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Regulatory Reinvention Pilot Projects
FRL-5197-9, Water Docket
Mail Code 4101
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Dear Sirs,

CONSAD Research Corporation is pleased to submit this XL proposal on behalf of the US Steel Group and the organizations proposed to participate in this project.

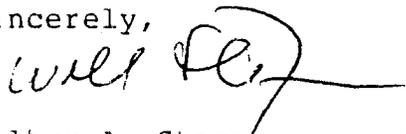
We believe that the Buckeye Eco-Industrial Park proposed in this submittal represents a significant step in the redirection and revitalization of Federal environmental policy.

Should you have any immediate questions, please do not hesitate to contact me or Alex Botkin at CONSAD, or Miles Stipanovich, Jr., at US Steel Group, Pittsburgh, PA. Mr. Stipanovich's address and phone number are:

U.S. Steel
600 Grant Street
Pittsburgh, PA 15219-2749

Phone: 412-433-2813
FAX: 412-433-2811

Sincerely,



Wilbur A. Steger
President

WAS:hlc

Enclosures

cc: Miles Stipanovich, Jr.
U.S. Steel Group

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Facility-Based XL Project Proposal:

Establishment of the Buckeye Eco-Industrial Park
Belmont County, Ohio

Proposal To:

Regulatory Reinvention Pilot Projects
FRL-5197-9
Water Docket
Mail Code 4101
United States Environmental Protection Agency
401 M Street, S.W.
Washington D.C. 20460

Proposal From:

US Steel Group
Pittsburgh, PA

August 29, 1995

Introduction

The Buckeye XL Project presented in this proposal represents an opportunity for US EPA and Ohio EPA to adopt alternatives to environmental management techniques driven by existing regulations. Adoption of reasonable, cost-effective management strategies presents a win-win opportunity for the residents of Belmont County, Ohio, who will achieve both environmental and economic benefits from the successful implementation of this proposal.

In the sections that follow, we present a broad outline of the benefits of this proposal, a description of the fundamental elements that comprise the Project scope, the relationship of the Project to EPAs XL criteria, identification of prospective participants in the Project, and delineate proposed relationships and responsibilities.

The Jefferson County/Belmont County Solid Waste Management District, the Buckeye PRP Group, Ohio EPA, and the other parties involved in this Project believe that US EPA will be able to respond enthusiastically to opportunities presented in this XL Project.

Overview of the project proposal

Objective of the Project

The Buckeye XL Project envisions the establishment of an eco-industrial park whose core technology involves the application of innovative pyrolytic technology in the production of carbon materials and energy. The process input stream would consist of newly collected municipal waste, discarded tires and coal refuse (gob) from nearby existing sites. The park will draw in other processes and technologies which recycle or reuse other fractions of the municipal waste stream, or manufacture new products utilizing the materials and energy produced there. The enhancement of wildlife habitats and improvement of visual appeal on the adjacent superfund site will significantly contribute to the marketability of the site as an industrial park.

Support for this eco-industrial park comes from the Buckeye PRP Group who believe that a more cost-effective solution for a Remedial Design (RD) can be achieved through careful consideration of the environmental needs of the site rather than inflexible application of statutory laws and regulations.

Environmental Benefits to the Community

Implementation of the Buckeye XL Project will contribute to the environmental well-being of Belmont County residents by speedily resolving outstanding disagreements on the Buckeye Superfund site without extensive legal action, enhancing the ecological attractiveness of the Buckeye Superfund site beyond narrow regulatory vegetation requirements, assisting in the disposal, recycling and reuse of municipal solid waste in the County, and reducing coal mine gob piles and discarded tire dumps throughout the southeastern Ohio region.

Economic Benefits to the Community

The resources to create an eco-industrial park are beyond the means of many local governments. This development activity can serve as a springboard to regional economic development opportunities which will provide employment for citizens and an expanded tax base for the local governmental bodies.

The proposed, more cost-effective, Buckeye XL Project would also reduce the economic impact of the Buckeye Superfund Remedial Design (RD) on the citizens of the county.

