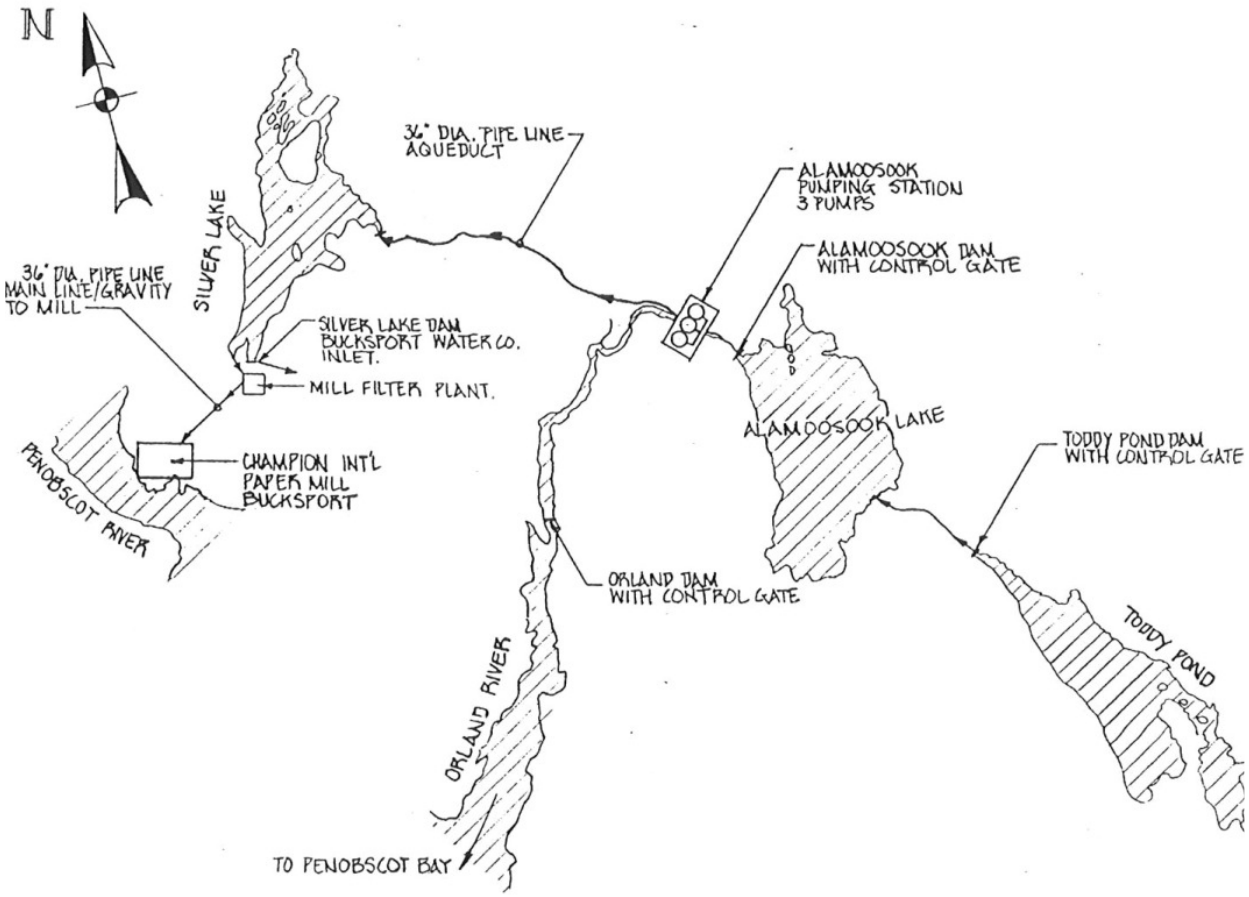
Downstream Engineering Assessment of Bucksport Mill Water System Silver Lake to Bucksport Mill

(Project # 22027R0)

10-30-2022

1.0 Purpose of Report:

1.1 The purpose of this report is to provide an engineering assessment of the general condition of the Bucksport Mill's Water System. The following maps show an overview of the entire water intake system. This report will evaluate from Silver Lake to the Bucksport Mill. The report also includes: Design capacity, life expectancy, spare parts, and operational / maintenance budgets.



2.0 Silver Lake Dam

2.1 Silver Lake Dam provides the lake water storage for the Bucksport Mill & the Town of Bucksport. The dam consists of an earthen embankment with masonry core and a concrete spillway and gate section.

2.2 The concrete and earthen dam had no spalling or earth movement and is in good condition.

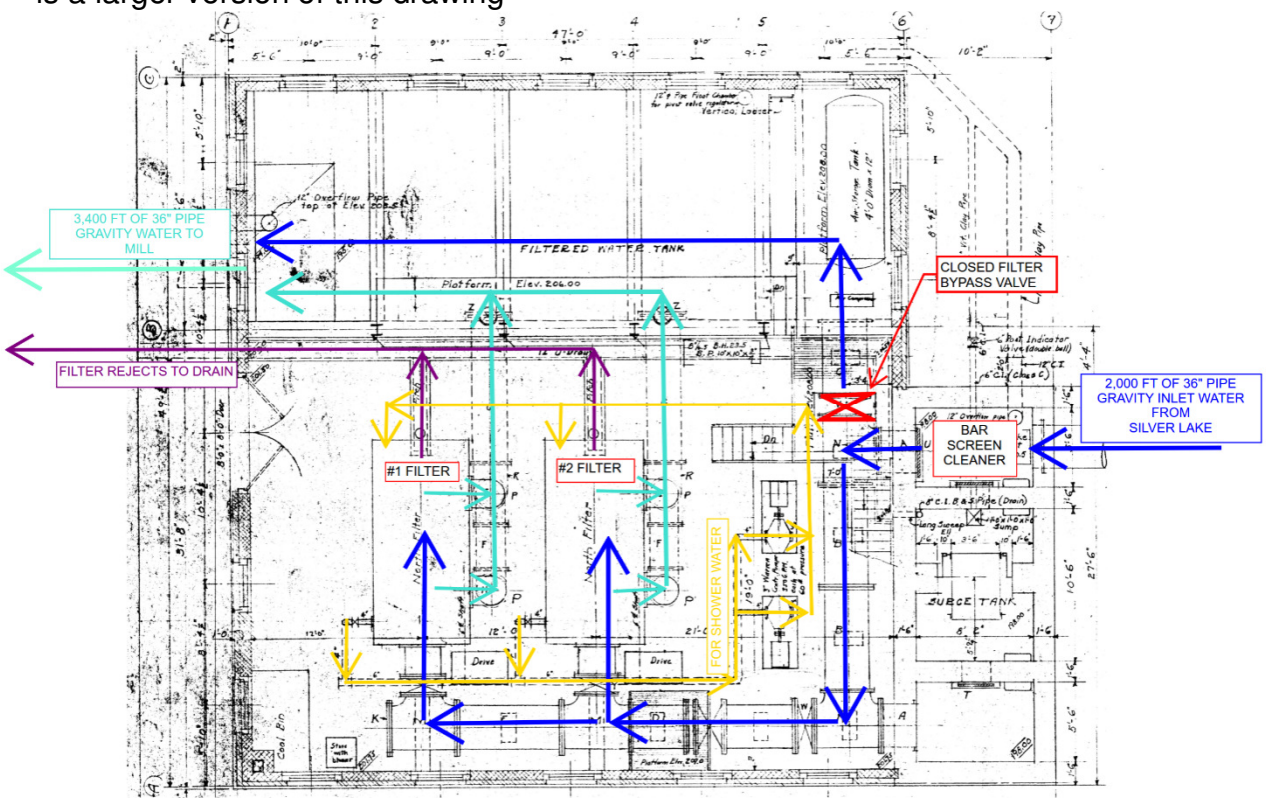
2.3The concrete wing walls shows water leaks thru the concrete cracks. To protect the rebar in the concrete, these cracks should be pressure injected if water leakage occurs.

