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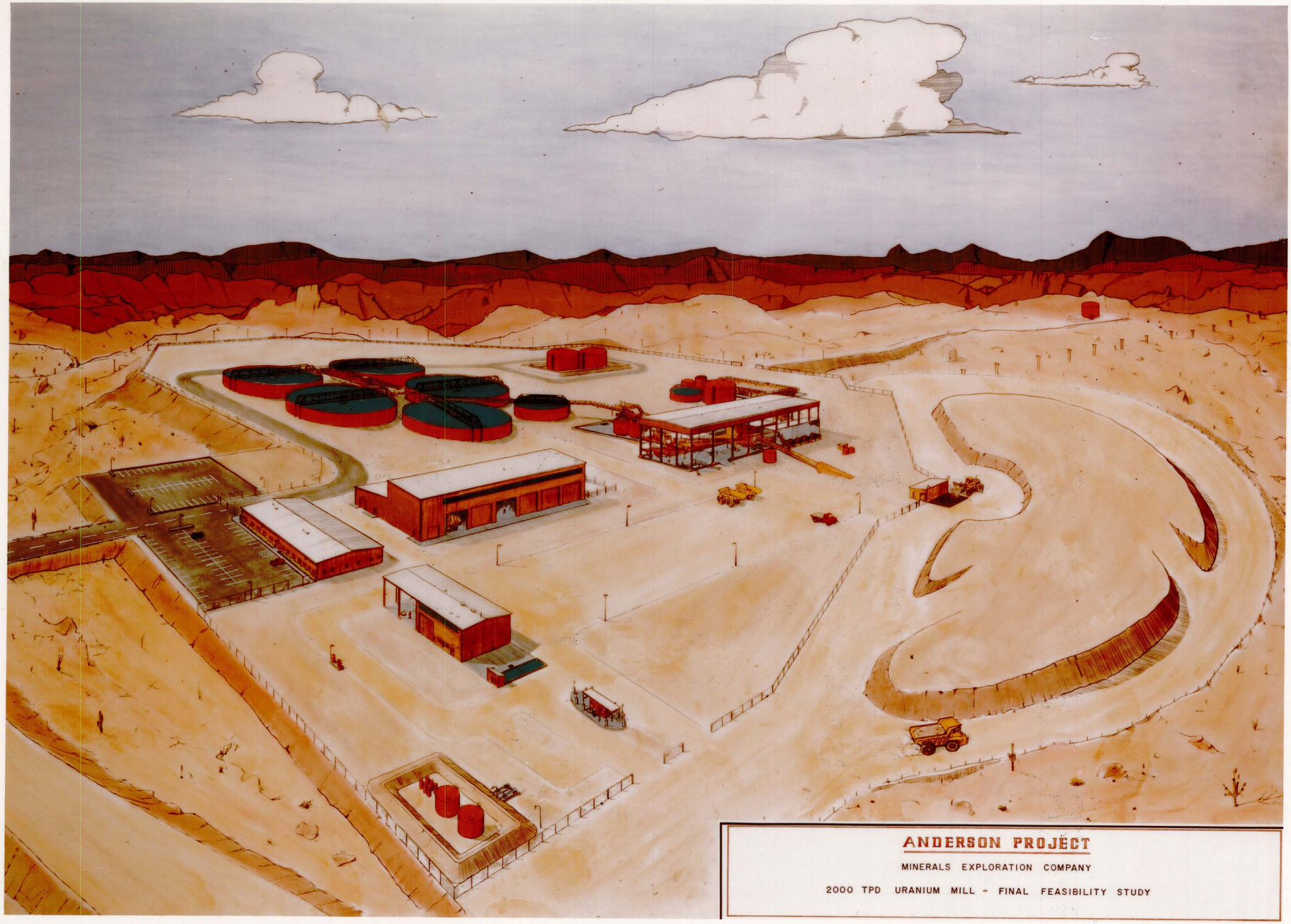

ANDERSON PROJECT

MINERALS EXPLORATION COMPANY

2000 TPD URANIUM MILL - FINAL FEASIBILITY STUDY

VOLUME 1
EXECUTIVE SUMMARY

MINERALS EXPLORATION COMPANY

union 76
MINERALS

FINAL FEASIBILITY STUDY

ANDERSON PROJECT
URANIUM MINE AND MILL
YAVAPAI COUNTY, ARIZONA

JULY, 1978

MORRISON KNUDSEN

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MINERALS

FINAL FEASIBILITY STUDY

ANDERSON PROJECT
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MORRISON KNUDSEN

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FORWARD

This feasibility study report is a compilation and summation of three years of investigations by Minerals Exploration Company and their consultants for the purpose of evaluating the economic viability of the Anderson Project, Yavapai County, Arizona. The study is reported in three volumes:

Volume I - Executive Summary

Volume II - Geology and Mining

Volume III - Ore Processing

Volumes I and III were written jointly by Minerals Exploration Company and Morrison-Knudsen Company. Minerals' staff authored Volume II, and Morrison-Knudsen edited and compiled all three volumes.

The results of all the investigations to date are incorporated into a Financial Analysis presented in Volume I. The remainder of the report describes the design basis and operating philosophy used to estimate the capital and operating costs required to develop this analysis.

This report is considered to be a final feasibility study, accurate to within plus or minus 15 percent. Additional investigations are recommended in certain areas to study possible cost reductions. However, these possible reductions or unforeseen cost additions are not expected to exceed the stated limits of accuracy.

SECTION 1

INTRODUCTION

Minerals Exploration Company is evaluating a 2000 tpd (730,000 tons per year) mine-mill complex for the extraction and processing of uranium ore. This proposed operation is known as the Anderson Project. The mill is scheduled to commence operation during the first quarter of 1981, and is expected to have a total life of about 10 years.

1.1 HISTORY

Anomalous radioactivity was first detected in the area by Mr. T. R. Anderson of Sacramento, California, using an airborne scintillometer in January, 1955. After ground checking disclosed uranium oxide in outcrop, several hundred claims were located. The property was subsequently drilled and mined by Anderson. In 1958, approximately 4300 tons of ore averaging 0.21% U_3O_8 was shipped for custom milling at Tuba City, Arizona. During 1967-68, Getty Oil Company obtained an option on the area. The property was dropped by Getty after drilling delineated only several small pods of uranium mineralization.

In 1968, Minerals' Tucson office received a submittal on the area. It was forwarded to the Casper office in 1969 where, after initial turndown, it remained in the files until 1974, when the increasing price of uranium created a renewed interest in the property. Following a field check and evaluation of the 1968 Getty drill data, an option was taken on the property in late 1974. Minerals

purchased the property in 1975 after a 53-hole, 19,000-foot drilling program on 800-foot centers confirmed a much greater uranium resource potential than had been interpreted from the 1968 Getty gamma log data.

Further exploration work, consisting of a 180-hole, 74,000-foot drill and core program on 400-foot centers, was conducted from November 1975 through February 1976 to further delineate the uranium resources.

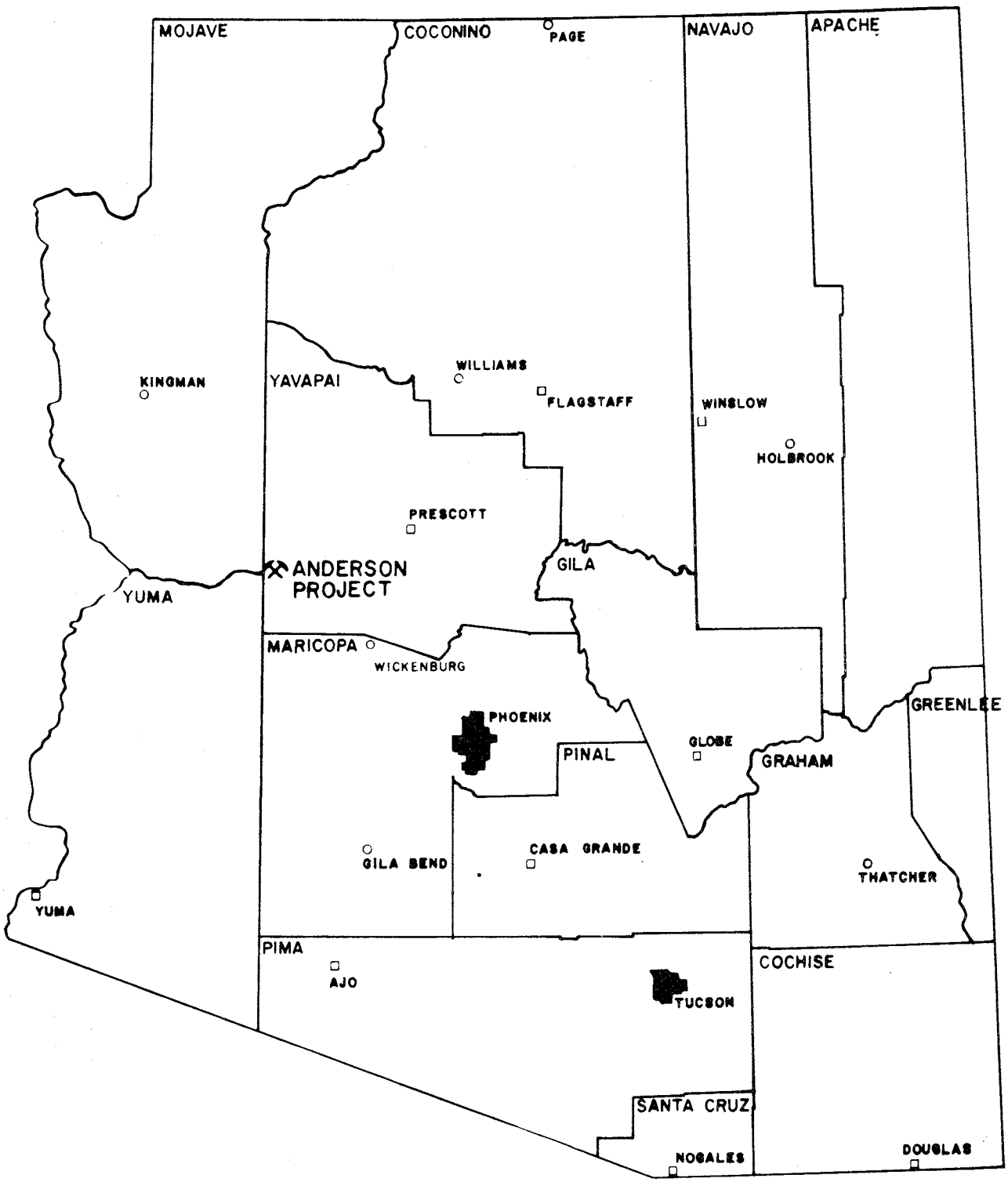
The property was turned over to Minerals' Development Group in late 1976 to determine the economic viability of the project. Subsequently, additional land was claimed to the north of the orebody for the dumps, millsite and ancillary requirements. The Palmerita Ranch, located seven miles west of the property along the Santa Maria River, was acquired in 1977 to provide a source of water for the operations in the event that closer sources proved inadequate. Based on favorable economics indicated in a Preliminary Feasibility Study completed in December, 1977 by Morrison-Knudsen Company, Inc., a detailed study was undertaken early in 1978 for final evaluation of the property.

1.2 LOCATION

The proposed Anderson Uranium Project is located in southwestern Yavapai County, Arizona, approximately 100 miles northwest of Phoenix and 43 miles northwest of Wickenburg. (See Figure 1.2-1) The general area is located along the northeast margin of the Date Creek Basin.

The project is located on the south side of the Santa Maria River approximately 13 miles west of State Highway 93, primarily on Sections 9, 10, 11, 14, 15 and 16 of T11N, R10W. Existing access is from Highway 93 by both improved and unimproved dirt roads.

ARIZONA



SCALE IN MILES
0 10 20 50

MINERALS EXPLORATION CO.

FIGURE 1.2-1

LOCATION MAP-ARIZ.

ANDERSON PROJECT

SCALE	DATE: FEB, 1978	APPROVED	
H: 1" = 40MI.	DRAWN BY: LRR		
V:	CHECKED:		
	DESIGN:		FILE:

1.3 WORK TO DATE

To complete the Feasibility Study, Minerals Development Group has worked with the following consultants to supplement the in-house studies covering the various elements of the proposed plan.

The Environmental Baseline Report has been the responsibility of Woodward-Clyde Consultants, San Francisco, California. Also addressed are the waste management systems incorporated into the design of the plant. The Baseline Report provides Minerals with the input required for a Radioactive Materials License application. The Arizona Atomic Energy Commission has the authority to issue said license.

An access road was engineered by Western Technologies, Inc., of Tucson and the necessary right-of-way applications have been submitted to the State of Arizona and the BLM. Arizona Public Service Company has received a Certificate of Environmental Compatibility allowing for the construction of a power line to the Project. All necessary applications have been filed with the Arizona State Land Department for the reclassification of land and the purchase of groundwater from State Section 16 which is immediately adjacent to the Project on the west. Pump tests by Water Development Corporation of Tucson indicate that sufficient water is available from this area to satisfy the project requirements.

Ore reserves, bulk density determinations and ore disequilibrium calculations have been completed by Minerals' staff and were reviewed and confirmed by Chapman, Wood & Griswold, Inc., Albuquerque, New Mexico.

Sergent, Hauskins & Beckwith, Phoenix, Arizona, completed a mill and tailing disposal site evaluation which was followed by a design report and cost estimate of the tailing impoundment by Dames & Moore, Phoenix, Arizona. Additional geotechnical work in the form of a slope stability analysis was completed by Dames & Moore, Denver, Colorado.

Metallurgical testing was conducted by Hazen Research, Inc., Golden, Colorado. The conceptual mill design completed by Morrison-Knudsen is based on design criteria prepared by A.H. Ross & Associates, Toronto, Ontario, Canada.

The investigations and studies which generated the data and criteria for this Final Feasibility Study are described in the following reports:

ORE RESERVES

a. Anderson Mine Geology Report, Minerals Exploration Company, August 1977
b. Ore Control Techniques at the Anderson Mine, Minerals Exploration Company, September 1977
c. A Review of Estimated Mineable Uranium Reserves, Anderson Mine Project, Chapman, Wood & Griswold, September 1977
d. Anderson Mine Bulk Density Study, Minerals Exploration Company, January 1978
e. Development Report on Equilibrium at the Anderson Mine Project, Minerals Exploration Company, April 1978

TECHNICAL STUDIES

a. Slope Stability Studies - Proposed Anderson Mine Property - Open Pit Uranium Mine, Dames & Moore, April 1977

b. Preliminary Geotechnical Investigation Report - Mill and Tailings Disposal Sites, Sergent, Hauskins & Beckwith, August 1977

c. Preliminary Feasibility Study, Morrison-Knudsen, December 1977

d. Design Report - Proposed Tailings Impoundment, Anderson Uranium Project, Dames & Moore, May 1978

HYDROLOGICAL

a. Progress Report - Exploration for Water Supply, Anderson Mine, Arizona, Water Development Corporation, June 1977

b. Anderson Mine Surface Water, Water Development Corporation, July 1977

c. Groundwater Hydrology of Anderson Mine Area, Arizona, Water Development Corporation, February 1978

d. Legal Evaluation of Alternative Sources of Water for the Anderson Mine Project, Yavapai Co., Arizona, D.P. Kearns & J.C. Lacy, March 1978

e. Surface Water Hydrology of Bill Williams River System, Arizona, Water Development Corporation, March 1978

ENVIRONMENTAL

a. Socio-Economic Evaluation - Anderson Project, Minerals Exploration Company, April 1977

b. Wildlife and Vegetation Baseline Study - Anderson Uranium Project Area, Dames & Moore, January 1978

c. Wildlife and Vegetation Baseline Inventory - Proposed Water Pipeline Palmerita Ranch to Anderson Mine Project, Dames & Moore, January 1978

d. Preliminary Report of Field Paleontological Resources, Museum of Northern Arizona, June 1977

e. An Archeological Survey of the Anderson Mine Area of West-Central Arizona, Museum of Northern Arizona, February 1978

f. Application for Certificate of Environmental Compatibility - Bagdad to Black Mountain 115 kv Line, Arizona Public Service, January 1978

g. Anderson Uranium Project Environmental Report, Woodward-Clyde Consultants, Draft copies only - not completed

METALLURGICAL

a. Alkaline Leaching of Anderson Mine Samples, Hazen Research, August 1977

b. Acid Leaching of Anderson Mine Samples, Hazen Research, August 1977

c. Metallurgical Summary and Preliminary Design Data, A.H. Ross & Associates, September 1977

d. Uranium Recovery from Anderson Mine Ore, Hazen Research, March 1978

e. Metallurgical Summary and Mill Design Criteria for the Anderson Uranium Deposit, A.H. Ross & Associates, May 1978

1.4 PURPOSE OF STUDY

The overall purpose of the study is to demonstrate the financial viability of the Anderson Project. The major objectives leading up to the overall analysis are:

a. Summarizing all of the mining, metallurgical and related engineering studies into an outline of the planned project.

b. Providing meaningful project operating and capital costs and replacement schedules.

c. Scheduling of an efficient operation in terms of manpower and equipment utilization.

d. Incorporation of the environmental constraints on the financial analysis of the Project.

e. Preparation of cash flow statements and Project sensitivities for a financial analysis.

