



## BLUE LAKE EXPANSION PROJECT

### MONTHLY UPDATE FOR CITY ASSEMBLY

Report No. 14

Month ending January 31, 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

- January 7 – 17 ASRC installed wall panels on powerhouse.
- January 7 – Conducted prebid conference for Contract 8, Reservoir Debris Management.
- January 12 – Last concrete placement was made at the adit tunnel plug.
- January 14 – We experienced a major storm that washed out the Blue Lake Road in 3 spots. Barnard made the road passable by the end of the day and resumed work at the dam site. Barnard completed the repairs January 17. We are working collaboratively with the USFS to replace the damaged culverts.
- January 14 – ASRC began placing roof panels on the powerhouse.
- January 24 – Barnard made gatehouse concrete floor placement.
- January 27 – Finished grouting adit tunnel plug.
- January 28 – Barnard began working nightshift in the gate shaft installing gate guides.
- January 28 – Opened 2 bids for Contract 8, Reservoir Debris Management. The bids are being evaluated on a best value basis.
- January 29 – The reservoir stopped spilling.
- January 29 – The FERC representative was on site and made a bi-monthly construction inspection.
- January 30 – Crux began drilling the dam spillway for installation of keyway rebar.
- January – Barnard made: 2 concrete placements at the thrust block, 1 placement at the cutoff wall, and 3 block placements in the main dam near the left abutment.
- TO DATE – 23 of 79 blocks of concrete have been placed at the dam, 3230 CY of 3350 CY have been placed at the powerhouse. Concrete tests have been better than required by the specification.

**COST SUMMARY - updated 1/31/2014**

| Project Element                          | Current Contract Total or Projected Amount | Payments           |                     |
|--|--|--------------------|---------------------|
|  |  | Paid this Month    | Paid to Date*       |
| <b>Supply Contracts</b>                  |  |                    |                     |
| Contract 1 - Turbine Generator Equipment | \$11,573,707                               | \$100,000          | \$10,361,098        |
| Contract 2 - Switchgear                  | \$647,672                                  | \$66,536           | \$293,035           |
| Contract 2A - SS Switchgear              | \$300,000                                  | \$0                | \$0                 |
| Contract 3 - Gates and Hoist             | \$780,185                                  | \$0                | \$703,376           |
| Contract 4 - Penstock                    | \$836,315                                  | \$0                | \$795,778           |
| Contract 5 - 69 kV Transformers          | \$601,184                                  | \$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**          | \$3,000,000                                | \$722              | \$722               |
| Contract 9, General Construction         | \$89,963,432                               | \$2,088,281        | \$52,722,444        |
| Diesel Fuel                              | \$1,260,000                                | \$0                | \$0                 |
| Temporary Filtration**                   | \$3,000,000                                | \$46,821           | \$145,576           |
| Remaining Project Costs                  |  | \$0                | \$0                 |
| License Amendment                        | \$1,400,000                                | \$582              | \$1,199,625         |
| Engineering                              | \$9,498,393                                | \$44,156           | \$11,756,451        |
| Construction Management                  | \$8,076,201                                | \$419,898          | \$4,739,839         |
| City Performed Work                      | \$1,495,000                                | \$35,269           | \$1,644,323         |
| Incentive Payment                        | \$1,600,000                                | \$0                | \$0                 |
| Cost of Insurance/Reserve Account        | \$3,500,000                                | \$0                | \$0                 |
| <b>TOTALS</b>                            | <b>\$138,941,928</b>                       | <b>\$2,802,264</b> | <b>\$86,235,041</b> |
| <b>ESTIMATED TOTAL PROJECT COST</b>      | <b>\$143,987,667</b>                       |                    |                     |

\*Paid to Date includes unpaid retainage

\*\*Debris management & Temporary Filtration budgets updated. Assembly approval will be requested at a later date for the overrun.

**COST CHANGES THIS MONTH**

- We completed negotiations with Contractor No. 1 for the supply of additional spare parts for the turbine, generator and control equipment. A net cost of approximately \$114,000 was agreed to for this expanded supply of spares. Also, we completed negotiations for Contract 1 for a group of ten other change items on this contract, including: additional water level switches and isolation valves; equipment modifications, delay of the equipment warranty period (required by the one-year delay of Contract 1), and modifications of the cooling water systems. All of these additions and deletions in the contract will be combined into Change Order No. 4 in the amount of an additional \$227,350.69 due the Contractor.

