UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

November 2, 2017

Naren M. Prasad, P.E., MPH
Integrys Business Support, LLC
200 East Randolph Street, 24th Floor
Chicago, Illinois 60601

Re: GSI Decision Matrix

Dear Mr. Prasad:

The United States Environmental Protection Agency (EPA) is submitting a Groundwater to Surface Water Interface (GSI) decision matrix for use at various manufactured gas plant (MGP) sites along the Chicago River. This decision matrix was put together with input from your office and the Illinois EPA. While the GSI decision matrix can now be used at the MGP sites currently being worked on along the Chicago River, EPA acknowledges that there may be opportunities to improve the document, in response to new technology and/or future agency guidance on the subject. This is similar strategy we've used on the multisite documents such as the RAF. As WEC moves ahead with its investigation of the various MGP sites, please apply the GSI decision matrix in assessing this potential exposure pathway.

Your cooperation on this matter is appreciated. If you have any questions or request a meeting to discuss the matter, you can reach me (312) 886-6195.

Sincerely,

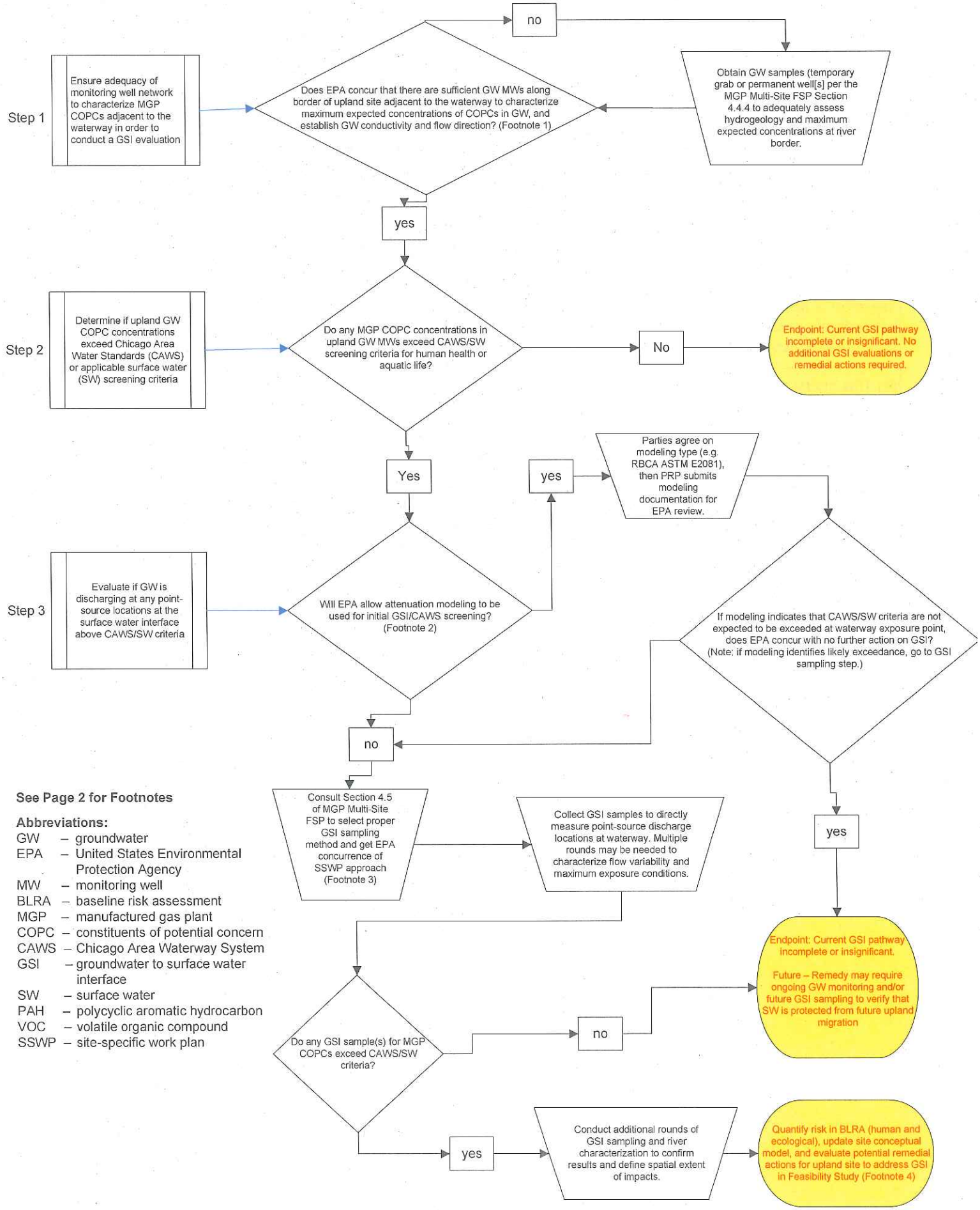
Ross del Rosario
Remedial Project Manager

