

**2016 ECR Plan Status Update Report
Quarterly Report – Update #8
July 30, 2018**

Executive Summary:

General

This report covers LG&E and KU’s (“Companies”) progress on the 2016 Environmental Cost Recovery (“ECR”) Plan through the second quarter of 2018. While this quarterly report does include the schedule and next steps, it does not include updated financials for the amended scope to the E.W. Brown Landfill (amended Phase II and closure of the remaining non-capped areas of the Main Ash Pond). The updated financials for the landfill will be included in the third quarter report since the amended scope was approved by the Commission’s Order in Case No. 2017-00483 on July 9, 2018 after the second quarter ended.

The overall 2016 ECR Plan safety performance through the second quarter of 2018 is excellent and has improved through the quarter with a year-to-date OSHA Recordable Incident Rate of 0.19 and an inception-to-date OSHA Recordable Incident Rate of 0.65, compared to the industry average of 3.20.

The total 2016 ECR Plan projected costs remain \$871.2 million (net) as reported last quarter, compared to the filed estimate of \$993.6 million (net).¹ Total spend to date increased from \$279.8 million (net) last quarter to \$360.8 million (net) through June 30, 2018.

CCR Compliance (CCR Rule and State CCR Pond Closures)

Safety performance through the second quarter is excellent and has improved through the quarter with a year-to-date OSHA Recordable Incident Rate of 0.19 and an inception-to-date Recordable Incident Rate of 0.65, compared to an industry average Recordable Rate that exceeds 3.20.

The total projected costs for the Coal Combustion Residual (“CCR”) Closure Program remains \$859.4 million as reported last quarter. Total spend to date through June 30, 2018 has increased from \$268.1 million (net) in the last report, to \$349.0 million (net).

¹ The total 2016 ECR Plan projected costs were provided in Case No. 2016-00026 and Case No. 2016-00027 on a net basis. 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 remaining engineering and procurement activities essentially consists of corrections for field construction impacts on the projects in progress, engineering associated with the diffusers at E.W. Brown, Ghent and Mill Creek for the Process Water System (“PWS”) discharges, and the engineering associated with the change in plans to clean close the Gypsum Storage Pond at Trimble County. Clean closure of the Gypsum Storage Pond will consist of transferring the gypsum in that pond over to the Bottom Ash Pond. Using the gypsum in the Gypsum Storage Pond to close the Bottom Ash Pond allows the potential for future gypsum produced at the station to be marketed for beneficial reuse instead of being placed in the Gypsum Storage Pond for closure contouring. Clean closing the Gypsum Storage Pond is projected to provide a lower total cost method of closure of Trimble County Station’s CCR impoundments by eliminating the need to transport fill to the Gypsum Storage Pond for contouring while also reducing the cost of transporting fill for the closure of the adjacent Bottom Ash Pond. The remaining procurement activities are associated with supporting the development of the remaining Request For Quotation (“RFQ”) packages for the closure scopes for Trimble County’s Bottom Ash and Gypsum Storage ponds, the Ghent Phase III of Ash Treatment Basin (“ATB”) #2, and Mill Creek’s Main Ash Pond.

CCR Impoundment Closures

- Ghent – CCR impoundment closure work remains focused on Tetra Tech’s work on the Ghent Phase I scope, which consist of hauling gypsum from the north side of the gypsum stack to the south side of the gypsum stack and to ATB #2, constructing a cooling channel in ATB #1, and construction of the North Cooling Pond. Tetra Tech continues to work towards the contracted completion date. The Companies issued the RFQ for the revised Phase II scope (construction of the South Cooling Pond and closure of ATB #1) during the second quarter. Bids were received on July 6, 2018. As reported last quarter, closure of ATB #2 will now be bid separately as a Phase III scope.
- E.W. Brown – bids for construction of a new Process Water Pond, closure of the Auxiliary Pond, construction of Phase II of the existing landfill and the closure of the non-capped areas of the Main Ash Pond were received in April 2018. The work was awarded to Thalle Construction Company (“Thalle”) after receiving the Commission’s approval order on July 9, 2018. Thalle is also the contractor performing the closure work at Tyrone and Pineville.
- Green River – CCR impoundments closure project is progressing to plan by Trans-Ash. Trans-Ash is nearing completion of the storm-water perimeter ditches. Trans Ash continues to dewater the CCR ponds, and regrade and haul CCR material within and between the CCR impoundment facilities. Trans-Ash has begun installing the liner cap in main ash pond.

- Mill Creek – South Ponds (i.e., Construction Runoff Pond, Clearwell Pond, and Dead Storage Pond) closure work continues according to plan by MAC Construction. MAC has completed the clean closure of the Construction Runoff Pond and is nearing completion on the installation of the liner system in the pond. MAC has begun dewatering the Clearwell Pond.
- Tyrone – Thalle continues to work on construction of a new storm-water runoff pond and is making good progress on placement of CCR fill material within the ash pond. Thalle will begin the closure work at Pineville after closure of Tyrone.

