

**PB99-963120**

**EPA541-R99-096**

**1999**

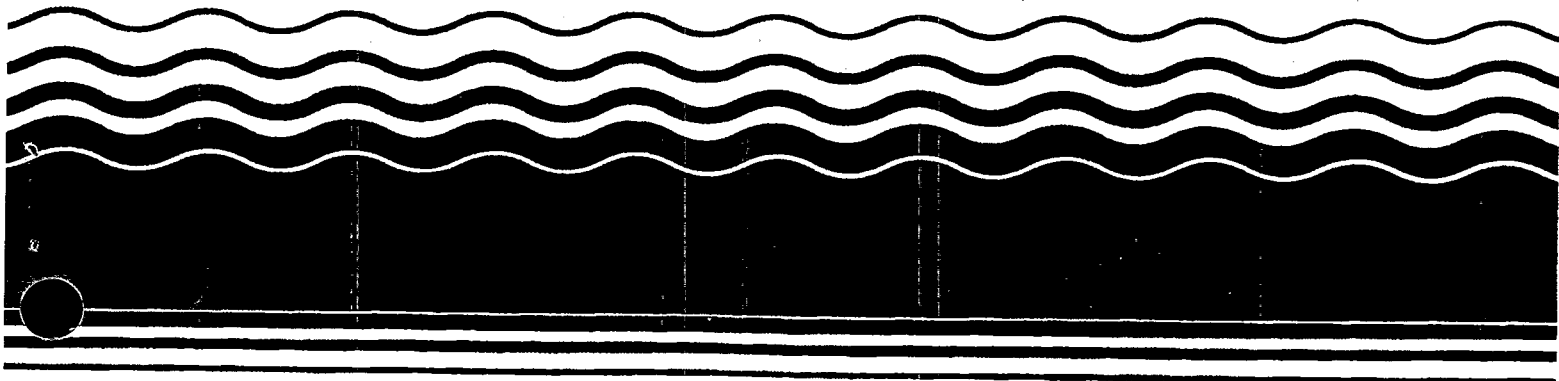
## **EPA Superfund**

### **Explanation of Significant Difference for the Record of Decision:**

**American Cyanamid Company Site**

**Bound Brook, NJ**

**11/30/1998**







## State of New Jersey

Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

Site Remediation Program  
Floor 6E, PO Box 028, 401 East State Street  
Trenton, NJ 08625-0028

Phone: (609) 292-1250/Fax: (609) 633-2360/Email: RGIMELLO@DEP.STATE.NJ.US

NOV 30 1998

Mr. Richard Caspe  
USEPA Region 2, Floor 19  
290 Broadway  
New York, NY 10007-1866

Dear Mr. Caspe:

Re: American Cyanamid Site  
American Home Products Corporation  
Bridgewater Township, Somerset County

Enclosed please find a copy of the final Explanation of Significant Difference (ESD) for Impoundments 15 and 16 (part of Group II Impoundments) for information purposes. The purpose of this Explanation of Significant Difference (ESD) is to explain a modification to the remedy selected in the Record of Decision (ROD) dated 12 JUL 1996 for the American Cyanamid site located in Bridgewater Township, Somerset County, New Jersey. This ESD is required pursuant to § 107(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and § 300.435(c)(2)(I) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

The New Jersey Department of Environmental Protection Agency (NJDEP) is the lead agency overseeing cleanup at this site. The United States Environmental Protection Agency (USEPA) acts as the support agency.

Recycling of the iron oxide material in Impoundments 15 and 16 was evaluated as a remedial alternative in the July 1996 ROD. But it could not be selected as a remedy in the ROD because a recycling vendor had not been identified at that time. The responsible party, American Home Products Corporation (AHPC), has now identified a vendor which can recycle this iron oxide material. These circumstances gave rise to the need for this ESD.

