Economic Evaluation

Case P2 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	24,003	1.00000000	24,003	24,003
2	9,320	24,003	0.82644628	19,837	43,839
3	7,420	19,109	0.75131480	14,357	58,197
4	6,783	17,469	0.68301346	11,931	70,128
5	5,436	14,000	0.62092132	8,693	78,821
6	4,718	12,151	0.56447393	6,859	85,680
7	4,000	10,302	0.51315812	5,286	90,966
8	4,000	10,302	0.46650738	4,806	95,772
9	4,000	10,302	0.42409762	4,369	100,140
10	4,000	10,302	0.38554329	3,972	104,112
11	4,000	10,302	0.35049390	3,611	107,723
12	4,000	10,302	0.31863082	3,282	111,005
13	4,000	10,302	0.28966438	2,984	113,989
14	4,000	10,302	0.26333125	2,713	116,702
15	4,000	10,302	0.23939205	2,466	119,168
16	4,000	10,302	0.21762914	2,242	121,410
17	4,000	10,302	0.19784467	2,038	123,448
18	4,000	10,302	0.17985879	1,853	125,301
19	4,000	10,302	0.16350799	1,684	126,985
20	4,000	10,302	0.14864363	1,531	128,516
21	4,000	10,302	0.13513057	1,392	129,908
22	4,000	10,302	0.12284597	1,266	131,174
23	4,000	10,302	0.11167816	1,150	132,324
24	4,000	10,302	0.10152560	1,046	133,370
25	4,000	10,302	0.09229600	951	134,321
26	4,000	10,302	0.08390545	864	135,185
27	4,000	10,302	0.07627768	786	135,971
28	4,000	10,302	0.06934335	714	136,686
29	4,000	10,302	0.06303941	649	137,335
30	4,000	10,302	0.05730855	590	137,925
Total		357,971			137,925

Economic Evaluation

Case P3 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	20,585	1.00000000	20,585	20,585
2	9,320	20,585	0.82644628	17,013	37,598
3	7,420	16,389	0.75131480	12,313	49,911
4	6,783	14,982	0.68301346	10,233	60,144
5	5,436	12,007	0.62092132	7,455	67,599
6	4,718	10,421	0.56447393	5,882	73,482
7	4,000	8,835	0.51315812	4,534	78,015
8	4,000	8,835	0.46650738	4,122	82,137
9	4,000	8,835	0.42409762	3,747	85,884
10	4,000	8,835	0.38554329	3,406	89,290
11	4,000	8,835	0.35049390	3,097	92,387
12	4,000	8,835	0.31863082	2,815	95,202
13	4,000	8,835	0.28966438	2,559	97,761
14	4,000	8,835	0.26333125	2,327	100,087
15	4,000	8,835	0.23939205	2,115	102,202
16	4,000	8,835	0.21762914	1,923	104,125
17	4,000	8,835	0.19784467	1,748	105,873
18	4,000	8,835	0.17985879	1,589	107,462
19	4,000	8,835	0.16350799	1,445	108,907
20	4,000	8,835	0.14864363	1,313	110,220
21	4,000	8,835	0.13513057	1,194	111,414
22	4,000	8,835	0.12284597	1,085	112,499
23	4,000	8,835	0.11167816	987	113,486
24	4,000	8,835	0.10152560	897	114,383
25	4,000	8,835	0.09229600	815	115,198
26	4,000	8,835	0.08390545	741	115,940
27	4,000	8,835	0.07627768	674	116,613
28	4,000	8,835	0.06934335	613	117,226
29	4,000	8,835	0.06303941	557	117,783
30	4,000	8,835	0.05730855	506	118,289
Total		307,008			118,289

Economic Evaluation

Case A1 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	12,001	1.00000000	12,001	12,001
2	9,320	12,001	0.82644628	9,918	21,920
3	7,420	9,555	0.75131480	7,179	29,098
4	6,783	8,734	0.68301346	5,966	35,064
5	5,436	7,000	0.62092132	4,346	39,410
6	4,718	6,075	0.56447393	3,429	42,840
7	4,000	5,151	0.51315812	2,643	45,483
8	4,000	5,151	0.46650738	2,403	47,886
9	4,000	5,151	0.42409762	2,184	50,070
10	4,000	5,151	0.38554329	1,986	52,056
11	4,000	5,151	0.35049390	1,805	53,861
12	4,000	5,151	0.31863082	1,641	55,503
13	4,000	5,151	0.28966438	1,492	56,995
14	4,000	5,151	0.26333125	1,356	58,351
15	4,000	5,151	0.23939205	1,233	59,584
16	4,000	5,151	0.21762914	1,121	60,705
17	4,000	5,151	0.19784467	1,019	61,724
18	4,000	5,151	0.17985879	926	62,650
19	4,000	5,151	0.16350799	842	63,493
20	4,000	5,151	0.14864363	766	64,258
21	4,000	5,151	0.13513057	696	64,954
22	4,000	5,151	0.12284597	633	65,587
23	4,000	5,151	0.11167816	575	66,162
24	4,000	5,151	0.10152560	523	66,685
25	4,000	5,151	0.09229600	475	67,161
26	4,000	5,151	0.08390545	432	67,593
27	4,000	5,151	0.07627768	393	67,986
28	4,000	5,151	0.06934335	357	68,343
29	4,000	5,151	0.06303941	325	68,667
30	4,000	5,151	0.05730855	295	68,963
Total		178,985			68,963