1.5 ANDERSON/SWEETWATER COMPARISON

1.5.1 Ore Reserves

The Sweetwater and Anderson ores are two entirely different types of deposits. The Sweetwater ore is a sandstone whereas the Anderson ore is basically a lignite and clay deposit. A brief comparison of the uranium values, reserve estimates and stripping ratios is presented below:

Anderson/Sweetwater Ore Comparison

	Sweetwater	Anderson
Reserves		
Waste - Tons	362,349,000	279,560,000
Ore - Tons	15,966,279	7,181,962
U_3O_8 - Pounds	15,279,745	10,299,189
Grade - $\%U_3O_8$	0.048	0.072
Disequilibrium	1.00	1.05
Tonnage Factor (Ore)	16.6	20.46
Stripping Ratios		
Tons Waste/Ton Ore	23:1	38:1
Tons Waste/lb U_3O_8	24:1	27:1

1.5.2 Mining

Due to similar stripping requirements the Sweetwater and Anderson Projects have only minor differences in their stripping fleets. However, geological variations dictate different methods of ore mining.

Sweetwater ore occurs as massive pods which lend themselves to being mined by dozers and front-end loaders. Ore will be stockpiled in the pit during mining operations. Once a day the 15-cu yd front-end loader will load the ore stockpiles into 120-ton haul trucks which will transport it to the mill.

Anderson ore occurs as thin lenses requiring a more selective technique utilizing backhoes. This selective mining does not lend itself to in-pit stockpiling but requires a fleet of small trucks to deliver the ore to the mill. The following tabulation compares the various equipment requirements for the two projects:

Equipment Comparison

	Sweetwater	Anderson
Shovels 17 cu yd	2	2
Front-end Loader 15 cu yd	1	0
Haul Trucks 120-ton	12	13
Drills	2	2
Dozers-Tractor	2	4
Scrapers	6	0
Airtrack Drills	0	1
Dozers-Rubber Tired	2	1
Graders	2	2
Water Trucks	2	2
Front-end Loader 6 cu yd	2	0
Front Shovel	0	1
Backhoe	0	1

Rugged terrain at the Anderson site requires substantial preparatory work to establish initial benches and haul roads. A relatively flat lying topography at the Sweetwater location requires only minimal preparation.

A longer preproduction period is required for the Anderson Project than for the Sweetwater. This longer period is required to provide sufficient space for the in-pit tailing pond. The following tabulation compares the various production rates for the two projects:

Production Comparison

	Sweetwater		Anderson	
	Tons x 10^6	Time	Tons x 10^6	Time
Preproduction Stripping	20.77	15 mos	36.50	15 mos
Production Stripping				
Rate "A"	31.16	14 yrs	29.20	4.5 yrs
Rate "B"			20.80	4.75 yrs
Secondary & Assoc. Waste	2.02		2.71	
Ore	1.05	15 yrs	0.73	10 yrs

1.5.3 Milling

The Anderson and Sweetwater projects will both employ a sulfuric acid leach CCD thickening and solvent extraction process. However, the facilities will differ because of the project locations, and processing differences will be experienced due to the characteristics of each ore. The major differences are noted below:

	Sweetwater	Anderson
Feed Rate (tpd)	3000	2000
Avg Ore Grade: $\%U_3O_8$	0.050	0.072
Recovery: %	91.5	89.0
Type of Grinding	Single Stage	Two Stage
Acid Consumption: lbs/ton	60	415
Oxidant Consumption: lbs/ton	0.5	6.0
Flocculant Consumption: lbs/ton	0.23	0.37
Production: lbs U_3O_8/day	2745	2443
Mill Life-years	15	9.83

1.5.4 Environmental

The location of the projects in different states makes the permit requirements somewhat different for each project.

The major difference in permits lies in the Permit to Mine required by the State of Wyoming Land Quality for the Sweetwater Project. This permit requires a comprehensive application with complete mining and reclamation plans. This application has a lengthy in-depth review process with public notification and possible

protest. Arizona has no such requirement for a Mine Permit. To operate in Arizona it is necessary to contact the State Mine Inspector and the Arizona Department of Health Services with a possible site visit and short application form required.

In the mill licensing, the Sweetwater Project requires a Source Materials License from the U.S. Nuclear Regulatory Commission. The NRC requires an extensive application with an accompanying environmental report. This environmental report is evaluated along with the total project scope and the NRC prepares an Environmental Impact Statement with the final step being public hearings. This process is lengthy and under close scrutiny. For the Anderson Project, the State of Arizona is an agreement state with NRC and has the power to grant a license to operate the mill. The Arizona Atomic Energy Commission (AAEC) requires an extensive application prepared in accordance with NRC guidelines. However, Arizona has no formal EIS requirement and the formal submission of an Environmental Report is not necessary. This lack of a formal EIS and the fact that the application for a Radioactive Materials License with the AAEC will be evaluated on the State level, rather than Federal, should simplify the Anderson Project licensing.

Both projects require nearly identical permits in terms of air quality, with each state requiring an Installation Permit. The 1977 amendments to the Clean Air Act make it necessary to apply to EPA for a PSD (Prevention of Significant Deterioration) Permit.

In terms of water quality permits for the projects, the Sweetwater Project is much more complicated than the Anderson Project due to the abundance of groundwater at Sweetwater. Sweetwater requires a permit to discharge water and a separate permit from the Wyoming State Engineer for each dewatering well and impoundment including the tailings impoundment. The only permit required in Arizona for the Anderson Project is one for the culinary water well with the Arizona Department of Health Services.

One final difference should be noted. In Wyoming, a project must prove to the Industrial Siting Council that the construction cost of the mine does not exceed a basic 50 million dollar (1975 base) value. If a project exceeds this value, the company is responsible to help mitigate personnel impact on the community providing services. Arizona has no such requirement at this time.

1.5.5 Tailing Disposal

Disposal of Sweetwater mill tailings will be accomplished using a combination of excavation and dam construction to generate capacity sufficient to hold all solids and water.

Anderson tails will be placed in an impoundment within the mining pit. Due to the permeability of dam construction materials at the Sweetwater Project all ponds will be lined with a synthetic membrane. No liner will be required at the Anderson Project tailings pond due to the high clay content of the pit bottom and dam construction materials.

1.5.6 Cost Comparison (Initial)

The following capital and operating cost comparisons are on a June 1, 1978 basis.

Item	Capital Costs Million $ Sweetwater	Anderson
Mine	29.9	33.2
Mill	23.6	22.5
Ancillary	5.4	6.2
Tailing Dam	2.4	2.7
TOTAL	61.3	64.6

	Total Operating Cost	
$/Ton Ore Milled	16.72	32.41
$/lb U_3O_8 Produced	19.40	25.50

SECTION 2

ABSTRACT

2.1 PROJECT SCOPE

This final feasibility study report summarizes all of the investigations made by Minerals Exploration Company and its consultants to evaluate the economic feasibility of the Anderson Project as of June 1, 1978. The investigations have resulted in cost estimates believed to have an accuracy of within ± 15 percent of the final actual cost, based on the parameters described in the report.

This section presents a summary of the information contained in this report, to give Minerals' Corporate Management an overview of the entire project activity, progress and economic viability.

In order to provide Minerals with the data required to evaluate the economic feasibility of the Anderson Project, the following items of work are incorporated into the scope of this study:

a. Ore Reserve Estimates
b. Bulk Density and Equilibrium Determinations
c. Geotechnical Studies
d. Geological Studies
e. Hydrological Studies
f. Preliminary Mine Design
g. Mine Facility Design
h. Mill and Tailing Site Selection
i. Process Amenability Testing

j. Process Flowsheet Development

k. Preliminary Mill Design

l. Tailing Disposal System Design

m. Ancillary Facility Design

n. Environmental Baseline and Impact Analysis

o. Mine, Mill, and Tailing Disposal Capital Cost Estimates

p. Mine, Mill, and Tailing Disposal Operating Cost Estimates

q. Project Financial Analysis

r. Engineering Schedule Development

s. Mine Development Schedule

t. Mill and Ancillary Construction Schedule

u. Mine and Mill Production Schedule

2.2 FINANCIAL ANALYSIS

Financial analyses were performed using data provided by MEC and M-K. Standard discounted cash flow techniques were utilized to develop the after tax cash flow patterns and the return on investment. Specific accounting procedures and output format were defined by MEC.

The financial analysis is based on a selling price of $43.40 per pound U_3O_8. Using this selling price, the DCF-ROI calculations produced the following project performance indicator values:

DCF Return on Investment - 19.6%

Non Discounted Payout Period - 6.1 years

Discounted Payout Period @ 10% - 7.7 years

Table 2.2-1 summarizes the cash flow calculations and the complete financial analysis results are summarized and provided in the Financial Summary section.

Sensitivity analyses were performed to evaluate the effects of uncertainty on the investment by varying specific investment parameters selected by MEC: selling price, production, capital costs, and operating costs. Each individual parameter was increased and decreased 20 percent, and the effect of the change on the DCF-ROI and net present value was computed. The effect of varying these parameters is summarized in Table 2.2-2 and sensitivity graphs are provided in the Financial Summary section.

TABLE 2.2-1

ANDERSON PROJECT
FINAL FEASIBILITY STUDY
FINANCIAL ANALYSIS

ITEM	UNITS	1 1979	2 1980	3 1981	4 1982	5 1983	6 1984	7 1985	8 1986	9 1987	10 1988	11 1989	12 1990	13 1991	14 1992	TOTAL
PRODUCTION	MM LBS/YR			1.053	1.053	.900	.900	.900	.900	.900	.900	.900	.756			9.2
REVENUE	MM$			45.7	45.7	39.1	39.1	39.1	39.1	39.1	39.1	39.1	32.8			397.9
OPERATING EXPENSE	MM$			24.5	24.5	24.5	24.5	24.5	22.5	22.5	22.5	22.5	18.9			231.4
OPERATING CASH FLOW	MM$			21.2	21.2	14.6	14.6	14.6	16.6	16.6	16.6	16.6	13.9			166.5
EXPENSED CAPITAL	MM$	3.3	13.8	2.1	2.0	1.6	1.3	0.9	1.0	0.5	0.6	0.1			2.6	29.8
CAPITALIZED	MM$	12.2	36.8	0.5		0.2	0.8	0.9	0.6	0.3	0.5	0.3				53.1
WORKING CAPITAL	MM$		1.4	6.6									(8.0)			0.0
TOTAL CAPITAL	MM$	15.5	52.0	9.2	2.0	1.8	2.1	1.8	1.6	0.8	1.1	0.4	(8.0)		2.6	82.9
BEFORE TAX CASH FLOW	MM$	(15.5)	(52.0)	12.0	19.2	12.8	12.5	12.8	15.0	15.8	15.5	16.2	21.9		(2.6)	83.6
DEPRECIATION	MM$	2.7	11.2	8.3	6.1	4.7	4.0	3.7	2.6	2.0	1.7	2.4	3.3			52.7
TAXABLE BEFORE DEPLETION	MM$	(6.0)	(25.1)	10.8	13.0	8.2	9.2	10.0	13.0	14.0	14.2	14.0	10.6		(2.6)	83.3
DEPLETION	MM$			5.4	6.5	4.1	4.6	5.0	6.5	7.0	7.1	7.0	5.3			58.5
TAXABLE	MM$	(6.0)	(25.1)	5.4	6.5	4.1	4.6	5.0	6.5	7.0	7.1	7.0	5.3		(2.6)	24.4
INCOME TAX 52%	MM$	(3.1)	(13.0)	2.8	3.4	2.1	2.4	2.6	3.4	3.7	3.7	3.7	2.7		(1.4)	13.0
INVESTMENT CREDIT	MM$	1.2	3.7	0.1			0.1	0.1	0.1		0.1					5.4
AFTER CASH FLOW	MM$	(11.2)	(35.3)	9.3	15.8	10.7	10.2	10.3	11.7	12.1	11.9	12.5	19.2		(1.2)	76.0
8% PRESENT WORTH	MM$	(10.3)	(30.3)	7.4	11.6	7.2	6.3	6.0	6.3	6.1	5.4	5.4	4.4		(0.4)	25.1
12% PRESENT WORTH	MM$	(10.0)	(28.2)	6.6	10.1	6.0	5.1	4.6	4.7	4.4	3.8	3.6	2.9		(0.3)	13.3
16% PRESENT WORTH	MM$	(9.6)	(26.3)	6.0	8.7	5.1	4.1	3.6	3.5	3.2	2.7	2.4	1.9		(0.2)	5.1
20% PRESENT WORTH	MM$	(9.3)	(24.5)	5.4	7.6	4.3	3.4	2.9	2.7	2.4	1.9	1.7	1.2		(0.1)	(0.4)

DCF-ROI = 19.6%

TABLE 2.2-2

ANDERSON PROJECT
FINAL FEASIBILITY STUDY
SENSITIVITY RESULTS

	DCF-ROI	PAYBACK PERIOD (YRS)	NET PRESENT VALUE (MM$) @ DISCOUNTING RATE 8%	12%	16%	20%
Base Case	19.6%	6.1	28.1	15.2	6.4	0
Selling Price +20%	33.1%	4.5	62.0	42.0	27.9	17.8
Selling Price -20%	3.0%	10.5	-6.3	-11.9	-15.4	-17.5
Production +20%	25.6%	5.2	42.5	26.6	15.6	7.7
Production -20%	13.2%	7.3	13.7	3.8	-2.8	-7.3
Capital Costs +20%	14.4%	7.1	19.5	7.0	-1.4	-7.1
Capital Costs -20%	26.9%	5.0	36.7	23.4	14.2	7.6
Operating Costs +20%	10.6%	8.0	8.1	-0.5	-6.2	-10.0
Operating Costs -20%	27.5%	5.0	47.5	30.6	18.7	10.3

2.3 PROJECT DESCRIPTION

This subsection presents a summary description of the major components for the Anderson Project. Detailed descriptions are presented in Volumes II and III of this report.

2.3.1 Geology and Ore Reserves

The Anderson Mine Property, totaling approximately 4530 acres, covers an area of interbedded lake sediments and volcanic rocks on the northeast margin of the Date Creek Basin.

During Tertiary Time, the Date Creek Basin was in an area of active volcanism. A thick series of volcanic flows and associated sediments of volcanic ash and clastics were deposited on the pre-existing surface. During one quiescent period, the basin was covered by a shallow lake or swamp in which were deposited up to 400 feet of sandstone, carbonaceous siltstone and lignite, silty limestone and limey siltstone and tuffaceous material. Interbedded course sediments, volcanic basalt flows and conglomerates overlay the lake sediments.

The uranium mineralization is associated with the lake sediments. The highest grade and most continuous mineralization are confined to the carbonaceous siltstone and limestone facies. In post-Tertiary Time, the sediments were tilted and faulted so that the original horizontal beds now dip 5° to 15° to the south. The mining sequence has been designed to minimize the effect of the fault displacements.

The final computer estimated reserves for the open pit Anderson Mine, as determined by Digitgraph Computer Systems Corporation, Tucson, Arizona, are: 7,181,962 tons ore containing 10,299,189 pounds U_3O_8 at 0.072% U_3O_8 average grade.

2.3.2 Mining

The project area is located approximately 43 road miles northwest of the town of Wickenburg, in Yavapai County, Arizona. The area of initial project development coincides with the now inactive Anderson Mine, a small uranium producing project active for a brief period during the 1950's. In general, development theory includes the uncovering and mining of near surface ore during the initial two mine sequences in order to develop an initial tailing disposal site and also to maintain a higher than average feed grade to the mill for the first two years. The result is the amassing of 547,000 tons of mill feed stockpile which must be maintained at that approximate size over much of the life of the project to allow for ample working room for subsequent tailing dam construction and maximum backfilling techniques. Drawing No. MEC-001, Area Plot Plan, shows the mine divided into approximate yearly mining increments. The segment designated as 1 represents the sequence planned for the use as the initial tailing pond area.

The relationship of the mining sequences to the tailing dam is shown on Drawing No. MEC-002, Tailing Disposal System. Sequences 1, 3, and 4 allow space for the full development of the final tailing dam design.

Subsequent mining activity will include the removal of approximately 29.2 million tons of overburden yearly for the first five and three-quarter years, and then at a reduced rate of 20.8 million tons per year until the end of stripping. The increased initial stripping rate allows for the tailing dam construction and also higher ore grade to be initially mined generating a higher rate of return. The stripping rate will allow the average yearly development of 730,000 tons of mill feed at an average grade of 0.08% U_3O_8 for the first two years and approximately 0.07% U_3O_8 thereafter.

The open pit operation will utilize two 17 cubic yard electric shovels for the excavation of all waste overburden materials.

These materials will be drilled, charged with an ammonium nitrate and fuel oil mixture and blasted to facilitate removal. Overburden materials will be loaded into 120-ton off-highway trucks for transportation to dumping areas adjacent to the active mine area, mined-out areas, or to the tailing dam site for use as construction material.

Following removal of waste overburden and exposure of ore zone materials, a 5-cubic yard front shovel equipped with a 3-cubic yard backhoe will selectively remove the ore and associated waste materials included within this zone. The ore materials will be dispatched through a probe tower and hauled directly to the mill stockpile in 35-ton off-highway trucks. Secondary stripping and interior waste will be hauled to dumps or to adjacent mined-out areas.

All maintenance of stripping and mining equipment will take place in a shop facility common with the mill facility.