- Bids were opened for Contract 8 - Reservoir Debris Management Contract on January 28, 2014. The bid prices ranged from \$2,258,714 to \$2,961,598. These costs are significantly higher than the \$1,530,000 previously budgeted for this work. As a result we have increased the cost allowance for Contract 8. We will need to request additional funds to perform this work. The project cashflow has been adjusted for this additional cost.
- A series of change items are still under negotiation as follows:
  - Changes to the powerhouse electrical conduit and cable requirements (a group of changes in conduit and the addition of a number of control cables). Negotiations for these changes were elevated to the corporate level on January 29, with pricing to be determined by Mort McMillen of McMillen LLC and Derek Tisdell of Barnard.
  - Dredging in front of the dam's sluice gate valve and repair of this valve. This work has now been accelerated to begin February 10 because of the unseasonably high inflows in January and the presently high lake level. (we need the dam outlet operational to ensure we can lower the lake enough to build the intake). This dredging work will cost more because of the deeper depth.
  - Temporary Water Filtration Plant
    - Phase I for the lease of the filtration units has been agreed to.
    - Phase II, installation of the filter units and auxiliary equipment.

We do not expect these change items to impact the 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 Gen. 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 upcoming target dates:
  - February 17 – Begin work to repair dam sluice gate valve.
  - February 12 – Unpacking and installation of the generating equipment will begin. The Site Representative for Contract 1 will arrive on site on this date to observe and coordinate this work.
  - February 7 – Start up powerhouse bridge crane.
  - February 7 – Powerhouse will be fully enclosed.
  - February 3 – The thrust block, cutoff wall and all season 1 dam work will be complete.
- Most of the Owner furnished materials and equipment are now on site. Only the switchgear and the inlet valve for the Fish Valve turbine remain to be delivered.
- The CM team and Electric Department continue working on the City-performed work tasks to ensure these activities are completed on time.
- The first formal Barnard/ NAES/CM team meeting to plan the Project commissioning took place on January 30, beginning preparation for the fall 2014 generation outage.
- Barnard, McMillen and CBS meet each Friday to coordinate generation outage planning.

**OTHER ITEMS OF INTEREST**

- January 2014 was very unseasonably wet and warm. Blue Lake remained full and spilled off and on during the month through January 29<sup>th</sup>. This delayed the contractor's start of work on the dam raise in the existing dam's spillway. This delay consumed the available schedule float for the dam raise work and we now have two critical path timelines on the Project: the dam raise; and the turbine installation.

## **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.

***Note to Assembly: With this month's report we have removed discussions of the City Performed work and Rock excavation risk areas as both of these activities are nearing completion and are well in hand.***

***Construction Schedule:*** In Barnard's most recent (February 1, 2013) schedule, the critical start of the 2014 Generation Outage is shown starting on August 21, 2014, three days ahead of schedule. However, we now have two critical schedule paths, for the dam raise and the turbine installation work related to the Generation outage.

***CURRENT RISK: MODERATE***

***Weather and Lake Levels:*** Blue Lake and Green Lake both spilled during much of January. Spill at Blue Lake delayed the dam raise work. The dam raise work is now closer to the critical path. The higher lake levels in January has delayed Barnard in accessing the intake portal road to remove the intake cofferdam and continue work on the intake structure. This is not a contract milestone but it does restrict Barnard's intake work. It is very important that we manage the Blue Lake level during February and March (as best we can) to allow construction of the dam raise and tunnel intake. If Blue Lake fills and spills again this winter, it will be quite bad for the Project schedule and therefore cost.

***CURRENT RISK: MODERATE (through spring 2014)***

***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 leased and installed at Indian River; some final design is still required. 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 CH2MHILL will perform 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 2. If the filtration system is constructed as planned, we will be on track for the Expansion Project.]***

***Sluice Gate Valve Repair:*** The sluice gate valve at the dam must be repaired to permit operation of the dam outlet valve prior to and during the generation outage. Extent of the repairs required will be determined by divers in February.

***CURRENT RISK: LOW***

***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 made 2 concrete placements at the thrust block, 1 placement at the cutoff wall, and 3 block placements in the main dam near the left abutment. Crux Subsurface also began drilling the dam spillway for installation of keyway rebar.**



**Figure 2. Drainage Tunnel and Scour Wall, on January 29 the lake stopped spilling.**



**Figure 3. Intake Portal and Right Abutment, Gatehouse foundation is complete.**



**Figure 4. Gate House Location, Barnard made a gate house concrete floor placement and began working nightshift in the gate shaft installing gate guides.**





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



**Figure 6. Lower Portal Area, no change this month.**



**Figure 7. Powerhouse Site, ASRC McGraw Constructors (AMCL) completed the installation of the concrete wall panels and began the installation of the roof panels.**



**Figure 9. Lower Project Site, Southeast Earthmovers (SEEM) continued excavation on the new powerhouse access road.**



**Figure 10. Powerhouse Interior, Powerhouse is now fully enclosed and the control room structure is erected.**

## **LAKE LEVEL WINDOW FORECAST**

### **NOTE TO CITY ASSEMBLY**

We changed significantly the operating plan for Blue Lake water levels in January. The very wet and warm month resulted in high inflows and spill at Blue Lake for essentially the entire month. At the end of January, Blue Lake is about 26 ft above its operating rule curve and Green Lake is spilling and 19 ft above its normal level.