3.0 Piping System from Silver Lake to Filter House

3.1 From the drawings, in 1930 about 2,000 ft of 36" diameter steel pipe was installed to the Mill's Water Filter Plant. The piping is mostly underground. We could not see any leaks on the day of our inspection.

4.0 Filter House

4.1 The Filter House will be reviewed using the following flow diagram. Attachment 2 is a larger version of this drawing



4.2 The 36” piping inlets to the Filter House traveling screen. This equipment is an automatic screen cleaner shown in the following pictures. If this screen is plugged, the water just outlets thru the surge tank.

4.3 The red valve shown above in the flow diagram is a 36” valve that is presently closed. This valve allows by pass of the remainder of the filter plant. The issue with by passing is at 5 MGD flow rate the velocity is only 1.14 ft/sec. Therefore, the sand and heavy material will settle in the bottom of the gravity piping to the Mill.

4.4 Each filter is design for 10 MGD. This picture is of the #2 filter. The inlet is on the left side. The clean water flows thru the screens on the front side. The spray water is on the top back side which pushes the debris to an internal outlet gutter. The debris and spray water drains on the right side.

4.5 The screen slowly rotates and is powered by a 3 HP motor. The drive rotates a gearbox and a chain which drives the shaft.

4.6 The shaft is support by bearing on both ends. The shaft turns the two small plastic pinion gears which rotates the two cast iron bull gears.

4.9 This is the #1 filter which has not run for several years.

4.10 The original 1930s brick building has a leaking roof system. Also the dark stain on the CMU wall is an area that the masonry needs to be repointed.

4.11 The addition on the left was built in 2006 for the chemical treatment of the water. This build is in good condition.

4.12 The second story shown has several cracks in the walls. This photo shows the cracks in corner. About six windows are so damaged that it is better to replace them.

4.13 The filter house has a backup generator. It is propane powered. We did not see this equipment running.

5.0 Expected Life Expectancy

5.1 The filters are 92 years old. They can be rebuilt to maintain good reliability. Since they run so slowly, the age has little impact on future expected life. The major question is can new cast iron gears be obtained. The existing bull gears still have at least 5 years of remaining life.

5.2 I can only find that the pumps were installed before 2006. They did replace the original Warren Pumps. Yearly vibration analysis will determine the life to rebuild. Power ends for Goulds 3196 are very common.

5.3 As for the 2,000 feet of carbon steel 36” diameter piping from Silver Lake and the 3,400 feet of carbon steel

36” diameter pipe to the Mill, you should expect a leak about every other year. These repairs are typical done with a stainless steel pipe repair clamp (see photo). If the leak is a small hole, this type of repair allows you to do the repair on the run. This type of underground water system are very common for Mills in the State of Maine. I personally know of raw water intake systems still in use that are over 100 years old that are still in service. The Bucksport piping system is 92 years old and no immediate issues are present.

6.0 Spare Parts

6.1 The filter has one spare screen drum that is stored outside. The screens are new on this filter.

6.2 This picture is a close up of the bull gear. Each filter has one bull gear on each end. Of the three screen drums, this one is in the worst condition. The rust flaking is typically 5 times greater than the actual corrosion. Due to the very slow turning rate, the drum still has life, but needs to be cleaned up and stored inside the 2006 addition.

6.3 Currently the Mill does not have the parts in Mill stores for the Goulds 3196 shower pumps.

6.4 Since the pipeline can have routine leaks, I would recommend that least one 36" SS repair clamp be on site. Presently none are on site.

7.0 Operational Budget:

7.1 At $120 /MWH, the cost to run 1 HP for one year is around $1,088. To run the traveling screen, one filter and one shower pump is around 25 HP. This equals $27,200 per year.

8.0 Maintenance Budget:

8.1 The following is the recommended maintenance:

- Replace the lubricants quarterly for equipment running continuously. Budget $9,000
- Measure vibration once per year. Budget $2,250
- Patch the piping once per year. Budget $15,000
- Maintenance for traveling screen. Budget $6,000
- Rebuild one filter screen. Budget $37,500 (1st two years)
- Rebuild one pump base, Budget $12,000 (1st two years)
- Repack the stem of the 30"valve. Budget $3,750 (1st year only)
- Propane usage: $6,000
- With the yearly total maintenance budget of $91,500

8.2 A motor will need to be replaced about every 10 to 15 years. The motor for the shower pumps is a 40 HP 1800 RPM 460 volt TEFC 1.15 SF. The price for this motor is around $3,750.

8.3 Another capital job is the roof repair on the brick & masonry building. The budget price for this project is $90,000. This is expected to be done within 2 years.

8.4 And another capital job is the replace the broken windows in the brick building and pointing of the masonry. The budget price for this project is $15,000. This is expected to be done within 2 years.

8.5 Another option is to put the filter plant bypass mode, and install two grit chambers in parallel to remove the sediment. This system would be gravity.

9.0 Conclusion:

9.1 The lake water system from Silver Lake to the Mill is in adequate condition but needs annual maintenance to maintain its reliability. As any mechanical system, it will need yearly maintenance to remain a reliable system.