2.3.3 Mining Facilities

Facilities for the administrative staff and laboratory will be housed in a prefabricated steel structure located near the mill area entrance gate. The overall plan of the building is designed to group personnel by functions within a 12,800 square foot area. The office portion of the building includes administrative offices, technical service offices, and a safety and first aid area. The laboratory portion of the building contains the metallurgical and analytical laboratories including a balance room, atomic absorption room and sample preparation room.

Maintenance and repair of mobile equipment will be performed in a pre-engineered structure 120 feet wide by 210 feet long, and will be equipped with seven repair bays. Warehouse and change room facilities will also be assigned to this building. This facility will be located approximately 70 feet north of the administration building. It will be equipped to complete all repairs except major component rebuilding, which will be assigned to outside contractors.

Equipment lubrication and tire repair facilities will be housed in a 7300 square foot pre-engineered steel building located approximately 75 feet east of the administration building. An open area on the east side of this structure will be equipped for washing the mobile equipment.

A fuel island and tank farm, located approximately 100 feet east of the lube and tire shop, will provide for the storage and dispensing of diesel fuel and gasoline and bulk storage lubricants. A two-week supply of diesel fuel will be stored in two 100,000-gallon steel tanks.

2.3.4 Milling

This mill is a conventional acid leach process consisting of two-stage grinding, sulfuric acid leach, countercurrent decantation, solvent extraction, drying and packaging. The basic process differs from Minerals' Sweetwater Project mainly in the grinding circuit. Two stages of grinding are necessary for the Anderson ore because of the extreme hardness of certain ore zones.

The mill will process an average of 2000 short tons of ore per 24 hours, operating 365 days per year. The average ore grade will be approximately 0.07% U_3O_8.

The run-of-mine ore will be fed into the receiving hopper through a fixed grizzly with 18-inch square openings. Ore will be removed from the hopper with a 48-inch by 16-foot apron feeder which will discharge over a 4-inch fixed grizzly to a 48-inch belt conveyor. The raw ore will be fed by the belt conveyor to a 16-foot diameter by 5-foot semiautogenous grinding (SAG) mill operating in open circuit. The discharge of the SAG mill will be fed to a 9-1/2-foot diameter by 16-foot rod mill operating in closed circuit with two stationary screens. The ore will be advanced to leaching in a pulp containing 46 percent solids; screen oversize will return to the rod mill for further grinding.

The pulp will be sampled and discharged into an acid mix tank (Leach Tank No. 1). Acid consumption during leaching will be approximately 400 pounds per ton of ore. Leaching proceeds in a series of six mechanically agitated tanks providing a nominal six hours of retention time.

An oxidant will be added under controlled conditions to the leaching tanks. A leach temperature of 175° F will be maintained in the leach tanks with live steam. Mechanical agitators will thoroughly mix the pulp.

The leached pulp will discharge into a sump and be pumped to the first of five 140-foot diameter washing thickeners (CCD circuit). Underflow from the fifth thickener, at approximately 38 percent solids, will be discarded to the tailing disposal area.

Uranium barren wash solutions and/or water are added to the fifth thickener and the thickener overflow will advance through the CCD circuit to the first washing thickener. The pregnant solution overflowing the first thickener will contain about 150 to 200 ppm solids.

In order to reduce the solids content of the pregnant solution to 35 to 80 ppm, the solution will be pumped to a 70-foot diameter clarifier tank equipped with a rake mechanism. The clarifier overflow will be pumped to a battery of three "polishing" sand filters. The filtrate (clarified pregnant leach solution)

containing less than 10 ppm solids, will report to the solvent extraction circuit feed holding tank.

The solvent extraction circuit will have four stages of extraction and four stages of stripping. The pregnant liquor enters the first stage of extraction where it will be mixed with an organic extractant to transfer the dissolved uranium from the feed solution to the organic solution.

Each stage of solvent extraction includes a mixer for the aqueous and organic solutions followed by a settler to separate the two phases. The aqueous and organic solutions flow continuously and countercurrently to each other through the contacting stages in both extraction and stripping.

The loaded organic is pumped to the first stage of stripping. The strip solution used in this process contains ammonium sulphate and the solution pH is controlled with gaseous ammonia. The uranium transfers from the loaded organic to the aqueous strip solution.

The pregnant strip solution will be fed to agitated precipitation tanks where the pH will be adjusted with ammonia to precipitate uranium as ammonium diuranate (yellowcake).

The precipitate slurry will report to the yellowcake thickener. The thickener overflow will be clarified and returned to the solvent extraction circuit strip solution holding tank. The

thickener underflow will be dewatered and washed in a centrifuge and fed to a dryer/calciner.

The dryer/calciner unit will be an oil-fired, multiple hearth furnace with an operating temperature of about 750° F. It will dry the yellowcake to less than two percent moisture.

The dryer discharges to a roll crusher to break any lumps greater than 1/4-inch, and the yellowcake product will be stored in a 125-cubic foot bin for packaging.

The final product will be packaged in 55-gallon steel drums (approximately 900 pounds per drum) on the day shift, hand sampled and stored in shipping lots of approximately 40,000 pounds.

Tailing slurry at about 38 percent solids will be gathered in a tailings sump. The tailings will consist of waste solids from the ore, water, minor quantities of unrecovered uranium values and small amounts of chemicals used in the milling process.

The tailings will be transported to the tailing pond via pipeline. A system of multiple drop boxes will be used to break the hydrostatic pressure generated between the mill site elevation and the tailing disposal area.

2.3.5 Tailing Disposal

The tailing impoundment will be located in the northeast portion of the open pit. A retention dam will be required on the south

and west sides of the impoundment. The dam will be a zoned structure with a clay core. All construction material for the dam will be obtained from the open pit mine. The dam will be constructed in several stages in order to accommodate the planned stripping and mining sequences. The maximum perimeter length of the retention dam will be about 4750 feet, and its maximum vertical height will be approximately 245 feet. The ultimate surface area of the impoundment will be approximately 81 acres.

Lacustrine sediments consisting predominantly of claystone will be exposed in the bottom of the open pit. Since this relatively impermeable stratum will serve as the bottom of the impoundment area and as the foundation for the dam, seepage losses through the bottom of the impoundment will be minimal. A compacted clay lining will be constructed over any localized areas of the bottom and sides of the impoundment where the claystone stratum is not present. It is estimated that maximum seepage loss from the impoundment will be on the order of seven gallons per minute. Approximately three-fourths of the seepage loss is expected to pass through the reservoir bottom and under the dam.

The impact of seepage on quality of the groundwater in the area is expected to be insignificant. Radiological contamination will be reduced to very low levels within a very short distance of travel through the claystone materials.

The storage capacity of the impoundment is sufficient to retain all of the solid tailing expected to be generated during the

life of the project. However, sufficient capacity is not available to store all of the waste water to be discharged from the mill. An evaporation system, using either evaporation ponds or spray evaporation methods, or both, will be constructed for the removal of the excess water.

In order to control erosion after abandonment, backfill will be placed against the downstream slope of the retention dam during stripping and mining operations in the south portion of the open pit. Upon abandonment, a minimum thickness of 14 feet of waste material will be placed over the surface of the tailing impoundment in order to reduce radon emanation. To provide further stabilization of the impoundment after abandonment, the surface of the impoundment will be revegetated with species native to the area.

2.3.6 Ancillary Facilities

A 12-mile access road will be constructed from U.S. Highway 93 to the project site. The road will be paved and provided with a public turnaround before reaching the project area. The road will be completed before plant construction begins.

The process and potable water supply will come from wells located in Section 16, T11N, R10W. The water will be transported four miles to the plant site via a 10-inch diameter line and stored in a 500,000-gallon tank. This water will be used for process make-up, fire protection, potable water, boiler feed and sanitary sewage.

Power will be provided by Arizona Public Service from a new 115 kv transmission line. Transformers at the substation lower the voltage to 12.5 kv for property distribution.

A telephone system, provided by Mountain Bell, will be the primary communication tie. Paging systems will be provided in the shop, warehouse, mill and office; and radios will be installed in the mobile equipment to provide communications to a base station.

2.3.7 Environmental

Individual baseline studies by various consultants have been consolidated into one document by Woodward-Clyde Consultants. This baseline study includes wildlife, vegetation, archaeology, cultural resources, seismology, air quality, surface and groundwater hydrology and radiological considerations. In addition, Woodward-Clyde Consultants is also preparing an Environmental Impact Report.

The mine, mill and tailings facilities have been designed to satisfy all environmental impact concerns. The mine pit will develop an estimated 200 gpm of water which will be collected in a sump and used for dust control in the pit and haulage roads. Any excess water will be pumped to the tailing pond for evaporation; none will be discharged from the property. Any emissions containing dust and/or radioactive material generated in the mill will be collected in ventilation systems and removed in wet scrubbers. Sensitive test equipment will be installed in the

mill and the surrounding area to monitor radiation and airborne contaminants. A Dames & Moore study, summarized in Volume III, covers the construction, operation, reclamation and long-term stabilization of the tailing impoundment which is designed to eliminate long-term maintenance requirements.

The AAEC (Arizona Atomic Energy Commission) has the authority to issue a Radioactive Materials License to operate the mill and tailing disposal facilities under agreement with the U.S. Nuclear Regulatory Commission. An application has been prepared and submitted to the AAEC using applicable NRC guidelines under the agreement. This application addresses mill and tailings siting alternatives, baseline data, and radiological impacts. The Dames & Moore tailing impoundment design report was included in its entirety to support the application.

The application for an Air Quality Installation Permit has been submitted to the Arizona State Board of Air Quality Control. The 1977 Amendments to the 1970 Clear Air Act have produced stringent requirements. The necessary baseline data has been obtained for the PSD (Prevention of Significant Deterioration) Permit application to EPA. This application has been filed with the EPA.

SECTION 3

FINANCIAL SUMMARY

The cost estimates developed for the financial analysis are considered to be accurate to within plus or minus 15 percent, based on the criteria and data described in this report. The base date for all estimating and pricing, including the product (yellowcake) price, is June 1, 1978.

All mine costs were developed by Minerals Exploration and mill costs were the responsibility of Morrison-Knudsen. The tailing dam costs are based on an estimate originally developed by Dames & Moore and later modified by MEC and M-K.

Financial analyses were performed using capital and cost estimates developed by MEC and M-K. Standard discounted cash flow analysis techniques were utilized to develop a full life discounted cash flow return on investment and reported in a format specified by MEC. Sensitivity analyses were performed and graphs were developed for selling price, production, capital costs, and operating cost.

3.1 COST ESTIMATES

3.1.1 Capital Cost Estimate

A summary of the estimated capital costs for the Anderson Project is presented in this subsection. This summary identifies both initial capital costs and future additional capital costs. The total estimated capital cost over the life of the project is approximately $69,107,000.

The initial capital costs are estimated to be about $64,519,000 and are summarized in Table 3.1.1-1. The initial mine capital cost estimate includes:

a. Preproduction costs (initial 18 months of Project)

b. Mine Costs (equipment and miscellaneous facilities)

c. Maintenance Costs (facilities and equipment)

d. Administration Costs (facilities and equipment)

The water supply, power supply, access road, environmental and mill costs are identified separately.

Additional future capital costs are identified by operating year below. All of these costs are charged to the mine.

Year	Capital Cost-$
1	$ 916,778
2	--
3	180,149
4	839,851
5	914,054
6	619,980
7	270,048
8	508,987
9	337,230
10	--
TOTAL	$4,587,077

TABLE 3.1.1-1

ANDERSON PROJECT

INITIAL CAPITAL COSTS

MINE:		
Preproduction	$14,092,643	
Mine Equipment	14,549,596	
Maintenance	3,803,882	
Administration	721,418	
Subtotal		$33,167,539
MILL:		
Subtotal		$22,485,830
TAILING DAM CONSTRUCTION:		
First Stage Dam	$ 2,118,013	
Construction Equipment	544,852	
Subtotal		$ 2,662,865
ANCILLARY:		
Access Road	$ 2,353,368	
Water Supply	1,471,230	
Power Supply	2,024,659	
Environmental	150,000	
Communications	204,000	
Subtotal		$ 6,203,257
TOTAL		$64,519,491

3.1.2 Operating Cost Estimate

The operating costs for the Anderson Project will vary from year to year over the life of the Project (10-plus years). Some of the variances are explained below and the costs are summarized in Table 3.1.2-1.

a. Mine operating costs have been developed for two periods: Production I, 4.5 years; and Production II, 4.75 years.

b. Mill operating costs are divided into two periods: the first two years of operation, during which the recovery is projected at 90.13 percent on an ore grade of 0.080 percent U_3O_8; and the remaining 7.83 years, estimated at 88.55 percent recovery on 0.0696 percent ore.

c. The construction cost of the tailing dam stages, which are charged to operating costs after the first stage, will vary each year. Abandonment costs which will be realized two years after the mill shutdown are also charged to operating costs. The tailing dam operating costs are reported separately.

d. Administrative costs will vary annually according to the manpower requirement. Office supplies are also included in the administrative operating costs.

e. Maintenance supervision costs are weighted, 70 percent to the mine and 30 percent to the mill each year.

f. Environmental operating costs, including environmental staff and a Perpetual Care Fund of 5¢ per ton of ore milled, are covered in the Administrative Cost Estimate.

g. The power cost of operating the water supply system is reported separately.

TABLE 3.1.2-1
OPERATING COST SUMMARY
ANDERSON PROJECT

	MINE		MILL		TAILING DAM		ADMINISTRATIVE		WATER SUPPLY		TOTAL	
Year	$/Ton[1]	$/lb[2]	$/Ton	$/lb	$/Ton	$/lb	$/Ton	$/lb	$/Ton	$/lb	$/Ton	$/lb
1981	17.228	11.940	15.152	10.506	0.314	0.218	1.028	0.713	0.158	0.109	33.880	23.486
1982	17.228	11.940	15.152	10.506	--	--	1.028	0.713	0.162	0.113	33.570	23.272
1983	17.228	13.978	15.152	12.293	0.284	0.230	1.028	0.835	0.167	0.135	33.859	27.471
1984	17.228	13.978	15.152	12.293	0.318	0.258	1.028	0.835	0.171	0.139	33.897	27.503
1985	17.228	13.978	15.152	12.293	--	--	1.028	0.835	0.175	0.142	33.583	27.248
1986	14.494	11.759	15.152	12.293	0.431	0.350	1.028	0.835	0.180	0.146	31.285	25.383
1987	14.494	11.759	15.152	12.293	--	--	1.028	0.835	0.184	0.149	30.858	25.036
1988	14.494	11.759	15.152	12.293	0.554	0.450	1.028	0.835	0.189	0.153	31.417	25.490
1989	14.494	11.759	15.152	12.293	--	--	1.028	0.835	0.193	0.156	30.867	25.043
1990	14.494	11.759	15.152	12.293	--	--	1.028	0.835	0.197	0.160	30.871	25.047
										Avg	32.408	
										Avg		25.498
1992 Abandonment Cost ($2,582,000)					0.360[3]	0.282[4]						

NOTES:
1 Tons Ore Milled: 730,000 TPY
2 Pounds U_3O_8 Produced
3 Based on Total Tons of Ore - 7,181,962 Tons
4 Based on Total Pounds of Recoverable U_3O_8 - 9,159,945 lbs

3.2 FINANCIAL ANALYSIS

The schedules of all anticipated capital expenditure requirements, development costs and subsequent facility operating costs have been analyzed utilizing standard discounted cash flow techniques within specific accounting guidelines as provided by MEC. A summary of the results of this analysis and specific definition of procedures and calculations follows in the remaining subsections.

3.2.1 Investment Requirements

a. Capital Expenditures - These items include all facilities and equipment which are to be capitalized. They have been separated for analysis into classifications defining the period over which they are to be depreciated. All buildings, main power and water supply lines, main access roads, first phase tailings pond, equipment and costs of construction or erection to be capitalized have been included in this item.

b. Working Capital - Items which have been included in the working capital allocation include three months of production cash cost to allow for market return lag, initial mill reagent inventories and initial mine and mill equipment spare parts inventories. Reagent and parts inventories have been considered in the year preceeding ore production with market lag in the first year of production.

All working capital is shown as being recovered in the twelfth year for the purposes of this financial analysis. (See Table 2.2-1)

3.2.2 Costs and Expenses

a. Operating Costs - The direct cost for labor and supplies necessary for mine and mill operation has been calculated and input to the analysis program in unit dollars per pound of produced mill product.

b. Expensed Items - The category of items which are to be directly expensed against income for tax purposes, but which are not part of direct mine operating costs, include preproduction mine development costs, tailings and evaporation pond construction (after first stage construction), abandonment costs, and state property tax.

3.2.3 Tax Items

a. Depreciation - The depreciation has been calculated utilizing double declining balance procedures for periods approximating each individual item's useful life. Depreciation generated within loss periods has also been credited assuming application against separately generated income.

b. Depletion - Calculated by using the allowable 22 percent of gross product sales revenue up to a maximum of

50 percent of the net income before depletion. This allowance for depletion has not been considered prior to ore material development.

c. State Property Tax - An annual state property tax is calculated by taking the acquisition cost of the ore body ($323,000) less the value of the ore removed from the ground, plus the cummulative capital less the cummulative amount of straight line depreciation. This value is then multiplied by 60% to obtain the assessed value. The mill levy factor of 0.9578 is then applied to the assessed value to determine the property tax.

d. Federal Income Tax - A federal tax rate of 52% has been used to represent both the federal and state income tax.

e. Investment Tax Credit - A 10% investment credit rate was applied to qualifying property.

