



**2016 ECR Plan Status Update Report**  
**Quarterly Report – Update #3**  
**April 28, 2017**

**Executive Summary:**

**General**

This report covers progress on the 2016 Environmental Cost Recovery (ECR) projects during the first quarter of 2017, as well as listing any significant events that have occurred to date. Safety performance to date remains very good with a year-to-date Recordable Incident Rate of 0.00 and an inception-to-date Recordable Incident Rate of 1.26, compared to the industry average of 3.90. As reported in the fourth quarter report for 2016, total 2016 ECR projected costs decreased from \$993.6M (net<sup>1</sup>) as provided in Cases 2016-00026 and Case 2016-00027 to \$866.3M. No changes to the forecasted cost occurred during this reporting period. Total spend to date is \$40.7M (net) through March 31, 2017.

From an execution perspective, the project work at Mill Creek to bring the existing Coal Combustion Residual (CCR) facilities into compliance with the CCR Rule were completed and placed into service in December 2016. The work included a new outfall structure for the ash pond, modifications to the East embankments on the ash pond, along with the hard surfacing of the gypsum dewatering facility gypsum storage area. The modifications to the Ghent spillways on the #1 and #2 Ash Treatment Basins (ATB) were completed and placed into service in February 2017. The Request for Quotation (RFQ) for the CCR Process Water Systems, which are required to facilitate closure of ash treatment basins by treating the process waters that currently go into the basins for Ghent, Mill Creek and Trimble County were issued to the market on December 16, 2016 with bids received on March 17, 2017.

**CCR Compliance (CCR Rule and State Closures)**

Safety performance to date is good with a year-to-date Recordable Incident Rate of 0.00 and an inception-to-date Recordable Incident Rate of 2.48, compared to the industry average of 3.90. In the last quarterly report, the year-to-date and inception-to-date Incident Rate was incorrectly reported as 0.00. There was a recordable incident that occurred on December 31, 2016 that was classified as such following the previously written quarterly report. Subsequently, it was not included in the calculation which made the last quarter inception-to-date Incident Rate 2.98.

Total projected costs for the CCR closure program decreased during the last reporting period from \$959.7M (net) to \$839.0M (net) as a result in the refinement of the closure designs which have resulted in a decrease in forecasted quantities of closure material, as well as a reduction in contingency associated with the maturation of the closure engineering designs from sixty percent (60%) to nearly ninety percent (90%).

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<sup>1</sup> Co-Owners of the Trimble County plant: Illinois Municipal Electric Agency (IMEA) and Indiana Municipal Power Agency (IMPA) are responsible for 25%. IMEA owns 12.12% and IMPA owns 12.88%. Co-owner share is not included in the costs provided in this report where “net” is shown.



The projected total cost remains \$839.0M (net) in this reporting period. Total spend to date through March 31, 2017 is \$34.7M (net).

Currently, the CCR Rule and State Closures program is focused on detailed design for the CCR impoundment closures and conceptual designs for the process water systems. Communications with AMEC, AECOM, and CH2M (the Owner's Engineers [OE] for the conceptual and final impoundment closure design, and permitting,) continues as planned with meetings being held no less than once a week. The Companies have updated the implementation schedules to reflect the current status of the program development and to provide guidance to the OEs on the critical path activities. The closure program is on schedule to be completed on or before the Environmental Protection Agency's (EPA) CCR Rule regulatory deadlines.

To ensure compliance with the EPA's CCR Rule, the Companies continue to hold program-wide meetings with the OEs and all affected facilities to provide an opportunity for all parties to provide updates on their work and to ensure the OEs are providing similar deliverables. In addition to the program-wide meetings, the Companies are holding weekly meetings with the individual OEs and the affected plants as well as monthly internal meetings to ensure all parties (i.e., generating stations, Environmental Affairs, Generation Planning, Legal, etc.) are in sync with each other.