Enclosures

CC: Paul Lake (IEPA)
Dave Klatt, CH2M

Enclosure

Decision Matrix for Evaluating the Groundwater to Surface Water Interface (GSI) Pathway at MGP Upland Sites (November 2017)



See Page 2 for Footnotes

Abbreviations:

- GW – groundwater
- EPA – United States Environmental Protection Agency
- MW – monitoring well
- BLRA – baseline risk assessment
- MGP – manufactured gas plant
- COPC – constituents of potential concern
- CAWS – Chicago Area Waterway System
- GSI – groundwater to surface water interface
- SW – surface water
- PAH – polycyclic aromatic hydrocarbon
- VOC – volatile organic compound
- SSWP – site-specific work plan

Footnotes:

(1) This step is to further evaluate if the MW network at the river border is sufficient to evaluate the location(s) where the highest potential COPC concentrations would be expected to reach the river (considering sheetpile walls, past removals, and other factors). EPA concurrence of sampling approach must be obtained.

(2) EPA will evaluate the MGP upland site circumstances and determine if attenuation modeling may be initially used to evaluate the GSI pathway. High concentration MGP COPC concentrations in GW exceeding CAWs/SW criteria within 100 feet of the river will generally preclude modeling and require GSI sampling under Step 3B. However, COPC concentrations slightly exceeding CAWS criteria at greater than 100 feet from the river may be appropriate for modeling to initially screen this GSI pathway.

(3) Sampling approach to be detailed in a SSWP for EPA approval, and should consider documenting whether the river is a gaining or losing stream, as well as to consider type of COPCs being evaluated (VOCs, PAHs, Metals) and potential background concentrations/depths. If shallow impacted GW is potentially entering the river above the elevation of bottom sediment (i.e. from the sidewall through a sheet-pile wall gap), include a sampling approach that will evaluate seep locations at the point of likely discharge rather than sediment pore water. EPA preference is for reproducible monitoring locations, if possible.

(4) This matrix is primarily intended to evaluate the upland portion of MGP sites to determine if there are documented organic MGP COPCs in groundwater that are migrating into surface water bodies above potential concentrations of concern. The matrix will allow the upland MGP sites to consider GSI and proceed toward a closure remedy, while potentially affected river segments may be evaluated as a separate operable unit or separate remedy component. MGP residuals (i.e. NAPL) identified in river sediments require a separate evaluation of the nature, depth, and mobility of MGP COPCs relative to identified background concentrations of similar COPCs, aquatic and human health receptors, and other factors. Since inorganic constituents such as iron, manganese, or lead would tend to precipitate out of solution when they move from GW into SW, it is suggested that CAWS screening exceedances for inorganics in upland wells should be a trigger for evaluation of these metals in nearby sediment rather than pore water or seep sampling of water discharge points for inorganics. This would effectively transfer the evaluation of inorganics in GW to the river sediment investigation and risk assessment process.