3.2.4 Performance Parameters

a. Return on Investment - The DCF-ROI has been determined using standard discounted cash flow methods and based on an estimated selling price of $43.40 per pound U_3O_8.

b. Payback Period - The number of years required for cash flow to recover original investment plus working capital at a non-discounted rate.

c. Net Present Value - Four NPV's have been calculated for discounting rates of 8%, 12%, 16%, and 20%, by taking the discounted cash inflow minus the discounted cash outflow.

d. Sensitivity - Sensitivity analysis has been performed on four investment parameters: selling price, production costs, capital costs, and operating costs. The individual effect of these parameters on the base economic evaluation results is determined by varying the selected parameters ±20 percent.

3.2.5 Results

The results of the financial analysis are provided in the following tables and graphs.

a. Financial Analysis Detail Tables

Table 0 - Summary

Table 1 - Capital Expenditures

Table 2 - Depreciation

Table 3 - Cost Detail

Table 4 - Pretax Income ($/lb)

Table 5 - Pretax Income (Full $)

Table 6 - Taxes and Cash Flow

Table 7 - Cash Outflow

Table 8 - Cash Inflow

b. Sensitivity Graphs

Selling Price

Production

Capital Costs

Operating Costs

TABLE: 0 SUMMARY OF RESULTS FOR DATA AS INPUT
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

DCF RETURN ON INVESTMENT: 19.581 %

NON DISCOUNTED PAYOUT PERIOD: 6.064 YEARS

DISCOUNTED PAYOUT PERIOD @ 10%: 7.740 YEARS

CAPITAL PRODUCTIVITY INDEX @ 10%: 1.543

SALES REVENUE:	YR	$/LB
	1	0.0
	2	0.0
	3	43.400
	4	43.400
	5	43.400
	6	43.400
	7	43.400
	8	43.400
	9	43.400
	10	43.400
	11	43.400
	12	43.400
	13	0.0
	14	0.0

TABLE: 1 CAPITAL EXPENDITURES BY INVESTMENT CLASSIFICATION
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

YR	20 YR INV	15 YR INV	10 YR INV	5 YR INV	3 YR INV	YEARLY TOTAL	CUM TOTAL
1	0.	0.	10705270.	1493670.	16000.	12214940.	12214940.
2	0.	0.	28223090.	8260603.	348949.	36832648.	49047588.
3	0.	0.	0.	482528.	0.	482528.	49530116.
4	0.	0.	0.	0.	0.	0.	49530116.
5	0.	0.	0.	0.	180149.	180149.	49710265.
6	0.	0.	0.	839851.	0.	839851.	50550116.
7	0.	0.	0.	826804.	87250.	914054.	51464170.
8	0.	0.	0.	439831.	180149.	619980.	52084150.
9	0.	0.	0.	270048.	0.	270048.	52354198.
10	0.	0.	0.	508987.	0.	508987.	52863185.
11	0.	0.	0.	161081.	176149.	337230.	53200415.
12	0.	0.	0.	0.	0.	0.	53200415.
13	0.	0.	0.	0.	0.	0.	53200415.
14	0.	0.	0.	0.	0.	0.	53200415.
TL	0.	0.	38928360.	13283403.	988646.	53200415.	53200415.

TABLE: 2 AVAILABLE DEPRECIATION BY INVESTMENT CLASSIFICATION (DOUBLE DECLINING BALANCE METHOD)
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

YR	20 YR DEP	15 YR DEP	10 YR DEP	5 YR DEP	3 YR DEP	YEARLY TOTAL	CUM TOTAL
1	0.	0.	2141054.	597468.	10667.	2749189.	2749189.
2	0.	0.	7357462.	3662722.	236188.	11256373.	14005561.
3	0.	0.	5885970.	2390644.	78729.	8355344.	22360905.
4	0.	0.	4708776.	1434387.	26441.	6169603.	28530508.
5	0.	0.	3767021.	860632.	133023.	4760676.	33291184.
6	0.	0.	3013617.	922008.	40033.	3975658.	37266842.
7	0.	0.	2410893.	1199645.	71511.	3682049.	40948891.
8	0.	0.	1928715.	532825.	146160.	2607700.	43556592.
9	0.	0.	1542972.	405202.	46496.	1994669.	45551261.
10	0.	0.	1234377.	446716.	16576.	1697669.	47248930.
11	0.	0.	1907078.	371646.	124105.	2402828.	49651758.
12	0.	0.	3030432.	222379.	39144.	3291955.	52943713.
13	0.	0.	0.	115373.	13048.	128421.	53072134.
14	0.	0.	0.	61302.	6524.	67826.	53139960.
TL	0.	0.	38928366.	13222948.	988646.	53139960.	53139960.

TOTAL INVESTMENTS: 53200415.
TOTAL DEPRECIATION: 53139960.
SALVAGE VALUE (BOOK): 60455.

TABLE: 3 COST DETAIL
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

YR	FEDERAL TAX RATE	INVEST CR RATE	STATE TAX RATE	EXPENSE ITEMS	WORKING CAPITAL	YEARLY LBS	ROYALTIES $/LB	LAND RENTAL $/LB	CASH COST $/LB
1	0.520	0.100	0.0	329568.	0.	0.	0.0	0.0	0.0
2	0.520	0.100	0.0	13853912.	1379260.	0.	0.0	0.0	0.0
3	0.520	0.100	0.0	2092652.	6559250.	1052718.	0.0	0.0	23.268
4	0.520	0.100	0.0	1971531.	0.	1052718.	0.0	0.0	23.272
5	0.520	0.100	0.0	1613420.	0.	899810.	0.0	0.0	27.241
6	0.520	0.100	0.0	1347104.	0.	899810.	0.0	0.0	27.245
7	0.520	0.100	0.0	912473.	0.	899810.	0.0	0.0	27.248
8	0.520	0.100	0.0	1007745.	0.	899810.	0.0	0.0	25.033
9	0.520	0.100	0.0	450776.	0.	899810.	0.0	0.0	25.036
10	0.520	0.100	0.0	622378.	0.	899810.	0.0	0.0	25.040
11	0.520	0.100	0.0	44500.	0.	899810.	0.0	0.0	25.043
12	0.520	0.100	0.0	23734.	0.	755839.	0.0	0.0	25.047
13	0.520	0.100	0.0	0.	0.	0.	0.0	0.0	0.0
14	0.520	0.100	0.0	2582000.	0.	0.	0.0	0.0	0.0
TL				29817909.	7938510.	9159945.			

TABLE: 4 PRETAX INCOME CALCULATION ($/LB)
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

YR	SALES REVENUE	50% LAND RETURN	LABOR COST	SUPPLY COST	GENERAL COSTS	ROYALTIES	LAND RENTAL	EXPENSE	DEPR	DEPL	TOTAL COST	PRETAX INCOME
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	********	********	0.0	********	********
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	********	********	0.0	********	********
3	43.400	0.0	23.268	0.0	0.0	0.0	0.0	1.988	7.937	5.104	38.296	5.104
4	43.400	0.0	23.272	0.0	0.0	0.0	0.0	1.873	5.861	6.197	37.203	6.197
5	43.400	0.0	27.241	0.0	0.0	0.0	0.0	1.793	5.291	4.538	38.862	4.538
6	43.400	0.0	27.245	0.0	0.0	0.0	0.0	1.497	4.418	5.120	38.280	5.120
7	43.400	0.0	27.248	0.0	0.0	0.0	0.0	1.014	4.092	5.523	37.877	5.523
8	43.400	0.0	25.033	0.0	0.0	0.0	0.0	1.120	2.898	7.174	36.226	7.174
9	43.400	0.0	25.036	0.0	0.0	0.0	0.0	0.501	2.217	7.823	35.577	7.823
10	43.400	0.0	25.040	0.0	0.0	0.0	0.0	0.692	1.887	7.891	35.509	7.891
11	43.400	0.0	25.043	0.0	0.0	0.0	0.0	0.049	2.670	7.819	35.581	7.819
12	43.400	0.0	25.047	0.0	0.0	0.0	0.0	0.031	4.355	6.983	36.417	6.983
13	43.400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	********	0.0	********	********
14	43.400	0.0	0.0	0.0	0.0	0.0	0.0	********	********	0.0	********	********

TABLE: 5 PRETAX INCOME CALCULATION (FULL DOLLARS)
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

YR	SALES REVENUE	50% LAND RETURN	TOTAL CASH COSTS	EXPENSE ITEMS	DEPR	DEPL	PRETAX INCOME
1	0.	0.	0.	3295684.	2749189.	0.	-6044873.
2	0.	0.	0.	13853912.	11256373.	0.	-25110285.
3	45687961.	0.	24494642.	2092652.	8355344.	5372662.	5372662.
4	45687961.	0.	24498853.	1971531.	6169603.	6523987.	6523987.
5	39051754.	0.	24511724.	1613420.	4760676.	4082967.	4082967.
6	39051754.	0.	24515323.	1347104.	3975658.	4606834.	4606834.
7	39051754.	0.	24518023.	912473.	3682049.	4969605.	4969605.
8	39051754.	0.	22524944.	1007745.	2607700.	6455682.	6455682.
9	39051754.	0.	22527643.	450776.	1994669.	7039333.	7039333.
10	39051754.	0.	22531242.	622378.	1697669.	7100232.	7100232.
11	39051754.	0.	22533942.	44500.	2402828.	7035242.	7035242.
12	32803413.	0.	18931499.	23734.	3291955.	5278112.	5278112.
13	0.	0.	0.	0.	128421.	0.	-128421.
14	0.	0.	0.	2582000.	67826.	0.	-2649826.
TL	397541613.	0.	231587837.	29817909.	53139960.	58464656.	24531251.

TABLE: 6 TAXES AND CASH FLOW
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

YR	PRETAX INCOME	FED&STATE INCOME TAX	INVEST CREDIT	PREF TAX	50% LAND RETURN	INCOME A/TAXES	CASH INFLOW	CASH OUTFLOW	NET CASH FLOW
1	-6044873.	-3143334.	1221494.	0.	0.	-1680045.	1069144.	12214940.	-11145796.
2	-25110285.	-13057348.	3683265.	0.	0.	-8369672.	2886701.	38211908.	-35325207.
3	5372662.	2793784.	48253.	0.	0.	2627130.	16355136.	7041778.	9313358.
4	6523987.	3392473.	0.	0.	0.	3131514.	15825104.	0.	15825104.
5	4082967.	2123143.	18015.	0.	0.	1977839.	10821482.	180149.	10641333.
6	4606834.	2395554.	83985.	0.	0.	2295266.	10877758.	839851.	10037907.
7	4969605.	2584195.	91405.	0.	0.	2476816.	11128469.	914054.	10214415.
8	6455682.	3356955.	61998.	0.	0.	3160726.	12224108.	619980.	11604128.
9	7039333.	3660453.	27005.	0.	0.	3405884.	12439886.	270048.	12169838.
10	7100232.	3692121.	50899.	0.	0.	3459010.	12256912.	508987.	11747925.
11	7035242.	3658326.	33723.	0.	0.	3410639.	12848709.	337230.	12511479.
12	5278112.	2744618.	0.	0.	0.	2533494.	11103561.	0.	11103561.
13	-128421.	-66779.	0.	0.	0.	-61642.	66779.	0.	66779.
14	-2649826.	-1377910.	0.	0.	0.	-1271917.	-1204090.	0.	-1204090.
TL	24531251.	12756251.	5320041.	0.	0.	17095042.	128699658.	61138925.	

TABLE: 7 CASH OUTFLOW DETAIL ($000)
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

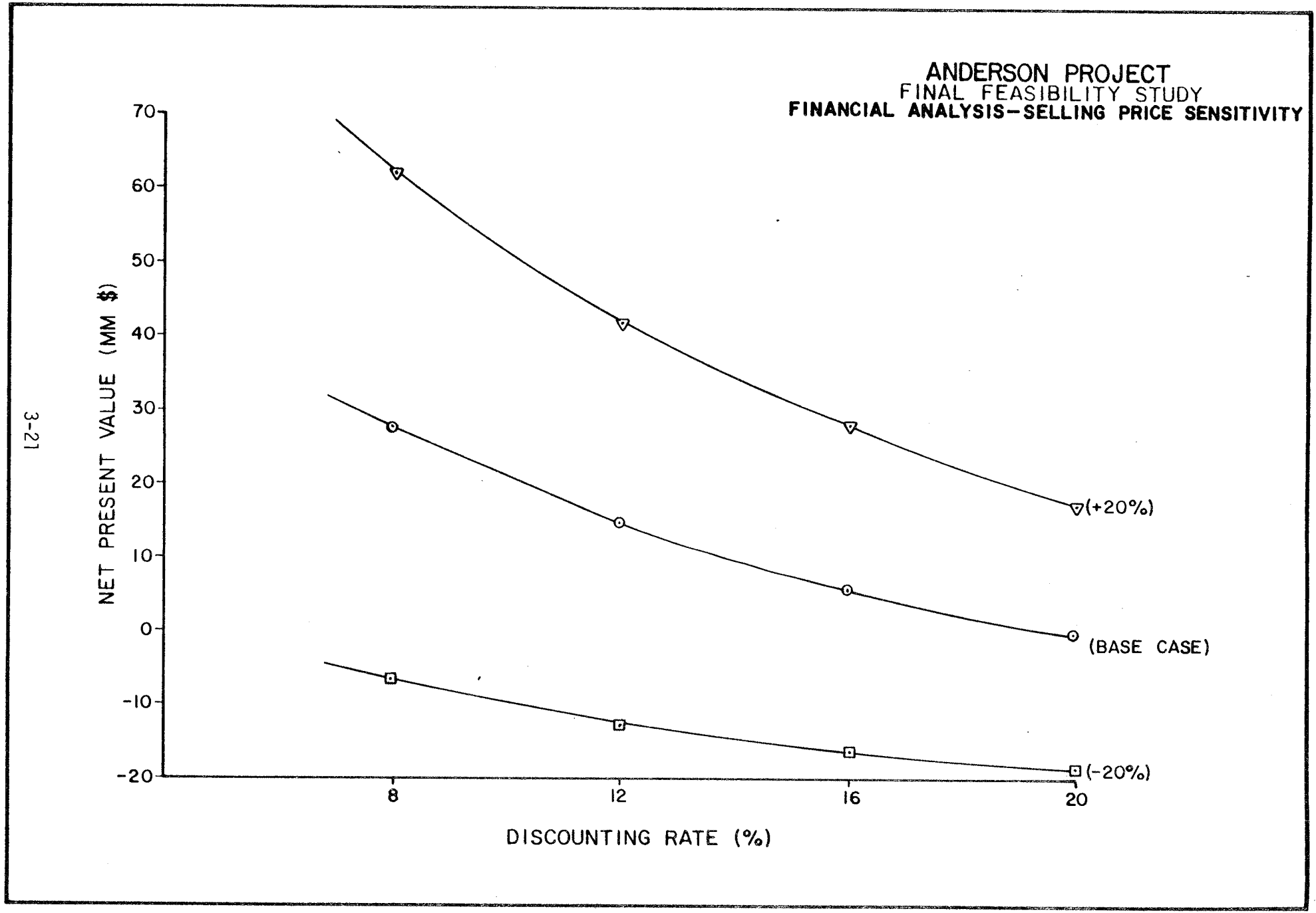
*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

