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PROGRESS REPORT NO. 3

FINAL FEASIBILITY STUDY
ANDERSON RANCH PROJECT
YAVAPAI COUNTY, ARIZONA

For

MINERALS EXPLORATION COMPANY, INC.

May 1978

MORRISON KNUDSEN

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1.0 SUMMARY

Minerals Exploration Company, Inc., awarded Morrison-Knudsen Company, Inc., a contract for the Anderson Project Preliminary Feasibility Study on September 9, 1977. Subsequent to the completion of the Preliminary Feasibility Report, Minerals Exploration requested Morrison-Knudsen Company to perform an additional study. This study will be the Anderson Project Final Feasibility Study. The authorization of this work was contained in a letter from F. H. Buchella, Jr., dated April 24, 1978. A meeting to discuss the Scope of Work was held by Messrs. F. Buchella, O'Dean Anderson, and R. J. Mehle on April 25, 1978, in Morrison-Knudsen's Boise office. The work is being performed under ECN 005 of the original project work order 1114. The Scope of Work for this study is presented in Section 2.0. A meeting to review the scope and to finalize the design criteria was held in Tucson on May 15 and 16.

As of May 29, 1978, the engineering was approximately 20 percent complete. Two invoices, totaling $4,412.17, covering the recorded charges for ECN 005 through May 12, 1978, have been submitted to MEC for payment. This includes approximately 4.5 percent of the $91,662 costs which were estimated for this Final Feasibility Study. At present, all indications are that the Final Feasibility Study will be completed on schedule by July 15, 1978.

2.0 SCOPE OF WORK

Morrison-Knudsen Company, Inc., proposes to provide Minerals Exploration Company (hereafter referred to as Owner), with engineering services required to complete a Final Feasibility Study for Owner's use in planning the development of its uranium deposit in Yavapai County, Arizona. The study will develop capital and operating cost estimates accurate to within ± 15 to 20 percent of actual costs for facilities to mine and process 2000 dry tons of uranium ore per day. Pre-operational costs shall be considered and analyzed as part of the cost estimate. June 1, 1978, shall be considered the effective date of all costs and equipment prices. Standard open pit mining methods will be used and a conventional acid leach, CCD, solvent extraction process will recover U_3O_8 from the ore in the form of a yellowcake concentrate. Morrison-Knudsen understands that the average ore grade will be approximately 0.069 percent U_3O_8, and the presently estimated mine life is 10 years at the specified design rate. Morrison-Knudsen's study will be based on data and criteria provided by the Owner and its consultants.

The Feasibility Study will be developed jointly by the Owner and Morrison-Knudsen. The Feasibility Study will be contained in three volumes and developed per the provided Table of Contents. Morrison-Knudsen will be responsible for incorporating the data and publishing the report.

A. Minerals Exploration Company Responsibilities

The Owner's responsibilities in the Feasibility Study will include the following:

1. Mining engineering and operational development
2. Mine equipment, operating and maintenance costs
3. Geology and Ore Reserve reports
4. Geotechnical Study
5. Hydrological evaluation
6. Mining facilities
7. Tailing dam
8. Plant ancillaries

This includes developing the text, tables and drawings for the preceding items.

B. Morrison-Knudsen Responsibilities

Morrison-Knudsen's Feasibility Study for Owner's acid leach mill will be based on the basic process and flowsheet provided by Owner's metallurgical consultant, A. H. Ross & Associates of Toronto, Canada. Morrison-Knudsen will incorporate data from the previously listed reports and studies provided by the Owner to develop a conceptual mill design for the Feasibility Study.

Morrison-Knudsen's engineering services for the mill and related facilities will include:

1. A review and evaluation of data supplied by the Owner and its consultants.

2. Recommendations for changes or modifications, if any, to the flowsheet and/or design criteria provided by the Owner and its consultants.

3. Development of preliminary general arrangements, elevations, one-line electrical, tailing disposal system, and auxiliary facilities. It is anticipated that 20 drawings will be developed.

4. Development of a pulp and water balance.

5. Preparation of a major equipment item list complete with sizes, prices, horsepower requirements and pertinent delivery information.

6. Preparation of performance specifications for all major equipment.

7. Preparation of a preliminary general construction specification.

8. Development of capital and operating cost estimates accurate to within $\pm$ 15 to 20 percent of actual costs.

9. Development of a milestone schedule for detailed design and construction.

10. Preparation of an estimate of the number of drawings and manhours required for detailed engineering.

11. Development of a construction manpower schedule.

C. Joint Responsibilities

The Owner and Morrison-Knudsen will be responsible for the development of the environmental data. In the Executive Summary, the Owner will provide the Introduction; Morrison-Knudsen will prepare the Abstract, the Financial Summary, and the Schedules and Manpower Requirements.

3.0 COSTS

The to-date invoices for engineering services regarding ECN 005 are summarized below.

Invoice No.	Date	Period	Amount
E-051318	5/9/78	4/15 - 4/28	$ 768.01
E-051361	5/19/78	4/29 - 5/12	3,644.16
TOTAL INVOICED			$4,412.17

The total labor charges invoiced amount to $4,124.52, or approximately 4.5 percent of the estimated costs.

4.0 ENGINEERING REPORT

Design is 20 percent complete versus 20 percent scheduled.

4.1 Metallurgical

4.1.1 A flowsheet based on the revised A. H. Ross criteria was developed.

4.1.2 A Pulp and Water Balance was completed.

4.1.3 The Equipment List was completed.

4.1.4 Pricing was obtained on 20 percent of the major equipment items.

4.2 Design Drawing Status

NUMBER	DESCRIPTION	PERCENT COMPLETE
21-53-0-100	Mill Area Isometric	0
21-53-0-101	Flowsheet - Receiving, Grinding, Leaching	20
21-53-0-102	Flowsheet - CCD, Solvent Extraction, and Stripping	20
21-53-0-103	Flowsheet - Yellowcake, Precipitation and Packing	20
21-52-0-104	Mill Site Plan	40
21-53-0-105	Ore Receiving and Conveying, General Arrangement Plan, and Elevation	0
21-53-0-106	Mill Building - General Arrangement Plan, and Elevation	40
21-53-0-107	Mill Building - General Arrangement Plan, and Elevation	40
21-53-0-108	Leach and Filter Area General Arrangement Plan, and Elevation	20
21-53-0-109	CCD Thickeners General Arrangement Plan, and Elevations	0

NUMBER	DESCRIPTION	PERCENT COMPLETE
21-53-0-110	Solvent Extraction General Arrangement Plan, and Elevation	80
21-53-0-111	Utility Diagram	20
21-54-0-112	Electrical One-Line	70
21-53-0-113	Ore Receiving and Conveying Emission Control	0
21-53-0-114	Mill Building Emission Control	0
21-53-0-115	Mill Building Emission Control	0
21-53-0-116	Leach and Filter Area Emission Control	0
21-53-0-117	CCD Thickener Emission Control	0
21-53-0-118	Mill Site Plan Emission Control	0

5.0 GENERAL COMMENTS

5.1 Contact has been established with D. McCloskey of MEC to coordinate a change in analyses summary sheet format.