

SECTION 14

ECONOMICS

The estimated capital requirements, project and fund drawdown schedules, operating costs, and required selling prices for representative project financial structures are presented in this section. All economics are based on fourth quarter 1975 dollars. For estimating purposes, the complex was divided into five cost centers:

- (1) Coal Mine
- (2) Coal Preparation Plant
- (3) Process Plant
- (4) Power Plant
- (5) Offsites

For further economic analysis, sensitivities of required selling prices to the key parameters of capital investment, operating costs, and profitability level are summarized.

14.1 FIXED CAPITAL INVESTMENT

14.1.1 SCOPE

The preliminary fixed capital investment was estimated for a grassroots complex producing SNG, liquid fuels, and electric power from coal produced in a captive coal mine. The process plant portion of the complex consists of the principal process units described in Sections 4 and 5 and shown on the Block Flow Diagram, Figure 4-1.

Necessary ancillary facilities are included, with such items as: administration, warehouse, laboratory, changehouse, and related buildings and equipment; computer capability and communications systems; rolling stock, including trucks and automobiles for transportation within the confines of the complex; road paving and fencing; utilities distribution; and other items required for the efficient operation of an industrial complex of this magnitude.

14.1.2 SUMMARY

The estimated fixed capital investment for this complex is \$1.55 billion.

The total constructed costs, approximately \$1.38 billion, are shown for each of the unit areas in Table 14-1. To this have been added home office costs and sales taxes, which result in the total project fixed

capital investment. Major equipment costs distributed by equipment classification for certain key units are shown in Table 14-2.

The fixed capital investment estimate was independently evaluated by the U.S. Army Engineer Division, Huntsville, Alabama (USAEDH). This work was done under contract to ERDA, Contract No. EX-76-C-01-1759. USAEDH estimate was approximately 10% lower than Parsons, and they report an indicated overall estimate confidence factor of $\pm 10\%$.

14.1.3 PROCEDURES

This is a preliminary cost estimate. The accuracy of the estimate is considered to be -5, +20%. The estimate includes the costs of equipment, field direct and field indirect costs, sales tax, engineering fee, and home office services.

14.1.4 BASIS FOR UNIT AREAS

The basis for the estimate for each unit is discussed in the following paragraphs.

The Coal Mine, Unit 9, equipment estimate is based on vendor pricing. The balance of the estimate consists of in-house costing of mine support facilities, initial mine cuts, and road building.

Key process unit estimates were developed using a combination of in-house pricing and vendor pricing information for major equipment. The totals for major equipment costs were then used with historical cost multipliers to obtain the total constructed cost estimate for each unit. The units in this category are listed below:

<u>Unit No.</u>	<u>Description</u>
10	Coal Preparation
11-1	Coal Storage
11-2	Coal Grinding and Drying
12	Gasification
13	Heat Recovery and Gas Cleaning
15	Shift Conversion
16	Fischer-Tropsch Synthesis
17	Methanation
18	Liquid Product Recovery
19	Chemical Recovery
22	Water Reclamation
26	Power Generation

The Acid Gas Removal, Unit 14, the carbon dioxide removal system portion of Fischer-Tropsch Synthesis, Unit 16, and the Oxygen Plant, Unit 20, all represent proprietary turnkey units, estimates being based on vendors' quotations.

The Sulfur Plant, Unit 21, was estimated on the basis of capacities using in-house historical cost data.

The remaining offsite Units were estimated on the basis of in-house historical information. These include the following:

<u>Unit No.</u>	<u>Description</u>
23	Steam Distribution
24	Shops and Buildings
25	Fire Water System
27	Potable and Sanitary Water System
28	Raw Water System
29	Flare System
30	Tank Farm
31	Effluent Water Treating
32	Site Preparation, Roads, and Railroad

14.1.5 BASIS FOR COST CATEGORIES

The estimating procedures used for each cost category are detailed below:

A. Major Equipment Costs

Process and major equipment costs are based on vendor pricing combined with historical in-house experience. Vendors' prices were solicited for certain special process equipment items where historical in-house pricing data were not completely applicable.

B. Constructed Cost

Constructed cost is estimated by applying an experience factor to major equipment cost. This factor includes the field direct and field indirect costs.

1. Field Direct Materials, Labor, and other Direct Costs.

Field direct costs include:

- (1) Concrete, structural steel, piping, instrumentation, and electrical.
- (2) Labor for construction of the various units.
- (3) Other direct costs such as miscellaneous freight, instrument checkout and run-in services, soils investigation, nonproductive time, and taxes that cannot be allocated to specific unit areas but are considered direct costs.

The labor costs reflect fourth quarter 1975 average hourly rates for the eastern interior coal region and expected labor productivity for that area. The estimate is based on the work being performed

during a standard work week defined as five 8-hour days, Monday through Friday. No provision for premium costs for scheduled overtime work is included. However, an allowance for limited nonscheduled overtime has been included.

2. Field Indirect Costs. Field indirect costs include:

- (1) Temporary construction facilities and costs related to the job and its working conditions, including craft subsistence and transportation.
- (2) Field administration and field office expense.
- (3) Construction equipment, small tools, and consumables.
- (4) Payroll taxes, insurance, union welfare, fringe benefits, permits, and bonds.

C. Home Office Costs

Engineering-construction home office costs include management and administration, process and project engineering, construction support, design, drafting, accounting, estimating, scheduling, cost engineering, procurement, expediting, inspection, stenographic, clerical, engineering construction fee, overhead, and direct expenses such as printing, reproduction, computer charges, communications, and travel.

D. Spare Parts

Costs for spare parts are included in working capital.

E. Sales Tax

5% sales tax and/or use tax is included for materials and equipment.

F. Escalation

Escalation for the period after the fourth quarter 1975 is not included.

G. Contingency

No contingency allowance has been included.

H. Exclusions from Fixed Capital Investment Estimate

The following cost items are excluded from the estimate:

- (1) Owner's expenses connected with project.
- (2) All taxes, except sales and payroll taxes.

- (3) Client's local, state, and federal permits.
- (4) Premium time costs, except nonscheduled overtime premium.
- (5) Piling and unusual foundation conditions.
- (6) Process licensing fees.

14.2 TOTAL CAPITAL REQUIREMENTS

In addition to the fixed capital investment, total capital requirements include: land acquisition and rights of way; initial charges of catalysts and chemicals; startup costs, construction financing, and provision for working capital.

Initial capital requirements for the five cost centers used for estimating operating costs are summarized in Table 14-3. The estimated total capital requirement of the project amounts to about \$1,770 million exclusive of construction financing costs, which depend on the project schedule, fund draw-down, and method of financing the project. This is discussed in subsections 14.4 and 14.6.

The Fixed Capital Investment is summarized by cost centers in Table 14-4. A detailed list of catalysts and chemicals estimated to cost \$10 million is presented in Table 14-5. Startup, estimated to cost about \$100 million, is summarized in Table 14-6 with construction changes and additional first-year maintenance based on experience factors for the types of units used. Provisions for working capital estimated at about \$100 million are shown in Table 14-7.

Recurring capital expenditures for replacement of coal mining equipment are based on the costs and useful lives shown in Table 14-8. Annual expenditures are shown in the Cash Flow Case Evaluations discussed in subsection 14.7.

The allowance for mineral rights is included in annual operating expenses in the form of royalties.

14.3 PROJECT SCHEDULE

The estimated project design, engineering, procurement, construction, and startup schedule is shown in Figure 14-1. This schedule was developed based on an analysis of the design, procurement of schedule-controlling equipment, fabrication, erection, and construction schedules. The results indicate mechanical completion in 57 months and capacity production one year later.

The estimated time required for construction completion is based on unit and major equipment count and type. Critical delivery equipment was predicted to require up to 36 months from time of order. Historical data from previous projects provided a basis for development of the project schedule.

14.4 FUND DRAWDOWN SCHEDULE

The fund requirements during the design, engineering, procurement, construction, and startup periods are illustrated in Figure 14-2; fund requirements are shown for 6-month intervals. The cumulative fund drawdowns are shown in Figure 14-3.

The Figure 14-2 and 14-3 fund drawdown schedules were developed based on the sum of the estimated fund requirement schedules for the complete project. Fund expenditures estimates were based on the construction schedule and experience gained from prior projects.

14.5 OPERATING COSTS

Estimated operating costs for each of the five cost centers are summarized in Table 14-9. Supporting details for the separate cost centers and elements are shown in Tables 14-10 through 14-18, which follow. The total projected operating costs of \$190.5 million per year are equivalent to \$1.10 per MM/Btu of energy products.

14.5.1 GENERAL BASIS

The economic analysis is based on a plant operating period of 20 years. The operating rate is 330 stream days per year, equal to a 90.4% operating factor except for the first year of operation, when the complex is assumed to produce at a rate equal to 50% of capacity.

Plant overhead/administration is based on an estimated requirement for administrative and support personnel consisting of plant management, accounting, personnel, first aid, cafeteria, fire and safety, quality assurance, engineering, motor pool, material control, and other support personnel and associated indirect materials and supplies. A payroll burden of 35% of total payroll cost for direct operation and maintenance labor plus supervision was used. The general and administrative expense amounts to 1.5% of the total operating cost. Property tax and insurance is based on 2.75% of the initial fixed capital investment.

Estimated manpower requirements for the complex are summarized in Table 14-10; they amount to approximately 2,100 people.

Annual maintenance costs are summarized in Table 14-11.

14.5.2 BASIS FOR COST CENTERS

The basis for estimating the annual operating costs for each cost center are presented below.

A. Coal Mine

A royalty of \$1.50 per ton of clean coal was used. Operating supplies consist of explosives and associated supplies used in the mining operation. Equipment operating costs shown in Table 14-8 include operating

and maintenance materials. Direct costs for operating labor and supervision are shown in Table 14-12. Maintenance labor and supervision are shown in Table 14-13. Payments to the Union Welfare Fund of \$1.15 per ton of clean coal are also included together with miscellaneous expenses, which consist of permits, bonds, and land reclamation.

B. Coal Preparation

Operating and maintenance labor for the coal preparation area are shown in Table 14-14. The total cost of maintenance is approximately 3% of the fixed capital investment. This is considered to be composed of 50% plant labor and 50% material.

C. Process Plant

Catalysts and chemicals required for the process plant are shown in Table 14-5. Operating and maintenance labor are detailed in Table 14-15. The cost of maintenance amounts to approximately 4% of the fixed capital investment as shown in Table 14-11. This is considered to be composed of preventive and routine work (60%) carried out by plant maintenance labor, and major maintenance tasks (40%) carried out by contract labor during unit shutdowns. The routine work is composed of 40% labor and 60% material.

D. Power Plant

Operating and maintenance labor are shown in Table 14-16. Total annual maintenance costs correspond to 3/4 mil per average production kW-hr (441 MW).

E. Offsites

Annual consumption and cost of chemicals for water treatment are shown in Table 14-17. Operating and maintenance labor are shown in Table 14-18. Total maintenance cost corresponds to 2% of fixed capital investment with about 30% allocated to labor and the balance to materials.

14.6 FINANCIAL PARAMETERS

14.6.1 FINANCIAL STRUCTURE

Economics were developed for three types of project financial structures.

- (1) 100% equity capital.
- (2) Borrowed capital: 65% of the total investment borrowed at 9% interest, with principal repaid in equal installments over the 20-year project term; all working capital borrowed for the 20-year term; a loan commitment fee of 0.75% on funds not yet drawn down during the construction period.

- (3) A nonprofit (0% discounted cash flow rate of return) or breakeven boundary case.

14.6.2 RETURN ON INVESTMENT

For each of the above cases a discounted cash flow (DCF) rate of return after taxes is specified and the revenue required to meet this objective calculated. The DCF computations take into consideration the 10% depletion allowance on the coal mine operation, depreciation allowances as described below, an investment tax credit of 10%, and a combined income tax rate of 52% for state and federal taxes. It was estimated that 90% of the fixed capital investment is eligible for the investment tax credit. It has been assumed that the plant will be operated as an integrated subsidiary of profit-making industries that can write off initial losses against current earnings for tax purposes.

Useful lives for asset depreciation purposes conform with Depreciation Guidelines and Rules, Revenue Procedure 62-21. The double declining balance method of depreciation was used. A 10-year useful life was used for coal mine depreciation based on the guidelines for the mining industry. The guidelines for the chemicals and allied products industry under group three, "Guidelines for Manufacturing," were used to establish an 11-year useful life for the Coal Preparation and Process Plants. The guidelines for a steam production plant for the production of electricity for electric utilities, group four, were used as a basis for a 28-year useful life of the power plant.

14.7 REQUIRED PRODUCT SELLING PRICE

The revenue required to achieve a specified DCF was calculated for each of the three financial structure cases. The required average selling prices for the energy products were then calculated from the required revenue and energy production figures.

The results for the base cases are summarized in Table 14-19, which shows the contribution of each of the five cost centers to the total required revenue. The computer printouts for the cash flow case evaluations representing each of the three types of financing are shown in Table 14-20 through 14-22.

Table 14-20 contains the cash flow for the case of private ownership with 100% equity financing with a 12% DCF after tax rate of return. The required revenue after taking credit for the byproduct sulfur at \$60 per ton is \$560 million per year or \$3.28 per MM Btu. Table 14-21 contains the cash flow for the case of private ownership with 65% debt at 9% per year interest. The required revenue is reduced to \$425 million or \$2.50 per MM Btu by the debt financing. Table 14-22 contains the cash flow for the breakeven case with no return on invested funds. The resulting revenue requirement is \$250 million per year or \$1.45 per MM Btu.