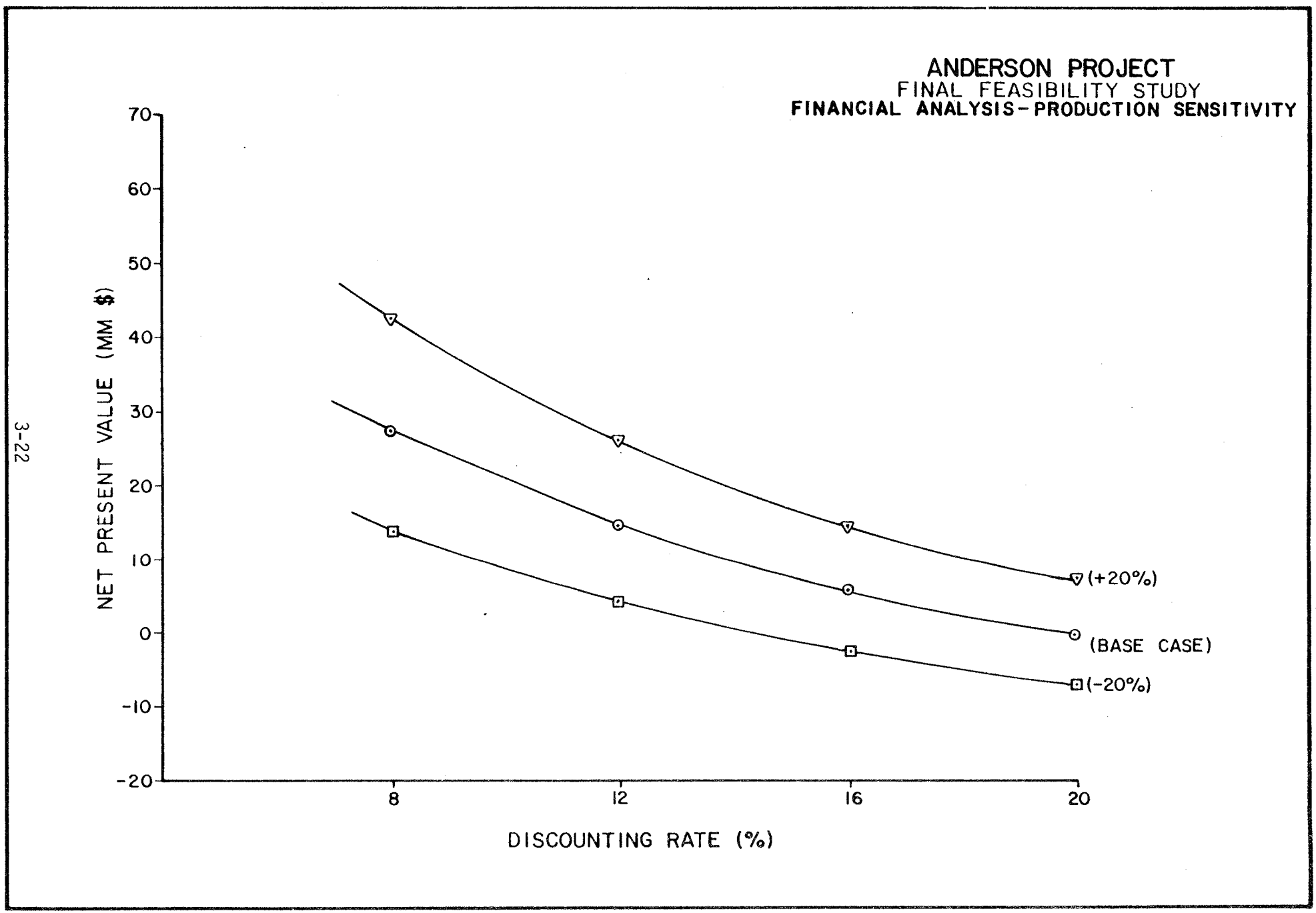
YR	DEPR ASSETS	WORKING CAPITAL	ACRTN COST	TOTAL OUTFLOW	PRESENT VALUE AT 08%	12%	16%
1	12215.	0.	0.	12215.	11310.	10906.	10530.
2	36833.	1379.	0.	38212.	32761.	30462.	28398.
3	483.	6559.	0.	7042.	5590.	5012.	4511.
4	0.	0.	0.	0.	0.	0.	0.
5	180.	0.	0.	180.	123.	102.	86.
6	840.	0.	0.	840.	529.	425.	345.
7	914.	0.	0.	914.	533.	413.	323.
8	620.	0.	0.	620.	335.	250.	189.
9	270.	0.	0.	270.	135.	97.	71.
10	509.	0.	0.	509.	236.	164.	115.
11	337.	0.	0.	337.	145.	97.	66.
12	0.	0.	0.	0.	0.	0.	0.
13	0.	0.	0.	0.	0.	0.	0.
14	0.	0.	0.	0.	0.	0.	0.
TL	53200.	7939.	0.	61139.	51696.	47930.	44634.

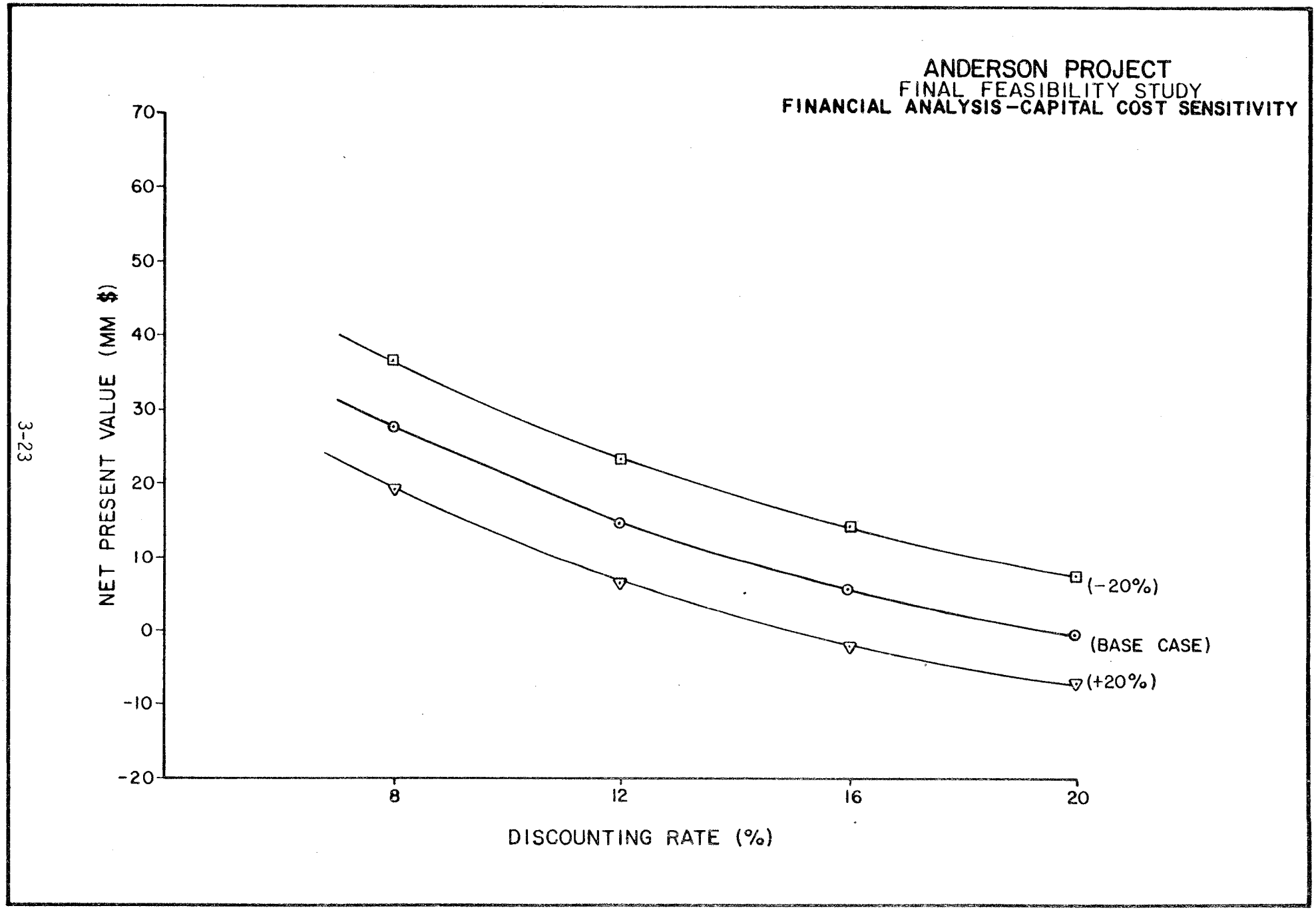
TABLE: 8 CASH INFLOW DETAIL ($000)
PROJECT: MINERALS EXPLORATION COMPANY
ID: ANDERSON PROJECT
DATE: 8/ 4/78

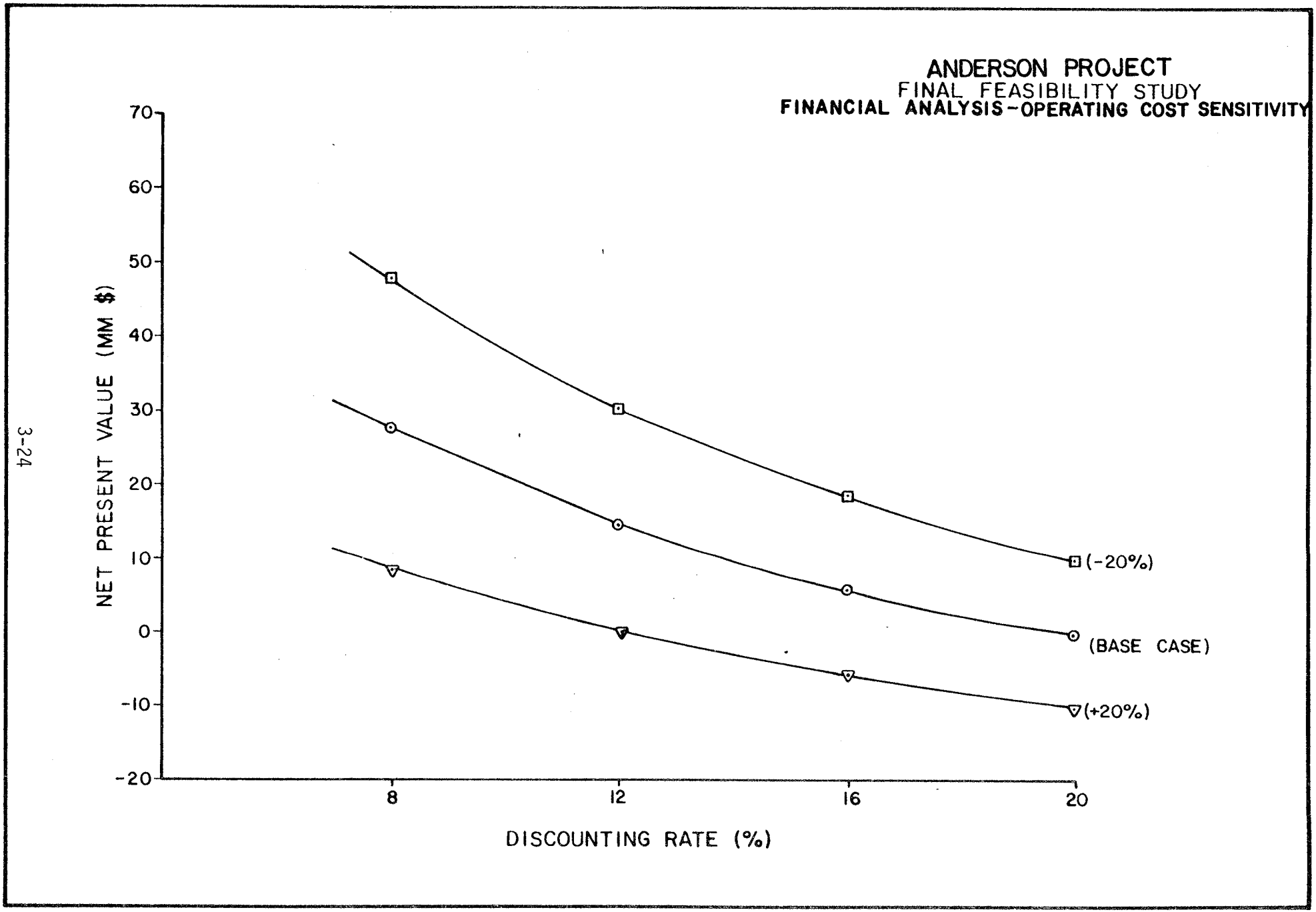
*MORRISON-KNUDSEN COMPANY, INC.
*INDUSTRIAL & MINING ENGINEERING DIV.

YR	PRETAX INCOME	TAX ON INCOME	50% LAND RETURN	NET INCOME	NONCASH CHARGES	CASH INFLOW	PRESENT VALUE AT 08%	12%	16%
1	-6045.	-4365.	0.	-1680.	2749.	1069.	990.	955.	922.
2	-25110.	-16741.	0.	-8370.	11256.	2887.	2475.	2301.	2145.
3	5373.	2746.	0.	2627.	13728.	16355.	12983.	11641.	10478.
4	6524.	3392.	0.	3132.	12694.	15825.	11632.	10057.	8740.
5	4083.	2105.	0.	1978.	8844.	10821.	7365.	6140.	5152.
6	4607.	2312.	0.	2295.	8582.	10878.	6855.	5511.	4465.
7	4970.	2493.	0.	2477.	8652.	11128.	6493.	5034.	3938.
8	6459.	3295.	0.	3161.	9063.	12224.	6604.	4937.	3729.
9	7039.	3633.	0.	3406.	9034.	12440.	6223.	4486.	3271.
10	7100.	3641.	0.	3459.	8798.	12257.	5677.	3946.	2778.
11	7035.	3625.	0.	3411.	9438.	12849.	5511.	3694.	2511.
12	5278.	2745.	0.	2533.	8570.	11104.	4409.	2850.	1871.
13	-128.	-67.	0.	-62.	128.	67.	25.	15.	10.
14	-2650.	-1378.	0.	-1272.	68.	-1204.	-410.	-246.	-151.
TL	24531.	7436.	0.	17095.	111605.	128700.	76833.	61322.	49858.
TERMINAL YEAR (WORKING CAPITAL + SALVAGE)						7999.	2941.	1833.	1162.
TOTAL CASH INFLOWS						136699.	79774.	63155.	51020.
PRESENT WORTH OF (CASH INFLOW - CASH OUTFLOW)							28077.	15224.	6385.


ANDERSON PROJECT
FINAL FEASIBILITY STUDY
FINANCIAL ANALYSIS–SELLING PRICE SENSITIVITY
NET PRESENT VALUE (MM $)
70
60
50
40
30
20
10
0
-10
-20
8
12
16
20
DISCOUNTING RATE (%)
(+20%)
(BASE CASE)
(-20%)


ANDERSON PROJECT
FINAL FEASIBILITY STUDY
FINANCIAL ANALYSIS - PRODUCTION SENSITIVITY
NET PRESENT VALUE (MM $)
70
60
50
40
30
20
10
0
-10
-20
8
12
16
20
DISCOUNTING RATE (%)
(+20%)
(BASE CASE)
(-20%)


ANDERSON PROJECT
FINAL FEASIBILITY STUDY
FINANCIAL ANALYSIS-CAPITAL COST SENSITIVITY
NET PRESENT VALUE (MM $)
70
60
50
40
30
20
10
0
-10
-20
8
12
16
20
DISCOUNTING RATE (%)
(-20%)
(BASE CASE)
(+20%)


ANDERSON PROJECT
FINAL FEASIBILITY STUDY
FINANCIAL ANALYSIS-OPERATING COST SENSITIVITY
NET PRESENT VALUE (MM $)
70
60
50
40
30
20
10
0
-10
-20
8
12
16
20
DISCOUNTING RATE (%)
(-20%)
(BASE CASE)
(+20%)

SECTION 4

SCHEDULES AND MANPOWER REQUIREMENTS

This section describes the organization, personnel, classifications, and personnel requirements in each classification used as the basis of this feasibility study. It also presents a preliminary construction schedule and a summary schedule of activities estimated to complete the project.

4.1 GENERAL AND ADMINISTRATION

The Anderson Project Organizational Chart is presented in Figure 4.1-1. The job classifications and number of administrative personnel are presented in Table 4.1-1. Twenty-five (25) personnel will be required for administrative functions related to both the mine and mill. These functions include general management, accounting, safety and environmental activities.

A cost summary for administration is shown in Section 3, and cost details are shown in Figure 4.1-2.

