City & Borough of Sitka
Electric Department
105 Jarvis Street, Sitka AK. 99835
Telephone: 907-747-4000 Fax: 907-747-3208

BLUE LAKE EXPANSION PROJECT

MONTHLY UPDATE FOR CITY ASSEMBLY

Report No. 17 Month ending April 30, 2014

SCOPE

- 83 ft. dam raise with modified tunnel system and new 15.9 MW powerhouse ($89 million)
- Eight supply contracts for Owner-Furnished equipment and materials ($16 million)

PROJECT HIGHLIGHTS DURING THIS MONTH

- April 6 – Gave first public tour of the season.
- April 8 – AUS performed first dive to inspect existing bulkhead gate.
- April 11 – AUS completed repairs and reinstalled the bulkhead gate.
- April 27 – Plunge pool was dewatered for scour wall installation.
- April 28 – Isolated and locked out No. 1 switchyard for NAES and ASRC begain switchyard work to install the 12.47 kV main transformers.
- April 29 – Crux arrived on site to begin curtain grouting and scour wall construction.
- April – Barnard, NAES, and Schmolk begain the buildout of the gate house.
- April – Barnard completed the intake rock bolting.
- April – Barnard completed the intake chamber concrete work and have set the trash rack frame and begun work on the intake structure concrete.
- April – Schmolk continued the mechanical buildout of the powerhouse
- April – ASRC completed 90% of the control room buildout.
- April – Conducted multiple commissioning meetings with contractors and suppliers
- April – NAES performed the following tasks related to the turbine generator installation:
    - Placed secondary concrete around BL5&3 draft tubes
    - Completed alignment of all 3 turbine spirial cases
    - Set all 3 turbine inlet valves
    - Completed alignment of BL5&3 generator sole plates
    - Installed generator stator, rotor, and bearings on BL5
- April – NAES continued with installation of conduit and cable tray in and ouside the powerhouse.
- April – NAES began installing electrical panel boards.
- April – NAES moved low voltage and medium voltage switchgear to powerhouse.
- April – Barnard installed the new penstock from the turbine inlet pipes up to the water treatment plant access road.
- April – Barnard showed good progess on the dam construction completing 9 block placements
- TO DATE – 37 of 53 blocks placed on the Dam Raise, 8 of 9 placements completed on the Left Abutment and Cutoff Wall and 3230 CY of 3350 CY have been placed at the powerhouse. Concrete tests have been better than required by the specification.

COST SUMMARY - updated 4/30/2014

Project Element	Current Contract Total or Projected Amount	Payments	
		Paid this Month	Paid to Date*
Supply Contracts			
Contract 1 - Turbine Generator Equipment	$11,573,707	$89,681	$10,678,129.76
Contract 2 - Switchgear	$647,672	$0	$584,488
Contract 2A/2B - SS/Raw Water Switchgear	$300,000	$0	$208,547
Contract 3 - Gates and Hoist	$780,185	$0	$703,376
Contract 4 - Penstock	$836,315	$0	$795,778
Contract 5 - 69 kV Transformers	$603,406	$0	$543,130
Contract 6 - Bridge Crane Equipment	$270,518	$0	$245,246
Contract 7 - Steel Building	$1,139,321	$0	$1,084,397
Contract 8, Debris Management**	$2,258,714	$0	$1,412
Contract 9, General Construction	$93,901,406	$2,907,805	$59,965,698
Temporary Filtration**	$1,651,424	$1,622	$236,899
Diesel Fuel	$1,260,000	$0	$0
Remaining Project Costs		$0	$0
License Amendment	$1,400,000	$16,181	$1,230,324
Engineering	$9,498,393	$13,269	$11,854,240
Construction Management	$8,076,201	$399,229	$5,523,044
City Performed Work	$1,495,000	$36,991	$1,847,710
Incentive Payment	$1,600,000	$0	$0
Cost of Bond Issuance/Reserve Account	$3,500,000	$0	$0
TOTALS	**$140,792,262**	**$3,464,777**	**$95,502,419**
ESTIMATED TOTAL PROJECT COST	**$145,256,725**		

*Paid to Date includes unpaid retainage

COST CHANGES THIS MONTH

- We issued change order No. 9 for Contract 9, for $483,555. This change order was for extra work by Barnard for repairs to the sluice gate valve and trash rack at the dam.
- A change work directive was issued to provide a dam release pipe at the dam. The pipe has been installed and the flanges are on site ready for installation.
- A change work directive will be issued to install a rock trap in the tunnel during the generation outage.

We do not expect these change items to impact the overall project schedule.

CONSTRUCTION SCHEDULE MILESTONES: PLANNED/ACTUAL

Construction Start	11-20-2012 / 12-03-2012	Sub. Comp. BLU #5	10-24-2014/
Drainage Tunnel Comp.	07-01-2013 / 05-05-2013	Sub. Comp. FVU	11-12-2014/
Tunnel ex. complete	08-19-2013 / 07-24-2013	Sub. Comp. BLU#4	11-22-2014/
Ready for Generation Outage	08-24-2014/	Substantial Completion	02-01-2015/

NOTES ON PROJECT SCHEDULE

- The most recent look-ahead schedule submitted by Barnard shows the following work to be performed in May:
    - Finish construction of new intake structure – June 4
    - Complete new penstock installation up to a point near the existing penstock – May 7
    - Continue turbine generator installation in Unit 3, 4, 5
    - Continue buildout of powerhouse interior
    - Continue placing monolith blocks on dam
    - Begin scour wall construction in plunge pool
    - Begin curtain grouting at dam
    - Continue switchyard construction
- All of the Owner furnished materials and equipment are now on site.
- The CM team and Electric Department continue working on the City-performed work tasks to ensure these activities are completed on time. Preliminary testing of automation equipment (SCADA) has been done. Bruce Belley has installed control panels in the switchyard building and will continue wiring them in.
- Project commissioning plans must be completed. This is a high priority.

OTHER ITEMS OF INTEREST

- The warmer than normal weather this winter has been good for construction and put more water in the reservoirs. We are managing the reservoirs to store additional water in Blue Lake for use following the generation outage. This additional water will decrease the amount of diesel generation required substatially.
- The progress on the dam work has improved this month.
- The contractor has progressed well on the intake construction this month. This will set us up well for water management related to the generation outage.