More than 22,000 acres of the county are presently devoted to park and recreational uses which draw significant number of visitors. The proposed amended RD for the superfund site further enhances the recreational and wildlife aspects of the county's economy.

Description of the Project

Community

Belmont County is located in eastern Ohio, straddling the major east-west corridor, Interstate 70 and is adjacent to the Ohio River and the West Virginia panhandle. The county population in 1990 was 71,000 persons. Median household income is \$ 21,000. The unemployment rate is about 8.9 percent, well above the national and state averages.

Because a significant portion of the Buckeye Superfund Site consists of municipal waste, area citizens and local governments are concerned with the financial impacts of inflexible, regulatorily mandated remediation. This Project represents an opportunity to lessen that impact and to enhance the economic benefits of an improved environment.

Site

The Project site encompasses approximately 125 acres. The major portion of the land, approximately 100 acres, represents the Buckeye Superfund site. Adjacent to this tract is a brownfield area of approximately 25 acres which is suitable for the location of an industrial park.

The current RD for the Buckeye Superfund site has a range of features which are felt to be contrary to current environmental design and thought. The Buckeye PRP Group is optimistic that the XL project mechanism can produce a more cost-effective solution for a Remedial Design.

The proposed alternative remedial approach retains a substantial portion of the existing Phase I RD. Contemplated alternatives to the Phase I RD include: retaining and enhancing the existing leachate cap rather than opening, regrading and recovering the site; and adopting more wildlife-friendly vegetation practices than current requirements permit.

Wildlife Habitat

Augmenting the basic vegetative cover contemplated by the RD, the Project would create a true wildlife and wetlands habitat. This improvement to the site would add visual and aesthetic enhancement to the industrial park, creating an attractive buffer zone which would further induce the establishment of wildlife on the site.

The current RD requirement for shallow rooted grasses would not allow the development of a diverse wildlife community. Alternative strategies developed by the Wildlife Habitat Council (WHC) could include the planting of corridors of native trees and shrubs to link into adjacent existing forested habitats, establishing islands of coniferous trees which provide winter food and cover for indigenous white tail deer, and constructing and placing various structure to provide perching and nesting sites for raptors and songbirds.

Adoption of the alternative vegetation strategies also contributes to a reduction in leachate infiltration.

Eco-Industrial Park

The Jefferson County/Belmont County Solid Waste Management District (SWMD) will act as the lead agency responsible for the creation and establishment of an eco-industrial park whose core technology involves the application of innovative pyrolytic technology in the production of carbon materials and energy. The park will attract other processes and technologies which recycle or reuse other fractions of the municipal waste stream, or manufacture new products utilizing the materials and energy produced there.

The core technology for the Buckeye Eco-Industrial Park is the Pennsylvania Coke Technology Incorporated (PACTI) Pyrolysis System developed to use discarded tires blended with coal refuse and an assortment of municipal waste materials as feedstock to produce energy and a variety of carbon products.

The Park will have a technical general manager, reporting to the SWMD. This manager, Concurrent Technologies Corporation (CTC), will assist in the integration of industrial process in the park and identify opportunities for further linkages between complementary industrial processes.

The Belmont County Department of Development would serve as the on-going point of contact for economic development in the eco-industrial park. The major thrust of the economic development program will occur during the initial PACTI research phases when the Department will be assisted by CTC and CONSAD Research in identifying development opportunities and organizations which will further the objectives of an eco-industrial park complex. CONSAD will assist in the creation and implementation of a targeted marketing program to reach firms and investors interested in the Buckeye Eco-Industrial Park.

Relationship to EPA XL Project Criteria

Environmental Results

Three complementary environmental benefits are anticipated to result from the implementation of this XL Project. The first two

are specific to the site and the southwest Ohio region, and the final one has dramatic implications for the coke manufacturing and consuming industries.

First, the PRP Group believes that a flexible approach to the needs of the Buckeye Site will produce a long-term solution that better integrates the site into the surrounding wildlife ecosystem. Second, by using the Pennsylvania Coke Technology Incorporated (PACTI) process as a core technology the eco-industrial park will, over time, have a significant impact on the environmental problems of the region by reusing unsightly coal gob piles, discarded vehicle tires, and municipal waste.