Economic Evaluation

Case A2 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	10,420	1.00000000	10,420	10,420
2	9,320	10,420	0.82644628	8,612	19,032
3	7,420	8,296	0.75131480	6,233	25,265
4	6,783	7,584	0.68301346	5,180	30,445
5	5,436	6,078	0.62092132	3,774	34,219
6	4,718	5,275	0.56447393	2,978	37,197
7	4,000	4,472	0.51315812	2,295	39,492
8	4,000	4,472	0.46650738	2,086	41,578
9	4,000	4,472	0.42409762	1,897	43,475
10	4,000	4,472	0.38554329	1,724	45,199
11	4,000	4,472	0.35049390	1,568	46,767
12	4,000	4,472	0.31863082	1,425	48,192
13	4,000	4,472	0.28966438	1,295	49,487
14	4,000	4,472	0.26333125	1,178	50,665
15	4,000	4,472	0.23939205	1,071	51,736
16	4,000	4,472	0.21762914	973	52,709
17	4,000	4,472	0.19784467	885	53,594
18	4,000	4,472	0.17985879	804	54,398
19	4,000	4,472	0.16350799	731	55,129
20	4,000	4,472	0.14864363	665	55,794
21	4,000	4,472	0.13513057	604	56,398
22	4,000	4,472	0.12284597	549	56,948
23	4,000	4,472	0.11167816	499	57,447
24	4,000	4,472	0.10152560	454	57,901
25	4,000	4,472	0.09229600	413	58,314
26	4,000	4,472	0.08390545	375	58,689
27	4,000	4,472	0.07627768	341	59,031
28	4,000	4,472	0.06934335	310	59,341
29	4,000	4,472	0.06303941	282	59,623
30	4,000	4,472	0.05730855	256	59,879
Total		155,409			59,879

Economic Evaluation

Case A3 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	9,580	1.00000000	9,580	9,580
2	9,320	9,580	0.82644628	7,918	17,498
3	7,420	7,627	0.75131480	5,731	23,229
4	6,783	6,973	0.68301346	4,762	27,991
5	5,436	5,588	0.62092132	3,470	31,461
6	4,718	4,850	0.56447393	2,738	34,198
7	4,000	4,112	0.51315812	2,110	36,308
8	4,000	4,112	0.46650738	1,918	38,226
9	4,000	4,112	0.42409762	1,744	39,970
10	4,000	4,112	0.38554329	1,585	41,555
11	4,000	4,112	0.35049390	1,441	42,996
12	4,000	4,112	0.31863082	1,310	44,307
13	4,000	4,112	0.28966438	1,191	45,498
14	4,000	4,112	0.26333125	1,083	46,580
15	4,000	4,112	0.23939205	984	47,565
16	4,000	4,112	0.21762914	895	48,460
17	4,000	4,112	0.19784467	813	49,273
18	4,000	4,112	0.17985879	740	50,013
19	4,000	4,112	0.16350799	672	50,685
20	4,000	4,112	0.14864363	611	51,296
21	4,000	4,112	0.13513057	556	51,852
22	4,000	4,112	0.12284597	505	52,357
23	4,000	4,112	0.11167816	459	52,816
24	4,000	4,112	0.10152560	417	53,233
25	4,000	4,112	0.09229600	379	53,613
26	4,000	4,112	0.08390545	345	53,958
27	4,000	4,112	0.07627768	314	54,272
28	4,000	4,112	0.06934335	285	54,557
29	4,000	4,112	0.06303941	259	54,816
30	4,000	4,112	0.05730855	236	55,051
Total		142,880			55,051

