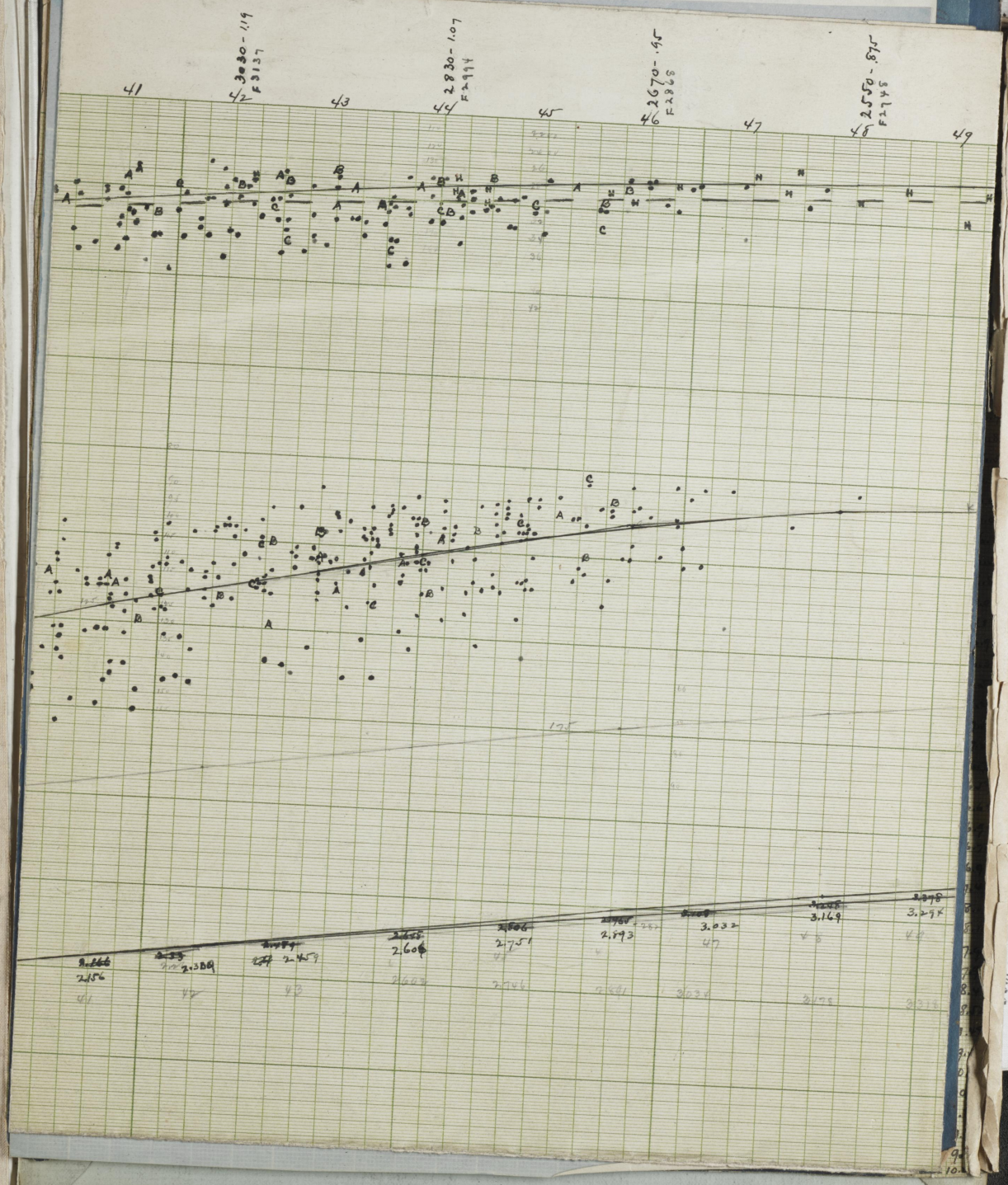
JOHN MEANS.
E. C. Means.

CONNELLSVILLE COKE. The condition of this trade [illegible] week: Blast furnaces in operation, [illegible]; Uniontown, [illegible]; Dunbar, [illegible]; Dawson, [illegible]; Mount Pleasant, [illegible]; Scottdale, [illegible]; West Leisenring, [illegible]; Connellsville, [illegible]; Total, [illegible]. Shipments for the week: By Pittsburg & Western railway, [illegible] cars; by Baltimore & Ohio railway, [illegible] cars; by Pennsylvania railroad, [illegible] cars; by Southwest Pennsylvania railway, [illegible] cars; by Pittsburg, Virginia & Charleston railway, [illegible] cars; by Monongahela railway, [illegible] cars; by Pittsburg, Cincinnati & St. Louis railway, [illegible] cars; by Pittsburg, Cincinnati, Chicago & St. Louis railway, [illegible] cars; by Pittsburg, Shenango & Lake Erie railway, [illegible] cars; by Pittsburg & Lake Erie railroad, [illegible] cars; by Youghiogheny railway, [illegible] cars; by Pittsburg & Conneaut Dock company, [illegible] cars; by Pittsburg, Youngstown & Ashtabula railway, [illegible] cars; by Wheeling & Lake Erie railway, [illegible] cars; by Buffalo, Pittsburg & Western railway, [illegible] cars; by Allegheny Valley railway, [illegible] cars; by Pittsburg, Fort Wayne & Chicago railway, [illegible] cars; by Pittsburg & Western

	Iron		Coke	Ore	Lime	Ore Yield
Blast A. No. 1 A.	46,786.28	1.40	1.26	2.428	1.197	.411
A. No. 2 A.	73,896.34	1.45	1.305	2.26	1.024	.442



COSTS OF KAY MOOR COAL - MINE NO.1.

	Year - 1902		Year - 1903		Year - 1904	
	Amount	Average per Ton Mined	Amount	Average per Ton Mined	Amount	Average per ton mined
3 TO SALARIES	$3,003.92	.058	3,458.03	.033	3,001.30	.027
1 " LABOR (MINING)	24,264.06	.471	51,128.46	.488	49,733.00	.440
1 " YARDAGE	6,143.10	.119	11,450.55	.109	12,258.72	.109
1 " TIMBER	1,122.20	.022	2,994.16	.029	2,533.51	.022
1 " DRIVERS, TRACK, ETC.	5,264.80	.102	12,083.55	.115	12,361.75	.109
2 " WEIGHING & TIPPING	1,639.30	.032				
2 " OUTSIDE WORK 4,897.83	3,258.53	.063	10,553.05	.101	7,824.70	.069
2 " INSIDE WORK	3,971.60	.077	9,140.05	.087	3,395.08	.030
2 " POWER HOUSE & PIPE LINE	7,159.33	.139	8,708.10	.083	6,353.26	.056
1 " VENTILATION	646.35	.013	3,461.01	.033	1,902.31	.017
1 " DRAINAGE 1390.34	743.99	.015				
2 " SHOPS	691.70	.013	2,207.85	.021	713.70	.006
1 " PIPE & FITTINGS, RAIL & SUPPLIES	6,364.76	.123	6,512.91	.062	3,990.75	.035
1 " EXPLOSIVES	---	---	76.33	.001	58.75	.001
1 " ROYALTY	5,000.00	.097	8,865.90	.085	9,387.39	.083
3 " TAXES	2,400.00	.047	2,400.00	.023	1,981.52	.018
3 " USE OF TEAMS	---	---	5,160.00	.049	4,120.00	.036
3 " MACHINERY & EQUIPMENT	---	---	2,400.00	.023	2,900.00	.026
2 " GENERAL EXPENSE	---	---	2,492.46	.024	1,087.92	.010
1 " TRANSPORTATION	1,238.98	.024	----	--	---	---
2 " TELEPHONE & TELEGRAMS	126.97	.002	---	--	---	---
3 " INSURANCE	297.74	.006	360.00	.003	417.60	.004
3 " DECREASE IN INVENTORY OF MULES, MINE CARS, MINING & OTHER MACHINES AND GENERAL EQUIPMENT	2,077.53	.040				
TOTAL COST	$75,414.86	1.463	$143,452.41	1.369	$124,021.26	1.098

PRODUCTION	51,546 Tons	104,777 Tons	112,929 Tons
	Differences	more 53,231 tons $ 68,037.85 more	more 8,152 tons $ 19,431.15 less @ ¢ 2.38
		@ ¢ 427	
#1	.986	.922	.816
#2	.326	.316	.171
#3	.151	.131	.111
	1.463	1.369	1.098

Loose Item

COSTS OF KAY MOOR COAL - MINE NO.1.

		Year - 1905		Year-1906		Year - 1907	
		Amount	Average per Ton Mined	Amount	Average per Ton Mined	Amount	Average per Ton Mined
3	TO SALARIES	2,646.00	.020	2,561.00	.021	3,195.45	.028
1	" LABOR (MINING)	53,777.65	.405	50,817.10	.413	47,283.25	.423
1	" YARDAGE	11,165.50	.084	9,539.00	.078	12,060.25	.108
1	" TIMBER	3,678.66	.028	3,671.99	.030	3,478.06	.031
1	" DRIVERS, TRACKS, ETC.,	13,731.35	.104	12,817.95	.104	14,767.60	.132
2	" OUTSIDE WORK WEIGHING & TIPPING	7,843.20	.059	9,780.65	.080	11,193.49	.100
2	" INSIDE WORK	3,409.25	.026	3,177.85	.026	2,622.50	.023
2	" POWER HOUSE & PIPE LINE	10,416.99	.079	11,302.66	.091	9,163.41	.082
1	" VENTILATION & DRAINAGE	3,725.45	.028	4,180.64	.034	4,981.71	.045
2	" SHOPS	686.25	.005	993.55	.008	908.05	.008
1	" PIPE & FITTINGS, RAIL & SUPPLIES	4,265.95	.032	6,165.49	.050	6,724.10	.060
1	" EXPLOSIVES	6.96	-	5.82	--	--	--
1	" ROYALTY	10,288.22	.078	10,057.01	.082	8,170.63	.074
3	" TAXES	1,610.33	.012	1,925.00	.016	2,100.00	.019
3	" USE OF TEAMS	4,480.00	.034	3,510.00	.029	4,470.68	.040
3	" MACHINERY & EQUIPMENT	4,028.68	.030	4,313.16	.035	4,764.00	.042
2	" GENERAL EXPENSE	980.82	.007	3,735.54	.030	1,144.59	.010
3	" INSURANCE	417.60	.003	417.60	.003	417.60	.004
	TOTAL COST	$137,158.86	1.034	$138,972.01	1.130	$137,445.37	~~1.330~~ 1.230
	PRODUCTION	132,696		123,016		111,767	

difference 19.769 Tons $13.139,60 @.66

9.680 - + 1,813.15

123.016@1.034=127188.54

9.680 @ 11.783,47=121

111.769@1.13 136.296.71

11.249 - 1.526.64

11.249 @ 11.148 66 = 99

20.929 - + 286.51

#1	.759	.791	.873
#2	176	235	223
#3	099	104	134
	1.034	1130	1.230

Loose Item

COSTS OF KAY MOOR COAL - MINE NO.1.

	Year - 1908 Amount	Year - 1908 Average per Ton Mined	Year - 1909 Amount	Year - 1909 Average per Ton Mined	Year - 1910 Amount	Year - 1910 Average per Ton Mined
3 TO SALARIES	3,862.78	.027	4,380.29	.026	4,874.78	.032
1 " LABOR (MINING)	53,429.00	.371	63,941.25	.384	56,659.90	.374
1 " YARDAGE	13,304.60	.092	15,431.60	.093	14,758.20	.097
1 " TIMBER	5,907.85	.041	4,270.20	.026	3,815.25	.025
1 " DRIVERS, TRACKS, ETC.,	14,575.70	.101	16,936.65	.102	18,288.45	.121
2 " OUTSIDE WORK, WEIGHING & TIPPING	11,113.30	.077	13,550.24	.081	14,757.62	.098
2 " INSIDE WORK	3,583.90	.025	2,480.05	.015	2,021.87	.013
2 " POWER HOUSE & PIPE LINE	11,733.74	.082	12,328.65	.074	14,408.68	.095
1 " VENTILATION & DRAINAGE	4,359.79	.030	3,457.35	.021	3,902.75	.026
2 " SHOPS	1,113.35	.008	1,242.65	.007	1,191.00	.008
1 " PIPE & FITTINGS,RAIL & SUPPLIES	7,031.59	.049	7,465.23	.045	7,170.38	.047
1 " EXPLOSIVES	2.45	.000	---	--	--	--
1 " ROYALTY	10,945.07	.076	14,032.52	.084	12,335.76	.082
3 " TAXES	2,100.00	.014	2,140.60	.013	2,721.56	.018
3 " USE OF TEAMS & OTHER CHARGES	6,295.52	.044	6,967.76	.042	6,890.13	.046
3 " MACHINERY & EQUIPMENT	4,842.00	.034	6,300.00	.038	10,944.00	.072
2 " GENERAL EXPENSE	840.31	.006	1,375.94	.008	1,128.38	.007
3 " INSURANCE	417.60	.003	417.60	.003	417.60	.003
" BAD & DOUBTFUL DEBTS WRITTEN OFF					2.65	--
TOTAL COST	$155,458.55	1.080	$176,718.58	1.062	$176,289.00	1.164

32,147 — 18.013.18 @ .56

22.527 — 21.260.03 @ 94¢

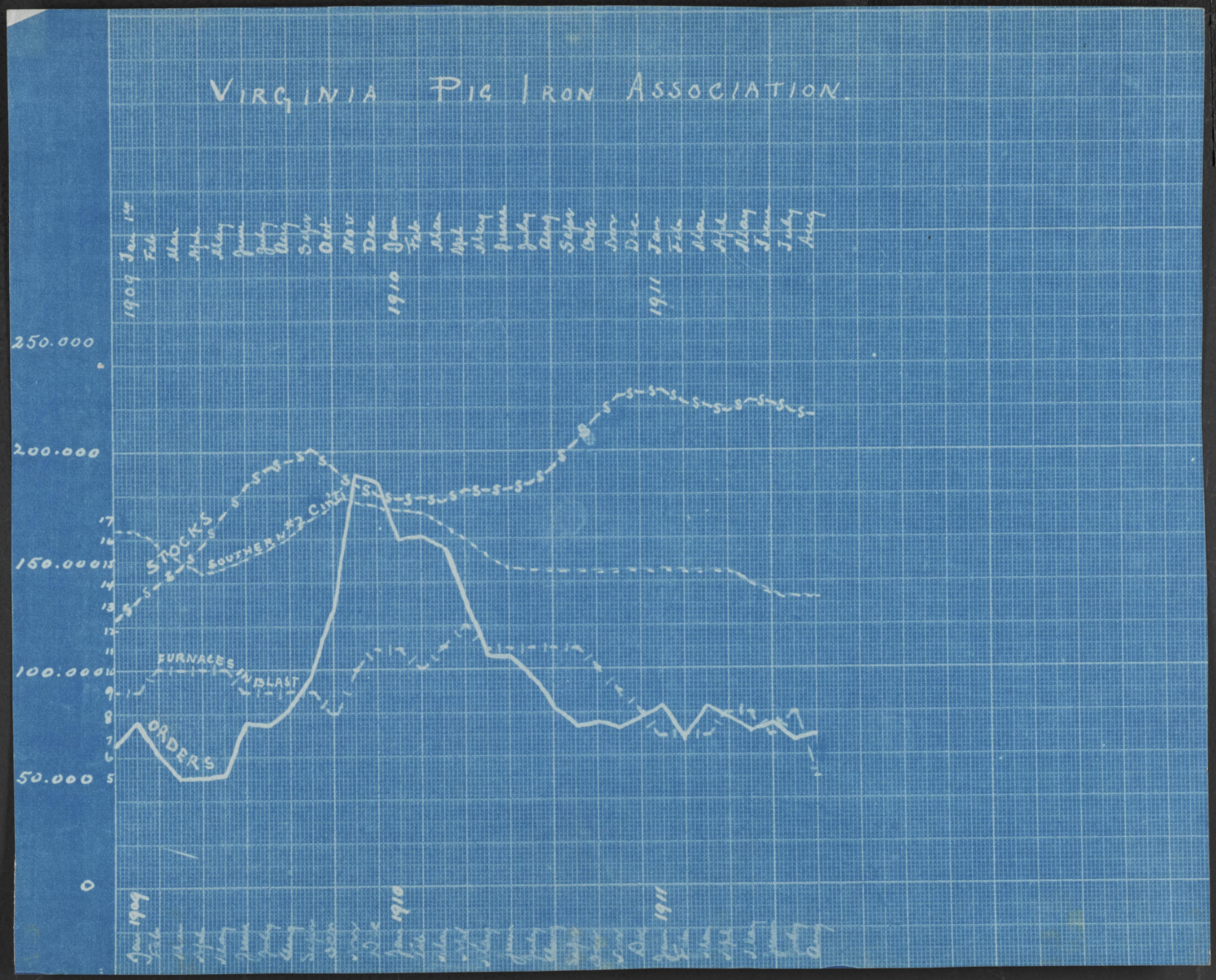
15.048 — 429.58

15048 @ 15.5964 = 1.03

PRODUCTION 143,914 166,441 151,393 @ 1.062 = 160.779.36

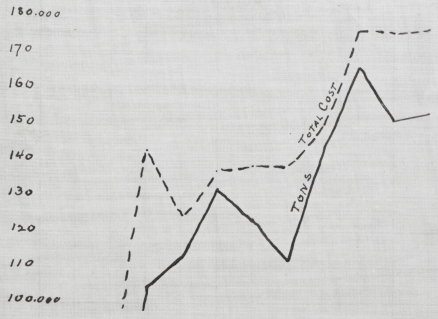
#1	.760	.755	.772
#2	.198	.185	.221
#3	.122	.122	.171
	1.080	1.062	1.164

Loose Item


VIRGINIA PIG IRON ASSOCIATION.
1909 Jan 1st
1910
1911
250.000
200.000
150.000
100.000
50.000
0
STOCKS
SOUTHERN #2 CINCINNATI
FURNACES IN BLAST
ORDERS

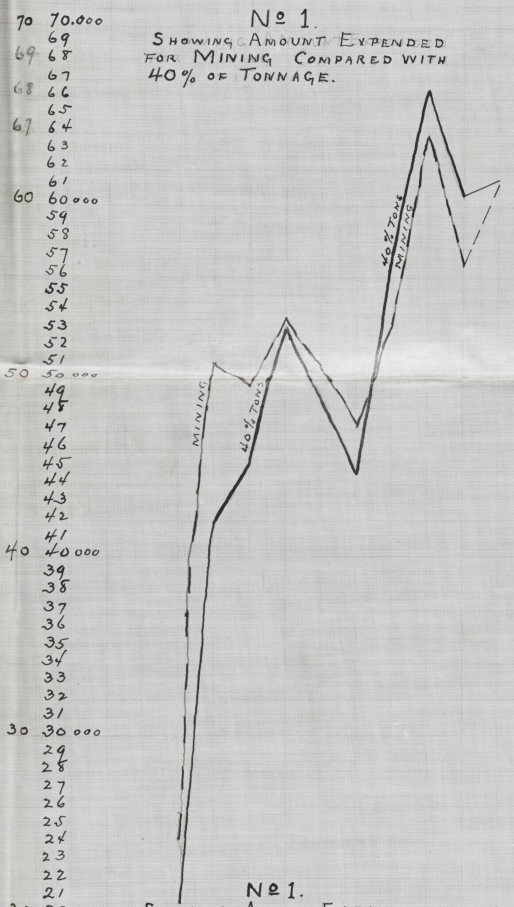
Loose Item

MINE Nº 1.



