UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

STATEMENT OF BASIS

FORMER CABOT PERFORMANCE MATERIALS

REVERE, PENNSYLVANIA

EPA ID NO. PAD014512388

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A. Introduction

The United States Environmental Protection Agency (EPA or Agency) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the former Cabot Performance Materials facility located at 377 Beaver Run Road, Revere, PA 18953 (referred to throughout this document as the Facility). The Facility is subject to EPA's Corrective Action program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901, *et seq*. The Corrective Action program requires that certain facilities subject to RCRA investigate and address environmental releases of hazardous waste and hazardous constituents, usually in the form of soil or groundwater contamination, that have occurred on their property.

EPA is providing a 30-day public comment period on this SB beginning February 1, 2011, and closing on March 2, 2011. EPA may modify its proposed remedy based on comments received during this period. EPA will announce its selection of a final remedy for the Facility in a Final Decision and Response to Comments (FDRTC).

B. Proposed Remedy

EPA has reached a tentative decision that no additional investigation or remediation is necessary for the Facility to satisfy its RCRA Corrective Action obligations. This tentative decision is based on EPA's review of investigations and remediation activities previously conducted at the Facility and summarized in Section D, below. EPA's proposed remedy is Institutional Controls (ICs) to ensure that current and future land uses are appropriate for the soil

conditions at the Facility (See Section F of this document for a description of the specific ICs). This proposed remedy is characterized as "Corrective Action Complete with Controls" as described in EPA guidance found in the Federal Register / Vol. 68, No. 37 / Tuesday, February 25, 2003 / Notices [FRL – 7454-7] pages 8757 to 8764.

The Administrative Record (AR) contains all documents, including data and quality assurance information, on which the proposed remedy is based. See Section I, Public Participation, for information on how you may review the AR.

C. Facility Background

The Facility property is approximately 102 acres in size and is bordered by Rapp Creek to the north, wooded areas to the east and west, and farmland and private residences to the northwest and south. The property is currently owned by the Cabot Corporation. A location map and a property diagram are attached.

The Facility began operations in 1959 as Penn Rare Metals. Penn Rare Metals primarily extracted beryllium from beryl ore. The Kawecki Division of Cabot Corporation began purchasing interests in Penn Rare Metals in 1960, and by 1963 obtained full ownership. Cabot Corporation continued to operate the Facility for the production of cesium, rubidium, and niobium alloys and high-purity germanium and tellurium until 2002, when all operations ceased. All but two buildings (an office building and a warehouse/garage) have been demolished, and the Facility is currently vacant.

D. Summary of Environmental Investigation

Environmental investigations of the Facility began in 1985. Groundwater from the Facility and surrounding area, and surface water from Rapp Creek both upstream and downstream of the Facility, were sampled by Applied Geotechnical and Environmental Service Corp. (AGES) on behalf of the North Central Oil Corporation. Results from this 1985 investigation found no evidence of contamination of groundwater beneath the Facility or surface water downgradient of the Facility.

In 1986, NUS Corporation conducted a Preliminary Assessment on behalf of EPA. A site reconnaissance and a Site Inspection (SI) were then conducted in July and September 1988, respectively. Each of these investigations focused primarily on a 50- by 50-foot pad that was the former location of a pilot-scale copper recovery unit. Soil, sediment, surface water, and groundwater samples were taken at the Facility. As a result of these two investigations, EPA concluded in 1989 that no significant health impacts were expected from the Facility.

In 1990, 1992, and 1993 Cabot Corporation performed a series of decommissioning efforts to remove portions of four radioactive thorium and uranium slag piles that were a result of historical processes at the Facility. (Since the historical processes involved radioactive material, Cabot Corporation had obtained a license to handle this material at the Facility from the Nuclear Regulatory Commission (NRC) in 1977.) When a confirmatory survey revealed pieces of slag remaining in these four areas, the Facility was placed on the NRC's Site Decommissioning Management Plan list for sites potentially difficult to close out. The conclusions to the

confirmatory survey were reexamined by a subsequent radiological assessment performed in 2001 by ST Environmental Professionals, Inc. (STEP) on behalf of Cabot Corporation. STEP's assessment concluded that the Facility met the current NRC regulations for unrestricted use and that no additional remediation was necessary.

The Pennsylvania Department of Environmental Protection's (PADEP) Bureau of Radiation Protection followed up with a limited survey of unaffected areas to provide reasonable confirmation that there were no unrecorded dumping locations and to audit the previous surveys performed in the four known affected areas. This survey was performed in April 2001 and concluded that the STEP assessment results were representative of the entire area. Therefore, PADEP's Bureau of Radiation Protection concluded that this survey, the STEP survey and a 2001 NRC Environmental Assessment and Safety Evaluation Report were sufficient evidence to allow unrestricted reuse of the Facility property. The NRC issued a letter on September 5, 2001 stating that the Facility's NRC license was no longer necessary and the land was released for unrestricted use.