The Companies issued RFQ packages for closure of the Mill Creek Emergency Pond (E-Pond), construction of the Ghent Cooling Ditch and North Cooling Pond (Phase I), and closure of the Green River impoundments during the first quarter of 2017. Bids were received for the Mill Creek E-Pond and Ghent Phase I closure scopes in the first quarter and are currently under review. The Companies anticipate awarding contracts for Mill Creek E-Pond and Ghent Phase I in the second quarter of 2017. Bids are due for the Green River Impoundment closure project during the second quarter of 2017.

The Companies received bids for the Ghent, Mill Creek, and Trimble County CCR Process Water Treatment systems on March 17, 2017. Presentations by all bidders were held for each station in late March. Bid reviews and clarification rounds with the bidders are in progress with plans to award by the end of the second quarter of 2017.

### **Fleet Mercury Control Injection Systems Project**

Safety performance to date remains excellent with a year-to-date Recordable Incident Rate of 0.00 and an inception-to-date Recordable Incident Rate of 0.00, compared to the industry average of 3.90. As reported last quarter, total projected costs have decreased from \$15.6M (net) to \$12.4M (net). Total spend to date has increased from \$2.9M to \$3.2M through March 31, 2017. The expected in-service dates are currently:

- Mill Creek Unit 3 – Completed (placed in service in June 2016)
- Mill Creek Unit 4 Organo-sulfide System - June 2017
- Mill Creek Units 1&2 Organo-sulfide System - June 2017
- Mill Creek Unit 1 Halogenated Liquid System - June 2017
- Mill Creek Unit 2 Halogenated Liquid System - June 2017
- Trimble County Unit 1 Organo-sulfide System - June 2017

- Ghent Unit 4 Organo-sulfide System - August 2017
- Ghent Unit 2 Halogenated Liquid System- August 2017
- Ghent Unit 1 Organo-sulfide System - August 2017
- Ghent Unit 2 Organo-sulfide System - August 2017
- Ghent Unit 3 Organo-sulfide System - August 2017

## **Ghent Unit 2 Wet Flue Gas Desulfurization Improvements (WFGD) Project**

Contractual performance testing was delayed until April 2017. As reported last quarter, total projected costs have decreased from \$4.0M to \$3.2M as a result of a refinement of the scope, award of the work under a lump sum agreement, and release of contingencies to account for the lump sum awards. No change in forecasted cost occurred during this reporting period. Spend through March 31, 2017 is \$2.8M.

## **E.W. Brown Landfill Phase II**

As planned, work on the E.W. Brown Landfill Phase II has not begun.

## **Quarterly Status Update:**

### **State Division of Waste Closure Projects:**

#### **KU Project 39 – Green River (GR)/Pineville (PV)/Tyrone (TY) Impoundment Closure**

Green River: CH2M was awarded the OE contract in late 2015 to perform the conceptual and final design, and permitting. KU is holding weekly and monthly update meetings to review the current status of the project. Conceptual design was completed on April 15, 2016 and the final design is currently 99% complete, with 100% completion not occurring until issuance of Issued for Construction drawings, which is expected to occur in late June 2017. An initial permit meeting was held with the Kentucky Division of Waste Management (KYDWM) on October 17, 2016, to present the design philosophy and solicit feedback on the permitting process. CH2M submitted the KYDWM permit application in the first quarter of 2017, no additional feedback has been received from KYDWM as of this report. The RFQ for the closure work was issued to the market in March. The Company anticipates the contract will be awarded in the beginning of the third quarter of 2017. To date, onsite activities have been limited to site visits by the OE and geotechnical explorations.

Pineville: AMEC was awarded the OE contract in late 2015 to perform the conceptual and final design, permitting, and CQA services. KU is holding weekly and monthly update meetings to review the current status of the project. Conceptual design was completed on September 30, 2016 and the final design is currently 60% complete and progressing towards 90% completion. AMEC will start development of the KYDWM permit application as the final design has attained 60% completion, and will build upon the experience gained during the Green River permitting process. Final design has been accelerated and is scheduled to be completed by the middle of 2017. The RFQ will be issued to the market in the third quarter of 2017. To date, onsite activities have been limited to site visits by the OE and geotechnical explorations.