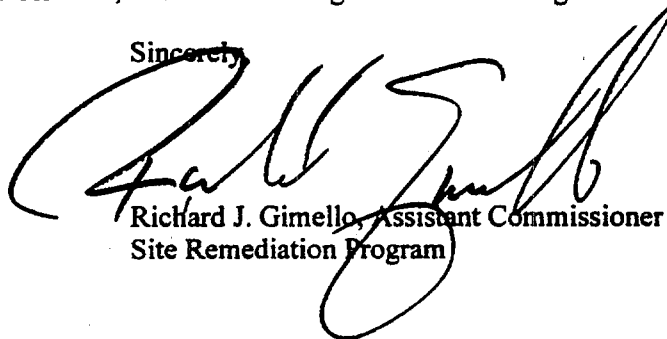
The NCP, § 300.435(c)(2)(i), states that an Explanation of Significant Difference (ESD) would be sufficient when the difference in the remedial action significantly changes but does not alter the remedy selected in the ROD with respect to scope, performance or cost. Recycling of the material of Impoundments 15 and 16 was evaluated in detail as a remedial alternative in the Corrective Measure Study/Feasibility Study (CMS/FS) and was carried through in the proposed plan and the ROD. The July 1996 ROD included the following sentence in the "Rational for Selected Remedy for Group II Impoundments" section: "The selected alternative would serve two purposes simultaneously; protecting human health and the environment and leaving the option open for recycling of the iron oxide material if such a user is found in the future."

The community was afforded an opportunity to comment on the recycling alternative together with other alternatives during the comment period of the original proposed plan. The community, including CRISIS (the local environmental group) and the Township of Bridgewater, preferred recycling then and still prefer it now. Copy of correspondence from CRISIS and the Township of Bridgewater, which indicate their support for the current proposal of recycling is enclosed. This correspondence also indicates that the community does not prefer another public comment period and public meeting on the current recycling proposal.

The above information clearly demonstrates that the current proposal of recycling does not fundamentally differ than the remedial alternatives considered and selected in the ROD. Based on this, NJDEP has determined that the ESD will be sufficient for the current proposal of recycling of the material of Impoundments 15 and 16.

The referenced site is a non-fund-financed (privately funded by responsible party) state-lead enforcement site under state law. In accordance with the NCP, §300.515(e)(2)(ii), USEPA's concurrence is not a prerequisite to a state's selecting a remedy at such sites. Further, the July 1996 ROD for the Group II Impoundments was signed by NJDEP. As such, NJDEP is moving forward in issuing the ESD.

Sincerely,

A large, stylized handwritten signature in black ink, appearing to read "Richard J. Gimello".

Richard J. Gimello, Assistant Commissioner  
Site Remediation Program

Enclosure

**EXPLANATION OF SIGNIFICANT DIFFERENCE  
IMPOUNDMENTS 15 AND 16 (PART OF GROUP II IMPOUNDMENTS)**

**AMERICAN CYANAMID SITE  
AMERICAN HOME PRODUCTS CORPORATION  
BRIDGEWATER TOWNSHIP, SOMERSET COUNTY  
NEW JERSEY**



**New Jersey Department of Environmental Protection  
Site Remediation Program  
Bureau of Federal Case Management  
November 1998**



## **INTRODUCTION**

The purpose of this Explanation of Significant Difference (ESD) is to explain modification to the remedy selected in the Record of Decision (ROD) dated 12 JUL 1996 for the American Cyanamid site located in Bridgewater Township, Somerset County, New Jersey. This ESD is required pursuant to § 107(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and § 300.435(c)(2)(I) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

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This ESD will become part of the administrative record file. The ESD and other supporting documents are available for review as follows:

Bridgewater Town Hall  
700 Garrestson Road  
Bridgewater, NJ 08807  
Phone: (908) 725-6300  
Hours: Monday - Friday 8:30 AM to 4:00 PM

NJDEP  
401 East State Street, CN 413  
Trenton, NJ 08625  
Phone: (609) 984-3081  
Hours: Monday - Friday 8:30 AM to 4:00 PM

Somerset County Library  
North Bridge Street & Vogt Drive  
Bridgewater, NJ 08807  
Phone: (908) 526-4016  
Hours: Monday - Thursday 9:00 AM to 9:00 PM  
Friday - Saturday 9:00 AM to 5:00 PM

## **SITE HISTORY AND CONTAMINATION PROBLEMS**

The site has been used for numerous chemical and pharmaceutical manufacturing operations for over 75 years. Currently, only pharmaceuticals are being manufactured at the plant. 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 Cyanamid and NJDEP. American Home Products Corporation purchased American Cyanamid Company in 1994 and has assumed full responsibility for environmental remediation at the site. Requirements of CERCLA, as amended by the Superfund Amendments and Re-authorization Act (SARA) as well as the Resource Conservation and Recovery Act (RCRA) and Hazardous and Solid Waste Amendments for corrective actions are included in the ACO and are being addressed for overall site cleanup. The Hazardous and Solid Waste Amendment (HSWA) permit and numerous Air Pollution Control permits have also been issued to the site.