We are now maximizing the outflow from Blue Lake to drive the water level down to allow second season dam work, allow access to the intake structure, and to meet the March 22 lake level milestone of el. 298.

After ensuring these short term goals, we will focus on preserving as much water as possible in both Blue Lake and Green Lake in order to minimize diesel generation needs in the fall of 2014 and the spring of 2015.

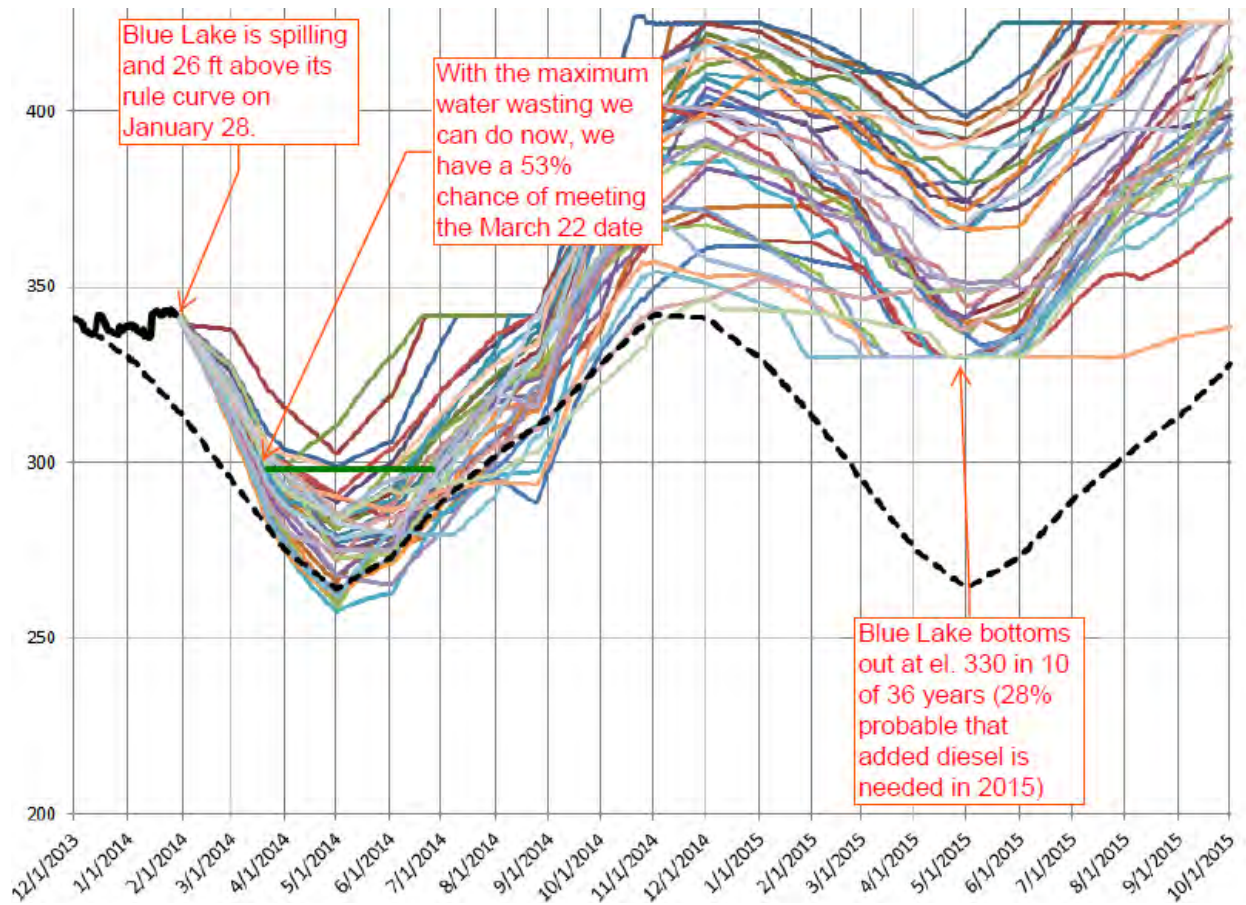
The worry is that we will delay construction at Blue Lake during this winter and spring. The good news is that there is a lot of water in the two lakes and we will have better than expected water storage in Green Lake during the fall 2014 generation outage. And the second bit of good news: weather in the Blue Lake basin turned cold on January 28, the lake stopped spilling on the 29<sup>th</sup> and Barnard went to work on the spillway on January 30. Continued cold weather forecast for early February suggests that we can now start pulling the lake level down as needed for construction.

Following are lake level predictions for both Blue Lake and Green Lake, showing the probabilities of meeting various lake level targets along with the probability of needing significant diesel generation in 2014 and 2015.