Economic Evaluation

Case B1 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	17,898	1.00000000	17,898	17,898
2	9,320	17,898	0.82644628	14,792	32,690
3	7,420	14,249	0.75131480	10,706	43,395
4	6,783	13,026	0.68301346	8,897	52,292
5	5,436	10,439	0.62092132	6,482	58,774
6	4,718	9,060	0.56447393	5,114	63,889
7	4,000	7,682	0.51315812	3,942	67,830
8	4,000	7,682	0.46650738	3,583	71,414
9	4,000	7,682	0.42409762	3,258	74,672
10	4,000	7,682	0.38554329	2,962	77,633
11	4,000	7,682	0.35049390	2,692	80,326
12	4,000	7,682	0.31863082	2,448	82,773
13	4,000	7,682	0.28966438	2,225	84,998
14	4,000	7,682	0.26333125	2,023	87,021
15	4,000	7,682	0.23939205	1,839	88,860
16	4,000	7,682	0.21762914	1,672	90,532
17	4,000	7,682	0.19784467	1,520	92,051
18	4,000	7,682	0.17985879	1,382	93,433
19	4,000	7,682	0.16350799	1,256	94,689
20	4,000	7,682	0.14864363	1,142	95,831
21	4,000	7,682	0.13513057	1,038	96,869
22	4,000	7,682	0.12284597	944	97,812
23	4,000	7,682	0.11167816	858	98,670
24	4,000	7,682	0.10152560	780	99,450
25	4,000	7,682	0.09229600	709	100,159
26	4,000	7,682	0.08390545	645	100,804
27	4,000	7,682	0.07627768	586	101,390
28	4,000	7,682	0.06934335	533	101,922
29	4,000	7,682	0.06303941	484	102,406
30	4,000	7,682	0.05730855	440	102,847
Total		266,928			102,847

Economic Evaluation

Case B2 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	15,776	1.00000000	15,776	15,776
2	9,320	15,776	0.82644628	13,038	28,814
3	7,420	12,560	0.75131480	9,436	38,250
4	6,783	11,482	0.68301346	7,842	46,092
5	5,436	9,201	0.62092132	5,713	51,806
6	4,718	7,986	0.56447393	4,508	56,314
7	4,000	6,771	0.51315812	3,474	59,788
8	4,000	6,771	0.46650738	3,159	62,947
9	4,000	6,771	0.42409762	2,871	65,818
10	4,000	6,771	0.38554329	2,610	68,429
11	4,000	6,771	0.35049390	2,373	70,802
12	4,000	6,771	0.31863082	2,157	72,959
13	4,000	6,771	0.28966438	1,961	74,920
14	4,000	6,771	0.26333125	1,783	76,703
15	4,000	6,771	0.23939205	1,621	78,324
16	4,000	6,771	0.21762914	1,474	79,798
17	4,000	6,771	0.19784467	1,340	81,137
18	4,000	6,771	0.17985879	1,218	82,355
19	4,000	6,771	0.16350799	1,107	83,462
20	4,000	6,771	0.14864363	1,006	84,468
21	4,000	6,771	0.13513057	915	85,383
22	4,000	6,771	0.12284597	832	86,215
23	4,000	6,771	0.11167816	756	86,971
24	4,000	6,771	0.10152560	687	87,659
25	4,000	6,771	0.09229600	625	88,284
26	4,000	6,771	0.08390545	568	88,852
27	4,000	6,771	0.07627768	516	89,368
28	4,000	6,771	0.06934335	470	89,838
29	4,000	6,771	0.06303941	427	90,265
30	4,000	6,771	0.05730855	388	90,653
Total		235,279			90,653

Economic Evaluation

Case B3 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	14,760	1.00000000	14,760	14,760
2	9,320	14,760	0.82644628	12,198	26,958
3	7,420	11,751	0.75131480	8,828	35,786
4	6,783	10,742	0.68301346	7,337	43,123
5	5,436	8,609	0.62092132	5,345	48,468
6	4,718	7,472	0.56447393	4,218	52,686
7	4,000	6,335	0.51315812	3,251	55,937
8	4,000	6,335	0.46650738	2,955	58,892
9	4,000	6,335	0.42409762	2,686	61,578
10	4,000	6,335	0.38554329	2,442	64,021
11	4,000	6,335	0.35049390	2,220	66,241
12	4,000	6,335	0.31863082	2,018	68,259
13	4,000	6,335	0.28966438	1,835	70,094
14	4,000	6,335	0.26333125	1,668	71,762
15	4,000	6,335	0.23939205	1,516	73,279
16	4,000	6,335	0.21762914	1,379	74,657
17	4,000	6,335	0.19784467	1,253	75,911
18	4,000	6,335	0.17985879	1,139	77,050
19	4,000	6,335	0.16350799	1,036	78,086
20	4,000	6,335	0.14864363	942	79,027
21	4,000	6,335	0.13513057	856	79,883
22	4,000	6,335	0.12284597	778	80,661
23	4,000	6,335	0.11167816	707	81,369
24	4,000	6,335	0.10152560	643	82,012
25	4,000	6,335	0.09229600	585	82,597
26	4,000	6,335	0.08390545	532	83,128
27	4,000	6,335	0.07627768	483	83,611
28	4,000	6,335	0.06934335	439	84,051
29	4,000	6,335	0.06303941	399	84,450
30	4,000	6,335	0.05730855	363	84,813
Total		220,123			84,813