Finally, the large scale demonstration of an environmentally friendly coke manufacturing process, will encourage existing coke producers to favorably consider redesigning their current facilities at the end of their useful economic life. Because coke plants are both strategically critical and capital intensive operations, manufacturers find it difficult to accept new processes that are theoretically better. The full scale demonstration of a new process technology could induce changes in industry-standard technology approaches.

Cost Savings

The Buckeye XL Project will produce both cost savings and create an economic opportunity for the residents of Belmont County.

The cost savings are created by adopting a more creative and flexible solution in the Phase I remedial design of the Buckeye Superfund Site. A significant portion of the savings will be invested in the development of the eco-industrial park.

The economic opportunity for the community lies in the seed capital for the eco-industrial park and its core technology, provided by the Buckeye PRP Group. This development activity can serve to expand regional economic development opportunities affording employment for citizens and an expanded tax base for the local governmental bodies.

Stakeholder Support

Local support for this eco-industrial park and the more flexible Phase I solution has been received from the Jefferson County/Belmont County Solid Waste Management District (SWMD) which will serve as the lead agency in establishing the park. The Ohio EPA, and US EPA Region 5 have also responded favorably to initial discussions on the proposed concept.

Innovation

Three aspects of innovation and pollution prevention characterize this proposed XL Project. First, the alternative design for the Buckeye Superfund Site proposes the use of an enhanced vegetative cover not permitted under current regulations. Second, the PACTI process will assist in the reclamation of nearby existing coal refuse piles, and use of municipal waste and discarded tires. Finally, the PACTI process will demonstrate its innovative pollution prevention method for thermal destruction of toxic hydrocarbon emissions as an integral part of its process.

Transferability

The concept of eco-industrial parks is not new. It is, however, largely untried because of the difficulty of assembling complementary industrial processes. Establishment of this park will provide a working high-visibility site for eco-industrial economic development training and education. The role of the core-technology process in meeting the needs of other environmental entrepreneurs is only theoretically understood. This park provides an opportunity to develop these relationships.

This project is also important because it continues the use of a brownfield site rather than the environmentally destructive industrialization of a greenfield location. Transfer of ownership and establishing the a priori rules governing responsibility under CERCLA (Superfund) are still in development. The understanding and exchange of protocol and practice in this area of environmental real estate business is thus important.

Feasibility

A single entity, the SWMD will have administrative responsibility for the continuing operation of the Buckeye Eco-Industrial Park. It is to be supported technically by Concurrent Technologies Corporation (CTC), which will act a general technical manager for the Park. The development, design, and installation of the PACTI process will be coordinated by PACTI with CTC and the SWMD. The remediation of the Buckeye Superfund Site in accordance with any Final Agreement reached under an XL project will remain the responsibility of the PRP Group.

The initial seed money for research and establishment of the Park will be provided by the Buckeye PRP Group. Additional funding for the development of the park would be sought from others including private sector investors, foundations, and state and federal government agencies.

Monitoring, Reporting and Evaluation

The developers of this proposal envision three types of communication methods in use during the initial stages of the Buckeye Eco-industrial Park. CTC will have the principal responsibility for information dissemination because of its experience and resources.

Following the approval and signing of the XL Project Final Agreement, the project team will develop a comprehensive schedule for the development of the PACTI technology and the industrial site. In accordance with this schedule, and as other opportunities arise, CTC will release material describing the process of the project. CTC will establish an internet website on its existing server which will contain all non-proprietary progress and technical information on the project with links to other relevant web-sites. CTC will also maintain a mailing list of individuals and organizations that wish to receive printed information about the project.

CTC will coordinate workshops or seminars on issues relating to brownfield reuse and the development of eco-industrial parks. It will coordinate with the WHC on information dissemination related to the wildlife habitat improvement project. These

information exchanges will help environmental communities across the country develop and refine their own plans and concepts of eco-friendly development. These will also serve as opportunities for independent peer-review of the objectives and progress of the Buckeye XL Project.

