



TELEPHONE CALL RECORD Outgoing Call	Project No.: 0317.04.029.301	
	Project Name: Steam Electric Rulemaking	
	Date: 02/14/2017	Time: 3:00 pm EST
Company Name: Liberty Hydro	Contact Name: Phil Farina Phone No.: 419-346-8848	
Name: Elizabeth Gentile	Eastern Research Group, Inc. (ERG)	
GENERAL SUBJECT: ZVI Blue™ – Reactive Media Technology		

TOPICS DISCUSSED AND ACTION TAKEN

Elizabeth Gentile, ERG, contacted Phil Farina, Liberty Hydro, on Tuesday, February 14, to discuss Liberty Hydro's ZVI Blue™ system, a zero-valent iron (ZVI) reactive media for the removal of heavy metals, including mercury. Ms. Gentile explained that the wastestream of interest was the distillate stream from a gasification wastewater treatment system with a flow rate of approximately 350-400 gallons per minute (gpm).

Mr. Farina explained that the media and required equipment (e.g., pressure vessels to house the media, pumps) for the flow described would be approximately \$1.5 million. Mr. Farina estimated that total capital costs for the system (including pilot testing, equipment, installation) would be approximately \$5 million dollars. Mr. Farina also stated that the operating and maintenance costs would be approximately \$1.7 - 2 million, which would cover replacing the media, hydrochloric acid for pH adjustment, media disposal, and operation and maintenance labor.

Mr. Farina explained that the typical steps for developing a more accurate cost estimate include determining if the system is feasible at the site, testing the wastestreams in the lab to calculate the correct residence time, pilot testing a 10-20 gpm slip stream on site, and making final adjustments for the design and installation of the full-scale system.