### Blue Lake Level Forecast – January 29, 2014

Case 15. Start January 28, 2014. Multi-year simulation using 36 year hydrologic record. 117,000 MWH system load until August 26, 2014. Then conservation assumed to reduce load to 112,000 MWH through October 2015. FVU and PMFU operation at full load combined with 140 cfs water wasting at the FVU bypass and PMFU bypass, continuing through March 22, 2014. THIS IS THE CURRENT OPERATING PLAN FOR THE SYSTEM. Note that in each of these 36 simulations, D4 diesel is assumed to run 10 hours daily during the Generation Outage at an average output of 3 MW.

**Blue Lake water level simulation** - 36 year record with average inflows. FVU and PMFU run at full load through March 22. Water wasting of 140 cfs through March 22.



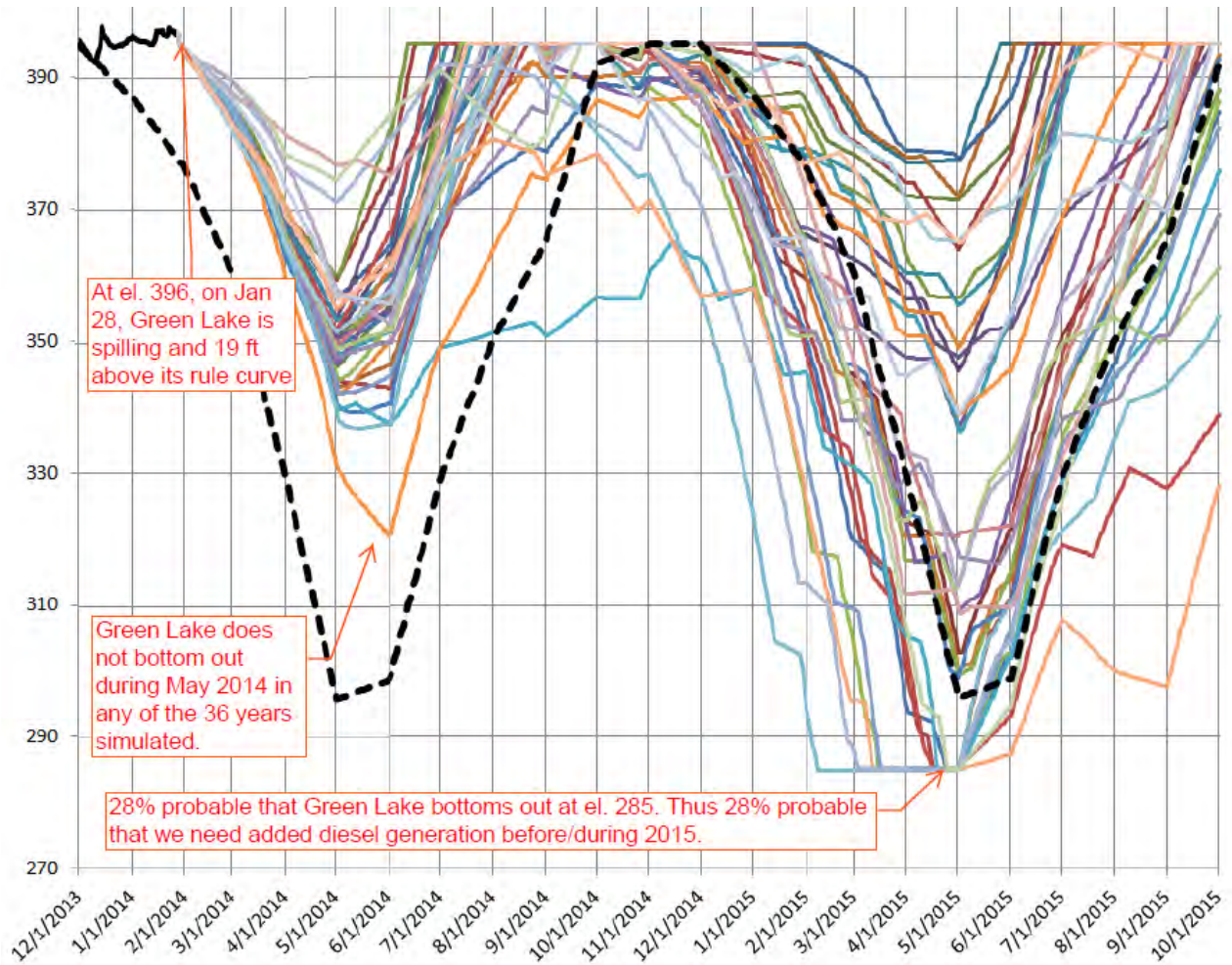
Total diesel generation predicted by this simulation:

| Period            | Dates                  | MWH of diesel        | Cost at \$0.45 per kWh |
|-------------------|------------------------|----------------------|------------------------|
| Spring 2014       | -                      | 0                    | \$0                    |
| Generation Outage | Aug 26 – Oct 26, 2014  | 1,620 <sup>(1)</sup> | \$731,000              |
| Spring 2015       | Mar 30 – June 16, 2015 | varies               | varies                 |

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

## Green Lake Water Level Forecast – January 29, 2014

**Green Lake Water Level Simulation.** Maximum generation and water wasting at Blue Lake. Water conservation at Green Lake in advance of the fall 2014 Generation Outage.