PROJECT RISK PROFILE
A discussion of the major risk areas follows below. As a general rule risks are measured as follows:

LOW: Probability of less than 10%, or mitigation cost less than $1 million.
MODERATE: Probability of more than 30%, or mitigation cost up to $5 million.
HIGH: Probability of more than 60%, or mitigation cost likely more than $5 million.

The City's project team believes the following risk areas will dominate the potential for increases in overall Project cost. We also believe these areas pose the greatest risk for schedule delays.

Construction Schedule: In Barnard's most recent (April 25, 2014) schedule, the critical start of the 2014 Generation Outage is shown starting on August 24, 2014, zero days ahead of schedule. However, the work completed and started this month give a higher level of comfort for being prepared for the Generation outage.
CURRENT RISK: MODERATE

Generation outage schedule: The commissioning plans must be prepared to properly execute the generation outage and the current schedule calls for only 10 days of wet commisionin. This is optimistic. The additional water we now have in the lakes may mitigate the impacts of this risk.
CURRENT RISK: MODERATE

Weather and Lake Levels: Now that we have achieved the intake work window elevation we have decreased the water wasting at Blue Lake.There is ample water in both lakes. There is now zero need for added diesel generation in the spring and early summer of 2014.
CURRENT RISK: VERY LOW

Temporary Water Filtration Plant: During the August through September 2014 outage of the Blue Lake tunnel, the City will get its drinking water from a temporary water supply. This temporary system remains to be installed at Indian River. This system must be in place and fully operational prior to the Generation Outage. Any delay in the filtration plant beyond August 23, 2014, will delay the hydro expansion Project. Barnard will be providing the filtration project as a change order to Contract 9. The filtration project is being managed by McMillen LLC and CH2M Hill has completed the final design. The City Water Department will operate the plant with assistance from CH2MHILL and the supplier.
CURRENT RISK: MODERATE [*The current status of the filtration system design and planned construction is described in Appendix 1. If the filtration system is constructed as planned, we will be on track for the Expansion Project.*]

Other: This is a broad combination of bad things that might happen such as: earthquakes; construction site accidents; floods; extreme winter weather; fire; labor unrest; etc. We expect that many of these risks would be covered by insurance at least in part.
CURRENT RISK: LOW

PROJECT PHOTO RECORD THIS MONTH

Photos are taken of each work area each month from a fixed location to document construction progress by work area. Relevant photos of the project for this month are provided on the following pages.

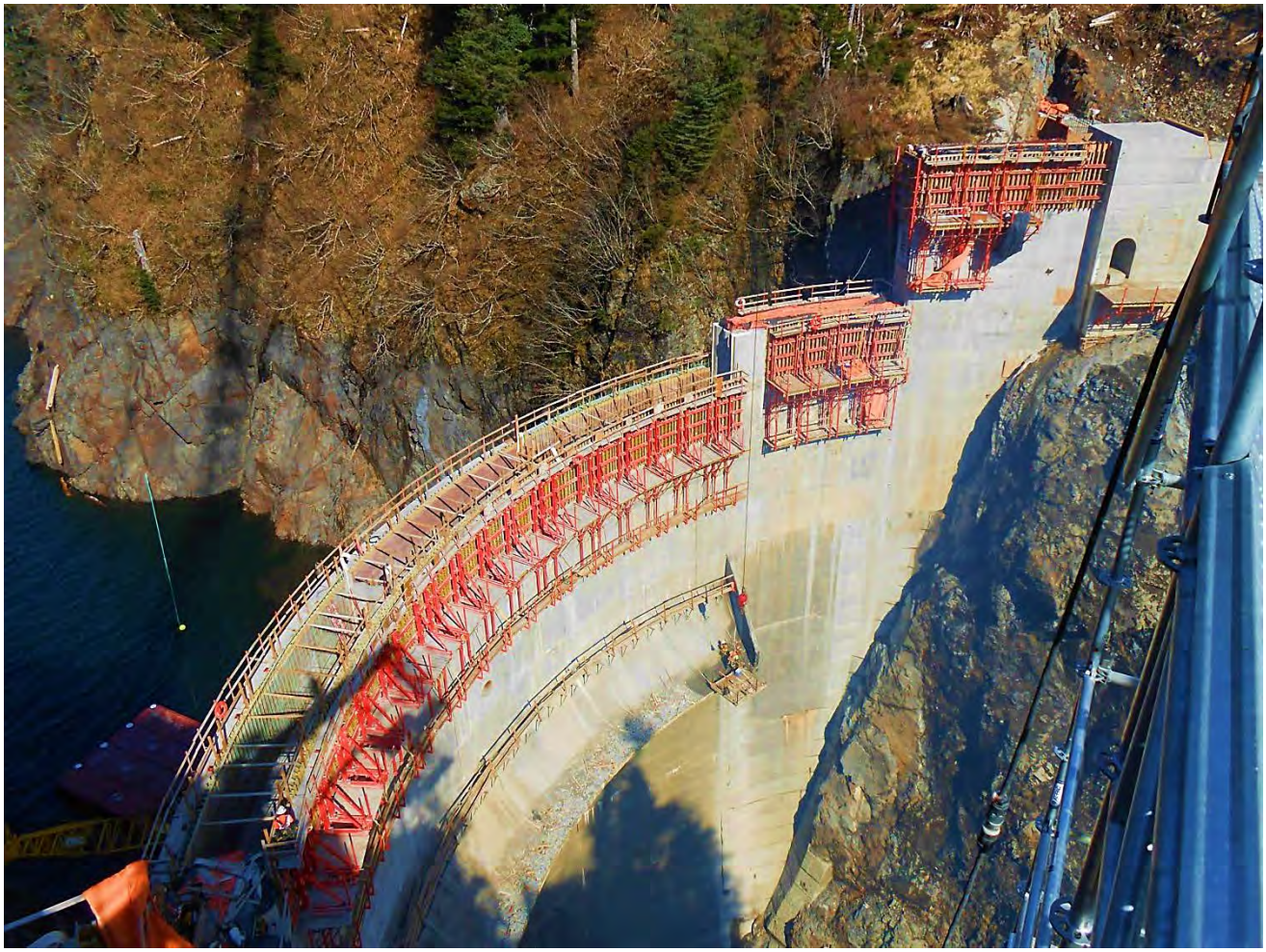


Figure 1. Dam and Left Abutment Area, – Barnard showed good progess on the dam construction completing 9 block placements.