9.2 This study is being conducted to understand if the current water supply will be adequate for the future Salmon Farm on the Bucksport Mill Site. The projected Salmon Water usage is:

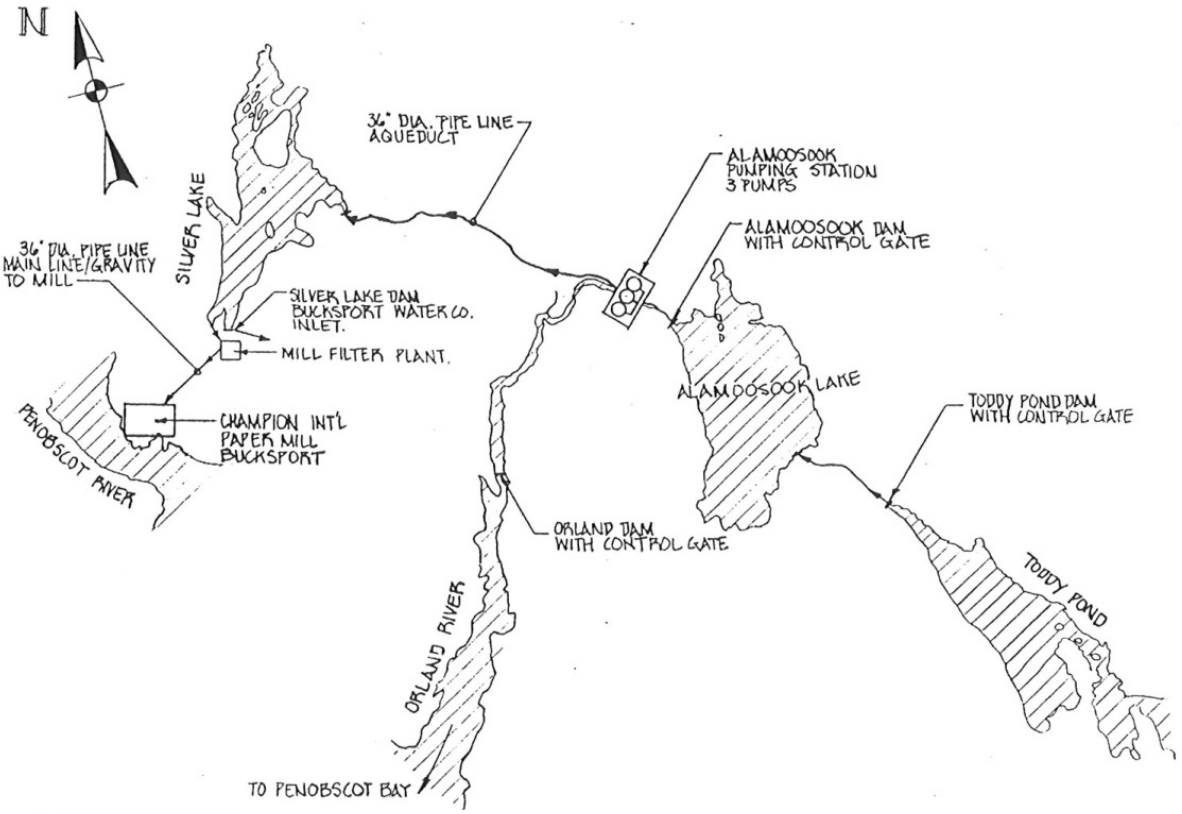
- Year 1: 1 MGD
- Year 5: 3 MGD
- Year 10: 5 MGD

9.3 The gravity water system has historically provided the Mill with 12.6 MGD.

9.4 A 1967 Process Water Study by Dr Kleinschmidt P.E. provided an estimate that Silver Lake has an estimate useful drawdown of 9.5 feet with a storage of 2,000 MG. The Town of Bucksport average usage is 0.3 MGD. At 5.3 MGD per day, water is available for 377days.

9.5 Therefore, It is a rare opportunity that this high quality lake water system is available for high demand use with its abundant water storage. The mechanical system can be maintained with money. The Lake Water System is a gift of nature.

9.6 In conclusion, we believe this part of the Lake Water System, will easily supply a sustainable quality and quantity of water as required by the future Salmon Farm.



Ted Ocana P.E.

Theodore E. Ocana, P.E.
Registered Professional Engineer

Attachment:
1) Water System Block Diagram
2) Filter Plant Flow Diagram

FORESIGHT ENGINEERING P.C.
10 Fleming Street
Lincoln, ME 04457 (207) 794-2775

ATTACHMENT 1

VERSO PAPER
BUCKSPORT WATER SYSTEM

TODDY POND – ORLAND

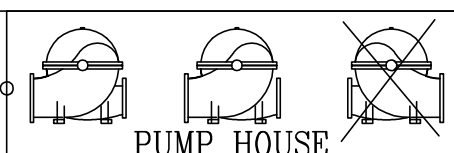
Physical Characteristics
Pond Area = 2,360 Acres.
Elevation drop of 9 feet
= 6,400 MG

Lake level is controlled by a dam and a manual gate.
Toddy Pond feeds the Alamoosook Lake through an unnamed stream.

ALAMOOSOOK LAKE – BUCKSPORT

Physical Characteristics
1,180 Acres at 120' El.
Elevation change from 120' to 114' (6 ft drop) = 1,900 MG

There are 3 pumps of which 2 are working and can run seasonally.



Lake level is controlled by a dam and a manual gate that overflows into the Narramissic river. When Silver Lake levels are low we run an electric pump through 12,200 feet of pipe that travels above/below the ground through residential areas to maintain level.

SILVER LAKE – BUCKSPORT

Physical Characteristics
610 Acres at 123' El.
734 Acres at 129.5' El. (Full Pond)
Elevation change from 129.5' to 123' (6.5 ft drop) = 2,000 MG

Lake level is controlled by a dam and a manual gate that overflows into the Mill stream. Silver Lake feeds the filter house by gravity through 2,000 feet of 36"ø gravity pipe.

FILTER HOUSE – BEHIND LAND FILL

There are 2 rotary screens rated for 10MGPD each. There is 1 traveling screen to remove debris. Shower water pumps cleans the rotary screens. The system can be bypassed.

The Filter House feeds the Bucksport Mill by gravity through 3,400 feet of 36"ø gravity pipe.

BUCKSPORT MILL

The Bucksport Mill used an average of 12.6 MGPD of fresh water in the paper making process. The effluent flow average was 11.54 MGPD in 2009 against a goal of 11 MGPD.

