

## STATEMENT OF CONSIDERATIONS

### REQUEST BY CERAMATEC INC. FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN PATENT RIGHTS UNDER DOE CONTRACT NO. DE-EE0000395 W(A) 2011-008

Ceramatec Inc. ("Ceramatec") has requested a waiver of domestic and foreign patent rights of the United States of America in all subject inventions arising from its participation under the above referenced grant entitled "R&D of Novel Materials for Animal Litter Using High-Carbon Fly Ash (UT)." Any subcontractors of Ceramatec, if there will be any, are not subject to the waiver. At this time, Ceramatec does not intend to use subcontractors.

This grant is a Congressional Directed Project directed to developing an animal litter from fly ash waste materials. The specific goals of the project are to (i) create a novel high-surface area highly adsorbent material for odor control in litter applications using coal fly ash; (ii) combine a synthetic high-surface area hierarchical material with agglomerated fly ash for use as an innovative green clumpable animal litter; (iii) use environmentally sound green chemistry techniques for sustainable product development; and (iv) develop new classes of materials with specific chemistries to promote the beneficial use of fly ash into entirely new markets.

The total anticipated cost of the grant is \$1,189,375 with Ceramatec providing 20% cost share, totaling \$237,817. This waiver is contingent upon Ceramatec maintaining at least a 20% cost share over the course of the grant.

According to Ceramatec, "[its] technical competence in the field of recycling fly ash for beneficial use (including animal litter) is the best in the world. No other company can rival Ceramatec's technical experience regarding beneficial re-use of fly ash. Ceramatec has been studying the chemical and physical properties of fly ash for 5-years." Ceramatec has prior experience with the Department of Energy related to fly ash research (SBIR grant number DE-FG02-05ER84197 phases I&II). Ceramatec was able to team with a commercial partner to further the results from the prior DOE awards. Ceramatec has filed five U.S. patent applications directed to beneficial re-uses of fly ash.

Ceramatec's lead researcher for this project is Dr. Chett Boxley. Dr. Boxley holds a Ph.D. in chemistry and has been researching fly ash materials since late 2005. Dr. Boxley's team also includes a bachelor-level chemist and two chemical engineers. As a member of the American Coal Ash Association (ACAA)'s technical committee, Dr. Boxley has presented several times at ACAA events regarding uses and benefits of fly ash.

Ceramatec is a wholly-owned subsidiary of CoorsTek, the largest manufacturer of technical ceramics in the world. If the waiver is granted, Ceramatec intends to license the animal litter technology to CoorsTek for commercialization. Currently, Ceramatec and CoorsTek are studying scale-up issues for this technology. Their current analysis indicates that an investment of \$5,000,000 will be needed to develop a manufacturing facility for a commercial product utilizing this animal litter technology. The decision on whether to make this investment will be based on whether the study by Ceramatec and

CoorsTek indicates likelihood that the commercial product would be profitable. The granting of the waiver will increase the likelihood of commercialization by Ceramatec and CoorsTek.

Referring to item 10 of the waiver petition, according to Ceramatec, "[t]here is no anticipated effect on market concentration or competition, because no other animal litter manufacturer currently uses fly ash in any form to produce animal litters. This waiver request will not put Ceramatec or CoorsTek in a dominant market position. Current materials for animal litter include bentonite clay, which currently dominates the market. Our technology is simply a green alternative to the strip mined bentonite clay materials. In principle introduction of our technology will increase competition and give consumers alternative products with identical performance as bentonite clays."

Ceramatec has agreed that this waiver shall be subject to the march-in and preference for U.S. industry provisions, as well as the U.S. Government license, comparable to those set out in 35 U.S.C. 202-204. Further, Ceramatec has agreed to the U.S. competitiveness provision as attached to this Statement. In brief, Ceramatec has agreed that products embodying any waived invention shall be substantially manufactured in the United States, and that Ceramatec will not license, assign, or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements.

Considering the foregoing, it is believed that granting this waiver will provide Ceramatec and CoorsTek with the necessary incentive to invest its resources in commercializing the results of the grant in a manner that will make the above technology available to the public in the shortest time. Therefore, upon evaluation of the waiver petition and in view of the objectives and considerations set forth in 10 CFR 784, all of which have been considered, it is recommended that the requested waiver be granted.

[REDACTED]

Glen R. Drysdale  
Patent Attorney  
Golden Field Office

Date: [REDACTED]

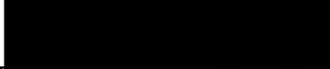
Based upon the foregoing Statement of Considerations and the statements made by Ceramatec in its petition and other supporting documents submitted by Ceramatec as part of the patent waiver request process, it is determined that the interests of the United States and the general public will best be served by a waiver of patent rights of the scope determined above, and therefore the waiver is granted. This waiver shall not apply to any modification or extension of the grant, where through such modification or extension, the purpose, scope, or cost of the grant has been substantially altered.

**CONCURRENCE:**

  
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Paul Bryan  
Program Manager  
Biomass Program

Date: 

**APPROVAL:**

  
  
\_\_\_\_\_  
John T. Lucas  
Assistant General Counsel for Technology  
Transfer and Intellectual Property

Date: 

## **U.S. COMPETITIVENESS**

Ceramatec agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States, unless Ceramatec can show to the satisfaction of DOE that it is not commercially feasible to do so. In the event DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., recoupment of the Government's investment, etc.

Ceramatec further agrees to make the above condition binding on any assignee or licensee or any entity otherwise acquiring rights to any waived invention, including subsequent assignees or licensees. Should Ceramatec or other such entity receiving rights in any waived invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in any waived invention is suspended until approved in writing by DOE.