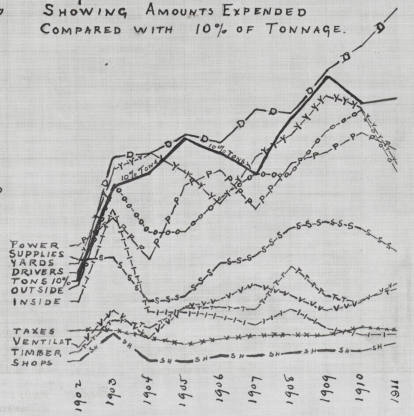
Nº 1.

SHOWING AMOUNT EXPENDED FOR MINING COMPARED WITH 40% OF TONNAGE.



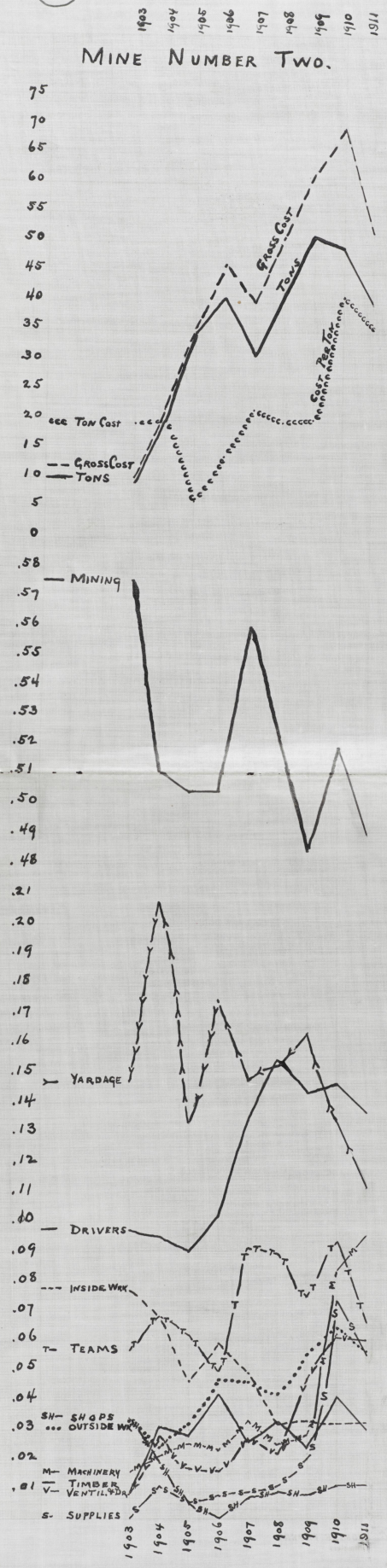
Nº 1.

SHOWING AMOUNTS EXPENDED COMPARED WITH 10% OF TONNAGE.



Loose Item

(2)


1903 1904 1905 1906 1907 1908 1909 1910 1911
MINE NUMBER TWO.
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0
GROSS COST
TONS
COST PER TON
TON COST
GROSS COST
TONS
.58 .57 .56 .55 .54 .53 .52 .51 .50 .49 .48
MINING
.21 .20 .19 .18 .17 .16 .15 .14 .13 .12 .11 .10 .09 .08 .07 .06 .05 .04 .03 .02 .01
YARDAGE
DRIVERS
INSIDE WRK
TEAMS
SHOPS
OUTSIDE WK
MACHINERY
TIMBER
VENTIL'G DR
SUPPLIES
1903 1904 1905 1906 1907 1908 1909 1910 1911

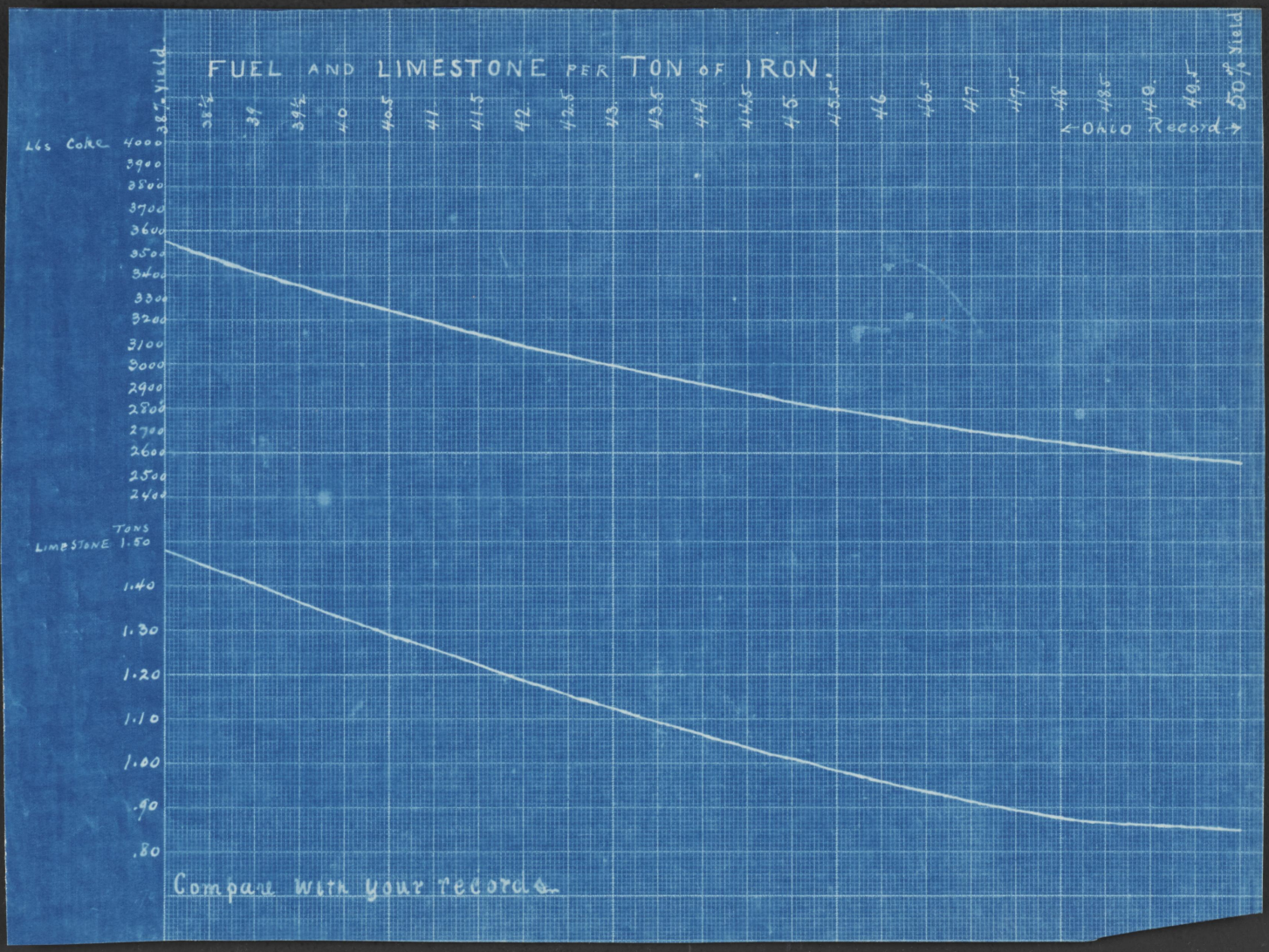
Loose Item

The following are Minimum Rates on Iron Ore and Limestone on Norfolk & Western Railway.

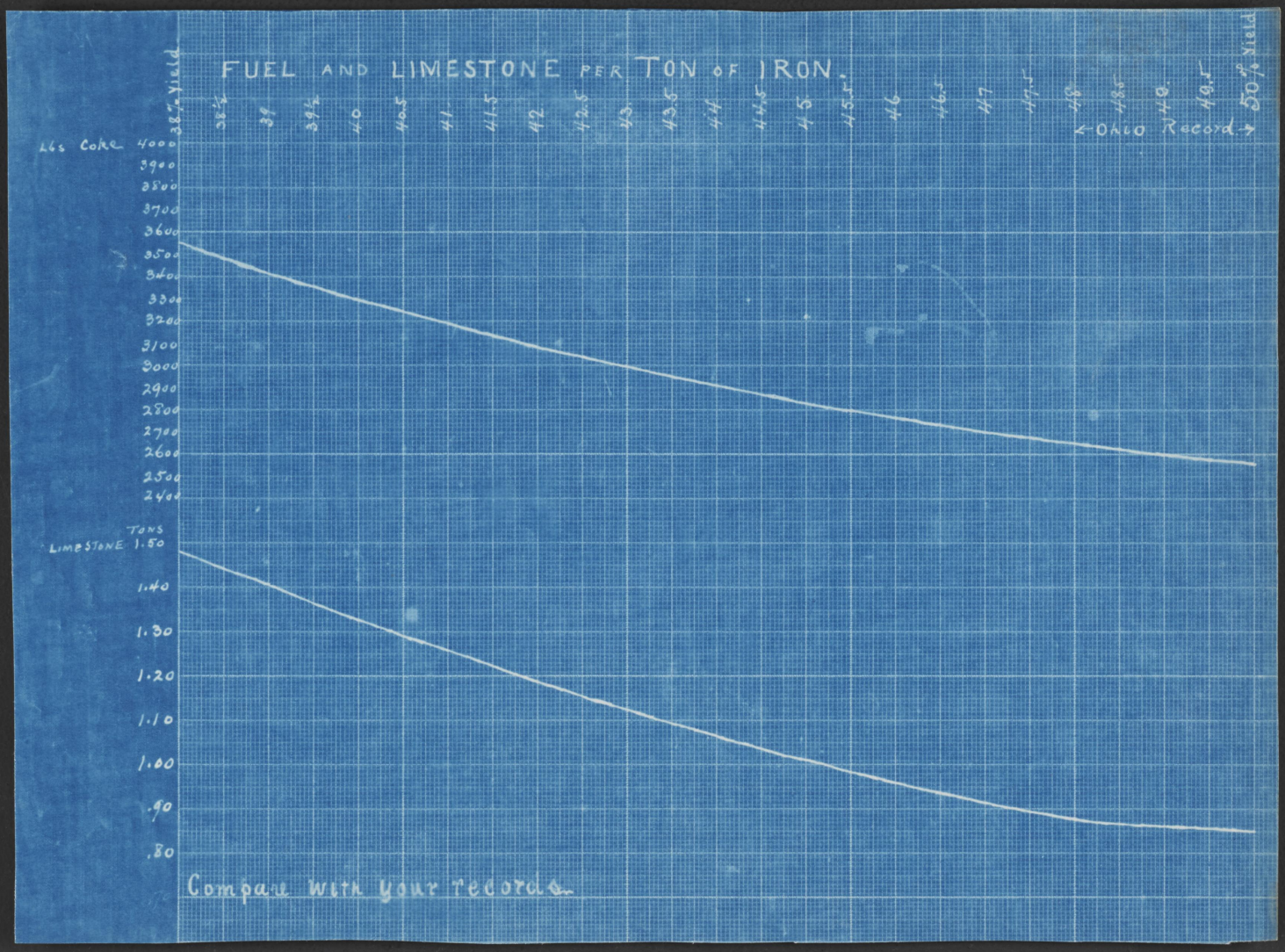
DISTANCE	RATES
10 miles and under,	10
20 miles and over 10 miles	12½
30 miles and over 20 miles,	15
35 miles and over 30 miles,	17½
40 miles and over 35 miles,	20
45 miles and over 40 miles,	22½
50 miles and over 45 miles,	25
55 miles and over 50 miles,	27½
60 miles and over 55 miles,	30
65 miles and over 60 miles,	32½
70 miles and over 65 miles,	35
75 miles and over 70 miles,	37½
80 miles and over 75 miles,	40
85 miles and over 80 miles,	42½
90 miles and over 85 miles,	45
95 miles and over 90 miles,	47½
100 miles and over 95 miles,	50
105 miles and over 100 miles,	52½
110 miles and over 105 miles	55
120 miles and over 110 miles,	57½
130 miles and over 120 miles,	60
140 miles and over 130 miles,	62½
150 miles and over 140 miles,	65

When the price of 2-X iron is advanced to $14.50 at Roanoke the rates on Iron Ore and Limestone will be advanced 2½ cents per ton, and for each additional advance in the price of pig iron of $1.00 per ton, the rates on Iron Ore and Limestone will advance 2½ cents per ton, except that the price of $16.50 for pig iron will fix the maximum rates on Iron Ore and Limestone.

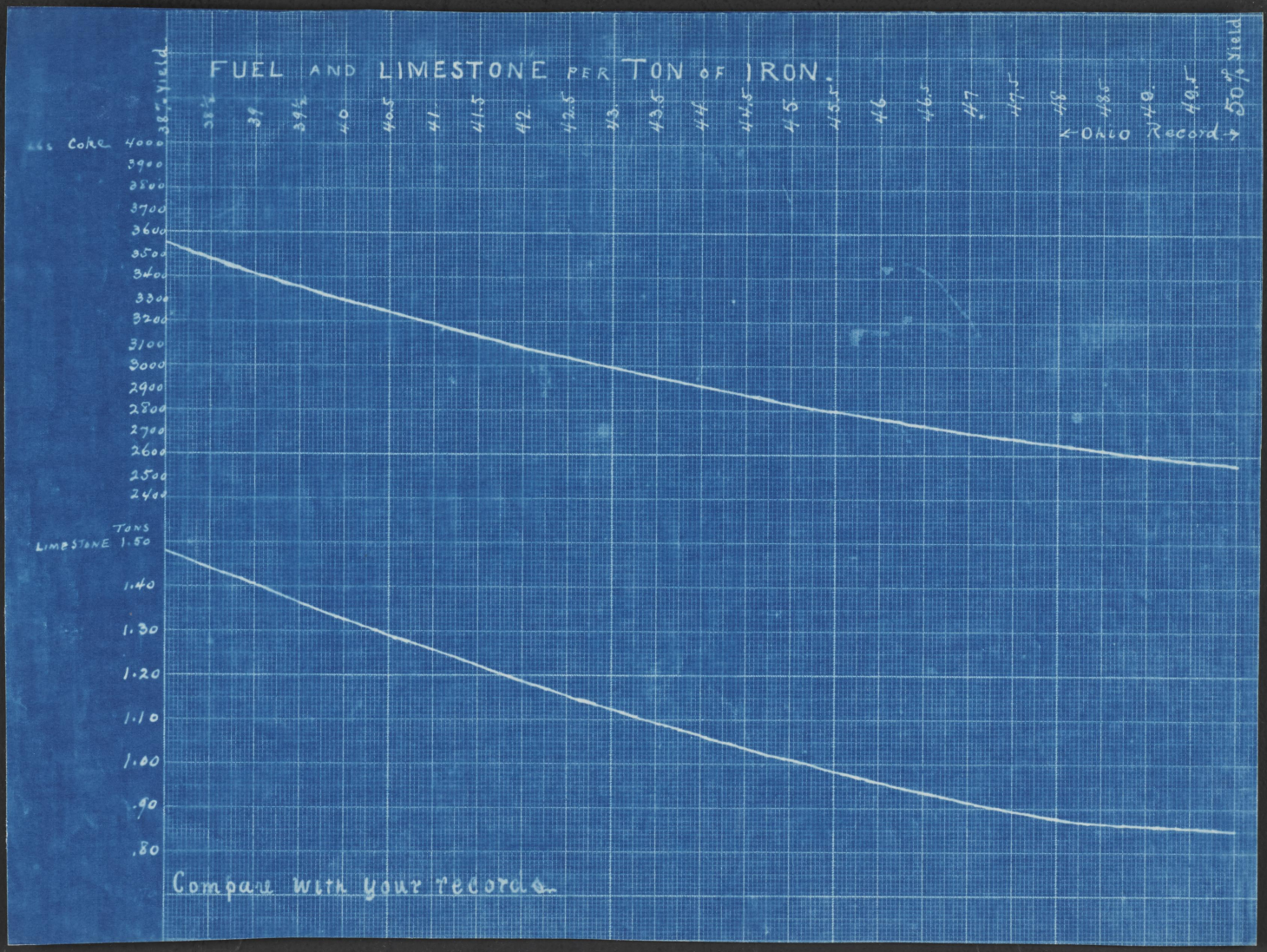
Loose Item


FUEL AND LIMESTONE PER TON OF IRON.
38½
39
39½
40
40.5
41
41.5
42
42.5
43.
43.5
44
44.5
45
45.5
46
46.5
47
47.5
48
48.5
49.
49.5
50% Yield
38½ Yield
← OHIO Record →
Lbs Coke 4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
TONS LIMESTONE 1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
Compare with your records.