The CCR Impoundment Closure Program is on schedule to be completed on or before the CCR Rule regulatory deadlines.² To ensure the Companies' projects will comply with the EPA's CCR Rule requirements and to share best-practices and lessons-learned across all projects, the Companies continue to hold program-wide meetings with the OEs, internal project management teams, and all affected stations. These meetings provide an opportunity for all parties to deliver updates on their work and to ensure the OEs and contractors are providing similar deliverables and that lessons-learned are applied across the projects.

Process Water Systems

- Trimble County – AMEC has completed the foundations for the PWS building, equalization tanks, reaction tanks, pipe rack and clarifier tanks. AMEC has begun erecting the pipe rack and PWS building steel and is currently receiving, inspecting, and placing equipment such as the treated effluent clearwell tanks, filter presses, gravity filter tanks and reaction tanks. AMEC is nearing completion of the erection of the Wet Flue Gas Desulfurization ("WFGD") storage tank.
- Mill Creek – AMEC continues to work on engineering activities, procurement of major equipment, underground utilities, constructing building foundations, construction of tanks and the PWS building. AMEC completed the installation and successfully commissioning the dry bottom ash conveyance system on Mill Creek Unit 2 as planned during the scheduled outage. MAC has completed the earthwork and partial lining of the new knockout pond. The Knockout Pond is a small pond that allows heavy solids to fall out prior to reaching the process water pond,

² The EPA Administrator is expected to reconsider the provisions of the final rule addressed in pending petitions requesting the EPA to initiate rulemaking to reconsider certain provisions of final CCR Rule. EPA is expected to publish the first phase of revised CCR regulations during the 3rd Quarter of 2018, followed by additional revisions towards the end of 2018. The final CCR Rule is also subject to a legal challenge in the District of Columbia Circuit (DC Circuit No. 15-1219). The Companies will continue to track EPA's actions and the litigation, provide updates to the Commission through future reports and, if appropriate, adjust their construction schedules and activities.

- Ghent – Burns & McDonnell (“B&McD”) continues to work on engineering activities, procurement of major equipment, underground utilities, setting of building structure steel, installation of aboveground piping, construction of tank and building foundations, construction of tanks, and receipt of material.
- E.W. Brown – the PWS scope was awarded to Bowen Engineering in June 2018. Bowen Engineering is performing a significant portion of the Ghent PWS construction as a subcontractor to B&McD.

Suez, the water treatment technology supplier for the Ghent, Mill Creek, and Trimble County PWS projects, continues their engineering, procurement activities, and deliveries in concert with both AMEC and B&McD. To ensure the Companies’ PWS projects share best-practices and lessons-learned across all projects, the Companies continue to hold program-wide meetings with the OEs, internal project management teams, and all affected stations. These meetings provide an opportunity for all parties to deliver updates on their work and to ensure the OEs and contractors are providing similar deliverables and that lessons-learned are applied across the projects.

Schedules

Process Water Systems

<u>Project</u>	<u>Project #</u>	<u>EPC Status</u> ³	<u>Planned In-Service Date</u> ⁴
E.W. Brown Process Water System	KU Project 42	Awarded June 14, 2018	December 2019
Ghent Process Water System	KU Project 40	Awarded August 1, 2017	August 2019
Mill Creek Process Water System	LG&E Project 29	Awarded July 19, 2017	April 2019
Trimble County Process Water System	KU Project 41, LG&E Project 30	Awarded July 7, 2017	May 2019

CCR Rule and State CCR Impoundment Closures

<u>Project</u>	<u>Project #</u>	<u>EPC Status</u> ³	<u>Planned Construction Completion</u> ³
E.W. Brown Aux Pond	KU Project 42	Awarded July 9, 2018	December 2020
E.W. Brown Main Ash Pond (Deleted Phase III of Landfill)	KU Project 36	Awarded July 9, 2018	December 2019
Ghent ATB #1	KU Project 40	Issued Amended RFQ 2Q 2018	December 2021
Ghent ATB #2	KU Project 40	Issue RFQ 4Q 2018	December 2023
Ghent Gypsum Stack	KU Project 40	Awarded June 9, 2017	December 2020
Green River Main Pond	KU Project 39	Awarded July 28, 2017	2Q 2019
Green River ATB #2	KU Project 39	Awarded July 28, 2017	2Q 2019
Green River SO2 Pond	KU Project 39	Awarded July 28, 2017	2Q 2019
Mill Creek Ash Pond	LG&E Project 29	Issue RFQ in 3Q 2018	December 2021
Mill Creek Clearwell Pond	LG&E Project 29	Awarded December 27, 2017	December 2018
Mill Creek Construction Runoff Pond	LG&E Project 29	Awarded December 27, 2017	Clean Closed 2Q, 2018, construction completion 3Q, 2018
Mill Creek Emergency Pond	LG&E Project 29	Construction Completed	Completed
Mill Creek Dead Storage Pond	LG&E Project 29	Awarded December 27, 2017	2Q 2019
Pineville Ash Pond	KU Project 39	Awarded December 7, 2017	2Q 2019
Trimble County Bottom Ash Pond	KU Project 41, LG&E Project 30	Issue RFQ 4Q 2018	December 2023
Trimble County Gypsum Storage Pond	KU Project 41, LG&E Project 30	Issue RFQ 4Q 2018	December 2023
Tyrone Ash Pond	KU Project 39	Awarded December 7, 2017	2Q 2019