The sensitivity of the required revenues to variations in selected variables was analyzed. The results indicate that the effect on the required selling prices of a 10% change in cost elements is as follows:

<u>Cost Element</u>	<u>% Change in Required Selling Price</u>	
	<u>100% Equity</u>	<u>65% Debt</u>
Operating costs	1.5	1.9
Capital associated costs	8.7	8.1
Run-of-mine coal cost	2.1	2.5
Clean coal cost	2.2	2.6

The effect on the required selling price of variations in the DCF is shown in Figure 14-4. Typical values follow:

<u>Rate of Return (% DCF)</u>	<u>Required Selling Price, % of Base Case</u>	
	<u>100% Equity</u>	<u>65% Debt</u>
0	46.3	77.3
6	67.7	84.7
12	100.0	100.0
18	144.1	123.0

14.8 POSSIBLE PRODUCT MARKET VALUES

A brief assessment of possible product market values and the effect of the resulting project revenues on profitability was completed. The results are summarized below.

The plant produces approximately 30 million barrels equivalent of energy products per year with a heating value of approximately 170×10^{12} Btu/year. These products are listed in Table 14-23 together with possible market values for each product.

To obtain the possible market values, the projected characteristics of these products were compared with those of conventional crude-oil based products. This comparative evaluation included discussions with major petroleum/chemical companies and utility companies plus review of industry reports and current literature.

The results of this study indicate that reducing fuel oil sulfur from 1.0% to 0.5% increases product values by approximately 10%. Since fuel oil products from the Fischer-Tropsch plant design have zero sulfur, combined nitrogen levels, and particulate matter contents, they possibly could command a 20 to 25% premium in sales value. Because the products described in the plant design contain physical and chemical properties that are generally unique, major oil companies expressed opinions that a 20 to 25% sales value

premium could be attained in the future. However, both oil and utility companies strongly qualified their opinions by stating that laboratory and field evaluation tests for performance must be conducted before firm dollar values could be placed on these products.

The possible unit sales values shown in Table 14-23 were used as a basis to illustrate the effect of sales values on the economics, also to perhaps stimulate further effort on establishing marketability and product values. The results indicate a possible annual revenue of approximately \$670 million which is 80% and 20% greater than required to achieve a 12% DCF with 65% debt financing and 100% equity financing, respectively.

Table 14-24 presents prorated required product sales values for the separate energy products required to produce the revenues earlier shown in Tables 14-20 through 14-22 to achieve a 12% DCF. The possible \$670 million annual revenue shown in Table 14-23, however, would result in the following DCFs:

65% debt - 23% DCF

100% equity - 14% DCF.

Details of the cash flow analysis for the 65% debt case are shown in Table 14-25 and the sensitivity of DCF to changes in revenue, fixed capital investment, and operating costs, are shown in Figure 14-5.

This analysis is considered only a starting point in the survey of possible U.S. market values for these products. The results, however, clearly emphasize the importance of definition of coal liquefaction product characteristics, marketability, and market values. This type of information should be developed for Fischer-Tropsch products and also for all other coal liquefaction product types.

Table 14-1 - Estimated Fixed Capital Investment

Unit No.	Description	Cost (\$ million)
09	Coal Mine	164.3
10	Coal Preparation	20.6
11-1	Coal Storage	10.5
11-2	Coal Grinding and Drying	12.2
12	Gasification	44.0
13	Heat Recovery and Gas Cleaning	166.3
14	Acid Gas Removal	93.8
15	Shift Conversion	17.7
16	Fischer-Tropsch Synthesis	191.4
17	Methanation	56.7
18	Liquid Product Recovery	28.5
19	Chemical Recovery	14.9
20	Oxygen Plant	285.6
21	Sulfur Plant	44.0
22	Water Reclamation	37.8
23	Steam Distribution	2.1
24	Shops and Buildings	6.9
25	Fire Water System	2.1
26-1	Power Generation and Utilities	119.3
26-2	Instrument and Plant Air	5.2
27	Potable and Sanitary Water System	0.4
28	Raw Water System	22.3
29	Flare System	1.4
30	Tank Farm	19.8
31	Effluent Water Treating	2.8
32	Site Preparation, Roads, and Railroads	5.7
	Total Constructed Cost	1,376.3
	Home Office Costs	137.6
	Sales Tax	<u>27.0</u>
	Total Fixed Capital Investment	<u>1,540.9</u>
	Say	<u><u>1,550.0</u></u>

Table 14-2 - Major Equipment Costs (\$'000)

Account Code	Equipment Description	Coal Preparation Unit 10	Coal Storage, Grinding, and Drying Unit 11	Gasification Unit 12	Slut Recovery and Gas Cleaning Unit 13	Shift Conversion Unit 15	Fischer-Tropsch Synthesis Unit 16	Methanation Unit 17	Liquid Products Unit 18	Chemical Recovery Unit 19	Water Reclamation Unit 21	Power Generation Unit 26-1	Other Utilities (a)	Tank Farm Unit 30	Account Code Total
1100	Columns						536		1,886	183	857				3,462
1200	Vessels			158	7,068	133	3,465	538	646	99	12		297		12,503
1300	Heat Exchangers and Condensers			1,468	18,957	803	16,149	10,512	3,427	3,944	5,292		4,405		61,986
1400	Furnaces and Heaters														
1500	Pumps and Drivers	611			41		90	7	243	72	317	2,436	1,980	181	4,696
1600	Boilers			118											
1700	Cooling Towers				21,009										
1800	Compressors and Drivers	13		166			675	2,436	1,425	5	442				27,024
1900	Tanks	42					33								5,142
2000	Materials Handling	4,931	3,605	3,923								4,930		7,937	15,381
2100	Reduction Equipment	545	843	296											12,459
2200	Separation	396		117	8,043										1,684
2300	Concentration												2,535		31,461
2400	Agitators, Mixers						4			651					651
2500	Reactors					6,274	29,250	6,921							60
2600	Hoppers, Bins	576		12,300											55,530
2700	Classification and Screening	1,025													1,151
2800	Other Major Equipment	1,420	7,645				38,600	566	2,772		6,000	38,555	474		1,925
Total Major Equipment		9,553	12,668	18,546	55,118	7,270	88,172	20,980	10,399	4,951	14,061	54,120	17,960	8,119	571,317

(a) Units 25, 26-2, 27, 28, 29, 31, and 32.

Table 14-3 - Total Initial Capital Requirements
(\$ million)

Item	Coal Mine	Coal Preparation	Process Plant	Power Plant	Offsites	Total
Fixed Capital Investment (See Table 14-4)	185.0	23.0	1118.0	135.0	89.0	1550.0
Initial Catalysts and Chemicals (See Table 14-5)	-	-	10.0	-	-	10.0
Startup Cost (See Table 14-6)	6.0	2.0	88.0	3.0	3.5	102.5
Construction Financing ^(a)	<u>23.8</u>	<u>3.0</u>	<u>143.0</u>	<u>17.3</u>	<u>11.5</u>	<u>198.5</u>
Depreciable Investment	214.8	28.0	1359.0	155.3	104.0	1861.0
Working Capital ^(a) (See Table 14-7)	-	-	-	-	-	105.5
Land, Rights of Way	-	-	-	-	-	<u>1.0</u>
Total Capital Requirement						1967.5

^(a) Applicable to cases using 65% Debt at 9% interest and 0.75% Commitment Fee only.

Table 14-4 - Fixed Capital Investment by Cost Centers
(\$ million)

Cost Center	Unit		Constructed Cost		Fixed Capital Investment	
	Number	Description	Subtotals	Totals	Total	By Cost Center
<u>Mine</u>	09	Mine		164.3		185
<u>Coal Preparation</u>	10	Coal Preparation		20.6		23
<u>Process Plant</u>	11-2	Grinding and Drying	12.2			
	12	Gasification	44.0			
	13	Heat Recovery and Gas Cleaning	166.3			
	14	Acid Gas Removal	93.8			
	15	Shift Conversion	17.7			
	16	Fischer-Tropsch Synthesis	191.4			
	17	Methanation	56.7			
	18	Liquid Products Recovery	28.5			
	19	Chemical Recovery	14.9			
	20	Oxygen Plant	285.6			
	21	Sulfur Plant	44.0			
	22	Water Reclamation	37.8			
					992.9	
<u>Power Plant</u>	26-1	Power Generation		119.3		135
<u>Offsites</u>	11-1	Coal Storage	10.5			
	25,27,2	Raw Water System	24.8			
	26-2	Instrument and Plant Air	5.2			
	23,24	General Facilities	16.1			
	29,32	Tank Farm	19.8			
	30	Effluent Water Treating	2.8			
	31				79.2	
		Total Const. Cost		1,376.3	1,376.3	
		Home Office Cost			137.6	
		Sales Tax			27.0	
	Total Fixed Capital Investment			1,540.9		
						<u>1,550</u>

Table 14-5 - Process Plant Catalyst and Chemical Requirements

Unit	Catalyst or Chemical	Initial Charge (tons)	Consumption (tons/year)	Cost	
				Initial Charge (\$000)	Annual Use (\$000)
14	<u>Acid Gas Removal</u>				
	Physical Solvent	1,500	241	\$ 2,940	\$ 472
15	<u>Shift Conversion</u>				
	Cobalt/Molybdenum Metal Oxides (CoO/MnO ₂ = 0.3:1)	349	116.4	1,605	535
16	Hydrogen (100%)	12,000 Mscf	6,000 Mscf	50	100
	<u>F-T Synthesis</u>				
	Zinc Oxide/Co-Mo Hydrogenation Catalyst	88	88	528	528
	Magnetite (Fe ₃ O ₄)	975	975	722	722
	Potassium Carbonate	3.2	7.6	1	3
	Hot Carbonate Solution	0		1,230	103
17	Sodium Carbonate	0	14,280		685
	Hydrogen (100%)	16,000 Mscf	16,000 Mscf	133	133
	<u>Methanation</u>				
	Raney Nickel (42% Ni)	822	822	2,466	2,465
	Nickel Hydrogenation Catalyst (40% Ni)	88	29.2	640	212
	Co/Mo Hydrogenation	75	25	288	97
	Caustic (100% NaOH)	494	41.0	74	62
	Tri-ethylene Glycol (100%)	14	44	9	30
18	<u>Liquid Products</u>				
	Ethylene Glycol (100%)	100	50	53	27
	Refrigerant	139		13	
	Total Catalyst and Chemicals			\$10,668	\$6,175

Table 14-6 - Startup Costs
(\$ million)

Expense Item	Coal Mine	Coal Preparation	Process Plant	Power Plant	Offsites	Total
<u>Pre-Startup</u>						
Construction Changes	0	0.690	33.540	1.350	0.900	36.480
Advance Hiring Recruit., Settling, Training	2.600	0.170	2.500	0.140	0.440	5.850
Payroll						
Operating Personnel	1.000	0.090	0.900	0.060	0.250	2.300
Administrative Average 3 Months	1.600	0.080	1.600	0.080	0.190	3.550
Payroll Burden	0.910	0.060	0.875	0.050	0.155	2.050
Subtotal	6.110	0.400	5.875	0.330	1.035	13.750
Total Pre-Startup	6.110	1.090	39.415	1.680	1.935	50.230
<u>Operating</u>						
Contract Operating Assistance	0	0.230	3.375	0.190	0.595	4.390
Support Maintenance	0	0.090	45.000	1.350	0.900	47.940
Total Operating	0	0.920	48.375	1.540	1.495	52.330
Total Startup	6.110	2.010	87.790	3.220	3.430	102.560
Say	6.000	2.000	88.000	3.000	3.500	102.500

Table 14-7 - Estimate of Working Capital Requirement (a)
(\$ million)

Item	Coal Mine	Coal Preparation	Process Plant	Power Plant	Offsites	Total
Coal Feed Inventory (14 days)	4.0	0.2	0	0	0	4.2
Finished Product Inventory (30 days)	8.6	0.4	16.4	0	1.3	26.7
Spare Parts Inventory (4% of Major Equipment)	5.1	0.2	11.1	1.4	0.7	18.5
Budget for Current Expenses (30 days)	8.6	0.4	16.4	1.5	1.3	28.2
Accounts Receivable (30 days)	10.5	0.6	27.6	2.0	1.7	42.4
Credit for Accounts Payable (30 days)	<u>5.5</u>	<u>0.1</u>	<u>7.8</u>	<u>0.6</u>	<u>0.5</u>	<u>14.5</u>
Total	<u>31.3</u>	<u>1.7</u>	<u>63.7</u>	<u>4.3</u>	<u>4.5</u>	<u>105.5</u>

(a) Applicable to cases using 65% Debt at 9% interest and 0.75% Commitment Fee only.

