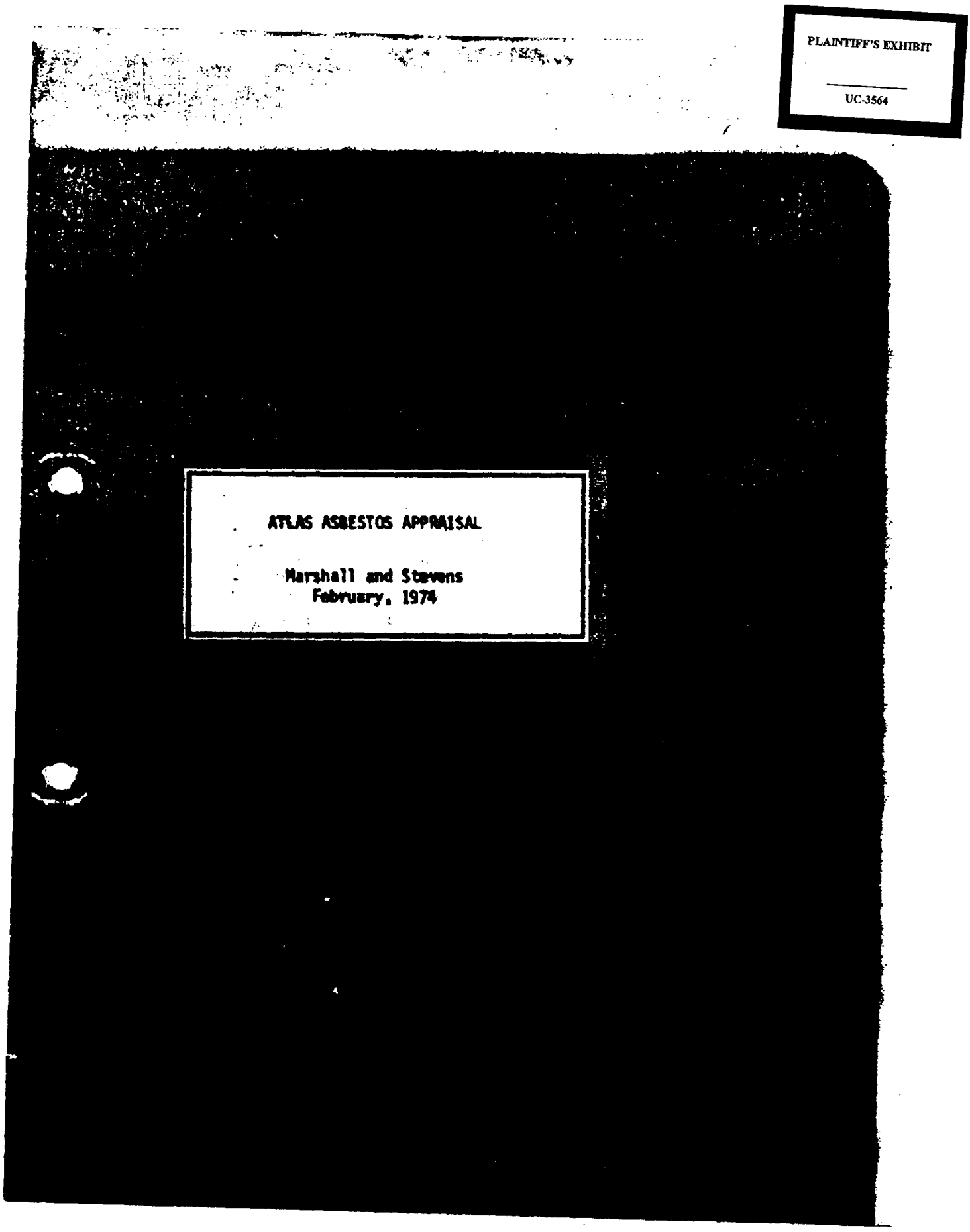


UCC 007592

Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/1

A P P R A I S A L

of the

Mineral Rights

Belonging to the

ATLAS ASBESTOS COMPANY

As of

February, 1974

M A R S H A L L A N D S T E V E N S
Incorporated
1645 Beverly Boulevard
Los Angeles, California

MARSHALL and STEVENS incorporated

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Comp… Published by AsbestosClaims.Law
ACL Doc 18303 · Page 2 of 61 asbestosclaims.law/library/18303/2

MARSHALL and STEVENS incorporated / appraisals

1645 BEVERLY BOULEVARD, LOS ANGELES, CALIFORNIA 90026 (213) [illegible]

March 21, 1974 File No. 11-2832

Vinnell Corporation
1145 Westminister Avenue
Alhambra, California 91802

Attention: Mr. L. N. Carlson,
Vice President

Gentlemen:

In accordance with your request, we are submitting herewith our appraisal of the mineral rights of Atlas Asbestos Company, located in the vicinity of Coalinga, California.

This report has been prepared by Mr. Ernest Oberbillig, who is our consultant in the valuation of mineral rights, mining interests, etc.

Based on the report which follows, in our opinion the fair market value of the mineral rights, considered as an integral part of the total business enterprise, is One Million Six Hundred Twenty Two Thousand Dollars,

$1,622,000.

If you have any questions on the material contained in this report, please feel free to call Mr. Oberbillig directly.

Yours truly,

MARSHALL and STEVENS
Incorporated

John L. Vaughan, Jr.
Senior Vice President

JLV:jer

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Comp... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 3 of 61 asbestosclaims.law/library/18303/3

TABLE OF CONTENTS

	Page
Letter of Transmittal	ii
REPORT	
Introduction	1
Geology	6
Ore Reserves	9
Property and Claims	11
Past Operations	14
Products Sold	14
Plant or Mill	18
Cost of Production	18
Plant Improvements	24
EPA and OSHA Health Requirements	33
Marketing and Prices	36
Recommendations	37
Valuation of Mineral Unit	38
ADDENDA	
Schedule of Mining Properties	2.1
Sales by Product	2.9
Production Costs	

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Comp… Published by AsbestosClaims.Law

ACL Doc 18303 · Page 4 of 61 **asbestosclaims.law/library/18303/4**

MINERAL RIGHTS VALUATION

Introduction

On the southeast end of the New Idria intrusive, there has developed a new chrysotile asbestos field which now dominates the domestic industry.

Nearly half the total United States asbestos output comes from this Coalinga area. California now has truly become important in the asbestos business but development here has been largely in the past decade. So recent has been this development that even an authoritative South African text on asbestos by Sinclair dated 1968 does not mention Coalinga asbestos.

Nonetheless, Coalinga asbestos of the specific mineral series called chrysotile, in keeping with the suffix "tile" in its name, has become highly desired in the tile floor covering industry. For whiteness or color quality, Coalinga asbestos is rivaled by only one other mineral produced in Yugoslavia. Another quality in which Coalinga asbestos excels is oil absorbance averaging 74 ml/100 gms. This oil absorbtivity, so important to tile manufacturers, can be accounted for by the unique platy, mat-like shape of the asbestos particles shown and compared with Canadian chrysotile fiber in the photo micrographs on the following page.

Dry screening tests indicate that Coalinga asbestos is comparable to Canadian group 7 fiber; however, wet screen tests show the Coalinga

MARSHALL and STEVENS incorporated

UCC 007606

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Comp... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 5 of 61 asbestosclaims.law/library/18303/5



Photomicrographs show typical Canadian Group 7 chrysotile fiber at left and the Coalinga-type chrysotile fiber, right. (70X). In tests conducted by Johns-Manville, Coalinga fiber has compared favorably with Canadian Group 7 asbestos.

Fig. 1. Photo Micrographs of Typical Canadian Group 7 Chrysotile Fibers, Left, and Coalinga-Type Fibers, Right.

UCC 007607

MARSHALL and STEVENS incorporated

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Comp… Published by AsbestosClaims.Law
ACL Doc 18303 · Page 6 of 61 asbestosclaims.law/library/18303/6

fiber to contain less "fines" or minus 200 mesh and the 100/200 mesh fraction greater in percentage. Thus, the Coalinga fiber is a more uniformly sized product than its competition and in this respect alone could be more desirable than Canadian fiber with its greater percentage of finer fiber particles, possible a greater health hazard in handling and utilization in industry.

The increased whiteness of the Coalinga asbestos results in elimination of costs for expensive scarce titanium oxide admixture; today titanium oxide heads the long list of critically scarce mineral commodities.

Tile mix containing only three percent titanium oxide with Coalinga asbestos to have replaced Canadian mineral with only one-third to one-half the amounts for equivalent tile; the balance of filler material consisted of much less costly ground limestone. With these superior qualities of Coalinga asbestos now known and accepted by the tile manufacturers, one needs not wonder that this mineral has become so highly desired and solidly accepted.

A summary of an interoffice memo regarding this feature states:

> "Because of the above described superior characteristics of Coalinga type asbestos, the required amount of asbestos to produce tile is reduced from approximately 16 to 18% when using Canadian type, to 9 to 11% when employing Coalinga type."

The Coalinga field has been developed by three operations or companies: first, on the northwest end by Union Carbide, next, in the middle by

MARSHALL and STEVENS incorporated

UCC 007608

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Comp... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 7 of 61 asbestosclaims.law/library/18303/7

Atlas Asbestos Company, and last, on the southeast end by Johns-Manville. Fig. 2 shows the location of these operations.

Union Carbide, with its 65 mile ore haul, is a lesser rival for sales at the present fiber prices, but with their "wet process" mill they are able to make specialty mineral products commanding a higher price.

This leaves Johns-Manville and Atlas Asbestos competing for the same type of customer and dividing the market between them.

The features of these two operations which seem to swing the balance in favor of Atlas can be listed as follows:

1. Atlas' pit is close to the mill and now, with extentions of the pit to the southeast, can almost put the ore in the stockpile direct from the pit with a loader. Johns-Manville is served with a six mile long steep road usable only in the dry months from their upper pit.

2. Their closer pit has a much lower grade of ore, which would not be commercial today even with a normal price increase.

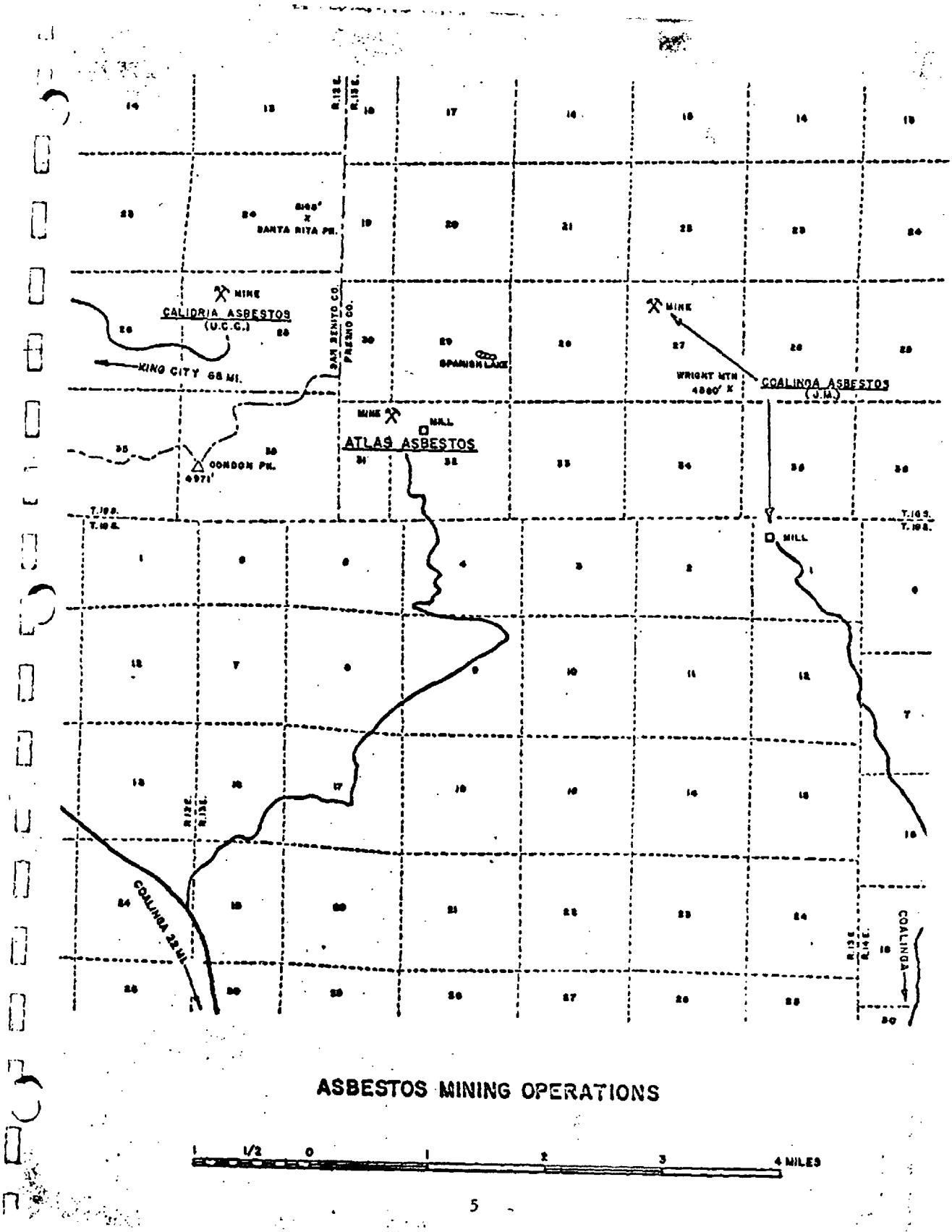
3. It is understood that they have a capital expenditure of around $4 million here and would be faced with some additional OSHA and EPA requirements costing in the $100,000 to $150,000 range immediately. This total depreciation of plant could appear on the balance sheet as a $10 to $15 per ton fiber cost leaving little, if any profit.