³ The red font signifies actuals.

⁴ The Planned In-Service Dates have been updated to reflect the executed EPCs.

E.W. Brown Landfill Phase II

The Companies' amended 2016 ECR Plan (e.g., modified Phase II of landfill, the elimination of the need for a future Phase III of the landfill, and the need to cap and close the remaining portion of the Main Ash Pond not covered by Phase I or Phase II) was approved by the Commission on July 9, 2018. These landfill modifications were captured in a minor modification permit application which was submitted to the Kentucky Division of Waste Management ("KYDWM") on March 21, 2018. As part of the normal permitting process, the Companies have attended several meetings with KYDWM to discuss the permit application. As noted above, the construction of Phase II and closure of the remaining non-capped areas of the Main Ash Pond was awarded to Thalle on July 9, 2018 as part of a site wide contract which also includes the closure of the Auxiliary Pond and construction of the new PWS pond.

Quarterly Status Update:

State Division of Waste Closure Projects:

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

Green River: KU continues to hold weekly and monthly update meetings to review the current status of the project. The impoundment closure work continues to progress to plan by Trans-Ash. Trans-Ash is progressing well with the construction of the new storm-water ponds, installation of perimeter ditches, dewatering of the CCR ponds, regrading/hauling of CCR material within and between the CCR impoundment facilities and installation of the cap liner system. Associated Engineers, Inc. continues to work with KU to perform Construction Quality Assurance ("CQA") services and AMEC continues to provide OE services on the Green River project.



Green River CCR Impoundments – Site View

Pineville: KU is holding weekly and monthly update meetings to review the current status of the project. AMEC started development of the KYDWM permit application, however based on discussions with KYDWM, a permit under the current regulations is not required for the facility. Closure work at Pineville will follow the completion of work at Tyrone Station. KU has contracted with AMEC to provide CQA and OE services on the Pineville project.

Tyrone: KU is holding weekly and monthly update meetings to review the current status of the project. Based on discussions with KYDWM, a permit under the current regulations is not required for the facility. The Impoundment Closure project is progressing to plan as Thalle continues to work on construction of a new storm-water pond and placement of CCR fill material within the ash pond. AMEC continues to provide CQA and OE services on the Tyrone project.



Tyrone Ash Pond

Federal CCR Rule Closure Projects:

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

KU is holding weekly and monthly update meetings to review the current status of the project. To date, Tetra Tech has deployed the erosion and sediment control facilities, constructed a haul road, continues hauling gypsum from the Gypsum Stack to ATB #2 and to the south gypsum stack, continues to receive construction materials and continues construction of the Cooling Channel inside ATB #1. AMEC continues to perform CQA services and AECOM is providing OE services for KU. The revised Phase II scope bids were received on July 6, 2018 and are under review.



Ghent Gypsum Stack – Looking South



Ghent ATB #1 Cooling Channel – Looking West

B&McD continues to progress the Ghent PWS scope to plan. B&McD continues to work on engineering activities, procurement of major equipment, underground utilities, the setting of structural steel, installation of aboveground piping, construction of tank and building foundations, and construction of tanks. B&McD is nearing completion of their engineering and procurement activities. Black & Veatch (“B&V”) continues to provide OE services on the Ghent PWS project.



Ghent PWS Facility – Site View

KU Project 41 and LG&E Project 30⁵ – Trimble County (TC) Station CCR Rule Compliance Construction and New Process Water Systems

The Companies are holding weekly and monthly update meetings to review the current status of the project. The issuance of the RFQ package for the closure of the Bottom Ash Pond and Gypsum Storage Pond has been deferred to the fourth quarter of 2018 to allow time to complete the design of the Gypsum Storage Pond clean closure option. Based on an initial review, clean closure of the Gypsum Storage pond would result in a cost reduction to Project 41 as well as an increase the amount of CCR available for beneficial use. To date, onsite activities have been limited to site visits by the OE, geotechnical explorations, and installation of groundwater monitoring wells. The Companies are performing additional process water chemistry sampling and testing to support analyses on various dewatering options for the Bottom Ash Pond. AMEC continues to provide CQA and OE services on the Trimble County project.