*Appendix 1 to Monthly Update for City Assembly*

**January 31, 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 and Barnard has agreed to the Change.

- Barnard signed an agreement with Pall on the lease of the filter units.
- CH2MHill completed the final design of the site equipment needed for the filtration units. The final design has been submitted to Barnard for pricing.
- McMillen will perform the construction management.
- The City will provide plant operation with possible assistance from the supplier.

The completion of this work is now in the critical path.

We expect to issue the phase 2 change order in February of 2014.

The Final design is complete. Barnard is reviewing the work and is scheduled to issue a change order proposal the first week in February. ADEC permitting is scheduled to be completed in March 2014, construction of the piping and pumping completed in April 2014 and final installation of the filter units in June 2014 for operation in July 2014. The preliminary design cost estimate has a projected design and construction cost of \$3,000,000.

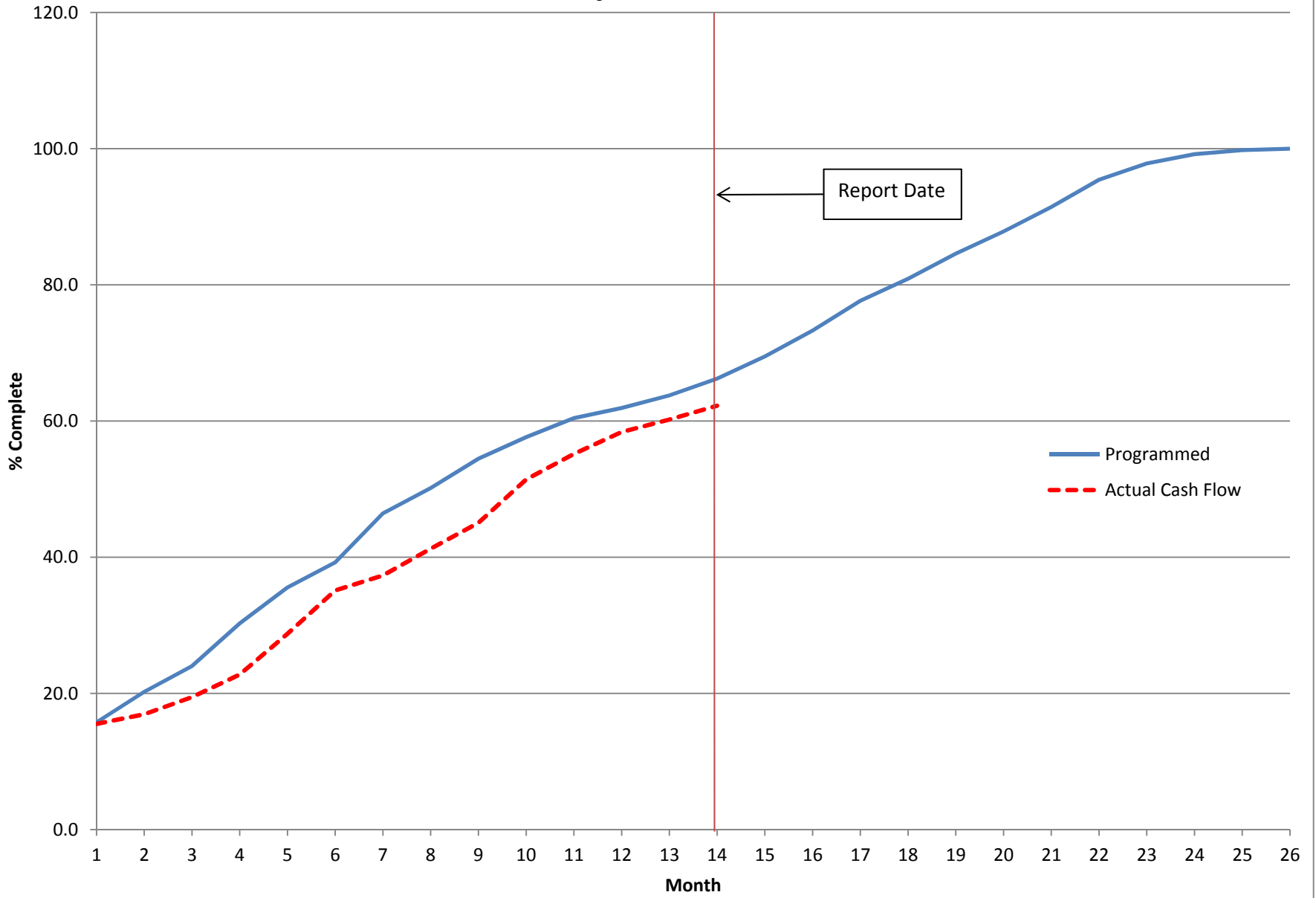
**Summary of Titan 130 Diesel Turbine Project Status**

1. PCN 005 was approved to complete shipping of all materials to Jarvis Substation. CBS will be responsible for offloading & installing turbine and generator at the site.
2. Two 69kV substation circuit breakers installed on site; bus tie breaker and GSU breaker.
3. One of two 40,000 gallon above ground double-walled fuel tanks arrived in Sitka. (Photo below).
4. All substation concrete foundations are complete. Structural steel for A-Frame installed February 2, 2014.
5. Logistics & planning meeting scheduled for February 10-11, 2014 in Sitka. Representatives from Solar Turbines (San Diego & Anchorage), EPS, and other consultants will be on hand for the technical meeting.