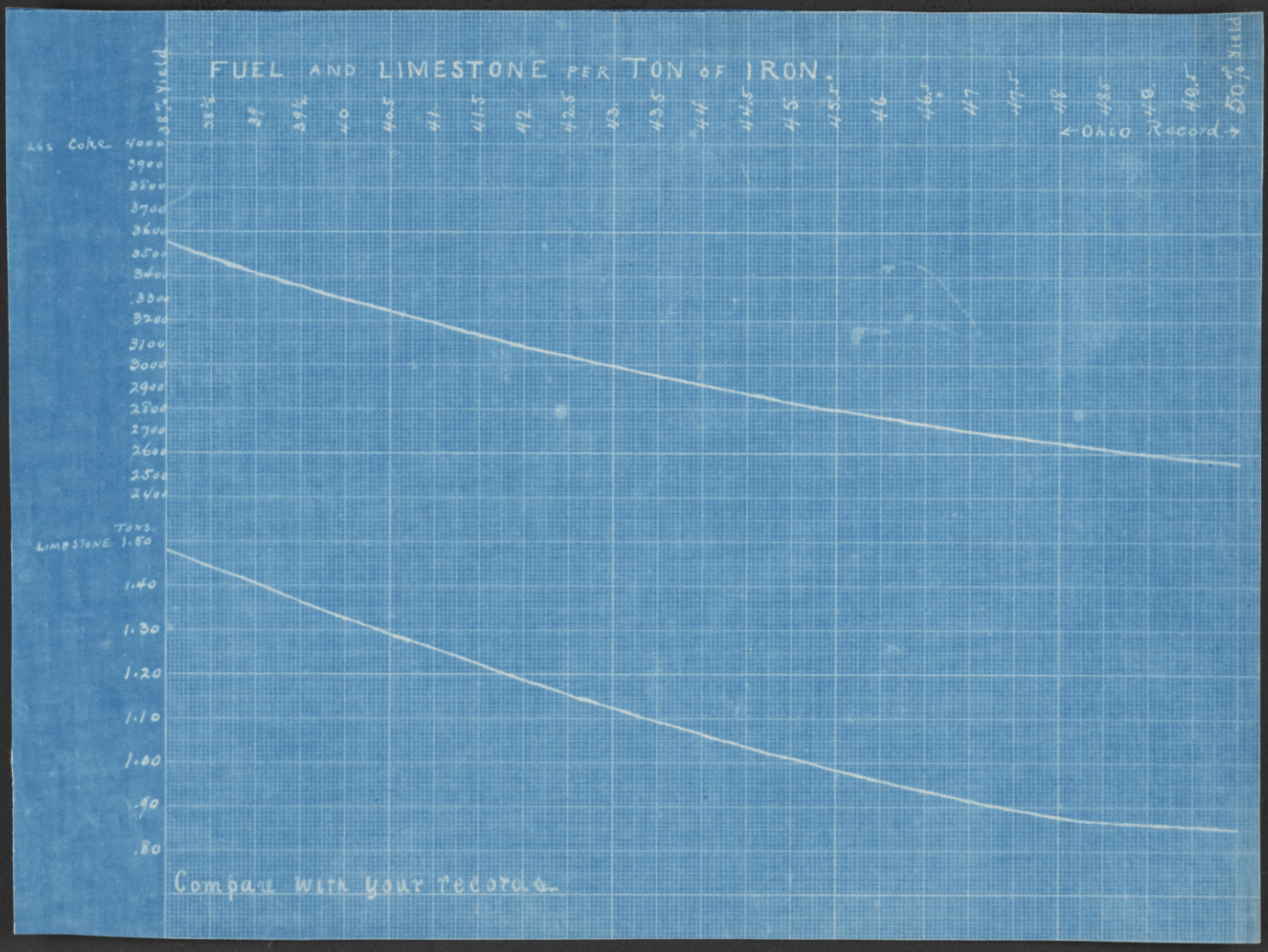
Loose Item


FUEL AND LIMESTONE PER TON OF IRON.
38% Yield
38½
39
39½
40
40.5
41
41.5
42
42.5
43
43.5
44
44.5
45
45.5
46
46.5
47
47.5
48
48.5
49
49.5
50% Yield
Ohio Record
Lbs Coke
4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
Tons Limestone
1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
Compare with your records.

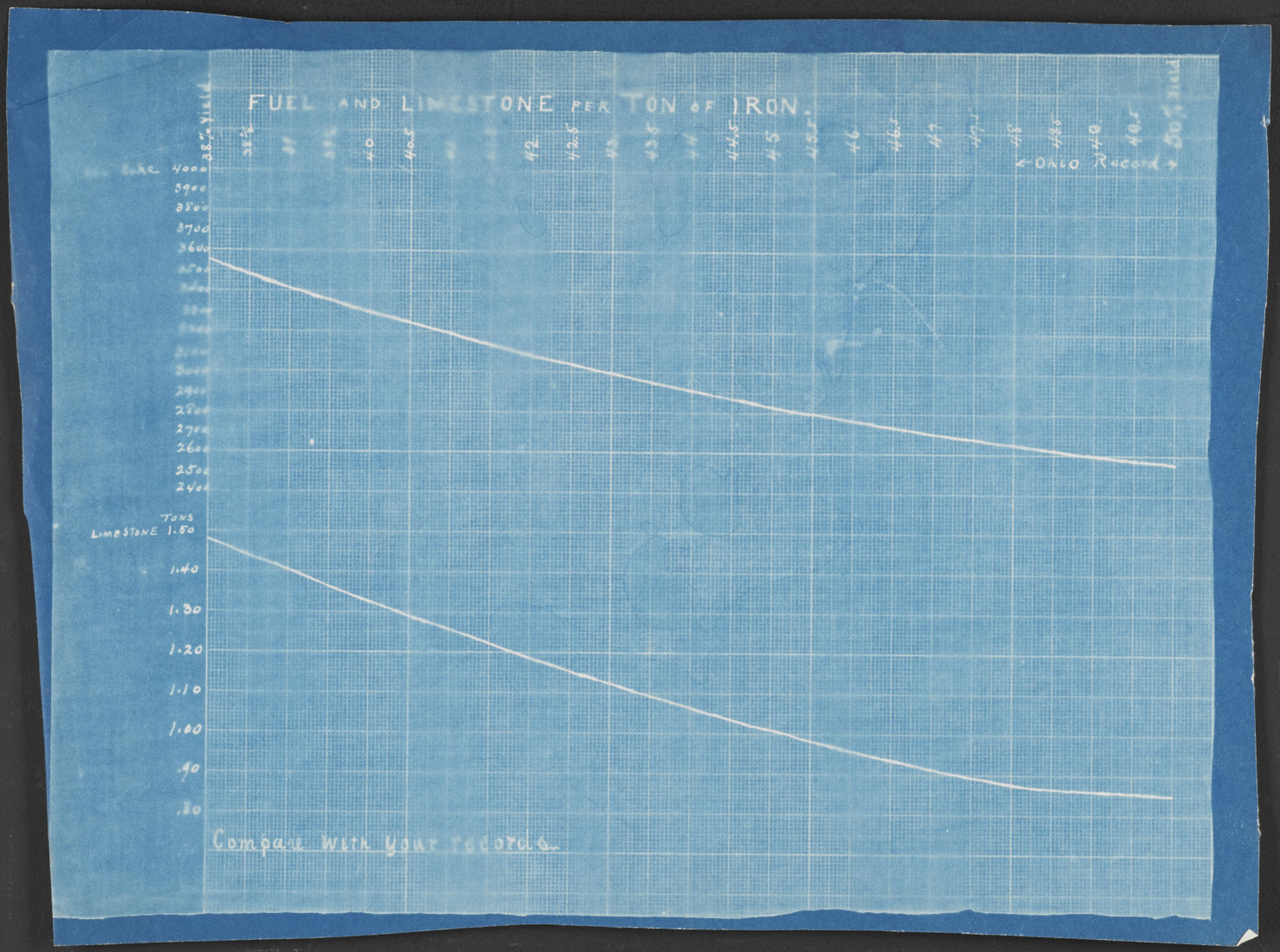
Loose Item


FUEL AND LIMESTONE PER TON OF IRON.
38% Yield
32½
33
33½
40
40.5
41
41.5
42
42.5
43
43.5
44
44.5
45
45.5
46
46.5
47
47.5
48
48.5
49
49.5
50% Yield
← OHIO Record →
Coke 4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
Tons Limestone 1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
Compare with your records

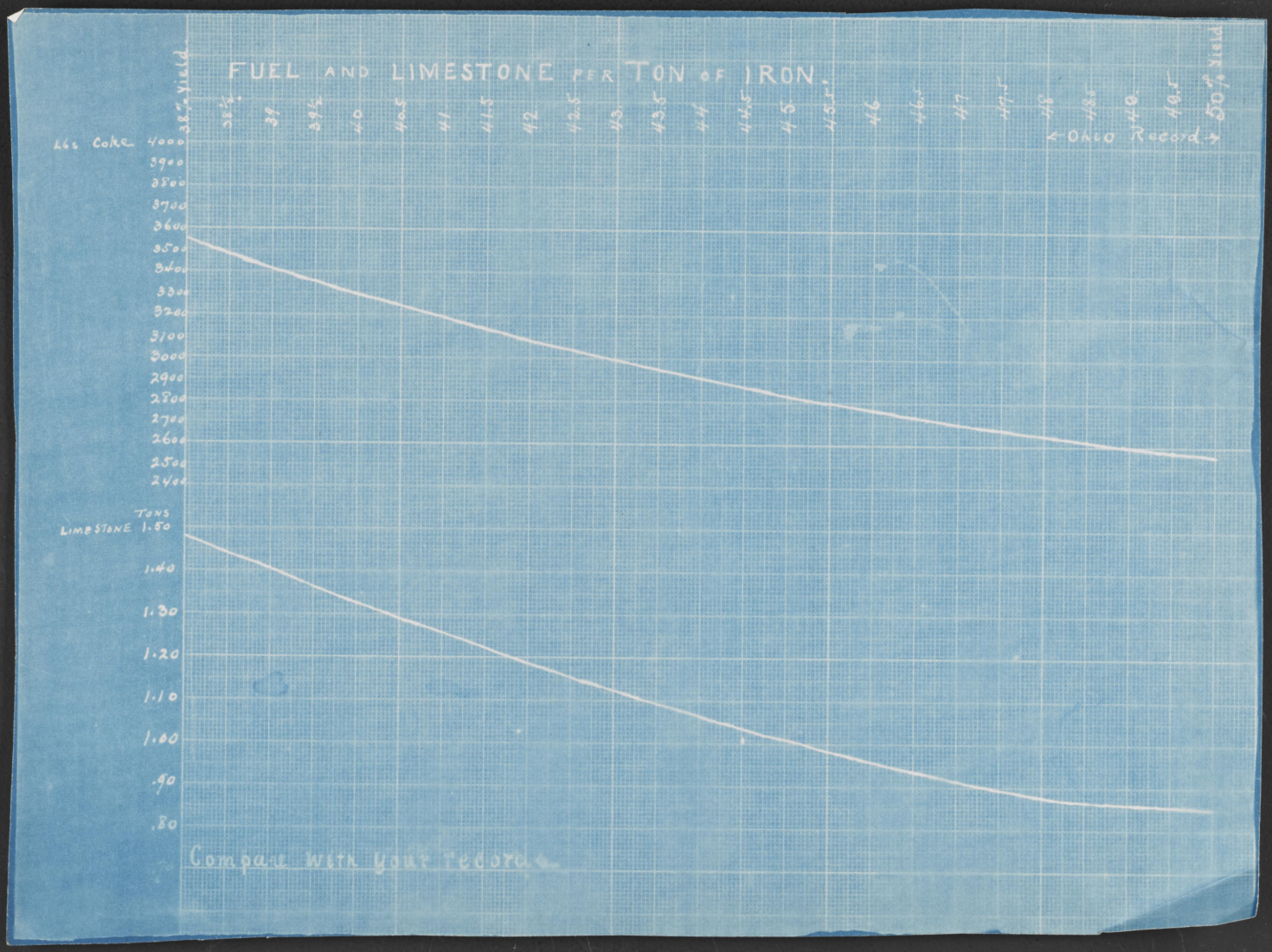
Loose Item


FUEL AND LIMESTONE PER TON OF IRON.
38% Yield
39%
40
40.5
41
41.5
42
42.5
43
43.5
44
44.5
45
45.5
46
46.5
47
47.5
48
48.5
49
49.5
50% Yield
← OHIO Record →
Lbs COKE
4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
TONS LIMESTONE
1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
Compare with your records.

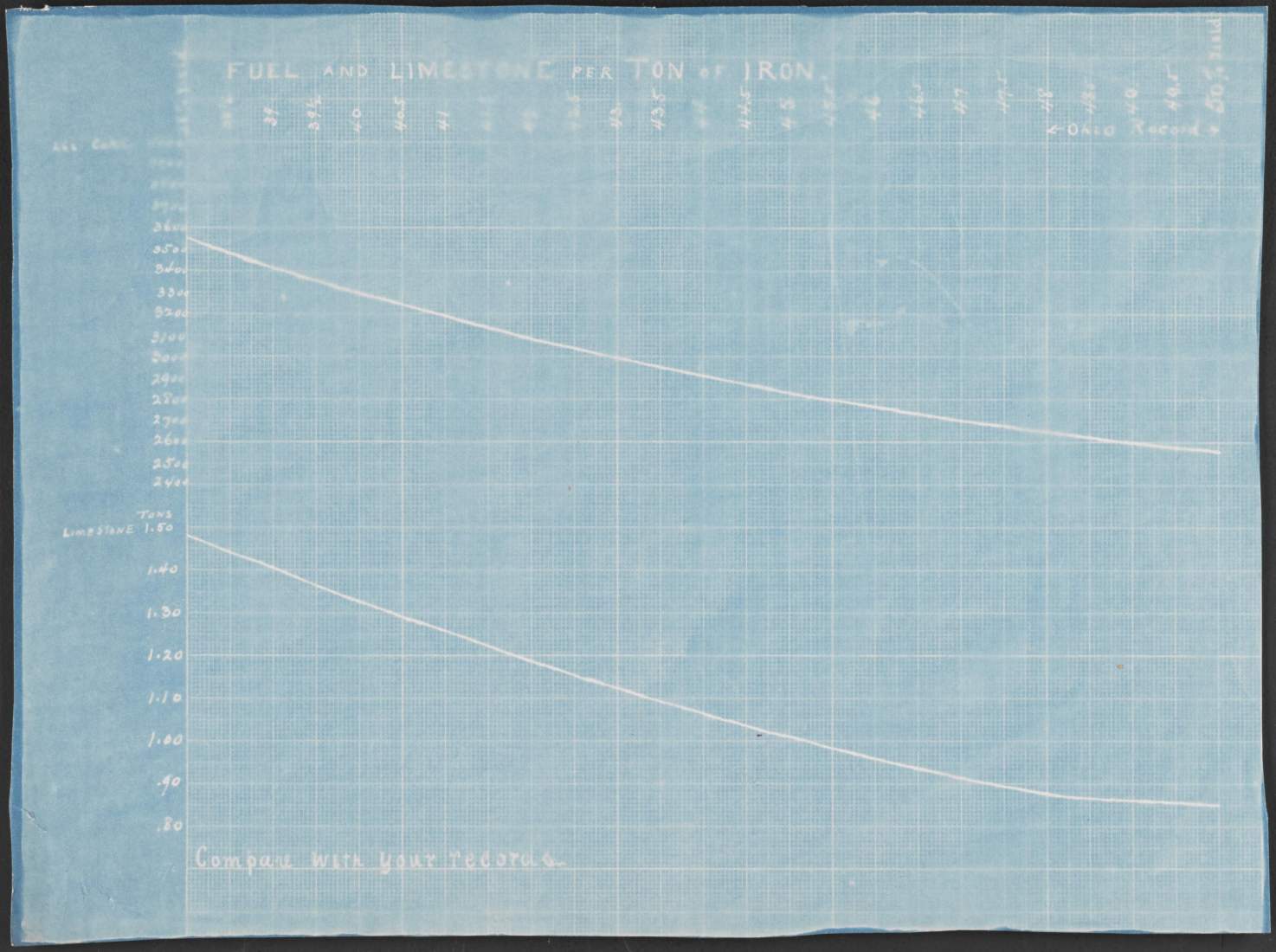
Loose Item


FUEL AND LIMESTONE PER TON OF IRON
38% Yield
4000
3900
3800
3700
3600
2900
2800
2700
2600
2500
2400
Tons Limestone
1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
Compare with your records.