JAM

MARSHALL and STEVENS incorporated

UCC 007609

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Comp... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 8 of 61 asbestosclaims.law/library/18303/8


MINE
CALIDRIA ASBESTOS
(U.C.C.)
KING CITY 68 MI.
SAN BENITO CO.
FRESNO CO.
SANTA RITA PK.
SPANISH LAKE
MINE
WRIGHT MTN
4560' K
COALINGA ASBESTOS
(J.M.)
MINE
MILL
ATLAS ASBESTOS
GORDON PK.
4971'
MILL
COALINGA 22 MI.
COALINGA
ASBESTOS MINING OPERATIONS
1/2
0
1
2
3
4 MILES

5

UCC 007610

All these above cited disadvantages could account for the fact that Johns-Manville has decided to "throw in the towel" and withdraw from this match with Atlas. Actually, there is market here for product from only one of the two operations anyway.

This shut-down of Johns-Manville now allows Atlas to seriously consider the necessary plant additions and changes to put Atlas on an efficient output footing to increase capacity and meet OSHA and EPA requirements at the same time.

Otherwise, it was planned to consider an orderly disposal of Atlas plant and retire from the scene. There is just not enough market to split up three ways, but a two-way split can give Atlas elbow room to consider expansion and the necessary additions and costs to meet OSHA and EPA requirements.

J. L. J. M. Stags

Geology

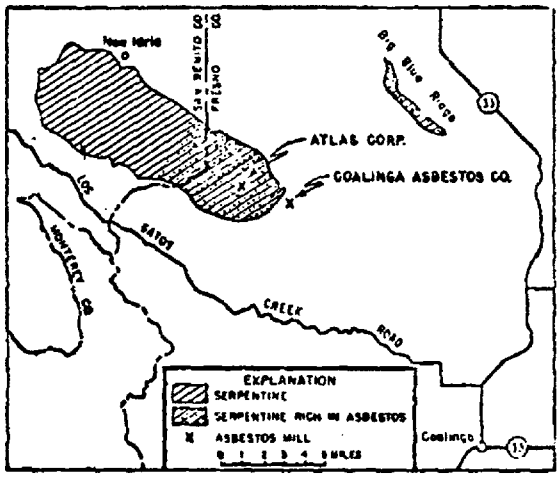
The New Idria mining district is centered by the serpentine intrusive mass of elliptical shape shown on Fig. 3 and roughly 14 miles long by 4 miles wide with the long axis of the ellipse being [illegible] in direction and thus paralleling the structural features of the region and likely the serpentine mass is aligned along the Coalinga anticline.

Seprentine is a rock long known to be the host rock closely associated with the California mercury mines and often the silica carbonate alteration of serpentine is the specific key rock sought in prospecting for

MARSHALL and STEVENS incorporated

UCC 007611

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 10 of 61 asbestosclaims.law/library/18303/10



Index map to asbestos deposits and mills in the vicinity of Coalinga, Fresno County.

Fig. 3. New Idria Intrusive shown shaded and the Asbestos rich part of the Serpentine is the lower stippled section, -- roughly the southeast one-third of the total intrusive.

UCC 007612

mercury ores. This serpentine mass also hosts nickel, chrome, iron and talc minerals. Here the New Idria mass shown only minor chrome, nickel and iron deposits, but the southeastern end of the mass has been subjected to considerable shearing and lateration with the development of considerable chrysotile asbestos mineral which locally can contain as much as 60 to 80 percent of the soft altered rock mass. Large bodies of the serpentine can show consistently 30 to 50 percent asbestos and there are the areas under exploitatipn at present.

Unaltered boulders and masses of serpentine and peridotite occur throughout the shear zones and these boulders represent the main part of pit rejects.

The chrysotile ore bodies are altered and soft and can be mined and dug with no drilling and blasting except for boulders. This allows the ore to be mined, hauled, and stockpiled for around 50c per ton. This is contrasted with the cross-fiber asbestos mines in hard rock where mining costs can reach $10 to $15 per ton for ore containing only 5 to 7 percent fiber. Admittedly, these "hard-rock" deposits yield a percentage of more valuable long-fiber product; they certainly need this to cover the greater mining and concentration costs. We have already discussed the comparison of the better quality Coalinga fiber to the Grade 7 Canadian fiber.

The ore zones in the serpentine mass seem to follow shear zones and it does seem that they can be traced on aerial photos. One geologist has described the favorable areas for exploration:

1. Along the contacts of the ultrabasic with the surrounding sediments;

MARSHALL and STEVENS incorporated

UCC 007613

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 12 of 61 asbestosclaims.law/library/18303/12

2. Northwest regional trending shear zones within the ultrabasic;

3. Secondary shear zones within the ultrabasic cutting across the strike of the regional structure; and

4. The intersection of any of the above structures.

In the case of the pit area now being mined by Atlas, it would seem that the northwest shear zone probably crossed by secondary shear zones is the explanation for the soft rich ore bodies of large size which are yielding the workable material.

The soft platy structure of the Coalinga asbestos is shown by low-power microphotograph included here as Fig. 4.

Much of the fine tailings contains another common accessory mineral of serpentine zones, talc, which is a hydrous magnesium silicate much the same as the host rock.

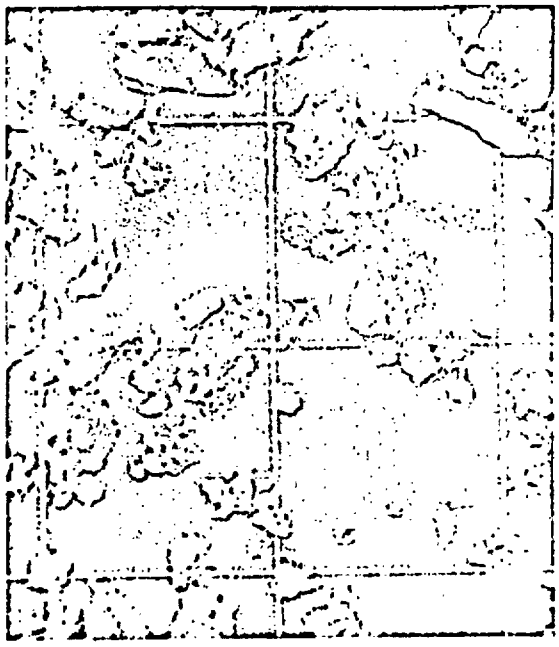
The surface material from the ore zones and to a depth of 15 to 20 feet on flat areas has been oxidized and stained brown with iron oxide, but usually this fine iron goes on out with the tailings and does not discolor the asbestos. Should it appear to present a problem, the material is run into the drill mud product where color quality is not important.

Ore Reserves

While it is known that some ore bodies have been drilled to over 150 feet depth with no change in the material and some pit work has extended ore material for hundreds of feet along the ore zones, no systematic sampling

UCC 007614

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 13 of 61
Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/13



Typical Coalinga asbestos ore has soft platy structure. Only known similar occurrence is at Stragari, Yugoslavia.

Fig. 4. Low-Power Photo Micrograph of Coalinga Asbestos.

UCC 007615

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com… Published by AsbestosClaims.Law
ACL Doc 18303 · Page 14 of 61 **asbestosclaims.law/library/18303/14**

and drilling has been done to block ore reserves ahead of immediate needs for the plant. Geological inference would agree that there is a likelihood that about 9,000,000 tons of material could be developed within a range of two miles from the plant. If we assume that this material would yield 10% asbestos fiber when milled (this is a lower assay than that actually used to date), then there could possibly be 900,000 tons of fiber. At 25,000 tons output of fiber per year, this possible inferred inventory of material could feed the plant 36 years at that rate of ore consumption.

It has been generally voiced by California State geologists that "the Coalinga deposit is immense, aggregating hundreds of millions of tons," but the operators here agree that systematic exploration must be done ahead of actual pit work to outline and delimit the better quality of rock to allow some flexibility in blending and maintaining a uniform plant feed.

Property and Claims

Figs. 5 and 6 are reduced scale maps showing the claims covering the mineral land held by Atlas Asbestos Company. This land consists of several types of mineral claims and mining rights:

1. Two five-acre patented mill sites upon which the plant is located.
2. 340 acres of state mineral leases.
3. 200 acres patented fee land labeled New Idria lease.
4. Approximately 2,700 acres of unpatented land covered by both lode and placer claims and well laid out to cover the deposit.

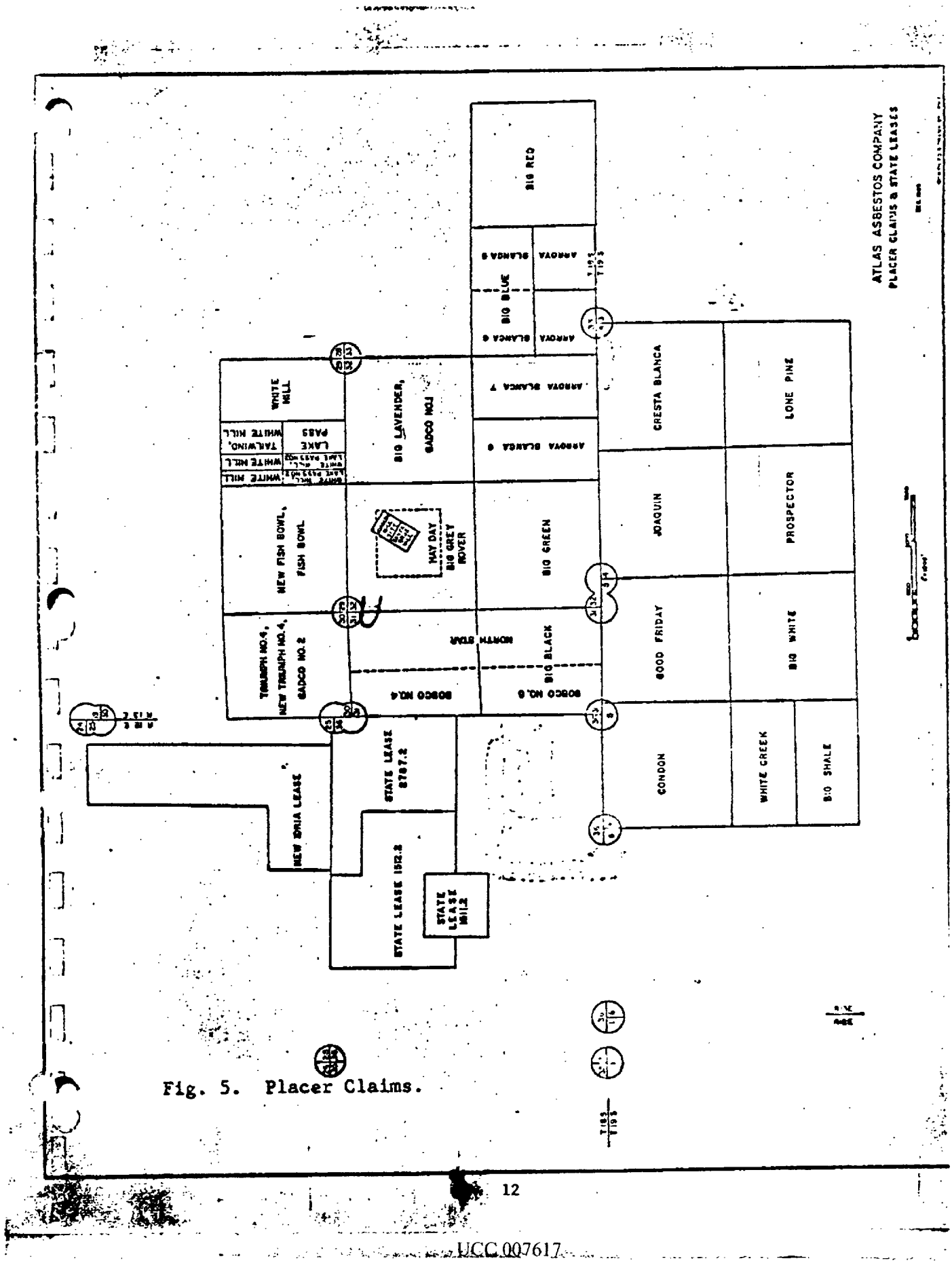


Fig. 5. Placer Claims.