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 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

#### **Completed Programs:**

American Home Products Corporation has completed, or is conducting, several remedial programs at the site. Completed programs include: removal of pumpable tars from impoundments 1, 2, 3 and 4 for off-site use as a supplemental fuel (1986-1987); a berm stability evaluation program; and a surface soil removal/remedial program. Each of the ongoing programs is discussed briefly below.

#### **On-going Programs**

##### *On-site Impoundment 8 Facility Program*

This program involves closure and post-closure of four on-site impoundments (Impoundments 6, 7, 8, and 9A) and the construction of a waste consolidation facility (Impoundment 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 (Figure 2). Sludge from old Impoundment 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 Impoundment 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. Waste from Impoundment 6 is currently being solidified and consolidated into Cell 2. This activity is expected to be completed in the summer of 1999. Cells 3 and 4 of the Impound 8 facility are scheduled for construction following the remediation of Impoundment 6. The design of these cells will be similar to Cells 1 and 2. After completion of the cell construction, remediation of the remaining impoundments involving consolidation into the Impound 8 facility will begin. Impoundment 9A has been closed in-place by installing a double synthetic liner capping system (60-mil High Density Polyethylene).

#### *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), and to the west by Foothill Road (Figure 1). The Hill Property is bisected by Main Street and encompasses a small traffic circle where Van Horne Avenue and Main Street intersect. Although physically separated from the main plant of the site the Hill property portion is 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 have 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 are 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 is 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, PW18, 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 PW16 will continue until such time that the monitoring data meet the conditions discussed above in this section.

#### *Bedrock Ground Water Pumping/Control System Program*

For the past 60 years, Cyanamid has withdrawn water from the on-site bedrock production wells for use as non-contact cooling water in the production operations. Cyanamid's present average 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 used as non-contact cooling

water on-site before discharge 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 was conducted as part of the Natural Resource Assessment (NRA). 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 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:

Impoundments 15 and 16: Consolidation of the material from Impoundment 16 into Impoundment 15 followed by covering with a synthetically lined cap. These impoundments are the focus of this ESD.

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. To date, 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:
- Category D (non-hazardous material of Impoundments 5

A remedial design is underway for these impoundments.

## **Characterization of Impoundments 15 and 16**

Impoundments 15 and 16 were characterized as reported in the January 1990 Impoundment Characterization Program Final Report (ICPFR). A summary of the analytical results of the contents of Impoundments 15 and 16 is provided in Table 1. The location of the site and the impoundments is indicated on Figure 1. An overview of the characterization of Impoundments 15 and 16 follows:

### **Impoundment 15**

Impoundment 15 has a surface area of approximately 2.8 acres. Its surface is devoid of topsoil and vegetation, and is sloped from the southwest to the northeast corner. This impoundment contains a homogeneous material composed of greater than 99 percent iron oxide (or magnetite). The iron oxide ranges from approximately 6 to 9 feet in depth and occupies a volume of approximately 29,500 cubic yards. Impurities in the iron oxide include trace organics, metals, stones and dirt. The detected predominant volatile organic contaminants of concern range in average concentration from 0.002 to 0.069 parts per million (ppm) and are Acetone, Benzene, Methylene Chloride and total Xylenes. The predominant semivolatile organic contaminants of concern range in average concentration from 0.092 to 17 ppm and are 4-Chloroaniline, N-nitrosodiphenylamine, Anthracene, Naphthalene and Phenanthrene. The predominant inorganic contaminants of concern range in average concentration from 55 to 4,490 ppm and include Arsenic, Copper, Lead and Zinc. Polychlorinated Biphenyl (PCB-1254) was also detected in the range of 0.9 to 3 ppm. The contents of Impoundment 15 are not classified as RCRA hazardous wastes.

### **Impoundment 16**

Impoundment 16 has a surface area of approximately 3.0 acres. Its surface is devoid of topsoil and vegetation and has been graded in the southeast corner to facilitate drainage of precipitation. This impoundment contains a homogeneous material composed of greater than 99 percent iron oxide. The iron oxide ranges from approximately 5 to 10 feet in depth and occupies a volume of approximately 38,000 cubic yards. Impurities in the iron oxide include trace organics, metals, stones and dirt. The detected predominant volatile organic contaminants of concern range in average concentration from 0.002 to 0.073 ppm and are Acetone, Benzene, Methylene Chloride and total Xylenes. The predominant semivolatile organic contaminants of concern range in average concentration from 0.046 to 6 ppm and are 4-Chloroaniline, N-nitrosodiphenylamine, Anthracene, Naphthalene, Phenanthrene and Pyrene. The predominant inorganic contaminants of concern range in average concentration from 20 to 2,620 ppm and include Arsenic, Copper, Lead and Zinc. PCB-1254 was also detected in the range of 1.5 to 6 ppm. The contents of Impoundment 16 are not classified as RCRA hazardous wastes.