Table 14-8 - Coal Mine Equipment Operating Costs and Replacement Schedule

Quantity	Item	Unit Cost (\$000)	Total Cost (\$000)	Operating Cost (\$000/year)	Operation (hours/year)	Life (hours each)	Replacement Schedule (years)
4	Draglines (175 cu yd)	25,764	103,056	10,600	27,100	-	20
4	Coal Shovel (15 cu yd)	1,080	4,320	545	18,400	50,000	11
10	Rotary Drills	607	6,070	2,780	49,100	30,000	6
18	Coal Haulers (120T)	303	5,454	2,085	83,900	25,000	5
4	Dozer with Ripper	191	764	291	18,400	15,000	3
3	Reject Haulers (120F)	303	909	366	14,700	25,000	5
4	Scrapers (35 cu yd)	278	1,112	435	9,700	15,000	6
8	Graders	87	696	285	39,200	15,000	3
4	Rubber Tired Dozers	127	508	281	18,400	15,000	3
8	Track Dozers	172	1,376	542	36,800	15,000	3
4	Sprinkler Truck	127	508	222	19,700	15,000	3
4	Trac-Drill with Compressor	63	252	41	5,800	15,000	10
4	Front End Loaders	129	516	151	9,100	15,000	7
2	Tire Truck	45	90	5	4,000	20,000	10
2	Low Boy with Tractor	33	66	2	800	15,000	20
4	Fuel Lube Truck	27	108	57	19,600	15,000	3
4	Flatbed Truck	9	72	28	21,500	20,000	8
4	ANFO Mix Truck	38	152	66	19,600	15,000	3
4	Explosive Truck	9	36	26	19,600	20,000	4
4	Mine Pumping System	45	180	30	6,000	30,000	20
2	Hydraulic Cranes (15T)	186	370	14	3,200	15,000	9
1	Mobile Crane (50T)	389	389	5	1,000	15,000	15
4	Welding Truck	9	36	18	12,700	15,000	5
4	Electrical Truck	9	36	14	10,100	15,000	6
3	Dump Truck (10T)	9	27	13	9,500	15,000	5
4	50-Passenger Bus	22	88	15	7,500	15,000	8
40	Pickup	4	160	168	134,000	10,000	3
	Total		<u>127,351</u>	<u>19,085</u>			
	Less Power Cost (Included in Power Plant)			<u>4,700</u>			
	Equipment Operating Cost			<u>14,385</u>			

Table 14-9 - Annual Operating Cost Summary
(\$ million/year)

Item	Coal Mine	Coal Preparation	Process Plant	Power Plant	Offsites	Total
<u>Mine Royalty</u>	14.850	-	-	-	-	14.850
<u>Materials and Supplies</u>						
Operating Supplies	9.028	0.012	0.559	0.068	0.045	9.712
Equipment Operation	14.385					14.385
Maintenance Materials and Contract Labor	-	0.350	34.271	2.128	1.257	38.006
Catalysts and Chemicals	-	-	6.175	-	0.791	6.966
Total Material and Supplies	23.413	0.362	41.005	2.196	2.093	69.069
<u>Labor</u>						
Operating Labor and Supervision	8.883	0.356	3.533	.234	1.011	14.017
Maintenance Labor and Supervision	3.100	0.252	8.005	0.366	0.386	12.109
Payroll Burden	4.194	0.213	4.037	0.210	0.489	9.143
Plant Overhead/Administration	6.471	0.328	6.228	0.324	0.755	14.106
Union Welfare	11.385	-	-	-	-	11.385
Total Labor Costs	39.033	1.149	21.803	1.134	2.641	60.760
<u>G and A Overhead</u>	1.186	0.033	1.424	0.107	0.109	2.859
<u>Miscellaneous Costs</u>						
Reclamation Permits and Bonds	0.158	-	-	-	-	0.158
Total	0.482	-	-	-	-	0.482
<u>Property Taxes and Insurance</u>	5.088	0.632	30.745	3.713	2.447	42.625
<u>Total Operating Costs</u>	79.052	2.176	94.977	7.150	7.290	190.645

Table 14-10 - Manpower Summary

Item	Operating	Maintenance	Administration	Total
Administration			343	343
Coal Mine	598	217		815
Coal Preparation	24	18		42
Process Plant	260	511		771
Power Plant	17	25		42
Offsites	<u>79</u>	<u>25</u>		<u>104</u>
Total	<u>978</u>	<u>796</u>	<u>343</u>	<u>2,117</u>

Table 14-11 - Annual Maintenance Cost Summary
(\$ million)

Unit No.	Description	Labor Including Payroll Burden	Contract Labor	Materials	Total	Percent of Fixed Capital Investment
09	<u>Mine</u>	4.135	None	14.385(b)	18.520	(a)
10	<u>Coal Preparation</u>	0.340	None	0.350	0.690	3
	<u>Process Plant</u>					
11-2	Grinding and Drying				0.531	4
12	Gasification				2.417	5
13	Gas Cleanup (Particulates)				9.143	5
14	Acid Gas Removal				4.113	4
15	Shift Conversion				0.779	4
16	Fischer-Tropsch Synthesis				10.528	5
17	Methanation				3.119	5
18	Liquid Products Recovery				1.255	4
19	Chemical Recovery				0.653	4
20	Oxygen Plant				9.425	3
21	Sulfur Plant				1.452	3
22	Water Reclamation				1.663	4
	Total Process Plant	10.807	18.043	16.228	45.078	4.03
	<u>Power Plant</u>					
26	Power Generation and Utilities	0.494	-	2.128	2.622	(c)
	<u>Offsites</u>					
11-1	Coal Storage				0.236	2
25,27,28	Raw Water System				0.556	2
26-2	Inst/Plant Air				0.117	2
23,24	General Facilities				0.362	2
29,32	Storage Tank Farm				0.444	2
30	Effluent Water Treating				0.063	2
31						
	Total Offsites	0.521	-	1.257	1.778	2
	Total	16.297	18.043	34.348	68.688	4.43

(a) See Tables 14-8 and 14-13
(b) Includes operating materials
(c) 3/4 MIL/kW-hr

Table 14-12 - Coal Mine Operating Labor and Supervision

Category	Number of Employees		Salaries and Wages		Payroll Cost
	Per Shift	Total	(\$/day)	(\$/year)	(\$000/year)
<u>Supervision</u>					
Pit Superintendent		4		29,000	116
Chief Mine Engineer		1		27,000	27
Mine Engineer		4		18,000	72
Shift Foreman	4	17		20,000	340
Blast Foreman	4	17		20,000	340
Dispatcher	1	5		20,000	100
Total Supervision	9	48			995
<u>Operating Labor</u>					
Dragline Operator	4	18	70.35 ^(a)		329
Dragline Oiler	4	18	65.07 ^(a)		305
Dragline Groundman	8	35	65.07 ^(a)		592
Coal Shovel Operator	4	18	60.90		285
Coal Shovel Groundman	4	18	56.33		263
Dozer Operator (Coal)	4	18	56.33		263
Coal Haul Driver	16	66	53.80		925
Rotary Drill Operator	8	32	53.80		448
Rotary Drill Helper	8	32	51.76		431
Truck Driver Reject	3	13	53.80		182
Scraper Operator	4	8	53.80		112
Grader Operator	4	17	53.80		238
R.T. Dozer Operator	4	17	53.80		238
Dozer Operator (Spoil)	8	33	53.80		462
Sprinkler Truck Driver		6	51.76		81
F.E. Loader Operator		5	53.80		70
Trac Driller		4	53.80		56
Trac Drill Helper		4	51.76		54
Fuel/Lube Driver	4	18	51.76		242
Fuel Lube Mechanic Helper	4	18	51.76		242
ANFO Truck Driver	4	18	51.76		242
Loader/Shooter	12	51	53.80		713
Utility Man (Laborers)	16	66	51.47		888
Misc. Driver	4	17	51.76		229
Total Operating Labor	127	550			7,888
Total Labor and Supervision	136	598			8,883
Payroll Burden					5,109
Total					11,992

(a) Includes daily overtime

Table 14-13 - Coal Mine Maintenance Labor and Supervision

Category	Number of Employees		Salaries and Wages		Payroll Cost
	Per Shift	Total	(\$/day)	(\$/year)	(\$000/year)
<u>Supervision</u>					
General Shop Supt.	1	1		26,000	26
Mechanical Supt.	1	1		26,000	26
Electrical Supt.	1	1		26,000	26
Mechanical Foreman	2	9		20,000	180
Electrical Foreman	1	5		20,000	100
Shop Foreman	1	5		20,000	100
Agronomist	1	1		18,000	18
Total Supervision	8	23			476
<u>Labor</u>					
Mechanic 1st	5	18	56.33		264
Mechanic 2nd	10	24	53.80		336
Electrician 1st	4	17	56.33		249
Electrician 2nd	2	9	53.80		126
Welder	6	19	56.33		278
Mechanic's Helper	10	24	51.76		323
Parts Man	3	7	51.76		94
Tool Man	2	9	51.76		121
Tire Man	2	9	51.76		121
Misc. Equipment Operator	2	9	53.80		126
Misc. Driver	4	11	51.76		148
Laborers	3	13	51.47		174
Rodman	4	4	50.18		52
Clerk	8	8	38.00		79
Typist	8	8	34.00		71
Draftsman	2	2	45.00		23
Agronomist Helper	3	3	50.18		39
Total Labor	78	194			2,624
Total Labor and Supervision	86	217			3,100
Payroll Burden					1,085
Total					4,135

Table 14-14 - Coal Preparation Labor

Category	Number of Employees		Salaries and Wages		Payroll Cost	
	Per Shift	Total	(\$/day)	(\$/year)	(\$000/year)	
<u>Operating Labor</u>						
Area Foreman	1	4		20,000	80	
Operator	3	12	53.80		168	
Helper	2	8	51.76		108	
Total	6	24				356
Payroll Burden						125
Total Operating Labor						<u>481</u>
<u>Maintenance Labor</u>						
Journeyman		18	53.80			252
Payroll Burden						88
Total Maintenance Labor						<u>340</u>

Table 14-15 - Process Plant Labor

Category	Number of Employees		Salaries and Wages		Payroll Cost	
	Per Shift	Total	(\$/hour)	(\$/year)	(\$000/year)	
<u>Operating Labor</u>						
Operating Superintendent		1		30,000	30	
Section Manager		4		20,000	80	
Shift Superintendent	1	3		18,000	54	
Shift Foreman	5	20		16,000	320	
Subtotal	6	28				484
<u>Operators</u>						
Unit 11	9	36				
Units 12, 13, 14, 15	12	48				
Units 16, 17	8	32				
Units 18, 19	8	32				
Unit 20	7	28				
Unit 21	4	16				
Unit 22	3	12				
Boardman	2	8				
Laborer	5	20				
Subtotal	58	232	6.00			3,049
Total		260				3,533
Payroll Burden						1,237
Total Operating Labor and Supervision						4,770
<u>Maintenance Labor</u>						
Maintenance Superintendent		1		30,000	30	
Craft Foreman		36		23,000	828	
Labor Foreman		14		19,000	266	
Journeyman		336	8.00		5,591	
General Labor		124	5.00		1,290	
Total		511				8,005
Payroll Burden						2,802
Total Maintenance Labor and Supervision						10,807

Table 14-16 - Power Plant Labor

Category	Number of Employees		Salaries and Wages		Payroll Cost
	Per Shift	Total	(\$/hour)	(\$/year)	(\$000/year)
<u>Operating Labor</u>					
Shift Foreman	<u>1</u>	<u>4</u>		16,000	64
Subtotal Supervision	1	4			
Control Room	1	4			
Turbine Operator	1	4			
Oiler	<u>1</u>	<u>5</u>			
Subtotal Labor	<u>3</u>	<u>13</u>	6.00		<u>170</u>
Total	4	17			234
Payroll Burden					<u>82</u>
Total Operating Labor and Supervision					<u>316</u>
<u>Maintenance Shop</u>					
Journeyman		17	8.00		283
Janitorial/Gardening		<u>8</u>	5.00		<u>83</u>
Total		<u>25</u>			366
Payroll Burden					<u>128</u>
Total Maintenance Labor and Supervision					<u>494</u>

Table 14-17 - Offsites Chemical Requirements

Unit	Chemical	Annual Consumption (ton/yr)	Annual Cost (\$000)
28	<u>Cooling Water System</u>		
	H ₂ SO ₄ Chemicals	640	\$ 32,000 210,000
28	<u>Raw Water System</u>		
	Demineralizer		
	H ₂ SO ₄	2,090	105,000
	NaOH	1,670	267,000
	Clarifier		
	Lime	1,840	55,000
	Aluminate	500	80,000
	Polyphosphate	30	12,000
	Boiler Feed Water		
	Chelant	7	7,000
Hydrazine	7	<u>23,000</u>	
			<u>\$791,000</u>

Table 14-18 - Offsites Labor

Category	Number of Employees		Salaries and Wages		Payroll Cost	
	Per Shift	Total	(\$/day)	(\$/year)	(\$000/year)	
<u>Operation</u>						
<u>Supervision</u>						
Section Manager		1		20,000	20	
Day Foreman		2		16,000	32	
Shift Foreman	<u>1</u>	<u>3</u>		16,000	<u>48</u>	
Subtotal	1	6				100
<u>Labor</u>						
Unit 11	6	24				
Unit 27	2	9				
Unit 28	1	5				
Unit 30	4	25				
Unit 31	<u>2</u>	<u>10</u>				
	<u>15</u>	<u>73</u>				
Subtotal			6.00			<u>911</u>
Total	<u>16</u>	<u>79</u>				1,011
Payroll Burden						<u>354</u>
Total Operating Labor and Supervision						<u>1,365</u>
<u>Maintenance</u>						
Shift Foreman	1	4		20,000	80	
Journeyman	3	14	8.00		233	
Laborer and Painter	<u>1</u>	<u>7</u>	5.00		<u>73</u>	
Total Maintenance	<u>5</u>	<u>25</u>				386
Payroll Burden						<u>135</u>
Total Maintenance Labor and Supervision						<u>521</u>