PREVIOUS VERSO DWG =S-19559

NOT FOR CONSTRUCTION
FOR PERMITTING ONLY
REV A

DATE: 5/13/19
SCALE: NOTED
DRAWN: TEO
JOB NO: 19023

BUCKSPORT MILL LAKE WATER SYSTEM BLOCK FLOW DIAGRAM

BUCKSPORT GENERATION
2 RIVER RD.
BUCKSPORT, ME 04416

FORESIGHT ENGINEERING P.C.
10 FLEMING STREET
LINCOLN, MAINE 04457
(207) 794-2775
(PHONE OR FAX)

FORESIGHT ENGINEERING P.C.
10 Fleming Street
Lincoln, ME 04457 (207) 794-2775

ATTACHMENT 2

3,400 FT OF 36" PIPE GRAVITY WATER TO MILL

FILTER REJECTS TO DRAIN

CLOSED FILTER BYPASS VALVE

2,000 FT OF 36" PIPE GRAVITY INLET WATER FROM SILVER LAKE

BAR SCREEN CLEANER

#1 FILTER

#2 FILTER

FOR SHOWER WATER

FILTERED WATER TANK

Platform Elev. 206.00

Platform Elev. 208.00

Av. Storage Tank 4'-0" Diam x 12'

12" Overflow Pipe top of Elev. 208.5

12"ø Pipe Float Chamber for pivot valve regulators Vertical Lever

6" Post Indicator Valve (double bell)

12" C.I. (Class C)

6" C.I. (Class C)

8" C.I. B & S. Pipe (Drain)

Long Sweep Ell

Jump

SUBCE TANK

Drive

Cool Bin

Store with blower

Platform Elev. 209.0

North Filter

3" Warren Cent. Pump 300 G.P.M. each at 60ft pressure

Brigadier General
Diane L. Dunn
Commissioner

State of Maine
Department of Defense, Veterans and Emergency Management
Maine Emergency Management Agency

Peter J. Rogers
Director

CERTIFIED MAIL

May 12, 2025

Bucksport Mill, LLC / Aim Recycling
Attn: Dave Bryant
PO Box 1874
Bucksport, ME 04416

SUBJECT: Dam Inspection Report for MEMA #111– Toddy Pond Dam

Dear Mr. Bryant:

On behalf of Commissioner Diane Dunn, thank you for your cooperation to facilitate the required inspection of your dam by the Maine Office of Dam Safety.

Per Title 37-B MRSA, Chapter 24: Dam Safety, your dam is required to be inspected every six (6) years for condition and every twelve (12) years for hazard. Your dam was inspected on April 15, 2025 by Tony Fletcher, PE. Please find attached the condition report with recommendations.

Should you disagree with the findings and recommendations of this report you may respond in writing to this office within twenty (20) days of receipt of this letter. Further you must file the basis of your appeal within 3 months of receipt of this letter.

Should you have any queries, please do not hesitate to contact either the Dam Safety Administrator, Tara Ayotte at (207)-624-4400 or tara.ayotte@maine.gov or the Operations and Response Division Director Steven Mallory at steven.mallory@maine.gov.

Thank you again.

Sincerely,

Peter J. Rogers
Director

Enc: Distribution List
Dam Report

72 State House Station
Augusta, Maine 04333-0072
Phone: 207-624-4400/800-452-8735
Fax: 207-287-3178

DAM INSPECTION REPORT
ELECTRONIC DISTRIBUTION LIST

DEPARTMENT OF DEFENSE, VETERANS, AND EMERGENCY MANAGEMENT

Brigadier General Diane Dunn, Commissioner
Steven Mallory, Director of Operations and Response, MEMA
Tara Ayotte, Dam Safety Administrator, MEMA (MEMA Dam File)

OTHER
Andrew Sankey, Hancoock County EMA Director
Town of Orland, 91 School House Street, Orland ME 04472
Bucksport Generation LLC, 2 River Road, Bucksport ME 04416

STATE OF MAINE
JANET T. MILLS
GOVERNOR
BG DIANE L. DUNN
COMMISSIONER

STATE OF MAINE
DEPARTMENT OF DEFENSE, VETERANS AND EMERGENCY MANAGEMENT
MAINE EMERGENCY MANAGEMENT AGENCY
72 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0072
PHONE: 207-624-4400/800-452-8735
FAX: 207-287-3178

PETER J. ROGERS
DIRECTOR

Memorandum

To: The Director, Operations & Response Division, MEMA
From: The Acting State Dam Inspector, MEMA
4/29/2025

Dear Steven,

RE: #111 Toddy Pond Dam, Orland, Hancock County, ME

In response to the attached letter (E) from the President of the Toddy Pond Association, addressed to you & the MEMA Director dated 12/2/24, you asked me & Anna to inspect Toddy Pond Dam on 4/15/25. The purpose of the inspection was to determine the progress the dam owner of Bucksport Mill LLC, owned by American Iron & Metal (AIM), have made implementing the recommendations of the 12/21/21 Hazard & Condition report for this dam by MEMA. This is my report.

1. Attachments

The following are attachments to this report: (A) the plan of Toddy Pond dam by Haley Ward Inc., based on drawings by Kleinschmidt Associates. (B) an elevation of the Toddy Pond dam. (C) inspection photographs of the spillway & fishway by Anna Poppelreiter EI. (D) Copy of the Memorandum to the Operations Director, from the Hazard & Condition report by the State Dam Inspector dated 12/21/21. (E) Copy of the 12/2/24 letter from the President, Toddy Pond Assn to MEMA.

2. Dam Safety Law

Title 37-B, Chapter 24: DAM SAFETY.

3. Remarks regarding the Toddy Pond Association (TPA) letter (Attachment E)

I have read the letter by the TPA attached & responded to complaints regarding dam safety per State law MRS 37B C24 "Dam Safety". My responses to this letter have been paraphrased. The "inspection & report" mentioned in the para 2 of the letter I assume is the 12/21/21 Hazard & Condition by MEMA. The complaint by the TPA in their attached letter is that report recommendations in the 12/21/21 have not been "followed through on". Since the complaint letter from Toddy Pond Association (E), MEMA inspected Toddy Pond Dam on April 15th, 2025, four issues were raised: brush growing on the dam & road embankment, rehabilitation of concrete decaying in the spillway, an inadequate principal spillway, the lack of dam breach inundation maps (DBIM's) for Toddy Pond dam showing the effects of a breach as far as the coast. By the date of this notice, the brush has been removed, and their contracted engineering firm Haley Ward will be working on a schedule to inspect the spillway.