⁵ KU and LG&E’s net costs are split 48%:52% respectively.

AMEC is progressing well with engineering, procurement and construction activities on the PWS scope and is meeting regularly with Suez and the Companies on PWS detailed design and integration into the existing station facilities. AMEC has completed installation of the final ring of the WFGD maintenance storage tank and is currently working on underground utilities, building foundations, and equalization tank fabrication. The filter presses have been received and set in place. B&V continues to provide OE services on the TC PWS project.



Trimble County PWS Facility – Site View

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

The award of the PWS EPC was executed on June 14, 2018 with Bowen Engineering. To date, onsite activities have been limited to site visits by the OE, geotechnical explorations, process water testing and installation of groundwater monitoring wells. KU has contracted with AMEC to provide CQA and OE services on the Brown project.



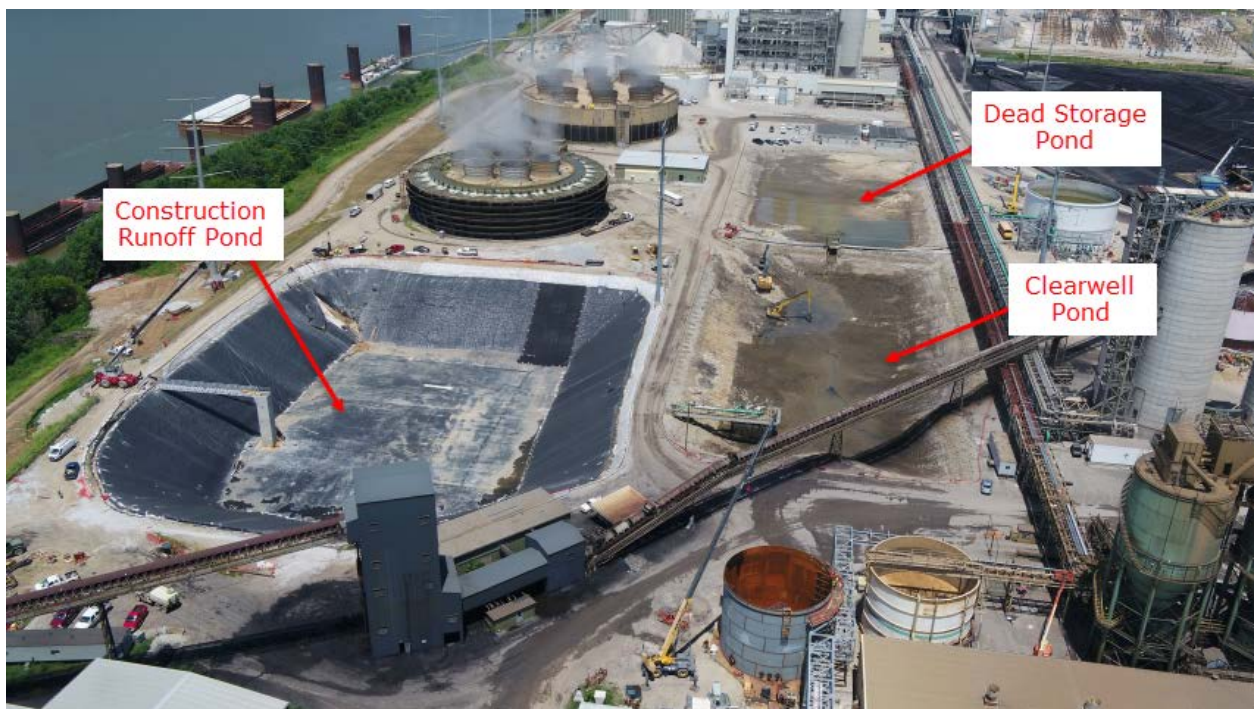
E.W. Brown Aux Pond – Pre-Construction



E.W. Brown Landfill Phase II and Closure – Pre-Construction

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

LG&E is holding weekly and monthly update meetings to review the current status of the project. MAC Construction has completed the removal of CCR from the Construction Runoff Pond and is nearing completion of installing the liner system. MAC also has completed the earthwork associated with the construction of the Knockout Pond and has begun installing the liner system. MAC has also begun dewatering the Clearwell Pond. AMEC continues to perform CQA services and AECOM continues to provide OE services on the Mill Creek closure projects.