UCC 007617

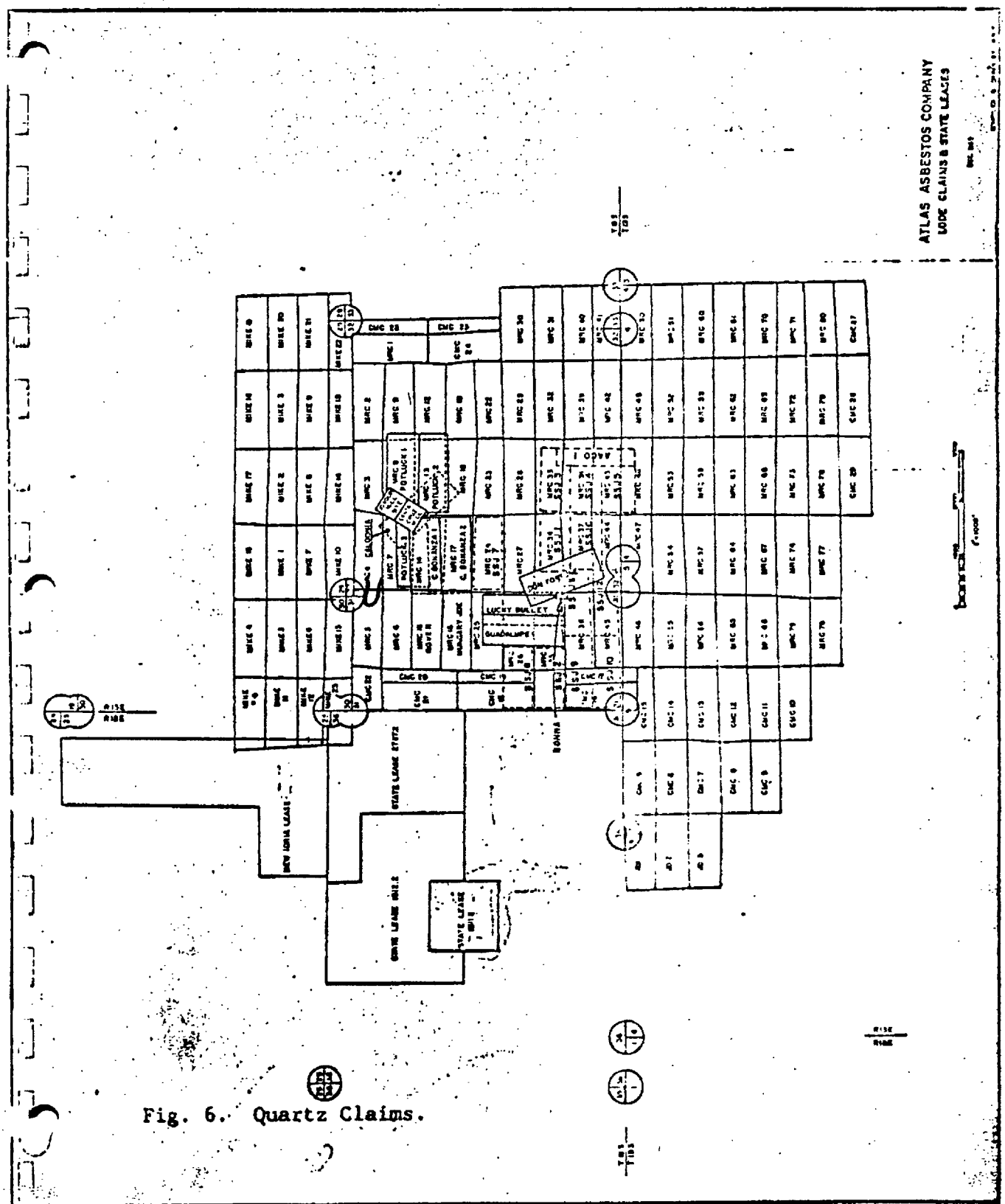


Fig. 6. Quartz Claims.

UCC 007618

The general layout of the claims, superimposed on the topographic sheet, is included here as Fig. 7. A general map showing three asbestos mining operations is included here as Fig. 8.

Past Operations

While the Atlas Asbestos Company started operations in 1963, it was not until 1965 that the operation reached its stride with a production of 11,600 tons. The next year, 1966, output was 13,604 tons sold, followed by 13,056 tons in 1967. 1968 was the "big one" with 15,290 tons sold. In 1969, sales dropped back to 11,024 tons and rose a bit in 1970 to 11,802. Products sold in 1971 totaled 12,757 tons. 11,876 tons were sold in 1972 and 1973 output sold rose to 12,240 tons.

This plant has been described at 20,000 to 24,000 ton product capacity per year, but these tonnages could be achieved only by two and three shift operation for ten to eleven months in a year. Tonnage output above 15,000 tons per year seems to have been limited by market and not plant capacity. Fig. 9 is a table showing month-by-month sales.

Products Sold

In 1972, the output was dominated by the AZ-20 product which accounted for 87% of the total. Drill-bestos was next, accounting for about 8% of the sales; physically and for the most part, these two principal fiber products are very similar as shown by the following two specification sheets. Naturally, the Drill-bestos could be off-color and not the clean opaque white required for tile fiber.

UCC 007619

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 18 of 61
Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/18

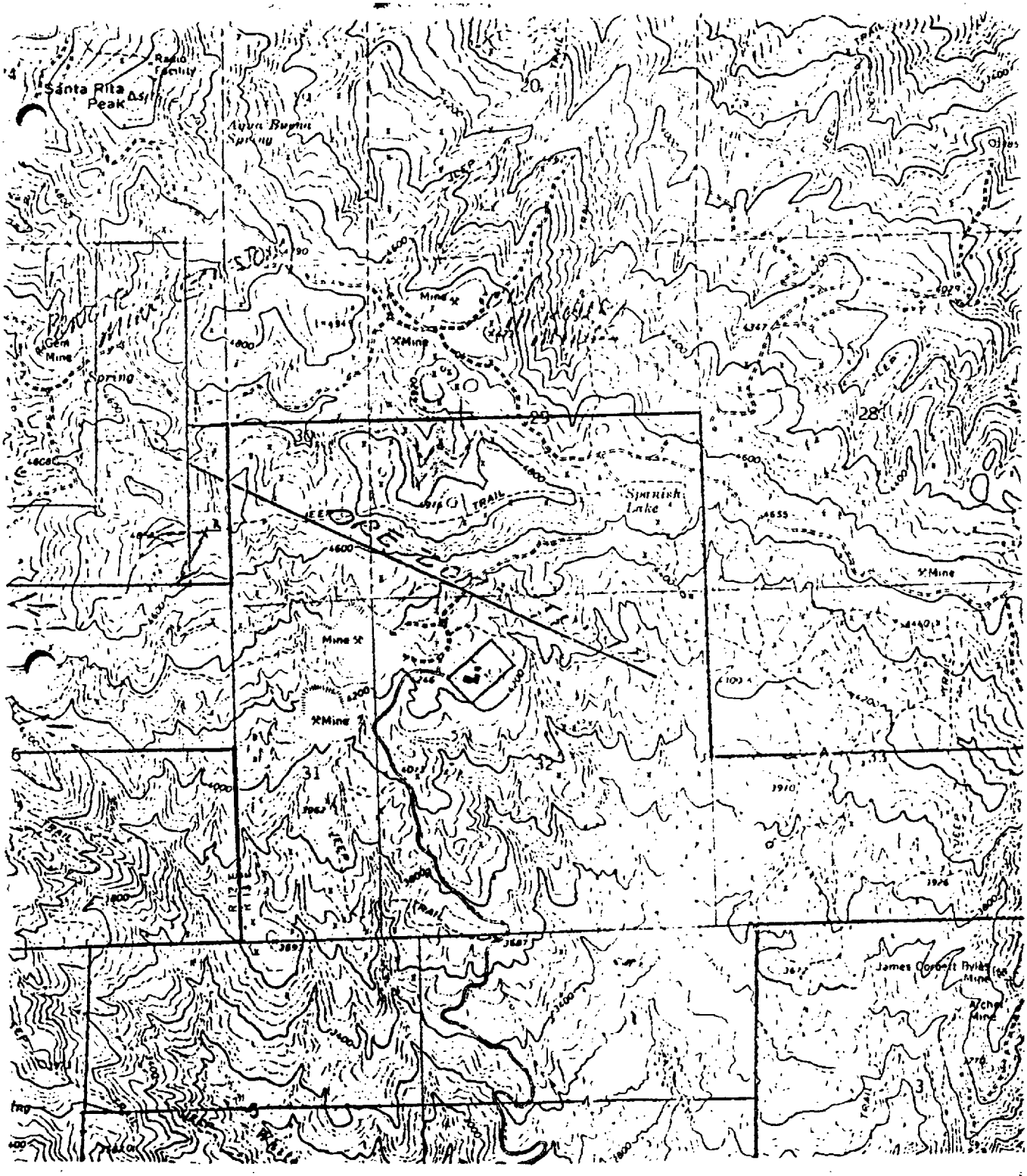
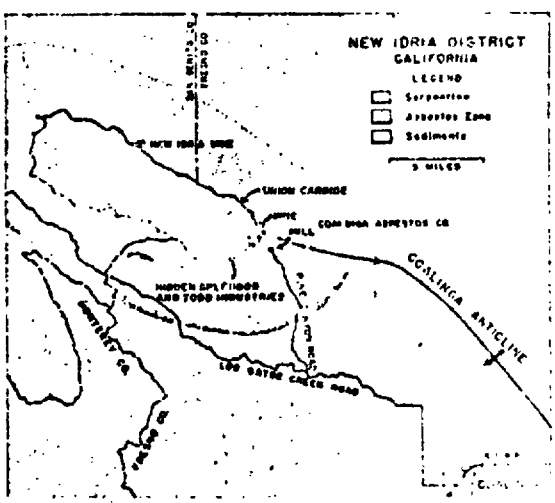


Fig. 7. Topographic Map showing Atlas Mill, Pit, and Area Covered By Claims.

UCC 007620

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 19 of 61 **asbestosclaims.law/library/18303/19**



Coalinga Asbestos Co. map showing general area of New Idria intrusive and location of major company interests.

Fig. 8. Asbestos Mining Operations.

UCC 007621

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com… Published by AsbestosClaims.Law
ACL Doc 18303 · Page 20 of 61 **asbestosclaims.law/library/18303/20**

Fig 9 SCHEDULE OF ASBESTOS SALES
BY TONS
MARCH 1963 THRU DECEMBER, 1973

	1963	1964	1965	1966	1967	1968	1969
JANUARY	---	780	514	1,185	781	1,882	991
FEBRUARY	---	721	742	729	698	1,463	745
MARCH	43	755	726	998	950	1,325	1,503
APRIL	302	491	882	1,010	917	1,080	1,432
MAY	389	33	1,005	994	995	1,178	1,364
JUNE	317	284	614	470	425	734	583
JULY	431	469	939	1,171	825	703	603
AUGUST	805	700	1,032	1,234	1,529	1,612	1,163
SEPTEMBER	560	555	1,260	1,831	1,346	922	1,034
OCTOBER	577	910	1,251	1,655	1,573	1,383	478
NOVEMBER	499	777	1,410	1,260	1,585	1,601	718
DECEMBER	795	545	1,295	1,067	1,432	1,407	380
TOTAL	4,718	7,020	11,670	13,604	13,056	15,290	11,024
% INCREASE/YEAR		49%	66%	17%	(-4%)	17%	(-28%)
% OVER BASE 1965			0	17%	12%	31%	(- 6%)

	1970	1971	1972	1973
JANUARY	541	781	1,321	1049
FEBRUARY	728	848	1,256	798
MARCH	1,230	610	1,029	781
APRIL	893	897	1,016	1675
MAY	845	1,554	569	1456
JUNE	575	944	750	764
JULY	501	1,075	809	1337
AUGUST	835	1,834	1,037	1247
SEPTEMBER	1,447	902	649	1372
OCTOBER	1,549	1,111	1,244	1195
NOVEMBER	1,432	971	969	227
DECEMBER	1,286	1,230	1,227	539
TOTAL	11,862	12,757	11,876	12,240
% INCREASE /YEAR	7.6%	7.5%	(-6.9%)	3.1%
% OVER BASE 1965	1.6%	[illegible]	1.8%	4.9%

UCC 007622

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 21 of 61
asbestosclaims.law/library/18303/21

Several other products have been made and sold but, when compared to the two leaders, were very small in tonnages.