Tyrone: AMEC was awarded the OE contract in late 2015 to perform the conceptual and final design, permitting, and CQA services. KU is holding weekly and monthly update meetings to review the current status of the project. Conceptual design was completed on September 30, 2016 and the final design is currently 60% complete and progressing towards 90% completion. AMEC will start development of the KYDWM permit application as the final design has attained 60% completion, and will build upon the experience gained during the Green River permitting process. Final design has been accelerated and is scheduled to be completed in July of 2017. The RFQ will be issued to the market in the third quarter of 2017. To date, onsite activities have been limited to site visits by the OE and geotechnical explorations.

## **Federal CCR Rule Closure Projects:**

### **Program-wide Items**

The Companies are currently working on two subprojects related to interstitial dewatering of the CCR Impoundments. Feedback from various industry sources indicate that interstitial dewatering carries the most risk for construction contractors. In an effort to minimize this risk, the Companies will perform a pilot dewatering test at Ghent's ATB#2 and Cone Penetration Test (CPT) at E.W. Brown, Ghent, Mill Creek, and Trimble County. The goal of this work is to minimize the risk and costs of the interstitial dewatering to the Companies by better understanding what will be expected through real-life pilot scale dewatering.

### **KU Project 40 – Ghent (GH) Station CCR Rule Compliance Construction and New Process Water Systems**

AECOM was awarded the OE contract in late 2015 to perform the conceptual and final design, and permitting. KU is holding weekly and monthly update meetings to review the current status of the project. Conceptual design was completed on June 1, 2016 and the overall final design is currently 60% complete and progressing towards 90% completion. In an effort to support the overall CCR Rule compliance plan at Ghent, AECOM accelerated the final design for the north end of the Gypsum Stack Cooling Ditch and North Cooling Pond (Phase I). AECOM submitted the final design for Phase I during the first quarter of 2017. The RFQ for execution of the Phase I work was issued to the market and bids were received during the first quarter of 2017. The Companies anticipate that a contract will be awarded for the Phase I work by the end of the second quarter of 2017. Phase II design (Gypsum Stack South Cell, ATB #1 and ATB #2) is scheduled to be completed in the second quarter of 2017. The RFQ will be issued in the third quarter of 2017. To date, onsite activities have been limited to site visits by the OE, geotechnical explorations, and installation of groundwater monitoring wells. KU awarded a contract to TransAsh on October 17, 2016 for spillway improvements on ATB #1 and ATB #2 to comply with H&H requirements outlined in the CCR Rule. Installation of a new emergency spillway on ATB #1 and improvements to the emergency spillway on ATB #2 were completed in the first quarter of 2017.

### **KU Project 41 and LG&E Project 30<sup>2</sup> – Trimble County (TC) Station CCR Rule Compliance Construction and New Process Water Systems**

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<sup>2</sup> KU and LG&E's net costs are split 48%/52% respectively.

AMEC was awarded the OE contract in late 2015 to perform the conceptual and final design, and support the permitting process. KU is holding weekly and monthly update meetings to review the current status of the project. Conceptual design was completed on June 1, 2016 and the final design is currently 60% complete and progressing towards 90% completion. Final design is scheduled to be completed late in the second quarter of 2017. The RFQ package for the closure of the Bottom Ash Pond and Gypsum Storage Pond will be issued to the market in the third quarter of 2017. To date, onsite activities have been limited to site visits by the OE, geotechnical explorations, and installation of groundwater monitoring wells.

#### **KU Project 42 – E.W. Brown (BR) Station CCR Rule Compliance Construction and New Process Water Systems**

AMEC was awarded the OE contract in late 2015 to perform the conceptual and final design, permitting, and CQA services. KU is holding weekly and monthly update meetings to review the current status of the project. Conceptual design was completed on September 30, 2016 and the final design is currently 60% complete and progressing toward 90% completion. Final design is scheduled to be completed by the middle of 2017 and the RFQ package will be issued in the third quarter of 2017. To date, onsite activities have been limited to site visits by the OE, geotechnical explorations, and installation of groundwater monitoring wells.