With regards to AIM's findings by their consultant who inspected the dam in 2024. It seems the fenced off section which the owner unlocked for MEMA could not be accessed. Coring of the concrete is mentioned. To opine, coring of the concrete is not required at this state. Regarding leakage around the gate, as well as condition of the masonry, the lake should be drawn down & an upstream inspection done of both the masonry & earthwork in the dry. Underwater inspections are difficult to analyze. The removal of vegetation will be reported on later.

Note: Dam inspections are normally visual. What is important is that dam surfaces can be seen. On rare occasions materials are tested in situ, however this requires the employment of specialist contractors & engineers as well as machinery.

4. Progress implementing the 12/21/21 MEMA hazard & condition report for Toddy Pond dam

The following are remedial actions recommended to the dam owner in the MEMA 12/21/2021 Hazard & Condition report. A summary of the status of each remedy by the dam owner is by the SDI in italics.

1) Correct & update dam EAP per para 11. *The EAP is Incomplete.*
2) Arrange TTX for the EAP by 2022. *Not done.*
3) Write an O&M plan before 2023. *Owner to engage with MEMA to discuss the O&M as the O&M needs more information.*
5) Submit "as-built" construction records. *None located. Attached plans originally by Kleinschmidt which are adequate.*
6) Root out all brush on the dam & downstream road embankment before 2023. *Not an issue.*
7) Rehabilitate decaying concrete & mortar in the dam, especially at the base of the gate piers, before 2023. *Not Done.*

To complete the recommendations from the 2021 MEMA report, the following must be done:

4.1) The dams Operation & Maintenance Manual (O&M) must be discussed with the State Dam Inspector (SDI).

4.2) The breach standards for the Toddy Pond Dam EAP must be discussed with the (SDI) before breach maps are made.

4.3) The dam owner must arrange a "tabletop exercise" (TTX) of the EAP before fall of 2025 in co-operation with MEMA.

4.4) Item 6 (six) of the MEMA 2021 report recommended clearance of brush on the embankment. This is not required because all embankment surfaces were visible during the latest (4/15/2025) MEMA inspection.

4.5) Item seven recommended rehabilitation of the dam's masonry which has not been done by the dam owner. This inspection is covered later in the progress report 5.0 below.

5. 4/15/25 condition inspection of Toddy Pond Dam by MEMA

5.1 This inspection was facilitated by the Director, MEMA Operations & Response Division at MEMA to assess the progress, by the dam owner implementing the 12/21/21 MEMA Hazard & Condition report for Toddy Pond Dam.

5.2 The condition inspection was done by Tony Fletcher PE & Anna Poppelreiter EI, who assisted with the inspection & photographed the dam. Others on site were the Director of Operations & Response at MEMA, a representative of the dam owner Mr. Bryant, their dam operator Wes Shute, and their engineer Mr. Baillargeon from Haley Ward.

5.3 The weather was cool with occasional rain. Terms left & right are used looking downstream) The pond "water surface elevation" (WSE) was EL 165.5' & "top of dam" 167.3' so the freeboard was 1.8 feet. There are 3 spillways, a partially open electric sluice gate flowing at about 250 cfs. (cubic feet a second). The electric sluice gate is flanked by two uncontrolled weirs flowing at: right 5 cfs & left 30 cfs. The fishway to the right of the spillway was flowing at an estimated 5 cfs. The dam has no emergency spillway. Photo (C)-2 was taken from Toddy Pond Road bridge deck on the dam of the inspection & shows the dams principal masonry spillway. The estimated total flow from dam on the day was 290 cfs.

5.4 Of concern is the difference in flow between the left & right uncontrolled spillways (looking downstream) when they are alike (B) & their discharge should be similar, however the discharges are pointedly different (C-2). From the flow estimate the left spillway is flowing at about 6 times that on the left. Assuming the uncontrolled spillways were constructed level, the cause the left spillway is lower than the right would be settlement.

5.5 The inspection route is shown on plan (A) & includes the following: the right abutment, the left earth embankments, the concrete cutoff, the upstream riprap (underwater), the power takeoff (A), the new handrail, the fencing, the wooden bridge to the gate structure, the gate & weirs from the concrete platform, the downstream channel from the left fence, the road bridge, the fishway located on the right of the outlet channel, the fishway inlet structure, the right embankment, Toddy Pond Road, the road bridge, the right & left embankments to the road bridge, the road surfacing (for recent cracking denoting movement in the earth structure).

5.6 The dam outlet channel & road channel was flooded & could not be inspected. Features not inspected on the day were: fish ladder, the sluice gate, the spillway piers, downstream channel walls, road bridge opening & fishway.

Inspection Findings

1) No debris blocked any spillway. Debris was raked from the spillways & stacked on the right of the outlet channel.

2) No movement or leakage seen from left & right embankments or adjoining road embankment.

3) The underwater riprap upstream of the embankment appeared stable.

4) The old water drawoff (A) did not show instability or seepage from the buried pipe work.

5) The concrete cutoff wall in the embankments was weathered but showed no movement or seepage.

6) The wooden bridge over the left spillway channel is deflected & unsafe for pedestrians (**structural defect**).

7) The concrete slab over the left spillway which supports the gate needs inspection from underneath.

8) Water flow in the downstream channel (5.6) prevented inspection of the spillway channel & bridge opening.

9) The left & right spillways overflowed at differing rates, the left about 6X more than the right (**structural defect**).

10) The left pier is being undercut near its foundation by water flowing from the gate – photo (C)-1 (**structural defect**).

11) Both piers are cracked horizontally 1'-2' above the channel floor (**structural defect**).

12) The entrance to the fishway channel was cracked (**structural defect**).

6. Conclusion

Recommendations to complete the requirements of the 12/21/2021 Hazard & Condition report for Toddy Pond Dam by MEMA are shown in 4.1–4.3. The 4/15/2025 inspection of the dam by MEMA shows no developing defects in the embankments, however, the spillway & downstream channel show defects which indicate the spillway is structurally unstable. This spillway must be inspected in dry conditions after draining the head pond.

7. Recommendations for the Dam Owner

A) Implement recommendations 4.1-4.3 above.

B) Warn pedestrians the wooden bridge over the left spillway (C-2) is unsafe (Finding 6) & replace the bridge asap.

C) Drain the head pond then inspect the upstream face of the dam in dry conditions.

D) Employ an expert in dam design & construction to inspect the outlet works dry with MEMA present, report finding & recommend repairs to the dam owner & MEMA.