Mill Creek South Ponds

AMEC is progressing well with engineering, and procurement and construction activities on the PWS scope and is meeting regularly with Suez and the Companies on PWS detailed design and integration into the existing station facilities. Construction is progressing to plan with substantial progress made on the take erections. Foundation construction of the PWS is nearing completion. The filter presses have been delivered and set in place. B&V continues to provide OE services on the MC PWS project.



Mill Creek PWS Facility – Site View



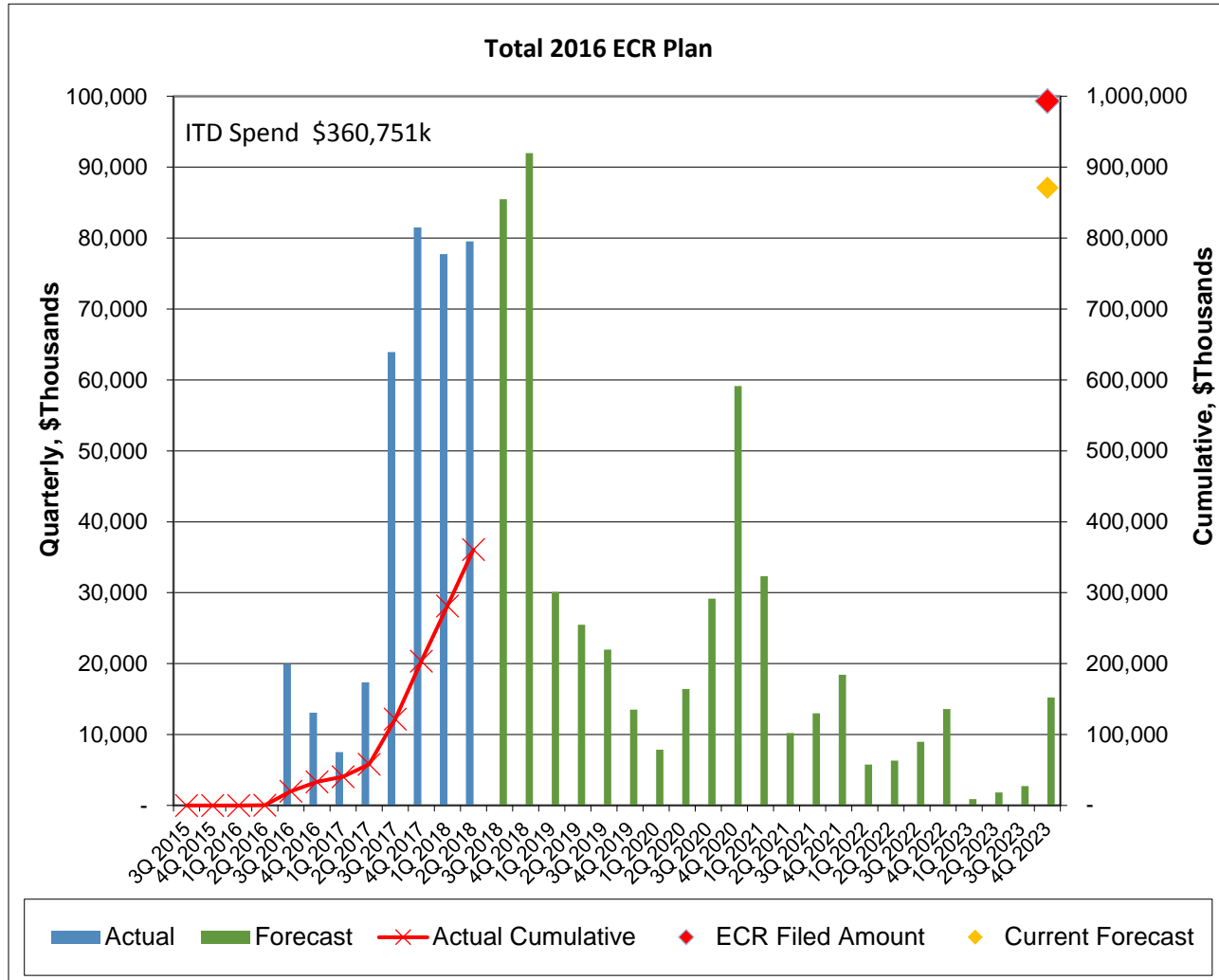
Mill Creek Construction Runoff Pond



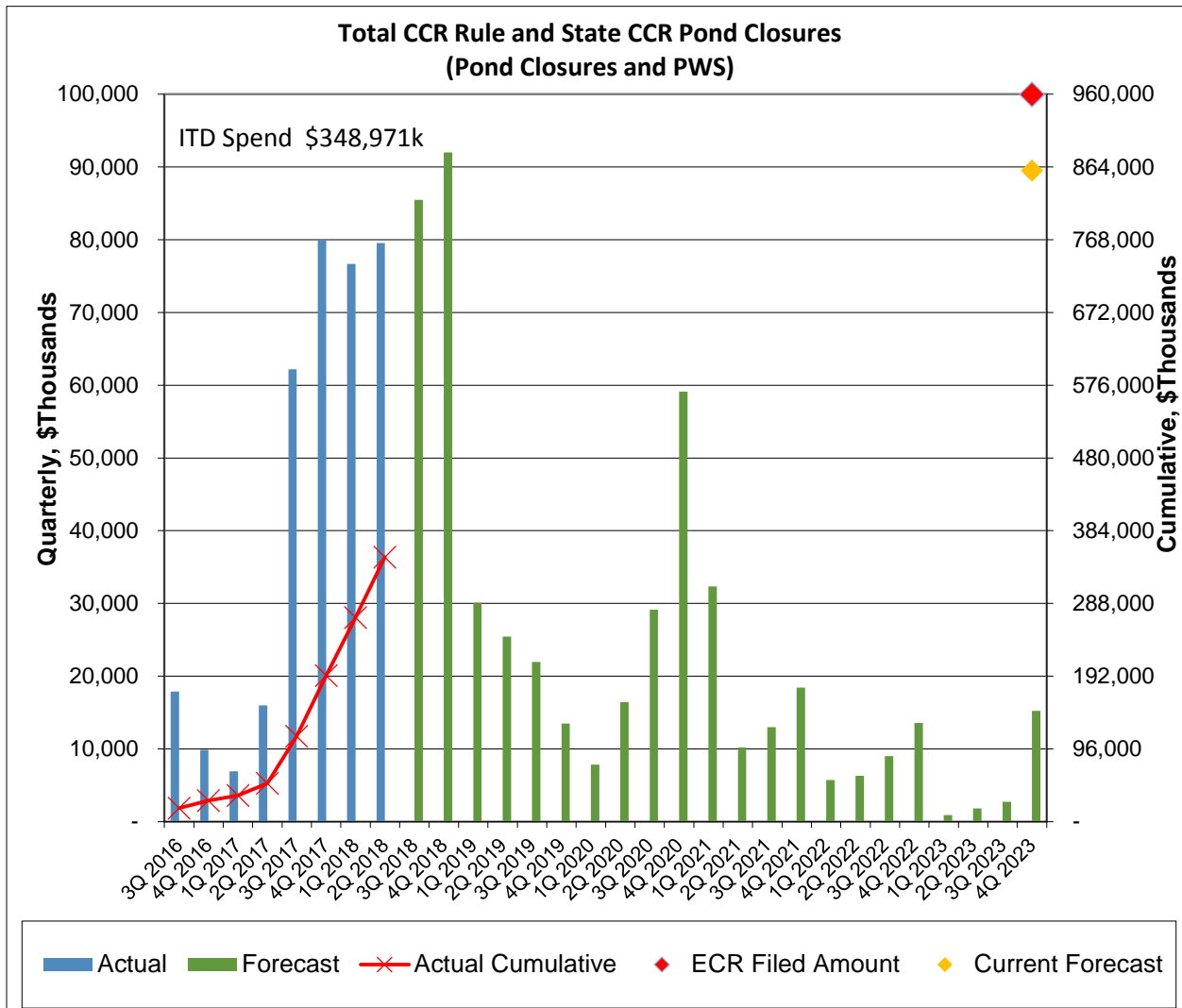
Mill Creek Knock-Out Pond

Financials:

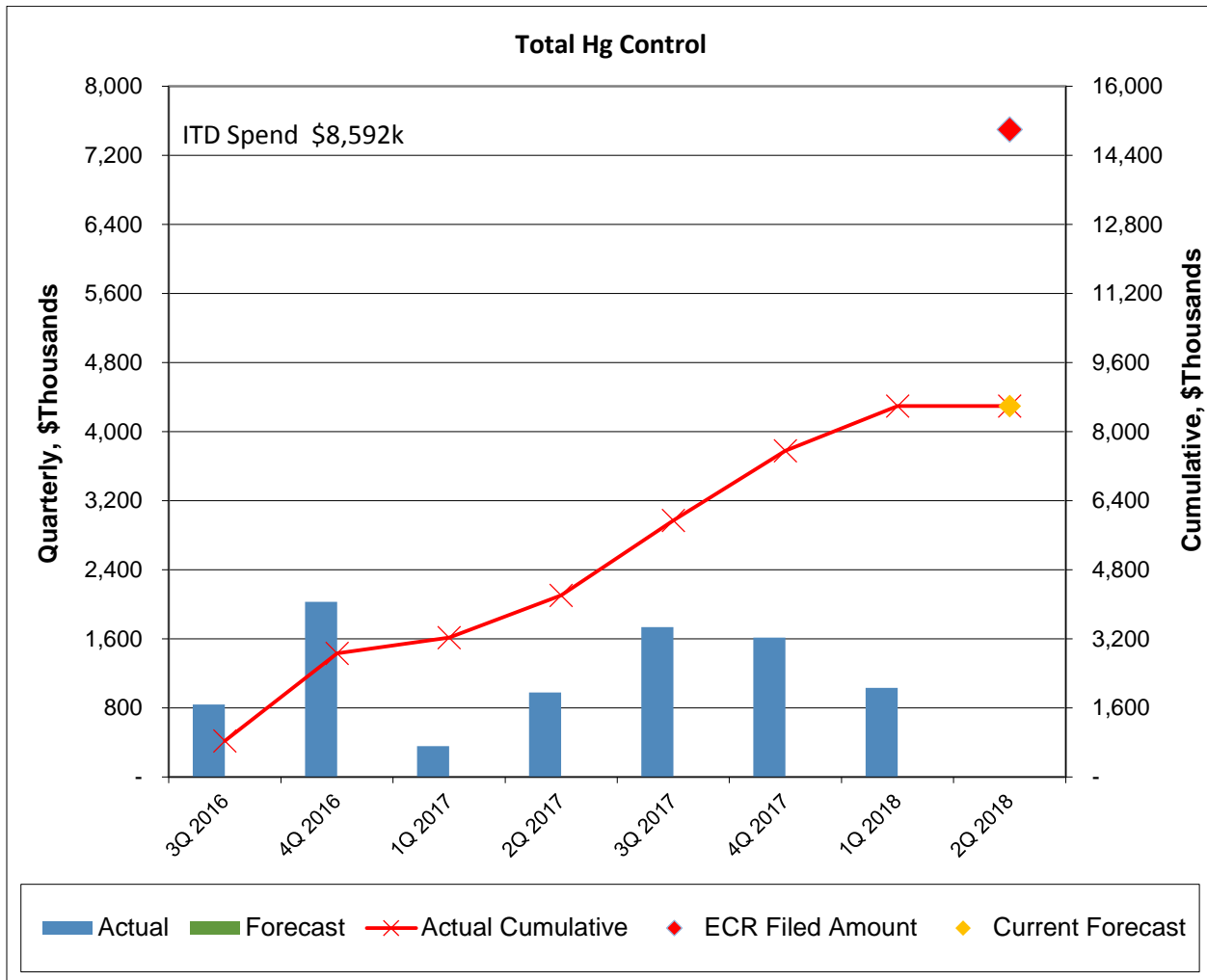
The total 2016 ECR Plan forecasted cost remains \$871.2 million (net) as reported last, compared to the filed estimate of \$993.6 million. Total spend through June 30, 2018 has increased from \$279.8 million (net) last quarter to \$360.8 million (net). For the graph below: 1) the chart includes a symbol (◆) to show the current forecast to completion; and an (2) inception-to-date (ITD) Spend shown in the upper left of the chart.