Figure 2. Drainage Tunnel and Scour Wall, Plunge pool was dewatered for scour wall installation. Crux arrived on site to begin curtain grouting and scour wall construction.

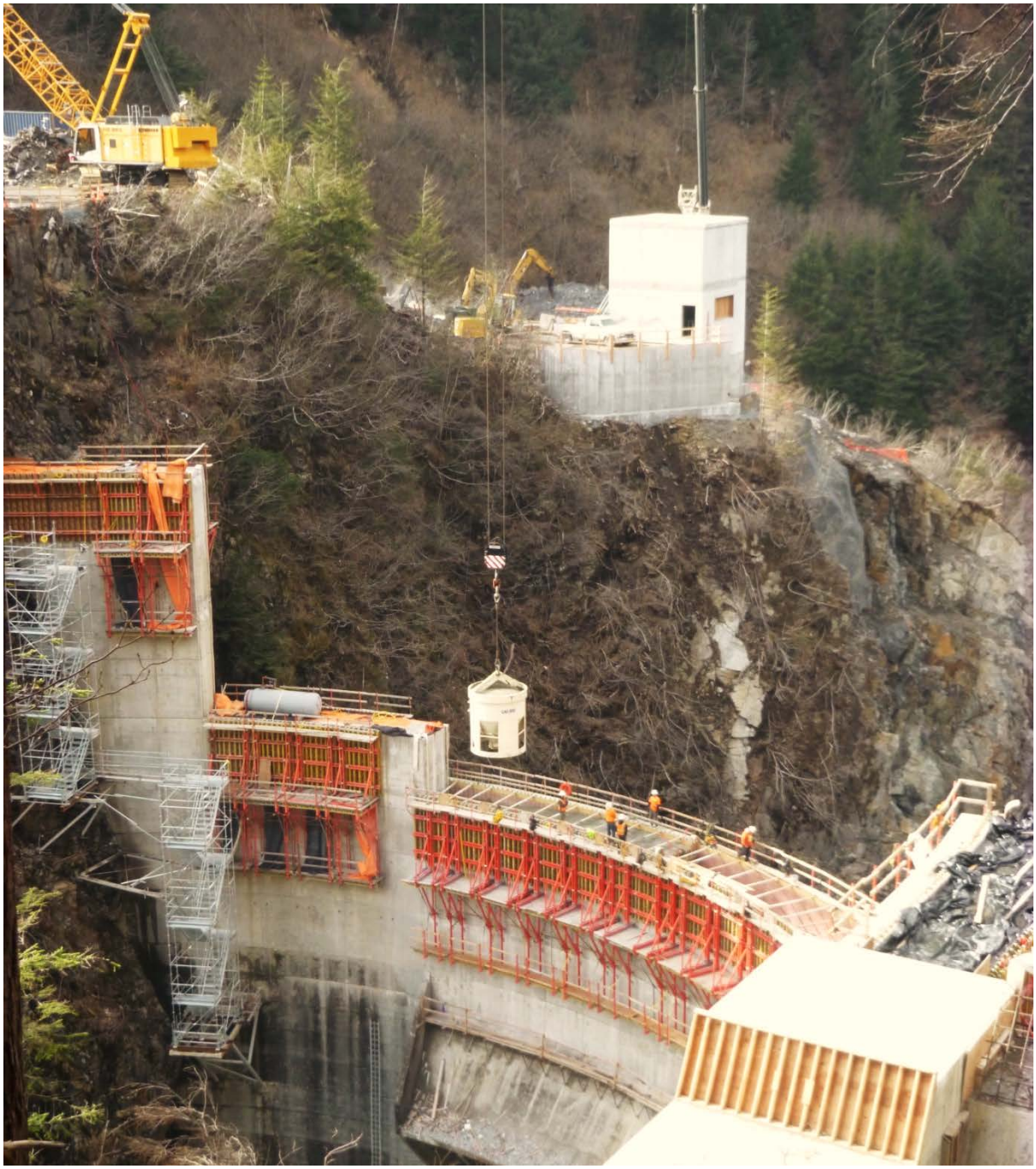


Figure 3. Intake Portal and Right Abutment, Barnard completed the intake rock bolting and the intake chamber concrete work. They have also set the trash rack frame and begun work on the intake structure concrete. (Not seen in this picture due to the new height of the dam.)

Figure 4. Gate House Location, Barnard, NAES, and Schmolk begain the inside buildout of the gate house.

Figure 5. Dam Staging area, no change this month.

Figure 6. Lower Portal Area, Barnard installed the new penstock from the turbine inlet pipes up to the water treatment plant access road.

Figure 7. Powerhouse Site, no change this month.

