FINAL REPORT
FOR CRADA NO. C-05-01
BETWEEN
BROOKHAVEN SCIENCE ASSOCIATES
AND
BATTELLE MEMORIAL INSTITUTE

Project Entitled: Developing Environmentally Beneficial Secondary End-Use Applications for Kazakhstan By-Product Sulfur Waste

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TITLE: Developing Environmentally Beneficial Secondary End-Use Applications for Kazakhstan By-Product Sulfur Waste

TECHNOLOGY AREA: Environmental

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NOTE : The IPP/ISTC project associated with this CRADA is currently being terminated.

PROJECT DESCRIPTION: This CRADA was in support of DOE IPP Project BNL-321/ISTC K-1421,

PROJECT OBJECTIVE: Develop beneficial products from by-product sulfur generated by the exploitation of oil and gas reserves in Kazakhstan using conventional techniques.

ACCOMPLISHMENTS: This project has been stalled since shortly after it began (see Significant Problems) with no major accomplishments achieved. However, a separate related CRADA with Battelle (BNL 04-02) was conducted to examine the Definition of Non-Conventional Sulfur Utilization in Western Kazakhstan for Sulfur Concrete (Phase I). This funds-in CRADA allowed BNL to work with Battelle and Russian and Kazakh collaborators and resulted in a data report on market potential for new sulfur products as well as preliminary laboratory trials for new sulfur polymer formulations. This work was conducted for Agip, KCO and eventually attracted the attention of Shell, which led to an additional small project for BNL.

SIGNIFICANT PROBLEMS: Soon after the project began the Kazakh Principal Investigator, Sergey Vagin died unexpectedly. Several attempts were made to find a suitable replacement. Most recently the new PI, Vladimir Sinyayev switched institutes and ISTC which coordinates program management for the sponsoring parties requested the funding stay with Sinyayev and his team. His former institute, Institute of Chemical Sciences wanted to keep the project and the dispute has kept the effort from moving forward.

INDUSTRY BENEFITS REALIZED: If the project had been able to continue, expected benefits include the ability to recycle industrial by-product sulfur that is currently piling up in storage at oil and gas facilities worldwide. Potential large volume products include alternative concrete materials for construction and synthetic aggregate for use in road paving. This use of waste materials for secondary applications is critical for sustainable development.

LABORATORY BENEFITS REALIZED: BNL has several waste treatment and environmental remediation technologies based on sulfur polymer and is developing new uses for sulfur products. This IPP project and associated CRADAs allowed BNL to pursue these new applications.

RECOMMENDED FOLLOW-ON WORK: None at this time.