Loose Item


FUEL AND LIMESTONE PER TON OF IRON.
Lbs Coke
4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
Tons Limestone
1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
Ohio Record
Compare with your record

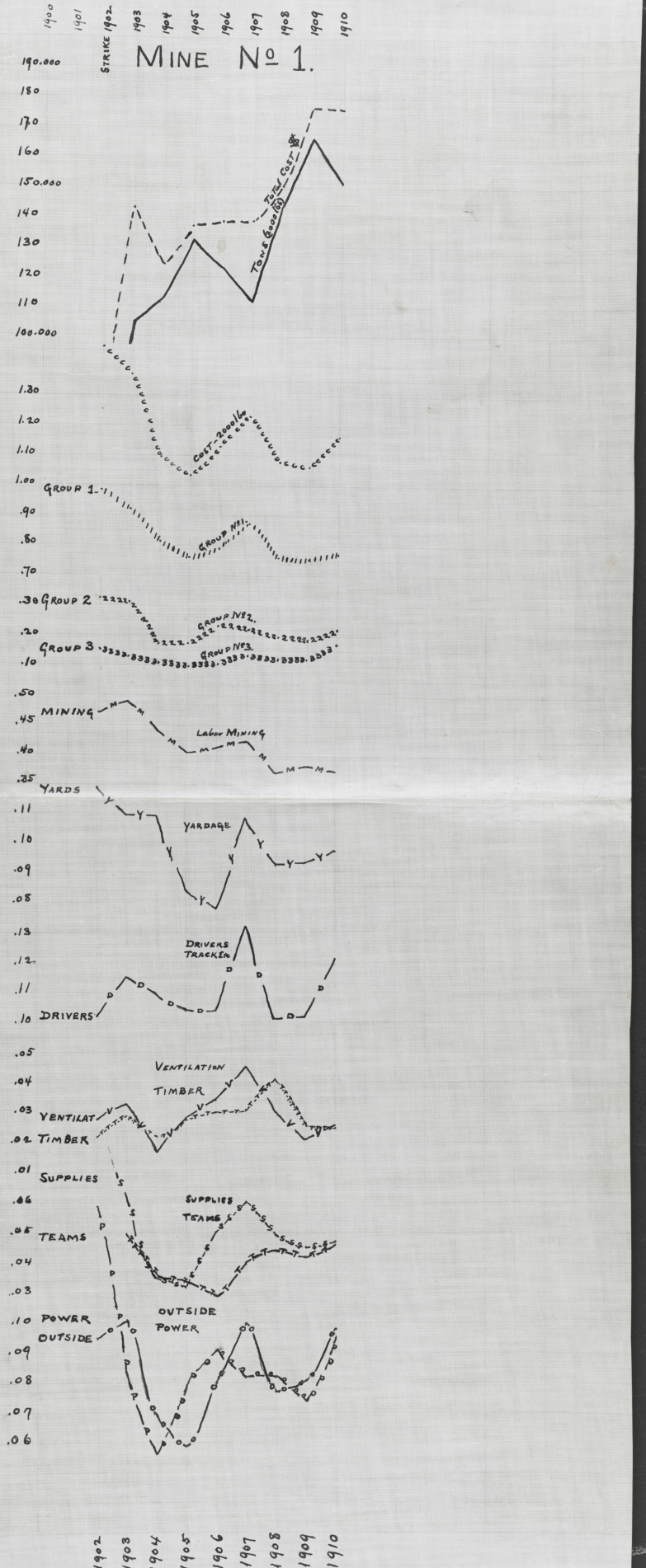
Loose Item


FUEL AND LIMESTONE PER TON OF IRON.
TONS LIMESTONE
1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
Compare with your records.

Loose Item

(1)

MINE No 1.



Loose Item

From
A. J. Mothams,
Wilmington, Del.



Sunday -

Mr. E. C. Means,

% Low Moor Iron Company,

Low Moor, Virginia

Loose Item



Loose Item

	Cast No.	Silicon	Sulphur	Cast No.	Silicon	Sulphur	Cast No.	Silicon	Sulphur
Hpt 9	615	3.00	.009	657	1.76	.018			
	616	2.30	.013	658	1.40	.030			
	617	2.33	.014	18 659	1.07	.036			
	618	2.70	.012	660	1.26	.040			
10	619	2.56	.011	661	1.40	.025			
	620	2.72	.010	662	1.60	.040			
	621	2.61	.008	663	1.54	.037			
	622	2.65	.008	19 664	1.49	.038			
	623	2.52	.010	665	1.58	.036			
11	624	2.33	.010	666	1.68	.042			
	625	2.26	.014	667	1.96	.026			
	626	2.50	.012	668	1.98	.026			
	627	2.61	.013	20 669	1.82	.033			
	628	2.42	.012	670	1.70	.026			
12	629	2.48	.013	671	1.75	.027			
	630	2.42	.012	672	1.94	.020			
	631	2.30	.013						
	632	2.30	.013						
	633	1.86	.016						
13	634	2.10	.013						
	635	2.75	.011						
	636	2.80	.010						
	637	2.33	.015						
	638	2.02	.023						
14	639	2.15	.027						
	640	2.00	.033						
	641	2.05	.030						
	642	2.19	.020						
	643	2.30	.018						
15	644	2.40	.022						
	645	2.30	.018						
	646	2.25	.020						
	647	2.20	.020						
	648	2.00	.018						
16	649	1.44	.030						
	650	1.50	.023						
	651	1.96	.020						
	652	2.10	.015						
	653	1.60	.021						
17	654	1.56	.022						
	655	1.86	.020						
	656	2.00	.017						

Loose Item

1899		Magnesia	Lime	Silica	Alumina	Sulphur		Tons of Iron made
March	15	4.23	47.90	33.40	13.36	2.18		116
"	16	4.32	48.70	33.08	13.50	1.96		1222
"	17	4.10	47.90	34.70	12.80	2.02		102
"	18	3.82	47.10	34.16	13.80	2.30		1045
"	20	4.46	46.30	34.30	13.86	2.13	Sunday & Monday	2113
"	21	4.30	46.00	33.96	14.70	1.90		99
"	22	4.00	48.60	33.70	13.00	1.86		1022
"	23	4.17	48.00	33.90	13.00	1.90		1075
"	24	2.98	48.40	34.00	13.82	1.93		1126
"	25	2.42	49.40	32.90	14.30	2.00		1089
"	27	2.10	50.90	34.40	12.60	1.95		216
"	28	2.10	49.10	31.80	16.70	1.98		1191
"	29	2.15	49.10	32.10	15.70	2.90		124
"	30	2.20	48.50	32.80	16.40	2.17		1142
"	31	2.00	48.60	32.56	15.80	2.05		1224
April	1	2.23	49.00	32.10	15.90	2.06		134
	2							1337
"	3	2.20	48.20	32.40	16.10	2.05		1347
"	4	2.35	50.30	32.00	14.30	2.15		1333
"	5	2.40	49.90	32.20	14.30	1.90		1224
"	6	2.15	49.00	34.20	13.80	1.70		1075
"	7	2.20	50.80	32.20	13.90	1.80		1057
"	8	2.30	51.40	32.40	13.00	1.80		1079
"	10	2.45	50.25	31.65	14.55	1.85		2128
"	11	2.20	49.00	33.40	14.45	1.95		109
"	12	2.00	49.10	33.80	14.10	2.00		122
"	13	1.90	48.80	33.60	14.60	2.20		130
"	14	2.10	47.90	33.80	15.20	2.20		1297
"	15	1.90	46.60	33.50	15.00	2.20		1323
"	17	2.60	48.60	33.60	14.10	2.00		2627
"	18	2.40	48.60	34.70	13.60	2.00		1319
"	19	2.30	48.50	34.30	14.00	2.00		1176

for analyses of iron see over

Hanging Rock Ohio

Loose Item

	Cast No	Silicon	Sulphur		Cast No	Si.	Sulph		Cast No	Si	Sulphur
Mch 15 1 a.m.	489	1.95	.023		531	1.58	.022		573	1.61	.026
	490	1.85	.030		532	1.16	.023	Mch 1	574	1.58	.025
	491	1.91	.021		533	.93	.036		575	1.85	.024
	492	1.75	.022	24	534	.75	.040		576	2.05	.021
	493	1.86	.018		535	1.09	.034		577	2.15	.024
16	494	1.92	.017		536	1.72	.022		578	2.40	.025
	495	2.35	.018		537	2.00	.018	2	579	1.60	.046
Five casts daily	496	1.58	.018		538	1.84	.013		580	1.80	.032
	497	1.76	.016	25	539	1.44	.010		581	2.20	.022
	498	1.95	.013		540	1.06	.014		582	2.33	.024
17	499	1.65	.013		541	1.07	.016		583	2.45	.030
	500	1.28	.030		542	1.34	.022	3	584	2.38	.020
	501	2.25	.017		543	1.44	.024		585	2.10	.018
	502	3.00	.014	26	544	1.38	.026		586	1.86	.015
	503	2.68	.014		545	1.40	.023		587	2.42	.017
18	504	1.90	.016		546	1.53	.028		588	2.25	.010
	505	1.98	.014		547	1.64	.024	4	589	2.06	.017
	506	2.01	.018		548	1.72	.021		590	1.72	.015
	507	1.85	.025	27	549	1.96	.025		591	1.65	.016
	508	1.74	.026		550	2.33	.020		592	1.68	.014
19	509	1.92	.046		551	1.82	.022		593	1.40	.025
	510	1.89	.056		552	1.68	.030	5	594	1.63	.022
	511	1.96	.048		553	1.91	.023		595	1.45	.026
	512	1.89	.036	28	554	2.25	.019		596	1.45	.020
	513	2.01	.055		555	2.15	.021		597	1.63	.018
20	514	1.83	.048		556	2.15	.021		598	1.60	.016
	515	1.91	.046		557	1.86	.025	6	599	1.65	.020
	516	1.92	.043		558	1.72	.032		600	1.60	.020
	517	1.73	.048	29	559	1.72	.030		601	1.63	.016
	518	1.91	.040		560	2.01	.023		602	1.85	.014
21	519	1.99	.038		561	1.85	.030		603	2.10	.009
	520	1.78	.045		562	1.67	.027	7	604	2.05	.010
	521	1.54	.030		563	1.63	.025		605	2.00	.010
	522	1.65	.022	30	564	1.76	.023		606	2.15	.010
	523	1.27	.025		565	1.84	.026		607	2.02	.013
22	524	.79	.050		566	1.66	.036		608	1.50	.014
	525	.54	.062		567	1.80	.028	8	609	1.95	.012
	526	1.30	.030		568	1.81	.024		610	2.45	.010
	527	1.18	.036	31	569	1.62	.032		611	1.50	.020
	528	.93	.033		570	1.50	.042		612	1.72	.012
23	529	1.12	.038		571	1.58	.025		613	2.45	.010
	530	1.57	.028		572	1.63	.024	9a	614	2.95	.009

Loose Item

John Clark.
Began at Kay moon No 2
Dec. 1st 1908
went to Kay moon No 1
Oct. 1st 1909
left Feby 1911 at Kay moon
No 2. Feby & March. 1911

M. T. Walter

Loose Item

Mine Foremen Kay Moor. No. 1.

John Riley June. 1st 1905 to mar. 1st 1905

J N McBrayer mar 1st 1905 to Dec 1st 1905

F L. Pugh. Dec 1st 1905 to mar 1st 1906

A R Jones mar. 1st 1906 to Nov 1st 1906

Geo Shawkey Nov. 1st 1906 to July 11th 1907

F.N. Tibbets July 11th 1907 to Oct 1st 1908

Geo. Shorthouse Oct 1st 1908 to Oct. 1st 1909

John Clark. Oct 1st 1909 to Feby 1st 1911

C A Booker Feby 1st 1911 to mar 1st 1911

M.V. Bragg mar 1st 1911 to May 1st 1911

M Blythe May 1st 1911 to

Loose Item

Mine Foremen.

Kay Moor Mine No. 2.

A R. Jones. Jan 1st 1905 to Mar 1st 1906

J M Frink Mar 1st 1906 to Dec 1st 1906

S. W. Darlington Dec 1st 1906 to Mar 1st 1907

R. O Rafter Mar 1st 1907 to Nov 1st 1907

D. N. Stull Nov. 1st 1907 to Dec 1st 1908

John Clark Dec 1st 1908 to Oct 1st 1909

Sam. Seaman. Oct 1st 1909 to Feby 1st 1911

John Clark. Feby 1st 1911 to April 1st 1911

D. N. Stull Apr. 1st 1911 to —

Loose Item

Naylor Clinker. from Apr 28 to June 4

Princess Furnace Kiln

.113	67.40 Iron	.206	
.158	3.80 Insol.	.124	
.099		.116	
.070		.393	
.069		.112	
.100		.093	
.115		.107	
.127		.103	
.056		.127	66.80 Iron.
.186		.175	2.60 Insol.
.082		.110	
.182		.314	
.158	66.80 Iron	.104	
.035	2.23 Insol.	.213	
.100		.219	
.075		.315	
.113		.151	
.102		.227	
.227		.203	
.175		.143	
.103		.248	
.145		.326	
.102		.172	
.102		.248	
.065		.248	
.121			
.090			
.058			
.078			

I did not include several high sulfur results because they we analyses "crisp". Same were used by us and are not included in the stock price from which we hope to ship you.

Mr. Means above are our analyses on clinker from foreign

Syn Co.

JRH 12/12/12

Loose Item

The Low Moor Iron Company of Virginia.

.....Department.

190

Memo. deeds covering water rights on Potts Creek –

March 1st 1906 –	Mrs. Mary C. Sively	5.00
"	J. W. Bowyer	5.00
"	Nancy Bowyer	5.00
"	W. S. Kepler	5.00
"	James O. Humphries	5.00
"	Matilda Rose	5.00
"	Silas L. Lockhart	250.00
"	B. L. Carter	
Oct. 24th 1906 –	Mary A. & L. D. Terry	2.50
Nov 7th 1906 –	Jas M. Robinson	1.00

Poor Farm

Loose Item

Average Wages.

Dolly Ann Mine.

1903	Outside	$1.31	per day
1903	Inside	1.29	
1904	Outside	1.35	
1904	Inside	1.35	
1905	Outside	1.38	
1905	Inside	1.43	
1906	Outside	1.56	
1906	Inside	1.55	
1907	Outside	1.72	
1907	Inside	1.82	

Loose Item

Average Stack Mine

1905	Outside	1.73 per day
1906	Outside	157
1906	Inside	153
1907	Outside	162
1907	Inside	174

Loose Item

Average Wages Paid

Fernwick Mine.