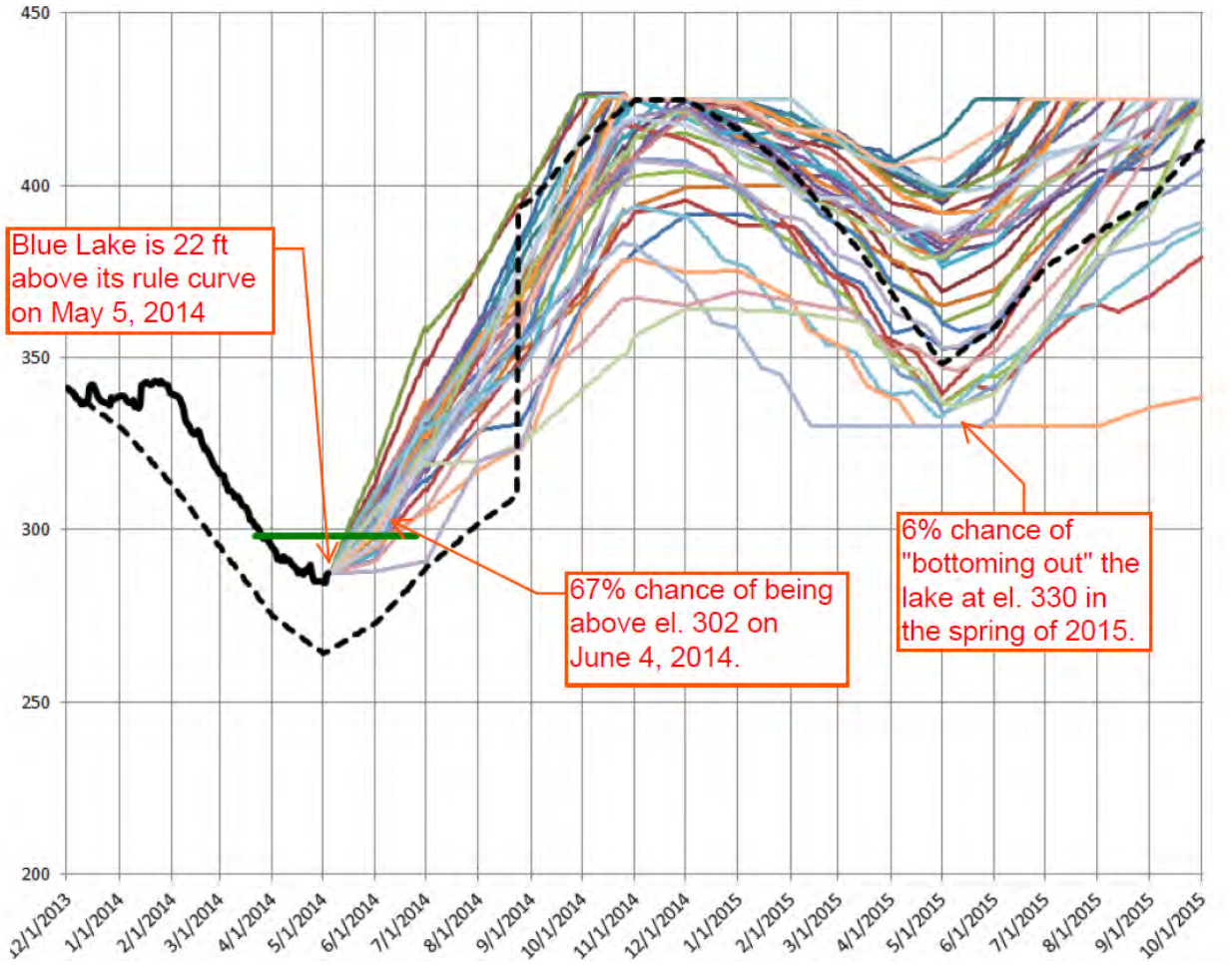
Figure 8. Powerhouse Interior, ASRC completed 90% of the control room buildout. NAES placed secondary concrete around BL5&3 draft tubes, completed alignment of all 3 turbine spirial cases, set all 3 turbine inlet valves, completed alignment of BL5&3 generator sole plates and installed generator stator, rotor, and bearings on BL5. NAES also continued with installation of conduit and cable tray in and ouside the powerhouse and began installing electrical panel boards.

Lake Level Forecast

This May 6, 2014 forecast reflects the recent shift to stop water wasting at Blue Lake and to cut back on generation at the Blue Lake powerhouse, all done in order to store water in Blue Lake. The simulation below actually shows the lake filling faster than we want during May, 2014. We will likely increase the generation at Blue Lake during May (from what is simulated below) to reduce the risk of high lake levels before the Contractor finishes the tunnel intake structure in early June.

Case 22. Start May 5, 2014. Multi-year simulation using 36 year hydrologic record. 117,000 MWH system load until August 26, 2014. Interrubtible load remain on. No water wasting and Blue Lake powerhouse cut back to one turbine starting May 2. In each of these 36 simulations, D4 diesel is run 10 hours each day during the Generation Outage at an average output of 3 MW.

Blue Lake water level simulation.

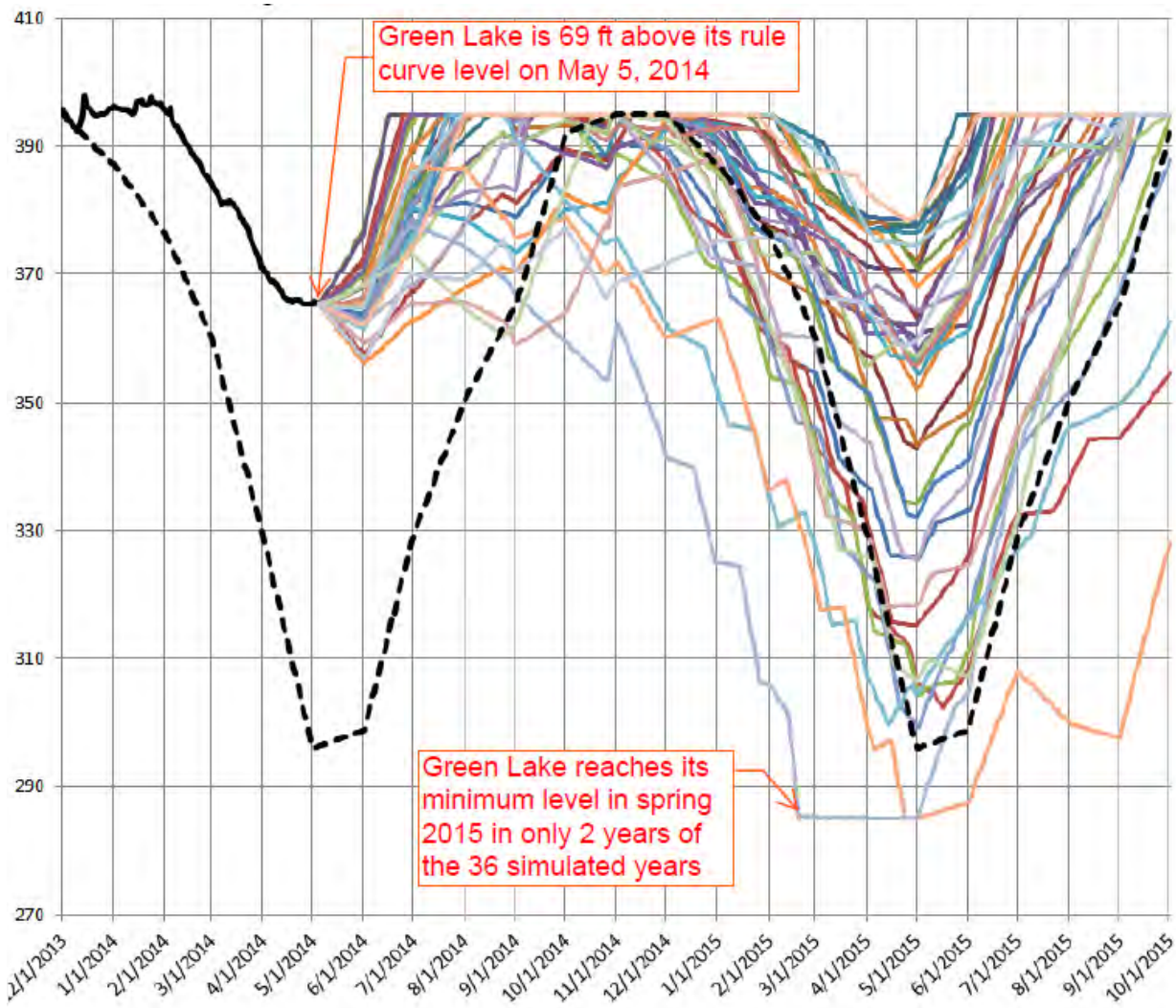


Total diesel generation predicted by this simulation:

Period	Dates	MWH of diesel	Cost at $0.45 per kWH
Spring 2014	-	0	$0
Generation Outage	Aug 26 – Oct 26, 2014	1,627(1)	$732,000
Spring 2015	Mar 30 – June 16, 2015	681 (ave)	$306,000 (ave)

(1) Assumes approx 30 MWH per day for daily peaks, scheduled manually in model

Green Lake water level simulation.



Note to Assembly

This current simulation shows greatly reduced diesel energy expenditures in 2015, compared to the simulation included with the March 31, 2014 Assembly Update report. This current simulation is likely a bit optimistic, as we will need to release more water from Blue Lake during May to make sure the Contractor's work at the new intake structure is not adversely affected by high lake levels.

Appendix 1 to Monthly Update for City Assembly

April 30, 2014

Summary of Temporary Filtration Project Status

Alternative Water Source Investigation Filtration (Blue Lake Project):

Barnard will be providing the Temporary Water Filtration Plant at Indian River as a Change Order to Contract 9.

- Barnard signed an agreement with Pall on the lease of the filter units.
- CH2MHill completed the final design and will be assisting with startup.
- McMillen will perform the construction management.
- The City will provide plant operation with possible assistance from the supplier.

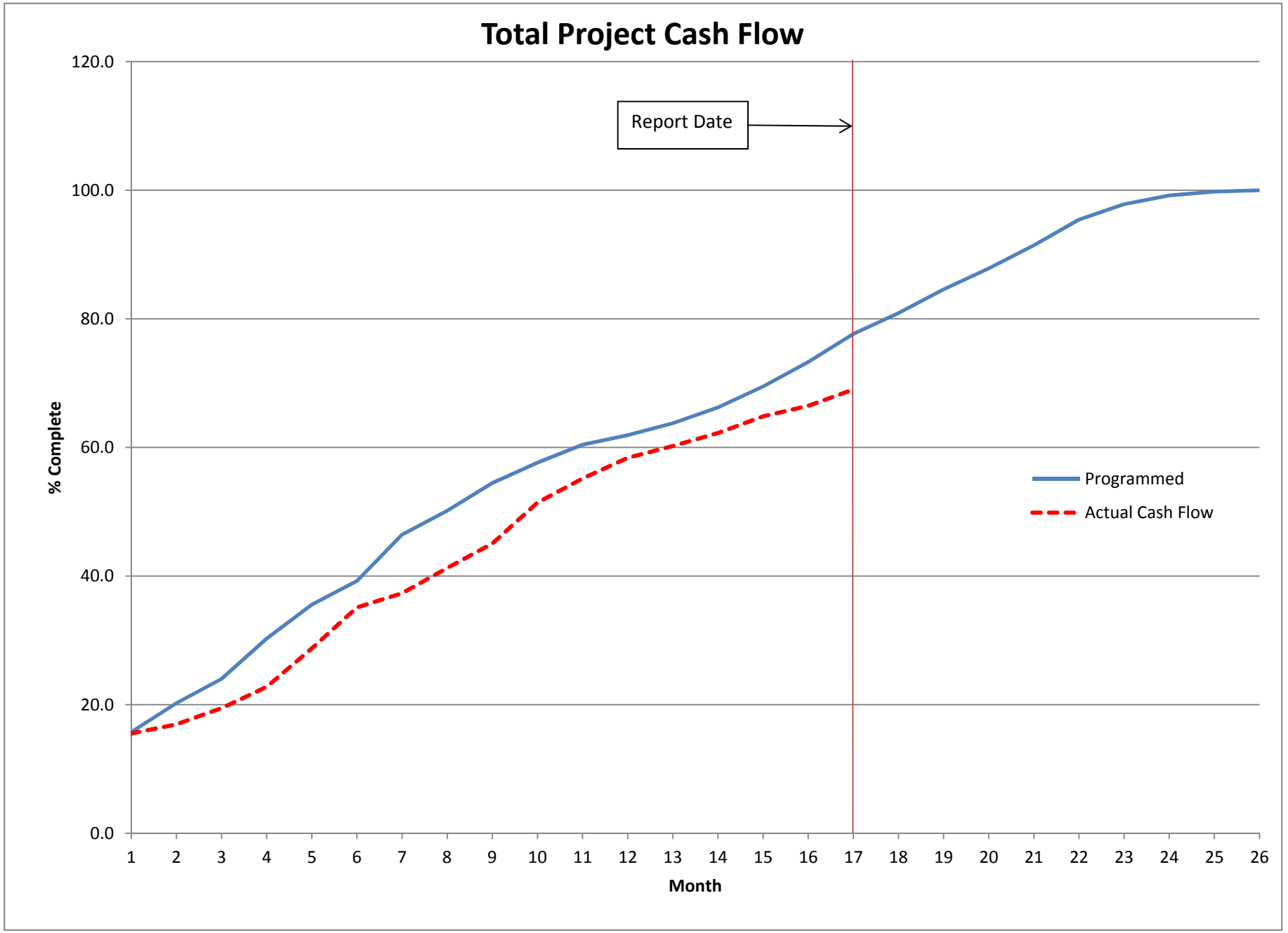
The Assembly approved additional funding for this work February 18. The total change order amount for Phase I & II is $3,106,790.00. The majority of the submittals have been submitted and approved.

All of the major equipment is onsite – PALL trailers, CT, Neutralization, and Backwash tanks and all piping and valves. Construction is on schedule.