Plant or Mill

Owing to the soft and disintegrated character of the ore itself, the mill process can be essentially a screening and vacuuming of the light platy fiber away from grit or harder serpentine particles. Naturally, the ore moisture must be reduced down to one or two percent before concentration. This description sounds simple, but a vast amount of machinery and process is needed to produce a pure grit-free fiber. True, the crushing and grinding machinery needed for the hard type serpentine cross fiber chrysotile ores is eliminated here but this type of ore creates more dust and health hazard in its milling. Fig. 10 is reduced scale copy of a flow-sheet of the plant and it shows the layout of the machinery.

It has been generally agreed that the plant lacks air for efficient concentration.

Further, one more fiberizer is needed and a number of minor repairs should be made throughout the mill to the air system.

Cost of Production

Four sheets have been included which show the direct operating costs per ton of fiber to be as follows:

MARSHALL and STEVENS incorporated

UCC 007623

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 22 of 61
Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/22

Year	Fiber Tons Sold	Direct Cost/Ton*	Possible Misc.Exp.	Probable Total
1972	11,877	$48.29	$6.25	$54.64
1971	12,757	48.83	5.90	54.73
1970	11,862	49.93	6.35	56.28
1969	11,204	49.28	6.65	55.93
1968	15,290	49.49	4.90	54.39

At 15,000 tons fiber per year, the total costs have been estimated at $57.83 per ton for the year 1974, with no changes or improvement.

By changing the mining methods and plant operations, it has been estimated these costs per ton can be reduced to $53.85 for 15,000 ton rate, almost exactly $4.00/ton savings.

With major capital expenditures totaling $315,000, it is estimated the costs can be reduced another $8.00 down to $45.82 per ton on the 15,000 tons per year rate.

Three calculations of operating costs have been made on the following premises:

1. Calculate costs of product

   a. 10,000 tons/year fiber = 95, [illegible] tons wet ore
   b. 15,000 tons/year fiber = 141, [illegible] tons wet ore
   c. 19,375 tons/year fiber = 182, [illegible] tons wet ore
   d. 28,125 tons/year fiber = 264, [illegible] tons wet ore

2. Use output -- 40 tons/shift 1st shift
   37.5 tons/shift 2nd shift
   35.0 tons/shift 3rd shift

	1st Shift 8:00-4:00	2nd Shift	3rd Shift	Total
One Shift	10,000	---	---	10,000
Two Shift	10,000	9,375	---	19,375
Three Shift	10,000	9,375	8,750	28,125

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 23 of 61 asbestosclaims.law/library/18303/23

3. Use $0.048 for amortizing overburden removal.

4. Use D-7 dozer to feed new belt feeder to vibrating grizzley over new 45 ton feed bin.

@ 10,000 tons cost.

Feeding ore	1.33 hrs./shift	x 250	=	333 hrs.
Other	1.00 hrs. shift	x 250	=	250 hrs.
		Total		583 hrs.

Fuel: 4,081 gal. @ 22¢	= $ 900.00
M&R Parts 1.60 x 538	= 932.00
M & R Labor & Serv.	= 1,749.00 @ $3.00/hr.
Depreciation: 5.50 x 583	= 3,206.00
Insurance	= 1,700.00

D-7 Loader & Dozer:

Tons/year	1 10,000	1.5 15,000	2.0 20,000	3.0 30,000
F-O-G	$ 900	$ 1,350	$ 1,800	$ 2,700
M & R Parts	932	1,398	1,864	2,796
M & R Labor	1,749	2,624	3,498	5,247
Deprec.	3,206	4,809	6,412	9,618
Ins. (Put in G&A)	(1,700)	(1,700)	(1,700)	(1,700)
	$ 6,787	$10,181	$13,574	$20,361

5. Road Grader (Cat 12)

Include under "Finish Product Handling."

6. Fork Lift

Tons/year	1.0 10,000	1.5 15,000	2.0 20,000	3.0 30,000
F-O-G	240	360	480	720
M & R Parts	1,000	1,500	1,750	2,500
M & R Labor		In D-7 above		
Tires	120	180	240	360
Depreciation	2,700	2,700	2,700	2,700
Fork Lift Total	4,060	4,740	5,170	6,280
D-7 (from above)	6,847	10,181	13,574	20,361
Total	10,907	14,921	18,744	26,641
Other	2,558	2,620	2,860	614
TOTAL MOBILE EQUIP.	13,465	17,541	21,604	27,255

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 24 of 61 asbestosclaims.law/library/18303/24

7. Operating Labor - Milling (Processing)

Classification	1st shift Rate	1st shift Shift	2nd shift Rate	2nd shift Shift	3rd shift Rate	3rd shift Shift
Leadman Mill	$5.17	$10,340	$5.29	$10,580	$5.37	$10,740
Equip.Dozer Man	4.70	9,400	4.82	9,640	4.90	9,800
Truck Driver	4.70	9,400	4.82	9,640	4.90	9,800
Mill Oper-A	4.22	8,440	4.34	8,680	4.42	8,840
Mill Oper-B	3.95	7,900	4.07	8,140	4.15	8,300
Mill Oper-B	3.95	7,900	4.07	8,140	4.15	8,300
General Work	3.59	7,180	3.71	7,420	3.79	7,580
Bus Driver	3.59	7,180	3.71	7,420	3.79	7,580
No. Men 8	---	$67,740	---	$69,660	---	$70,940

MER used	1 shift	(10,000)	$67,500			$ 67,500
	2	(20,000)	67,500	$69,660		136,920
EEO	3	(30,000)	67,500	69,660	$70,940	208,100

8. M & R Labor (Mechanics)

Classification	1st shift Rate	1st shift Shift	2nd shift Rate	2nd shift Shift	3rd shift Rate	3rd shift Shift
Mechanic Leadman	$5.17	$10,340	---	---	---	---
Mechanic A	4.70	9,400	$4.82	$ 9,640	$4.90	$ 9,800
Mechanic Helper	4.22	8,440	4.34	8,680	4.42	8,840
Total		$28,180		$18,320		$18,640

10,000 tons	$28,180			$28,180
20,000 tons	28,180	$18,320		45,500
30,000 tons	28,180	18,320	17,640	64,140

9. Dryer Burner Oil

436×10^3 Btu needed/Ton Feed ÷ 157 [illegible]
$436 \times 10^3 \div .66$ (eff.) = 661×10^3 Btu/Ton Ore
$20{,}000 \times 10^3 \div 661 \times 10^3$ = 30 tons/hr. feed.
Coalinga oil is 150,150 Btu per gal.
661,000 ÷ 150,000 = 4.40 gal./ton
4.40 x $0.1024 = $0.45/ton feed
at 30 tons/hr. - 132 gal./hr. or
$13.50/hr. or $108/shift.

250 shift = $27,000
500 shifts = $54,000
750 shifts = $81,000

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 25 of 61
asbestosclaims.law/library/18303/25

The above calculations assume the present dryer 4½' x 40' is large enough to handle 40 tons per hour and do the job. If about 30% is scalped off by the trommel, then 43 tons of feed per hour can be treated.

Further, 66% dryer efficiency on this type of material can be high and the efficiency could be as low as 50 to 55 percent.

During the wet season with the high air humidity and greater moisture content of the feed, drying may be a bottleneck for full capacity.

Residence time plus stirring and tumbling may greatly add efficiency to the drying operation by means of a 20' to 30' long heavy screw conveyor working in a closed tank. This would utilize the latent heat from the dryer and cool down the dry ore before dumping it into the bin. Cooler dry ore can help the caking problem in the bin.

Naturally, the present dryer above will work at much greater efficiency on a three shift around-the-clock operation. Should the plant be run in a ten-day back-to-back campaign greater efficiency could also be achieved rather than five days plus two shut downs calendar week.

Latent waste heat from the dryer could be directed around the bin to avoid the caking problem. ?

10. Bags

Use budget figure of $3.939 per ton of fiber. This is about 10¢ per plastic bag each.

11. M & S Other Than Bags

Use budget of $1,332 because of planned better efficiency of new installation.

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 26 of 61
Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/26

12. M & R Parts (other than mobile)

Use budget of $0.666/ton.

13. Utilities - (other than phone)

Use for 10,000 ton rate - $19,800 1.980 per ton fiber
15,000 ton rate - 26,822 1.780 per ton fiber
20,000 ton rate - 32,366 1.618 per ton fiber
30,000 ton rate - 36,000 1.200 per ton fiber

14. Telephone

Put in Coalinga G & A.

15. Employee Benefits

	Union	Non-Union
Holidays	4.40	---
Vacation	4.00	4.00
FICA	4.85	4.85
SUI	4.10	4.10
FUI	0.58	0.58
Work. Comp.	3.40	3.40
H & W	10.40	---
TOTAL	31.73%	16.93%

16. Depreciation

	$37,818
	15,000
Total	$52,818

17. Finish Product Handling (Total Costs)

	10,000	15,000	20,000	30,000
F-O-G	2,716	4,074	5,432	8,148
M&R Parts	1,950	2,925	3,900	5,850
M&R Labor	1,575	2,363	3,150	4,725
Tires	1,090	1,635	2,180	3,270
Deprec.	3,900	3,900	3,900	3,900

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 27 of 61 asbestosclaims.law/library/18303/27

18. Finish Product Handling (Other)

Operating Labor

Tons	Warehouse Forklift	Truck Driver	Total
10,000	$ 8,440	$ 9,400	$17,840
15,000	8,440	10,288	18,728
20,000	11,253	14,100	25,353
30,000	16,880	20,576	37,456

19. M & S Other Than Bags

Tons	Pallets Etc.	Slip Sheets	Total
10,000	$1,390	$2,560	$ 3,950
15,000	2,085	3,840	5,925
20,000	2,780	5,120	7,900
30,000	4,170	7,680	11,850

20. Equipment Rental (Tractor)

10,000	$13,050
15,000	14,035
20,000	15,000
30,000	16,956

21. Property Rental (Coalinga Warehouse)

$4,200/year (All units)

Plant Improvements

Several improvements are schedules for the plant and chief of these is more air or another fan unit. This is needed not only to meet plant expansion and recover more fiber but also to meet the new standards set up by EPA and OSHA. Another hydraulic packer is needed to eliminate a bottleneck at this point.

Further, another fiberizer is needed to boost output.

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 28 of 61
Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/28

Several minor but important plant items are needed. These are:

	Item-Mobile Equipment	10,000 Ton 95,000 tons ore wet	Milling	10,000 Tons Fiber/Year Unfin. Unit Cost	Finish. Prod. Cost	Finish. Unit Cost
3	Fuel Oil Grease		$ 1,540	$ 0.154	$ 2,720	$0.272
4	M & R Parts		2,180	0.218	1,950	0.195
5	M & R Labor		2,070	0.207	1,575	0.158
6	Tires		270	0.027	1,090	0.109
7	Depreciation		7,410	0.741	3,900	0.390
11	Sub-total		$ 13,470	$ 1.347	$11,235	$1.124
13	Contracts Mining @ 45¢/ton	$42,750	--	--	--	--
14	Operating Labor		67,500	6.750	17,840	1.784
15	M & R Labor		25,200	2.520	--	--
16	Dryer Burner Fuel		28,730	2.783	--	--
17	Bags		39,390	3.939	--	--
18	M & T (Other)		13,320	1.332	3,950	0.395
19	M & R Parts (Other)		6,660	0.666	--	--
20	Equipment Rental		--	--	13,050	1,305
21	Utilities (except phone)		19,800	1.980	--	--
23	Heating		2,400	0.240	--	--
24	Property Rental		--	--	4,200	0.420
25	Super., Office Sales		13,200	1.320	--	--
26	Employee Benefits		32,594	3,259	6,160	0.616
31	Depreciation		52,818	5,282	--	--
32	Amortization @ 4.10¢/wet ton (ore)	3,880	--	--	--	--
33	Misc. Taxes		--	--	900	0.090
34	Sub-Total	$46,630	$301,612	$30.161	$46,100	$4.610
	TOTAL	$46,630	$315,082	$31.508	$57,335	$5.734
	Total Cost/Ton Fiber	$ 4.663		$31.508		$5.734

UCC 007630

MARSHALL and STEVENS incorporated

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 29 of 61 asbestosclaims.law/library/18303/29