Economic Evaluation

Case B4 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	14,760	1.00000000	14,760	14,760
2	9,320	14,760	0.82644628	12,198	26,958
3	7,420	11,751	0.75131480	8,828	35,786
4	6,783	10,742	0.68301346	7,337	43,123
5	5,436	8,609	0.62092132	5,345	48,468
6	4,718	7,472	0.56447393	4,218	52,686
7	4,000	6,335	0.51315812	3,251	55,937
8	4,000	6,335	0.46650738	2,955	58,892
9	4,000	6,335	0.42409762	2,686	61,578
10	4,000	6,335	0.38554329	2,442	64,021
11	4,000	6,335	0.35049390	2,220	66,241
12	4,000	6,335	0.31863082	2,018	68,259
13	4,000	6,335	0.28966438	1,835	70,094
14	4,000	6,335	0.26333125	1,668	71,762
15	4,000	6,335	0.23939205	1,516	73,279
16	4,000	6,335	0.21762914	1,379	74,657
17	4,000	6,335	0.19784467	1,253	75,911
18	4,000	6,335	0.17985879	1,139	77,050
19	4,000	6,335	0.16350799	1,036	78,086
20	4,000	6,335	0.14864363	942	79,027
21	4,000	6,335	0.13513057	856	79,883
22	4,000	6,335	0.12284597	778	80,661
23	4,000	6,335	0.11167816	707	81,369
24	4,000	6,335	0.10152560	643	82,012
25	4,000	6,335	0.09229600	585	82,597
26	4,000	6,335	0.08390545	532	83,128
27	4,000	6,335	0.07627768	483	83,611
28	4,000	6,335	0.06934335	439	84,051
29	4,000	6,335	0.06303941	399	84,450
30	4,000	6,335	0.05730855	363	84,813
Total		220,123			84,813

Economic Evaluation

Case C1 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	18,308	1.00000000	18,308	18,308
2	9,320	18,308	0.82644628	15,131	33,439
3	7,420	14,576	0.75131480	10,951	44,391
4	6,783	13,325	0.68301346	9,101	53,491
5	5,436	10,679	0.62092132	6,631	60,122
6	4,718	9,268	0.56447393	5,232	65,354
7	4,000	7,858	0.51315812	4,032	69,386
8	4,000	7,858	0.46650738	3,666	73,052
9	4,000	7,858	0.42409762	3,332	76,384
10	4,000	7,858	0.38554329	3,029	79,413
11	4,000	7,858	0.35049390	2,754	82,168
12	4,000	7,858	0.31863082	2,504	84,671
13	4,000	7,858	0.28966438	2,276	86,947
14	4,000	7,858	0.26333125	2,069	89,017
15	4,000	7,858	0.23939205	1,881	90,898
16	4,000	7,858	0.21762914	1,710	92,608
17	4,000	7,858	0.19784467	1,555	94,162
18	4,000	7,858	0.17985879	1,413	95,576
19	4,000	7,858	0.16350799	1,285	96,860
20	4,000	7,858	0.14864363	1,168	98,028
21	4,000	7,858	0.13513057	1,062	99,090
22	4,000	7,858	0.12284597	965	100,055
23	4,000	7,858	0.11167816	878	100,933
24	4,000	7,858	0.10152560	798	101,731
25	4,000	7,858	0.09229600	725	102,456
26	4,000	7,858	0.08390545	659	103,115
27	4,000	7,858	0.07627768	599	103,715
28	4,000	7,858	0.06934335	545	104,260
29	4,000	7,858	0.06303941	495	104,755
30	4,000	7,858	0.05730855	450	105,205
Total		273,049			105,205

Economic Evaluation

Case C2 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	14,760	1.00000000	14,760	14,760
2	9,320	14,760	0.82644628	12,198	26,958
3	7,420	11,751	0.75131480	8,828	35,786
4	6,783	10,742	0.68301346	7,337	43,123
5	5,436	8,609	0.62092132	5,345	48,468
6	4,718	7,472	0.56447393	4,218	52,686
7	4,000	6,335	0.51315812	3,251	55,937
8	4,000	6,335	0.46650738	2,955	58,892
9	4,000	6,335	0.42409762	2,686	61,578
10	4,000	6,335	0.38554329	2,442	64,021
11	4,000	6,335	0.35049390	2,220	66,241
12	4,000	6,335	0.31863082	2,018	68,259
13	4,000	6,335	0.28966438	1,835	70,094
14	4,000	6,335	0.26333125	1,668	71,762
15	4,000	6,335	0.23939205	1,516	73,279
16	4,000	6,335	0.21762914	1,379	74,657
17	4,000	6,335	0.19784467	1,253	75,911
18	4,000	6,335	0.17985879	1,139	77,050
19	4,000	6,335	0.16350799	1,036	78,086
20	4,000	6,335	0.14864363	942	79,027
21	4,000	6,335	0.13513057	856	79,883
22	4,000	6,335	0.12284597	778	80,661
23	4,000	6,335	0.11167816	707	81,369
24	4,000	6,335	0.10152560	643	82,012
25	4,000	6,335	0.09229600	585	82,597
26	4,000	6,335	0.08390545	532	83,128
27	4,000	6,335	0.07627768	483	83,611
28	4,000	6,335	0.06934335	439	84,051
29	4,000	6,335	0.06303941	399	84,450
30	4,000	6,335	0.05730855	363	84,813
Total		220,123			84,813