1903	Outside	1.35
1904	Outside	1.30
1905	Outside	1.35
1905	Inside	1.40
1906	Outside	1.45
1906	Inside	1.55
1907	Outside	1.50
1907	Inside	1.80

Loose Item

Limestone Quarry
Average Wages per day

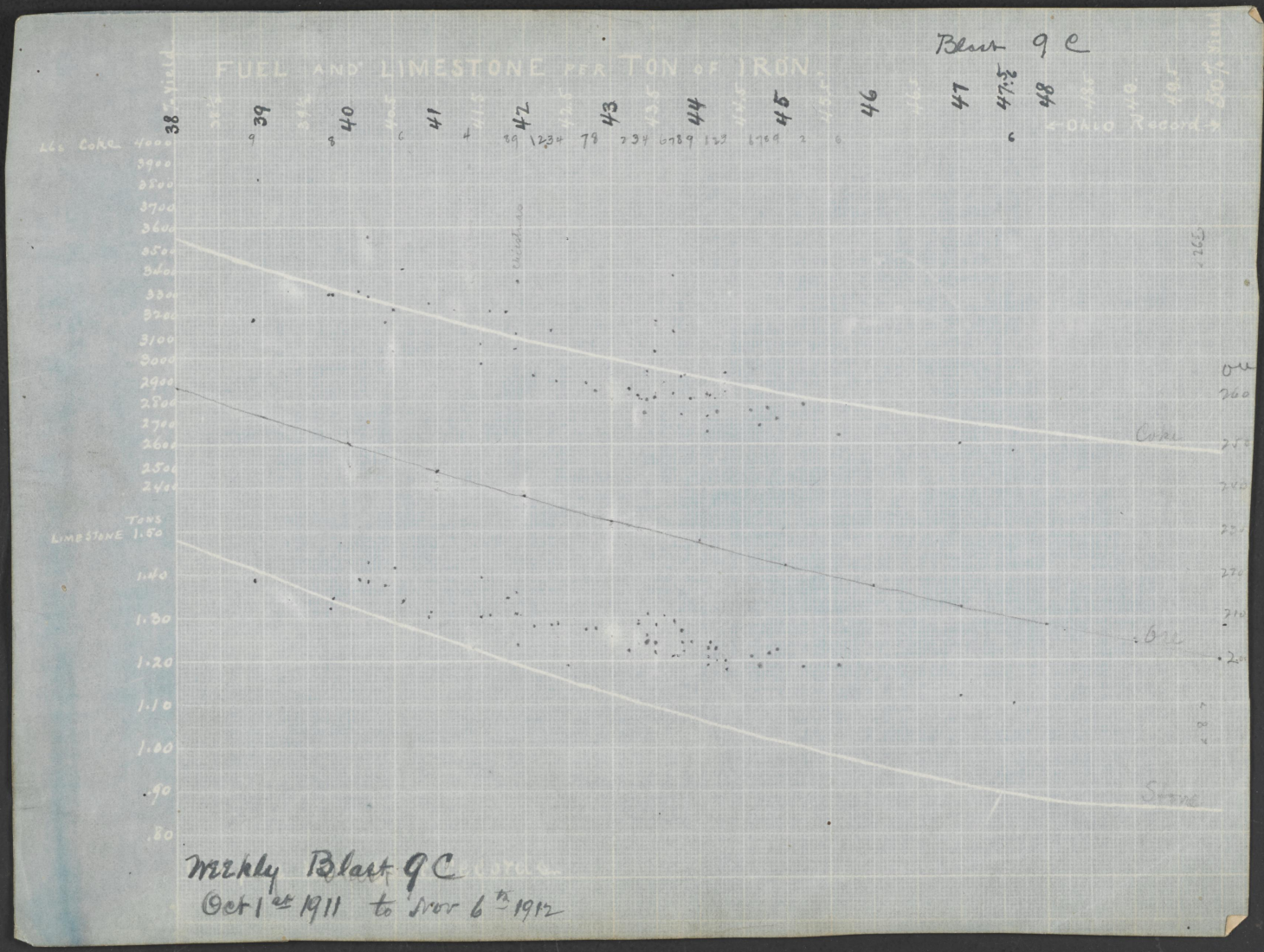
1903	129
1904	120
1905	131
1906	149
1907	153

5 year Average.

Dolly Ann	$1.47
Fenwick	1.46
Stack.	1.64
Quarry	1.36

M F Walters.

Loose Item


Blast 9 C
FUEL AND LIMESTONE PER TON OF IRON
Lbs Coke
TONS LIMESTONE
Coke
Ore
Stone
Weekly Blast 9 C
Oct 1st 1911 to Nov 6th 1912

Loose Item

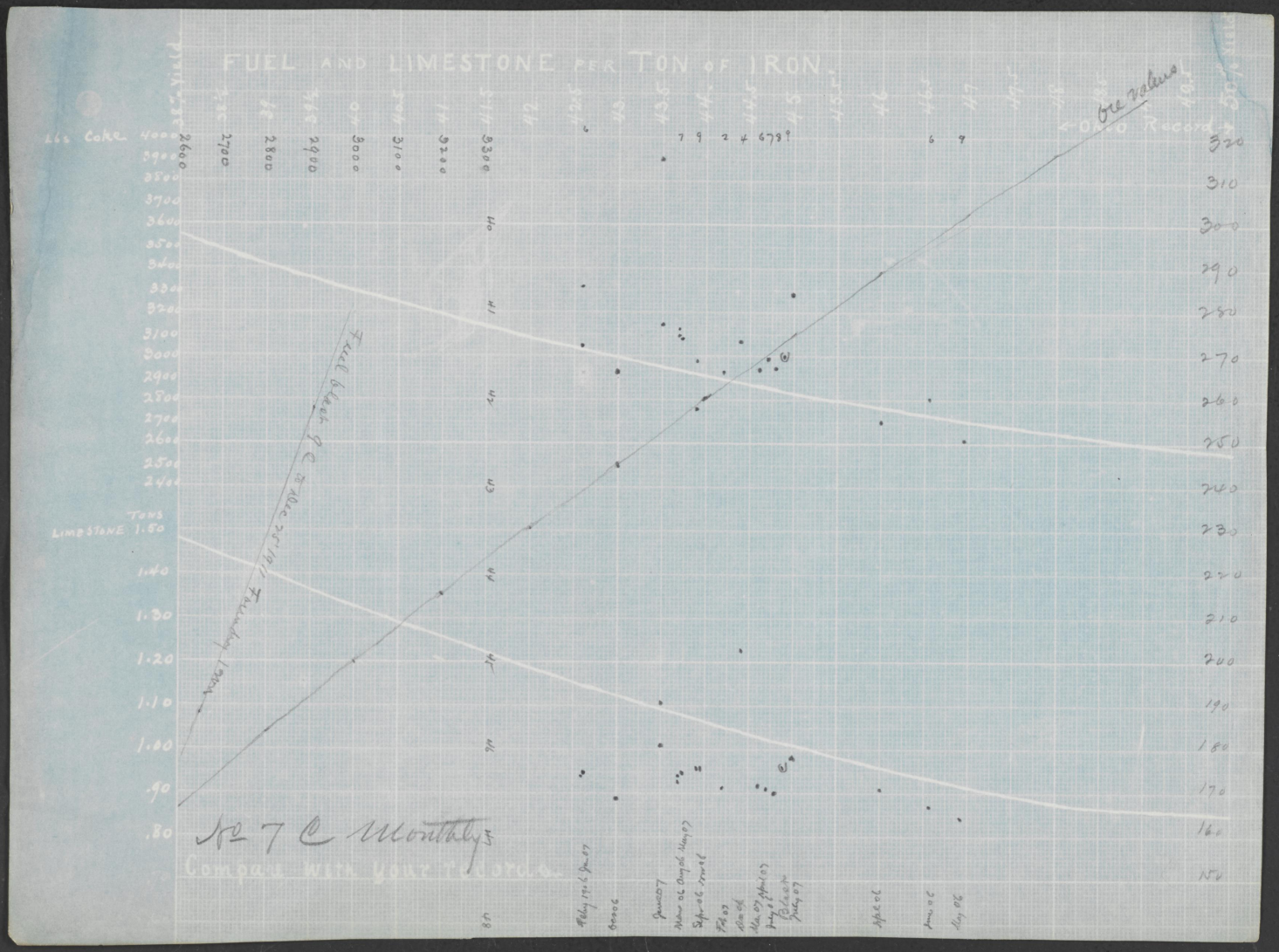
40% — 1.70

42% — 2.00

44% — 2.28

46% — 2.56

Loose Item


FUEL AND LIMESTONE PER TON OF IRON
Lbs Coke
TONS
LIMESTONE
Ore values
Fuel block of C to Dec 25 1911 Tonnage 1000
No 7 C Monthly
Compare with your records

Loose Item

Ore values—
37 – 1.513
38 – 1.678
39 – 1.841
40 – 2.000
41 – 2.156
42 – 2.309
43 – 2.459
44 – 2.606
45 – 2.751
46 – 2.893
47 – 3.032
48 – 3.167
49 – 3.294
50 – 3.410

Coke @ 2.80.
lime @ .80

Iron Cost $12.68 per ton

Loose Item

Lime 3% Silicon 4 5 6 Coke

Coke	Lime	Ore	Yield	Silicon	Sulp	Date	Tons	Silica	Oxides	Heat
3224	1.402	2.576	38.8	3.84	033	1/30 1909	1204	46.55	8.44	1113
3134	1.421	2.434	41.07	3.87	038	Feb 20	1178	46.33	8.17	1080
3184	1.381	2.618	38.20	4.09	031	Oct 16	1210	46.78	7.91	1120
3426	1.591	2.686	37.25	4.06	029	Nov 27	1211	46.60	7.69	1145
3642	1.54	2.738	36.51	4.65	038	Dec 18	1093	48.42	7.65	1070
2952	1.388	2.311	43.25	4.44	026	1910 Jan 8	1234	46.96	6.83	1084
3084	1.306	2.329	42.94	4.19	038	Dec 3	1161	46.96	7.74	1070
3592	1.406	2.495	41.51	3.95	030	Dec 24	1109	44.59	7.27	1052
3516	1.463	2.344	42.65	4.84	039	31	992	44.76	6.68	1045
3998	1.346	2.285	43.75	5.72	034	1911 JAN 28	979	46.95	8.18	1130
3572	1.263	2.287	43.72	6.62	023	Feb 4	988	47.08	7.26	1060
3292	1.404	2.297	42.04	4.06	039	11	1221	47.76	7.20	1083
3366	1.063	2.126	47.03	4.24	026	Apr 1	1288	46.74	6.55	1100
3688	1.273	2.143	46.65	4.34	047	May 13	1125	45.89	6.24	
3484	1.427	2.340	42.73	4.10	049	1910 20	1104	47.97	6.21	
3709	.978	2.249	44.4	4.53	063	Jan 23	711	45.99	8.96	1057
3753	.977	2.254	44.3	6.25	033	30	682	46.13	8.55	1048
3547	.950	2.247	44.5	6.71	033	Feb 6	775	45.81	8.46	1066
3506	.940	2.258	44.3	5.88	036	13	798	46.58	8.32	1051
3464	1.221	2.375	42.1	4.22	035	20	800	46.14	7.71	1080
3535	.936	2.281	43.8	6.65	041	Apr 10	745	47.89	8.20	1227
3676	.897	2.266	44.1	6.88	039	17	688	48.73	8.61	1276
3673	.980	2.264	44.1	6.53	043	24	687	49.39	8.52	1261
3689	1.025	2.321	43.1	7.19	035	May 1	641	47.14	7.90	
3369	.984	2.238	44.6	6.29	039	8	698	46.44	8.03	
3547	1.022	2.259	44.2	6.20	037	15	685	47.53	7.97	
3496	.988	2.226	44.9	6.20	034	22	706	46.79	8.24	
3542	.989	2.223	44.9	6.37	043	29	681	47.11	7.91	
3453	.955	2.136	46.8	5.64	042	Jun 5	603	47.03	7.29	
3224	1.254	2.329	42.9	4.22	052	12	696	46.81	7.56	
3729	1.000	2.260	44.2	5.97	041	19	633	47.11	7.95	
3791	1.159	2.228	44.8	5.27	049	July 10	609	46.81	7.36	
4018	1.096	2.307	43.3	6.80	040	17	560	47.59	7.10	
~~3556~~	~~1.359~~	~~2.338~~	~~43~~							

Fee B

Fee C
Sandy Amore
" "
" "
" 10% Jordan
" 35 " "
" 30 " "
" 46 " "
" 48 " "
" 50 " "
" 50 " "
" 50 " "
" 50 " "

Perfect PROFILE Millimeters

Loose Item

Blast 12A

Under .10 | .10 .10 Tons | Silicon 3% | Under 100 100 100 100 | Annual Coke

Stone off 2 days
Fan blown down 4 hours to Air out Line - Lean Slag
12 hours Clearing Flues

1/20 Scale + Nodules
1/2 Nodules

IDLE 4 DAYS
3 DAYS on 6 & 7% Silicon

Small tuke irregular
Slunded tuns 4 (105°)
Casings 1/2 from 4 Coke Charge
1/2 " 3 " "

Lost 1 cast in 5 days Pig accounts for low Yields

Lost part of Cast-Boil

Some take ore in stock ore

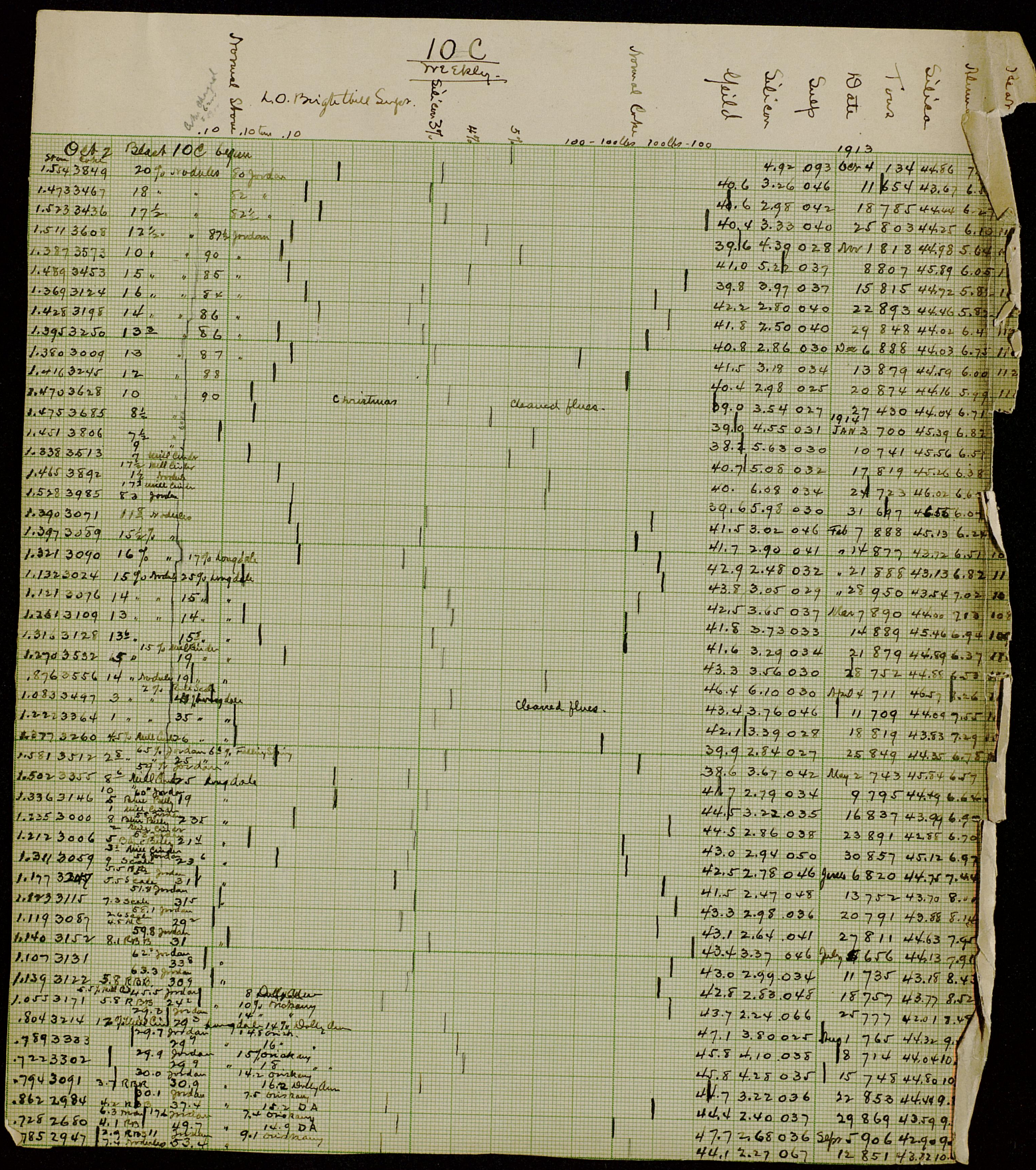
1/3 Ayrs Coke Ore
1/6 Blast was Dolomite
1/3 Ayrs Coke Ore

Coke for 4th + 5th + 6
Coke for 6 + 7th
All native Ore
" " "
1/8 Nodules
1/5 "
21% "