Table 14-19 - Contribution of Cost Centers to Required Annual Revenue (RAR)

	Breakeven Case 0% DCF		12% DCF			
			100% Equity		65% Debt	
	RAR \$MM/yr	%	RAR \$MM/yr	%	RAR \$MM/yr	%
Coal Mine	90.5	34	122.5	21	110.5	25
Coal Preparation	3.5	1	8.0	1	6.0	1
Process Plant	148.0	55	373.0	65	275.0	62
Power Plant	14.5	6	44.0	8	37.5	7
Offsites	11.5	4	31.0	5	23.0	5
Total	268.0	100	578.5	100	447.0	100
Byproduct Credit	20.0	7	20.0	3	20.0	4
Total Energy Products	248.0	93	558.5	97	427.0	96
\$/MM Btu	1.45		3.28		2.50	

Table 14-20 - Cash Flow Case Evaluation, Total Complex, 100% Equity
(\$ millions)

PERIOD	-5	-4	-3	-2	-1	1	2	3	4	5	6	7
REVENUE	0.000	0.000	0.000	0.000	0.000	279.398	558.779	558.779	558.779	558.779	558.779	558.779
ENERGY PRODUCTS	0.000	0.000	0.000	0.000	0.000	10.839	28.877	28.877	28.877	28.877	28.877	28.877
SULFUR	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
... I O T A ...	0.000	0.000	0.000	0.000	0.000	289.429	578.656	578.656	578.656	578.656	578.656	578.656
(COSTS)												
MINE ROYALTY	0.000	0.000	0.000	0.000	0.000	7.425	14.850	14.850	14.850	14.850	14.850	14.850
OPERATING SUPPLIES	0.000	0.000	0.000	0.000	0.000	4.856	9.712	9.712	9.712	9.712	9.712	9.712
CATALYST + CHEMICALS	0.000	0.000	0.000	0.000	0.000	3.963	6.966	6.966	6.966	6.966	6.966	6.966
OPERATING LABOR	0.000	0.000	0.000	0.000	0.000	14.017	14.017	14.017	14.017	14.017	14.017	14.017
PATROL + WAGEN	0.000	0.000	0.000	0.000	0.000	9.143	9.143	9.143	9.143	9.143	9.143	9.143
PLANT OVERHEAD/AGHIN	0.000	0.000	0.000	0.000	0.000	14.106	14.106	14.106	14.106	14.106	14.106	14.106
UNION WELFARE	0.000	0.000	0.000	0.000	0.000	11.385	11.385	11.385	11.385	11.385	11.385	11.385
WHS-COSTS	0.000	0.000	0.000	0.000	0.000	4.42	4.42	4.42	4.42	4.42	4.42	4.42
G AND A OVERHEAD	0.000	0.000	0.000	0.000	0.000	2.859	2.859	2.859	2.859	2.859	2.859	2.859
MAINTENANCE MAJICAL	0.000	0.000	0.000	0.000	0.000	52.391	52.391	52.391	52.391	52.391	52.391	52.391
MAINTENANCE LABOR	0.000	0.000	0.000	0.000	0.000	12.189	12.189	12.189	12.189	12.189	12.189	12.189
PROPERTY TAX + INSUR	0.000	0.000	0.000	0.000	0.000	42.625	42.625	42.625	42.625	42.625	42.625	42.625
... T O T A L ...	0.000	0.000	0.000	0.000	0.000	148.444	198.645	198.645	198.645	198.645	198.645	198.645
DEPRECN - MINE	0.000	0.000	0.000	0.000	0.000	38.000	38.000	25.302	20.249	17.485	16.281	13.132
DEPRECN - GDA PREP	0.000	0.000	0.000	0.000	0.000	4.545	4.545	3.843	2.498	2.687	1.667	1.588
DEPRECN - PROJESS	0.000	0.000	0.000	0.000	0.000	221.163	188.952	148.051	121.133	99.109	81.089	72.900
DEPRECN - POWER PLNT	0.000	0.000	0.000	0.000	0.000	9.857	9.857	7.453	7.328	7.328	6.805	6.319
DEPRECN - OFF-SITES	0.000	0.000	0.000	0.000	0.000	9.258	9.258	7.493	6.743	6.869	5.462	4.916
DEPLETION ALLOWANCE	0.000	0.000	0.000	0.000	0.000	0.000	6.440	9.089	11.595	12.249	12.249	12.249
COST + DEPR + DEPL	0.000	0.000	0.000	0.000	0.000	431.259	429.794	392.103	360.747	334.922	314.203	301.741
PROFIT BEFORE TAX	0.000	0.000	0.000	0.000	0.000	141.838	149.862	166.753	218.109	243.934	264.655	277.115
INCOME TAXES	0.000	0.000	0.000	0.000	0.000	73.752	77.912	97.112	113.417	126.846	137.628	146.106
TAX CREDIT	0.000	0.000	0.000	0.000	0.000	139.500	0.000	0.000	0.000	0.000	0.000	0.000
PROFIT AFTER TAX	0.000	0.000	0.000	0.000	0.000	71.421	71.950	69.641	104.692	117.088	127.027	131.009
AVERAGE ANNUAL NET PROFIT	0.000	0.000	0.000	0.000	0.000	141.383						
INVESTMENTS												
LAND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FIXED CAP INVESTMENT	31.000	101.000	271.000	637.000	310.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INITIAL CAT + CHEM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
START-UP COSTS	0.000	0.000	0.000	0.000	0.000	52.500	0.000	0.000	0.000	0.000	0.000	0.000
EQUIPMENT REPLACEMENT	0.000	0.000	0.000	0.000	0.000	0.000	4.272	4.272	4.272	4.272	4.272	4.272
TOTAL FIXED INVEST.	32.000	102.000	271.000	637.000	310.000	52.500	4.272	4.272	4.272	4.272	4.272	4.272
WORKING CAP PAID IN	0.000	0.000	0.000	0.000	0.000	72.500	0.000	0.000	0.000	0.000	0.000	0.000
ACCOM GROSS OF TOTAL	-32.000	-103.000	-442.000	-1274.000	-1611.000	-1381.764	-1071.065	-784.237	-509.479	-254.539	-15.437	228.154
NET CASH FLOW	-32.000	-103.000	-271.000	-637.000	-370.760	229.236	310.699	286.828	274.758	254.939	239.102	243.595
BEFORE NET CASHFLOW	-32.000	-103.000	-442.000	-1274.000	-1611.000	-1381.764	-1071.065	-784.237	-509.479	-254.539	-15.437	228.154
... NET CASH FLOW DISCOUNTED AT 12.000 / PERIOD ...												

Table 14-20 - Cash Flow Case Evaluation, Total Complex, 100% Equity (Contd)
(\$ millions)

PERIOD	8	9	10	11	12	13	14	15	16	17	18	19
REVENUE	558.779	558.779	558.779	558.779	558.779	558.779	558.779	558.779	558.779	558.779	558.779	558.779
ENERGY PRODUCTS	28.877	28.877	28.877	28.877	28.877	28.877	28.877	28.877	28.877	28.877	28.877	28.877
SUB-FUR	578.856	578.856	578.856	578.856	578.856	578.856	578.856	578.856	578.856	578.856	578.856	578.856
... T O T A L ...	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850
COSTS	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712
MINE ROYALTY	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966
OPERATING SUPPLIES	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817
LABORIST & TECHNICALS	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143
OPERATING LABOR	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106
PAYROLL BURDEN	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385
PLANT OVERHEAD/ADMIN	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82
UNION WELFARE	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859
MISC COSTS	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391
G AND A OVERHEAD	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189
MAINTENANCE MATERIAL	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625
PROPERTY TAX & INSUR	198.645	198.645	198.645	198.645	198.645	198.645	198.645	198.645	198.645	198.645	198.645	198.645
... T O T A L ...	4.537	4.537	4.537	4.537	4.537	4.537	4.537	4.537	4.537	4.537	4.537	4.537
DEPRECN - MINE	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500
DEPRECN - COA. PREP	72.380	72.380	72.380	72.380	72.380	72.380	72.380	72.380	72.380	72.380	72.380	72.380
DEPRECN - PROCESS	5.493	5.493	5.493	5.493	5.493	5.493	5.493	5.493	5.493	5.493	5.493	5.493
DEPRECN - POWER PLANT	4.932	4.932	4.932	4.932	4.932	4.932	4.932	4.932	4.932	4.932	4.932	4.932
DEPRECN - OFF-SITES	12.249	12.249	12.249	12.249	12.249	12.249	12.249	12.249	12.249	12.249	12.249	12.249
DEPRECN - ALL-ORANGE	298.623	298.623	298.623	298.623	298.623	298.623	298.623	298.623	298.623	298.623	298.623	298.623
COST & DEPRN & UEPL	282.834	282.834	282.834	282.834	282.834	282.834	282.834	282.834	282.834	282.834	282.834	282.834
PROFIT BEFORE TAX	145.940	145.940	145.940	145.940	145.940	145.940	145.940	145.940	145.940	145.940	145.940	145.940
INCOME TAXES	8.888	8.888	8.888	8.888	8.888	8.888	8.888	8.888	8.888	8.888	8.888	8.888
TAX CREDIT	149.744	149.744	149.744	149.744	149.744	149.744	149.744	149.744	149.744	149.744	149.744	149.744
PROFIT AFTER TAX	341.383	341.383	341.383	341.383	341.383	341.383	341.383	341.383	341.383	341.383	341.383	341.383
AVENUE ANNUAL NET PROFIT	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
LAND INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FIXED CAP INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INITIAL CAP & CHEM.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
START-UP COSTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EQUIPMENT REP-RCMNT	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158	1.158
TOTAL FIXED INVEST.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP PAID IN	478.270	478.270	478.270	478.270	478.270	478.270	478.270	478.270	478.270	478.270	478.270	478.270
AGGUM GROSS OF TOTAL	243.266	243.266	243.266	243.266	243.266	243.266	243.266	243.266	243.266	243.266	243.266	243.266
NET CASH FLOW	478.272	478.272	478.272	478.272	478.272	478.272	478.272	478.272	478.272	478.272	478.272	478.272
AGGUM NET CASH-FLOW	188.620	188.620	188.620	188.620	188.620	188.620	188.620	188.620	188.620	188.620	188.620	188.620
----- NET CASH FLOW DISCOUNTED AT 12.000 / PERIOD -----	2537.773	2537.773	2537.773	2537.773	2537.773	2537.773	2537.773	2537.773	2537.773	2537.773	2537.773	2537.773

Table 14-20 - Cash Flow Case Evaluation, Total Complex, 100% Equity (Contd)
(\$ millions)

PERIOD	20
(REVENUE)	
ENERGY PRODUCTS	558,779
SULFUR	28,877
... T O T A L ...	578,856
(COSTS)	
MINE ROYALTY	14,858
OPERATING SUPPLIES	9,712
CATALYST + CHEMICALS	6,966
OPERATING LABOR	14,917
PAYROLL BURDEN	9,243
PLANT OVERHEAD/ADMIN	14,188
HELUM WELFARE	11,385
RISB - EGGRS	1,462
G AND A OVERHEAD	2,459
MAINTENANCE MATERIAL	52,891
MAINTENANCE LABOR	12,289
PROPERTY TAX + INSUR	42,525
... T O T A L ...	198,195
DEPRECH - MINE	3,737
DEPRECH - COAL PREP	8,988
DEPRECH - PROCESS	6,880
DEPRECH - POWER PLNT	3,493
DEPRECH - OFF-SITES	3,225
DEPLETION ALLOWANCE	12,249
COST + DEPR + DEPL	213,349
PROFIT BEFORE TAX	365,587
INCOME TAXES	190,864
TAX CREDIT	9,086
PROFIT AFTER TAX	175,444
AVERAGE ANNUAL NET PROFIT	141,383
(INVESTMENT)	
LAND	0,000
FIELD CAP INVESTMENT	8,300
INITIAL CAT + CHEM.	8,988
START-UP COSTS	0,000
EQUIPMENT REPLACEMT	0,000
TOTAL FIXED INVEST.	0,000
WORKING CAP PAID IN	-72,500
ACCUM GROSS CF TOTAL	3687,354
NET CASH FLOW	279,944
ACCUM NET CASHFLOW	3817,854
----- NET CASH FLOW DISCOUNTED AT 12.00% / PERIOD -----	

Table 14-21 - Cash Flow Case Evaluation, Total Complex
 Financed 65/35 D/E Ratio, 9% Interest
 (\$ millions)