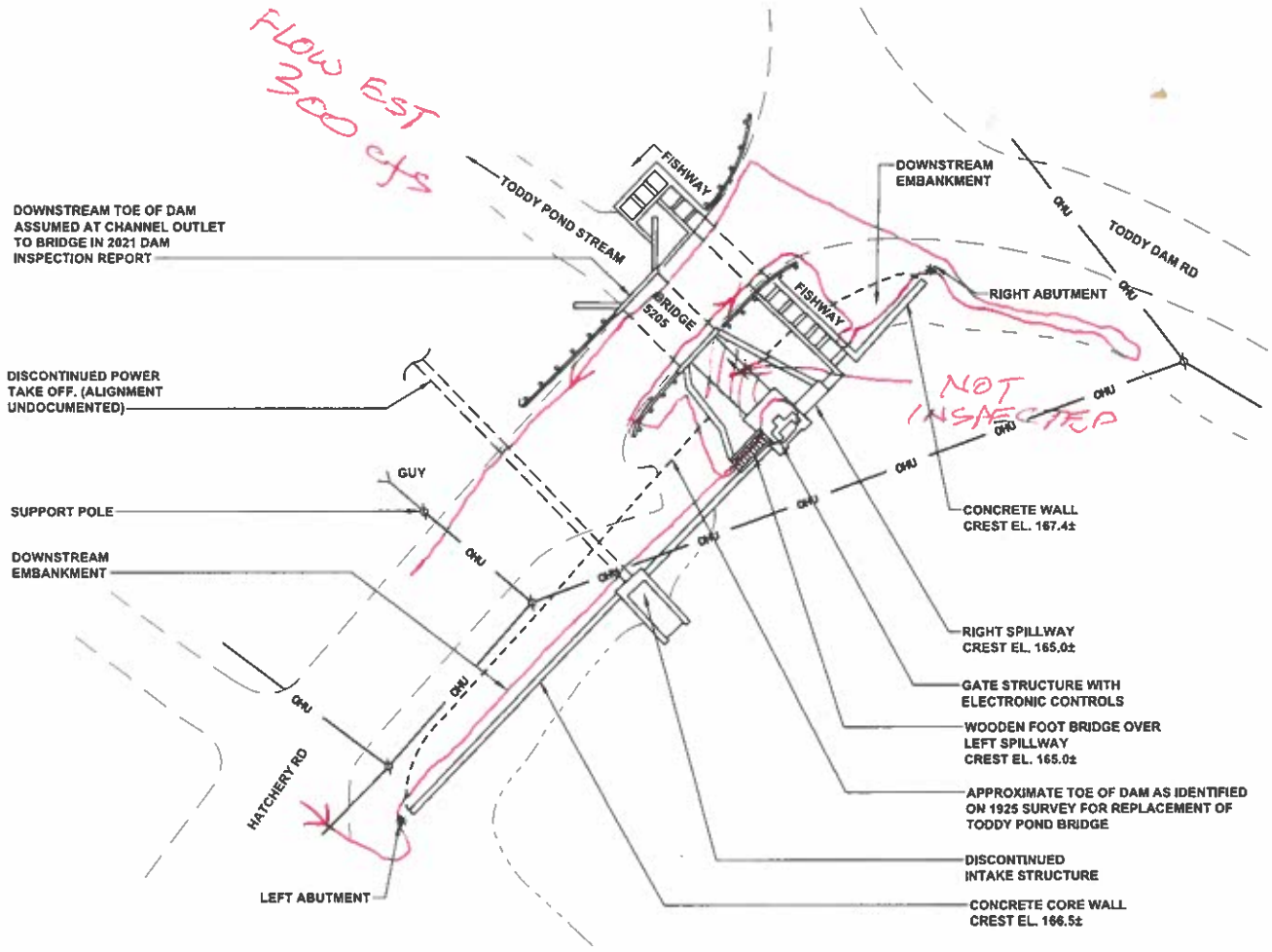
If you have any queries, please do not hesitate to contact me.

Sincerely,

Tony Fletcher

5/12/25

Tony Fletcher PE
Acting State Dam Inspector



LEGEND

- UTILITY POLE
- OHU — OVERHEAD WIRES
- EDGE OF WATER
- TOE OF DAM
- GUIDE RAIL

NOTES:

1. MAP IS PROJECTED USING UTM ZONE 19 COORDINATES, AND REFERENCES THE NORTH AMERICAN DATUM OF 1983 (NAD83.
2. NORTH ARROW IS ORIENTED TO GRID NORTH IN ALL MAP EXTENTS DEPICTED HEREIN.
3. BASE MAP COURTESY OF GOOGLE MAPS.
4. THE LOCATION OF OVERHEAD WIRES SHOULD BE CONSTRUED AS APPROXIMATE.
5. ELEVATIONS FOR SPILLWAY CREST AND DAM WALLS WERE OBTAINED FROM THE 2021 INSPECTION REPORT FOR TODDY POND DAM #111 ON FILE AT MEMA.
6. BRIDGE FEATURES AND APPROXIMATE TOE OF DAM WERE OBTAINED FROM PLANS DATED 1925 FOR BRIDGE 2505 ON FILE AT MDOT.
7. INFORMATION PROVIDED IN THE 1925 DAM SURVEY AND 2021 INSPECTION REPORT REFERENCED HEREIN CONFLICT WITH RESPECT TO THE LOCATION OF THE DAM'S DOWNSTREAM TOE. FURTHER INVESTIGATION IS REQUIRED TO DOCUMENT DOWNSTREAM LIMITS OF THE DAM.