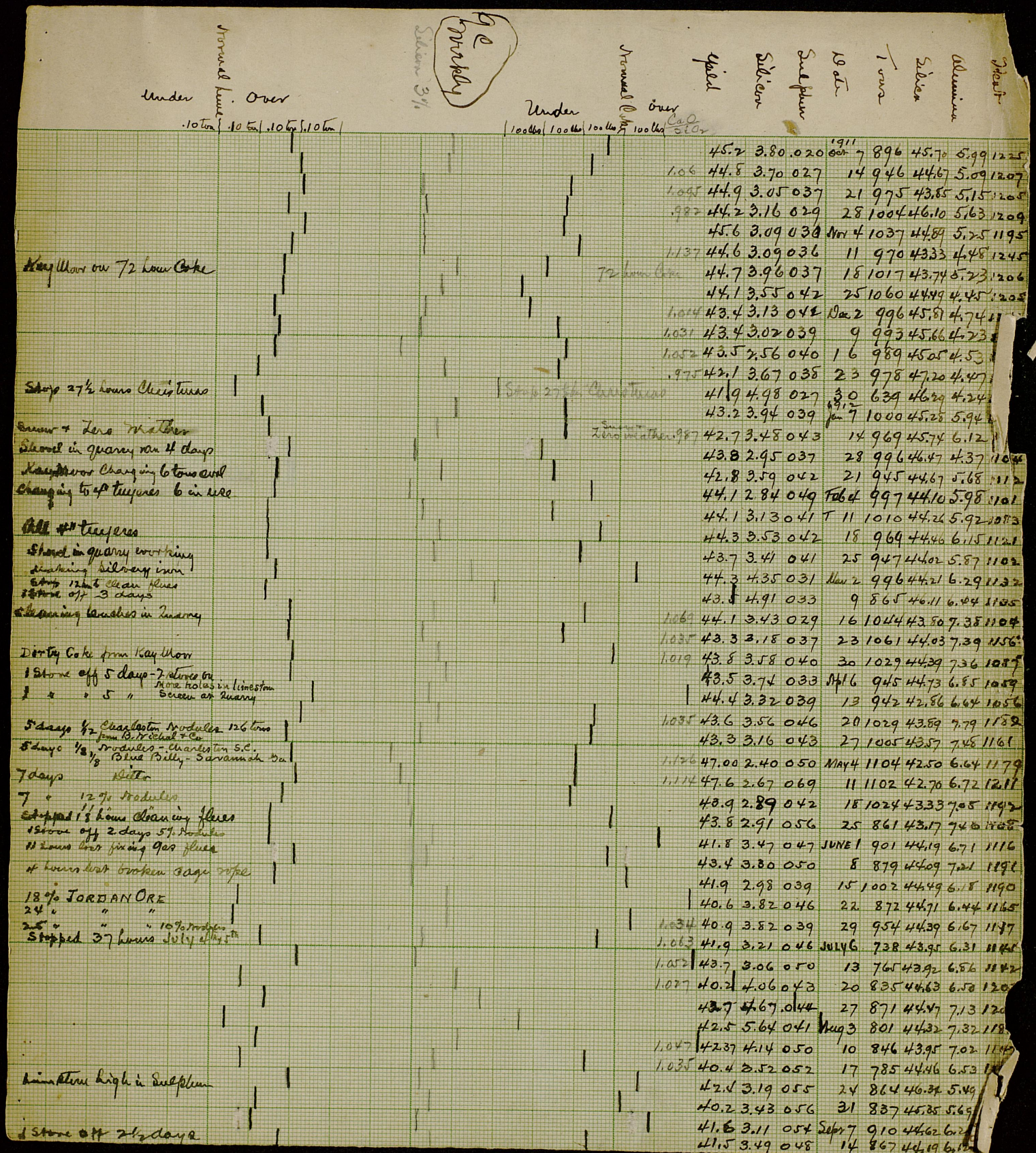
Blowing Out

Annual Limestone	Silicon	Sulphur	Silicon	Yield					
40.5	3.62	.059			1912 Sept 21	795	44.45	6.35	1120
39.8	3.58	.062			28	842	45.26	5.81	1152
42.3	3.42	.047			Oct 5	852	45.28	5.76	1123
40.1	3.90	.064			12	828	46.94	6.18	1129
39.8	3.87	.036			19	844	45.07	5.69	1119
41.5	3.85	.035			26	926	45.78	5.95	1109
38.9	3.67	.043			Nov 2	850	46.44	5.85	1110
38.9	4.06	.034			Nov 23	1240	46.97	6.09	1079
38.2	3.38	.054			" 30	1143	47.88	5.57	1038
37.9	3.56	.055			Dec 7	1215	46.30	6.03	1118
40.2	3.32	.053			14	1279	46.01	5.88	1131
42.7	4.03	.025			21	1362	44.54	5.82	1167
40.9	4.70	.054			28	474	47.64	6.02	1038
41.9	4.82	.024			1913 Jan 4	1228	45.25	6.12	1250
41.4	3.24	.051			11	1242	46.24	6.15	1175
41.8	3.30	.048			18	1322	46.02	6.26	1222
38.3	3.78	.103			25	1118	46.42	7.79	8227
40.6	3.84	.047			Feb 1	1298	46.35	6.53	1179
43.1	3.36	.026			8	1404	43.52	6.25	1141
40.4	3.07	.029			15	1202	44.22	6.05	1113
44.3	3.19	.038			22	1444	44.55	6.23	1151
42.0	4.55	.035			Mar 1	1247	45.04	7.18	1177
42.3	5.81	.040			8	1133	45.88	7.75	1168
41.5	4.97	.043			15	1165	45.54	6.58	1166
41.9	3.30	.037			22	1319	43.99	7.18	1164
42.1	3.06	.042			29	1343	45.01	6.60	1161
45.8	2.84	.027			Apl 5	1424	43.24	6.47	1173
45.5	3.06	.036			12	1414	44.11	6.65	1152
43.2	3.27	.027			19	1437	44.01	6.76	1172
44.7	2.81	.036			26	1344	45.26	5.88	1180
42.7	2.72	.074			May 3	1319	44.69	7.75	1179
46.4	2.49	.070			10	1225	44.97	8.03	1202
41.7	2.93	.076			17	1076	44.24	8.25	1188
44.0	4.22	.055			24	1175	45.98	7.66	1197
42.7	3.47	.036			31	1274	45.27	6.6	1236
42.1	3.38	.049			June 7	1180	45.27	6.80	1246
41.8	4.65	.080			14	1040	46.31	8.70	1247
41.1	4.74	.060			21	962	46.04	7.28	1262
41.5	3.54	.070			28	990	45.78	7.28	1245
43.0	5.03	.052			July 5	665	46.24	7.08	1276
37.9	5.78	.088			12	685	46.81	6.65	1175
38.7	6.07	.038			19	958	47.35	6.78	1249
39.8	5.17	.045			26	1056	47.06	6.83	1056
42.7	3.20	.038			Aug 2	1205	45.37	6.18	1238
43.3	3.22	.042			9	1155	44.07	7.16	1263
41.1	3.17	.030			16	1219	43.72	6.66	1221
45.8	3.75	.065			20	451	44.82	6.71	1232

Loose Item


10C
Weekly
L.O. Brightbill Supr.
Annual Stroke .10 .10 .10
Black 10C began
Christmas
Cleaned flues.
Cleaned flues.
Annual Capacity
100 - 100 lbs 200 lbs - 100
1913
1914
Silica
Iron Oxide
Alumina
Lime
Magnesia
Sulphur
Phosphorus
Manganese
Yield

Loose Item



Under | Normal Lime | Over | Silicon 3% | Under | Normal Coke | Over

.10 ton | .10 ton | .10 ton | .10 ton | 100 lbs | 100 lbs | 100 lbs | 100 lbs | CaO / SiO2

Key Moor on 72 hour Coke

Stop 27½ hours Christmas

Snow + Zero Weather

Shovel in quarry ran 4 days

Key Moor Charging 6 tons eval

Changing to 4" tuyeres 6 in use

All 4" tuyeres

Shovel in quarry working

making Silvery iron

Stop 12 hrs clean flues

1 Stove off 3 days

Cleaning bunches in Quarry

Dirty Coke from Key Moor

1 Stove off 5 days - 2 stoves on

1 " " 5 " More holes in limestone Screen at Quarry

5 days 1/2 Charleston Nodules 126 tons from B. Nichol & Co

5 days 1/8 Nodules - Charleston S.C.

1/8 Blue Billy - Savannah Ga

7 days Ditto

7 " 12% Nodules

Stopped 1 1/8 hours cleaning flues

1 Stove off 2 days 5% Nodules

11 hours lost fixing gas flues

4 hours lost broken cage rope

18% JORDAN ORE

24 " " "

25 " " " 10% Nodules

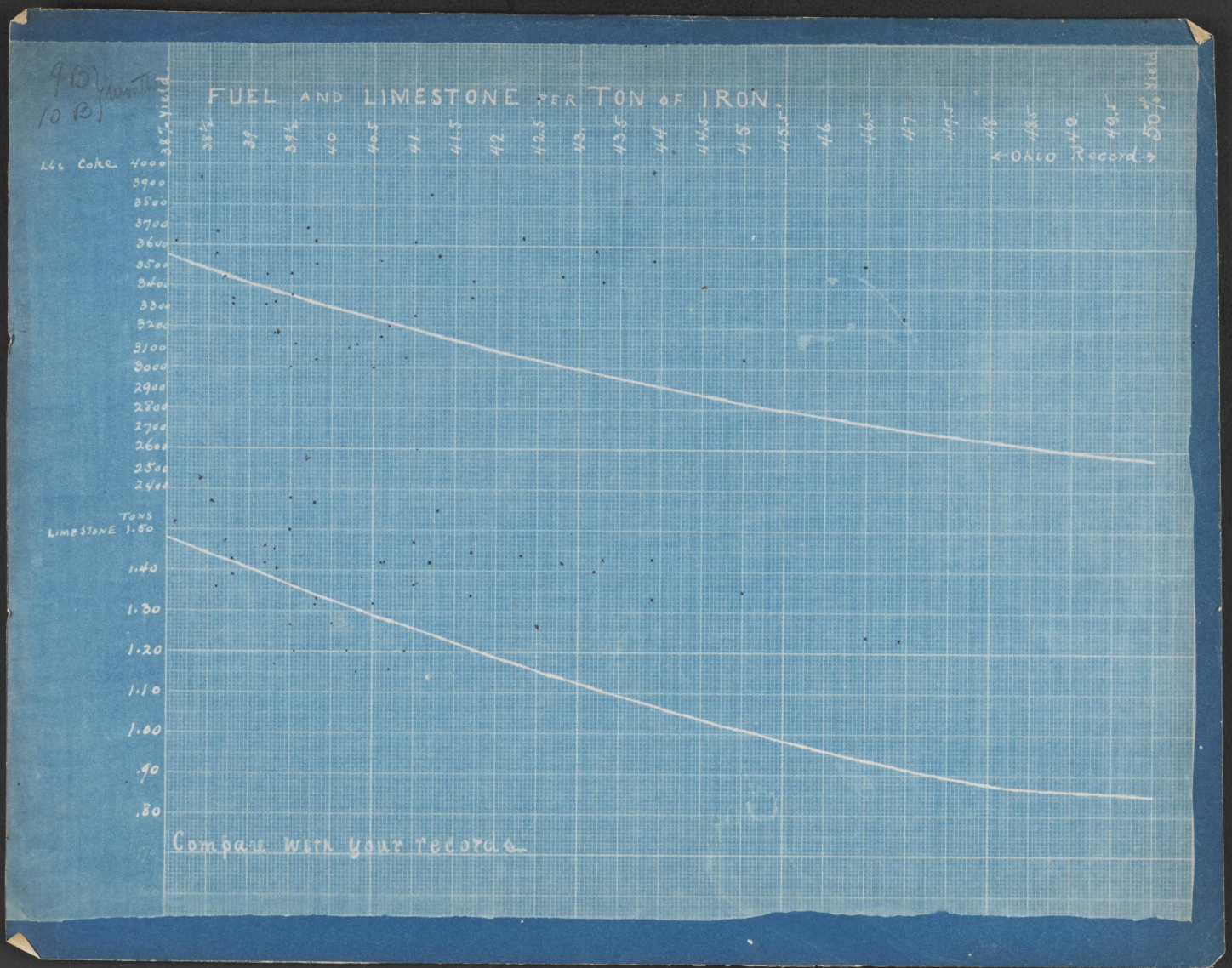
Stopped 37 hours July 4th & 5th

Limestone high in Sulphur

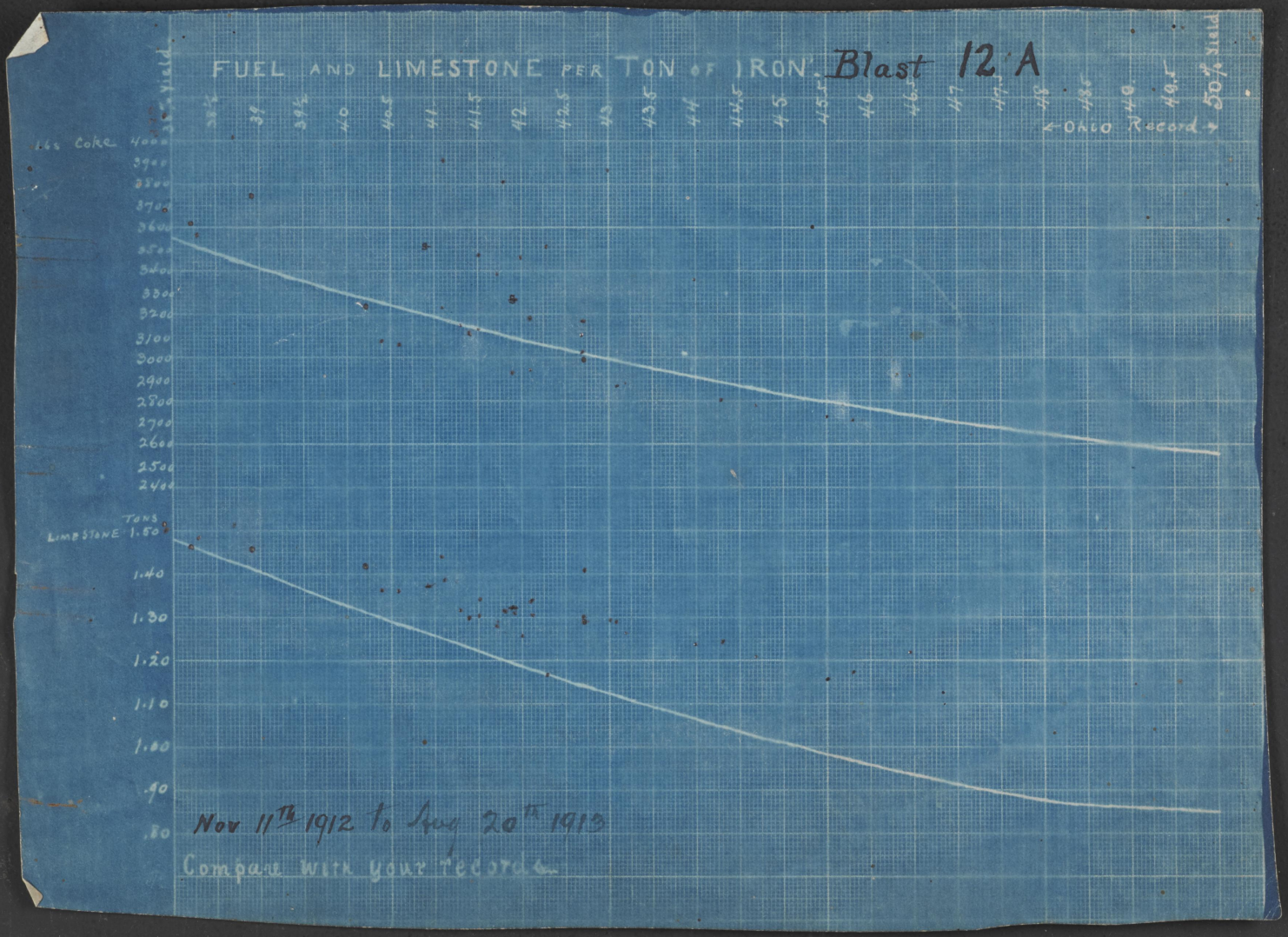
1 Stove off 2½ days

Yield	Silicon	Sulphur	Date	Tons	Silica	Alumina	Heat
	45.2	3.80	.020	1911 Oct 7	896	45.70	5.99	1225
1.06	44.8	3.70	027	14	946	44.67	5.09	1207
1.095	44.9	3.05	037	21	975	43.85	5.15	1205
.982	44.2	3.16	029	28	1004	46.10	5.63	1209
	45.6	3.09	030	Nov 4	1037	44.89	5.25	1195
1.137	44.6	3.09	036	11	970	43.33	4.48	1245
	44.7	3.96	037	18	1017	43.74	5.23	1206
	44.1	3.55	042	25	1060	44.49	4.45	1205
1.014	43.4	3.13	042	Dec 2	996	45.81	4.74	[illegible]
1.031	43.4	3.02	039	9	993	45.66	4.23	[illegible]
1.052	43.5	2.56	040	16	989	45.05	4.53	[illegible]
.975	42.1	3.67	038	23	978	47.20	4.47	[illegible]
	41.9	4.98	027	30	639	46.29	4.24	[illegible]
	43.2	3.94	039	1912 Jan 7	1000	45.28	5.94	[illegible]
.987	42.7	3.48	043	14	969	45.74	6.12	[illegible]
	43.8	2.95	037	28	996	46.47	4.37	1104
	42.8	3.59	042	21	945	44.67	5.68	1112
	44.1	2.84	049	Feb 4	997	44.10	5.98	1101
	44.1	3.13	041	T 11	1010	44.26	5.92	1083
	44.3	3.53	042	18	969	44.46	6.15	1121
	43.7	3.41	041	25	947	44.02	5.87	1102
	44.3	4.35	031	Mar 2	996	44.21	6.29	1132
	43.5	4.91	033	9	865	46.11	6.44	1135
1.069	44.1	3.43	029	16	1044	43.80	7.38	1104
1.035	43.3	3.18	037	23	1061	44.03	7.39	1156
1.019	43.8	3.58	040	30	1029	44.39	7.36	1087
	43.5	3.74	033	Apl 6	945	44.73	6.85	1059
	44.4	3.32	039	13	942	42.86	6.64	1056
1.035	43.6	3.56	046	20	1029	43.89	7.79	1182
	43.3	3.16	043	27	1005	43.57	7.48	1161
1.126	47.00	2.40	050	May 4	1104	42.50	6.64	1179
1.114	47.6	2.67	069	11	1102	42.70	6.72	1211
	43.9	2.89	042	18	1024	43.33	7.05	1192
	43.8	2.91	056	25	861	43.17	7.46	[illegible]
	41.8	3.47	047	June 1	901	44.19	6.71	1116
	43.4	3.30	050	8	879	44.09	7.21	1191
	41.9	2.98	039	15	1002	44.49	6.18	1190
	40.6	3.82	046	22	872	44.71	6.44	1165
1.034	40.9	3.82	039	29	954	44.39	6.67	1187
1.063	41.9	3.21	046	July 6	738	43.95	6.31	1145
1.052	43.7	3.06	050	13	765	43.92	6.86	1142
1.027	40.2	4.06	043	20	835	44.63	6.50	120[illegible]
	43.7	4.67	.044	27	871	44.47	7.13	120[illegible]
	42.5	5.64	041	Aug 3	801	44.32	7.32	118[illegible]
1.047	42.37	4.14	050	10	846	43.95	7.02	11[illegible]
1.035	40.4	3.52	052	17	785	44.46	6.53	[illegible]
	42.4	3.19	055	24	864	46.34	5.49	[illegible]
	40.2	3.43	056	31	837	45.35	5.69	[illegible]
	41.6	3.11	054	Sept 7	910	44.62	6.2[illegible]	[illegible]
	41.5	3.49	048	14	867	44.19	6.1[illegible]	[illegible]