PERIOD	-5	-4	-3	-2	-1	1	2	3	4	5	6	7
REVENUE	0.000	0.000	0.000	0.000	0.000	212.995	425.990	425.990	425.990	425.990	425.990	425.990
ENERGY PRODUCTS	0.000	0.000	0.000	0.000	0.000	18.839	20.877	20.877	20.877	20.877	20.877	20.877
SULFUR	0.000	0.000	0.000	0.000	0.000	223.034	446.067	446.067	446.067	446.067	446.067	446.067
... T O T A L ...	0.000	0.000	0.000	0.000	0.000	7.425	14.850	14.850	14.850	14.850	14.850	14.850
(COSTS)	0.000	0.000	0.000	0.000	0.000	4.850	9.712	9.712	9.712	9.712	9.712	9.712
MINE ROYALTY	0.000	0.000	0.000	0.000	0.000	3.483	6.966	6.966	6.966	6.966	6.966	6.966
OPERATING SUPPLIES	0.000	0.000	0.000	0.000	0.000	14.017	14.017	14.017	14.017	14.017	14.017	14.017
CATALYST & CHEMICALS	0.000	0.000	0.000	0.000	0.000	9.143	9.143	9.143	9.143	9.143	9.143	9.143
OPERATING LABOR	0.000	0.000	0.000	0.000	0.000	14.106	14.106	14.106	14.106	14.106	14.106	14.106
PAYROLL BURDEN	0.000	0.000	0.000	0.000	0.000	11.385	11.385	11.385	11.385	11.385	11.385	11.385
PLANT OVERHEAD/ADMIN	0.000	0.000	0.000	0.000	0.000	2.482	4.964	4.964	4.964	4.964	4.964	4.964
UNION WELFARE	0.000	0.000	0.000	0.000	0.000	2.859	5.718	5.718	5.718	5.718	5.718	5.718
MISC COSTS	0.000	0.000	0.000	0.000	0.000	26.195	52.391	52.391	52.391	52.391	52.391	52.391
G AND A OVERHEAD	0.000	0.000	0.000	0.000	0.000	12.189	24.378	24.378	24.378	24.378	24.378	24.378
MAINTENANCE MATERIAL	0.000	0.000	0.000	0.000	0.000	42.625	85.250	85.250	85.250	85.250	85.250	85.250
PROPERTY TAX & INSUR	0.000	0.000	0.000	0.000	0.000	97.878	195.756	195.756	195.756	195.756	195.756	195.756
INTEREST ON LOAN	0.000	0.000	0.000	0.000	0.000	9.495	18.990	18.990	18.990	18.990	18.990	18.990
INTEREST ON WCAP	0.000	0.000	0.000	0.000	0.000	281.848	563.696	563.696	563.696	563.696	563.696	563.696
... T O T A L ...	0.000	0.000	0.000	0.000	0.000	42.335	84.670	84.670	84.670	84.670	84.670	84.670
DEPREN - MINE	0.000	0.000	0.000	0.000	0.000	3.483	6.966	6.966	6.966	6.966	6.966	6.966
DEPREN - GUAL PREP	0.000	0.000	0.000	0.000	0.000	282.482	564.964	564.964	564.964	564.964	564.964	564.964
DEPREN - PROCESS	0.000	0.000	0.000	0.000	0.000	11.031	22.062	22.062	22.062	22.062	22.062	22.062
DEPREN - POWER PLNT	0.000	0.000	0.000	0.000	0.000	9.435	18.870	18.870	18.870	18.870	18.870	18.870
DEPREN - OFF-SITES	0.000	0.000	0.000	0.000	0.000	0.880	1.760	1.760	1.760	1.760	1.760	1.760
DEPLETION ALLOWANCE	0.000	0.000	0.000	0.000	0.000	577.721	1155.442	1155.442	1155.442	1155.442	1155.442	1155.442
COST & DEPR & DEPL	0.000	0.000	0.000	0.000	0.000	-354.697	-709.394	-709.394	-709.394	-709.394	-709.394	-709.394
PROFIT BEFORE TAX	0.000	0.000	0.000	0.000	0.000	149.437	298.874	298.874	298.874	298.874	298.874	298.874
INCOME TAXES	0.000	0.000	0.000	0.000	0.000	139.588	279.176	279.176	279.176	279.176	279.176	279.176
TAX CREDIT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PROFIT AFTER TAX	0.000	0.000	0.000	0.000	0.000	-30.750	-61.500	-61.500	-61.500	-61.500	-61.500	-61.500
AVERAGE ANNUAL NET PROFIT	0.000	0.000	0.000	0.000	0.000	48.027	96.054	96.054	96.054	96.054	96.054	96.054
INVESTMENT	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FIXED CAP INVESTMENT	31.000	31.000	271.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INITIAL CAP & OTHRS	0.000	0.000	0.000	0.000	0.000	52.500	0.000	0.000	0.000	0.000	0.000	0.000
START-UP COSTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INT. WORKING CONSTR.	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COMMITMENT FEE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EQUIPMENT REPLACEMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL FIELD INVEST.	40.000	40.000	281.000	0.000	0.000	52.500	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP PAID IN	0.000	0.000	0.000	0.000	0.000	105.500	0.000	0.000	0.000	0.000	0.000	0.000
BORROWED CAPITAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP BORROWED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ACCOUNT GROSS UP TOTAL	-32.000	-32.000	-271.000	-542.000	-542.000	-370.076	-740.152	-740.152	-740.152	-740.152	-740.152	-740.152
LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NET CASH FLOW	-32.000	-32.000	-271.000	-542.000	-542.000	-370.076	-740.152	-740.152	-740.152	-740.152	-740.152	-740.152
ACCOUNT NET CASHFLOW	-32.000	-32.000	-271.000	-542.000	-542.000	-370.076	-740.152	-740.152	-740.152	-740.152	-740.152	-740.152
----- NET CASH FLOW DISCOUNTED AT 9% PERIOD -----												
9% ANNUAL	0.000	0.000	0.000	0.000	0.000	1145.603	1865.488	1865.488	1865.488	1865.488	1865.488	1865.488
BALANCE W/CAP LOAN	0.000	0.000	0.000	0.000	0.000	105.500	105.500	105.500	105.500	105.500	105.500	105.500

Table 14-21 - Cash Flow Case Evaluation, Total Complex
 Financed 65/35 D/E Ratio, 9% Interest (Contd)

PERIOD	8	9	10	11	12	13	14	15	16	17	18	19
REVENUES	425.990	425.990	425.990	425.990	425.990	425.990	425.990	425.990	425.990	425.990	425.990	425.990
ENERGY PRODUCTS	20.077	20.077	20.077	20.077	20.077	20.077	20.077	20.077	20.077	20.077	20.077	20.077
SUBTAK	446.067	446.067	446.067	446.067	446.067	446.067	446.067	446.067	446.067	446.067	446.067	446.067
... I O I A L ...	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850	14.850
MINI RENTAL	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712
OPERATING SUPPLIES	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966
CATALYST & CHEMICALS	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017
OPERATING LABOR	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143
PAYROLL BURDEN	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106
PLANT OVERHEAD/ADMIN	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385
UNION BELTFARE	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482
MISC COSTS	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859
6 AND A OVERHEAD	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391
MAINTENANCE MATERIAL	12.109	12.109	12.109	12.109	12.109	12.109	12.109	12.109	12.109	12.109	12.109	12.109
PROPERTY TAX & INSUR	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625
INTEREST ON LOAN	59.692	59.692	59.692	59.692	59.692	59.692	59.692	59.692	59.692	59.692	59.692	59.692
INTEREST ON M/CAP.	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495
... I O T A ...	269.650	269.650	269.650	269.650	269.650	269.650	269.650	269.650	269.650	269.650	269.650	269.650
DEPRECN - MINE	14.193	14.193	14.193	14.193	14.193	14.193	14.193	14.193	14.193	14.193	14.193	14.193
DEPRECN - COM. PREP	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677
DEPRECN - MINE	81.566	81.566	81.566	81.566	81.566	81.566	81.566	81.566	81.566	81.566	81.566	81.566
DEPRECN - POWER PLANT	6.231	6.231	6.231	6.231	6.231	6.231	6.231	6.231	6.231	6.231	6.231	6.231
DEPRECN - OFF-SITES	4.925	4.925	4.925	4.925	4.925	4.925	4.925	4.925	4.925	4.925	4.925	4.925
DEPLETION ALLOWANCE	4.768	4.768	4.768	4.768	4.768	4.768	4.768	4.768	4.768	4.768	4.768	4.768
COST & DEPR & DEPL	176.376	176.376	176.376	176.376	176.376	176.376	176.376	176.376	176.376	176.376	176.376	176.376
PROFIT BEFORE TAX	69.037	69.037	69.037	69.037	69.037	69.037	69.037	69.037	69.037	69.037	69.037	69.037
INCOME TAXES	39.622	39.622	39.622	39.622	39.622	39.622	39.622	39.622	39.622	39.622	39.622	39.622
TAX CREDIT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PROFIT AFTER TAX	35.415	35.415	35.415	35.415	35.415	35.415	35.415	35.415	35.415	35.415	35.415	35.415
AVERAGE ANNUAL NET PROFIT	48.027	48.027	48.027	48.027	48.027	48.027	48.027	48.027	48.027	48.027	48.027	48.027
INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FIXED CAP INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INITIAL CAP & DEPR	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
START-UP COSTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INT. WORKING CAPITAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LIMITATION FEE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EQUIPMENT REPAIRS	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
TOTAL FIXED INVEST.	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
WORKING CAP PAID IN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BURROED CAPITAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP BURROED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ACUM WORKS OF TOTAL	757.785	899.619	1091.466	1287.045	1486.470	1689.739	1898.742	2119.742	2355.113	2609.505	2889.942	3194.220
LOAN REPAYMENT	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295
WORKING CAP REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NET CASH FLOW	84.114	84.114	84.114	84.114	84.114	84.114	84.114	84.114	84.114	84.114	84.114	84.114
ACUM NET CASHFLOW	275.425	356.564	438.516	524.880	614.904	714.846	824.616	944.222	1074.622	1214.736	1364.563	1524.101
----- NET CASH FLOW UNDISCOUNTED AT 12.000 % PERIOD -----												
Rebt delatue	724.530	668.473	622.980	582.653	542.630	502.863	461.768	421.170	381.003	341.170	301.663	262.500
BALANCE M/CAP LOAN	105.500	105.500	105.500	105.500	105.500	105.500	105.500	105.500	105.500	105.500	105.500	105.500

Table 14-21 - Cash Flow Case Evaluation, Total Complex
 Financed 65/35 D/E Ratio, 9% Interest (Contd)
 (\$ millions)

PERIOD	20
REVENUE	425.994
ENERGY PRJONCTS	20.877
SULFUR	
... T U T A L ...	446.871
(COSTS)	
MINE ROYALTY	14.050
OPERATING SUPPLIES	9.712
CATALYST & CHEMICALS	8.906
OPERATING LABOR	14.017
PAYROLL BURDEN	9.143
PLANT OVERHAUL/ADMIN	14.100
UNION WELFARE	11.865
MISC COSTS	4.82
G AND A OVERHEAD	2.854
MAINTENANCE MATERIAL	25.031
MAINTENANCE LABOR	12.109
PROPERTY TAX & INSUR	42.102
INTEREST ON LOAN	7.004
INTEREST ON M/CAP.	8.000
... T U T A L ...	196.045
DEPRECN - MINE	3.885
DEPRECN - COM. PREP	0.000
DEPRECN - PROJESS	0.000
DEPRECN - POWER PLANT	3.536
DEPRECN - OFF-SITES	3.622
DEPLETION ALLOWANCE	11.088
COST & DEPR & DEPL	23.131
PROFIT BEFORE TAX	232.398
INCOME TAXES	12.259
TAX CREDIT	0.000
PROFIT AFTER TAX	111.839
AVERAGE ANNUAL NET PROFIT	49.027
(INVESTMENT)	
LAND	0.000
FIXED CAP INVESTMENT	0.000
INITIAL CAT & CHEM.	0.000
START-UP COSTS	0.000
INT. DURING CONSTR.	0.000
COMMITMENT FEE	0.000
EQUIPMENT REPLACEMENT	0.000
TOTAL FIXED INVEST.	0.000
WORKING CAP PRIO IN	-100.000
BORROWED CAPITAL	0.000
WORKING CAP BORROWED	0.000
ACCUM GROSS CF TOTAL	234.194
LOAN REPAYMENT	68.292
WORKING CAP REPAYMENT	182.106
NET CASH FLOW	73.599
ACCUM NET CASH FLOW	1030.544
----- NET CASH FLOW UNDISCOUNTED AT 12.00% / PERIOD -----	
DEBT BALANCE	7.000
BALANCE M/CAP LOAN	0.000

Table 14-22 - Cash Flow Case Evaluation, Total Complex, 100% Equity
(\$ millions)