15,000 Ton				15,000 Tons Fiber/Year	
Item-Mobile Equipment	141,175 Tons Ore Wet	Milling	Unfin. Unit Cost	Finish. Prod. Cost	Finish. Unit Cost
3 Fuel Oil Grease		$ 2,110	$ 0.141	$ 4,074	$0.272
4 M & R Parts		3,148	0.210	2,925	0.195
5 M & R Labor		2,944	0.196	2,363	0.158
6 Tires		330	0.022	1,635	0.109
7 Depreciation		9,009	0.601	3,900	0.260
11 Sub-Total		$ 17,541	$ 1.170	$14,897	$0.994
13 Mining Contract	$63,530	--	--	--	--
14 Operating Labor		104,474	6.965	18,788	1.253
15 M & R Labor		37,800	2.520	--	--
16 Dryer Burner Fuel		42,410	2.827	--	--
17 Bags		59,085	3.939	--	--
18 M & S Other		19,980	1.332	5,925	0.395
19 M & R Parts Other		9,990	0.666	--	--
20 Equipment Rental		--	--	14,025	0.935
21 Utilities except phone		26,822	1.788	--	--
23 Heating		2,400	0.160	--	--
24 Property Rental		--	--	4,200	0.280
25 Super. Office Sales		13,200	0.880	--	--
26 Employee Benefits		47,407	3.160	6,692	0.446
31 Depreciation		52,820	3,521	--	--
32 Amortization 4.1¢/ton wet	5,788	--	--	--	--
33 Misc. Taxes		--	--	900	0.060
34 Sub-Total	$69,318	$416,388	$27.758	$50,530	$3.369
TOTAL	$69,318	$433,929	$28.928	$65,427	$4.363
Total Cost/Ton Fiber	$ 4.620		$28.928		$4.363

UCC 007631

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 30 of 61
asbestosclaims.law/library/18303/30

19,375 Tons				19,375 Tons Fiber/Year	
Item-Mobile Equipment	182,500 Tons Ore Wet	Milling	Unfin. Unit Cost	Finish. Prod. Cost	Finish. Unit Cost
3 Fuel, Oil, Grease		$ 2,596	$ 0.134	$ 5,270	$0.272
4 M & R Parts		3,739	0.193	3,778	0.195
5 M & R Labor		3,739	0.193	3,061	0.158
6 Tires		620	0.032	2,112	0.109
7 Depreciation		10,288	0.531	3,778	0.195
11 Sub-Total		$ 20,982	$ 1.083	$17,999	$0.929
13 Contracts Mining @ 45¢/Ton Wet	$82,125	--	--	--	--
14 Operating Labor		133,240	6.877	24,600	1.270
15 M & R Labor		45,200	2.333	--	--
16 Dryer Burner Fuel		49,000	2.529	--	--
17 Bags		76,400	3.943	--	--
18 M & S Other		25,950	1.339	7,650	0.395
19 M & R Parts Other		12,900	0.666	--	--
20 Equipment Rental		--	--	15,000	0.774
21 Utilities except phone		31,420	1.622	--	--
23 Heating		2,320	0.120	--	--
24 Property Rental		--	--	4,200	0.217
25 Super. Office Sales		13,200	0.681	--	--
26 Employee Benefits		58,550	3.022	9,700	0.501
31 Depreciation		52,820	2.726	--	--
32 Amortization @ 4.10¢/ton wet	7,500	--	--	--	--
33 Misc. Taxes		--	--	900	0.046
34 Sub-Total	$89,625	$501,000	$25.858	$62,050	$3.203
TOTAL	$89,625	$521,982	$26.941	$80,049	$4.132
Total Cost/Ton Fiber	$ 4.620		$ 26.941		$4.132

UCC 007632

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 31 of 61
asbestosclaims.law/library/18303/31

28,125 Tons | 28,125 Tons Fiber/Year

	Item-Mobile Equipment	264,000 Tons Ore Wet	Milling	Unfin. Unit Cost	Finish. Prod. Cost	Finish. Unit Cost
3	Fuel Oil Grease		$ 4,345	$ 0.155	$ 7,660	$0.272
4	M & R Parts		6,140	0.218	5,445	0.194
5	M & R Labor		5,830	0.207	4,446	0.158
6	Tires		760	0.027	3,075	0.109
7	Depreciation		10,180	0.362	3,100	0.110
11	Sub-Total		$ 27,255	$ 0.968	$23,726	$0.844
13	Contract Mining	$118,800	--	--	--	--
14	Operating Labor		207,620	7.382	35,500	1.262
15	M & R Labor		65,140	2.316	--	--
16	Dryer Burner Fuel		63,800	2.268	--	--
17	Bags		110,800	3.940	--	--
18	M & S Other		37,600	1.337	11,100	0.395
19	M & R Other Parts		18,600	0.661	--	--
20	Equipment Rental		--	--	16,600	0.590
21	Utilities except phone		45,000	1.600	--	--
23	Heating		2,400	0.085	--	--
24	Property Rental		--	--	4,200	0.149
25	Super. Office Sales		13,200	0.469	--	--
26	Employee Benefits		86,550	3.077	12,010	0.427
31	Depreciation		52,817	1.878	--	--
32	Amortization @ 4.10¢/ ton wet	10,825	--	--	--	--
33	Misc. Taxes		--	--	900	0.032
34	Sub-Total	$129,625	$703,527	$25.012	$80,310	$2.855
	TOTAL	$129,625	$729,78[illegible]	$25.981	$104,036	$3.699
	Total Cost/Ton Fiber	$ 4.620		[illegible].981		$3.699

UCC 007633

MARSHALL and STEVENS incorporated

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 32 of 61 asbestosclaims.law/library/18303/32

Several minor but important plant items are needed. These are:

1. Cover or canopy over the feed bin plus a larger bin to allow D-7 feed to plant and grizzley.

2. Asphalt black top yard and trailer parking area. This will eliminate most loading problems and even allow storage space for palletized fiber in corners and unused areas.

3. Provide a new shower and change room or renovate the present one plus possibly one more toilet in mill itself.

4. Dust control and floor cleanup to show the best possible clean housekeeping.

5. Study methods of dust control of tailings. A cheap asphalt spray over permanent older tailings piles could eliminate much of the air-borne dust and asbestos background count of the areas.

6. Should the dryer prove to be inadequate, the addition of a cooling trough could possibly give the little extra added drying capacity to avoid the necessity of another or bigger rotary dryer. Also, the action of such a screw conveyor could be just what's needed in the way of a "fluffing" operation to improve recovery.

7. A complete check, renovation or repair of the air or "vacuum system" to eliminate leaks can work wonders to improve the day-to-day operations.

8. Another place where flexibility in plant operation may be achieved is by extension of the pit to the southeast into higher grade material where a second lower grade stockpile can be made up to draw from whenever a "sweetener" is needed. This gives your superintendent a chance to smooth out breakdowns and emergencies without explain. why output could be a bit low.

These plant improvements and renovations are estimated by your staff to total $315,000. It is this writer's opinion that an additional $50,000 should be budgeted for additional plant cleanup and additions to meet EPA and OSHA requirements.

UCC 007634

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 33 of 61 asbestosclaims.law/library/18303/33

This fund can be calculated as follows:

Yr.	Amount for Int.	Rate	Interest	Annual Payment	Total Payment
1	$365,000	9%	$32,850	$73,000	$105,850
2	292,000	9%	26,280	73,000	99,280
3	219,000	9%	19,710	73,000	92,710
4	146,000	9%	13,140	73,000	86,140
5	73,000	9%	6,570	73,000	79,570

If we take the payment for the first year of $105,850 and divide it by the several outputs we get the following:

Annual Rate	Total Payment	Cost/Ton Fiber
10,000	$105,850	$10.59
15,000	105,850	7.06
19,375	105,850	5.46
28,125	105,850	3.76

Two other items of cost must be included and these are selling costs and total G&A for both Coalinga and Alhambra. These are estimated from past records and budgets as follows:

Tons Fiber Per Year	Cost Selling	Total G & A
10,000	$3.03	$6.40
15,000	2.02	4.26
19,375	1.56	3.32
28,125	1.08	2.28

Assembling and compiling all these various costs gives a table showing these cost centers for the several tonnages of fiber annual outputs as follows:

UCC 007635

MARSHALL and STEVENS incorporated

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 34 of 61
asbestosclaims.law/library/18303/34

COST PER TON

RECAP OF VARIOUS OUTPUTS

Tons/yr. Fiber	Min. Cost	Mill	Product Mktg.	Selling	Total G & A	Int. & Cap.Exp.	Total
10,000	$4.62*	$31.51	$5.73	$3.03	$6.40	$10.59	$61.88
15,000	4.62	28.93	4.36	2.02	4.26	7.06	51.25
19,375	4.62	26.87	4.13	1.56	3.32	5.46	45.96
28,125	4.62	25.98	3.70	1.08	2.28	3.76	41.42

With these estimated costs and value for the fiber output an economic balance sheet can be set up for the various annual tonnages:

Tons	Sales at $55.72/Ton+	Total Costs	Net Before Fed.& St.Tax
10,000	$ 557,200	$ 618,800	($ 61,600)
15,000	835,800	768,750	67,050
19,375	1,079,575	891,145	188,430
28,125	1,567,125	1,164,928	402,187

Thus, it would seem from the above that the "break-even" output, even after expansion of plant, would be around 12,000 tons/year.

Even with the time needed to install the mill improvements, it would appear that for the year of 1975, 20,000 to 22,000 tons could be a target figure to shoot for. Then, it seems that it should be possible to aim for 28,000 to 30,000 tons for the year of 19[illegible], and for each year thereafter.

---

* $4.663 here but used $4.62.

\+ Calculated by EEO; compares with MWR's $55.59.

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 35 of 61 asbestosclaims.law/library/18303/35

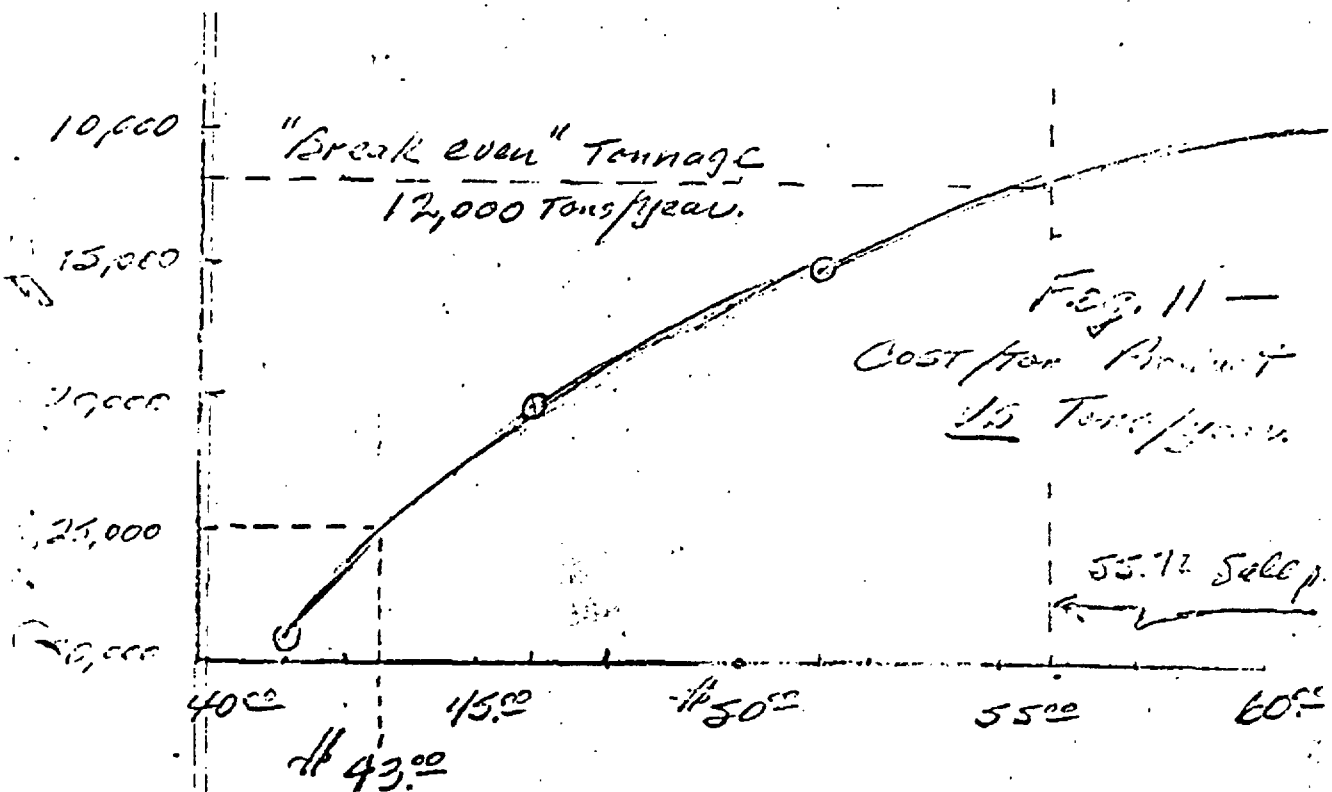


Fig. 11 — Cost for Plant of 25 Tons/year

Fig. 11, — above Graph is to estimate annual cost of operating 25,000 Tons per year at Prices of $43/Ton, or any other Tonnage per year.