Economic Evaluation

Case C3 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	15,648	1.00000000	15,648	15,648
2	9,320	15,648	0.82644628	12,932	28,580
3	7,420	12,458	0.75131480	9,360	37,940
4	6,783	11,389	0.68301346	7,779	45,719
5	5,436	9,127	0.62092132	5,667	51,386
6	4,718	7,921	0.56447393	4,471	55,857
7	4,000	6,716	0.51315812	3,446	59,304
8	4,000	6,716	0.46650738	3,133	62,437
9	4,000	6,716	0.42409762	2,848	65,285
10	4,000	6,716	0.38554329	2,589	67,874
11	4,000	6,716	0.35049390	2,354	70,228
12	4,000	6,716	0.31863082	2,140	72,368
13	4,000	6,716	0.28966438	1,945	74,313
14	4,000	6,716	0.26333125	1,769	76,082
15	4,000	6,716	0.23939205	1,608	77,690
16	4,000	6,716	0.21762914	1,462	79,151
17	4,000	6,716	0.19784467	1,329	80,480
18	4,000	6,716	0.17985879	1,208	81,688
19	4,000	6,716	0.16350799	1,098	82,786
20	4,000	6,716	0.14864363	998	83,784
21	4,000	6,716	0.13513057	908	84,692
22	4,000	6,716	0.12284597	825	85,517
23	4,000	6,716	0.11167816	750	86,267
24	4,000	6,716	0.10152560	682	86,949
25	4,000	6,716	0.09229600	620	87,569
26	4,000	6,716	0.08390545	564	88,132
27	4,000	6,716	0.07627768	512	88,644
28	4,000	6,716	0.06934335	466	89,110
29	4,000	6,716	0.06303941	423	89,533
30	4,000	6,716	0.05730855	385	89,918
Total		233,374			89,918

Economic Evaluation

Case C4 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	17,898	1.00000000	17,898	17,898
2	9,320	17,898	0.82644628	14,792	32,690
3	7,420	14,249	0.75131480	10,706	43,395
4	6,783	13,026	0.68301346	8,897	52,292
5	5,436	10,439	0.62092132	6,482	58,774
6	4,718	9,060	0.56447393	5,114	63,889
7	4,000	7,682	0.51315812	3,942	67,830
8	4,000	7,682	0.46650738	3,583	71,414
9	4,000	7,682	0.42409762	3,258	74,672
10	4,000	7,682	0.38554329	2,962	77,633
11	4,000	7,682	0.35049390	2,692	80,326
12	4,000	7,682	0.31863082	2,448	82,773
13	4,000	7,682	0.28966438	2,225	84,998
14	4,000	7,682	0.26333125	2,023	87,021
15	4,000	7,682	0.23939205	1,839	88,860
16	4,000	7,682	0.21762914	1,672	90,532
17	4,000	7,682	0.19784467	1,520	92,051
18	4,000	7,682	0.17985879	1,382	93,433
19	4,000	7,682	0.16350799	1,256	94,689
20	4,000	7,682	0.14864363	1,142	95,831
21	4,000	7,682	0.13513057	1,038	96,869
22	4,000	7,682	0.12284597	944	97,812
23	4,000	7,682	0.11167816	858	98,670
24	4,000	7,682	0.10152560	780	99,450
25	4,000	7,682	0.09229600	709	100,159
26	4,000	7,682	0.08390545	645	100,804
27	4,000	7,682	0.07627768	586	101,390
28	4,000	7,682	0.06934335	533	101,922
29	4,000	7,682	0.06303941	484	102,406
30	4,000	7,682	0.05730855	440	102,847
Total		266,928			102,847

