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Kerogen Oil Value Enhancement Research

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ABSTRACT

Task 13 (a) was approved on December 21, 2001. Minimal work was performed for the quarter during the approval process. Laboratory and equipment facilities have been maintained in anticipation of the work to be done. The PI communicated with DOE and Estonia researchers during this period, providing advice and direction for the startup of the Estonia research, and preparing a Draft Teaming Agreement. The PI participated in an industrial liaison meeting with DOE personnel. This meeting is expected to lead to formal cooperation between industry and government.

Technical Progress Report

SPX5-123-01

4th Quarter, 2001

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*required fields

List of Graphical Materials

(none this quarter)

Introduction

This report marks the initiation of work under task 13(a), product development, Estonia kerogen oil.

Experimental*

No experimental work was conducted this quarter as a result of the approval process occurring only 9 days before the end of quarter.

Results and Discussion*

The phase -2 USA-Estonia cooperative research program received approval during this quarter and the contractor will play an appropriate role in this program. One of the overall objectives of phase-2 is the integration of process data with economic estimates to establish a conceptual commercial opportunity. The opportunity will be introduced to industry with the objective of attracting private financing to implement a commercial venture. While the scope of the Contractor's work will focus on developing samples for assessment, the product manufacturing work will be performed within the context of the overall objective of phase-2. Part of the overall objective will be to produce a plan that is comprised as follows:

- i) resource description - the approximate grade and quantity of ore available to the retorts.
- ii) retort description - currently available capacities, results of efficiency studies, opportunities for expansion, estimated capital costs of expansion.
- iii) kerogen oil processing - a description of the preferred and alternative process schemes, including overall mass balances.
- iv) product slate - a description of the products projected for market, including synthetic crude oils, broad range products, pure compound products, and finished consumer and industrial products.
- v) prospective customers - lists of prospective customers of products and their required specifications, if available. This section will also include a brief description of a marketing strategy.
- vi) economics - projected investment costs, operating costs and revenues.
- vii) intellectual property position - description of intellectual property portfolio and protection of rights of investors.

viii) development requirements - a listing of the developments needed before commercial investment can be made (primarily phase-3 and pre-commercial tasks). A long-range development vision may be included which involves growth-oriented research and the application of the technology concept to the oil shale resources of the USA and other nations.

ix) consortium and funding proposal - a plan for funding, management and participation in phase-3.

x) Schedule - prepare a development time-line.

The plan will be shared with those companies and individuals who sign a confidentiality agreement and who will constitute the pool from which an industrial consortium will be built.

Key steps to be accomplished in the next quarter are to better define the dealkylation step, including the yield and specificity of dealkylated phenolics, which can be produced. Also on the agenda are improvements in extraction results and the catalytic hydroprocessing of raffinate to prepare a premium refinery feedstock. Galoter oil will be used to prepare product samples and research will be conducted to allow comparison with the Kiviter oil.

Conclusion*

The initiation of phase - 2 of the Estonia program marks the beginning of the development program whereby technologies developed in this phase will be used to interest private industry in the processing of Kukersite kerogen oil.

References*

(no references this quarter)

List of Acronyms and Abbreviations

Galoter - the name of a hot rock recycle rotary kiln retort employed at Nrva and characterized by a riser combustor that burns the semi-coke for energy.

Kiviter - the name of a down flow, cross-fired retort technology employed at Kohtle-Jrve and characterized by a water seal at the base of the retort.