Loose Item


FUEL AND LIMESTONE PER TON OF IRON
38½
39
39½
40
40½
41
41½
42
42½
43
43½
44
44½
45
45½
46
46½
47
47½
48
48½
49
49½
50% Yield
← OHLO Record →
38% Yield
Lbs Coke 4000
3900
3800
3700
3600
3500
3400
3300
3200
3100
3000
2900
2800
2700
2600
2500
2400
Tons Limestone 1.50
1.40
1.30
1.20
1.10
1.00
.90
.80
Compare with your records

Loose Item


FUEL AND LIMESTONE PER TON OF IRON. Blast 12 A
← Ohio Record →
Lbs Coke
Tons
Limestone
Nov 11th 1912 to Aug 20th 1913
Compare with your records

Loose Item

	34	36	38	40	42	44	46	48	50
Ore	2.94	2.77	2.63	2.50	2.38	2.27	2.17	2.08	
Coke	4230	3870	3550	3270	3030	2820	2670	2550	2470
lime	1.85	1.65	1.46	1345	1.19	107	.95	.875	.85
			1.48	1375					
Ore	3.236	3.90	4.500	5.00	5.444	5.82	6.140	6.38	6.500
28 Coke	5.922	5.418	4.97	4.578	4.242	3.962	3.738	3.57	3.458
80 lime	1.48	1.32	1.168	1.060	.952	.856	760	.70	.680
	10.638	10.638	10.638	10.638	10,638	10.688	10.638	10638	10.638
			10658	10658					

Coke 2.80 lime 80	7.402	6.738	6.138	5.638	5.194	4.818	4.498	4.27	4.138
Labor Etc	30	20	10	.00	-10	-20	-30	-40	-.50
	7.702	6.938	6.238	5.638	5.094	3618	4.19	3.87	3.638
Ore value	2.93	3.70	4.400	5.00	5.544	6.02	6.448	6.768	7.00
Ore portion	.9962	1.332	1.672	2.00	2.338	2.64	2.966	3.248	3.50
	36	34	33	33		307	326	282	302

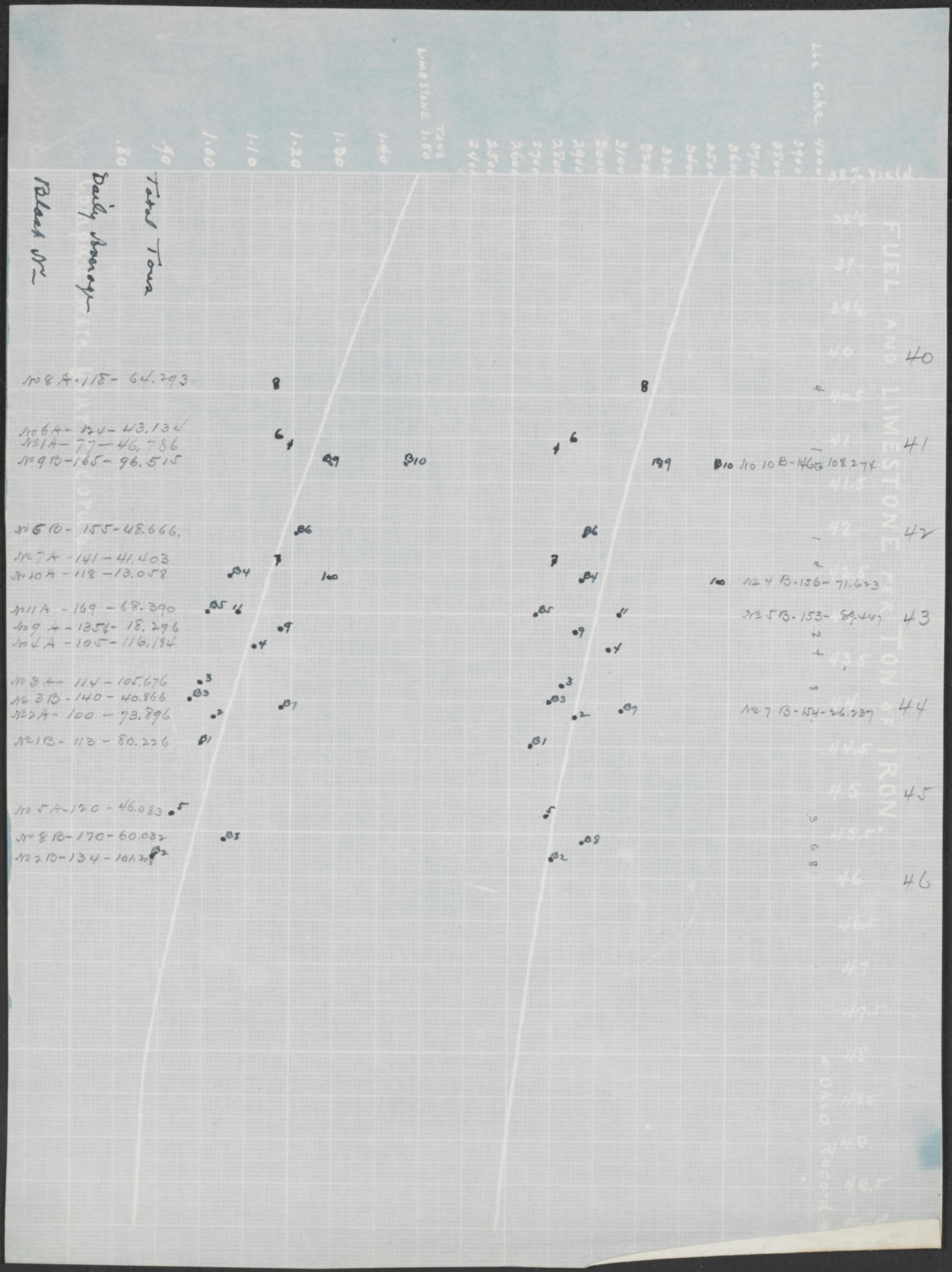
200
1836 — 16.6
167.2 — 16.4
150.1 — 17.1
133.7 — 16.5
116 — 17.2

42	44	46	48	50
3030	2905	2780	2655	2530
	4.067	3.892	3.717	3.542
	856	.760	.70	.68
	4.923	4.652	4417	4.222
	5.715	5.986	6.221	6.412
	20	30	40	50
	5.915	6.286	6.621	6.912
	44	46	48	50
	23660	37716	52968	345900
	23660	25144	26484	
	2,6026	28915	3,17808	
	2889	28652	28042	

Loose Item

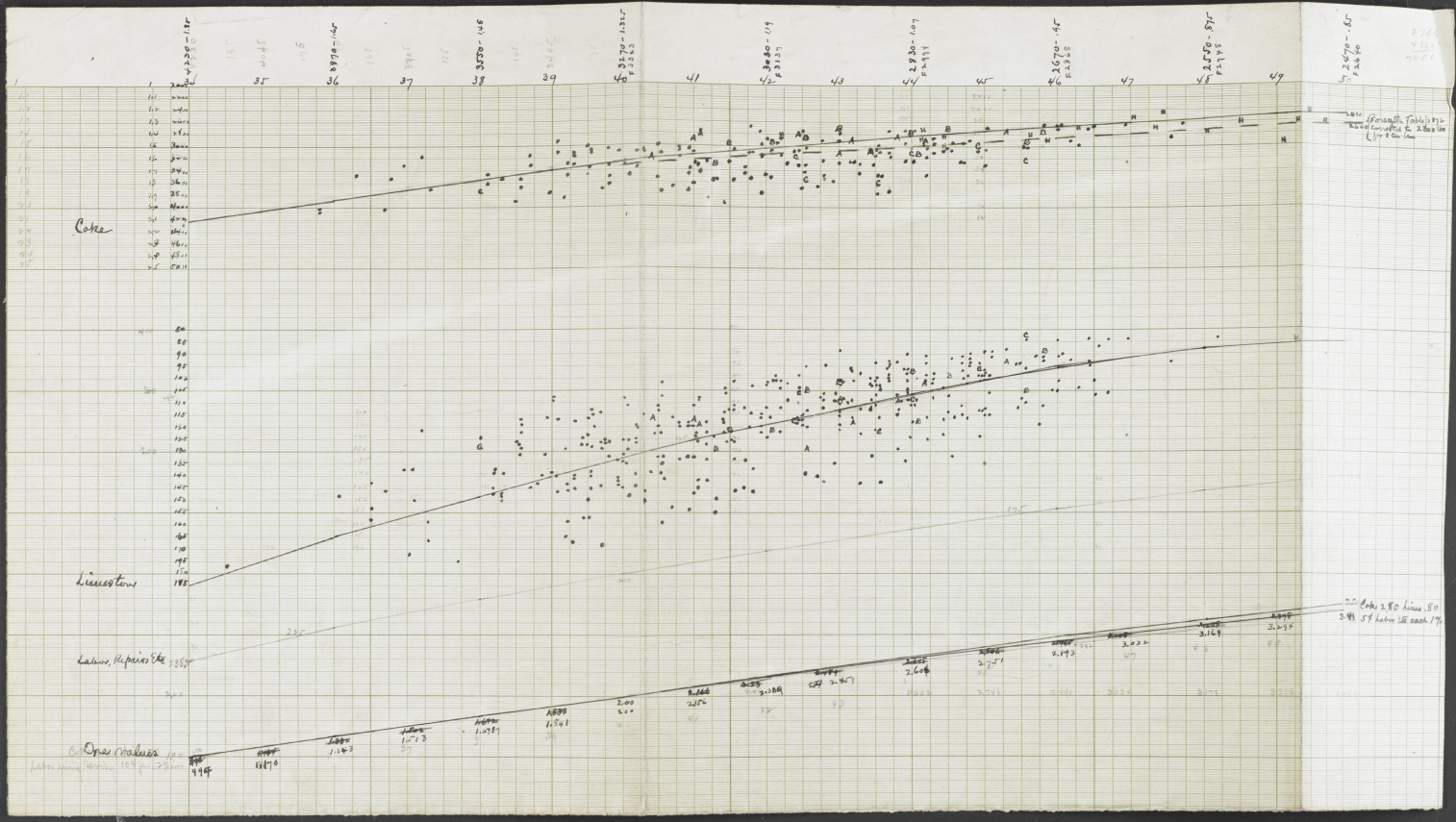
		Iron		Coke	Ore	Lime	Ore Yield
Blast	A. No. 1 A.	46,786.28	1.40	1.26	2.428	1.197	.411
	A. No. 2 A.	73,896.34	1.45	1.305	2.26	1.024	.442
	A. No. 3 A.	105,676.46	1.42	1.276	2.278	1.094	.438
	B. No. 1 B.	80,226.35	1.35	1.22	2.24	.997	.445
	A. No. 4 A.	116,184.78	1.53	1.38	2.30	1.12	.434
	B. No. 2 B.	101,208.10	1.40	1.26	2.18	.887	.458
	A. No. 5 A.	46,083.21	1.39	1.25	2.20	.932	.453
	C. No. 1 C.	26,608.17	1.61	1.45	2.19	.827	.456
	B. No. 3 B.	40,866.00	1.39	1.25	2.26	.97	.44
	B. No. 4 B.	71,623.00	1.43	1.29	2.34	1.05	.426
	C. No. 2 C.	47,675.00	1.55	1.40	2.26	1.08	.44
	B. No. 5 B.	89,447.21	1.33	1.21	2.33	1.01	.43
	C. No. 3 C.	15,330.08	1.54	1.39	2.35	1.06	.424
	C. No. 4 C.	39,999.53	1.80	1.62	2.29	1.22	.436
2240 / 2000	A. No. 6 A.	43,134.94	1.422	1.27	2.43	1.17	.410
	C. No. 5 C.	37,599.53		1.48	2.41	1.21	.415
	C. No. 6 C.	45,475.02		1.87	2.63	1.28	.38
	A. No. 7 A.	41,403.08		1.40	2.36	1.17	.424
	A. No. 8 A.	64,293.00		1.60	2.47	1.16	.404
	B. No. 6 B.	48,666.48		1.47	2.37	1.21	.421
	A. No. 9 A.	18,296.00		1.45	2.31	1.18	.432
	B. No. 7 B.	26,237.99		1.56	2.27	1.18	.441
	No.10 A.	13,058.59		1.78	2.34	1.29	.426
	No. 8 B.	60,032.00		1.47	2.19	1.05	.456
	No.11 A.	68,390.00		1.55	2.32	1.08	.430
	No. 7 C.	71,509.00		1.50	2.22	.96	.449
	No. 9 B.	96,515.00		1.64	2.42	1.29	.413

Loose Item



Total Tons
Daily Average
Black No
LIMESTONE TONS
Lbs Coke
38% Yield
FUEL AND LIMESTONE PER TON OF IRON
40
41
42
43
44
45
46
No 8 A - 118 - 64.293
No 6 A - 124 - 43.134
No 1 A - 77 - 46.786
No 9 B - 165 - 96.515
No 10 B - 146 - 108.274
No 6 B - 155 - 48.666
No 7 A - 141 - 41.403
No 10 A - 118 - 13.058
No 4 B - 156 - 71.623
No 11 A - 169 - 68.390
No 9 A - 135½ - 18.296
No 4 A - 105 - 116.184
No 5 B - 153 - 89.447
No 3 A - 114 - 105.676
No 3 B - 140 - 40.866
No 2 A - 100 - 73.896
No 1 B - 113 - 80.226
No 7 B - 154 - 26.237
No 5 A - 120 - 46.083
No 8 B - 170 - 60.032
No 2 B - 134 - 101.208

Loose Item



Loose Item

1882 Oct 2nd Blew in
1885 March 31 Ham made 36.442 Tons 311 Lbs
1886 Lty 3 Oct " 13.410 " 1632 "
Made on Lining 49.852 " 1943 "

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1885 May 30 6 Barrows B @ 825 = 4950

" " C. 1250 = 2500 7450 1 round

Sept 8 Try Blast Engine No 2. with Steam only

" 28 Put " " " on Furnace

1886 Sept 26 Mond Tuyers from 7° between to 6° 8" between points

Oct 24 " " " 6°8' to 6°4" " "

31 " " " 6°4' to 7°+8" " "

Dec 11 This mark different days, mond 7°8" to 5°10" "

16 Mond from 5°10' to 6°7"

1887 Jany 10 " " 6°7' to 7°0"

July 4 Walker leave and Chas P. Perrin take Furnace

July 20 Perrin leave and Jos J. Lemotten takes Furnace

Aug 29 Up to this day the tuyers been pointed down into hearth, not set level.