An Environmental Indicator (EI) inspection was conducted at the Facility in April 2002 by the U.S. Army Corps of Engineers on behalf of EPA in order to determine if the Facility met both of EPA's EIs (see Section G, below). The report from the inspection included a review of historical records and prior investigations of the Facility, and included an evaluation of all Solid Waste Management Units (SWMU) that were observed during the EI inspection. As a result of several apparent data gaps outlined in the EI inspection report, human exposures to contamination and migration of contaminated groundwater were deemed indeterminate from the information available at that time.

In January 2003 Cabot Corporation outlined several additional activities that were being undertaken to clean up the Facility, including decontaminating and demolishing most of the Facility buildings. On behalf of Cabot Corporation, Shaw Environmental also completed characterization of the low-level radioactive slag material remaining at the Facility in a Co-Product Determination report submitted in July and revised in October 2003. The report determined that the slag material could be characterized as a co-product of processes occurring at the Facility and was determined to be a non-hazardous material. This determination allowed Cabot Corporation to remove approximately 4,077 tons of larger pieces and 7,392 tons of smaller pieces of slag from the Facility in 2006 to be beneficially reused as construction aggregate and daily landfill cover, respectively. Disturbed areas of the Facility were restored and re-vegetated in accordance with a restoration plan submitted to the Bucks County Conservation District.

Groundwater sampling was performed in January 2004 by Environmental Standards, on behalf of Cabot Corporation, and results were submitted to EPA in a February 2004 Summary Environmental Report. This report also included a summary of sampling efforts conducted at the Facility since the NUS SI of 1988. A conceptual site model was developed incorporating all of these results in order to determine the fate and transport of contaminants at the Facility. Complete exposure pathways were evaluated for a hunter/trespasser receptor in a risk assessment that determined a carcinogenic risk of $3x10^{-7}$ and a non-carcinogenic hazard of 0.5, which are both below EPA's acceptable risk levels of 10^{-6} to 10^{-4} and 1.0 for carcinogenic and non-carcinogenic hazards, respectively. Following the submittal of this report, EPA determined that both EIs (human exposures to contamination and migration of contaminated groundwater) were

under control at the Facility.

Site decommissioning activities continued in late 2004 with the removal of an underground storage tank near the north side of the fire pond. During the removal, evidence of two former settling ponds and several buried drums were discovered. Shaw Environmental, on behalf of Cabot Corporation, continued the assessment of the area, which included review of historical aerial photography and site plans, interviews with former employees, completion of a ground-penetrating radar (GPR) survey, performance of test pits, and collection of soil samples for analysis. The GPR survey identified 147 anomalies that were excavated and assessed by Shaw Environmental. Approximately 50 drums were excavated, identified as non-hazardous industrial solid waste material, and removed from the Facility. Approximately 200 cubic yards of slag were excavated and provided to an end-user for use as sub-base material. Removal, backfilling, and grading activities were completed in January 2005.

Four sediment samples, two per settling pond, were analyzed for volatile organic compounds and metals. Results showed no exceedances of Pennsylvania's Statewide Health Standards (SHS) except for antimony in one sample, which appeared to be an anomaly based on the average of the other three samples having very low antimony levels. Considering the depth at which this exceedance was located (approximately 8 feet below ground surface) and the backfilling performed after excavation, no adverse impacts are expected due to this exceedance. These activities are further detailed in the September 2009 Removal Action Summary report by Shaw Environmental.

In June 2009 Shaw Environmental, on behalf of Cabot Corporation, completed a Fire Pond Characterization Summary Report to assess the sediment and surface water quality of the pond at the Facility. Twelve sediment samples and two water samples from the pond were taken to characterize the pond. No exceedances of the SHS were noted for volatile organic compounds; however, elevated levels of antimony, mercury, and arsenic were found in several sediment samples. Upon review, the elevated arsenic levels were determined to be a background condition of the area, and the few elevated levels of antimony and mercury were determined to be statistically insignificant, i.e. elevated levels were not high enough and frequent enough to be a cause for concern. Surface water samples revealed no exceedances of the SHS, however, a pH of 9.2 was noted as indicative of the eutrophication processes that are occurring in the pond.

In August 2010 a revised version of the February 2004 Summary Environmental Report was submitted by Environmental Standards on behalf of Cabot Corporation due to inconsistencies that were discovered by EPA during the review for this SB. New toxicity values for vanadium and mercury were also incorporated into the revision. The resultant hazards for the hunter/trespasser scenario were 0.4 for non-carcinogenic hazards and 3.9×10^{-5} for carcinogenic hazards, which remain below the EPA risk levels of 1.0 and 10^{-6} to 10^{-4} for non-carcinogenic and carcinogenic hazards, respectively. Since soil at the Facility contains levels of contaminants above the Residential Soil Risk-Based Concentrations, a restriction on the use of Facility property is required to ensure that any residential use is prohibited. The institutional control prohibiting residential use is described in more detail in Section F, below.