Permitting is ongoing with ADEC. Everything is on track currently for acquisition of all required permits prior to operation.

Summary of Titan 130 Diesel Turbine Project Status

- Assembly is complete of the Titan Turbine Generator.
- Fuel tanks are in place and be complete by end of May.
- Substation work is complete except for one late arriving device, not critical.
- Substation control work is in progress.
- Titan training School by Solar is scheduled June 2-6.
- Titan commissioning complete by late June.
- All acceptance tests complete and Titan ready for service by July 15.


Total Project Cash Flow
120.0
100.0
80.0
60.0
40.0
20.0
0.0
% Complete
Report Date
Programmed
Actual Cash Flow
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
Month

BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT

For Period Ending: APRIL 30, 2013
Prepared by: BARNARD CONSTRUCTION COMPANY, INC.

1. *Progress of work*

Environmental Protection

Barnard continues to install erosion and sediment control measures as required at the dam site, storage yard at Sawmill Cove Industrial Park and powerhouse area as ground disturbing activities continue. BMP maintenance and repair is ongoing as needed throughout the project site.

Gate Chamber Concrete

Barnard completed 3 concrete placements in the gate chamber in April. The final floor and wall placements were completed as well as one placement in the tunnel crown. We expect to complete the final crown placement in early May and begin installing the sill and lintel beams and gate guides.

Gate House

Barnard crews have installed the permanent walkways and handrails inside the gate house. With this work complete, NAES and Schmolk have started installing the electrical and mechanical gear inside the structure and down the shaft. Barnard also completed the backfill behind the retaining wall.

Intake Structure

Barnard crews completed the excavation for the new intake structure. Concrete crews immediately began work on the new structure. Work completed in April includes drilling and grouting the required rock dowels for the floor slabs and walls, 2 concrete placements for the front floor slab and bulkhead gate sill beam, installation of the reinforcing steel for the center pier nosing, north and south walls, and installation of the Trashrack embedded guides.

Barnard and Associated Underwater Services completed the removal, cleaning and permanent sealing of the existing intake gate in April as well.

Dam Raise

Barnard crews completed 8 major concrete placements on the dam, mostly focused on Monoliths 3 through 5. These monoliths are now at Elevation 375.

Powerhouse

ASRC McGraw has nearly completed the control room and offices areas with work completed in April including drywall installation and painting. ASRC also completed installation of the two overhead rolling doors in the access bay. ASRC completed two second stage concrete placements in Unit #5 for the draft tube and spiral case encasements.

Schmolk Mechanical continues installation of all powerhouse plumbing and has continued installation of the HVAC system, with Air-Handling Units and ductwork.

NAES Power Contractors has started installation of the electrical gear including the low voltage and medium voltage switchgear. With the powerhouse cleaning complete, NAES will now focus on installation of the remaining electrical gear.

NAES has also continued installation of the Turbine-Generator equipment. Work completed in April includes the alignment and grouting of the Unit #3 and Unit #4 spiral case, final alignment of the Unit #5 and Unit #3 draft tubes, final grouting and alignment for the Unit #5 and Unit #3 sole plates. NAES also begun installation of the generator components for Unit #5.

Penstock

Barnard crews continued installation of the lower penstock piping through the month of April. We have completed installation of Wye Segments 1 and 2, Pipe Segment 4, Pipe Segment 5, and half of Pipe Segment Six. Purcell Painting and Coating mobilized to the site in late April to begin coating repair in the penstock pipe.

Temporary Filtration Plant

Barnard crews also began installation of the temporary water filtration plant at Indian River. Work completed in April includes site preparation, temporary fence installation, placement of concrete pads for the raw water pumps and header, installation of the CT tanks, and receipt of nearly all major materials.

2. *Status of Construction*

Status of Ongoing Major Construction Activities

- Powerhouse Excavation – 95% complete
- Powerhouse Steel Building – 98% Complete
- Powerhouse Roof – 98% complete
- Precast Wall Panels – 98% complete
- Dam Raise –37 of 53 monolith blocks placed.
- Dam Spillway – 0 of 9 placements
- Dam Parapet Walls and Crest Slab – 0 of 15 placements
- Left Abutment Thrust Block and Cutoff Wall – 8 of 9 placements completed.
- Powerhouse Concrete – 3230 CY placed to date.
- Gate Chamber Concrete – 195 CY placed to date.
- Intake Structure Concrete – 34 cy placed to date.

See Section 1 above for construction work completed in March 2014.

3. *Construction Issues*

4. *Contract Status*

Barnard's key subcontractors for the Blue Lake Project are as follows:

Name	Scope
ASRC McGraw Constructors, LLC	Powerhouse Construction
Southeast Earthmovers, Inc.	Excavation
Blue Lake Tunnelers	Underground Construction
Crux Subsurface	Foundation Grouting, Micropiles, PRW's
O'Neill Surveying and Engineering	Land Survey
Baranof Materials Test Lab	Quality Control
NAES Power Contractors	Turbine-Generator Installation/Electrical

Barnard's key material suppliers for the Blue Lake Project are as follows:

Name	Scope
ASRC McGraw Constructors, LLC	Concrete Supply
Gerdau Reinforcing Steel	Concrete Reinforcing Steel
Haskell Corporation	Misc. Metal Fabrication

5. *Critical Events and Dates*

Please see attached summary progress schedule updated April 25, 2014.

Critical Dates for the Blue Lake Project are as follows:

Milestone	Date	Required Status of Construction
1	07/01/2013	Drainage Tunnel Complete – Completed May 6, 2013
2	08/19/2013	Initial Intake Excavation Complete – Completed July 21, 2013
3	06/04/2014	Intake Structure Complete
4	08/24/2014	Ready for Generation Outage
5	61 days after start of Generation Outage	Substantial Completion of 1st Blue Lake Turbine Generator
6	91 days after start of Generation Outage	Substantial Completion of 2nd Blue Lake Turbine Generator
7	80 days after start of Generation Outage	Substantial Completion of Fish Valve Unit

6. *Reservoir Filling*

7. *Foundations*

Not applicable for this report.

8. *Sources of Major Construction Material*

The City and Borough of Sitka will be providing most of the major construction materials for this project. Please see list below.