Economic Evaluation

Case C5 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	15,776	1.00000000	15,776	15,776
2	9,320	15,776	0.82644628	13,038	28,814
3	7,420	12,560	0.75131480	9,436	38,250
4	6,783	11,482	0.68301346	7,842	46,092
5	5,436	9,201	0.62092132	5,713	51,806
6	4,718	7,986	0.56447393	4,508	56,314
7	4,000	6,771	0.51315812	3,474	59,788
8	4,000	6,771	0.46650738	3,159	62,947
9	4,000	6,771	0.42409762	2,871	65,818
10	4,000	6,771	0.38554329	2,610	68,429
11	4,000	6,771	0.35049390	2,373	70,802
12	4,000	6,771	0.31863082	2,157	72,959
13	4,000	6,771	0.28966438	1,961	74,920
14	4,000	6,771	0.26333125	1,783	76,703
15	4,000	6,771	0.23939205	1,621	78,324
16	4,000	6,771	0.21762914	1,474	79,798
17	4,000	6,771	0.19784467	1,340	81,137
18	4,000	6,771	0.17985879	1,218	82,355
19	4,000	6,771	0.16350799	1,107	83,462
20	4,000	6,771	0.14864363	1,006	84,468
21	4,000	6,771	0.13513057	915	85,383
22	4,000	6,771	0.12284597	832	86,215
23	4,000	6,771	0.11167816	756	86,971
24	4,000	6,771	0.10152560	687	87,659
25	4,000	6,771	0.09229600	625	88,284
26	4,000	6,771	0.08390545	568	88,852
27	4,000	6,771	0.07627768	516	89,368
28	4,000	6,771	0.06934335	470	89,838
29	4,000	6,771	0.06303941	427	90,265
30	4,000	6,771	0.05730855	388	90,653
Total		235,279			90,653

Economic Evaluation

Case D1 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	14,760	1.00000000	14,760	14,760
2	9,320	14,760	0.82644628	12,198	26,958
3	7,420	11,751	0.75131480	8,828	35,786
4	6,783	10,742	0.68301346	7,337	43,123
5	5,436	8,609	0.62092132	5,345	48,468
6	4,718	7,472	0.56447393	4,218	52,686
7	4,000	6,335	0.51315812	3,251	55,937
8	4,000	6,335	0.46650738	2,955	58,892
9	4,000	6,335	0.42409762	2,686	61,578
10	4,000	6,335	0.38554329	2,442	64,021
11	4,000	6,335	0.35049390	2,220	66,241
12	4,000	6,335	0.31863082	2,018	68,259
13	4,000	6,335	0.28966438	1,835	70,094
14	4,000	6,335	0.26333125	1,668	71,762
15	4,000	6,335	0.23939205	1,516	73,279
16	4,000	6,335	0.21762914	1,379	74,657
17	4,000	6,335	0.19784467	1,253	75,911
18	4,000	6,335	0.17985879	1,139	77,050
19	4,000	6,335	0.16350799	1,036	78,086
20	4,000	6,335	0.14864363	942	79,027
21	4,000	6,335	0.13513057	856	79,883
22	4,000	6,335	0.12284597	778	80,661
23	4,000	6,335	0.11167816	707	81,369
24	4,000	6,335	0.10152560	643	82,012
25	4,000	6,335	0.09229600	585	82,597
26	4,000	6,335	0.08390545	532	83,128
27	4,000	6,335	0.07627768	483	83,611
28	4,000	6,335	0.06934335	439	84,051
29	4,000	6,335	0.06303941	399	84,450
30	4,000	6,335	0.05730855	363	84,813
Total		220,123			84,813

Economic Evaluation

Case D2 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	15,648	1.00000000	15,648	15,648
2	9,320	15,648	0.82644628	12,932	28,580
3	7,420	12,458	0.75131480	9,360	37,940
4	6,783	11,389	0.68301346	7,779	45,719
5	5,436	9,127	0.62092132	5,667	51,386
6	4,718	7,921	0.56447393	4,471	55,857
7	4,000	6,716	0.51315812	3,446	59,304
8	4,000	6,716	0.46650738	3,133	62,437
9	4,000	6,716	0.42409762	2,848	65,285
10	4,000	6,716	0.38554329	2,589	67,874
11	4,000	6,716	0.35049390	2,354	70,228
12	4,000	6,716	0.31863082	2,140	72,368
13	4,000	6,716	0.28966438	1,945	74,313
14	4,000	6,716	0.26333125	1,769	76,082
15	4,000	6,716	0.23939205	1,608	77,690
16	4,000	6,716	0.21762914	1,462	79,151
17	4,000	6,716	0.19784467	1,329	80,480
18	4,000	6,716	0.17985879	1,208	81,688
19	4,000	6,716	0.16350799	1,098	82,786
20	4,000	6,716	0.14864363	998	83,784
21	4,000	6,716	0.13513057	908	84,692
22	4,000	6,716	0.12284597	825	85,517
23	4,000	6,716	0.11167816	750	86,267
24	4,000	6,716	0.10152560	682	86,949
25	4,000	6,716	0.09229600	620	87,569
26	4,000	6,716	0.08390545	564	88,132
27	4,000	6,716	0.07627768	512	88,644
28	4,000	6,716	0.06934335	466	89,110
29	4,000	6,716	0.06303941	423	89,533
30	4,000	6,716	0.05730855	385	89,918
Total		233,374			89,918

