American Cyanamid

Bridgewater Township, Somerset County

Block: Various **Lot:** Various

Office of Community Relations (OCR): (609) 984-3081 | (800) 253-5647

SITE DESCRIPTION/RESOLUTION OF ENVIRONMENTAL CONCERNS

The site is located in the southeastern section of Bridgewater Township, Somerset County. The site is approximately 435 acres in size and is bounded by Main Street to the north, the Raritan River to the south, Interstate 287 and the Somerset Tire Service to the east and the Raritan River to the west. The site has been used for numerous chemical and pharmaceutical manufacturing operations for over 75 years. Manufacturing ceased at the site in June 1999 and demolition of the plant buildings was completed by November 2000.

Past manufacturing and disposal activities at the site had resulted in a number of areas used for waste storage and disposal as well as areas of soil and ground water contamination. The site is listed on the National Priorities List (NPL). Site cleanup activities are being addressed under a May 1988 (Amended May 1994) Administrative Consent Order (ACO) between American Cyanamid and the New Jersey Department of Environmental Protection (NJDEP). Wyeth Holding Corporation (WHC, formerly American Home Products Corporation) has assumed full responsibilities for remediation of the site. Requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Re-authorization Act (SARA) as well as the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments (HSWA) for corrective actions are included in the ACO and are being addressed for overall site cleanup. A HSWA permit and numerous Air Pollution Control permits have also been issued to the site.

SITE INVESTIGATION

A Remedial Investigation of the site-wide soils was completed in 1992. A Feasibility Study addressing the site-wide soils will be initiated after completion of the remediation of the 16 on-site impoundments. Site-wide ground water contamination will be addressed after completion of the remediation of site-wide soils. Potential contamination in surface water, sediment and associated wetlands related to the Cuckolds Brook and Raritan River is being independently (and simultaneously with this program) addressed under the Natural Resource Assessment investigation program. Depending upon the outcome of this investigation program, additional study and/or restoration work may be required.

Due to practical limitations, all 16 of the Superfund impoundments cannot be remediated concurrently. Therefore, they have been grouped into three impoundment groups according to waste type, nature of contaminants, and geographical location on the site. This concept allows this complex site to be subdivided into discrete, more manageable units. The impoundment groups are as follows:

Group I - Impoundments 11, 13, 19, and 24
Group II - Impoundments 15, 16, 17, and 18
Group III - Impoundments 1, 2, 3, 4, 5, 14, 20, and 26

In addition to the 16 Superfund Impoundments, there are 4 RCRA Lagoons (Lagoons 6, 7, 8 and 9A) which require closure.

Completed Programs

American Cyanamid Company has completed, or is conducting, several remedial programs at the site. Completed programs include: removal of pumpable tars from Impoundments 1, 2, 4, and 5 for off-site use as a supplemental fuel, closure of Impoundments 11, 18, 19, 26 and closure of Lagoon 6, 8 and 9A. Each of the ongoing programs is discussed briefly below.

On-going Programs

On-site Impound 8 Facility Program

This program involves closure and post-closure of four on-site impoundments (Lagoons 6, 7, 8, and 9A) and the construction of a waste consolidation facility (Impound 8 facility). These construction, closure, and post-closure activities are being conducted in accordance with the May 1994 ACO. Construction of Cell 1 of the state-of-the-art Impound 8 facility was completed in May 1991. The design includes a triple liner, leachate detection and collection system and ground water monitoring system. A cross section of the Impound 8 facility is provided. Sludge from old Lagoon 8 was removed, dewatered, solidified, and consolidated into Cell 1 from August 1991 to November 1994. Also during this time period, most of the waste from Lagoon 7 was removed, dewatered,

solidified, and consolidated into Cell 1. The solidified sludge from Impoundment 19 was placed in Cell 1. Construction of Cell 2 of the Impound 8 facility was completed in August 1996. The design of this cell includes a double composite liner system, leachate detection and collection system, and a ground water monitoring system. Solidified sludge from the remediation of Impoundment 11 was placed in Cell 2 between September 1996 and April 1997.Solidified sludge from the remediation of Lagoon 6 was placed in cell 2 between November 1997 and May 1999. Construction for Cells 3 and 4 of the Impound 8 facility was completed in December 1999. The design of cells 3 and 4 is similar to Cells 1 and 2. Solidified sludge from the remediation of Impoundment 26 was placed in cell 3 and 4 between December 2000 and April 2001. Impoundment 9A has been closed in-place by installing a double synthetic liner capping system (60-mil High Density Polyethylene).