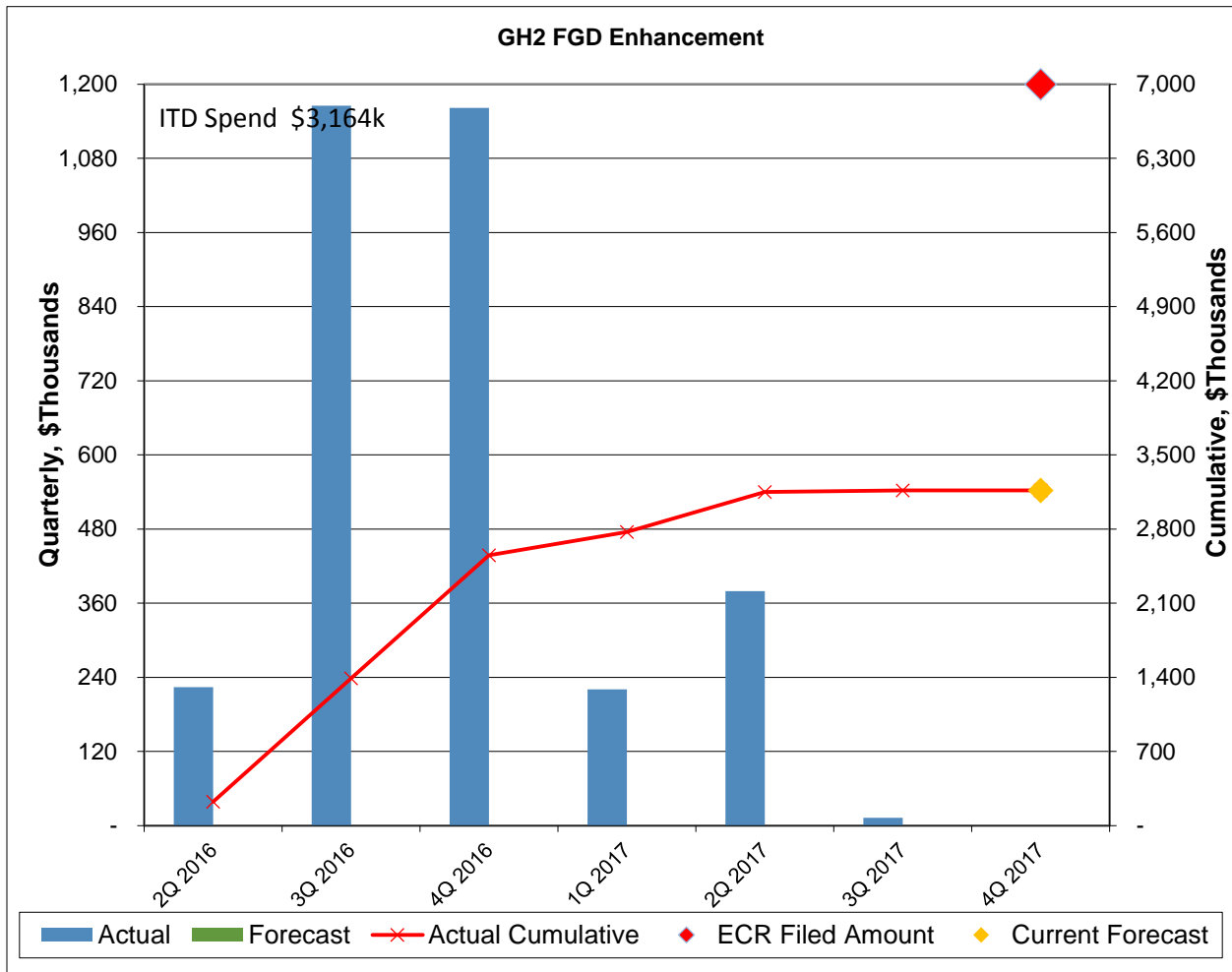
No change in CCR Impoundment Closure total forecasted cost occurred during this reporting period. Total spend through June 30, 2018 has increased from \$268.1 million (net) last quarter to \$348.9 million (net). Note for the graph below: (1) the chart includes a symbol (◆) to show the current forecast to completion; and (2) ITD Spend is shown in the upper left of the chart.



The Mercury Injection projects have been completed and commissioned. The projects' total forecasted cost has increased from \$8.6 million to \$8.7 million (net) in this reporting period compared to the filed estimate of \$15.0 million. Given the projects are in service, only minor expenses remain associated with paying remaining invoices and miscellaneous close out items of the projects. 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 Ghent Unit 2 WFGD Enhancement project has been completed. No change in the total forecasted cost occurred during this reporting period. Total spend on the project was \$3.16 million compared to the filed estimate of \$7.0 million. 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 chart and financials for the E.W. Brown Landfill Phase II and Phase III Closure will be included in the next report since the amended 2016 ECR filing that was approved by the Commission on July 9, 2018 in Case No. 2017-00483.

Planned Activities for Next Quarter:

State Division of Waste Closure Projects

Closure work on the Green River CCR impoundments will continue as planned. Thalle will also continue advancing the closure of the CCR impoundment at the Tyrone Station as planned.

Federal CCR Rule Closure Projects

CCR Closures:

Tetra Tech will continue with Phase I closure activities at Ghent, as well as continue engineering and execution activities associated with the recovery efforts. The contract for the revised Ghent Phase II scope is planned to be awarded in August of 2018. At Mill Creek, MAC will continue closure activities on the Construction Runoff pond and Clearwell Pond, and will continue to progress the construction of the Knockout Pond. The E.W. Brown CCR impoundment closure scope will be awarded this month of July 2018 to Thalle, which will mobilize to the site during next quarter.

PWS:

AMEC will continue engineering, procurement, and construction activities on the Mill Creek and Trimble County PWS projects. B&McD will continue progressing their engineering, procurement and construction efforts on the Ghent PWS project. Both AMEC and B&McD, along with the Companies and the Companies' OE, will continue reviewing engineering designs, procurement activities, and the design and fabrication of Suez (the treatment technology supplier) at all three stations (Ghent, Mill Creek, and Trimble County). The contract to construct the Trimble County PWS ponds will be awarded.

E.W. Brown Landfill Phase II

In connection with receiving approval from the Commission of the Companies' amended 2016 ECR filing relative to E.W. Brown's landfill phase II and closure of the originally designed Phase III area, KU will award the Landfill Phase II and closure scope this month of July 2018 to Thalle. The minor modification permit application will continue to be reviewed by KYDWM.