



Responsiveness Summary
Supplement
November 8, 2007

Allied Chemical and Ironton Coke Site
Operable Unit 3 (Tar Plant)
Ironton, Ohio

1. Capping contaminated soil under a solid waste cap is not sufficiently protective of human health and the environment.

The remediation goals for the Tar Plant include protecting people and nonhuman receptors from exposure to contaminated soils. The United States Environmental Protection Agency (U.S. EPA) and the Ohio Environmental Protection Agency (Ohio EPA) believe that the selected solid waste cap is protective of human health and the environment as it would create a physical barrier between these receptors and contaminated soils. Ohio's solid waste rules are very prescriptive and provide for a low permeability barrier through various configurations of compacted clay, FML (flexible membrane liner), and GCL (geosynthetic clay layer). The low-permeability features of an Ohio solid waste cap (3745-27-08) provide further protection at the Tar Plant by reducing/eliminating infiltration of precipitation into soils, thus preventing leaching of contaminants to groundwater. In addition, institutional controls will be implemented, and inspections will be conducted periodically to ensure the cap remains intact and that institutional controls are being enforced. Results of the inspections will be reported in the five-year review reports.

Soil cover at the river parcel will reduce the human health risks and the risks to aquatic organisms in the Ohio River adjacent to the Allied Chemical and Ironton Coke site over time. The selected remedies, in conjunction with the remedies for operable unit one (OU1, the Goldcamp Disposal Area) and operable unit two (OU2, the Coke Plant/Lagoon Area) will achieve the remedial action objectives set forth for the entire Allied Chemical and Ironton Coke site prescribed in all of the Records of Decision and supplemental Record of Decision Amendments. The selected remedies are protective of human health and the environment.

2. Soils at the Tar Plant are contaminated with listed hazardous wastes (including spills that occurred after RCRA), so the proposed remedy will not meet ARAR's.

During its 55 years of operation, the 27-acre Tar Plant contained 124 above-ground storage tanks and process tanks varying in size from several hundred to 750,000 gallons, and numerous ancillary buildings used for storage, maintenance operations, and a laboratory. In addition, there were numerous material transfer lines located throughout the plant. Based on historical records and plant personnel interviews conducted by Honeywell, miscellaneous leaks and releases occurred in process, material handling, and storage areas that may have

impacted surface soils (see page 21 through 24 of the Technical Letter Report, dated 22 October, 2003 for a list of Tar Plant Releases). The material transfer lines had leaked in the past and were therefore a suspected contaminant source. Due to the ubiquitous nature of these leaks and spills, it is impossible to distinguish soils that were contaminated with pure product from those contaminated with listed hazardous waste. Furthermore, the contaminated soils which are the subject of this response action do not themselves meet the definition of "waste" because they are not a "discarded material", 40 C.F.R. sec. 261.2. Even if the soils were a "waste" they would not be a hazardous waste because they are not listed as a hazardous waste, do not exhibit any of the characteristics of hazardous waste, and are not a mixture of a hazardous waste and a solid waste. Therefore, Ohio's hazardous waste and solid waste regulations are not "applicable" to the contaminated soils at this operable unit. We have determined that a number of the requirements of the Ohio solid waste regulations pertaining to landfills are both relevant and appropriate here, given the similarity of the type of materials and the risks to human health and the environment presented by the contaminated soils and wastes disposed of in solid waste landfills. The chosen remedy does meet ARARs.

3. This plan is not as protective as the plan to clean the New Boston Coke Plant (which has similar waste constituents and is being cleaned under state programs).

The New Boston Coke plant has not been subject to a Superfund remedial investigation and feasibility study (RI/FS) process as has the Allied Tar Plant in Ironton; there is no formal, sitewide cleanup plan for the New Boston Coke Plant. The remedy selected for the Tar Plant is protective of human health and the environment and is consistent with the National Contingency Plan.

4. Capping in-place reduces the potential for re-development of the site.

As stated on page 2 of the responsiveness summary, once the proposed cap is engineered and installed on the Tar Plant property, the site may be open for any type of commercial, industrial and recreational redevelopment. Placing a relatively level cap over the contaminated soils offers more opportunity for redevelopment than other alternatives that would create a more mounded cap or leave the site excavated and structurally unstable. Any proposed redevelopment will be reviewed by U.S. EPA and approved only if U.S. EPA is certain the integrity of the cap will be maintained.

