Memorandum

To:        Dania Zinner, EPA RPM, VB/I70 Superfund Site  
From:      Timothy C. Shangraw  
Date:      September 30, 2015  
Re:        POLREP #3 - Vasquez Boulevard/Interstate 70 (VB/I70) Superfund Site, Operable Unit 2, Removal Action

On behalf of the City and County of Denver (Respondent), Engineering Management Support, Inc. is submitting this Pollution Report (POLREP #3) in accordance with Section 4.c of Appendix C to the Administrative Settlement Agreement and Order on Consent for Removal Action, for the subject Superfund Site (the Site). This report follows the outline detailed in Section 4.c of Appendix C, and contains pertinent new information specified in the Superfund Removal Procedures, Removal Response Reporting: POLREP and OSC Reports (EPA, 1994).

Section 1 – Heading

The date, site name, report author, report recipient, and report number are presented above.

Section II – Response Information

The reporting period extended from September 1 to September 30, 2015. During the reporting period a Data Summary Report was prepared submitted to EPA and CDPHE (September 18, 2015) and work continued on the final Materials Management Plan (MMP) and draft Design Report. In support of the final MMP, Respondent applied for a discharge permit for Remediation Activities Discharging to Surface Water (COG 315000) to the CDPHE Water Quality Control Division (WQCD). The permit application was submitted on August 31st and additional information was submitted during the reporting period in response to requests from the WQCD. Also in support of the MMP, Respondent submitted waste profile applications to Waste Management of Colorado, Inc. for disposal of excavated Site wastes at the Denver-Arapahoe Disposal Site (DADS). Upon receipt of the discharge permit and waste profiles, the MMP will be finalized and submitted to EPA and CDPHE.

Design of the impermeable barrier system component of the stormwater drainage feature involved: 1) assessment of subsoil conditions beneath the proposed box culverts and open-channel segments of the drainage feature; 2) evaluation of alternative subsoil stabilization measures; 3) assessment of various barrier system configurations, materials, and construction techniques; 4) evaluation of dewatering requirements for “dry” construction of the barrier system; and 5) preliminary assessment of treatment processes for extracted groundwater. This work was conducted collaboratively with stakeholders from the Urban Drainage and Flood Control District, the North Denver Cornerstone Collaborative, Denver Parks, and Denver Public Works Department. The Respondent, together with these stakeholders, updated EPA and CDPHE on the status of the project in a meeting on September 8, 2015.
Section III – Issues, Resolutions, and Planned Activities

Subsoils beneath the stormwater drainage feature that passes through the Coliseum parking lot contain decomposing organic material. This material is comingled with soft, silty, clayey, saturated sand. Collectively, the material matrix has poor compressive strength that is unlikely to uniformly support the weight of the proposed drainage feature. Therefore, waste material beneath the drainage feature will need to be replaced with material having adequate compressive strength, or stabilized in a manner that produces adequate compressive strength. The Respondent’s and stakeholders’ design teams prefer in-place stabilization techniques over removal and replacement. Viable stabilization techniques consist of vibro-piers and compaction grouting, as referenced below.

**Vibro-Piers:**
http://www.haywardbaker.com/WhatWeDo/Techniques/GroundImprovement/VibroPiers/default.aspx

**Compaction Grouting:**

Potential impacts to the environmental components of the drainage feature consist of:

- Long-term affects on groundwater movement beneath the drainage feature with the vibro-piers and/or grout columns installed;
- Differential settlement between vibro-piers (or grout columns) and how to accommodate it with geosynthetic materials;
- Construction dewatering during and following pier/column installation; and
- Scheduling and cost.

Activities planned for the next reporting period consist of:

- Preparing the final Materials Management Plan (anticipate submittal 1 week following receipt of the discharge permit);
- Preparing the Draft Design Report (anticipate submittal in mid-October);
- Evaluating dewatering scenarios and pumping rates (throughout October);
- Conducting water treatability studies, as appropriate (throughout October); and
- Responding to EPA comments on the draft Quality Management Plan (throughout October).

Please call Lisa Farrell (720.865.5439) or me (303.940.3426 x9) if you have any questions.