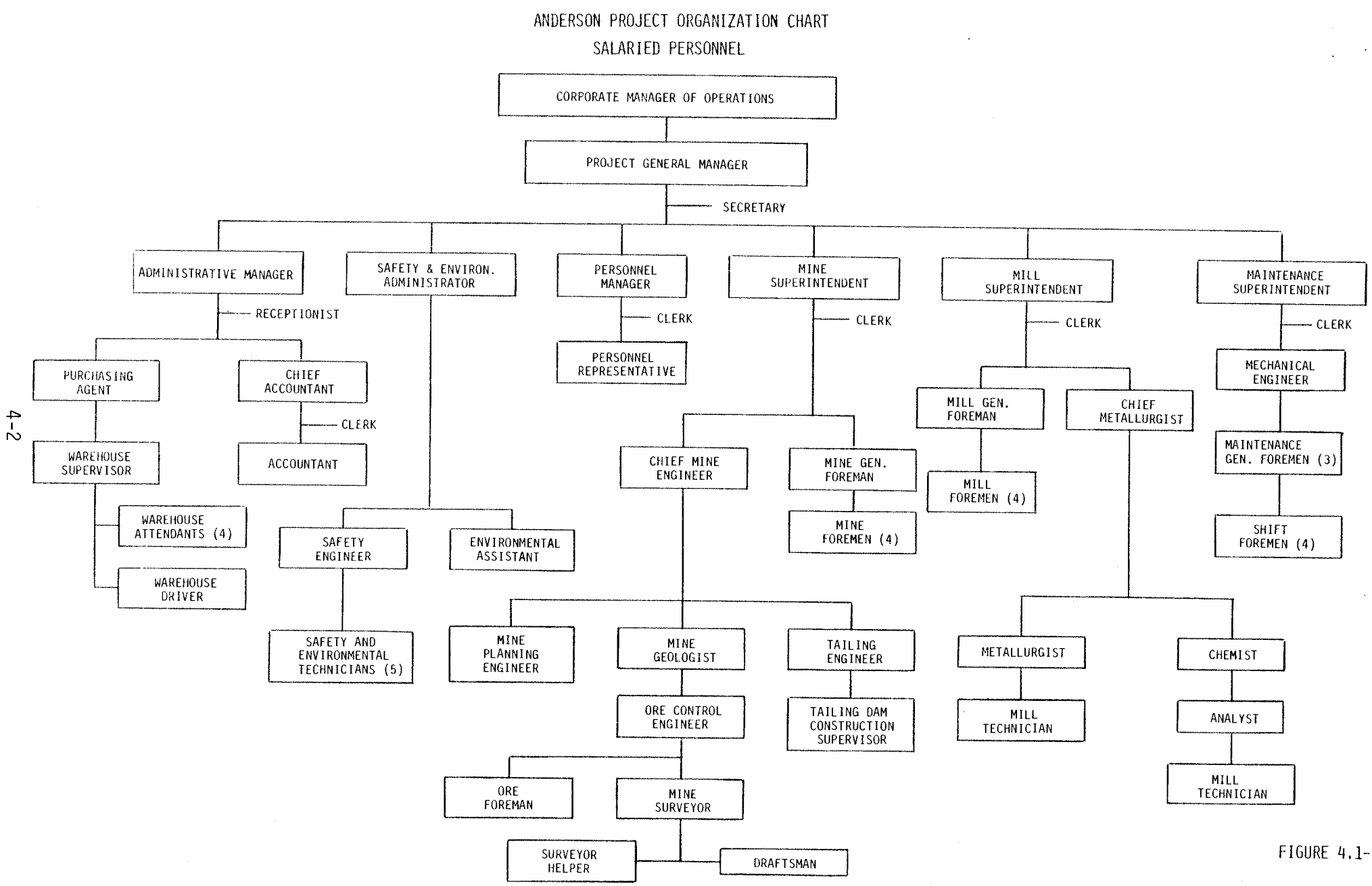

ANDERSON PROJECT ORGANIZATION CHART
SALARIED PERSONNEL
CORPORATE MANAGER OF OPERATIONS
PROJECT GENERAL MANAGER
SECRETARY
ADMINISTRATIVE MANAGER
RECEPTIONIST
PURCHASING AGENT
WAREHOUSE SUPERVISOR
WAREHOUSE ATTENDANTS (4)
WAREHOUSE DRIVER
CHIEF ACCOUNTANT
CLERK
ACCOUNTANT
SAFETY & ENVIRON. ADMINISTRATOR
SAFETY ENGINEER
SAFETY AND ENVIRONMENTAL TECHNICIANS (5)
ENVIRONMENTAL ASSISTANT
PERSONNEL MANAGER
CLERK
PERSONNEL REPRESENTATIVE
MINE SUPERINTENDENT
CLERK
CHIEF MINE ENGINEER
MINE PLANNING ENGINEER
MINE GEOLOGIST
ORE CONTROL ENGINEER
ORE FOREMAN
MINE SURVEYOR
SURVEYOR HELPER
DRAFTSMAN
MINE GEN. FOREMAN
MINE FOREMEN (4)
TAILING ENGINEER
TAILING DAM CONSTRUCTION SUPERVISOR
MILL SUPERINTENDENT
CLERK
MILL GEN. FOREMAN
MILL FOREMEN (4)
CHIEF METALLURGIST
METALLURGIST
MILL TECHNICIAN
CHEMIST
ANALYST
MILL TECHNICIAN
MAINTENANCE SUPERINTENDENT
CLERK
MECHANICAL ENGINEER
MAINTENANCE GEN. FOREMEN (3)
SHIFT FOREMEN (4)

FIGURE 4.1-1

TABLE 4.1-1

ADMINISTRATIVE COST - MINE AND MILL

POSITION	NUMBER	ANNUAL RATE	ANNUAL COST	COST PER TON	$/lb U_3O_8 [1]	$/lb U_3O_8 [2]
General Manager	1	$38,500	$ 38,500	$0.053	$0.043	$0.037
Administrative Manager	1	28,600	28,600	0.039	0.032	0.027
Chief Accountant	1	23,100	23,100	0.032	0.026	0.022
Accountant	1	19,800	19,800	0.027	0.022	0.019
Accounting Clerk	1	16,500	16,500	0.023	0.018	0.015
Personnel Manager	1	23,100	23,100	0.032	0.026	0.022
Personnel Representative	1	19,800	19,800	0.027	0.022	0.019
Personnel Clerk	1	16,500	16,500	0.023	0.018	0.015
Purchasing Agent	1	23,100	23,100	0.032	0.026	0.022
Secretary	1	13,200	13,200	0.018	0.015	0.013
Receptionist	1	11,000	11,000	0.015	0.012	0.010
Safety & Environmental Admin.	1	26,400	26,400	0.036	0.029	0.025
Environmental Assistant	1	19,800	19,800	0.027	0.022	0.019
Safety & Environmental Technician	5	16,500	82,500	0.113	0.092	0.078
Safety Engineer	1	19,800	19,800	0.027	0.022	0.019
Warehouse Supervisor	1	19,800	19,800	0.027	0.022	0.019
Warehouse Attendant	4	17,600	70,400	0.096	0.078	0.067
Warehouse Driver	1	17,600	17,600	0.024	0.020	0.017
Total Before Burden	25		$489,500	$0.671	$0.545	$0.465
23% Burden			112,585	0.154	0.125	0.107
Total	25		$602,085	$0.825	$0.670	$0.572
Environmental Operating Cost			20,000	0.027	0.022	0.019
Perpetual Care Fund (5¢/Ton Milled)			36,500	0.050	0.041	0.035
Total Environmental Operating Costs			$ 56,500	$0.077	$0.063	$0.054
Total Office Operating Supplies			91,700	0.126	0.102	0.087
TOTAL ANNUAL ADMINISTRATIVE COSTS			$750,285	$1.028	$0.835	$0.713

NOTES: 730,000 tpy Ore
1 - 899,810 lb U_3O_8/yr @ Ore Grade of 0.0696% U_3O_8, 88.55% Recovery
2 - 1,052,718 lb U_3O_8/yr @ Ore Grade of 0.080% U_3O_8, 90.13% Recovery

4.2 PROJECT MANPOWER REQUIREMENT SUMMARY

The number of personnel required on the Minerals Exploration payroll to operate the Anderson Project at full production is listed below:

Project Manpower Requirements

	Salary	Hourly	Total
Administration	25	--	25
Mine			
Operations	15	162	177
Maintenance	--	62	62
Mill			
Operations	13	33	46
Maintenance	--	21	21
Maintenance			
Supervision	10	--	10
Tailings Operations *(Tailings dam and evaporation ponds)			
Supervision	1	--	1
Operations	1	4	5
TOTAL	65	282	347

*Total estimated construction time for the tailings dam and evaporation ponds is approximately five years, extended over a total period exceeding eight years. It is assumed that these personnel will be reassigned to other mining operations when not working in the construction of the tailing dams.

A detailed project personnel list is presented in Table 4.2-1. Personnel will be added to the Minerals Exploration Anderson Project as required. A summary schedule of the required manpower loading is presented in Table 4.2-2.

TABLE 4.2-1

PROJECT PERSONNEL*

SALARIED

Administrative		Mine		Mill		Maintenance		Tailings Dam Construction	
Title	No	Title	No	Title	No	Title	No	Title	No
General Manager	1	Mine Superintendent	1	Mill Superintendent	1	Maintenance Super.	1	Supervisor	1
Administrative Manager	1	Mine General Foreman	1	Mill General Foreman	1	General Maint. Foreman	3	Engineer	1
Chief Accountant	1	Shift Foreman	4	Mill Foreman	4	Shift Foreman	4		
Accountant	1	Mine Planning Engineer	1	Chief Metallurgist	1	Mechanical Engineer	1		
Accounting Clerk	1	Ore Foreman	1	Metallurgist	1	Maintenance Clerk	1		
Personnel Manager	1	Chief Mine Engineer	1	Mill Technician	2				
Personnel Representative	1	Mine Geologist	1	Chemist	1				
Personnel Clerk	1	Clerk	1	Analyst	1				
Purchasing Agent	1	Ore Control Engineer	1	Mill Clerk	1				
Secretary	1	Mine Surveyor	1						
Receptionist	1	Surveyor Helper	1						
Safety and Environmental Adm.	1	Draftsman	1						
Environmental Assistant	1								
Safety and Environmental Tech.	5								
Safety Engineer	1								
Warehouse Supervisor	1								
Warehouse Attendant	4								
Warehouse Driver	1								
TOTAL (Salaried)	25	TOTAL (Salaried)	15	TOTAL (Salaried)	13	TOTAL (Salaried)	10	TOTAL (Salaried)	2

TOTAL SALARIED PERSONNEL - 65

*At full production

PROJECT PERSONNEL*

HOURLY

Administrative		Mine		Mill		Maintenance		Tailings Dam Construction	
Title	No	Title	No	Title	No	Title	No	Title	No
		Crews		Mill Operators		Mine		Tailings Dam Construction Operators	4
		Stripping		Loader Operator	4	Mechanics	15		
		Shovel A	8	Grinding & Leaching Operator	4	Mechanic & Welder Helper	5		
		Shovel B	6	CCD Circuit Operator	4	Welders	8		
		Truck A	18	S-X & Precip. Oper.	4	Electricians	6		
		Truck B	14	YC Drying-Handling	4	Electricians Apprentices	2		
		Drill	12	Tailings Operator	4	Lube Mechanics	4		
		Explosives	4	Trainee	4	Lube Mechanics Helpers	2		
		Prill Truck	1			Fuelmen	4		
		Dozers-Pioneer	4			Machinists	2		
		Dozers-Dump	4			Steam Cleaners & Janitors	4		
						Service Vehicle Mech.	5		
						Labor Pool	5		
		Subtotal	71	Subtotal	28	Subtotal	62	Subtotal	4
		Mining		Metallurgical Laboratory		Mill			
		Front Shovel	6	Mill Technicians	4	Electrician	4		
		Truck	24	Janitor	1	Mechanics (Craftsmen)	6		
		Dozer	3			Mechanic (Journeyman)	1		
		Prober	15			Mechanic (Helper)	6		
		Drill-Ore Control	6			Trainee	4		
		Probe Tower	3						
		Subtotal	57	Subtotal	5	Subtotal	21		

*At full production

PROJECT PERSONNEL*

HOURLY

Administrative		Mine		Mill		Maintenance		Tailings Dam Construction	
Title	No	Title	No	Title	No	Title	No	Title	No
		Support							
		Grader A	4						
		Grader B	3						
		Rubber Tire Dozer	4						
		Water Wagon A	4						
		Water Wagon B	2						
		Dump Spotters A	4						
		Dump Spotters B	3						
		Pipe Tender	1						
		Labor Pool	9						
		Subtotal	34						
TOTAL (Hourly)	0	TOTAL (Hourly)	162	TOTAL (Hourly)	33	TOTAL (Hourly)	83	TOTAL (Hr.)	4
TOTAL HOURLY PERSONNEL - 282									
TOTAL (Salaried & Hourly) - 25			177		46		93		6
GRAND TOTAL PROJECT PERSONNEL - 347									

*At full production

TABLE 4.2-2

MINERALS EXPLORATION COMPANY

PROJECT MANPOWER LOADING SCHEDULE

Year	Administration		Mine		Mill		Maintenance (Mine & Mill)		Tailings & Evap. Ponds[1]		Total	
	Salary	Hourly	Salary	Hourly	Salary	Hourly	Salary	Hourly	Salary	Hourly	Salary	Hourly
1979	22	--	15	97	4	4	9	53	--	--	50	154
1980	25	--	15	154	13	33	10	83	2	4*	65	274
1981	25	--	15	162	13	33	10	83	2	4*	65	282
1982	25	--	15	162	13	33	10	83	2	4	65	282
1983	25	--	15	162	13	33	10	83	2	4*	65	282
1984	25	--	15	162	13	33	10	83	2	4*	65	282
1985	25	--	15	162	13	33	10	83	2	4	65	282
1986	25	--	15	136	13	33	10	77	2	4*	65	250
1987	25	--	15	136	13	33	10	77	2	4	65	250
1988	25	--	15	136	13	33	10	77	2	4*	65	250
1989	25	--	15	136	13	33	10	77	0	0	63	244
1990	25	--	15	136	13	33	10	77	0	0	63	244

[1]These personnel will be assigned to the mine in the years when not required for tailing dam construction.

*Years of tailing dam construction.

4.3 CONSTRUCTION MANPOWER LOADING SCHEDULE

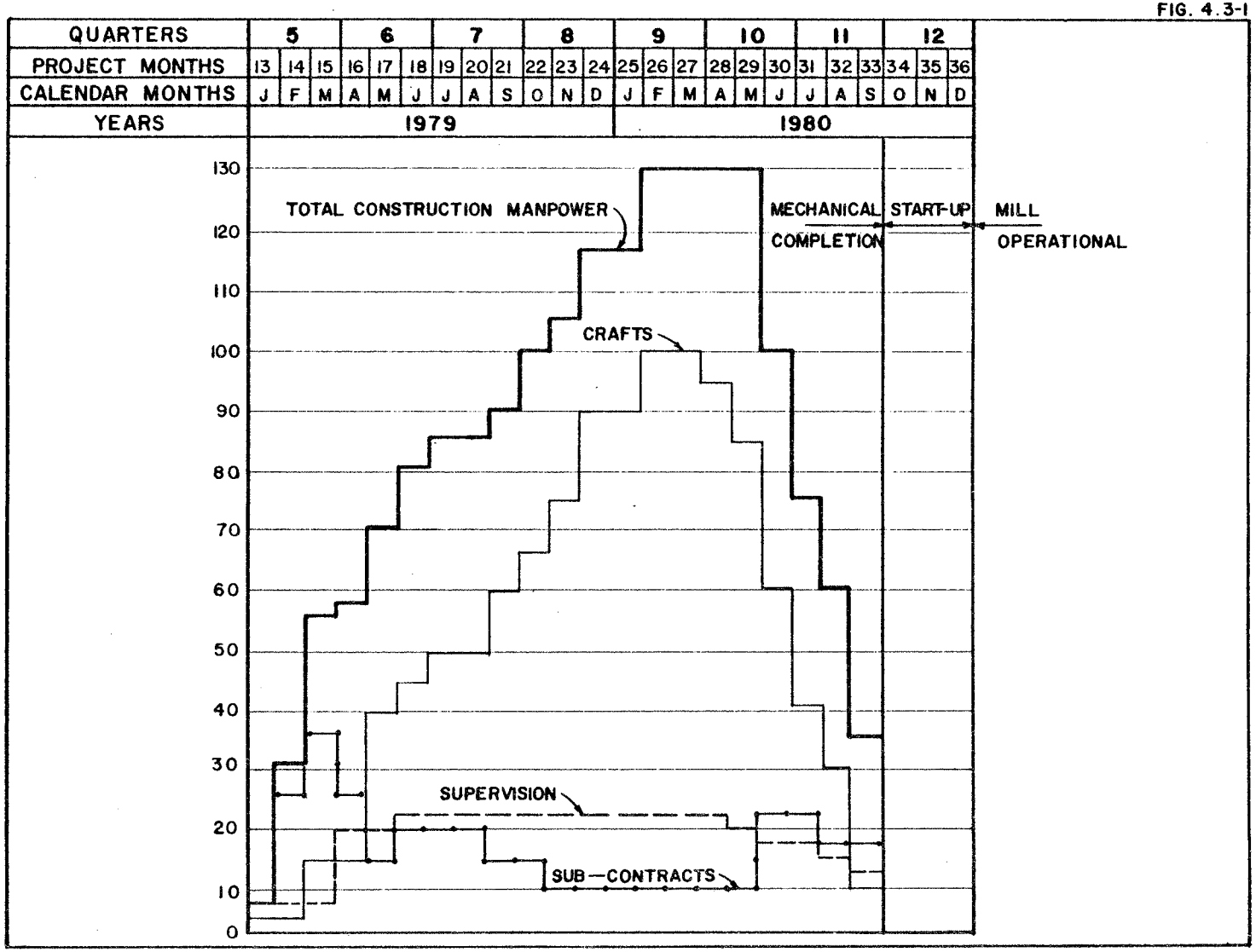
The Construction Manpower Loading Schedule is shown graphically on Figure 4.3-1. This schedule includes all construction manpower required to complete construction activities such as site preparation, utilities, building construction, process equipment, installations, piping, instrumentation, electrical and the specialty trade work.

The schedule is classified by the following: Total construction manpower, construction trades, construction supervision and sub-contractor manpower.

The manpower loading and durations are predicated on a normal 8-hour, 5-day work week, site preparation starting January 1, 1979, and mechanical completion October 1, 1980. There is a possibility that an extended work week may be necessary as an incentive to draw a sufficient number of construction craftsmen. A number of construction projects will be underway in Arizona the same time as the Anderson Project. This may affect the supply of construction craftsmen.

CONSTRUCTION MANPOWER LOADING SCHEDULE
MINERALS EXPLORATION COMPANY — ANDERSON URANIUM MILL PROJECT

FIG. 4.3-1



4.4 PROJECT ACTIVITY SCHEDULE SUMMARY

A summary schedule of the major project activities is presented in Figure 4.4-1. Some of the schedule milestones are:

a. September 1, 1978 - Commence detailed mine engineering

b. January 1, 1979
- Construct access road
- Commence site preparation for mine facilities (Administration Building, Shop, Garage & Warehouse). This assumes that all required permits have been approved.
- Commence detailed mill design engineering

c. February 1, 1979 - Commence procurement of critical mill equipment (SAG Mill)

d. April 1, 1979 - Commence construction of mine facilities at millsite

e. October 1, 1979
- Commence mine stripping
- Complete mine facilities at millsite
- Commence mill construction

f. March 1, 1980
- Commence ore development
- Commence tailing dam construction

g. October 1, 1980 - Mechanical completion of mill facilities

h. January 1, 1981 - Commence Mill Operations

i. July 1, 1990 - Mine stripping complete

j. October 1, 1990 - Mining completed

A preliminary construction network-type schedule is presented in Figure 4.4-2. This schedule covers the mine and mill facilities and the first stage tailing dam. In general, this figure represents a condensed CPM schedule anticipated for the Anderson Project.