## **SELECTED REMEDY FOR IMPOUNDMENTS 15 AND 16 AS DESCRIBED IN JULY 1996 ROD**

Consolidation of the iron oxide from Impoundment 16 into Impoundment 15 with capping (synthetic liner) of the consolidated material. The selected remedy (involving excavation) includes removal of six (6) inches of underlying soils and any other obviously contaminated material after removal of the contents of the impoundments and post-excavation evaluation/sampling of the underlying soils. If the results are above the NJDEP Soil Cleanup Criteria, the underlying soils will be removed/remediated. The selected remedy also includes a ground water monitoring program and an air emission control measure (such as a carbon absorber), if necessary.

## DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES

**Description:** The responsible party, American Home Products Corporation (AHPC), has identified (16 OCT 1998 letter) a vendor, which can recycle the iron oxide material of Impoundments 15 and 16 and use it in their product. The recycling vendor uses 8 million pounds of iron oxide per year and Impoundments 15 and 16 contain approximately 160 million pounds of iron oxide. Thus, at the current rate it would take 20 years to use all of the material in the impoundments. However, this vendor is experiencing 15% growth per year so the time frame could be less. This arrangement allows for beneficial re-use of the material and the eventual removal of the material from the site. If at some point, the recycling vendor is not able to continue to use 8 million pound per year, AHPC would have the right to terminate the contract and would then proceed to consolidate and cap the remaining material in place.

**Basis:** Recycling/re-use of iron oxide would eliminate long-term maintenance of the impoundments and is beneficial to the environment. Consolidating and capping the material in-place as selected originally in the ROD, while cost-effective and not detrimental to the environment, will still require long-term maintenance and monitoring and provides no benefit to the environment.

## MODIFIED REMEDY

Recycling/Re-use of the iron oxide material of Impoundments 15 and 16 as follows:

- Excavation of iron oxide;
- Transport and reuse of the iron oxide at an off-site recycling facility;
- Backfilling, regrading and natural revegetation of former impoundment areas; and,
- Ground water monitoring.

**Total Cost:** \$ 8,100,000

**Time to Implement:** 20 years

## EVALUATION OF MODIFIED REMEDY USING CERCLA CRITERIA

### *Threshold Criteria:*

1. **Overall protection of human health and the environment:** addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced or controlled through treatment, engineering controls or institutional controls.
  - The modified remedy would achieve overall protection of human health and the environment by removal of the iron oxide material from the site.
2. **Compliance with applicable or relevant and appropriate requirements (ARARs):** addresses whether or not a remedy will meet all of the applicable or relevant and appropriate requirements of federal and state environmental statutes and other requirements or provides grounds for invoking a waiver.
  - The modified remedy would not trigger chemical specific ARARs such as RCRA Hazardous Waste

Regulations or Land Disposal Restrictions (LDRs) since the iron oxide is not a RCRA Hazardous Waste. The modified remedy would contribute in achieving site-wide ground water ARARs by removal and recycling of iron oxide material. Ground water monitoring is an ARAR under the State requirements and under the RCRA program (40 CFR 264.97). Location-specific ARARs consist of wetlands, cultural resources and flood plains. Based on the preliminary findings, location-specific ARARs, except for flood plain requirements, would not be triggered for Impoundments 15 and 16 because the proposed remedial actions would not impact those natural resources. Requirements for the flood plain will be evaluated and satisfied (through permit equivalency) during remedial design phase. Action-specific ARARs include the 1988 ACO, NJDEP Technical Requirements for Site Remediation, Occupational Safety and Health Administration (OSHA) regulations, and Department of Transportation (DOT) transport requirements. These ARARs would be met by specifying and monitoring activities so that they are in compliance with the substantive requirements of these regulatory programs.