**Figure 1. One of two 40,000 gallon above ground double-walled fuel tanks.**

# Total Project Cash Flow



# **BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT**

For Period Ending: JANUARY 31, 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 Shaft Concrete

Barnard completed the gate shaft concrete lining in early January. We have recently started working on the fixed wheel gate sill beam and gate guides on a night shift.

### Gate House Concrete

With the completion of the gate shaft lining, our crews have started concrete work on the gate house. Work completed in January includes – final foundation excavation, embedded electrical conduit and grounding installation, concrete floor placement (to El 428) and the start of wall formwork and rebar installation.

### Dam Raise

Barnard crews continued placing concrete on the dam and left abutment thrust block and cutoff wall. We have completed 23 monoliths blocks total on the dam and have made 10 placements on the thrust block and cutoff wall. Blue Lake Dam quit spilling on January 29 which has allowed us to begin work on the existing spillway.

### Powerhouse

ASRC McGraw completed installation of the steel superstructure for the Powerhouse building and began installation of the pre-cast wall panels and roof panels. ASRC has started installation of the 12 valve pit rock anchors. ASRC has started installation of the powerhouse bridge crane. ASRC has also started installation of the interior structural steel and hollow-core slabs that will become the control room for the powerhouse.

Southeast Earthmovers continues rock excavation for the new powerhouse access road with Barnard installing the required rock bolts as the excavation progresses.

NAES Power Contractors has continued to install cable tray and conduit below Elevation 27 in the powerhouse.

### Adit Tunnel

Barnard completed the concrete placements and contact grouting for the adit tunnel concrete plug.

## **2. Status of Construction**

### **Status of Ongoing Major Construction Activities**

## **BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT**

For Period Ending: JANUARY 31, 2013

Prepared by: BARNARD CONSTRUCTION COMPANY, INC.

- Powerhouse Excavation – 94% complete
- Powerhouse Steel Building – 95% Complete
- Powerhouse Roof – 50% complete
- Precast Wall Panels – 75% complete
- Dam Raise – 2326 CY placed to date.
- Left Abutment Thrust Block and Cutoff Wall – 821 CY.
- Powerhouse Concrete – 3230 CY placed to date.
- Gate Chamber Concrete – 150 CY placed to date.
- Gate Shaft Lining –complete.
- Gate House Concrete – 98 cy placed to date.

See Section 1 above for construction work completed in January 2013.

### **3. Construction Issues**

Blue Lake Dam has continued to spill water through January which has not allowed us to begin work on the existing spillway. The water quit spilling on January 29 and we will begin work immediately on the spillway as long as the water level stays down. Heavy rains created mud slides and excess run-off on the project on January 14. This resulted in significant road repairs to allow safe access on Blue Lake Road and the existing Powerhouse access road.

### **4. Contract Status**

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

| <b>Name</b>                       | <b>Scope</b>                              |
|-----------------------------------|---|
| 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:

| <b>Name</b>                   | <b>Scope</b>               |
|-------------------------------|----------------------------|
| 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 December 30, 2013.

## **BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT**

For Period Ending: JANUARY 31, 2013

Prepared by: BARNARD CONSTRUCTION COMPANY, INC.

Critical Dates for the Blue Lake Project are as follows:

| <b>Milestone</b> | <b>Date</b>                              | <b>Required Status of Construction</b>                                |
|------------------|--|---|
| 1                | 07/01/2013                               | Drainage Tunnel Complete – <b>Completed May 6, 2013</b>               |
| 2                | 08/19/2013                               | Initial Intake Excavation Complete – <b>Completed July 21, 2013</b>   |
| 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 1 <sup>st</sup> Blue Lake Turbine Generator |
| 6                | 91 days after start of Generation Outage | Substantial Completion of 2 <sup>nd</sup> Blue Lake Turbine Generator |
| 7                | 80 days after start of Generation Outage | Substantial Completion of Fish Valve Unit                             |

### **6. Reservoir Filling**

See above – Blue Lake dam has continued spilling through most of January.

### **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.

| <b>Contract No.</b> | <b>Vendor</b>                   | <b>Scope of Supply</b>                    |
|---------------------|---------------------------------|---|
| 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:

Rebar – Barnard has been receiving reinforcing steel for the powerhouse, gatehouse and dam throughout the month of January.