#### **LG&E Project 29 – Mill Creek (MC) Station CCR Rule Compliance Construction and New Process Water Systems**

AECOM was awarded the OE contract in late 2015 to perform the conceptual and final design, permitting, and CQA services. LG&E is holding weekly and monthly update meetings to review the current status of the project. Conceptual design was completed on June 1, 2016 and the overall final design is currently 60% complete and progressing towards 90% completion. In an effort to support the overall CCR Rule compliance plan at Mill Creek, AECOM accelerated the final design for the Emergency Pond (E-Pond). Final design for the E-Pond was completed early in the first quarter of 2017. A RFQ was issued and bids were received by the end of the first quarter of 2017. LG&E anticipates that a contract will be awarded in the second quarter of 2017. Design of the south ponds and Main Ash Pond are scheduled to be completed by the end of the second quarter of 2017. To date, onsite activities have included site visits by the OE, geotechnical explorations, and installation of groundwater monitoring wells. MAC completed the H&H work associated with improvements on the bottom ash pond and that scope was placed into service on December 22, 2016.

#### **Fleet Mercury Control Injection Systems Project**

Nalco, the equipment supplier, completed Mill Creek Unit 3's Organo-sulfide System post-startup activities such as Operation and Maintenance (O&M) manual revisions and performing training for plant personnel. These activities were overseen by LG&E with consultation from AECOM.

AECOM began the design phase of the systems for Mill Creek Units 1, 2, and 4. This phase included weekly project conference calls, completion of action items, finalizing the equipment layouts, information collection, and site visits.



In addition, Nalco, with involvement from LG&E, KU and AECOM, finalized the design of the systems for Mill Creek Units 1, 2, and 4. Pump skids, tanks, and pump enclosures were delivered in December 2016 for Mill Creek Units 1, 2 and 4 Organo-sulfide Systems and Mill Creek Unit 1 and 2 Halogenated Liquid Systems. Award for the installation contract is expected in April 2017.

### **Ghent Unit 2 Wet Flue Gas Desulfurization Improvements (WFGD) Project**

The work on the Ghent Unit 2 WFGD is mechanically complete. Performance testing was delayed a few weeks into April 2017.

## **Planned Activities for Next Quarter:**

### **State Division of Waste Closure Projects**

The Companies plan to receive the closure proposals and award the construction contract for the Green River Impoundment closure project.

### **Federal CCR Rule Closure Projects**

The Companies plan to award the construction contract for the Mill Creek E-Pond, Ghent Phase I closure work, and Green River's closure projects. Plans also include starting construction activities on the Mill Creek E-Pond.