GRAPHIC SCALE

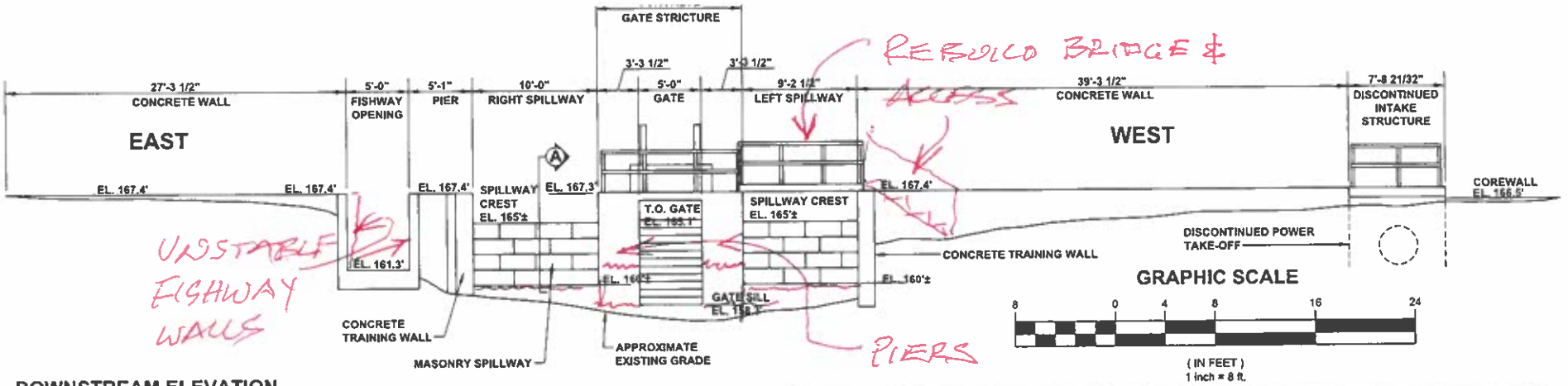
30 0 15 30 60 90

(IN FEET)
1 inch = 30 ft.

PROJECT: TODDY POND DAM, ORLAND, MAINE	DWG No.: FIGURE 2	BY: MEB / DNB	DRAWING STATUS: NOT FOR CONSTRUCTION	HALEY WARD ENGINEERING | ENVIRONMENTAL | SURVEYING
TITLE: SITE PLAN	JN: 11299.023	DATE: 2023.05.18		
	SCALE: AS NOTED	REV.: REV. DATE:		

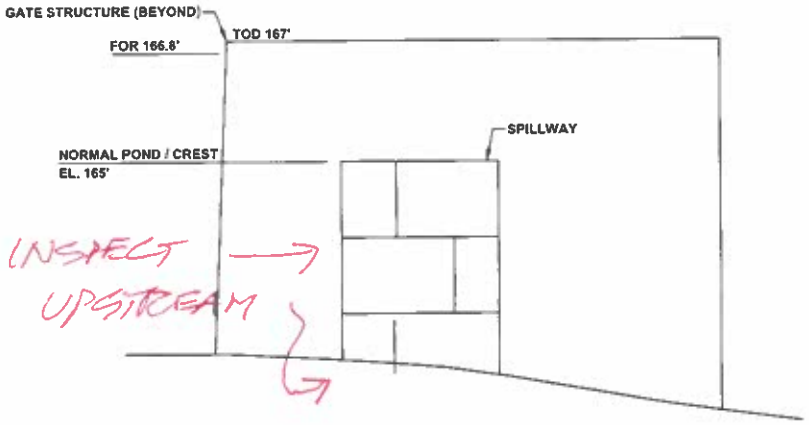
P:\11299-AM_DEVELOPMENT\2023-RIVER RD (BUCKSPORT EAP UPDATES 3 DAMS\DWG\CAD_DRAWINGS\CIVIL\TODDY POND DAM\11299.023 FIGURE 2.DWG

#111 Toddy Pond Dam - PLAN A



DOWNSTREAM ELEVATION

SCALE: 1"=8'-0"



SECTION A

SCALE: 1"=2'-0"

NOTES:

1. THIS DRAWING WAS DIGITIZED BY HALEY WARD, INC. FROM A 1998 DRAWING BY KLEIMSCHMIDT ASSOCIATES AND SHOULD BE CONSTRUED AS APPROXIMATE.
2. ELEVATIONS DEPICTED ON THIS DRAWING WERE OBTAINED FROM THE ABOVE-MENTIONED KLEINSCHMIDT DRAWING AS ANNOTATED BY MEMA IN THE 10/12/21 HAZARD & CONDITION REPORT FOR #111 TODDY POND DAM. ELEVATIONS APPEAR TO BE APPROXIMATELY REFERENCED TO NGVD-1929

PROJECT: TODDY POND DAM, ORLAND, MAINE	DWG No.: FIGURE 3	BY: MEB / DNB	DRAWING STATUS: NOT FOR CONSTRUCTION
TITLE: DOWNSTREAM ELEVATION	JN: 11299.023	DATE: 2023.04.19	
	SCALE: AS NOTED	REV.	
		REV. DATE	

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

P:\11299-ARA_DEVELOPMENT\023-RIVER RD BUCKSPORT EAP UPDATES 3 DAMS-DBW02-CAD_DRAWINGS\DVELTODDY POND DAM\11299 023 2.DWG

#111 Toddy Pond Dam - ELEVATION B

Maine Dam Safety Program
45 Commerce Drive Suite #2
Augusta, ME 04333-0072

#111 Toddy Pond
Town of Orland
Hancock County, ME

Attachment C
Inspection Photographs
Inspection Date 04/15/2025

1. The right fishway retaining wall is displaced at concrete joint.

2. The left spillway flows more than right spillway despite originally being level.

Memorandum

To: The Operations Director, MEMA
Copy: MEMA Dam Safety Office
From: Acting State Dam Inspector
Date: December 21, 2021

RE: Condition Assessment of #111 Toddy Pond Dam, Town of Orland, Hancock County, ME

Attached please find my hazard & condition report for Toddy Pond Dam, a 14' high, 196' long, 100-year-old, significant hazard, composite earth/concrete/masonry dam, located in the Town of Orland, Hancock County, ME. The dam is owned by Bucksport Mill LLC, represented by Mr. Dave Bryant, who, together with the dam operator, attended the inspection. Originally the dam was constructed to store water for downstream mills. Now that the mills are gone, the dam sustains Toddy Pond for recreation. The dam is located on the Narramissic Stream, 144' higher than & 3,800' upstream of Alamoosook Lake. The Narramissic Stream is hydraulically steep & the flow caused by a breach of Toddy Pond Dam would be fast & turbulent.

Regarding the dam's Hazard; I have reviewed the dam's emergency action plan (EAP) & the MEMA dam file. The dams EAP has been tested by the dam owner, however, the current "dam breach inundation map" (DBIM), compared to Attachment F, the DBIM from the MEMA "Toddy Pond Dam Breach Study", 02/07/20, has a considerably smaller dam breach flood line & lacks houses on the left bank of the Narramissic River which are within a the Studies breach flood line. The Study map requires confirmation by the dam owner. It is sufficiently accurate to reclassify Toddy Pond Dam a "high" hazard potential dam. One point to note is that if Toddy Pond Dam fails, Alamoosaook Lake rises about 3 times the rate Toddy Pond draws down, this is likely to cause shorefront flooding & should be noted by the Town EMA.

