

**Check List for EC/IC Long Term Assessment
For
W.R. Grace- Conn., Columbia, Maryland
RCRA ID# MDD 074933961**

A. Pre-Site Visit Checklist for Site Project Manager—In-office review of:

1. ECs/ICs documents: EPA issued the Final Remedy on September 14, 2006. The Final Remedy was implemented through a permit modification to the corrective action permit issued on June 10, 1992. The permit modification was issued on November 6, 2007 and became effective on November 30, 2007.

The 2007 permit requires the continual operation of the groundwater recovery and treatment system at the main site until EPA determines that an alternative remedy is necessary and the remediation of groundwater at the Former Landfill Area using monitored natural attenuation (MNA) until the groundwater Cleanup Standards are achieved. A title notice has also been filed which gives notice of the prohibition for the development of onsite wells for drinking water or other domestic use at the Facility. Financial assurance was received in September 2008 by an irrevocable trust and letter of credit.

The most recent 5- year remediation system evaluation groundwater sampling report was received in January 2014. Review of the 5-year evaluation confirmed the effectiveness of the groundwater recovery and treatment system and that groundwater contaminants were asymptotically approaching the MCL.

2. Location maps: Check EPA Facility website and update as needed, check map links—do they still work; check aerial maps available on Google Earth showing previous year satellite maps to look for evidence of changes, disturbances to and around EC/IC areas; check paper copies of boundaries from reports. **Map attached illustrating the Facility Boundary including the IC and well locations.**

3. Local and State contact: (1) send letter to local/county gov't to ensure title notice has not been revoked or changed by Facility. **The Deed restriction is still in effect. I spoke to Pat Britt-Fendlay, of Planning and Zoning, Howard County and explained that EPA was reaching out to the County on behalf of the RCRA Corrective Action Program regarding remedies that have been taken to clean up the WR Grace Site and advised her of a deed of restriction regarding ground water. She communicated the message to her manager, and the manager of the Zoning Office, Cindy Hamilton who is currently overseeing the Zoning Board Case ZB-1104 concerning current activity at the Grace property.**

4. Facility Contact: **Joel Hennessy, Luis Pizarro, and Erich Weissbart (all from EPA R3), James Miles (EPA HQ) visited the site on April 17, 2014 and accompanied Paul Bucens from Grace and James Wang, Grace's Environmental Consultant.**

B. Facility visit:

1. Facility in-office review: (a) compare EC/IC maps for accuracy/consistency; (b) discuss any EC/IC and/or remediation units regarding updates or info. not conveyed in reports to EPA, any plans

for land use, construction or sale of restricted use land; (b) discuss how restricted areas and restrictions are communicated to staff, contractors, upper management, local planners/govt as applicable; (c) discuss any issues identified under A., above; (d) discuss any recommendations with Facility, if they arise.

Region 3 conducted the inspection as part of its RCRA corrective action long-term stewardship inspection pilot effort, and used GPS with a geospatial PDF map of the facility to verify well locations and boundaries of institutional control areas. In addition Paul Bucens shared a proposed residential development plan that will purchase a portion of the Grace Facility. The developers have been notified of the groundwater use restriction and previous RCRA investigations. The developers contracted for their own Phase 2 Environmental Site Assessment of the property to be purchased from Grace and were satisfied that no environmental issues were discovered. The developers shared the data with Mr. Bucens who was also satisfied that no environmental contamination was reported. EPA has not seen the data but had previously cleared Facility soils for unrestricted use as concluded by RCRA RFI characterization.

2. View EC/IC and on-going remediation areas including photo documentation, if applicable. Note activities on and around EC/IC/remedy areas. Note any remedy difficulties, like equipment malfunctions, timely responses and notifications to EPA.

An inspection was conducted focusing on the building containing the groundwater treatment system and the Facility beyond the Campus area including the furthest extent of the IC boundary and a number of monitoring well locations.

C. Document the Review in Memo/Report to Files: Document what was reviewed, photos, findings and recommendations. Once approved by management, send Report to Facility and upload to EPA Facility website and update RCRA Info with applicable code(s).