Contract No.	Vendor	Scope of Supply

1	Gilbert Gilkes and Gordon, Ltd.	Turbines and Generators
2	Myers	12.47 kV Switchgear
3	Linita Design and Manufacturing	Bulkhead Gate, Fixed Wheel Gate and Hoist
4	T Bailey, Inc.	Penstock and Manifold
5	WEG Electric	69kV Transformers
6	Benchmark Industrial Services	Powerhouse Bridge Crane
7	CHG Building Systems	Powerhouse Building

Materials Received this Period:

Misc. Metals/Rebar - Barnard has been receiving misc. metals and rebar for various project features throughout the month of March

9. *Material Testing and Results*

Concrete testing is ongoing for the dam raise, gate chamber and powerhouse concrete.

Compaction testing was completed for the gatehouse retaining wall.

No issues have been encountered to date.

10. *Instrumentation*

Not applicable for this report.

11. *Photographs*

Figure 1: Dam Raise From Left Abutment

Figure 2: Removing Existing Bulkhead Gate

Figure 3: Gate Chamber Reinforcing Steel

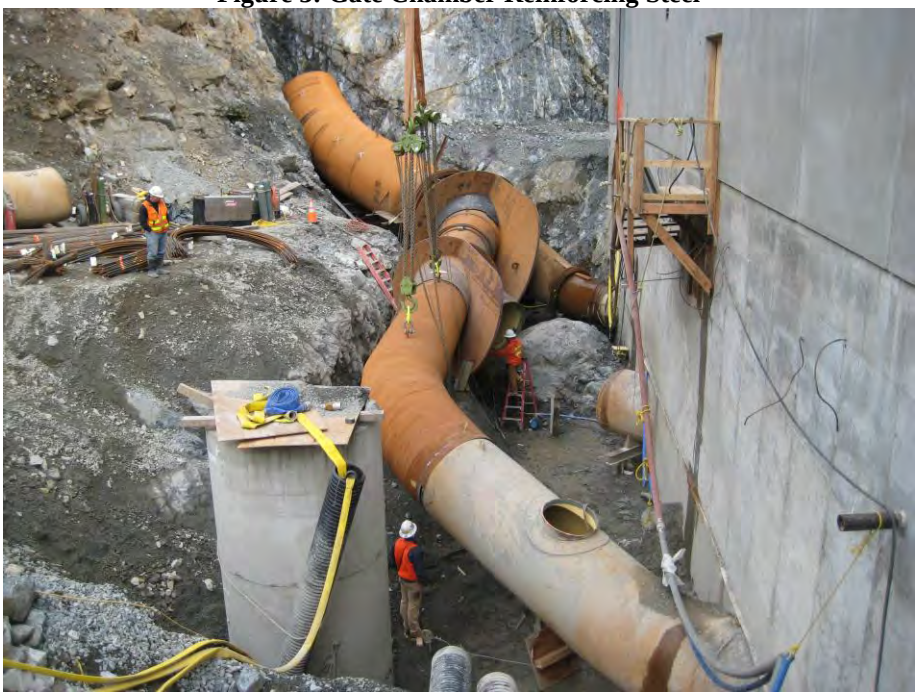


Figure 4: Penstock Installation

Figure 5: Powerhouse Interior

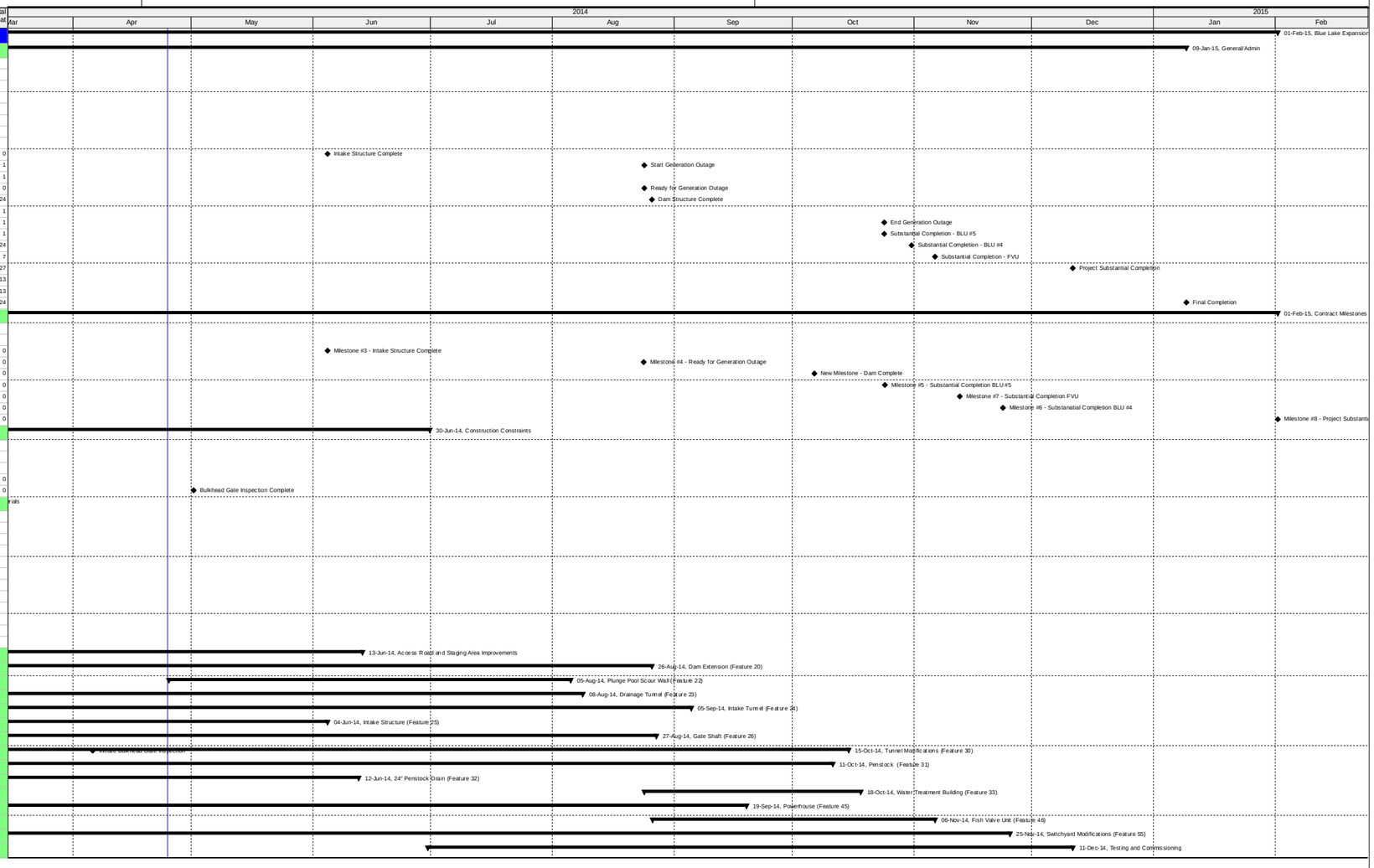
Figure 6: CT Tanks At Temp Filtration Facility

12. *Erosion Control and Other Environmental Issues*

Barnard is continuing to install the required environmental protection measures on the project site ahead of ground disturbing activities. Ongoing maintenance of dewatering system at powerhouse excavation site will be required to maintain water quality in Sawmill Creek.