5. Technologies are available and are feasible to remove the contaminants for permanent treatment or disposal off-site.

Prior to selecting the remedy, U.S. EPA, in consultation with Ohio EPA, conducted an analysis of all available technologies and alternatives including those that deal with excavation and off-site disposal. As stated in the ROD, based on the exposure criteria for organics, approximately 1.1 million cubic yards of contaminated soil would have required excavation. A large scale excavation of this area would be the most challenging of all alternatives, as it would require an

excavation to a depth of 40 feet on the main parcel and 20 feet on the river parcel. This alternative would require disposal off-site of approximately 114,000 truckloads of contaminated material over a four-year period. The magnitude of this large scale excavation would cost approximately \$135 million and would involve great logistical and administrative problems due to adverse impacts associated with increased truck traffic resulting in dust, noise and risk of accidents. This extensive excavation and offsite disposal would also result in the greatest amount of uncertainty to this remedial project as the excavation, transport and disposal costs could significantly increase. In addition, the site wide groundwater capture system would need to be shut down during the extended period of site excavation, allowing uncontrolled migration of contaminated groundwater. This alternative was evaluated in accordance with the nine criteria specified in the National Contingency Plan and compared against other alternatives. U.S. EPA, in consultation with Ohio EPA, performed this comparative analysis and selected the Ohio solid waste cap as the one which best met the balancing criteria.

6. Again, U.S. EPA appears to have taken the least expensive and least protective approach, to the detriment of the environment.

As required by the NCP, U.S. EPA, in consultation with Ohio EPA, conducted a detailed analysis of eight individual alternatives against each of the nine evaluation criteria (two threshold, five primary balancing, and two modifying criteria) and a comparative analysis focusing upon the relative performance of each alternative against those criteria. The solid waste cap alternative selected represents the best balance of overall protectiveness, compliance with ARARs, long-term effectiveness and permanence, costs, and other criteria, including state and community acceptance.

7. The chosen alternative at the adjacent GoldCamp Dump was a disaster to construct and, as with this remedy, does nothing to abate the DNAPL constituents in the groundwater.

In 1988, EPA issued a ROD for the Gold Camp Disposal Area (GDA) in order to isolate and contain the GDA as a future source of groundwater contamination. (OU1). Based on this ROD, a containment system was installed at the GDA, which included the construction of a slurry wall 2,000 feet in length and 90 feet deep all around the GDA and a cap over the GDA. Interior pumping wells were installed to maintain an inward hydraulic gradient and contain contamination inside the slurry wall; a network of seven wells located within the GDA containment wall which evaluates the GDA groundwater containment system. Similarly, a network of 25 wells outside the slurry wall both on and off the GDA site is monitored.

The chosen alternative at the GDA was difficult to implement but the remedy implemented is protective of human health and the environment as the threats have been addressed through the capping of the contaminated soil and maintaining inward hydraulic gradients within the GDA.

The second operable unit (OU2) comprehensively addressed site-wide groundwater contamination. Based on the second five-year review report, dated September 2004, all basic landfill components are in good condition and functioning as intended. The groundwater monitoring program continues to demonstrate the effectiveness of the slurry wall, confirms that the capture zone is generally controlled, confirms that site-wide groundwater is being contained on-site and that the DNAPL is being recovered and removed. Also, iron fouling of wells and a protracted capture zone was noticed in one sector due to lowering of pumping rates and higher than normal precipitation.

Additional focused investigations in the southeast and southwest portions of the site, which are not yet scheduled, will be used by U.S. EPA and Ohio EPA to evaluate and institute modifications to the groundwater remedy (e.g., targeted DNAPL recovery) in this area under the RODs for OUs 1 and 2. Honeywell is reviewing innovative technologies for Non-Aqueous Phase Substance (NAPS) remediation as they are required to do every two years. Honeywell is also working to get access from an adjacent property owner to install a new discharge pipeline, monitoring well and a new pumping well to replace an inactive pumping well. Since pumping operations began in late 1995, more than 870 million gallons of groundwater have been extracted from within the GDA and from all other areas of the site, including OU2 and the Tar Plant. Approximately 5,500 gallons of product has been removed through June 2007.

8. Groundwater is a special concern, being within the capture zone of the Coal Grove wellfield and immediately upstream from the City of Ironton's water intake.

Groundwater is being addressed under the remedy selected for OU2. With regard to the Coal Grove Well Field area, groundwater monitoring confirms that capture zone on the south of the site is generally controlled. However, some recent sample results have prompted additional focused investigations that are being conducted in accordance with the U.S. EPA and Ohio EPA approved Operations and Monitoring Plan. Honeywell is obtaining access to the adjacent property at the south end of the site to install additional monitoring and recovery wells to evaluate and institute any necessary modifications to the overall groundwater remedy being implemented under the OU2 remedy.