Economic Evaluation

Case D3 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	17,898	1.00000000	17,898	17,898
2	9,320	17,898	0.82644628	14,792	32,690
3	7,420	14,249	0.75131480	10,706	43,395
4	6,783	13,026	0.68301346	8,897	52,292
5	5,436	10,439	0.62092132	6,482	58,774
6	4,718	9,060	0.56447393	5,114	63,889
7	4,000	7,682	0.51315812	3,942	67,830
8	4,000	7,682	0.46650738	3,583	71,414
9	4,000	7,682	0.42409762	3,258	74,672
10	4,000	7,682	0.38554329	2,962	77,633
11	4,000	7,682	0.35049390	2,692	80,326
12	4,000	7,682	0.31863082	2,448	82,773
13	4,000	7,682	0.28966438	2,225	84,998
14	4,000	7,682	0.26333125	2,023	87,021
15	4,000	7,682	0.23939205	1,839	88,860
16	4,000	7,682	0.21762914	1,672	90,532
17	4,000	7,682	0.19784467	1,520	92,051
18	4,000	7,682	0.17985879	1,382	93,433
19	4,000	7,682	0.16350799	1,256	94,689
20	4,000	7,682	0.14864363	1,142	95,831
21	4,000	7,682	0.13513057	1,038	96,869
22	4,000	7,682	0.12284597	944	97,812
23	4,000	7,682	0.11167816	858	98,670
24	4,000	7,682	0.10152560	780	99,450
25	4,000	7,682	0.09229600	709	100,159
26	4,000	7,682	0.08390545	645	100,804
27	4,000	7,682	0.07627768	586	101,390
28	4,000	7,682	0.06934335	533	101,922
29	4,000	7,682	0.06303941	484	102,406
30	4,000	7,682	0.05730855	440	102,847
Total		266,928			102,847

Economic Evaluation

Case D4 Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	15,776	1.00000000	15,776	15,776
2	9,320	15,776	0.82644628	13,038	28,814
3	7,420	12,560	0.75131480	9,436	38,250
4	6,783	11,482	0.68301346	7,842	46,092
5	5,436	9,201	0.62092132	5,713	51,806
6	4,718	7,986	0.56447393	4,508	56,314
7	4,000	6,771	0.51315812	3,474	59,788
8	4,000	6,771	0.46650738	3,159	62,947
9	4,000	6,771	0.42409762	2,871	65,818
10	4,000	6,771	0.38554329	2,610	68,429
11	4,000	6,771	0.35049390	2,373	70,802
12	4,000	6,771	0.31863082	2,157	72,959
13	4,000	6,771	0.28966438	1,961	74,920
14	4,000	6,771	0.26333125	1,783	76,703
15	4,000	6,771	0.23939205	1,621	78,324
16	4,000	6,771	0.21762914	1,474	79,798
17	4,000	6,771	0.19784467	1,340	81,137
18	4,000	6,771	0.17985879	1,218	82,355
19	4,000	6,771	0.16350799	1,107	83,462
20	4,000	6,771	0.14864363	1,006	84,468
21	4,000	6,771	0.13513057	915	85,383
22	4,000	6,771	0.12284597	832	86,215
23	4,000	6,771	0.11167816	756	86,971
24	4,000	6,771	0.10152560	687	87,659
25	4,000	6,771	0.09229600	625	88,284
26	4,000	6,771	0.08390545	568	88,852
27	4,000	6,771	0.07627768	516	89,368
28	4,000	6,771	0.06934335	470	89,838
29	4,000	6,771	0.06303941	427	90,265
30	4,000	6,771	0.05730855	388	90,653
Total		235,279			90,653

Tabla 5.4.18

Valor Actual Neto del Costo de Envío desde Puerto Ordaz hasta Destino, Caso P2 Handymax

Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	150,984	1.00000000	150,984	150,984
2	9,320	150,984	0.82644628	124,780	275,764
3	7,420	120,204	0.75131480	90,311	366,075
4	6,783	109,885	0.68301346	75,053	441,128
5	5,436	88,063	0.62092132	54,680	495,808
6	4,718	76,432	0.56447393	43,144	538,952
7	4,000	64,800	0.51315812	33,253	572,204
8	4,000	64,800	0.46650738	30,230	602,434
9	4,000	64,800	0.42409762	27,482	629,916
10	4,000	64,800	0.38554329	24,983	654,899
11	4,000	64,800	0.35049390	22,712	677,611
12	4,000	64,800	0.31863082	20,647	698,258
13	4,000	64,800	0.28966438	18,770	717,028
14	4,000	64,800	0.26333125	17,064	734,092
15	4,000	64,800	0.23939205	15,513	749,605
16	4,000	64,800	0.21762914	14,102	763,707
17	4,000	64,800	0.19784467	12,820	776,528
18	4,000	64,800	0.17985879	11,655	788,182
19	4,000	64,800	0.16350799	10,595	798,778
20	4,000	64,800	0.14864363	9,632	808,410
21	4,000	64,800	0.13513057	8,756	817,166
22	4,000	64,800	0.12284597	7,960	825,127
23	4,000	64,800	0.11167816	7,237	832,363
24	4,000	64,800	0.10152560	6,579	838,942
25	4,000	64,800	0.09229600	5,981	844,923
26	4,000	64,800	0.08390545	5,437	850,360
27	4,000	64,800	0.07627768	4,943	855,303
28	4,000	64,800	0.06934335	4,493	859,796
29	4,000	64,800	0.06303941	4,085	863,881
30	4,000	64,800	0.05730855	3,714	867,595
Total		2,251,751			867,595