### **Fleet Mercury Control Injection Systems Project**

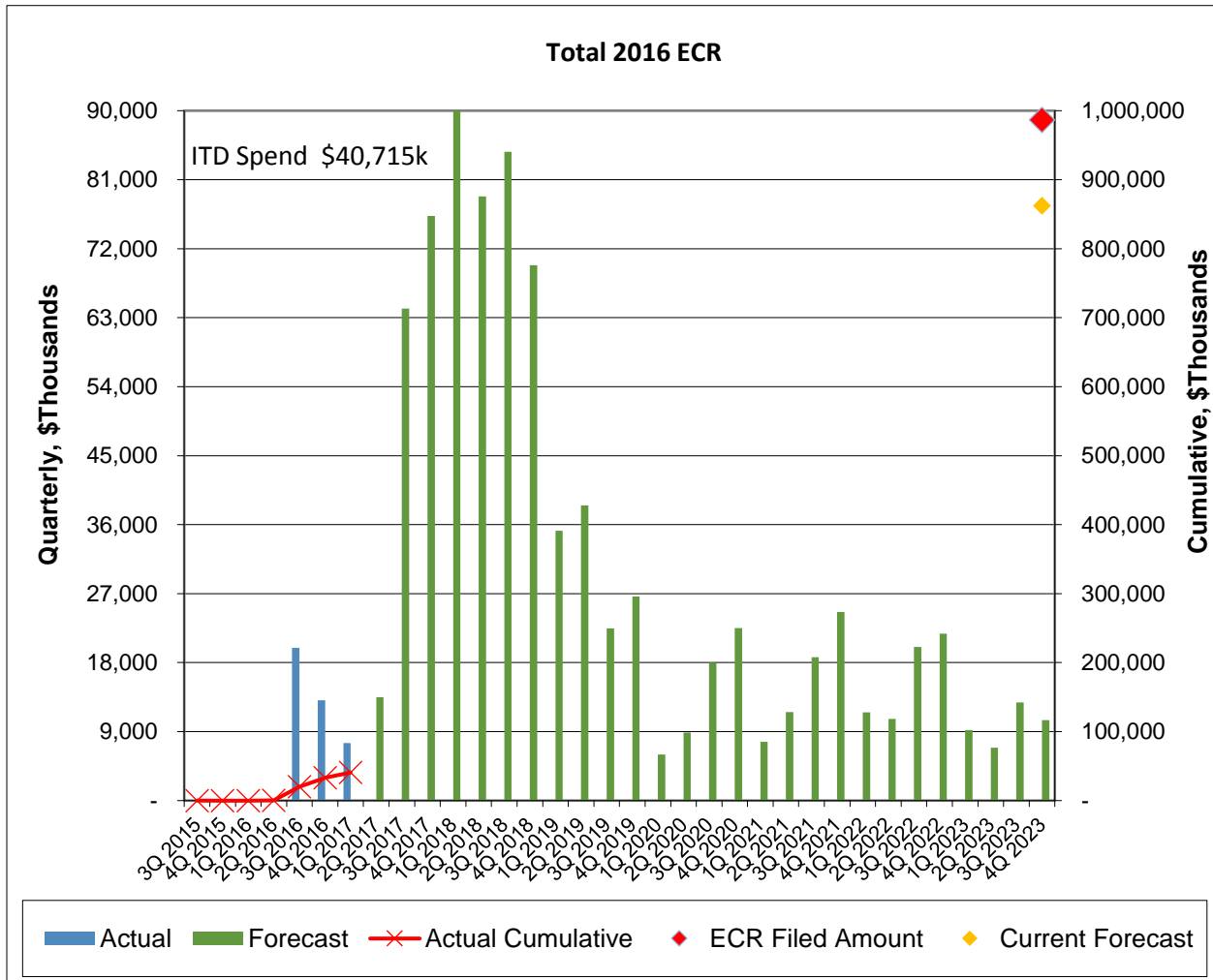
The RFQ for the balance of work at Mill Creek (inclusive of electrical power, instrumentation and controls, piping, and miscellaneous mechanical construction) is expected to be awarded in April 2017 with work commencing during the second quarter.

### **Ghent Unit 2 Wet Flue Gas Desulfurization Improvements (WFGD) Project**

Plans are to complete performance testing and review test reports. Early indications based on unit performance are positive.