*Primary Balancing Criteria:*

3. **Long-term effectiveness and permanence:** refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met.
  - The modified remedy achieves this criterion by removal of iron oxide material from the site resulting in no long-term maintenance. The modified remedy also achieves permanence by re-use of the iron oxide material.
4. **Reduction of toxicity, mobility, or volume:** through treatment is the anticipated performance of the treatment technologies a remedy may employ.
  - The modified remedy would result in removal of the iron oxide from the site for reuse, thereby eliminating concerns with reducing toxicity, mobility and volume of contaminants.
5. **Short-term effectiveness:** addresses the period of time needed to achieve protection from any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.
  - The modified remedy would not result in short-term impacts because the excavation and transportation activities would be carried out in accordance with the regulatory standards protective of human health and the environment. However, it might require that workers use personal protective equipment to reduce the potential for inhalation of dust particles generated during excavation.
6. **Implementability:** is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.
  - The operations associated with the modified remedy employ well-established, readily available construction methods and are all considered technically and administratively feasible. The modified remedy is now implementable because a recycling vendor has been identified.

IMP-15 K12 1-10 ATTACH Total Pairs 'BRIDGE' 1.019

DATE: 12/1/78

FR: Jaiyesh Shah FIGURE 1

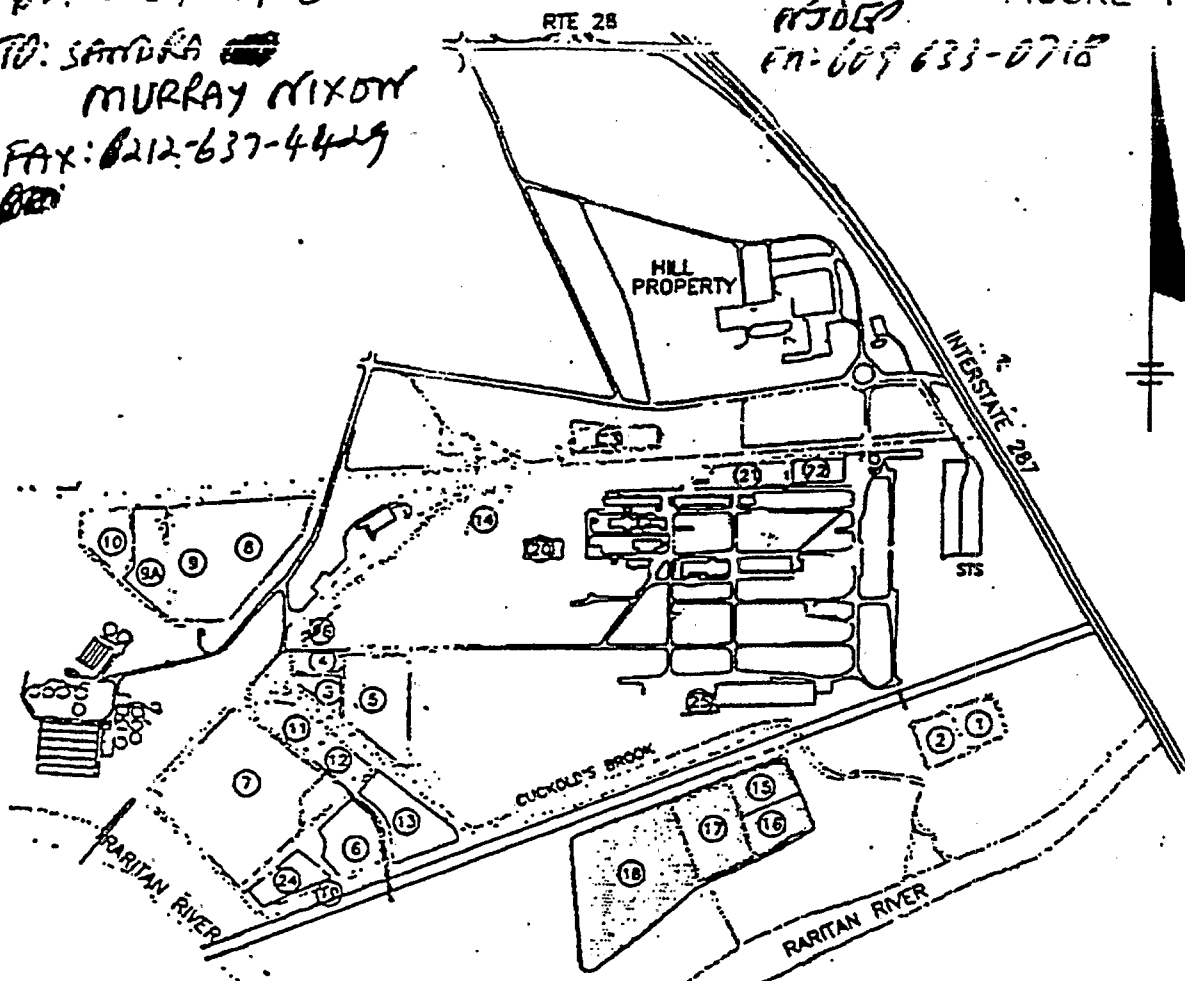
WJDEP

EN-009 633-0710

TO: SANDRA  
MURRAY NIXON

FAX: 0212-637-4429

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AMERICAN CYANAMID COMPANY  
BOUND BROOK, NEW JERSEY  
**GROUP II IMPOUNDMENTS**

N.T.S.

FILE NO. 5772.010

TABLE 1 (Cont'd)  
AMERICAN CYANAMID COMPANY  
BOUND BROOK, NEW JERSEY  
GROUP II IMPOUNDMENTS  
DATABASE SUMMARY FOR CONTAMINANT CONCENTRATIONS

Contaminant	Impoundment 15				Impoundment 16				Impoundment 17				Impoundment 18			
	Min	Max	Mean	Detects	Min	Max	Mean	Detects	Min	Max	Mean	Detects	Min	Max	Mean	Detects
mercuric																
chromium	154	288	222.50	6 of 6	104.00	299.00	216.00	6 of 6	47,600.00	118,000.00	86,333.33	12 of 12	26,200.00	123,000.00	80,925.00	20 of 20