ACTIVITY SCHEDULE SUMMARY
MINERALS EXPLORATION COMPANY
ANDERSON PROJECT — URANIUM MINE AND MILL

FIG. 4.4-1

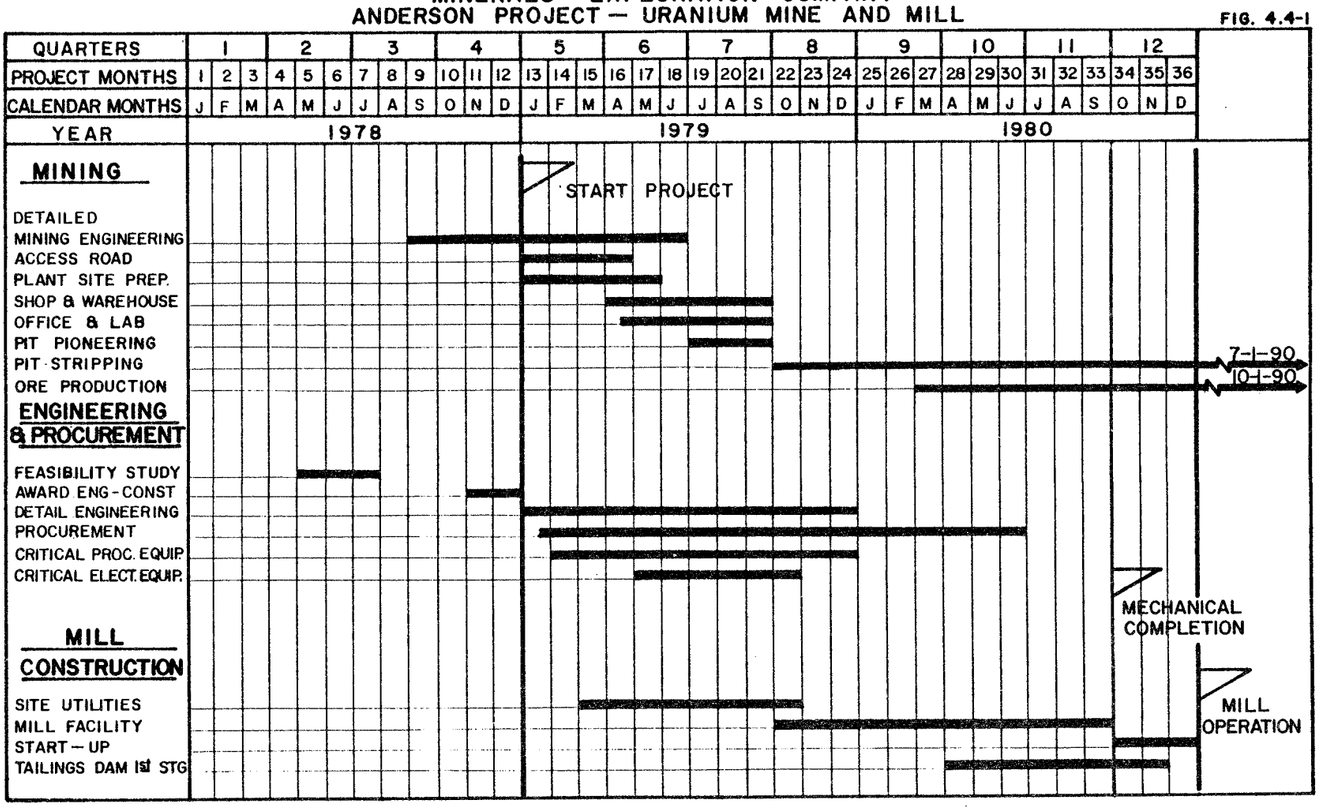


FIG. 4.4-2

CONSTRUCTION SCHEDULE

MINERALS EXPLORATION COMPANY, ANDERSON PROJECT

QUARTER	5			6			7			8			9			10			11			12		
MONTH NO.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
YEAR	1979												1980											

SITE WORK
- MOBILIZE FORCES
- (2) SITE SURVEY
- (1) SITE PREP
- START PROJECT
- COMPLETE SITE PREP
- WATER TANK AND PROCESS WATER SYSTEM
- PIPELINE – WELLS TO TANK
- FIRE PROTECTION SYSTEM
- POTABLE WATER SYSTEM
- SANITARY SEWER SYSTEM
- PACKAGE TREATMENT PLANT
- SITE WORK COMPLETED
- PLANT AREA SURFACING
- TAILINGS DAM 1ST STAGE
- TAILINGS LINE
- INST

ELECTRICAL
- POLE LINE TO WATER SUPPLY
- POWER LOOP
- POLE LINE TO MINE
- AREA LIGHTING
- FEED SUB-STATION
- TO MILL
- TRANSFORMERS TO MAIN STATION
- PERMANENT POWER TO SITE
- TIE TO ARIZONA PUBLIC SERVICE POWER TO ALL AREAS
- POLELINE TO TAILINGS

SHOP WAREHOUSE LUBE
- EXCAVATION CONCRETE
- BUILDING ERECTION
- SIDING & DOORS
- INTERIOR FINISH
- PIPING & MECHANICAL INSTALLATION
- SUB-CONTRACT ELECTRICAL
- SHOP & WAREHOUSE COMPLETED

OFFICE & LAB
- EXCAVATION & CONCRETE BLDG ERECT
- SIDING
- INTERIOR FINISH
- PIPING & MECHANICAL INSTALLATION
- SUB-CONTRACT ELECTRICAL
- OFFICE & LAB COMPLETED

MILL BUILDING
- EXCAVATION & CONCRETE
- BUILDING ERECTION
- SERVICE PIPING
- CLADDING
- INTERIOR FINISH
- PAINTING
- ROOFING
- SUB-CONTRACT ELECTRICAL / MECHANICAL INSTALLATION
- AREA 100 COMPLETED
- MECHANICAL COMPLETION

AREA 100 ORE RECEIVING AND GRINDING
- EXCAVATION & TUNNEL
- CONCRETE
- STRUCTURAL / MECHANICAL PIPING
- SUB-CONTR ELECTRICAL
- INST
- MECH CHK-OUT
- START UP
- MILL OPERATIONAL
- EQUIPMENT FOUNDATIONS
- SAG MILL INSTALLATION
- ROD MILL INSTALLATION
- CONVEYOR INSTALLATION
- PUMP INSTALLATION
- MISC EQUIPMENT INSTALLATION
- CHUTES STRUCTURAL
- PROCESS PIPING
- SUB-CONTRACT ELECTRICAL
- INST
- MECH CHK-OUT

AREA 200 LEACHING
- EXCAVATION & CONCRETE
- TNK INSTALLATION & SUPPORTS
- MECHANICAL INSTALLATION
- PIPING
- SUB-CONTRACT ELECTRICAL
- INST
- MECH CHK-OUT
- AREA 200 COMPLETED

AREA 300 CCD
- EXCAVATION & CONCRETE
- CCD TANK ERECTION
- STRUCTURAL ERECTION
- BUILDING ERECTION
- MECHANICAL INSTALLATION
- PROCESS PIPING
- SUB-CONTRACT ELECTRICAL
- INST
- MECH CHK-OUT
- AREA 300 COMPLETED

AREA 400 CLARIFICATION
- EXCAVATION & CONCRETE
- STRUCTURAL STEEL
- TNK- FILTER INSTALL
- MECH INSTALL
- PROCESS PIPING
- SUB-CONTRACT ELECTRICAL
- INST
- MECH CHK-OUT
- AREAS 400 & 500 COMPLETED

AREA 500 SOLVENT EXTRACTION
- EXCAVATION & CONCRETE
- STRUCTURAL SUPPORTS
- TANK INSTALLATIONS
- MECHANICAL INSTALL
- PROCESS PIPING
- SUB-CONTRACT ELECTRICAL
- INST
- MECH CHK-OUT

AREA 600 YELLOWCAKE PRECIPITATION WASHING, DRYING & PACKING
- TANK & DRY INSTALL
- MECHANICAL INSTALLATION
- SUB-CONTRACT ELECTRICAL
- PIPING
- INST
- MECH CHK-OUT
- AREA 600 COMPLETED

AREA 700 REAGENT HANDLING
- EXCAVATION & CONCRETE
- TANK INSTALLATION
- STRUCTURE
- PLATFORMS
- BLDG ERECTION
- MECH INSTALL
- PROCESS PIPING
- SUB-CONTRACT ELECTRICAL
- INST
- MECH CHK-OUT

AREA 001 MISCELLANEOUS EQUIPMENT
- INSTL BOILERS
- INSTALL OTHER AUXILLARY EQUIPMENT
- INSTL COMPRESS
- EMERGY GEN
- FUEL STORAGE
- ASSOCIATED MECHANICAL INSTALLATION
- PIPING
- SUB-CONTRACT ELECTRICAL
- INST
- MECH CHK-OUT
- AREA 001 COMPLETED

(1) SITE INVESTIGATION COMPLETED PRIOR TO SITE PREPARATION.
(2) SITE SURVEY CONTROL COMPLETED PRIOR TO PROJECT START.

NO. | DATE | REVISION | BY | APPR. | APPR.

REFERENCE DRAWING | NUMBER

NOTES

DESCRIPTION | COST ACCOUNT

WORK COVERED BY THIS DRAWING CHARGED TO COST ACCOUNT ABOVE

MINERALS EXPLORATION COMPANY
ANDERSON PROJECT

2000 TPD URANIUM MILL FACILITY

YAVAPAI COUNTY, ARIZONA

PROPRIETARY STATEMENT

APPROVALS	DATE
CLIENT	
PROJECT MANAGER	

SCALE	NONE	DATE
DRAWN BY	T E MORE	6-29-78
DESIGNED BY		
CHECKED BY		
APPROVED		
APPROVED		

DEPT.	ARCH.	STRUCT.	MECH.	ELECT.	P.&I.	PIPING	SAF. DEPT.	P.E.
INITIAL								
DATE								

MORRISON-KNUDSEN COMPANY INC.
ENGINEERS CONTRACTORS DEVELOPERS
TWO MORRISON-KNUDSEN PLAZA/P.O. BOX 7808/BOISE, IDAHO 83729

CONSTRUCTION SCHEDULE
FIG. 4.4-2

JOB NO. 1114 | DRAWING NO. | REVISION

EXHIBIT I

WEST DUMP B

WEST DUMP A

WEST PIT

PRIMARY PIT

EAST DUMP

EAST PIT

MAIN SUBSTATION

HAUL ROAD

ACCESS ROAD

PUBLIC TURNAROUND

POWER LINE

WATER LINE

BOOSTER STATION

WELL # 1

WELL # 2

WELL # 3

WELL # 4

PARKING

TRUCK PARKING

Pit Crest

Pit Toe

T 11 N

R 10 W

union MINERALS EXPLORATION CO.

ANDERSON MINE PROJECT
YAVAPAI COUNTY, ARIZONA

MINE AREA PLOT PLAN
MEC - 001

SCALE	DATE: 5/13/78	APPROVED	REVISIONS
H: 1" = 400'	DRAWN BY: A.M.G.		
V:	CHECKED:		
	DESIGN: M.K.		FILE:

ROW

No. 5 THICKENER

TAILINGS LINE

TAILINGS DAM FIRST STAGE

TAILINGS DAM FINAL STAGE

CREST

PRIMARY PIT

EAST PIT

TOE

CREST

PIT TOE

PIT CREST

union MINERALS EXPLORATION CO.

ANDERSON MINE PROJECT
YAVAPAI COUNTY, ARIZONA

TAILING DISPOSAL SYSTEM

MEC-002

SCALE	DATE: 6/8/78	APPROVED	REVISIONS
H. 1"=200'	DRAWN BY: L.R.R.		
V.	CHECKED:		
	DESIGN: J.C.R.		FILE:

ORE RECEIVING

ORE STORAGE PAD
550,000 TON CAPACITY

FRONT END LOADER
3 1/2 CU YD

FIXED GRIZZLY
18" X 18" OPENINGS

SURGE HOPPER
100 TON LIVE CAPACITY

APRON FEEDER
48" X 16'

FIXED GRIZZLY

48" BELT CONVEYOR

BELT SCALE
WITH INTEGRATOR
0-300 TON

TO SAG MILL
FEED BOX

ORE RECEIVING AREA
SUMP & PUMP

ATMOSPHERE

WET SCRUBBER

WATER

GRINDING

BALL CHARGE

WATER

SAG MILL
16'Ø X 5'
500 HP MOTOR
VARIABLE SPEED DRIVE

SAG MILL TROMMEL
3/8" OPENINGS

WATER

TO SAG MILL
FEED BOX

GRINDING AREA
SUMP & PUMP

SAG MILL DISCHARGE SUMP

ROD MILL FEED PUMPS

28 MESH SEPARATION
SCREEN

WATER

TRAMP IRON
MAGNET

TROMMEL OVERSIZE
CONVEYOR 18" WIDE

ROD MILL
9'-6"Ø X 16'
600 HP
VARIABLE SPEED DRIVE

ROD CHARGER MACHINE

TWO-STAGE SAMPLING SYSTEM

LEACH FEED SUMP

ROD MILL DISCHARGE SUMP

LEACH FEED PUMPS

SCREEN
FEED PUMPS

LEACHING

DENSITY METER

MASS FLOW INDICATOR

10 TOTALIZER SULFURIC ACID

11 TOTALIZER SODIUM CHLORATE

12 TOTALIZER STEAM

ACID

SODIUM CHLORATE

STEAM

FUMES

ACID MIX TANKS (2)
20' Ø X 26'

TO ACID MIX TANK

LEACHING AREA
SUMP & PUMP

CLARIFIER UNDERFLOW SLURRY 13

WATER 14

NO. 1

NO. 2

NO. 3

NO. 4

AGITATOR (TYP.)

LEACH TANKS (4)
20' Ø X 22'

FUTURE NO. 5

ATMOSPHERE

WET SCRUBBER

WATER

ACID FUMES

SLURRY

15 TO CCD CIRCUIT 21-53-0-102

LEACH DISCHARGE
SUMP

LEACH DISCHARGE PUMPS

STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SOLIDS TPH	91.7	---	---	82.5	9.2	---	18.3	91.7	110.0	---	---	---	---	---	95.1
LIQUID TPH	10.1	64.9	3.0	77.0	1.0	8.8	3.2	91.7	90.0	20.4	0.7	9.8	2.0	6.4	116.2
TOTAL FLOW GPM		259.6	12.0	446.9		35.2		521.2	545.3	*44.7	2.0	39.2	8.0	25.6	609.6

*27.7 GPM ARE USED UP BY $CaCO_3$

LEGEND

- INDICATES MAIN PRODUCT FLOW
- INDICATES STAND-BY OR INTERMITTENT FLOW
- INDICATES DRAWING NO. OF LINE CONTINUATION
- INDICATES STREAM NUMBER

#1

NO.	DATE	REVISION	BY	APPR.	APPR.

REFERENCE DRAWING	NUMBER
ORE RECEIVING & CONVEYING PLAN & EL.	21-53-0-105
CCD CLARIFYING & TAILING FLOW SHEET	21-53-0-102
MILL BUILDING PLAN & EL.	21-53-0-107
LEACH & FILTER AREA PLAN & EL.	21-53-0-108

NOTES

1. LEACH TANKS LOCATED OUTDOORS
2. LEACHING CIRCUIT BYPASS LINES OMITTED FOR CLARITY

DESCRIPTION — COST ACCOUNT

WORK COVERED BY THIS DRAWING CHARGED TO COST ACCOUNT ABOVE

MINERALS EXPLORATION COMPANY
ANDERSON PROJECT

2000 TPD URANIUM MILL FACILITY

YAVAPAI COUNTY, ARIZONA

PROPRIETARY STATEMENT

APPROVALS	DATE
CLIENT	
PROJECT MANAGER R Rumble	7-18-78

	DATE
SCALE NONE	
DRAWN BY [illegible]	30 JULY 78
DESIGNED BY	
CHECKED BY J.WUZIL.WC	7/11/78
APPROVED [illegible]	7/18/78
APPROVED [illegible]	7/18/78

DEPT.	ARCH.	STRUCT.	MECH.	ELECT.	P.M.	PIPING	SAF. DEPT.	P.E.
INITIAL								
DATE								

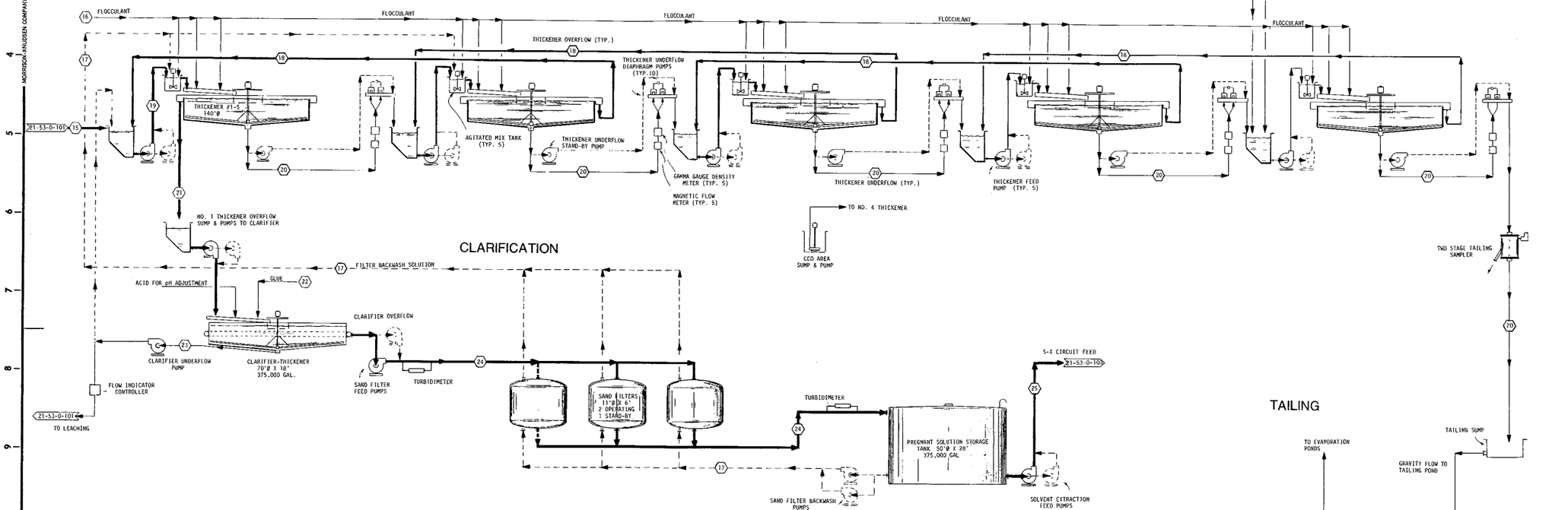
MORRISON-KNUDSEN COMPANY INC.
ENGINEERS CONTRACTORS DEVELOPERS
TWO MORRISON-KNUDSEN PLAZA/P.O. BOX 7808/BOISE, IDAHO 83729

ORE RECEIVING, GRINDING & LEACHING FLOW SHEET

JOB NO.	DRAWING NO.	REVISION
1114	21-53-0-101	0

21-53-0-102

C.C.D.