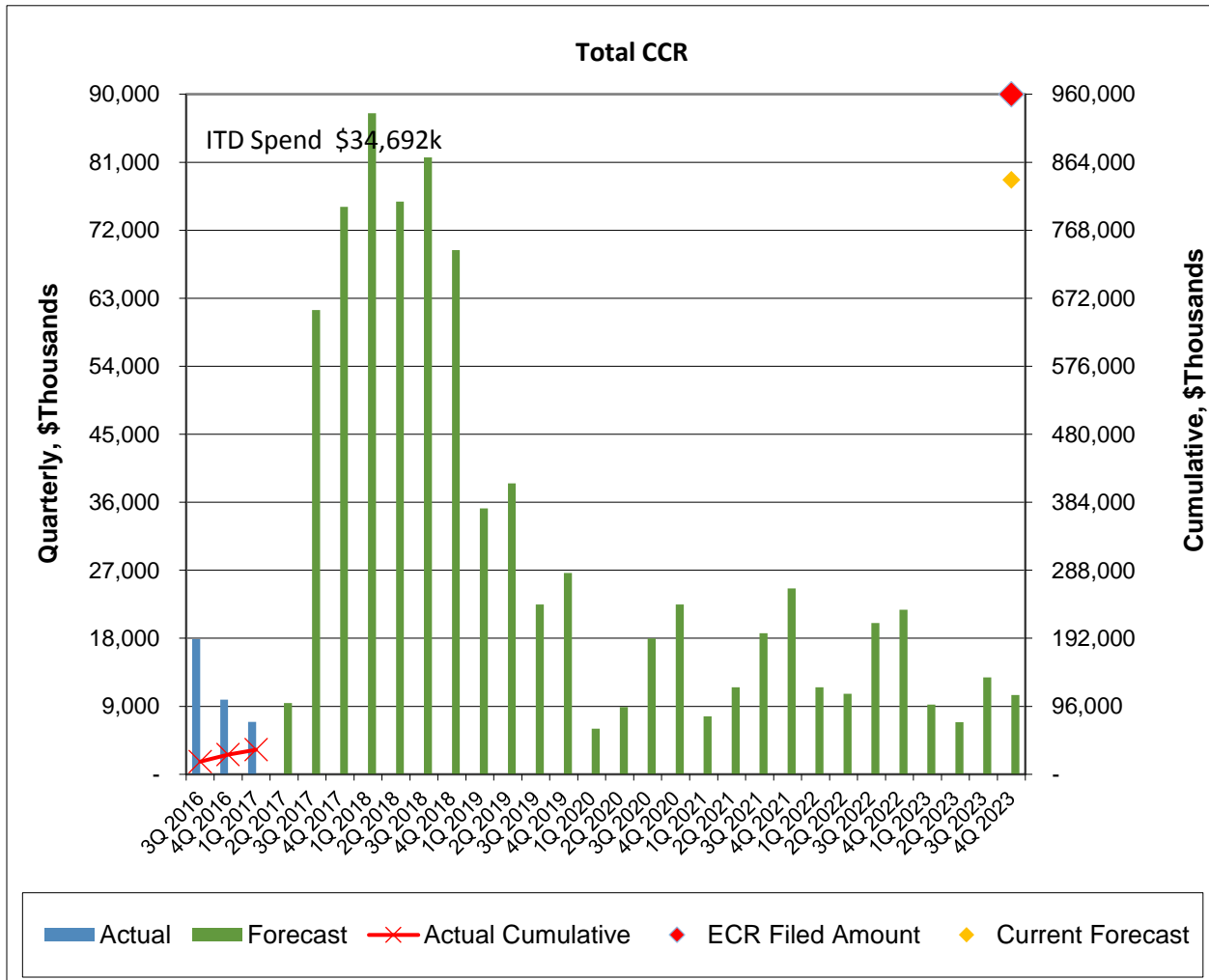
**Financials:**

During the last quarter, the forecasted cost for the 2016 ECR projects decreased from the ECR Filing amount of \$993.6M (net) to \$866.3M (net). No change in forecasted cost occurred during this reporting period. Total spend through March 31, 2017 is \$40.7M (net). Note for the graph below: (1) the chart includes a symbol (◆) to show the current forecast to completion; and (2) Inception-to-Date (ITD) Spend is shown in the upper left of the chart.