UCC 007637

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com…
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 36 of 61
asbestosclaims.law/library/18303/36

It is possible, as pointed out by your management, that surplus capacity can be achieved for an emergency surge of production by using a fourth shift to increase productive campaigns to full 30 days per month. Some efficiency would be sacrificed in this manner because the four-day down time every two weeks would be lost and thus this valuable repair work time would not be available.

Further, to work well the fourth shift crew would need to be used effectively a full 20 days a month or they would seek employment elsewhere if many lay-offs occurred.

EPA and OSHA Health Requirements

Asbestos mining and milling has always been considered a hazard to health due to dust and fine particles. In recent years, we have the entrance of two new federal agencies with power to enforce standards on the industry. Both OSHA and EPA seem to have power to enforce regulations and even levy fines for what they consider non-compliance.

Even the test standards for particles of asbestos of five fibers larger than five microns per millilter of air cannot be checked by two different men using identical equipment. Until we have techniques accurate enough to give identical test assays, all the industry can do is use their best judgment as to the probable standards which will eventually be established.

A report prepared in 1971 by the National Academy of Sciences and Engineering on "Airborne Asbestos" under the chapter heading "Research Needs" states:

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 37 of 61 asbestosclaims.law/library/18303/37

Two recent reports[25,167] have discussed in some detail the many kinds of research needed to answer pressing questions concerning the effects of asbestos on health and the degree and nature of necessary controls. Investigations along the following lines should be given high priority.

Study of the mechanism of action of the asbestos minerals should continue, with particular attention to carcinogenic effects. It is important to learn more about the influence of asbestos type and fiber size on respirability, deposition, retention, translocation, and effects at the tissue, cellular, and molecular levels with and without cofactors. It is especially important that the role of fibers below the LM range be clarified.

Methods of sampling, identifying, and quantitating airborne asbestos need continued development. Coordination with studies in animals and man is essential to ensure that environmental data will be biologically relevant. Similarly, methods for identifying and quantitating asbestos in biologic tissue need development and application.

Quantitative methods for measuring airborne asbestos should be applied widely to determine the natural background and the concentration and distribution of fibers in the air near various sources. Conventional LM methods and EM methods should be applied simultaneously in selected occupational and community situations.

More epidemiologic studies are needed. Populations in several different exposure ranges should be stidues, including occupational, household, and neighborhood exposures. Special studies of mesothelioma are needed to determine whether the incidence has been increasing and to determine the current pattern of distribution. A large series of routine autopsies should be studied to determine whether causes of death can be related to amounts of asbestos in the lungs and other organs. All the above are urgent if a range of safe exposure is to be established with confidence. (Underscoring supplied)

---

25 Cralley, L.J., H.C. Cooper, W.S. Lainhart & M.C. Brown, "Research on Health Effects of Asbestos. - J. Occup. Med. 10:38-41, 1968.

167 Working group on Asbestos and Cancer Report and Recommendations of the working group covered under the auspices of the Geographical Pathology Committee of the International Union against Cancer. Environmental Health 11:22- , 1965.

UCC 007594

MARSHALL and STEVENS Incorporated

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 38 of 61 asbestosclaims.law/library/18303/38

Until we get answers to these questions as cited above, we don't really know how far to go in attempting to meet standards.

All we can plan to do in this regard is to keep as clean a mill as possible within the cost budgeted for improvements. Further, it would seem possible to allow modest price increases for the product to allow more health and pollution measures if they are needed to meet government regulations.

It could be that even one man per shift will be required on nothing but cleanup work and when this becomes necessary, the price for the fiber must increase about $1 per ton to cover this alone.

Just because asbestos presents an environment and health problem, there seems no reason to consider this will close down the industry. We need asbestos in many items of our life and the price must be adjusted to pay for these additional measures to work under healthy conditions.

As suggested earlier, there may be a method of coating and stabilizing the surface of the older more permanent tailings dumps to minimize wind-blown asbestos. The fines dumps may be controlled with water as is now being done.

It is not certain, of course, that the dumps contribute more asbestos in wind-blown form than, say, the open pit or even undistrubed hillsides, but some tests would be in order.

UCC 007595

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 39 of 61
asbestosclaims.law/library/18303/39

Marketing and Prices

The asbestos product from this area is chemically the same as chrysotile mineral or serpentinite and has been labeled chrysotile. However, the mats and flakes of pure Coalinga mineral are so different from Grade 7 Quebec product that it should be labeled with its own appellation. It is suggested that the term "Coalingite" or "Idriaite" be adopted to distinguish this unique mineral product.

From the utility standpoint, this product replaces Grade 7 chrysotile for floor tile in the ratio of 10 to 18 percent. With Quebec Grade 7 chrysotile selling for $50.00 per ton, this Coalinga product should receive $50 ÷ 10/18 = $90. Further, the whiteness of the Coalinga mineral reduces the need for costly titanium oxide from five percent down to three percent and this alone would be 40 pounds less of the costly and scarce titanium oxide per ton of tile mix.

Thus, we can see that from the standpoint of utility and replacement of Quebec Type 7 chrysotile, the Coalinga product should be priced at double the price for the Quebec material. Today $100 per ton for Coalingite would be realistic.

For the past decade in the development of markets for this new unique mineral product it was unfairly priced as Chrysotile Grade 7 before its adaptability and ratio of substitution were know. Further, Johns-Manville may have wanted to keep the price of the Coalinga mineral in line with their Grade 7 product.

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com… Published by AsbestosClaims.Law
ACL Doc 18303 · Page 40 of 61 **asbestosclaims.law/library/18303/40**

For these reasons, it may be that a greater price increase for the Atlas asbestos is long overdue and it should be priced according to its adaptability rather than a historic "bargain" price used to create markets and gain a toe hold in the business.

In this regard shouldn't Atlas today scan very carefully a page from the book guiding the Arabs?

Recommendations

With customers from Johns-Manville now coming to Atlas, it would appear that Atlas can now sell all the product they can make. Even with a temporary slackening in demand for tile (should it occur) there still seems almost an unlimited market for the limited capacity of the Atlas operation.

For this reason, careful consideration should be given to the program of mill renovation and supplementation costing between $365,000 and $400,000 and boosting the present capacity from 15,000 to 20,000 tons up to 28,000 to 30,000 tons per year.

At the same time these capital expenditures are needed to meet improvements in health standards for OSHA and EPA compliance, and allow extra air for increased output and produce a new product - AZ-100. Without about $150,000 to $200,000 (approximately half) the capital expenditures, the operation would be forced to close on November 28, 1974. It is your management's suggestion and plan to supplement these required expenditures with a like sum and put the operation on a more efficient economic basis.

UCC 007597

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 41 of 61
asbestosclaims.law/library/18303/41

For these plans we agree that conditions appear to justify this expenditure of between $365,000 and $400,000.

Valuation of Mineral Unit

For the valuation of the complete operating unit with the capital expenditures and on the premise of costs and product prices as developed above, a table for a minimum value was computed.

In this computation, we have provided for re-capture of the additional capital investment of $365,000 over a 5-year period, or $73,000 per year. Depreciation over a 15-year period as shown in a preceeding section of this analysis has been computed at $52,818 per year. A summary of the resulting valuation, using a 12% rate of return in the investment is as follows:

Year	Net After Tax	Deprec.& Recap.of Add. Inv.	Cash Flow	Return on Invest.*	Excess to Min. Rights	1974 P.V. @ 12%
1974	$148,352	$125,818	$274,170	$125,000	$149,170	$ 133,188
1975-78	304,304	125,818	430,122	125,000	305,122	827,466
1979-88	304,304	52,818	357,122	125,000	232,122	661,033
						$1,621,687
Rounded to						$1,622,000

Investment	$1,054,000	Present Facilities
	196,000	Working Capital
	$1,250,000	

Based on the foregoing, in our opinion, the fair market value of the mineral rights as a part of the going concern may be reasonably stated as $1,622,000.

* $1,250,000 x 10%.

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 42 of 61 asbestosclaims.law/library/18303/42

ADDENDA

MARSHALL and STEVENS incorporated

UCC 007599

ATLAS ASBESTOS CO.
SCHEDULE OF MINING PROPERTIES
LOCATED IN
FRESNO COUNTY, CALIFORNIA

PLACERS

RHODES-MINGUS MINING DEED

CLAIM NAME	ORIGINAL RECORDED DATE	BOOK	PAGE	AMENDED RECORDED DATE	BOOK	PAGE
CONDON	4-24-24	444	448			
GOOD FRIDAY	4-24-24	448	160			
WHITE CREEK	4-24-24	450	145			
BIG WHITE	4-2-24	442	309			
JOAQUIN	4-24-24	447	290			
CRESTA BLANCA	4-24-24	451	124			
PROSPECTOR	4-2-24	440	312	3-26-56	3745	232*
LONEPINE	4-2-24	439	349	3-26-56	3745	231*

CONN MINING DEED

CLAIM NAME	ORIGINAL RECORDED DATE	BOOK	PAGE	AMENDED RECORDED DATE	BOOK	PAGE
WHITE HILL	5-25-56	3774	591	8-25-61	4601	45
" "				9-27-61	4615	366
LAKE PASS	5-14-56	3769	130	5-24-56	3774	76
FISH BOWL	1-16-57	3869	656			
TRIUMPH #4	1-4-57	3864	322			
BOBCO #4	3-15-57	3898	480	7-30-57	3954	614
" (VOID?)				8-25-61	4601	43
BOBCO #5	3-15-57	3898	482	7-30-57	3954	615
" (VOID?)				8-25-61	4601	41
TAILWIND	5-14-56	3769	129	5-24-56	3774	75

*RELOCATED

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 44 of 61
asbestosclaims.law/library/18303/44

ATLAS ASBESTOS CO.
SCHEDULE OF MINING PROPERTIES
LOCATED IN
FRESNO COUNTY, CALIFORNIA

PLACERS

ATLAS ASBESTOS CO.

CLAIM NAME	ORIGINAL RECORDED DATE	ORIGINAL BOOK	ORIGINAL PAGE	AMENDED RECORDED DATE	AMENDED BOOK	AMENDED PAGE
ROVER	2-3-58	4023	572	2-5-58	4173	288*
LAKE PASS #2	9-28-61	4615	580			
NEW FISH BOWL	9-28-61	4615	576			
NORTH STAR	9-28-61	4615	574			
NEW TRIUMPH #4	9-28-61	4615	578			
GADCO #1	6-22-59	4237	658			
GADCO #2	6-22-59	4237	659			
BIG BLACK	4-10-56	3752	354			
BIG LAVENDAR	4-10-56	3752	355			
BIG GRAY	4-10-56	3752	356			
BIG GREEN	4-10-56	3752	357			
BIG BLUE	4-10-56	3752	358			
BIG RED	4-10-56	3752	359			
BIG SHALE	3-26-56	3745	230			
HAYDAY #1	4-3-62	4701	268			

*RELOCATED

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 45 of 61
asbestosclaims.law/library/18303/45

ATLAS ASBESTOS CO.
SCHEDULE OF MINING PROPERTIES
LOCATED IN
FRESNO COUNTY, CALIFORNIA

LODES

ATLAS ASBESTOS CO.