Tabla 5.4.19

Valor Actual Neto del Costo de Envío desde Puerto Ordaz hasta Destino, Caso A2 Panamax

Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	140,732	1.00000000	140,732	140,732
2	9,320	140,732	0.82644628	116,307	257,039
3	7,420	112,042	0.75131480	84,179	341,218
4	6,783	102,423	0.68301346	69,956	411,175
5	5,436	82,084	0.62092132	50,967	462,142
6	4,718	71,242	0.56447393	40,214	502,356
7	4,000	60,400	0.51315812	30,995	533,351
8	4,000	60,400	0.46650738	28,177	561,528
9	4,000	60,400	0.42409762	25,615	587,144
10	4,000	60,400	0.38554329	23,287	610,430
11	4,000	60,400	0.35049390	21,170	631,600
12	4,000	60,400	0.31863082	19,245	650,846
13	4,000	60,400	0.28966438	17,496	668,341
14	4,000	60,400	0.26333125	15,905	684,247
15	4,000	60,400	0.23939205	14,459	698,706
16	4,000	60,400	0.21762914	13,145	711,851
17	4,000	60,400	0.19784467	11,950	723,800
18	4,000	60,400	0.17985879	10,863	734,664
19	4,000	60,400	0.16350799	9,876	744,540
20	4,000	60,400	0.14864363	8,978	753,518
21	4,000	60,400	0.13513057	8,162	761,680
22	4,000	60,400	0.12284597	7,420	769,100
23	4,000	60,400	0.11167816	6,745	775,845
24	4,000	60,400	0.10152560	6,132	781,977
25	4,000	60,400	0.09229600	5,575	787,552
26	4,000	60,400	0.08390545	5,068	792,620
27	4,000	60,400	0.07627768	4,607	797,227
28	4,000	60,400	0.06934335	4,188	801,415
29	4,000	60,400	0.06303941	3,808	805,223
30	4,000	60,400	0.05730855	3,461	808,684
Total		2,098,855			808,684

Tabla 5.4.20

Valor Actual Neto del Costo de Envío desde Puerto Ordaz hasta Destino, Caso C2 y D1 Gabarras

Discount Rate=10%

Unit $: x1000

Year	Forecast	Cost	Discount Rate	Present Value	
	1,000ton				Accumulation
1	9,320	167,760	1.00000000	167,760	167,760
2	9,320	167,760	0.82644628	138,645	306,405
3	7,420	133,560	0.75131480	100,346	406,750
4	6,783	122,094	0.68301346	83,392	490,142
5	5,436	97,848	0.62092132	60,756	550,898
6	4,718	84,924	0.56447393	47,937	598,835
7	4,000	72,000	0.51315812	36,947	635,783
8	4,000	72,000	0.46650738	33,589	669,371
9	4,000	72,000	0.42409762	30,535	699,906
10	4,000	72,000	0.38554329	27,759	727,665
11	4,000	72,000	0.35049390	25,236	752,901
12	4,000	72,000	0.31863082	22,941	775,842
13	4,000	72,000	0.28966438	20,856	796,698
14	4,000	72,000	0.26333125	18,960	815,658
15	4,000	72,000	0.23939205	17,236	832,894
16	4,000	72,000	0.21762914	15,669	848,564
17	4,000	72,000	0.19784467	14,245	862,808
18	4,000	72,000	0.17985879	12,950	875,758
19	4,000	72,000	0.16350799	11,773	887,531
20	4,000	72,000	0.14864363	10,702	898,233
21	4,000	72,000	0.13513057	9,729	907,963
22	4,000	72,000	0.12284597	8,845	916,808
23	4,000	72,000	0.11167816	8,041	924,848
24	4,000	72,000	0.10152560	7,310	932,158
25	4,000	72,000	0.09229600	6,645	938,803
26	4,000	72,000	0.08390545	6,041	944,845
27	4,000	72,000	0.07627768	5,492	950,337
28	4,000	72,000	0.06934335	4,993	955,329
29	4,000	72,000	0.06303941	4,539	959,868
30	4,000	72,000	0.05730855	4,126	963,994
Total		2,501,946			963,994