Misc. Metals - Barnard has been receiving misc. metals for various project features throughout the month of January, including the energy dissipation steel.

### **9. Material Testing and Results**

## **BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT**

For Period Ending: JANUARY 31, 2013

Prepared by: BARNARD CONSTRUCTION COMPANY, INC.

Concrete testing is ongoing for the dam raise, gate chamber and powerhouse concrete. No issues have been encountered to date.

### **10. Instrumentation**

Not applicable for this report.

### **11. Photographs**



**Figure 1: Adit Tunnel Plug Formwork**

## **BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT**

For Period Ending: JANUARY 31, 2013

Prepared by: BARNARD CONSTRUCTION COMPANY, INC.



**Figure 2: Powerhouse Construction**



**Figure 3: Precast Wall Panel Installation**



## **BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT**

For Period Ending: JANUARY 31, 2013

Prepared by: BARNARD CONSTRUCTION COMPANY, INC.



**Figure 4: Powerhouse Roof**



**Figure 5: Concrete Placement for M7-403**

## **BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT**

For Period Ending: JANUARY 31, 2013

Prepared by: BARNARD CONSTRUCTION COMPANY, INC.



**Figure 6: Gatehouse Floor and Wall Formwork**



**Figure 7: Blue Lake Spillway**

### **12. Erosion Control and Other Environmental Issues**

## **BLUE LAKE EXPANSION PROJECT MONTHLY CONSTRUCTION REPORT**

For Period Ending: JANUARY 31, 2013

Prepared by: BARNARD CONSTRUCTION COMPANY, INC.