E. Evaluation of EPA's Proposed Remedy

This section provides a description of the criteria EPA uses to evaluate proposed remedies under the Corrective Action program. The criteria are applied in two phases. In the first phase, EPA evaluates three criteria, known as threshold criteria. In the second phase, EPA uses seven balancing criteria to select among alternative solutions, if more than one is proposed. The Facility has demonstrated that the current conditions meet the threshold criteria established by EPA. Because EPA is not selecting among alternatives, a complete evaluation of the balancing criteria is not necessary.

The following is a summary of EPA's evaluation of the Threshold Criteria:

1. <u>Protect Human Health and the Environment</u> - This proposed remedy protects human health and the environment from exposure to contamination. EPA's proposed remedy meets this standard for current and reasonably anticipated land uses. The low levels of contamination that remain in soil at the Facility are not expected to impact any potential receptors at levels that represent an unacceptable risk. Moreover, the IC to be placed on the Facility will restrict use of the property to non-residential uses, which will further reduce potential exposures to the low levels of remaining soil contamination. Groundwater samples from beneath the Facility indicated no impact from Facility-related contaminants. The levels of contamination found in sediment samples were of such low concentrations that EPA proposes that no action is necessary for this medium.

2. <u>Achieve Media Cleanup Objectives</u> - EPA's proposed remedy meets the appropriate cleanup objectives, which are the protection of human health and the environment, based on assumptions regarding current and reasonably anticipated land and water resource use(s). The majority of contaminants detected at the Facility were at levels below appropriate risk-based standards. The few contaminants detected at levels exceeding risk-based concentrations were evaluated in a site-specific risk assessment that demonstrated that any potential receptor would not be adversely affected by contamination remaining at the Facility.

3. <u>Remediating the Source of Releases</u> - In all remedy decisions, EPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. The Facility has removed all known potential continuing sources of contamination through the decommissioning process. Consequently, there are no current, discrete sources of waste or constituent release.

F. Institutional Controls

Institutional Controls (ICs) are generally non-engineered mechanisms such as administrative and/or legal controls that minimize the potential for human exposure to contamination and/or protect the integrity of a remedy. Under this proposed remedy, some concentrations of contaminants will remain in the soil at the Facility above levels appropriate for residential and domestic uses. As a result, the proposed remedy will require the Facility to implement ICs in order to restrict use of the Facility property to prevent human exposure to contaminants while such contaminants remain in place.

The proposed IC may be instituted through an Environmental Covenant, pursuant to the Pennsylvania Uniform Environmental Covenants Act, Title 27, Chapter 65, Sections 6501-6517 of the Pennsylvania Code, and recorded with the Clerk's Office of Bucks County, Pennsylvania, and would state that the impacted property area would be used only for non-residential purposes. As part of the Environmental Covenant, if executed, Cabot Corporation will be required to provide a coordinate survey as well as a metes and bounds survey of the impacted property area and the Facility boundary. Mapping the extent of the land use restrictions will allow for presentation in a publicly accessible mapping program such as Google Earth or Google Maps. A clerk-stamped copy of the Environmental Covenant would be sent to EPA and PADEP within sixty (60) calendar days of recordation.

If Cabot Corporation were to fail to meet its obligations under the enforceable mechanism proposed or EPA, in its sole discretion, deemed that additional ICs are necessary to protect human health or the environment, EPA has the authority to require and enforce additional ICs, such as in an order or permit.

G. Environmental Indicators

Under the Government Performance and Results Act (GPRA), EPA has set national goals to measure progress toward meeting the nation's major environmental goals. For Corrective Action, EPA evaluates two key environmental indicators for each facility: (1) current human exposures under control and (2) migration of contaminated groundwater under control. The Facility met these two indicators on March 3, 2004.

H. Financial Assurance

Due to the minimal cost of the proposed remedy, no financial assurance is required.

I. Public Participation

The Administrative Record (AR) contains all information considered by EPA in reaching this proposed remedy. It is available for public review during normal business hours at:

U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
Contact: Mr. Griff Miller (3LC30)
Phone: (215) 814-3407
Fax: (215) 814 - 3113
Email: miller.griff@epa.gov

Interested parties are encouraged to review the AR and comment on EPA's proposed remedy. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. Comments may be submitted by mail, fax, or e-mail to Mr. Griff Miller. EPA will hold a public meeting to discuss this proposed decision upon request. Requests for a public meeting should be made to Mr. Miller.

EPA will respond to all relevant comments received during the comment period. If EPA determines that new information warrants modification of the proposed remedy, EPA will make appropriate changes. EPA will announce the selection of the final remedy and explain the rationale for any changes in an FDRTC. All persons who comment on this proposed decision will receive a copy of the FDRTC. Others may obtain a copy by contacting Mr. Miller.