Surface Soils Remedial/Removal Action Program

The 1992 Surface Soils Remedial/Removal Action (SSR/RA) Program was completed in December 1992 addressing areas of surface soil contamination that posed a potential risk to worker health and safety. The program included excavation and off-site disposal of Polychlorinated Biphenyl (PCB)-contaminated soils, excavation and disposal of Polynuclear Aromatic Hydrocarbon (PAH)-contaminated soil in the on-site RCRA permitted facility, and capping of another PAH-contaminated area (in West Yard Area near Impoundment 14), as well as placement of a geotextile, soil and vegetative cover over a chromium-contaminated area. These areas, except for one PAH Area (Area 11) will be revisited as part of the site-wide soil remediation program. PAH Area 11 was determined to be clean based on post-excavation sampling results that indicated no surface contamination and based on the Soil Remedial Investigation data that indicated no subsurface contamination above the applicable State Cleanup Criteria. NJDEP non-residential cleanup criteria were used in the SSR/RA program.

Hill Property Remedial Investigation/Rod

The Hill Property is approximately 140 acres in area, bounded to the south by the Central Railroad of New Jersey (CRNJ) railroad tracks, to the east by Interstate Highway 287, to the north by Route 28 (Union Avenue). Although physically separated from the main plant of the site the Hill property portion was part of the overall site, which consisted of a research laboratory and administrative buildings. The March 1991 Hill Property Remedial Investigation Report and comparison of contaminant levels in soils to NJDEP Soil Cleanup Criteria indicated that levels of contaminants in soils at the Hill Property are below the applicable NJDEP Soil Cleanup Criteria (both residential and non-residential) and/or background and/or Impact to Ground Water Criteria. The March 1992 Baseline Site-Wide Endangerment Assessment Report (Hill Property Quantitative Risk Assessment, Appendix VII) established that there is no current or future unacceptable risks to human health and the environment associated with the Hill Property. Based on this finding, no remedial actions were required for the Hill Property soils.

In July of 1996, a no further action ROD was issued by the NJDEP for the Hill Property portion of the site. The ROD includes provisions for a Classification Exception Area (CEA) covering the ground water beneath the Hill Property. This ground water was monitored at five bedrock wells (former production wells PW-16, PW-17, PW-18, as well as wells UU and MJ). Low levels of some organic compounds were observed in these wells at the time of issuing of the ROD/CEA. Monitoring of these wells is required, in accordance with the ACO Amendment and the ROD/CEA, until it is observed that the monitoring results are below criteria for two consecutive quarters (NJAC 7:26E-6.3). NJDEP approved a request to terminate monitoring for wells PW17, PWl8, UU and MJ on February 18, 1998 based on the information submitted in the January 1998 Hill Property Ground Water Quality Assessment report. Monitoring of well PWl6 will continue until such time that the monitoring data meet the conditions discussed above in this section.

The Hill Property area of the site was deleted from the NPL in December 1998 and developed under the Brownfields program, which includes a Baseball Stadium and Retail Stores (Home Depot, Target and others).