PERIOD	-5	-4	-3	-2	-1	1	2	3	4	5	6	7
REVENUE												
ENERGY PRODUCTS	0.000	0.000	0.000	0.000	0.000	124.084	248.168	248.168	248.168	248.168	248.168	248.168
SULFUR	0.000	0.000	0.000	0.000	0.000	10.839	20.877	20.877	20.877	20.877	20.877	20.877
... TOTAL ...	0.000	0.000	0.000	0.000	0.000	134.923	269.045	269.045	269.045	269.045	269.045	269.045
CGSTYS												
LEASE ROYALTY	0.000	0.000	0.000	0.000	0.000	7.425	14.850	14.850	14.850	14.850	14.850	14.850
OPERATING SUPPLIES	0.000	0.000	0.000	0.000	0.000	4.056	9.712	9.712	9.712	9.712	9.712	9.712
CATALYST + CHEMICALS	0.000	0.000	0.000	0.000	0.000	4.883	6.366	6.366	6.366	6.366	6.366	6.366
OPERATING LABOR	0.000	0.000	0.000	0.000	0.000	14.017	14.017	14.017	14.017	14.017	14.017	14.017
PAYROLL BURDEN	0.000	0.000	0.000	0.000	0.000	9.143	9.143	9.143	9.143	9.143	9.143	9.143
PLANT OVERHEAD/AURUM	0.000	0.000	0.000	0.000	0.000	14.106	14.106	14.106	14.106	14.106	14.106	14.106
UNION WELFARE	0.000	0.000	0.000	0.000	0.000	11.385	11.385	11.385	11.385	11.385	11.385	11.385
MAFG COSTS	0.000	0.000	0.000	0.000	0.000	2.441	4.882	4.882	4.882	4.882	4.882	4.882
6 AND A OVERHEAD	0.000	0.000	0.000	0.000	0.000	2.059	2.059	2.059	2.059	2.059	2.059	2.059
MAINTENANCE MATERIAL	0.000	0.000	0.000	0.000	0.000	52.391	52.391	52.391	52.391	52.391	52.391	52.391
MAINTENANCE LABOR	0.000	0.000	0.000	0.000	0.000	12.109	12.109	12.109	12.109	12.109	12.109	12.109
PROPERTY TAX + INSUR	0.000	0.000	0.000	0.000	0.000	42.625	42.625	42.625	42.625	42.625	42.625	42.625
... TOTAL ...	0.000	0.000	0.000	0.000	0.000	146.444	190.645	190.645	190.645	190.645	190.645	190.645
DEPRECN - MING	0.000	0.000	0.000	0.000	0.000	38.060	38.060	25.302	20.249	17.465	16.286	13.132
DEPRECN - WML PREP	0.000	0.000	0.000	0.000	0.000	4.545	3.719	3.043	2.490	2.037	1.667	1.368
DEPRECN - PROGRSS	0.000	0.000	0.000	0.000	0.000	221.183	180.952	149.051	121.133	99.193	81.083	72.980
DEPRECN - POWER PLNT	0.000	0.000	0.000	0.000	0.000	9.857	9.155	8.500	7.328	6.305	5.462	4.916
DEPRECN - OFF-SITES	0.000	0.000	0.000	0.000	0.000	9.250	8.325	7.493	6.743	6.069	5.462	4.916
DEFLECTION ALLOWANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COST + DEPR + OPL	0.000	0.000	0.000	0.000	0.000	441.259	423.354	383.434	349.152	322.573	301.954	289.692
PROFIT BEFORE TAX	0.000	0.000	0.000	0.000	0.000	-237.136	-155.109	-114.789	-84.907	-58.428	-33.705	-21.247
INCOME TAXES	0.000	0.000	0.000	0.000	0.000	-194.511	-86.657	-59.690	-42.872	-28.383	-17.529	-11.849
TAX CREDIT	0.000	0.000	0.000	0.000	0.000	149.560	0.000	0.000	0.000	0.000	0.000	0.000
PROFIT AFTER TAX	0.000	0.000	0.000	0.000	0.000	-31.125	-74.453	-55.499	-38.836	-26.126	-16.161	-10.199
AVERAGE ANNUAL NET PROFIT	0.000	0.000	0.000	0.000	0.000	-619	-619	-619	-619	-619	-619	-619
INVESTMENT												
LAND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FIELD CAP INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INITIAL CAT + UREN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
START-UP COSTS	0.000	0.000	0.000	0.000	0.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
EQUIPMENT REPLACEMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL FIXED INVEST.	0.000	0.000	0.000	0.000	0.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
WORKING CAP PAID IN	0.000	0.000	0.000	0.000	0.000	72.506	72.506	72.506	72.506	72.506	72.506	72.506
ACCUM 0ND IS OF TOTAL	-32.000	-133.000	-406.000	-1242.000	-1611.000	-1048.000	-610.000	-1296.000	-1165.000	-945.924	-862.285	-774.153
NET CASH FLOW	-32.000	-101.000	-271.000	-637.000	-678.000	154.250	133.018	119.635	99.875	83.638	68.132	58.132
ACCUM NET CASHFLOW	-32.000	-133.000	-406.000	-1043.000	-1611.000	-1456.750	-1298.032	-1165.000	-1045.400	-945.924	-862.285	-774.153
***** NET CASH FLOW DISCOUNTED AT 10.00% / PERIOD *****												

Table 14-22 - Cash Flow Case Evaluation, Total Complex, 100% Equity (Contd)
(\$ millions)

PERIOD	8	9	10	11	12	13	14	15	16	17	18	19
REVENUE	248.168	248.168	248.168	248.168	248.168	248.168	248.168	248.168	248.168	248.168	248.168	248.168
ENERGY PRODUCTS	20.877	20.877	20.877	20.877	20.877	20.877	20.877	20.877	20.877	20.877	20.877	20.877
OTHER	268.245	268.245	268.245	268.245	268.245	268.245	268.245	268.245	268.245	268.245	268.245	268.245
... TOTAL ...	14.488	14.488	14.488	14.488	14.488	14.488	14.488	14.488	14.488	14.488	14.488	14.488
MINING ROYALTY	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712	9.712
OPERATING SUPPLIES	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966
CATALYST & CHEMICALS	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017	14.017
OPERATING LABOR	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143	9.143
PAYROLL BURDEN	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106
PLANT OVERHEAD/ADMIN	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385
UNION WELFARE	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82
MIS. COSTS	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859
G AND A OVERHEAD	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391
MAINTENANCE MATERIAL	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189
MAINTENANCE LABOR	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625	42.625
PROPERTY TAX & INSUR	190.645	190.645	190.645	190.645	190.645	190.645	190.645	190.645	190.645	190.645	190.645	190.645
... TOTAL ...	10.237	10.237	10.237	10.237	10.237	10.237	10.237	10.237	10.237	10.237	10.237	10.237
DEPRECN - MINE	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500
DEPRECN - GWA - PREP	72.984	72.984	72.984	72.984	72.984	72.984	72.984	72.984	72.984	72.984	72.984	72.984
DEPRECN - PROCESS	5.868	5.868	5.868	5.868	5.868	5.868	5.868	5.868	5.868	5.868	5.868	5.868
DEPRECN - POWER PLANT	4.424	4.424	4.424	4.424	4.424	4.424	4.424	4.424	4.424	4.424	4.424	4.424
DEPRECN - OFF-SITES	1.137	1.137	1.137	1.137	1.137	1.137	1.137	1.137	1.137	1.137	1.137	1.137
DEPLETION ALLOWANCE	286.502	286.502	286.502	286.502	286.502	286.502	286.502	286.502	286.502	286.502	286.502	286.502
COST & DEPN & DEPL	-18.257	-18.257	-18.257	-18.257	-18.257	-18.257	-18.257	-18.257	-18.257	-18.257	-18.257	-18.257
PROFIT BEFORE TAX	-9.494	-9.494	-9.494	-9.494	-9.494	-9.494	-9.494	-9.494	-9.494	-9.494	-9.494	-9.494
ENGINE TAXES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TAX CREDIT	-0.744	-0.744	-0.744	-0.744	-0.744	-0.744	-0.744	-0.744	-0.744	-0.744	-0.744	-0.744
PROFIT AFTER TAX	-0.237	-0.237	-0.237	-0.237	-0.237	-0.237	-0.237	-0.237	-0.237	-0.237	-0.237	-0.237
AVERAGE ANNUAL NET PROFIT	0.613	0.613	0.613	0.613	0.613	0.613	0.613	0.613	0.613	0.613	0.613	0.613
INVESTMENTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LAND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FIXED CAP INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INSTRUMENTAL OAT & CHEM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
START-UP COSTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EQUIPMENT REPLACEMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL FIXED INVEST.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP PAID IN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ACQUM GROSS C ² TOTAL	-687.218	-605.523	-520.497	-445.632	-410.698	-364.835	-319.979	-265.547	-248.532	-195.639	-162.218	-117.237
NET CASH FLOW	66.949	61.694	79.422	81.665	34.541	45.856	44.856	36.431	45.816	44.832	33.422	44.988
ACQUM NET CASH-FLOW	-687.218	-605.523	-520.497	-445.632	-410.698	-364.835	-319.979	-265.547	-248.532	-195.639	-162.218	-117.237
----- NET CASH FLOW DISCOUNTED AT 0.000 / PERIOD -----												

Table 14-22 - Cash Flow Case Evaluation, Total Complex, 100% Equity (Contd)
(\$ millions)

PERIOD	2a
REVENUE	240.164
ENERGY PRODUCTS	201077
SHLFUK	
... T O T A L ...	468.245
(COSTS)	
MINE ROYALTY	14.85M
OPERATING SUPPLIES	9.712
CATALYST & CHEMICALS	8.266
OPERATING LABOR	14.017
FRACELL BURDEN	9.142
PLANT OVERHEAD/ADMIN	14.186
UNION WELFARE	11.385
MISC COSTS	4.982
G AND A OVERHEAD	2.859
MAINTENANCE MATERIAL	52.591
MAINTENANCE LABOR	12.189
PROPERTY TAX & INSUR	42.625
... T O T A L ...	198.645
DEPRECH - MINE	3.737
DEPRECH - GEN. DEPR	8.044
DEPRECH - PROCESS	6.406
DEPRECH - POWER PLNT	3.493
DEPRECH - OFF-SITES	3.225
DEPLETION ALLOWANCE	3.944
COST + DEPR + REPL	48.848
PROFIT BEFORE TAX	63.197
INCOME TAXES	32.862
TAX CREDIT	8.006
PROFIT AFTER TAX	38.334
AVERAGE ANNUAL NET PROFIT	1619
INVESTMENT	
LAND	0.000
FIXED CAP INVESTMENT	6.600
INITIAL CAT + CHEM.	6.000
START-UP COSTS	0.000
EQUIPMENT REPLACEMENT	0.000
TOTAL FIXED INVEST.	6.600
WORKING CAP PAID IN	-72.900
ACCUM GROSS OF TOTAL	6.600
NET CASH FLOW	117.237
RECUM NET CASHFLOW	0.000
... NET CASH FLOW DISCOUNTED AT 10.000 / PERIGO ...	

Table 14-23 - Possible Annual Sales Value

Products	Daily Output	Unit Sales Price (\$)	Annual Sales (\$ million)	
<u>SNG</u>	260.0 MMscfd	4.25/Mcf		362.8
<u>Liquids</u>				
C ₄ s	3,535 BPD	12.00/bbl		14.0
<u>Naphthas</u>				
Light	10,620 BPD	15.50/bbl	54.3	
Heavy	9,555 BPD	17.00/bbl	53.6	
Alcohols	3,910 BPD	25.00 bbl	32.3	
Diesel Fuel	16,960 BPD	14.50/bbl	79.9	
Premium Fuel Oil	4,960 BPD	15.00/bbl	24.5	
				241.6
<u>Power</u>	3,352 MW-hr	0.03/kW-hr		<u>33.2</u>
Total Energy				651.6
Sulfur	1,015 Ton	60/Ton		<u>20.1</u>
Total				<u>671.7</u>

Table 14-24 - Possible Required Product Selling Prices

Products	Required Selling Price		
	Broakeven 0% DCF	100% Equity 12% DCF	65% Debt 12% DCF
<u>SNG</u>	\$1.60/Mcf	\$3.65/Mcf	\$2.30/Mcf
<u>Liquids</u>			
C ₄ s	4.55/bbl	10.30/bbl	650/bbl
<u>Naphthas</u>			
Light	5.90/bbl	13.30/bbl	8.40/bbl
Heavy	6.50/bbl	14.60/bbl	9.20/bbl
Alcohols	9.50/bbl	21.50/bbl	13.50/bbl
Diesel Fuel	5.50/bbl	12.50/bbl	7.90/bbl
Premium Fuel Oil	5.70/bbl	12.90/bbl	8.10/bbl
<u>Power</u>	0.011/kW-hr	0.026/kW-hr	0.016/kW-hr
Sulfur	60/ton	60/ton	60/ton

Table 14-25 - Cash Flow Case Evaluation, Total Complex
 Financed 65/35 D/E Ratio, 9% Interest
 (\$ millions)

PERIOD	-5	-4	-3	-2	-1	1	2	3	4	5	6	7
REVENUES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ENERGY PRODUCTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL ...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COSTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MINING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OPERATING SUPPLIES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CATALYST & CHEMICALS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OPERATING LABOR	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SALES & MARKETING	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PLANT OVERHEAD/ADMIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UNION WELFARE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RESEARCH & DEVELOPMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G AND A OVERHEAD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAINTENANCE MATERIAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PROPERTY TAX & INSUR	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INTEREST ON LOAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INTEREST ON W/CAP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL ...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEPRECIATION - MINE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEPRECIATION - COAL PREP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEPRECIATION - PROCESS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEPRECIATION - POWER PLANT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEPRECIATION - OFF-SITES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEPRECIATION - BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COST OF DEPR + DEPL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PROFIT BEFORE TAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TAX CREDIT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PROFIT AFTER TAX	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AVERAGE ANNUAL NET PROFIT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FIXED CAP INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INITIAL CAP + CAEM	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
START-UP COSTS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INT. DURING CONSTR.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COMMITMENT FEE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EQUIPMENT REPLACEMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL FUND INVEST.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP PAID IN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BORROWED CAPITAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP BORROWED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ACCUM GROSS CF TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NET CASH FLOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ACCUM NET CASH FLOW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NET CASH FLOW DISCOUNTED AT 23.13% / PERIOD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEBT BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BALANCE W/CAP LOAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 14-25 - Cash Flow Case Evaluation, Total Complex
 Financed 65/35 D/E Ratio, 9% Interest (Contd)
 (\$ millions)