iron	7.70	29.40	12.72	6 of 6	7.00	16.90	10.63	6 of 6	30.70	49.70	42.93	3 of 12	8.10	58.00	32.21	20 of 20
nickel	54.60	78.80	66.13	6 of 6	52.80	63.60	60.00	6 of 6	27.90	168.00	71.12	12 of 12	27.30	522	178.62	20 of 20
barium	4.70	6.30	5.50	6 of 6	4.80	7.20	5.72	6 of 6	3,630.00	15,500.00	7,801.67	12 of 12	1,260.00	14,100.00	7,449.50	20 of 20
barium					6.90	7.90	7.40	2 of 6	2.20	2.20	2.20	1 of 12	0.62	1.80	1.28	10 of 20
cadmium									1.60	5.70	3.98	11 of 12	2.00	10.00	4.53	20 of 20
cadmium	14.40	153	45.32	6 of 6	20.90	74.50	38.38	6 of 6	12,200.00	86,900.00	29,275.00	12 of 12	5,540.00	163,000.00	28,702.50	20 of 20
chromium	531	1210	756.17	6 of 6	479.00	1,070.00	762.50	6 of 6	915.00	19,700.00	3,418.75	12 of 12	409.00	2,600.00	1,668.85	20 of 20
cobalt	37.70	48.30	42.07	6 of 6	32.80	47.40	37.42	6 of 6	9.80	24.10	15.88	12 of 12	5.90	32.80	15.07	20 of 20
zinc	1030	4,490.00	1,971.87	6 of 6	1,040.00	2,820.00	1,771.87	6 of 6	1,210.00	3,640.00	2,457.50	12 of 12	638.00	3,670.00	2,086.40	20 of 20
zinc									8.00	20.70	14.05	10 of 12	4.10	49.70	11.81	19 of 20
iron	380,000.00	567,000.00	469,633.33	6 of 6	432,000.00	490,000.00	461,333.33	6 of 6	24,400.00	65,100.00	48,358.33	12 of 12	23,700.00	267,000.00	59,580.00	20 of 20
lead	104	229	162	6 of 6	19.70	174.00	97.83	6 of 6	1,300.00	3,070.00	2,358.33	12 of 12	585.00	3,370.00	2,085.50	20 of 20
magnesium	10.50	10.50	10.50	1 of 6					18,800.00	178,000.00	56,083.33	12 of 12	3,230.00	112,000.00	21,580.50	20 of 20
manganese	1,290.00	1,740.00	1,500.00	6 of 6	1,180.00	1,930.00	1,598.33	6 of 6	695.00	1,900.00	1,198.08	12 of 12	187.00	1,650.00	953.16	20 of 20
mercury									20.10	101.00	78.18	12 of 12	35.20	254.00	125.32	20 of 20
nickel	791	1,890.00	1,188.17	6 of 6	707.00	1,130.00	898.00	6 of 6	66.30	145.00	98.32	12 of 12	48.90	356.00	102.98	20 of 20
potassium					161.00	161.00	161.00	1 of 6	896.00	935.00	915.50	2 of 12	445.00	1,500.00	708.13	15 of 20
silicon													0.50	0.90	0.66	9 of 20
silver																
sodium	81	846	205.13	6 of 6	58.50	97.80	73.74	5 of 6	196.00	1,090.00	543.33	12 of 12	188.00	819.00	334.00	20 of 20
strontium	19.30	19.30	19.30	1 of 6					61.00	113.00	83.98	12 of 12	33.70	175.00	70.85	20 of 20
tin	64.90	648	244.82	6 of 6	75.40	489.00	152.27	6 of 6	1,480.00	3,750.00	2,631.87	12 of 12	387.00	4,380.00	2,259.70	20 of 20