The 5-year remediation report was reviewed. The Facility was inspected. Photos attached.

D. IC/EC Generic Review and Inspection Questions:

- Have the ICs specified in the CA remedy been fully implemented in accordance with any applicable schedule? **The groundwater use restriction has been fully implemented in accordance with the RCRA Corrective Action Permit (Permit) and documented with Howard County through a Deed Restriction.**
- Do the ICs provide control for the entire extent of contamination (entire site or a specific portion)? **The IC provides control for an area currently greater than the extent of groundwater contamination.**
- Are the ICs eliminating or reducing exposure of all potential receptors to known contamination? **There is no exposure to contaminated groundwater and the IC provides another layer of protection.**

- Are the ICs sufficiently meeting the risk goals and applicable standards specified in the CA remedy? **In conjunction with Facility security that includes an 8-foot fence and controlled access, the IC aids in controlling exposure to groundwater.**
- Are the ICs effective and reliable for the activities (current and future) at the property to which the controls are applied? **The IC contributes to a groundwater use restriction along with Facility security, the CA Permit, and the industrial use.**
- Are the ICs suitable for the period/length of time which the controls are intended to be used as specified in the CA remedy? **The IC is effective as a control so long as the Facility exists and maintains a CA Permit requiring the groundwater use restriction and the cleanup of groundwater to MCLs.**
- Are the ICs being maintained as required by the CA remedy in order to ensure that the controls remain effective? **Yes (see above).**
- Are additional ICs necessary to achieve the intended goals of the CA remedy? **No.**
- Are modifications to the ICs needed? **Not at this time.**

Types of ECs utilized at RCRA CA facilities

~~Caps & Liners—soil, asphalt, clay, bentonite, synthetic membrane~~

Groundwater control – flow and plume containment

Groundwater/Soil treatment – P&T, ISCO, SVE, ERH, biological, etc.

~~Barriers—slurry wall, cutoff trench, sheet pilings, membrane~~

Security – fence, gate

~~Immobilization—Stabilization, Solidification, Encapsulation~~

EC Review and Inspection Questions:

- Have the ECs specified in the CA remedy been fully implemented and constructed in accordance with any applicable plans and schedule? **Yes.**
- Are the ECs fully intact? Any damage visible? Have any repairs been necessary? **Maintenance of the P&T is ongoing. Recently the activated carbon container was replaced.**
- Do the ECs provide control for the entire extent of contamination (lateral and vertical)? **The SVE was effectively implemented over 17 years ago for source control; the P&T has been effectively operated since to the extent that the plume of contamination has been under hydraulic control.**
- Are the ECs effective at reducing contaminant migration? Is data available to provide supporting evidence? **A 5-year data summary report demonstrates that the SVE and**

P&T have effectively mitigated groundwater contamination to the point where contaminants are asymptotically approaching MCLs.

- Are the ECs eliminating or mitigating exposures to all potential receptors? **Yes. The groundwater P&T has prevented groundwater from discharging to the Middle Patuxent River, which borders the Facility.**
- Are the ECs sufficiently meeting the risk goals and applicable standards specified in the CA remedy? **Yes.**
- Are the ECs effective and reliable for the activities (current and future) and climatic conditions at the property to which the controls are applied? **ECs are no longer necessary. Groundwater is marginally above MCLs at depths and the risk to the Patuxent River has been mitigated.**
- Are the ECs reliable during the period/length of time which the controls are used to achieve and maintain applicable standards specified in the CA remedy? **The ECs were reliable and effective.**
- Are the ECs being monitored and maintained as required by the O&M plan or agreement developed in accordance with the CA remedy in order to ensure that the controls remain effective? **The P&T was monitored and maintained up until the date of the Facility inspection. Upon receipt of the written request to terminate the P&T, EPA responded with an approval.**
- Are additional ECs necessary to achieve the intended goals of the CA remedy? **No.**
- Are modifications to the ECs needed? **No.**