PERIOD	8	9	10	11	12	13	14	15	16	17	18	19
(REVENUE)												
ENERGY PRODUCTS	651.680	651.680	651.680	651.680	651.680	651.680	651.680	651.680	651.680	651.680	651.680	651.680
SULFUR	28.077	28.077	28.077	28.077	28.077	28.077	28.077	28.077	28.077	28.077	28.077	28.077
... I O T A L ...	679.757	679.757	679.757	679.757	679.757	679.757	679.757	679.757	679.757	679.757	679.757	679.757
(COSTS)												
MINE ROYALTY	14.858	14.858	14.858	14.858	14.858	14.858	14.858	14.858	14.858	14.858	14.858	14.858
OPERATING SUPPLIES	9.742	9.742	9.742	9.742	9.742	9.742	9.742	9.742	9.742	9.742	9.742	9.742
CATALYST & CHEMICALS	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966	6.966
OPERATING LABOR	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817	14.817
PARROLL BURDEN	9.443	9.443	9.443	9.443	9.443	9.443	9.443	9.443	9.443	9.443	9.443	9.443
PLANT OVERHEAD/ADMIN	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106	14.106
UNION WELFARE	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385	11.385
MISC-COSTS	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482	4.482
G AND A OVERHEAD	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859	2.859
MAINTENANCE MATERIAL	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391	52.391
PROPERTY TAX & INSUR	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189	12.189
INTEREST ON LOAN	65.118	59.892	54.665	49.439	44.212	38.985	33.758	28.531	23.304	18.077	12.850	7.623
INCREASE ON M/CAP.	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495	9.495
... I O T A L ...	265.258	259.832	254.405	248.979	243.552	238.126	232.699	227.273	221.846	216.419	210.993	205.566
DEPRECN - MINE	14.234	14.153	14.072	14.000	13.928	13.856	13.784	13.712	13.640	13.568	13.496	13.424
DEPRECN - COAL PREP	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677	1.677
DEPRECN - PROCESS	81.958	81.958	81.958	81.958	81.958	81.958	81.958	81.958	81.958	81.958	81.958	81.958
DEPRECN - POWER PLANT	6.882	6.882	6.882	6.882	6.882	6.882	6.882	6.882	6.882	6.882	6.882	6.882
DEPRECN - OFF-SITES	4.969	4.969	4.969	4.969	4.969	4.969	4.969	4.969	4.969	4.969	4.969	4.969
DEPRECN ALLOWANCE	4.768	5.701	6.634	7.567	8.500	9.433	10.366	11.299	12.232	13.165	14.098	15.031
COST & DEPR & DEPL	376.370	369.612	362.854	356.096	349.338	342.580	335.822	329.064	322.306	315.548	308.790	302.032
PROFIT BEFORE TAX	295.387	419.925	425.352	430.779	436.206	441.633	447.060	452.487	457.914	463.341	468.768	474.195
INCOME TAXES	15.801	15.801	15.801	15.801	15.801	15.801	15.801	15.801	15.801	15.801	15.801	15.801
TAX CREDIT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PROFIT AFTER TAX	14.786	149.124	149.551	154.978	160.405	165.832	171.259	176.686	182.113	187.540	192.967	198.394
AVERAGE ANNUAL NET PROFIT	153.849	153.849	153.849	153.849	153.849	153.849	153.849	153.849	153.849	153.849	153.849	153.849
(INVESTMENT)												
LABOR	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FIXED CAP INVESTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
INITIAL CAT & CHEM.	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300
START-UP COSTS	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000
ANT. WORKING CONSTR.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COMMITMENT FEE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EQUIPMENT REPLACEMENT	4.358	4.358	4.358	4.358	4.358	4.358	4.358	4.358	4.358	4.358	4.358	4.358
TOTAL FIXED INVEST.	11.658	11.658	11.658	11.658	11.658	11.658	11.658	11.658	11.658	11.658	11.658	11.658
WORKING CAP PAID IN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAPITAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WORKING CAP BORROWED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AVG GROSS OF TOTAL	174.026	182.043	190.060	198.077	206.094	214.111	222.128	230.145	238.162	246.179	254.196	262.213
LOAN REPAYMENT	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295	60.295
WORKING CAP REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NET CASH FLOW	152.445	189.871	189.871	198.043	206.094	214.111	222.128	230.145	238.162	246.179	254.196	262.213
AVG GROSS NET CASH FLOW	187.787	187.787	187.787	187.787	187.787	187.787	187.787	187.787	187.787	187.787	187.787	187.787
----- NET CASH FLOW DISCOUNTED AT 13.13% / PERIOD -----												
DEBT BALANCE	723.936	603.243	502.948	422.653	362.358	311.063	269.768	238.473	207.178	175.883	144.588	113.293
BALANCE M/CAP LOAN	165.586	165.586	165.586	165.586	165.586	165.586	165.586	165.586	165.586	165.586	165.586	165.586

Table 14-25 - Cash Flow Case Evaluation, Total Complex
 Financed 65/35 D/E Ratio, 9% Interest (Contd)
 (\$ millions)

PERIOD	20
(REVENUE)	
ENERGY PRODUCTS	651.646
SULFUR	28.677
... T O T A L ...	671.757
(COSTS)	
MINE ROYALTY	14.858
OPERATING SUPPLIES	9.732
CATALYST & CHEMICALS	6.966
OPERATING LABOR	14.817
PAYROLL BURDEN	2.114
PLANT OVERHEAD/ADMIN	14.106
UNION WELFARE	11.285
MISC COSTS	4.862
G AND A OVERHEAD	2.859
MAINTENANCE MATERIAL	52.131
MAINTENANCE LABOR	52.149
PROPERTY TAX & INSUR	42.625
INTEREST ON LOAN	1.088
INTEREST ON W/CAP	0.480
... T O T A L ...	196.843
DEPRECN - MINE	3.445
DEPRECN - COAL PREP	0.000
DEPRECN - PROCESS	4.448
DEPRECN - POWER PLNT	3.936
DEPRECN - OFF-SITES	3.822
DEPRECN - ALIENANCE	11.068
COST & DEPR & DEPL	21.870
PROFIT BEFORE TAX	454.607
INCOME TAXES	238.517
TAX CREDIT	0.000
PROFIT AFTER TAX	220.170
AVERAGE ANNUAL NET PROFIT	153.849
(INVESTMENT)	
LAND	0.000
FIXED CAP INVESTMENT	0.000
INITIAL CAT & CHEM.	0.000
START-UP COSTS	0.000
INT. DURING CONSTR.	0.000
COMMITMENT FEE	0.000
EQUIPMENT REPAIRS/MNT	0.000
TOTAL FIXED INVEST.	0.000
WORKING CAP RATE IN	105.500
BORROWED CAPITAL	0.000
WORKING CAP BORROWED	0.000
ACCUM GROSS CF TOTAL	4454.499
LOAN REPAYMENT	50.495
WORKING CAP REPAYMENT	105.500
NET CASH FLOW	182.508
ACCUM NET CASHFLOW	3142.993
----- NET CASH FLOW DISCOUNTED AT 25.131 / PERIOD -----	
DEBT BALANCE	1.000
BALANCE W/CAP LOAN	0.000