Bedrock Ground Water Pumping/Control System Program

Presently an average of 650,000 gallons of groundwater per day is being withdrawn from the on-site extraction wells. The withdrawal of over 650,000 gallons per day results in ground water flow inward from the perimeter of the site towards the pumping wells. This system effectively contains the majority of the ground water contamination within the production area and West Yard area on the site. Recovered ground water is transferred to the adjacent Somerset-Raritan Valley Sewerage Authority (SRVSA) wastewater facility for subsequent treatment. Any ground water not captured by the production well pumping system flows to the Raritan River. A previous study (Lawler, Matuskey, and Skelley, 1983) concluded that the Cyanamid facility did not have a significant impact on water quality in the Raritan River. Further

study of the Raritan River/Cuckolds Brook water quality is being conducted as part of the Natural Resource Assessment (NRA) program. The NRA is currently under evaluation.

Impoundments 11, 13, 19, and 24 (Group I)

Remediation of the Group I Impoundments, consisting of solidification and consolidation into the Impoundment 8 facility, has been initiated in accordance with the September 1993 Record of Decision (ROD), May 1994 Remedial Design Report as well as the July and September 1994 Impoundment 19 Remedial Action Plans and the August 1996 Impoundment 11 Remedial Action Plan. To date, remediation of Impoundments 19 and 11 has been completed. Remediation of Impoundments 13 and 24 will be initiated after completion of the remediation of the Group II and III Impoundments.

Impoundments 15, 16, 17, and 18 (Group II)

Remediation of the Group II Impoundments has been initiated in accordance with the July 1996 ROD, the March 1997 Remedial Design Report, and the October 1997 Remedial Action Plan (Impoundment 18). The selected remedial alternatives for those impoundments are as follows:

Impoundment 15 and 16: Consolidation of the material from Impoundment 16 into Impoundment 15, followed by covering with a synthetically lined cap. NJDEP received a proposal from American Home Products Corporation for an alternative remedy consisting of recycling/reuse of iron oxide material at an offsite facility. Based on this proposal, NJDEP issued a Superfund Explanation of Significant Difference (for sleeted remedy in the July 1996 ROD). This recycling/reuse activity is now in progress.

Impoundment 17: Solidification and consolidation into the Impound 8 facility. Remediation of Impoundment 17 will be initiated after completion of the remediation of the Group III Impoundments (because of the high concentrations of detected contaminants in the Group III Impoundments).

Impoundment 18: Security fencing, berm improvements and maintenance of natural vegetative cover. The closure of Impoundment 18 has been completed.

Group III Impoundments (1, 2, 3, 4, 5, 14, 20 & 26):

A ROD was signed on 8 October 1998 as follows:

1. Category A material (High BTU tar of Impoundments 1 and 2):
   - Low-Temperature Thermal Treatment (LTTT) and placement of treated material in Impoundment 8;
2. Category B (Low BTU tar of Impoundments {4, 5 (wet), 14, and 20}:
   - Biotreatment and placement of treated material in Impoundment 8
3. Category C (remaining tar material of Impoundment 3):
   - LTTT and placement of treated material in Impoundment 8
4. Category D (non-hazardous material of Impoundments 5 (dry) and 26:
   - Consolidation in Impoundment 8
5. Category E (General plant debris of Impoundments 3, 4, 5, 14, and 20):
   - Consolidation in Impoundment 8.

During 2002, a 65,000 square foot processing structure was constructed to support the Group III Impoundment remediation projects. The purpose of the structure is to control odors and air emissions generated during the processing of impoundment materials. Using the facility, a portion of Impoundment 5 Dry was solidified and placed into the Impound 8 Facility. The remaining portion of Impoundment 5 Dry will be removed during the remediation of Impoundment 5 Wet. Impoundments 14 and 20 were excavated and staged in preparation for biotreatment.

PRESENT STATUS/FUTURE PLANS

In March 2004, WHC submitted a letter to NJDEP and USEPA stating that, based on pilot-scale treatment data, the Biotreatment may not be appropriate for remediation of category B material of the Group III Impoundments due to air emission issues. WHC has proposed and NJDEP and USEPA accepted to conduct an integrated site-wide Feasibility Study (FS) Program encompassing all remaining impoundments, site soils, and groundwater to determine and select an appropriate remedy. The site-wide FS program is in progress.