Regarding the dam's condition; The following dam components were inspected on the afternoon of 10/12/21. The upstream stone wave protection, both abutments, the top of the dam, the upstream surfaces, the embankments, the toe area along the road, the concrete spillway & gate structure & the walkway. Components not inspected were – the old outlet, the dam gate, the bridge under Hatchery Road, the road downstream toe area, the fishway & the Narramissic stream to its confluence with Alamoosook Lake. The Gate was not operated nor was leakage measured. Inspection findings: brush growing upstream of the dam, local minor settlement of the embankment, concrete deterioration including crazing & ASR, undercutting of the base of the gate piers, failure of mortar pointing in the stonework & gate leakage. No evidence of recent movement or incipient failure was observed.

Based in this inspection, I recommend that MEMA reclassify Toddy Pond Dam a "high" potential hazard dam & that you request the dam owner do the following.

1) Correct & update the EAP per paragraph 11) of this report. ✓
2) Arrange a table-top exercise (TTX) to test the edited EAP before the 2022 spring runoff.
3) Write an "operation & maintenance plan" (O&M) for the dam before 2023. ✓
4) Copy the O&M plan to MEMA, the Town & Shorefront property owners association.
5) Submit as-built construction records of the dam to MEMA for record purposes.
6) Root out all brush growing on the dam & downstream road embankment before 2023. Restore surface & lawn. 3
7) Rehabilitate all decayed concrete & mortar in the dam, especially at the base of the gate piers, before 2023.

If you have any questions about this report, please do not hesitate to contact me.

Sincerely,

Tony Fletcher

STATE OF MAINE
TONY
FLETCHER
No. 9091
12/21/21
LICENSED
PROFESSIONAL ENGINEER

Tony Fletcher PE
Acting State Dam Inspector

Toddy Pond ASSOCIATION

Peter J. Rogers
Director
Maine Emergency Management Agency

Steven H. Mallory
Director
Operations and Response Division, Deputy SWIC

Marc Restuccia
President, Toddy Pond Association
December 2, 2024

Dear Directors Rogers and Mallory,

I am writing to you today on behalf of the Toddy Pond Association Board and membership. We have been actively engaged in the petition process of American Iron and Metal LLC, dba Bucksport Mill LLC, to divest themselves of the dams on Alamoosook Lake and Toddy Pond. We wish to make you aware of our grave concern that American Iron and Metal (AIM) is attempting to either foist damaged and poorly maintained dams on the community or abandoning these dams and releasing the impounded waters of these ponds/lakes. Either option would result in significant negative impacts on the municipalities, businesses, wildlife, recreation opportunities and populations living on and adjacent to these water bodies.

Since assuming ownership of the former Verso Mill in Bucksport and the attendant properties, including the dams on Silver Lake, Alamoosook Lake and Toddy Pond in 2015, AIM has allowed these dams to deteriorate, performing little to no maintenance or repair. The MEMA inspection and report from 2021 had several recommendations, which were not followed through on. For the dam on Toddy Pond:

- Root out all brush growing on the dam and downstream road embankment before 2023. Restore surface and lawn.
- Rehabilitate all decayed concrete and mortar in the dam, especially at the base of the gate piers before 2023

Additionally, the inspecting engineer noted on page 6, #8, "The spillway cannot pass the probable Maximum Flood)PMF) and is thus inadequate." Page 7, #14 Conclusion: " A dam breach study, together with a dam breach inundation map suitable for use in the EAP and an EAP test (TTX) must replace those DBIM 'is' the extant EAP before the 2022 spring runoff. The new dam breach inundation maps must show the entire Narramissic River all endangered infrastructure within the worst dam breach flood line." Neither of these additional recommendations have been followed up on.

It should also be noted this inspection was limited to a limited visual of the dam and associated structures.

In 2024, AIM hired the firm of Haley Ward to conduct a new inspection of the Toddy Dam. This also was visual only, "and limited to those areas/components accessible at the time." Additionally, "At the time of our evaluation, there was a fence that prevented access to the head gate mechanism and the pool area of Toddy Pond". Their findings, which have not been followed up on include:

- Complete coring of various concrete elements and test for ASR deterioration
- Develop a design to repair deteriorated concrete elements and address the leakage around the head gate
- Remove vegetation and debris on the upstream face of the dam and stabilize with stone riprap

The recommendation was made that an underwater inspection be performed of the dam structures and head gate, especially around the known leaking areas. An underwater inspection was performed, however the results of this have NOT been shared beyond the diver's field notes.

It is clear that AIM has not been sufficiently attentive to the care and maintenance of the Toddy Dam, which MEMA has characterized as a "high hazard" dam.

During the petition process AIM has not acted in good faith. They have refused to disclose critical information which should be made available to any entity seeking to pursue dam ownership.

- To date, AIM has not yet revealed if it has advertised that the dam properties are for sale or at what cost, or, alternately, available for a gratis conveyance
- They have failed to provide in a timely manner inspection reports, repair records, dam insurability and other information which a prospective owner would need to make an informed decision re; dam ownership
- When they have provided information, they have done so in a random and incomplete manner, again making it difficult to impossible for a prospective owner to glean the necessary information to make an informed decision

- They have not formally involved the municipalities affected by the petition, relying on a single public meeting where they refused to answer any questions put to them.
- The website that AIM created to purportedly "answer" questions put to the company during the public meeting does NOT answer the questions posed in any substantive manner, merely saying they've "followed the statute".

Because of this, the Toddy Pond Association believes that:

- AIM is an unfit entity to own and manage these dams
- The current petition process is an effort by AIM to divest themselves of these dams as quickly as possible. This would leave either communities burdened with high hazard dams which have been poorly maintained and are likely to pose an impossible financial burden on the communities, or dewatering of these ponds/lakes, leading to significant financial hardship to the communities, businesses and property owners, loss of a century of wildlife habitat and recreational opportunities enjoyed by people from the entire state of Maine and beyond.

Therefore, the Toddy Pond Association, respectfully, but with a great sense of urgency requests that the State Agencies involved in this consultation process, Department of Environmental Protection, Department of Inland Fisheries and Wildlife, Department of Agriculture, Conservation and Forestry and the Maine Emergency Management Agency use this consultation process to:

- Require AIM LLC address and remediate all of the deficiencies and implement all of the recommendations contained in the two inspection reports listed above.
- Work with any qualified entities and the Municipalities involved to identify an appropriate ownership model/structure to preserve these bodies of water and insure the safety and function of their associated dams.

We look forward to your responses.

Respectfully,

Marc Restuccia
President, Toddy Pond Association.