Shifting of Risk Burden

The alternatives proposed for adoption under the Buckeye XL Project do not create any new environmental risks for the community or the participants. In fact, by adoption of a revised plan for cut and fill of the superfund site, the project eliminates risks that would have been borne by construction workers involved in reopening, moving and recapping some 200,000 cubic yards of municipal and industrial waste.

Participants in the Project

The operational success of the Project depends upon the participation and cooperation of several different organizations. Roles of these participants include oversight, management, implementation, and financial support. Several have legal, statutory, and regulatory obligations; while others will act as contractors, implementing the activities that need to take place to ensure a successful program. With each organization listed is the name of a contact person (or persons), familiar with the thrust of this program, the Buckeye Site and the community, and to whom questions and concerns can be addressed.

Jefferson County/Belmont County Solid Waste Management District (SWMD)

Jim Hepe, Belmont County Commissioner, 614-695-2121
Mike Bianconi, Belmont County Commissioner, 614-695-2121

The SWMD is the regions manager for all solid waste issues. In its sphere of responsibility are such activities as:

- Collection
- Household Hazardous Waste
- Materials Processing
- Recycling
- Siting
- Transfer
- Composting
- Landfilling
- Planning
- Regionalization
- Source Reduction
- Waste-to-Energy

In this project it has two additional roles. It will act as the lead agency responsible for the creation of the eco-industrial park. The SWMD is also responsible for the solid waste transfer station on the site which will be a feedstock source for the PACTI process and the recycling operations.

Concurrent Technologies Corporation (CTC)

Dr. Dale Denny, 814-269-2400

Concurrent Technologies Corporation, a non-profit corporation, serves as a national resource to assist the nation's industrial base in achieving world class manufacturing agility and

competitiveness. CTC is committed to successfully transferring leading edge technologies to defense clients, other governmental organizations, and the domestic industrial base. CTC is staffed by over 500 professional engineers, scientists, and technicians.

Of particular interest for this Project, is the fact that CTC operates the National Defense Center for Environmental Excellence (NDCEE) the staff supporting this program are involved in projects relating to pollution prevention, remediation and restoration of environmentally impacted facilities and sites.

For the Buckeye Eco-Industrial Park, CTC will act as a technical general manager, reporting to the SWMD. CTC will assist in the integration of industrial process in the park and identify opportunities for further linkages between complementary industrial processes. CTC will also assist other eco-entrepreneurs as they become involved in the Project. CTC, through its existing electronic and print publishing capabilities will provide documentation and information on the progress and success of the eco-industrial park.

US EPA Region 5

(Specific contact persons to be determined with project approval)

Michelle Jordan, 312-886-3000
William Muno, 312-886-7579

Responsibilities and staffing of oversight and monitoring activities on the Buckeye Superfund Site are coordinated with Ohio EPA staff.

OHIO EPA

(Specific contact persons to be determined with project approval)

Jeff Hurdley, 614-644-3037
Abby LaVelle, 614-385-8501
Peter Thompson, 614-385-8501

Ohio EPA has primary responsibility for the Jefferson County/Belmont County Solid Waste Management District and thus is expected to play a major role in the implementation of any Final Agreement under an XL project. The Ohio EPA and the Buckeye PRP Group have a history of constructive discussion and relationship.

Buckeye PRP Group

Miles Stipanovich, US Steel Group, 412-433-2811

The PRP Group is first and foremost responsible for the cost-effective remediation of the Buckeye site in accordance with the Final Agreements to be reached as a consequence of this XL Project.

Under this proposed XL Project, the PRP Group will also provide seed capital toward the initiation of the eco-industrial park, technical general management and the development of the PACTI process. Funds will also be made available for the creative development of wetlands and wildlife-attracting habitats.

The resources for wildlife habitat enhancement and the eco-industrial park seed capital will be available in part due to the reduction in expenses associated with the implementation of a revised Phase I remedial action for the Buckeye Superfund Site.

Wildlife Habitat Council

Joyce Kelly, 301-588-8994

The Wildlife Habitat Council (WHC) is a non-profit, non-lobbying group of individuals, conservation organizations, and corporations dedicated to the enhancement and preservation of wildlife habitat. WHC was created in 1988 to help large landowners, particularly corporations, manage their unused lands in a ecologically sensitive manner for the benefit of wildlife.