STREAM NO.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
SOLIDS TPH	---	---	---	95.1	95.1	---	---	---	---	---	---	---			
LIQUID TPH	5.6	12.5	424.7	559.0	155.1	403.9	0.6	2.0	402.5	390	390	34.7			
TOTAL FLOW GPM	22.6	50.0	1698.8	2381.0	765.5	1615.5	2.5	8.0	1610.0	1560	1560	138.8			

LEGEND

- ▬▬▬ - INDICATES MAIN PRODUCT FLOW
- — — — - INDICATES STAND-BY OR INTERMITTENT FLOW
- ⟩ - INDICATES DRAWING NO. OF LINE CONTINUATION
- ⬡ - INDICATES STREAM NUMBER

#2

NO.	DATE	REVISION	BY	APPR.	APPR.

REFERENCE DRAWING	NUMBER
RECEIVING, GRINDING, & LEACHING FLOWSHEET	21-53-0-101
CCD AREA PLAN & ELEVATION	21-53-0-109
LEACH & FILTER AREA PLAN & ELEVATION	21-53-0-108
MILL SITE PLAN	21-53-0-104
S-X, STRIPPING PRECIPITATION DRYING & PACKAGING FLOWSHEET	21-53-0-103

NOTES

1. THICKENER BYPASS AND RECIRCULATION LINES OMITTED FOR CLARITY

DESCRIPTION COST ACCOUNT

WORK COVERED BY THIS DRAWING CHARGED TO COST ACCOUNT ABOVE

PROPRIETARY STATEMENT

MINERALS EXPLORATION COMPANY
ANDERSON PROJECT

2000 TPD URANIUM MILL FACILITY

YAVAPAI COUNTY, ARIZONA

APPROVALS	DATE
CLIENT	
PROJECT MANAGER	7-12-78

	DATE
SCALE NONE	
DRAWN BY	31 MAY 78
DESIGNED BY	
CHECKED BY J. KUZIL III	7/11/78
APPROVED	7/18/78
APPROVED	7/18/78

DEPT.	ARCH.	STRUCT.	MECH.	ELECT.	P.&I.	PIPING	SAF. DEPT.	P.E.
INITIAL								
DATE								

MORRISON-KNUDSEN COMPANY INC.
ENGINEERS CONTRACTORS DEVELOPERS
TWO MORRISON-KNUDSEN PLAZA/P.O. BOX 7808/BOISE, IDAHO 83729

C.C.D. CLARIFICATION & TAILING FLOW SHEET

JOB NO.	DRAWING NO.	REVISION
1114	21-53-0-102	0

21-53-0-103

MORRISON-KNUDSEN COMPANY, INC.

EXTRACTION

PREGNANT ORGANIC FEED PUMPS
EXTRACTION MIXER AGITATOR (TYP.4)
PICKET FENCE BAFFLE (TYP 4)
FLOW RECORDER CONTROLLER
SETTLER #1 (30' X 70' X 5 1/2' TYP.4)
SETTLER #2
SETTLER #3
SETTLER #4
ORGANIC RECYCLE TYP.
H_2SO_4
15" ORGANIC DEPTH
SKIMMED ORGANIC
RAFFINATE HOLDING TANK 65'Ø X 12'
RAFFINATE DISCHARGE PUMPS
FLOWMETER
TOTALIZER
SAMPLER
EXTRACTION MIXER (TYP.)
AQUEOUS (TYP.)
ORGANIC ADVANCE (TYP.)
RAFFINATE FEED PUMPS
21-53-0-102
TO NO.5 THICKENER
TO TAILINGS
CONTINUOUS BLEED TO NO. 2 EXTRACTION MIXER
AQUEOUS
PREGNANT ORGANIC SOLUTION
BARREN ORGANIC
TO MIXER #1
EXTRACTION AREA SUMP & PUMP

STRIPPING

HEAT EXCHANGER
STEAM
PREGNANT ORGANIC HOLDING TANK 18'Ø X 14'
PREGNANT ORGANIC BLEED-OFF PUMP
PREGNANT ORGANIC DISCHARGE PUMPS
PREGNANT STRIP SOLUTION FEED PUMPS
STRIP MIXER AGITATOR (TYP 4)
SETTLER #1 (20' X 8' X 5 1/2' TYP.5)
PICKET FENCE BAFFLE (TYP.)
SETTLER #2
STRIP MIXER (TYP.4)
AQUEOUS RECYCLE (TYP.)
AMMONIA/AIR MIXTURE TO SPARGERS
SETTLER #3
BARREN ORGANIC FEED PUMPS
SETTLER #4
CONTINUOUS BLEED TO NO. 3 STRIP MIXER OR TO NO. 2 EXTRACTION MIXER
SODIUM BICARBONATE SOLUTION
REGENERATION MIXER AGITATOR
REGENERATION MIXER SETTLER
FEED PUMP TO TAILINGS OR TO ORGANIC SLUDGE HOLDING TANK
SAMPLER
ORGANIC ADVANCE (TYP.)
TO MIXER NO. 1
STRIPPING AREA SUMP & PUMP

PRECIPITATION

PREGNANT STRIP SOLUTION
SAMPLER
BACKWASH SURGE TANK 4' Ø X 4'
HEAT EXCHANGER
STEAM
FUMES TO PRECIPITATION WET SCRUBBER
AMMONIA/AIR MIXTURE TO SPARGERS
NO. 1
NO. 2
PRECIPITATION TANKS 5' Ø X 6'
TO Y.C. THICKENER
PRECIPITATION AREA SUMP & PUMP

Y.C. WASHING & DEWATERING

Y.C. THICKENER FEED
FUMES TO WET SCRUBBER
PRECIPITATION WET SCRUBBER
WATER
CENTRATE
YELLOWCAKE THICKENER 18' Ø X 5'
Y.C. THICKENER OVERFLOW
Y.C. THICKENER UNDERFLOW DIAPHRAGM PUMP
FLOW METER
Y.C. THICKENER UNDERFLOW
Y.C. THICKENER UNDERFLOW TANK 8'Ø X 8'
VARIABLE SPEED ROTARY PUMP
Y.C. SLURRY
UNCLARIFIED BARREN STRIP SOLUTION TANK 8'Ø X 8'
SAND FILTER FEED PUMP
BARREN STRIP SAND FILTER
SAND FILTER BACKWASH PUMP
CLARIFIED BARREN STRIP SOLUTION TANK 8'Ø X 8'
BARREN STRIP FEED PUMPS
FLOW RECORDER CONTROLLER
SAMPLER
ORGANIC SLUDGE HOLDING TANK 20'Ø X 20'
SUPERNATANT CRUD PUMP
ORGANIC SLUDGE DISCHARGE PUMP
FLOWMETER
BARREN ORGANIC HOLDING TANK 18'Ø X 14'
BARREN ORGANIC DISCHARGE PUMPS
BARREN ORGANIC BLEED-OFF PUMP
AMINE
ISODECANOL
KEROSENE
ORGANIC
AQUEOUS
TO LEACHING OR PRECIPITATION
SKIM-OFF TO TAILINGS
BLEED TO TAILINGS OR TO LEACH TANK #4
Y.C. CENTRIFUGE 18"Ø X 28"
SCREW CONVEYOR
DRYER FEED

DRYING

DRYER SCRUBBER
Y.C. PACKAGING SCRUBBER
DRYER GASES
MULTIPLE HEARTH DRYER
SCRUBBER SLURRY TO YC THICKENER
WATER
FUEL
ROLL CRUSHER
YELLOWCAKE STORAGE BIN

PACKAGING

55 GAL DRUMS TO STORAGE
PLATFORM SCALE
4680 LB/DAY MAXIMUM (YELLOWCAKE 85% U_3O_8)
3960 LB/DAY (U_3O_8 100%)
TO Y.C. THICKENER
DRYING AREA SUMP & PUMP
DRUM VIBRATOR
ROLLER CONVEYOR

STREAM NO.	25	26		28	29	30	31	32	33	34	35	36	37				
SOLIDS TPH	---	---		---	---	.083	---	.083	---	---	---	.083	.083				
LIQUID TPH	390.0	390		33.0	3.7	4.79	4.62	.17	.92	1.04	1.09	.124	.002				
TOTAL FLOW GPM	1560	1560		165	13.2	17.9	17.25	.65	3.4	4.16	4.15	.5	*				

* 3960 LB/DAY U_3O_8 (100%)
EQUIVALENT TO 4659 LB/DAY U_3O_8 (85%)

LEGEND
- INDICATES MAIN PRODUCT FLOW
- INDICATES STAND-BY OR INTERMITTENT FLOW
- INDICATES DRAWING NO. OF LINE CONTINUATION
- INDICATES STREAM NUMBER

#3

NO.	DATE	REVISION	BY	APPR.	APPR.

REFERENCE DRAWING	NUMBER
SOLVENT EXTRACTION & STRIPPING PLAN & ELEVATION	21-53-0-110
MILL BUILDING PLAN & ELEVATIONS	21-53-0-107
MILL BUILDING PLAN & ELEVATIONS	21-53-0-106
MILL SITE PLAN	21-53-0-104
CCD, CLARIFYING & TAILINGS FLOWSHEET	21-53-0-102

NOTES

DESCRIPTION | COST ACCOUNT
WORK COVERED BY THIS DRAWING CHARGED TO COST ACCOUNT ABOVE

PROPRIETARY STATEMENT

MINERALS EXPLORATION COMPANY
ANDERSON PROJECT
2000 TPD URANIUM MILL FACILITY
YAVAPAI COUNTY, ARIZONA

APPROVALS		DATE
CLIENT		
PROJECT MANAGER	R. Knuble	7-18-78

SCALE	NONE
DRAWN BY	4 JUNE 78
DESIGNED BY	
CHECKED BY	J. KUTILEK 7/11/78
APPROVED	R.J. Pigeon 7/18/78
APPROVED	T.D. Bolen 7/16/178

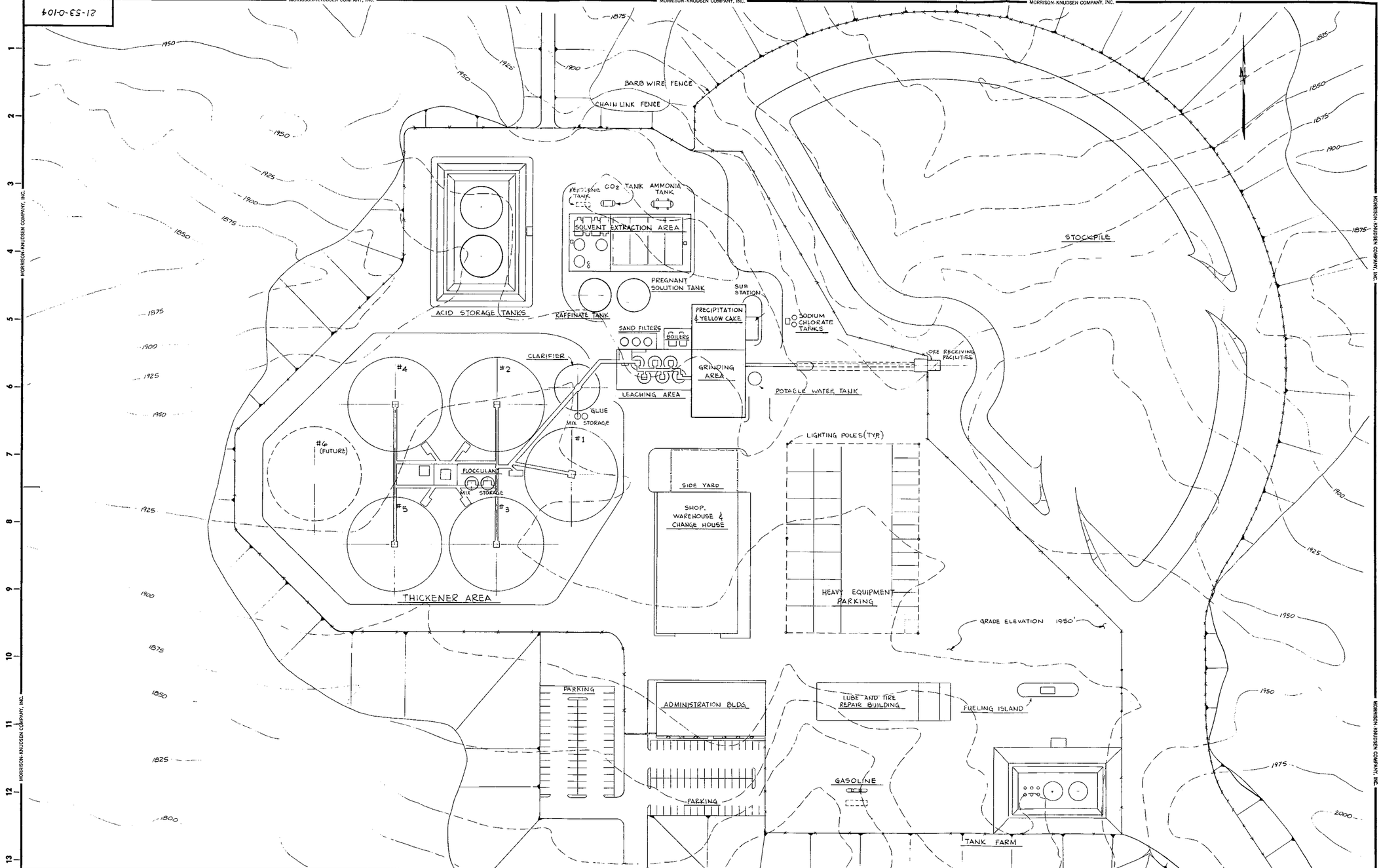
DEPT.	ARCH.	STRUCT.	MECH.	ELECT.	P&I.	PIPING	SAF. DEPT.	P.E.
INITIAL								
DATE								

MORRISON-KNUDSEN COMPANY INC.
ENGINEERS CONTRACTORS DEVELOPERS
TWO MORRISON-KNUDSEN PLAZA/P.O. BOX 7808/BOISE, IDAHO 83729

SOLVENT EXTRACTION, STRIPPING Y.C. PRECIPITATION & PACKAGING FLOW SHEET

JOB NO. 1114 | DRAWING NO. 21-53-0-103 | REVISION 0

21-53-0104



NO.	DATE	REVISION	BY	APPR.	APPR.

REFERENCE DRAWING	NUMBER

NOTES

DESCRIPTION COST ACCOUNT

WORK COVERED BY THIS DRAWING CHARGED TO COST ACCOUNT ABOVE

PROPRIETARY STATEMENT

MINERALS EXPLORATION COMPANY
ANDERSON PROJECT

2000 TPD URANIUM MILL FACILITY

YAVAPAI COUNTY, ARIZONA

APPROVALS		DATE
CLIENT:		
PROJECT MANAGER		7-18-78

	DATE
SCALE 1"=50'	
DRAWN BY S. BUTTERBRODT	4/22/78
DESIGNED BY	
CHECKED BY J. QUILICI	7/14/78
APPROVED	7/21/78
APPROVED	7/20/78

DEPT.	ARCH.	STRUCT.	MECH.	ELECT.	P.&I.	PIPING	SAF. DEPT.	P.E.
INITIAL								
DATE								

MORRISON-KNUDSEN COMPANY INC.
ENGINEERS CONTRACTORS DEVELOPERS
TWO MORRISON-KNUDSEN PLAZA/P.O. BOX 7808/BOISE, IDAHO 83729

MILL & MINE FACILITY
PLOT PLAN

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