CLAIM NAME	ORIGINAL RECORDED DATE	BOOK	PAGE	AMENDED RECORDED DATE	BOOK	PAGE
ROVER	12-29-58	4154	282			
HUNGRY JOE	2-9-59	4174	525			
POTLUCK 1	12-8-58	4145	341			
POTLUCK 2	12-8-58	4145	340			
POTLUCK 3	12-30-58	4155	198	2-5-59	4173	296
MIKE 1	8-26-59	4265	167	8-9-60	4424	106
MIKE 2	8-26-59	4265	168	8-9-60	4424	108
MIKE 3	8-26-59	4265	169	8-9-60	4424	110
MIKE 4	8-26-59	4265	170	8-9-60	4424	112
MIKE 5	8-26-59	4265	171	8-9-60	4424	114
MIKE 6	8-26-59	4265	172	8-9-60	4424	116
MIKE 7	8-26-59	4265	173	8-9-60	4424	118
MIKE 8	8-26-59	4265	174	8-9-60	4424	120
MIKE 9	8-26-59	4265	175	8-9-60	4424	122
MIKE 10A	10-6-59	4282	142	8-9-60	4424	124
MIKE 11	11-9-59	4296	293	8-9-60	4424	126
MIKE 12	11-9-59	4296	291	8-9-60	4424	128
MIKE 13	8-26-59	4265	176	8-9-60	4424	130
MIKE 14	10-6-59	4282	143	8-9-60	4424	132
MIKE 15	10-6-59	4282	144	8-9-60	4424	134
MIKE 16	10-6-59	4282	145	8-9-60	4424	136
MIKE 17	10-6-59	4282	146	8-9-60	4424	138
MIKE 18	10-6-59	4282	147	8-9-60	4424	140
MIKE 19	10-6-59	4282	148	8-9-60	4424	142
MIKE 20	10-6-59	4282	149	8-9-60	4424	144
MIKE 21	10-6-59	4282	150	8-9-60	4424	146
MIKE 22	10-6-59	4282	151	8-9-60	4424	148
MIKE 23	10-6-59	4282	152	8-9-60	4424	150
MIKE 24	10-6-59	4282	153	8-9-60	4424	152
JD 1	11-10-60	4464	196			
JD 2	11-10-60	4464	198			
JD 3	11-10-60	4464	202			

2.3

UCC 007602

ATLAS ASBESTOS CO.
SCHEDULE OF MINING PROPERTIES
LOCATED IN
FRESNO COUNTY, CALIFORNIA

LODES

ATLAS ASBESTOS CO.

CLAIM NAME	ORIGINAL RECORDED DATE	BOOK	PAGE	AMENDED RECORDED DATE	BOOK	PAGE
CMC 5	12-9-60	4477	157			
CMC 6	12-9-60	4477	159			
CMC 7	12-9-60	4477	161			
CMC 8	12-9-60	4477	163			
CMC 9	12-9-60	4477	165			
CMC 10	10-20-60	4455	247			
CMC 11	10-20-60	4455	245			
CMC 12	10-20-60	4455	443			
CMC 13	10-10-60	4450	585			
CMC 14	10-10-60	4450	584			
CMC 15	10-10-60	4450	583			
CMC 16	10-10-60	4450	582			
CMC 17	10-10-60	4450	581			
CMC 18	10-10-60	4450	565			
CMC 19	10-10-60	4450	567			
CMC 20	10-10-60	4450	569			
CMC 21	10-10-60	4450	571			
CMC 22	10-10-60	4450	573			
CMC 23	10-10-60	4450	575			
CMC 24	10-10-60	4450	577			
CMC 25	10-10-60	4450	579			
CMC 27	10-20-60	4455	250			
CMC 28	10-20-60	4455	249			
CMC 29	11-10-60	4464	194			
CLAYTON'S BONANZA 1	4-22-59	4211	217			
CLAYTON'S BONANZA 2	5-11-59	4219	602			
MRC 1	10-1-59	4280	119	10-10-60	4450	552
MRC 2	10-1-59	4280	120	10-10-60	4450	553
MRC 3	10-1-59	4280	121	10-10-60	4450	554
" "				7-16-63	4883	656
MRC 4	10-1-59	4280	122	12-13-60	4478	125
MRC 5	10-1-59	4280	123	12-13-60	4478	126

UCC 007638

ATLAS ASBESTOS CO.
SCHEDULE OF MINING PROPERTIES
LOCATED IN
FRESNO COUNTY, CALIFORNIA

LODES

ATLAS ASBESTOS CO.

CLAIM NAME	ORIGINAL RECORDED DATE	ORIGINAL BOOK	ORIGINAL PAGE	AMENDED RECORDED DATE	AMENDED BOOK	AMENDED PAGE
MRC 6	10-1-59	4280	124	12-14-60	4479	346
MRC 7	10-1-59	4280	125	12-14-60	4479	347
" "				3-7-62	4688	783
" "				7-16-63	4883	657
MRC 8	10-1-59	4280	126	10-10-60	4450	555
" "				3-7-62	4688	784
" "				7-16-63	4883	658
MRC 9	10-1-59	4280	127	10-10-60	4450	556
MRC 10	10-1-59	4280	128			
MRC 11	10-1-59	4280	129			
MRC 12	11-3-59	4294	29	10-10-60	4450	557
MRC 13	11-3-59	4294	31	10-10-60	4450	558
" "				3-7-62	4688	785
MRC 14	11-3-59	4294	33	12-14-60	4479	348
" "				3-7-62	4688	782
MRC 15	11-3-59	4294	35	12-14-60	4479	349
MRC 16	11-3-59	4294	37	10-10-60	4450	559
MRC 17	11-3-59	4294	39	10-10-60	4450	560
MRC 18	11-3-59	4294	41	10-10-60	4450	561
MRC 19	11-3-59	4294	43			
MRC 20	11-3-59	4294	45			
MRC 21	11-3-59	4294	47			
MRC 22	11-3-59	4294	49			
MRC 23	11-3-59	4294	51			
MRC 24	11-3-59	4294	53	12-14-60	4479	350
MRC 25	11-3-59	4294	55	10-10-60	4450	562
MRC 26	11-3-59	4294	57	10-10-60	4450	563
MRC 27	11-3-59	4294	59	10-10-60	4450	564
MRC 28	11-3-59	4294	61			
MRC 29	11-3-59	4294	63			
MRC 30	11-3-59	4294	65			
MRC 31	11-3-59	4294	67			
MRC 32	11-3-59	4294	69			
MRC 33	11-3-59	4294	71			
MRC 34	11-3-59	4294	73			

UCC 007639

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 48 of 61
asbestosclaims.law/library/18303/48

ATLAS ASBESTOS CO.
SCHEDULE OF MINING PROPERTIES
LOCATED IN
FRESNO COUNTY, CALIFORNIA

LODES

ATLAS ASBESTOS CO.

CLAIM NAME	ORIGINAL RECORDED DATE	ORIGINAL BOOK	ORIGINAL PAGE	AMENDED RECORDED DATE	AMENDED BOOK	AMENDED PAGE
MRC 35	11-3-59	4294	75			
MRC 36	11-3-59	4294	77	12-13-60	4478	127
MRC 37	11-3-59	4294	79	12-13-60	4478	128
MRC 38	11-3-59	4294	81			
MRC 39	11-3-59	4294	83			
MRC 40	11-3-59	4294	85			
MRC 41	11-3-59	4294	87			
MRC 42	11-3-59	4294	89			
MRC 43	11-3-59	4294	91	12-14-60	4479	351
MRC 44	11-3-59	4294	93	12-13-60	4478	129
MRC 45	11-3-59	4294	95	12-13-60	4478	130
MRC 46	11-3-59	4294	97	12-13-60	4478	131
MRC 47	11-3-59	4294	99	12-13-60	4478	132
MRC 48	11-3-59	4294	101	12-13-60	4478	133
MRC 49	11-3-59	4294	103	12-13-60	4478	134
MRC 50	11-3-59	4294	105	12-13-60	4478	135
MRC 51	11-3-59	4294	107	12-13-60	4478	136
MRC 52	11-3-59	4294	109	12-13-60	4478	137
MRC 53	11-3-59	4294	111	12-13-60	4478	138
MRC 54	11-3-59	4294	113	12-13-60	4478	139
MRC 55	11-3-59	4294	115	12-13-60	4478	140
MRC 56	11-3-59	4294	117	12-13-60	4478	141
MRC 57	11-20-59	4301	521	12-13-60	4478	142
MRC 58	11-20-59	4301	523	12-13-60	4478	143
MRC 59	11-20-59	4301	525	12-13-60	4478	144
MRC 60	11-20-59	4301	527	12-13-60	4478	145
MRC 61	11-20-59	4301	529	12-13-60	4478	146
MRC 62	11-20-59	4301	531	12-13-60	4478	147
MRC 63	11-20-59	4301	533	12-13-60	4478	148
MRC 64	11-20-59	4301	535	12-13-60	4478	149
MRC 65	11-20-59	4301	537	12-13-60	4478	150
MRC 66	11-20-59	4301	539	12-13-60	4478	151
MRC 67	11-20-59	4301	541	12-13-60	4478	152
MRC 68	11-20-59	4301	543	12-13-60	4478	153

UCC 007640

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
Published by AsbestosClaims.Law
ACL Doc 18303 · Page 49 of 61
asbestosclaims.law/library/18303/49

ATLAS ASBESTOS CO.
SCHEDULE OF MINING PROPERTIES
LOCATED IN
FRESNO COUNTY, CALIFORNIA

LODES

ATLAS ASBESTOS CO.

CLAIM NAME	ORIGINAL RECORDED DATE	BOOK	PAGE	AMENDED RECORDED DATE	BOOK	PAGE
MRC 69	11-20-59	4301	545	12-13-60	4478	154
MRC 70	11-20-59	4301	519	12-13-60	4478	155
MRC 71	12-9-59	4311	15	12-13-60	4478	156
MRC 72	12-9-59	4311	13	12-13-60	4478	157
MRC 73	12-9-59	4311	11	12-13-60	4478	158
MRC 74	12-9-59	4311	9	12-13-60	4478	159
MRC 75	12-9-59	4311	7	12-13-60	4478	160
MRC 76	12-9-59	4311	5	12-13-60	4478	161
MRC 77	12-9-59	4311	3	12-13-60	4478	162
MRC 78	12-9-59	4310	1	12-13-60	4478	163
MRC 79	12-9-59	4310	698	12-13-60	4478	164
MRC 80	12-9-59	4310	696	12-13-60	4478	165

UCC 007641

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 50 of 61 asbestosclaims.law/library/18303/50

ATLAS ASBESTOS CO.
SCHEDULE OF MINING PROPERTIES
LOCATED IN THE COUNTIES OF
FRESNO AND SAN BENITO, CALIFORNIA

STATE LEASES

STATE LEASE NO.	LEGAL DESCRIPTION
1511.2	SOUTH 20 ACRES OF THE 80-ACRE PARCEL WEST OF LOTS 3 AND 4, AND THE NORTH 20 ACRES OF THE 40-ACRE PARCEL WEST OF LOT 9 AND NORTH OF LOT 12 IN SEC. 36, T. 18 S., R. 12 E., M. D. B. & M., FRESNO CO., CONTAINING 40 ACRES MORE OR LESS.
1512.2	ALL OF LOT 4, THE SOUTH 1/2 OF LOT 3, THE NORTH 60 ACRES OF THE 80-ACRE PARCEL WEST OF LOTS 3 AND 4, AND THE EAST 1/2 OF THE 160-ACRE PARCEL WEST OF SAID 80-ACRE PARCEL, CONTAINING 160 ACRES MORE OR LESS, IN SEC. 36, T. 18 S., R. 12 E., M. D. B. & M., FRESNO AND SAN BENITO COUNTIES.
2787.2	LOTS 1 AND 2, NORTH 1/2 OF LOT 3, LOTS 5 AND 6 IN SEC. 36, T. 18 S., R. 12 E., M. D. B. & M., FRESNO AND SAN BENITO COUNTIES, CONTAINING 136.02 ACRES MORE OR LESS.

NEW IDRIA FEE LANDS

LOTS 2, 7, 10, 12, AND 13 IN SECTION 5, TOWNSHIP 18 SOUTH, RANGE 12 EAST, M. D. B. & M., SAN BENITO COUNTY, CONTAINING 200 ACRES MORE OR LESS.