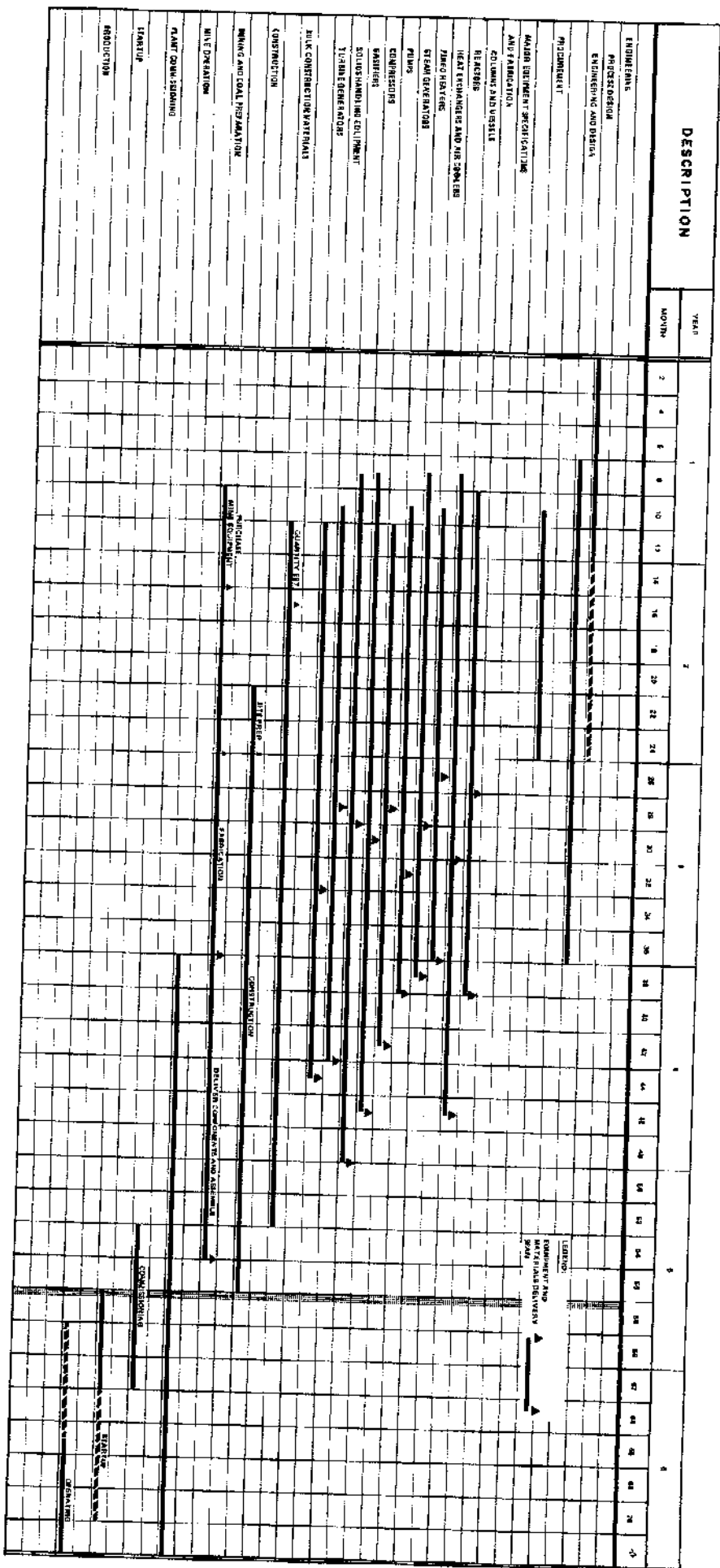


Figure 14-1 - Project Overall Schedule

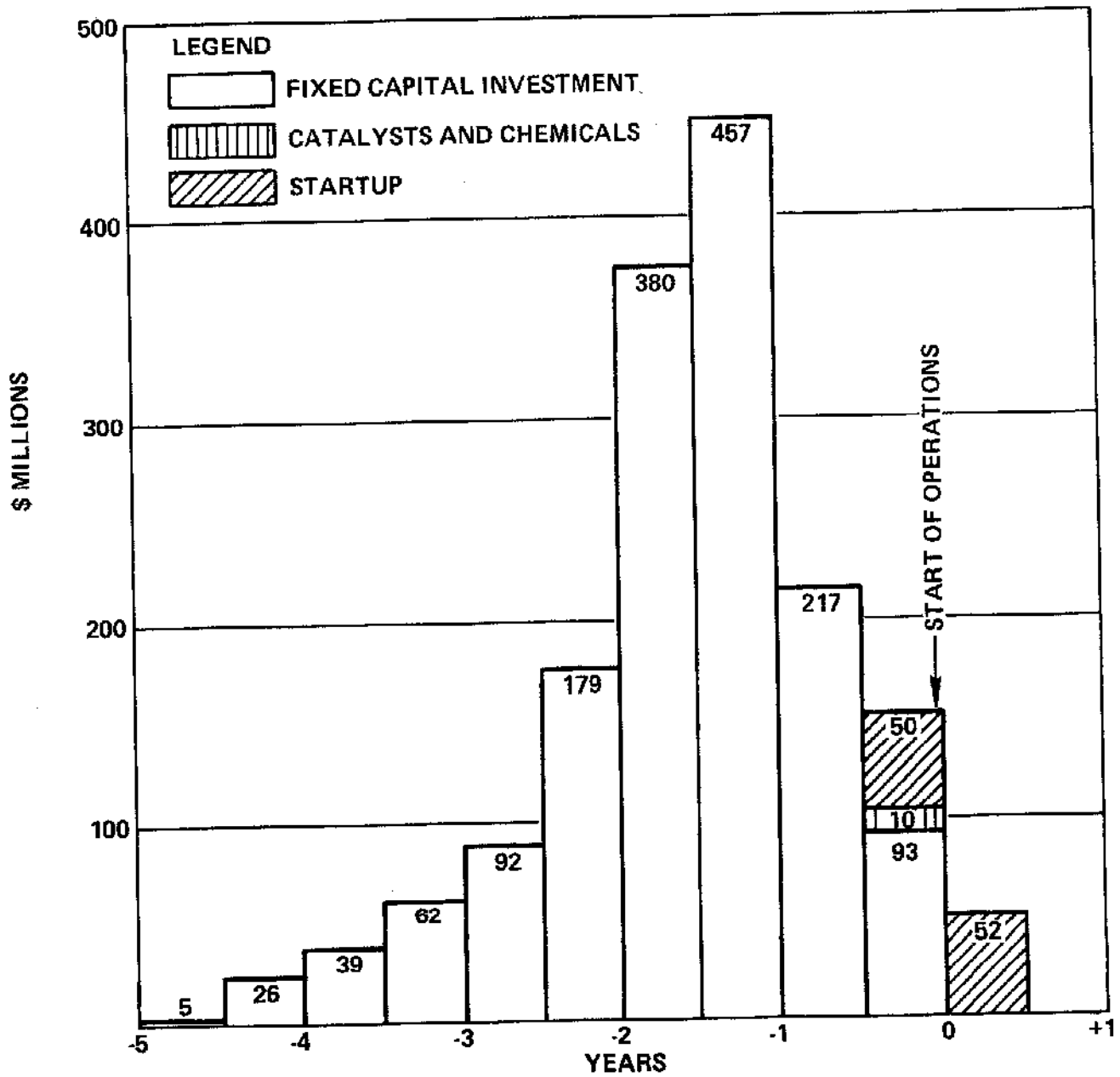


Figure 14-2 - Fund Drawdown Schedule

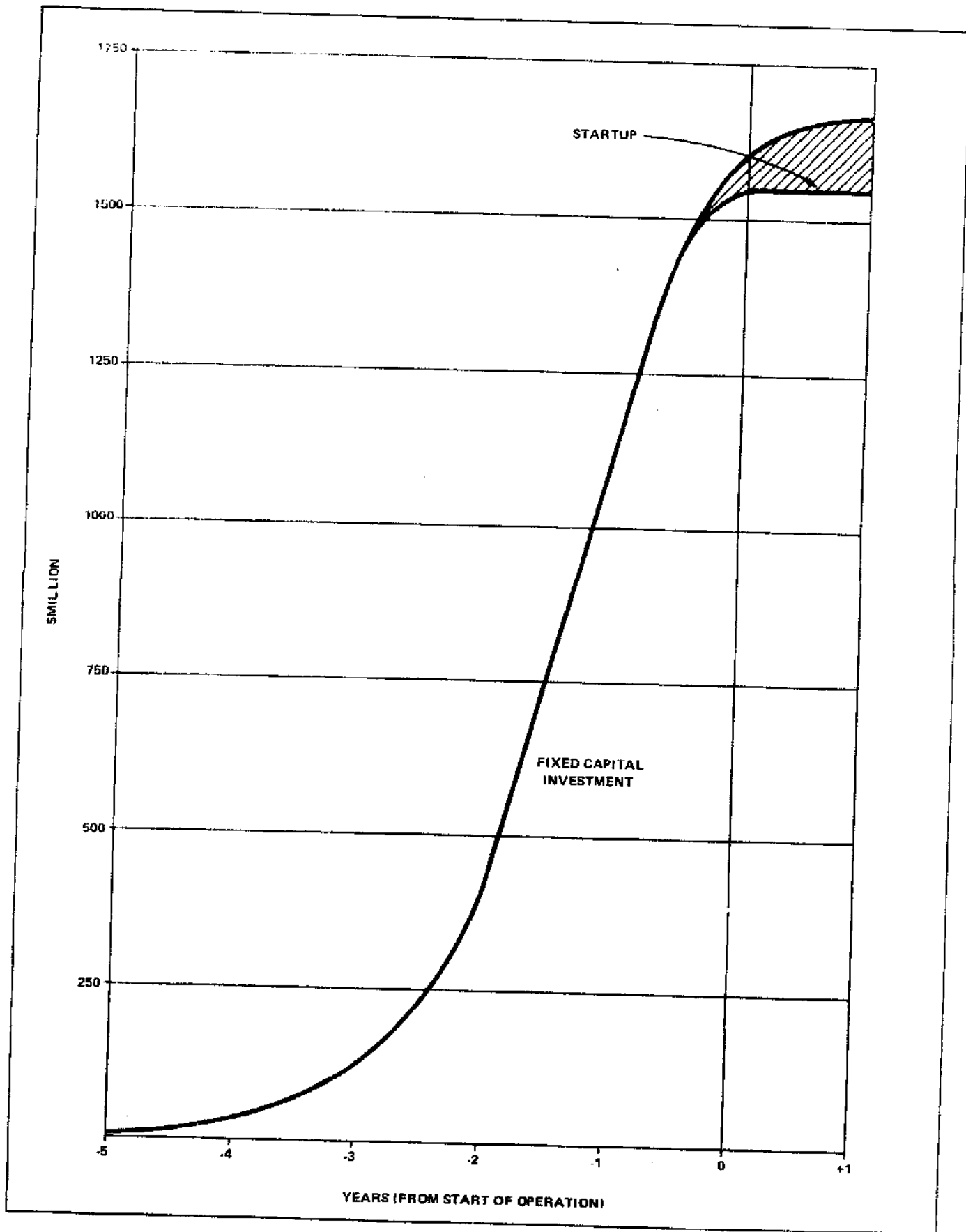


Figure 14-3 - Cumulative Fund Drawdown Schedule

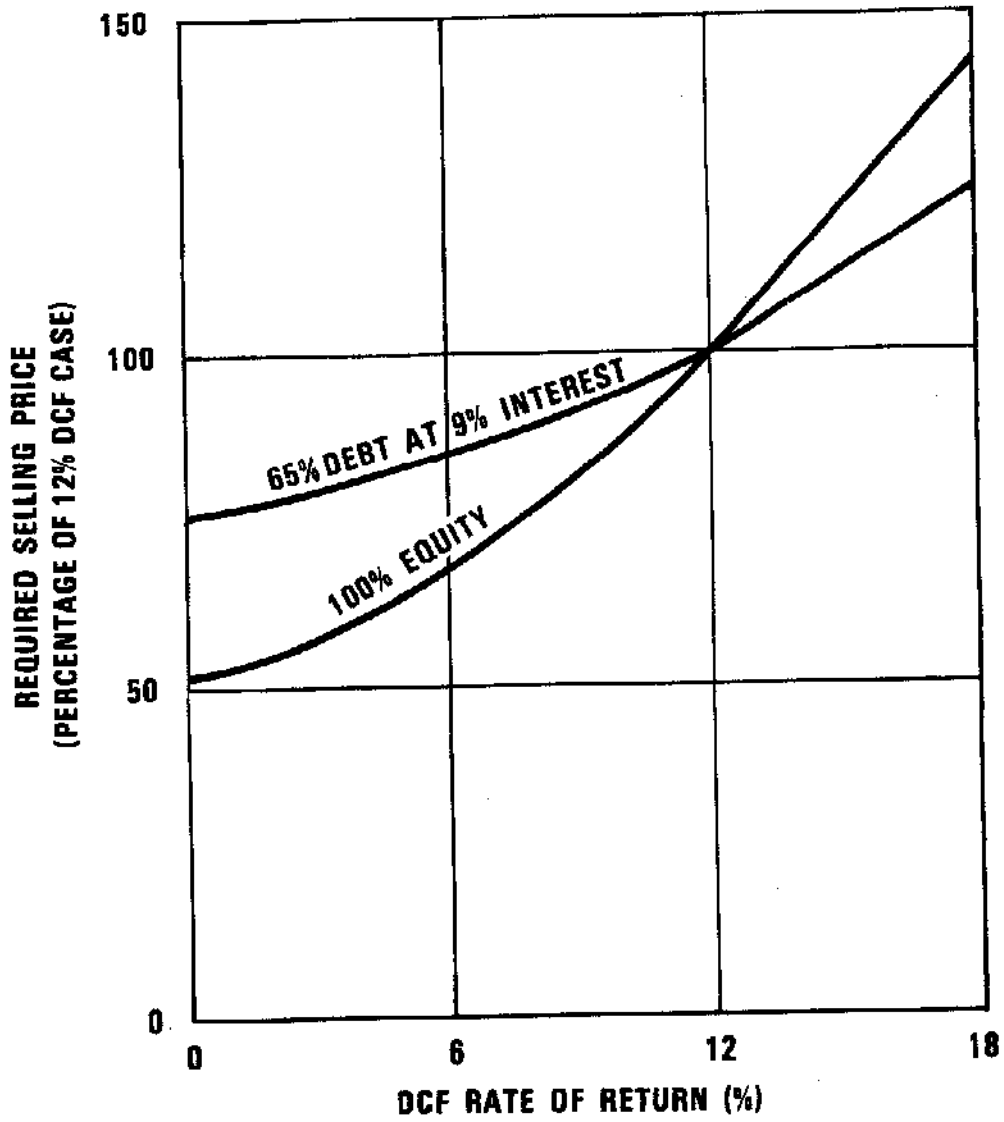


Figure 14-4 - Sensitivity of Required Product Selling Price to DCF

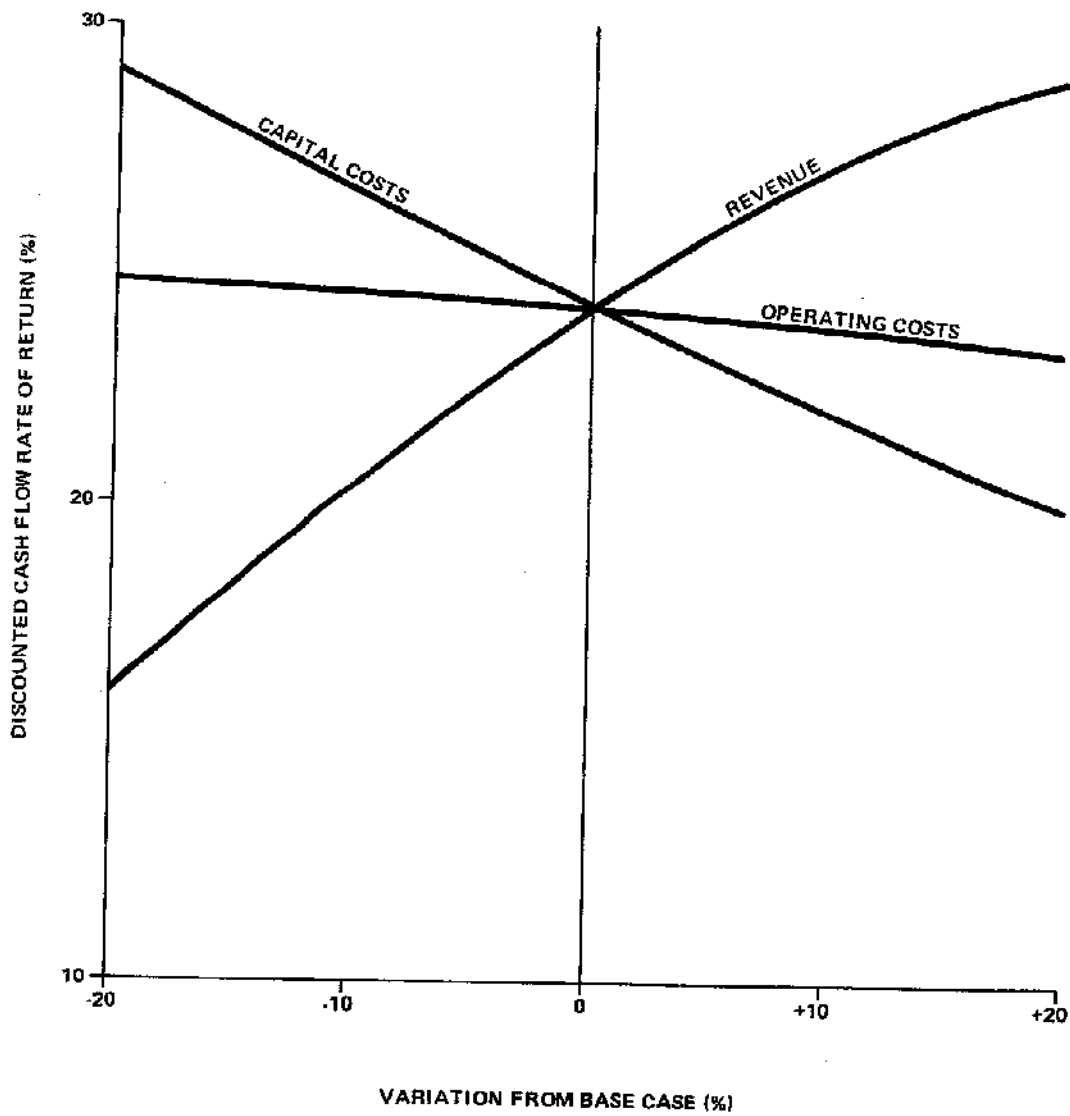


Figure 14-5 - Sensitivity Analysis of DCF
 Possible Annual Revenue of \$670 Million
 65% Debt at 9% Interest