Note: Mean calculations derived using sum of detected concentrations / number of detections.  
Items left blank indicate that contaminants were not detected.

DEC 23 1998 16:10 FR HAZ SUB CIRC OFF 1 005 003 1405 10 2141200/4442

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TABLE 1  
AMERICAN CYANAMID COMPANY  
BOUND BROOK, NEW JERSEY  
GROUP II IMPOUNDMENTS  
DATABASE SUMMARY FOR CONTAMINANT CONCENTRATIONS

1 OF 2

mg/kg	Impoundment 15				Impoundment 16				Impoundment 17				Impoundment 18			
	Min	Max	Mean	Detects	Min	Max	Mean	Detects	Min	Max	Mean	Detects	Min	Max	Mean	Detects
Volatiles																
2-Butanone													0.048	0.048	0.048	1 of 20
2-Hexanone																
4-Methyl-2-Pentanone	0.009	0.010	0.010	2 of 6	0.004	0.005	0.005	2 of 6	2.600	2.600	2.600	1 of 12				
Acetone	0.017	0.081	0.048	8 of 8	0.018	0.140	0.063	6 of 6	0.047	8.000	1.722	11 of 12	0.014	15.000	1.081	18 of 20
Benzene	0.002	0.009	0.005	5 of 6	0.003	0.018	0.009	4 of 6	0.004	1.100	0.471	9 of 12	0.008	0.430	0.118	5 of 20
Carbon Disulfide	0.002	0.002	0.002	1 of 6	0.008	0.022	0.016	2 of 6					0.010	0.010	0.010	1 of 20
Bromobenzene									0.320	0.320	0.320	1 of 12				
Chlorobenzene									0.890	17.000	8.782	6 of 12	0.670	4.100	2.623	3 of 20
Chloroethane									0.075	0.075	0.075	1 of 12				
Ethylbenzene	0.002	0.003	0.003	2 of 6	0.002	0.008	0.004	3 of 6	0.330	6.000	2.387	6 of 12	0.140	0.500	0.261	2 of 20
Methylene Chloride	0.004	0.005	0.005	3 of 6	0.004	0.011	0.007	4 of 6	0.033	3.600	0.783	5 of 12	0.018	0.280	0.101	4 of 20
Toluene	0.002	0.008	0.004	4 of 6	0.004	0.010	0.007	3 of 6	0.004	3.400	1.078	6 of 12	0.011	0.011	0.011	1 of 20
Xylenes (Total)	0.008	0.008	0.004	3 of 6	0.005	0.170	0.073	3 of 6	0.020	38.000	15.588	7 of 12	0.019	1.600	0.631	4 of 20
Semi-Volatile Compounds																
1,2,4-Trichlorobenzene									4.000	160.000	67.491	11 of 12	2.300	19.000	7.641	5 of 20
1,2-Dichlorobenzene									3.800	5.000	4.400	2 of 12	8.400	11.000	10.700	2 of 20
2-Chloronaphthalene									2.300	100.000	33.643	7 of 12	3.900	3.900	3.901	1 of 20
2-Methylnaphthalene									4.700	25.000	11.666	7 of 12	3.900	450.000	119.715	4 of 20
4-Chloroaniline	0.200	0.200	0.200	1 of 6	0.048	0.073	0.058	3 of 6					760.000	760.000	760.000	1 of 20
N-Nitrosodiphenylamine	0.280	17.000	8.097	6 of 6	0.620	6.100	3.570	6 of 6	12.000	180.000	82.500	12 of 12	15.000	22.000	19.313	3 of 20
Acenaphthene									3.000	14.000	6.543	7 of 12	9.000	210.000	77.210	5 of 20
Anthracene	0.092	0.092	0.092	1 of 6									11.000	30.000	20.210	4 of 20
Benzo(a)anthracene									19.000	41.000	28.600	5 of 12	11.000	66.000	39.616	11 of 20
bis(2-ethylhexyl) phthalate	0.110	2.100	0.535	6 of 6	0.230	0.630	0.407	6 of 6	6.900	34.000	18.782	12 of 12	7.500	61.000	25.816	10 of 20
Chrysene													34.000	34.000	34.000	1 of 20
di-n-octyl-phthalate													16.000	16.000	16.000	1 of 20
dibenzofuran									3.200	15.000	7.171	7 of 12	13.000	120.000	80.910	4 of 20
Fluorene	0.062	0.420	0.183	4 of 6	0.110	0.200	0.170	6 of 6					10.000	37.000	23.510	8 of 20
Fluorene													130.000	140.000	135.000	2 of 20
naphthalene	0.110	0.490	0.247	3 of 6	0.060	0.200	0.111	5 of 6	3.300	300.000	63.075	12 of 12	2.000	810.000	100.163	16 of 20
nitrobenzene													1.700	1.700	1.710	1 of 20
phenanthrene	0.120	1.500	0.470	5 of 6	0.150	0.400	0.313	6 of 6	4.900	15.000	9.833	8 of 12	4.300	190.000	88.313	6 of 20
pyrene					0.110	0.190	0.153	4 of 6					12.000	29.000	23.000	6 of 20
PCB's																
Aroclor-1242									8.500	15.000	11.040	10 of 12				
Aroclor-1248													3.900	3.900	3.910	1 of 20
Aroclor-1254	0.900	3.000	1.780	5 of 6	1.500	6.200	3.683	6 of 6								