13. Other Items of Interest

Activity ID	Activity Name	Original Duration	Actual Duration	Remaining Duration	Start	Finish	Total Float
Blue Lake Expansion - Progress Schedule - April 2014							
General/Admin							
A1000	Blue Lake Expansion Bid Due	0	0	0	31-Jul-12 A		
A1010	Contract Award	0	0	0	12-Sep-12 A		
A1020	Notice to Proceed	0	0	0	01-Nov-12 A		
A1200	Submittal/Work Plan Prep	10	12	0	01-Nov-12 A	23-Nov-12 A	
A1030	Mobilization, Office and Yard Setup	10	33	0	26-Nov-12 A	25-Jan-13 A	
A1040	Environmental Controls Setup	6	25	0	10-Dec-12 A	25-Jan-13 A	
A1110	Drainage Tunnel Complete	0	0	0		06-May-13 A	
A1150	Initial Intake Structure Excavation Complete	0	0	0		28-Jul-13 A	
A1150	Intake Structure Complete	0	0	0		04-Jun-14	0
A1050	Start Generation Outage	0	0	0	24-Aug-14		1
A1120	Shutdown Existing Powerhouse - Dewater Tunnel	2	0	2	24-Aug-14	26-Aug-14	1
A1140	Ready for Generation Outage	0	0	0		24-Aug-14*	0
A1210	Dam Structure Complete	0	0	0		26-Aug-14	24
A1130	Rewater Tunnel	1	0	1	15-Oct-14	16-Oct-14	1
A1300	End Generation Outage	0	0	0		24-Oct-14	1
A1170	Substantial Completion - BLU #5	0	0	0		24-Oct-14	1
A1180	Substantial Completion - BLU #4	0	0	0		31-Oct-14	24
A1190	Substantial Completion - FVU	0	0	0		06-Nov-14	7
A1060	Project Substantial Completion	0	0	0		11-Dec-14	27
A1070	Punchlist	10	0	10	11-Dec-14	31-Dec-14	13
A1090	Demobilization	10	0	10	19-Dec-14	09-Jan-15	13
A1080	Final Completion	0	0	0		09-Jan-15	24
Contract Milestones							
CM1000	Milestone #1 - Drainage Tunnel Complete (by 7/1/13)	0	0	0		06-May-13 A	
CM1010	Milestone #2 - Initial Intake Excavation Complete (by 8/19/13)	0	0	0		21-Jul-13 A	
CM1020	Milestone #3 - Intake Structure Complete	0	0	0		04-Jun-14*	0
CM1030	Milestone #4 - Ready for Generation Outage	0	0	0		24-Aug-14*	0
CM1080	New Milestone - Dam Complete	0	0	0		06-Oct-14*	0
CM1040	Milestone #5 - Substantial Completion BLU #5	0	0	0		24-Oct-14*	0
CM1060	Milestone #7 - Substantial Completion FVU	0	0	0		12-Nov-14*	0
CM1050	Milestone #6 - Substanatial Completion BLU #4	0	0	0		23-Nov-14*	0
CM1070	Milestone #8 - Project Substantial Completion	0	0	0		01-Feb-15*	0
Construction Constraints							
CC1010	2013 Lake Level Window (EL. 330)	206	205	0	26-Jan-13 A	19-Aug-13 A	
CC1030	Milestone #3 Early Completion Bonus Date (not achieved)	0	0	0		19-Aug-13 A	
CC1000	2013 Spill Window	106	149	0	01-Sep-13 A	28-Jan-14 A	
CC1020	2014 Lake Level Window (EL. 298)	96	29	67	27-Mar-14 A	30-Jun-14	0
CC1040	Bulkhead Gate Inspection Complete	0	0	0		01-May-14*	0
Owner Supplied Materials							
OM1000	Bulkhead Gate and Guides	0	0	0		20-Feb-13 A	
OM1020	Powerhouse Bridge Crane	0	0	0		27-Mar-13 A	
OM1090	Penstock Manifold	0	0	0		05-Apr-13 A	
OM1100	Penstock Pipe	0	0	0		05-Apr-13 A	
OM1010	Fixed Wheel Gate, Guides, and Hoist	0	0	0		28-Jun-13 A	
OM1110	Powerhouse Steel Building	0	0	0		09-Jul-13 A	
OM1070	69kV/12.47kV Transformers	0	0	0		26-Aug-13 A	
OM1030	BLU Hydraulic Turbines	0	0	0		18-Sep-13 A	
OM1040	BLU Turbine Governos	0	0	0		18-Sep-13 A	
OM1050	BLU Turbine Inlet Valves	0	0	0		18-Sep-13 A	
OM1060	BLU Generators and Exciters	0	0	0		18-Sep-13 A	
OM1080	12.47 kV Switchgear	0	0	0		19-Feb-14 A	
Access Road and Staging Area Improvements							
Dam Extension (Feature 20)							
Plunge Pool Scour Wall (Feature 22)							
Drainage Tunnel (Feature 23)							
Intake Tunnel (Feature 24)							
Intake Structure (Feature 25)							
Gate Shaft (Feature 26)							
Tunnel Modifications (Feature 30)							
Penstock (Feature 31)							
24" Penstock Drain (Feature 32)							
Water Treatment Building (Feature 33)							
Powerhouse (Feature 45)							
Fish Valve Unit (Feature 46)							
Switchyard Modifications (Feature 55)							
Testing and Commissioning							



◆ Milestone

Summary

TASK filter: All Activities