In its "Wastelands to Wildlands" program, WHC designs creative, cost-effective management options for habitat enhancement programs on degraded lands traditionally overlooked for habitat restoration.

Pennsylvania Coke Technology Incorporated (PACTI)

Phil Masciantonio, 412-834-7555

PACTI was established in 1977. The technology base for the firm was established in a demonstration program at Alverton Coke and was approved by US EPA for a "greenfield" installation in West Virginia in the 1980's. Unfavorable business conditions prevented its installation in the United States, but a limited production facility was constructed in Mexico and can serve as a design test-bed for technology enhancements.

PACTI has improved the technology of coke-making with a number of technical, environmental, and operational enhancements including:

- thermal destruction of 99.99% of toxic hydrocarbon emissions,
- elimination of uneven heating and product quality,
- production of salable energy in the form of electric power or steam, and
- integration of advanced pollution control technologies for the control of both fugitive particulate and gaseous effluent pollutants.

The PACTI Pyrolysis System as developed for the Buckeye Eco-Industrial Park would use discarded tires blended with coal refuse and an assortment of municipal waste materials to produce energy and a variety of carbon products.

Belmont County Department of Development

Donald Meyers, 614-695-9678

The Department of Development is a small governmental unit charged with expansion of employment and economic development in the county. With modest resources at its disposal, it serves as liaison between the business community and other governmental units in the county. The department would serve as the on-going point of contact for economic development in the eco-industrial park.

CONSAD Research Corporation

Dr. Wilbur Steger, 412-363-5500

Now in its fourth decade of work, CONSAD is an organization actively involved in economic development, and economic and policy analysis. CONSAD has assisted local government organizations in analyzing, planning, and implementing community economic development projects.

For this Project, CONSAD will assist CTC and the Belmont County Department of Development in identifying development opportunities and organizations that can further the objectives of an eco-industrial park complex. CONSAD will also develop a targeted marketing program and prepare and direct the distribution of marketing materials related to the eco-industrial park.

Other entities

The establishment of the eco-industrial park includes the involvement of additional firms involved in waste management, recycling and reuse. These will be located and involved in the project as opportunities and requirements appear.

Proposed Relationships and Responsibilities

Management, Control and Operation

A single entity, the Jefferson County/Belmont County Solid Waste Management District will have administrative responsibility and control over the continuing operation of the Buckeye Eco-Industrial Park and its development. It will be supported technically by Concurrent Technologies Corporation (CTC), who will act a general technical manager for the Park under contract to the SWMD. CONSAD will assist the county Department of Development under a contract to CTC and the SWMD. The development, design, and installation of the PACTI process will be coordinated by PACTI with CTC and the SWMD. The remediation of the Buckeye Superfund Site in accordance with any Final Agreement reached under an XL project remains the responsibility of the PRP Group. The Wildlife Habitat Council will complete its work under a contract with the PRP Group.

Funding

It is estimated that the initial phases of the Buckeye Eco-Industrial Park, including PATI process development, will be completed for approximately \$2 to \$3 million dollars, depending upon the scope of the unit operations examined and the degree of detail required to be investigated. Construction of the production scale plant and its associated infrastructure would require consideration of private sector investor interests based on marketing and financial projections at that time.

The initial seed money for research and establishment of the Park will be provided by the Buckeye PRP Group. Additional funding for the development of the park would be sought from other investors including private sector foundations, state and federal government agencies.

The funding for the completion of the Buckeye Superfund site remediation is under the responsibility and control of the PRP Group.

Implementation Schedule

It is anticipated that the revised Phase I RD as established in the Final Agreement under this proposed XL Project would be implemented and completed within a period not to exceed two construction seasons following its acceptance.

The development of the eco-industrial park will be based on the timing of research and development, and materials characterization and analysis in conjunction with the PACTI process. The first component is estimated to require six to nine months to complete. A second study phase is anticipated to also last six to nine months followed by the construction of a demonstration scale plant.