Note: Mean calculations derived using sum of detected concentrations / number of detections  
Items left blank indicate that contaminants were not detected



# THE TOWNSHIP OF BRIDGEWATER

100 GARRETSON ROAD / BRIDGEWATER, N.J. 08807  
908/725-6300 / FAX # 908/707-1235



November 4, 1998

MAILING ADDRESS  
P.O. BOX #300  
BRIDGEWATER, NJ 08807

Mr. Haiyesh Shah  
New Jersey Department of Environmental Protection  
Bureau of Federal Case Management  
Division of Responsible Party Site Remediation  
401 East State Street, Fifth Floor West  
CN 028  
Trenton, New Jersey 08625-0028

RE: American Cyanamid Site  
Proposed Recycling Option  
Impoundments 15 and 16

NOV - 5 1998

Dear Haiyseh:

Please be advised the Health Department has reviewed the proposal to recycle approximately 160 million pounds of iron oxide material currently located in Impoundments 15 and 16 at the American Cyanamid site. As a result the Health Department has no objections to the proposed plan. Furthermore, the Department recommends actions be taken to expedite all approvals necessary to implement the beneficial reuse of these materials.

It is suggested a work plan be constructed and provided for review prior to the initiation of all on-site activities. This plan should include information on the aspects of dust control, transportation of materials, and necessary environmental monitoring during reclamation procedures.

Thank you for the opportunity to comment on this matter.

Sincerely,

Chris O. Poulsen  
Environmental Health Specialist

TO: J. J. Catanzarita  
EPA-Superfund

**CRISIS**

Fax Memo

11/2/98

Fax: 212-637-4429

PH: 212-637-4409

FR: Haiton John NJOSE

PH: 609 633 0718

TO: Haiyesh Shah

FAX NO. 609/633-1454

FROM: Walt Sodie

Phone: 609/799-1553; Fax No. 609/716-1705

Number of pages, including this one - 1

RE: American Home Products (AHP) (American Cyanamid) Superfund Site  
Recycling of iron oxide in Impoundments 15 and 16  
Reference AHP letter to you of 10/16/98

Per discussions you have had with our Technical Advisor, Tom Germine, CRISIS has no objection to the timetable for recycling this material, as outlined in the above-captioned AHP letter.

Further, CRISIS sees no need for holding a public hearing on this issue.

If you require any further action from CRISIS, please contact me.

Walter M. Sodie

Walter M. Sodie  
Executive Director

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