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 | 2014   |     |     |     |     |     |     |     |     |     |     |     | 2015                     |
|---|--|-------------------|-----------------|--------------------|-------------|-------------|-------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------------------|
|   |  |                   |                 |                    |             |             |             | Jan  | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan                      |
| <b>Blue Lake Expansion - Progress Schedule - January 2014</b> |  |                   |                 |                    |             |             |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>General/Admin</b>  |  |                   |                 |                    |             |             |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1000   | Blue Lake Expansion Bid Due                                    | 0                 | 0               | 0                  | 31-Jul-12 A |             |             |  |     |     |     |     |     |     |     |     |     |     |     | 26-Feb-14, General/Admin |
| 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 |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1160   | Initial Intake Structure Excavation Complete                   | 0                 | 0               | 0                  |             | 28-Jul-13 A |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1150   | Intake Structure Complete                                      | 0                 | 0               | 0                  |             | 04-Jun-14   |             | ◆ Intake Structure Complete                          |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1140   | Ready for Generation Outage                                    | 0                 | 0               | 0                  |             | 20-Aug-14*  |             | ◆ Ready for Generation Outage                        |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1050   | Start Generation Outage  | 0                 | 0               | 0                  | 21-Aug-14   |             |             | ◆ Start Generation Outage                            |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1120   | Shutdown Existing Powerhouse - Dewater Tunnel                  | 2                 | 0               | 2                  | 21-Aug-14   | 22-Aug-14   |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1130   | Rewater Tunnel   | 1                 | 0               | 1                  | 12-Oct-14   | 12-Oct-14   |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1100   | End Generation Outage  | 0                 | 0               | 0                  |             | 19-Oct-14   |             | ◆ End Generation Outage                              |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1170   | Substantial Completion - BLU #5                                | 0                 | 0               | 0                  |             | 19-Oct-14   |             | ◆ Substantial Completion - BLU #5                    |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1180   | Substantial Completion - BLU #4                                | 0                 | 0               | 0                  |             | 27-Oct-14   |             | ◆ Substantial Completion - BLU #4                    |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1190   | Substantial Completion - FVU                                   | 0                 | 0               | 0                  |             | 01-Nov-14   |             | ◆ Substantial Completion - FVU                       |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1060   | Project Substantial Completion                                 | 0                 | 0               | 0                  |             | 30-Nov-14   |             | ◆ Project Substantial Completion                     |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1070   | Punchlist  | 10                | 0               | 10                 | 02-Dec-14   | 17-Dec-14   |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1090   | Demobilization   | 10                | 0               | 10                 | 10-Dec-14   | 26-Dec-14   |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| A1080   | Final Completion   | 0                 | 0               | 0                  |             | 26-Dec-14   |             | ◆ Final Completion                                   |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Contract Milestones</b>                                    |  |                   |                 |                    |             |             |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| 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*  |             | ◆ Milestone #3 - Intake Structure Complete           |     |     |     |     |     |     |     |     |     |     |     |                          |
| CM1030  | Milestone #4 - Ready for Generation Outage                     | 0                 | 0               | 0                  |             | 24-Aug-14*  |             | ◆ Milestone #4 - Ready for Generation Outage         |     |     |     |     |     |     |     |     |     |     |     |                          |
| CM1040  | Milestone #5 - Substantial Completion BLU #5                   | 0                 | 0               | 0                  |             | 24-Oct-14*  |             | ◆ Milestone #5 - Substantial Completion BLU #5       |     |     |     |     |     |     |     |     |     |     |     |                          |
| CM1060  | Milestone #7 - Substantial Completion FVU                      | 0                 | 0               | 0                  |             | 12-Nov-14*  |             | ◆ Milestone #7 - Substantial Completion FVU          |     |     |     |     |     |     |     |     |     |     |     |                          |
| CM1050  | Milestone #6 - Substantial Completion BLU #4                   | 0                 | 0               | 0                  |             | 23-Nov-14*  |             | ◆ Milestone #6 - Substantial Completion BLU #4       |     |     |     |     |     |     |     |     |     |     |     |                          |
| CM1070  | Milestone #8 - Project Substantial Completion                  | 0                 | 0               | 0                  |             | 01-Feb-15*  |             | ◆ Milestone #8 - Project Substantial Completion      |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Construction Constraints</b>                               |  |                   |                 |                    |             |             |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| CC1010  | 2013 Lake Level Window (EL. 330)                               | 206               | 205             | 0                  | 26-Jan-13 A | 19-Aug-13 A |             | 25-Jun-14, Construction Constraints                  |     |     |     |     |     |     |     |     |     |     |     |                          |
| 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                | 0               | 96                 | 22-Mar-14*  | 25-Jun-14   |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| CC1040  | Bulkhead Gate Inspection Complete                              | 0                 | 0               | 0                  |             | 01-May-14*  |             | ◆ Bulkhead Gate Inspection Complete                  |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Owner Supplied Materials</b>                               |  |                   |                 |                    |             |             |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| OM1000  | Bulkhead Gate and Guides                                       | 0                 | 0               | 0                  |             | 20-Feb-13 A |             | 31-Jan-14, Owner Supplied Materials                  |     |     |     |     |     |     |     |     |     |     |     |                          |
| 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 Host                             | 0                 | 0               | 0                  |             | 28-Jun-13 A |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| OM1110  | Powerhouse Steel Building                                      | 0                 | 0               | 0                  |             | 09-Jun-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 Governors  | 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                  |             | 31-Jan-14*  |             | ◆ 12.47 KV Switchgear                                |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Access Road and Staging Area Improvements</b>              |  |                   |                 |                    |             |             |             |  |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Dam Extension (Feature 20)</b>                             |  |                   |                 |                    |             |             |             | 19-May-14, Access Road and Staging Area Improvements |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Plunge Pool Scour Wall (Feature 22)</b>                    |  |                   |                 |                    |             |             |             | 19-Aug-14, Dam Extension (Feature 20)                |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Drainage Tunnel (Feature 23)</b>                           |  |                   |                 |                    |             |             |             | 16-Aug-14, Plunge Pool Scour Wall (Feature 22)       |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Intake Tunnel (Feature 24)</b>                             |  |                   |                 |                    |             |             |             | 20-Aug-14, Drainage Tunnel (Feature 23)              |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Intake Structure (Feature 25)</b>                          |  |                   |                 |                    |             |             |             | 31-Aug-14, Intake Tunnel (Feature 24)                |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Gate Shaft (Feature 26)</b>                                |  |                   |                 |                    |             |             |             | 04-Jun-14, Intake Structure (Feature 25)             |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Tunnel Modifications (Feature 30)</b>                      |  |                   |                 |                    |             |             |             | 25-Aug-14, Gate Shaft (Feature 26)                   |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Penstock (Feature 31)</b>                                  |  |                   |                 |                    |             |             |             | 11-Oct-14, Tunnel Modifications (Feature 30)         |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>24" Penstock Drain (Feature 32)</b>                        |  |                   |                 |                    |             |             |             | 08-Oct-14, Penstock (Feature 31)                     |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Water Treatment Building (Feature 33)</b>                  |  |                   |                 |                    |             |             |             | 30-May-14, 24" Penstock Drain (Feature 32)           |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Powerhouse (Feature 45)</b>                                |  |                   |                 |                    |             |             |             | 14-Oct-14, Water Treatment Building (Feature 33)     |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Fish Valve Unit (Feature 46)</b>                           |  |                   |                 |                    |             |             |             | 21-Aug-14, Powerhouse (Feature 45)                   |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Switchyard Modifications (Feature 55)</b>                  |  |                   |                 |                    |             |             |             | 01-Nov-14, Fish Valve Unit (Feature 46)              |     |     |     |     |     |     |     |     |     |     |     |                          |
| <b>Testing and Commissioning</b>                              |  |                   |                 |                    |             |             |             | 21-Nov-14, Switchyard Modifications (Feature 55)     |     |     |     |     |     |     |     |     |     |     |     |                          |
|   |  |                   |                 |                    |             |             |             | 30-Nov-14, Testing and Commissioning                 |     |     |     |     |     |     |     |     |     |     |     |                          |

◆ Milestone  
 Summary