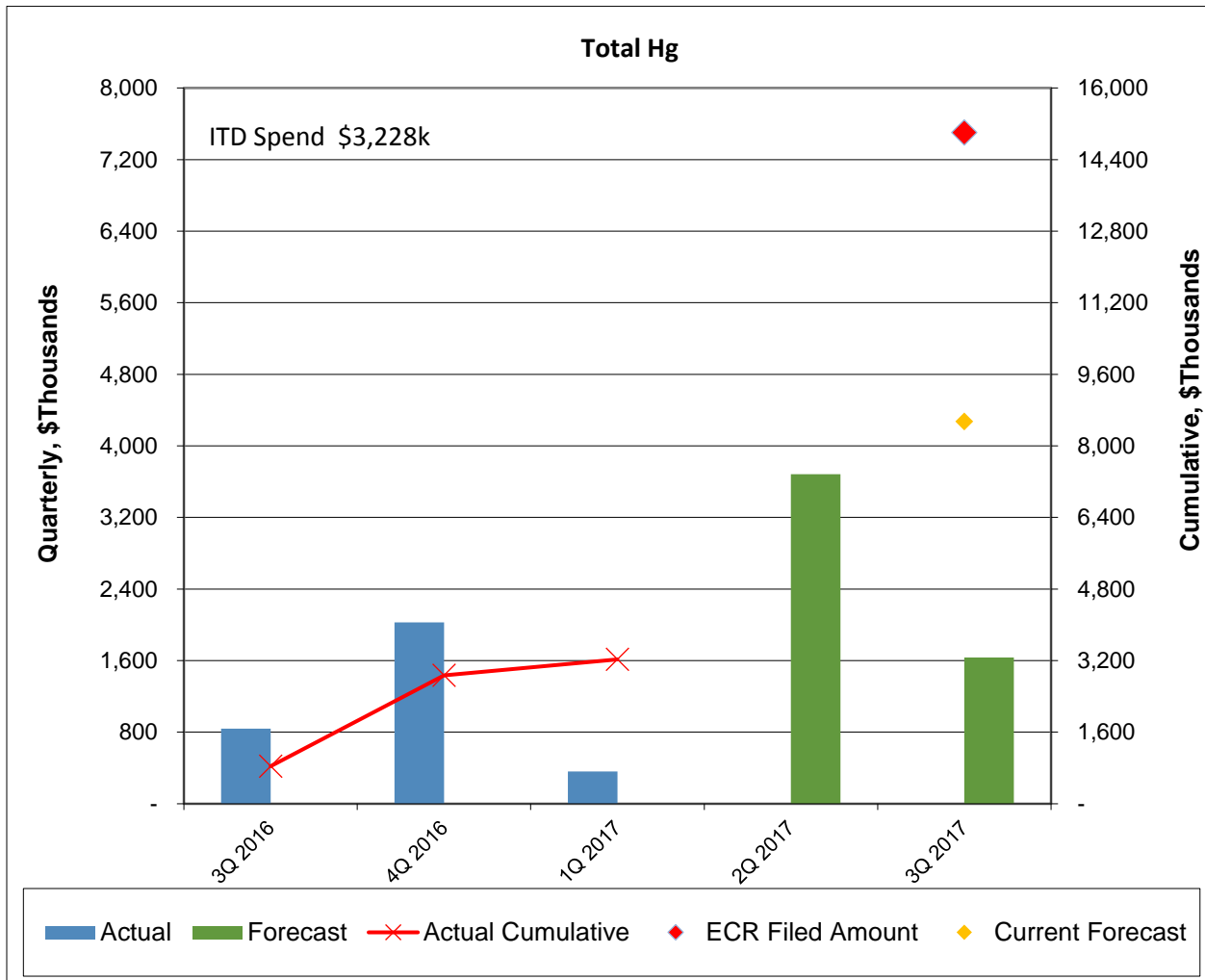


During the last quarter, the forecasted cost for the CCR Closure scopes decreased from the ECR filing amount of \$959.7M (net) to \$839.0M (net). No change in forecasted cost occurred during this reporting period. Total spend through March 31, 2017 is \$34.7M (net). Note for the graph below: (1) the chart includes a symbol (◆) to show the current forecast to completion; and (2) Inception-to-Date (ITD) Spend is shown in the upper left of the chart.