UCC 007642

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com... Published by AsbestosClaims.Law
ACL Doc 18303 · Page 51 of 61 asbestosclaims.law/library/18303/51

ATLAS ASBESTOS CO.
1968
SALES BY PRODUCT
(TONS)

	AZ-20	DRILL-BESTOS	TOTAL
JANUARY	1,680.00	202.50	1,882.50
FEBRUARY	1,402.50	60.00	1,462.50
MARCH	1,242.50	82.50	1,325.00
APRIL	977.50	102.50	1,080.00
MAY	1,128.00	50.00	1,178.00
JUNE	734.00		734.00
JULY	703.00		703.00
AUGUST	1,612.50		1,612.50
SEPTEMBER	890.50	31.50	922.00
OCTOBER	1,383.50		1,383.50
NOVEMBER	1,550.00	50.00	1,600.00
DECEMBER	1,377.00	30.00	1,407.00
	14,681.00	609.00	15,290.00

UCC 007643

ATLAS ASBESTOS CO.
1969
SALES BY PRODUCT
(TONS)

	AZ-20	DRILL-BESTOS	AZ-15	TOTAL
JANUARY	941.30	50.00		991.30
FEBRUARY	745.30			745.30
MARCH	1,503.85			1,503.85
APRIL	1,432.50			1,432.50
MAY	1,363.75			1,363.75
JUNE	582.70			582.70
JULY	608.00			608.00
AUGUST	1,187.53			1,187.53
SEPTEMBER	981.25	50.00	2.25	1,033.50
OCTOBER	455.00	22.50		477.50
NOVEMBER	718.00			718.00
DECEMBER	380.00			380.00
	10,899.18	122.50	2.25	11,023.93

UCC 007644

ATLAS ASBESTOS CO.
1970
SALES BY PRODUCT
(TONS)

	AZ-8	AZ-20	AZ-100	DRILL-BESTOS	TOTAL
JANUARY	1.00	540.00			541.00
FEBRUARY	2.10	726.00			728.10
MARCH		1,180.50		50.00	1,230.50
APRIL	22.50	870.00			892.50
MAY		815.00		30.00	845.00
JUNE		525.00		50.00	575.00
JULY		500.25	.50		500.75
AUGUST	22.50	812.63			835.13
SEPTEMBER		1,447.00			1,447.00
OCTOBER	.40	1,447.80	1.20	100.00	1,549.40
NOVEMBER		1,363.85	4.93	63.00	1,431.78
DECEMBER	22.35	1,126.60	7.00	130.00	1,285.95
	70.85	11,354.63	13.63	423.00	11,862.11

UCC 007645

ATLAS ASBESTOS CO.
1971
SALES BY PRODUCT
(TONS)

	AZ-8	AZ-20	AZ-100	DRILL-BESTOS	TOTAL
JANUARY		700.25	1.00	80.00	781.25
FEBRUARY		738.15	9.75	100.00	847.90
MARCH		608.00	2.00		610.00
APRIL		790.00	4.00	103.00	897.00
MAY	22.50	1,488.00	13.75	30.00	1,554.25
JUNE		791.00	13.11	140.00	944.11
JULY		963.00	13.00	99.00	1,075.00
AUGUST		1,629.70	6.85	197.50	1,834.05
SEPTEMBER	21.25	705.00	6.00	170.00	902.25
OCTOBER		967.00	5.00	139.00	1,111.00
NOVEMBER		934.50	6.75	30.00	971.25
DECEMBER	19.70	1,043.50	15.75	150.00	1,228.95
	63.45	11,358.10	96.96	1,238.50	12,757.01

UCC 007646

Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/55

1972

SALES BY PRODUCT
(TONS)

	AZ-8	AZ-20	AZ-25	AZ-100	DRILL-BESTOS	TOTAL
JANUARY		1,136.00		15.50	170.00	1,321.50
FEBRUARY		1,116.00			140.00	1,256.00
MARCH		944.00		5.25	80.00	1,029.25
APRIL		1,011.00		5.00		1,016.00
MAY		517.50			51.00	568.50
JUNE	4.85	675.00		10.00	60.00	749.85
JULY	11.15	718.25			80.00	809.40
AUGUST	5.00	888.75	67.50	5.25	70.00	1,036.50
SEPTEMBER		492.50	67.50	9.25	80.00	649.25
OCTOBER	5.00	1,066.50	67.50	15.00	90.00	1,244.00
NOVEMBER	5.00	799.00	135.00		30.00	969.00
DECEMBER		959.50	132.50	5.25	130.00	1,227.25
	31.00	10,324.00	470.00	70.50	981.00	11,876.50

UCC 007647

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 57 of 61

UCC 007648

ATLAS ASBESTOS CO.

YEAR 1966

PRODUCTION COSTS

	TOTAL COST						COST PER TON				
	LABOR	MATERIALS & SUPPLIES	EQUIPMENT OPERATIONS	SERVICES AND SUB-CONTRACTS	TOTAL	TONNAGE PRODUCED	LABOR	MAT & SUPPLIES	EQUIP. OP.	SRVS. SUBS.	TO
	$	$	$	$	$		$	$	$	$	$
MINING COST	11,919.58	207.87	4,608.67	28,387.21	45,123.33	156,542	.076	.001	.030	.181	.2
BURDEN REMOVAL				20,998.52	20,998.52	156,542				.134	.1
MORTIZATION											
	11,919.58	207.87	4,608.67	49,385.73	66,121.85	156,542				.315	.4
ING PROCESS	43,904.43	74,378.56	113,918.67		232,201.66	15,217	2.885	4.888	7.486		15.2
ING	33,810.28	79,276.72	4,474.66		117,561.66	15,217	2.222	5.210	.294		7.7
	77,714.71	153,655.28	118,393.33		349,763.32		5.107	10.098	7.780		22.9
UCT HANDLING	23,966.77		8,511.82	41,022.54	73,501.13	15,290	1.567		.557	2.683	4.8
	41,167.84	8,158.08	84,446.42		133,772.34	15,217	2.705	.536	5.550		8.7
L PRODUCTION COSTS	154,768.90	162,021.23	215,960.24	90,408.27	623,158.64	15,217	10.171	10.647	14.192	5.941	40.9
SALES COMMISSIONS AND OTHER SELLING EXPENSES					27,037	15,290					1.8
GENERAL AND ADMINISTRATIVE EXPENSES					71,254	15,217					4.6

THE ABOVE COSTS DO NOT INCLUDE DEPRECIATION, DEPLETION OR EQUIPMENT RENTAL COSTS. ALSO EXCLUDED ARE VMMC MANAGEMENT FEES AND FINANCIAL EXPENSES.

SALES: $736,834 15,290 TONS $48.185 PER TON

Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/57

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 58 of 61
UCC 007649
Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/58

ATLAS ASBESTOS CO.

PRODUCTION COSTS

	TOTAL COST						COST PER TON				
	LABOR	MATERIALS & SUPPLIES	EQUIPMENT OPERATIONS	SERVICES AND SUB-CONTRACTS	TOTAL	TONNAGE PRODUCED	LABOR	MTLS. & SUPP.	EQUIP. OPR.	SRVS. SUBS.	TOTA
MINING COST	14,422	241	18,025		32,688	135,258	.107	.002	.133		.24
BURDEN REMOVAL						135,258				.044	.04
MORTIZATION				5,940	5,940	135,258				.044	.23
	14,422	241	18,025	5,940	38,628	135,258	.107	.002	.133		
ING PROCESS	171,248	179,563	18,063		368,874	11,952	14.328	15.023	1.511		30.85
BAGGING											
UCT HANDLING	22,035	5,787	14,413	8,243	50,478	11,952	1.844	.484	1.206	.690	4.22
	1,857	19,526	30,592		51,975	11,952	.156	1.634	2.559		4.34
L PRODUCTION COSTS	209,562	205,117	81,093	14,183	509,955	11,952	17.533	17.161	6.785	1.187	42.65
SALES COMMISSIONS AND OTHER SELLING EXPENSES					23,688	11,203.97 TONS					2.11
GENERAL AND ADMINISTRATIVE EXPENSES					80,925	11,925.37 TONS					6.7

THE ABOVE COSTS DO NOT INCLUDE DEPRECIATION, DEPLETION OR EQUIPMENT RENTAL COSTS OR EXTRAORDINARY EXPENSES. ALSO, EXCLUDED ARE VMMC MANAGEMENT FEES AND FINANCIAL EXPENSES.

SALES: $552,099 · 11,203.97 TONS · $49.277 PER TON

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 59 of 61

UCC 007650

ATLAS ASBESTOS CO.

PRODUCTION COSTS

YEAR 1970

	TOTAL COST						COST PER TON				
	LABOR	MATERIALS & SUPPLIES	EQUIPMENT OPERATIONS	SERVICES AND SUB-CONTRACTS	TOTAL	TONNAGE PRODUCED	LABOR	MAT & SUPPLIES	EQUIP. OP.	SRVS. SUBS.	TOTAL
MINING COST	$,577	545	26,053	30,067	62,242	110,135	.051	.005	.236	.273	.56
BURDEN REMOVAL				4,930	4,930	110,135				.045	.04
AMORTIZATION	5,577	545	26,053	34,997	67,172	110,135	.051	.005	.236	.318	.61
LING PROCESS D BAGGING	111,869	180,312	32,566		324,747	11,361	9.846	15.871	2.866		28.583
DUCT HANDL NG	17,571	1,034	7,382		25,987	10,202	1.722	.101	.724		2.54
L BURDEN	1,437	49,569			51,005	11,361	.126	4.363			4.48
AL PRODUCT ON COSTS	136,454	231,460	66,001	34,997	458,912	11,361	12.010	20.373	5.809	3.080	41.2
SALES COMMISSIONS AND OTHER SELLING EXPENSES					56,295	11,862 TONS					4.7
GENERAL AND ADMINISTRATIVE EXPENSES					74,032	11,361 TONS					6.5

THE ABOVE COSTS DO NOT INCLUDE DEPRECIATION, DEPLETION OR EQUIPMENT RENTAL COSTS OR EXTRAORDINARY EXPENSES. ALSO, EXCLUDED ARE VMMC MANAGEMENT FEES AND FINANCIAL EXPENSES.

SALES: $592,250 11,862.01 TONS $49.928 PER TON

Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/59

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 60 of 61
UCC 007651
Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/60

ATLAS ASBESTOS CO.

PRODUCTION COSTS

YEAR 1971

	TOTAL COST						COST PER TON				
	LABOR	MATERIALS & SUPPLIES	EQUIPMENT OPERATIONS	SERVICES AND SUB-CONTRACTS	TOTAL	TONNAGE PRODUCED	LABOR	MAT & SUPPLIES	EQUIP. OP..	SRVS. SUBS.	TO
RE MINING COST	7,745	25	16,889	28,492	53,151	177,106	.044		.095	.161	.3
VERBURDEN REMOVAL AMORTIZATION				7,498	7,498	177,106				.042	.0
	7,745	25	16,889	35,990	60,649	177,106	.044		.095	.203	.3
ILLING PROCESS AND BAGGING	155,381	202,510	21,062		378,953	13,175	11.793	15.369	1.599		28.7
RODUCT HANDLING	21,643	2,488	10,4[illegible]		34,595	12,821	1.688	.194	.816		2.6
ILL BURDEN	409	65,496			65,905	13,176	.031	4.971			5.0
OTAL PRODUCTION COSTS	185,183	270,5[illegible]	48,410	35,990	540,102	13,176	14.055	20.531	3.674	2.732	40..
SALES COMMISSIONS AND OTHER SELLING EXPENSES					62,935	12,757					4.9
GENERAL AND ADMINISTRATIVE EXPENSES					20,038	13,176					5.1

THE ABOVE COSTS DO NOT INCLUDE DEPRECIATION, DEPLETION, EQUIPMENT RENTAL COSTS OR EXTRAORDINARY EXPENSES. ALSO, EXCLUDED ARE VMMC MANAGEMENT FEES AND FINANCIAL EXPENSES.

SALES: $623,033 12,757 TONS $48.83 PER TON

Union Carbide trial exhibit UC-3564: Marshall and Stevens Appraisal of the Mineral Rights of Atlas Asbestos Com...
ACL Doc 18303 · Page 61 of 61
Published by AsbestosClaims.Law
asbestosclaims.law/library/18303/61

UCC 007652

ATLAS ASBESTOS CO.

PRODUCTION COSTS

YEAR 1972

	TOTAL COST						COST PER TON				
	LABOR	MATERIALS & SUPPLIES	EQUIPMENT OPERATIONS	SERVICES AND SUB-CONTRACTS	TOTAL	TONNAGE PRODUCED	LABOR	MAT & SUPPLIES	EQUIP. OP.	SRVS. SUBS	TOTAL
ORE MINING COST	11,440		13,263	55,665	80,368	130,311	.088		.102	.427	.617
OVERBURDEN REMOVAL AMORTIZATION				6,333	6,333	130,311				.048	.043
	11,440	-0-	13,263	61,998	86,701	130,311	.088	-0-	.102	.475	.665
MILLING PROCESS AND BAGGING	134,792	190,835	11,367	-0-	336,994	11,769	11.436	16.190	.966	-0-	28.634
PRODUCT HANDLING	20,615	1,431	11,512	-0-	33,558	11,640	1.771	.121	.990	-0-	2.883
MILL BURDEN	462	85,148	-0-	-0-	85,610	11,769	.039	7.235	-0-	-0-	7.274
TOTAL PRODUCTION COSTS	167,309	277,414	36,159	61,998	542,863	11,769	14.216	23.571	3.072	5.268	46.128
SALES COMMISSIONS AND OTHER SELLING EXPENSES					73,383	11,877					6.179
GENERAL AND ADMINISTRATIVE EXPENSES					79,899	11,769					6.789

THE ABOVE COSTS DO NOT INCLUDE DEPRECIATION, DEPLETION, EQUIPMENT RENTAL COSTS OR EXTRAORDINARY EXPENSES. ALSO, EXCLUDED ARE WMC MANAGEMENT FEES AND FINANCIAL EXPENSES.

SALES: $573,612 11,877 TONS $48.29 PER TON