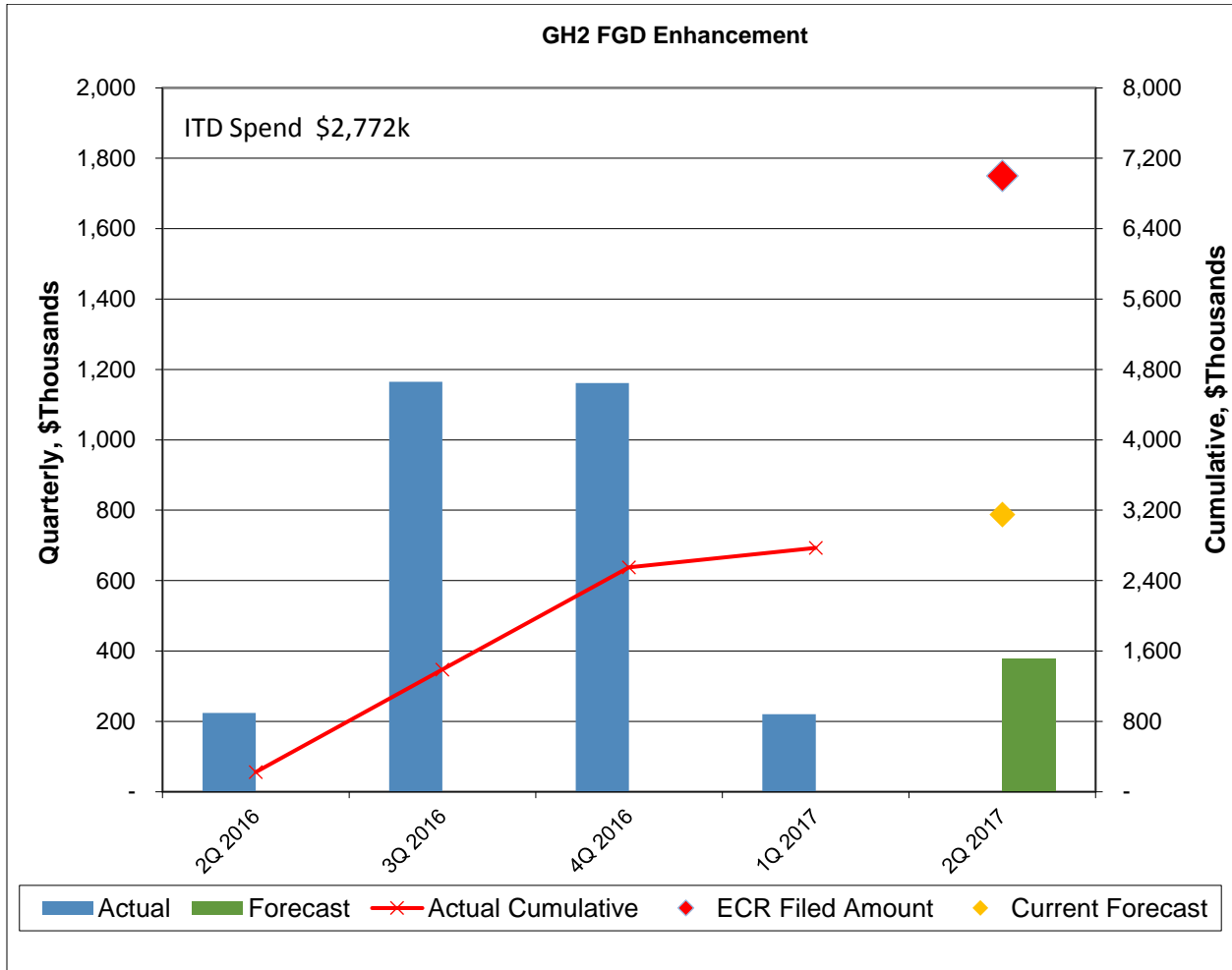




During the last quarter, the forecasted cost for the Fleet Mercury Control Injection Systems Project scopes decreased from the ECR filing amount of \$15.0M (net) to \$12.4M (net). No change in forecasted cost occurred during this reporting period. Total spend through March 31, 2017 is \$3.2M. Note for the graph below: (1) the chart includes a symbol (◆) to show the current forecast to completion; and (2) ITD Spend is shown in the upper left of the chart.



During the last quarter, the total projected cost of the Ghent Unit 2 WFGD Improvements decreased from the ECR filing amount of \$7.0M to \$3.2M, which was attributed to finalization of scope and contract award. No change in forecasted cost occurred during this reporting period. Total spend through March 31, 2017 is \$2.8M. Note for the graph below: (1) the chart includes a symbol (◆) to show the current forecast to completion; and (2) ITD Spend is shown in the upper left of the chart.



The forecasted cost for the E.W. Brown Landfill Phase II Project scopes remains \$11.9M. No change in forecasted cost occurred during this reporting period. Total spend through March 31, 2017 is \$0.024M. Note for the graph below: (1) the chart includes a symbol (◆) to show the current forecast to completion; and (2) ITD Spend is shown in the upper left of the chart.