Eureka 31

Low Moor 50

Ashland Furnace – J. B. Walker, Founder

1883	Batts	J. Mtn	boys	C	Lime	Fuel	Iron	Labor
December 17	268.39	74.55	5¾	149.10	228.25	791.45	261.45	575.39
24	286.06	79.45	6½	158.93	243.27	839.17	278.65	585.82
December 1	253.92	70.54	6¾	141.07	215.97	841.60	255.41	636.49
8	242.67	67.41	6½	134.67	206.39	794.00	241.36	625.00
4 Weeks	1051.04	291.95	25½	583.77	893.88	3.266.22	1.036.87	2.422.70
Dec 15	197.50	58.19	6½	174.58	222.45	758.40	263.97	645.33
22	196.24	57.81	6½	173.47	226.09	792.80	246.42	604.15
29	197.50	58.19	6½	174.58	231.93	803.20	238.57	656.39
1884 January 5	250.04	73.17	7	219.52	290.53	916.80	310.09	592.80
12	217.85	60.85	7	182.54	253.42	892.63	241.70	571.20
9 Weeks	2.110.17	600.16	59	1.508.46	2.118.30	7.430.05	2.337.62	5.477.57
Jany 19	233.66	68.32	6½	204.98	279.55	836.40	288.87	550.33
26	243.94	72.20	6½	216.59	284.69	909.60	298.49	585.56
Feby 2	233.74	73.42	7	220.22	280.21	899.60	284.56	616.51
	2.821.31	814.10	99	2.150.25	2.962.75	10.073.65	3.209.54	7.194.91
13 Weeks Feby 9	163.74	25.00	5 Alabama 2617	158.51	200.52	628.80	204.67	530.96
Blood 13 Weeks	2985.05	839.10	84 2617	2.303.76	3.163.27	10.702.45	3.414.21	7.725.87
March 1	223.66		7 55.92	167.67	228.93	878.400	211.01	601.36
8	263.34		7 6583	197.50	268.00	864.00	280.02	599.62
15	257.88		7 6445	193.36	262.35	857.40	299.38	606.47
22	141.42	Lake	4½ 3536	106.07	143.92	499.20	140.46	390.54
29	235.67	41.09	7 1835	178.33	244.47	820.80	263.87	614.89
April 5	239.14	13.50	7 —	216.24	251.81	816.00	267.44	604.92
6 Weeks 28	1359.11	54.59	39½ 33991	1059.17	1399.48	4727.80	1442.18	3.417.80
April 12	246.39		6½	248.89	296.67	854.40	229.33	588.81
19	218.84	No 4 Stove off for	6½ repairs	211.66	255.57	772.50	236.58	647.68
26	259.38	" " "	7 "	195.16	261.38	816.00	251.66	584.28
May 3	253.73	" " "	6 "	147.54	223.73	729.60	215.67	621.81
4 Weeks April	988.34	" " "	26 4	803.25	1037.35	3.172.80	981.24	2.442.58
May 10	329.80	" " "	7 "	191.29	295.34	945.60	290.07	548.12
17	303.01	" " "	6½ "	175.75	274.39	868.80	251.14	542.35
24	384.88	Stove on —	6½ —	165.81	267.13	806.40	238.76	621.09
31	371.06	- - -	6½	132.33	299.24	849.60	267.00	588.61
4 Weeks	1.288.75		26½	664.68	1.111.10	3.470.40	1.046.97	2295.17
June 7	439.55		7	150.18	297.95	950.40	321.55	605.94
14	406.61		6½	155.05	269.74	583.20	284.95	585.47
21	408.82		6½	165.18	266.81	888.00	300.87	545.57
28	404.40		6½	149.56	260.68	828.40	283.46	519.09
4 Weeks	1659.38		26½	619.97	1088.18	3600.00	1.190.83	2.256.07
July 5	393.46		5¾	148.22	239.78	811.20	269.54	509.53
12	408.82		7	148.98	250.36	888.00	283.97	556.73
19	421.59	No 2 Stove off	6½	82.15	213.82	844.80	261.93	500.53
26	384.51	" " "	6½	124.29	230.17	835.20	266.83	546.07
4 Weeks	1.588.38		25¾	503.64	934.13	3.379.20	1082.27	2.112.86

		Bath	Ill		C	L	Fuel	Labour	Gross	Ore mixt Yield
						to bunker	Tons	Per Ton	Ton	Per Ton
575.39	4W. Nov 17 to 3 Dec	0.545 per ℔	0.155 per ℔		0.30 per ℔	0.463 per ℔	3.15	2.33⁶	14.03	.538
585.82	9 Weeks " " 1884 to 5 Jany 85	.50	.142		.358	.502 "	3.178	2.34¹	13.93	.554
636.49	13 " " to 27 Jany	.485	.137	Alabama .004	.374	.514 "	3.134	2.24²	13.70	.537
625.00	6 Weeks 1 March to 5 Apr	.501	Lake 34 .02	.088	.390	.515 "	3.278	2.37	14.26	.529
2.422.70	4 Week April 12 to May 3	.552	0	0	.448	.579 "	3.233	2.489	13.46	.547
645.33	4 Weeks 10 May to 31	.659	0	0	.34	.568 "	3.314	2.19²	13.38	.535
604.15	4W 7th to June 28	.728	0	0	.272	.477 "	3.023	1.894	12.49⁶	.522
656.39	8 W 10 May to 28 June	.696	0	0	.303	.519 "	3.159	2.033	12.91⁶	.528
592.80	1 Week 19 June	.836+	No 2 Stone off	0	.163	.424	3.22	1.91	12.39	.519
571.20	4W 5th to 26 "	.759	— "	0	.24	.446	3.122	1.95	12.71	.517
5.472.57	1W 2 Aug	.755	No 2 H.B.S. off	—	.240	.452	3.325	2.01	13.40	.493
550.33	1W 9 "	.755	" "	—	.245	.452	3.26	1.99	13.16	.503
555.50	1 W 16 "	.955	" "	—	.245	.452	3.14	1.80	12.53	.523
616.51	1 W 23 "	.755	" "	—	.245	.452	3.22	1.99	12.99	.514
7.194.91	5 W 2 to 30 "	.752	" "	32½ Limp	.248	.453	3.21	1.96	12.91	.508
530.96	1 W 6th to 13 Sept	.727	No 2 Stone on	6½ Limp	.272	.46	2.76	1.90	12.03	.524
7.225.87	1 " 20 "	.727		6½	.272	.46	2.72	1.86	11.83	.532
601.36	4 " 6 to 27 Sept	.725		36	.275	.465	2.728	1.91	12.15	.519
599.62	9W 6 Sept to 1 Nov	.731		38½	.269	.458	2.804	1.85	12.09	.517
606.47	7W 8 Nov to 20 Dec	.713		49¼	.287	.451	2.859	1.81⁷	12.37	.497
390.54	7 W. 27 Dec to 7 May 85	.697		47	.303	.45	2.81⁶	1.75	12.28	.493
614.89	32 W. 5 July to 9 May 1885	.725 .500		209 Limp	.275 .52	.453	2.91⁶	1.84⁹	12.40	.505
604.92	39 W. " to 28 March 85	.716 .498		356 "	.284 .52	.449	2.87⁸	1.80⁶	12.33	.504
3.417.80	51 W. 12 April 1884 to 28 March 85	.703 Limp .506		335 "	.297 .52	.468	3.944	1.885	12.47⁸	.51
588.81	6 W. 4 April to 9 May 1885	.673		38½ "	.327	.436	2.692	1.59	11.794	.50
647.68		2¼			2¼	1¼	1½			
584.28	1 W. 16 May 1885	.664		6½	.336	.437	2.555	1.38	10.488	.574
621.81	1 " 23 "	.664		6½	.336	.437	2.86	1.48	10.724	.516
2.442.58	9W 4 April to 30 May	.69		58	.33	.436	2.648	1.542	11.048	.505
548.12	1 W 6 June	.822		6½	.178	.409	2.704	1.584	10.82	.489
542.35		2			2	1	1½			
621.09	7W 6th June to 18 July	.82		44.5	.18	.397	2.725	1.598	10.586	.491
588.61	17W " " 26 Sept	.819		109.¼	.181	.395	2.742	1.614	10.60	.491
2.295.17	26 W 4 Apr to 15 "	.765	C = .552 R = .488	167¼	.235	.40	2.708	1.588	10.415	.496
605.94	8 W 3 Oct to 21 Nov	.821		51	.179	.388	2.915	1.684	11.138	.47
585.47	10 " " 5 Dec	.82		64	.18	.39	2.927	1.68	11.136	.472
545.57	9W 15 6 July 1886	.805		.53¾	.195	.399	3.182	1.966	11.99	.486
519.09	45 W 4 Apr 85 to 6 July 86	.785 R .493		~~.50~~ 385	.215	.403	2.839 ~~3.357~~	1.674	10.903	.483
2.256.07	9 W 1886 27 March to 31 May	.696		~~.50~~	.304	.424	3.327	1.933	12.186	.468
509.53		2¼ R	C. 2¼	D5	2¼	1	1½			
556.78	19 W. 1886 27 March to 31 July	.686	.314	121¼ ~~.21~~	C = 5½ R = .46 C = 5.2	.437	3.312	1.898	12.437	.482
500.53	37 W. " To 25 Sept	.685	.315	173¼	.15 = 47⁶	.443	3.258	1.877	12.25¹	.491
546.07	4 W 2 Oct to 23 Oct	.693	.307	28½		.442	3.068	1.981	12.039	.493
2.112.86	11 W " 11 Dec						3.218			.47
	38 W 27 March to "	.687	.313	244¾		.443	3.243	1.948	12.373	.484

1884 Ashland Furnace T. B. Walker Founder

	Batt 2240 2¼	Days	C 2.3	Lime 1¼	Fuel 2000 1.7	Iron 2300	Labor
August 2	404.40	6½ Stove Nov	130.72	242.06	878.40	264.15	$ 533.26
9	422.07	6½ Off	136.43	252.66	916.80	281.03	560.92
16	419.85	6½ "	135.72	251.32	912.00	290.81	523.33
23	417.64	6½ "	135.00	250.00	907.20	282.09	562.15
	1663.96		537.87	996.04	3614.40	1118.08	2179.66
30	397.77	6½	141.01	250.98	864.00	276.62	560.61
5 Weeks	2.061.73	32½	678.88	1.246.82	4.478.40	1.394.70	$ 2.740.27
Sept 6	404.40	6½	157.73	262.73	827.08	291.33	549.55
13	404.40	6½	151.14	258.21	805.20	291.24	554.65
20	406.61	6½	151.95	259.62	809.60	297.48	553.58
27	366.84	6½	137.10	234.22	730.40	253.38	511.33
4 Weeks	1.582.25	26	597.92	1.014.78	3.172.28	1.133.43	$ 2.169.11
Oct 4	434.60	6½	133.80	258.48	827.20	291.49	555.78
11	393.35	6½	147.00	250.09	783.20	269.53	554.53
18	435.34	6½	162.71	269.28	866.80	314.58	551.08
25	453.00	6½	169.31	280.21	902.00	324.37	554.18
Nov 1	453.00	6½	169.31	280.21	902.00	324.42	534.52
9 Weeks Sept 6 to Nov 1	3.751.54	58½	1.380.05	2.353.05	7.453.48	2.657.82	4.919.20
Nov 8	466.28	6½	174.27	288.41	928.40	325.69	540.86
15	448.60	6½	167.66	277.48	893.20	318.25	569.34
22	437.55	6½	163.57	270.65	871.20	284.92	558.15
29	422.07	6¼	165.63	268.44	840.40	288.43	577.13
Dec 6	446.39	6½	189.58	287.72	888.80	319.35	557.63
13	439.76	6½	191.00	284.29	875.60	312.92	568.35
20	444.18	6½	192.93	287.15	884.40	312.35	557.18
7 Weeks	3.104.83	45¼	1.244.64	1.964.14	6.182.00	2.161.91	3.928.64
27	422.10	6½	183.33	272.87	840.40	296.85	547.66
85 Jany 3	408.82	6½	177.57	264.29	814.00	289.80	541.04
10	437.55	7	190.05	282.87	871.20	319.92	525.43
17	417.64	6½	181.41	270.00	831.60	295.00	504.41
24	459.65	7	199.65	297.15	915.20	322.79	531.34
31	430.92	7	187.17	278.58	858.00	300.62	539.12
Feby 7	426.50	6½	185.25	275.73	849.20	297.97	529.74
7 Weeks	3.003.18	47	1.304.43	1.941.49	5.979.60	2.122.95	3.718.74
32 Weeks 84 5 July to 85 7 Feby	13.509.66	209	5.111.64	8.439.63	27.472.68	9.419.65	17.419.71
Feby 14	422.07	7	190.21	272.87	840.40	304.22	522.55
21	437.55	7	214.36	282.87	871.20	322.87	519.33
28	391.14	7	187.46	247.93	778.80	282.76	531.73
Mar 7	437.55	6½	203.30	279.38	871.20	326.62	500.79
14	453.00	6½	210.50	289.25	902.00	332.66	503.49
21	448.60	6½	208.44	286.43	893.20	327.85	508.70
28	437.55	6½	203.31	279.37	871.20	320.27	514.11
39 Weeks 84 5 July to 85 Mar 28	16.537.12	256	6.529.22	10.377.73	33.500.68	11.636.90	21.021.41
51 Weeks 84 12 Apr to 85 28 March	20.471.59	335	8.617.12	13.614.36	43.743.88	14.855.94	28.015.23

1885 Ashland Furnace Walker Furnace

Labor		Batts	Dogs	C	Lime	Fuel	Ore	Labor	7	Charges
533.26	April 4	426.50	6½	198.17	297.32	849.20	313.81	578.17		193
560.92	11	437.55	6½	203.31	299.37	871.20	318.00	518.05		198
523.33	18	382.30	6	177.64	241.63	786.40	273.97	537.30		173
562.15	25	457.44	6½	231.00	301.20	910.80	340.74	574.57		207
560.61	May 2	457.44	6½	231.00	301.20	910.80	348.75	507.38		207
2.740.27	9	457.44	6½	231.00	301.20	910.80	350.34	509.23		207
579.55	6 Weeks	2.618.67	38½	1272.12	1696.92	5.239.20	1.945.61	3.104.70		1185
554.65	16	455.23	6½	229.92	299.75	906.40	357.62	488.32		206
553.58	23	437.55	6½	220.99	288.09	871.20	340.16	504.48	10.92	198
511.83	30	441.97	6½	223.22	291.00	880.00	340.81	507.08	11.04	200
2.169.11	9 Weeks	3.958.42	58.	1.946.25	2.575.76	7.896.80	2.981.20	4599.58		1788
585.78	June 6	588.67	6½	116.53	268.62	866.80	320.45	491.84	10.82	197
557.53	13	532.66	6½	113.58	253.98	844.80	319.74	486.58	10.32	192
551.08	20	511.09	6½	110.62	244.98	822.80	303.34	589.20	10.65	189
554.18	27	470.16	6½	104.70	231.08	778.80	296.16	483.95	9.82	177
584.52	July 4	456.88	5½	101.75	219.95	756.80	281.69	428.37		172
4.919.20	11	517.97	6½	115.35	249.35	858.00	303.41	505.69		195
540.86	18	541.88	6½	120.67	260.86	899.60	333.06	511.57		204
569.34	7 Weeks	3.569.31	44½	783.20	1728.82	5.825.60	2.137.79	3.417.25		1324
558.15	25	494.06	6½	110.00	237.83	818.40	289.87	493.57	2.82	186
597.13	Aug 1	503.00	6½	111.80	241.68	831.60	297.34	501.75	2.80	189
587.63	8	470.15	6¼	104.70	226.33	778.80	271.46	478.17	2.89	177
568.35	15	510.00	6½	113.58	245.51	844.80	305.98	500.83	2.96	192
559.18	22	494.06	6½	110.00	237.85	818.40	296.93	529.21	2.99	186
3.928.64	29	494.06	6½	110.00	237.82	818.40	300.04	459.37	2.93	186
549.66	Sept 5	502.00	6½	111.80	241.68	831.60	302.00	468.02	2.95	189
541.04	12	494.06	6½	110.00	237.84	818.40	299.21	485.49	2.95	186
525.43	19	520.63	6½	115.94	250.63	862.40	321.88	485.67	2.68	196
504.41	26	523.28	6½	116.52	251.93	866.80	328.25	492.97	2.64	197
531.34	After 10th Engine No 3. 17 Weeks	8.593.61	109.¼	1.899.54	4.137.92	14.115.20	5.147.20	8.310.22	2.74	3208
539.12	26 Weeks 4 Apr to 26 Sept	12.527.03	169¼	3.843.29	6.713.68	22.012.00	8.128.40	12.909.80	2.90	4997
529.74	Oct 3	504.69	6½	112.39	242.96	836.00	289.41	488.00	2.84	188
3.718.74	10	520.63	6½	115.94	250.63	893.60	316.51	509.39	2.96	196
17.419.71	17	549.85	6½	122.45	264.90	934.20	313.66	533.89	2.98	207
522.55	24	599.06	6½	128.95	278.96	991.40	350.00	516.43	2.80	218
519.33	31	537.41	6½	110.30	248.07	853.60	295.93	489.77	2.88	194
531.73	Nov 7	619.85	6½	127.77	276.20	950.40	338.35	519.21	2.86	206
500.79	21	448.91	5½	99.97	216.10	811.20	268.77	548.90	3.03	169
503.49	14	503.75	6½	110.67	239.11	898.00	271.72	503.77	3.24	187
508.70	8 Weeks	4.258.15	51.	928.39	2.016.53	7.108.40	2.438.35	4.109.34	2.95	1575
514.11	Nov 28	541.88	6½	120.67	260.86	999.20	319.20	534.95	3.07	204
21.021.41	Dec 5	537.50	6½	126.00	263.41	913.20	316.44	523.71	2.89	206
28.015.23	10 Weeks	5.337.53	64.	1.175.06	2.540.80	9.000.80	3.074.09	5.166.00	2.92	1985

1885 — Ashland Furnace — J. B. Walker Founder.

	Batts	C	L	Fuel	Days	Iron	Labor	Charges Fuel.	
Dec 12	469.22	113.75	232.73	800.80	6	263.55	502.76	182	
19	469.22	113.75	232.73	865.60	6¼	271.89	479.26	182	
26	510.47	123.75	253.18	950.40	6½	308.50	~~488.80~~ 482.86	198	
1886 Jany 2	577.50	140.00	286.43	1014.00	6½	339.94	514.31	224	
9	520.79	126.35	258.30	906.80	6½	294.16	534.77	202	
16	487.69	117.50	240.40	843.20	7	262.21	535.52	188	ice
23	456.33	110.63	226.33	820.80	6½	248.45	515.56	177	
30	311.96	75.63	154.73	550.80	5	189.60	497.04	121	
Feby 6	299.59	70.00	149.62	607.20	3½	151.27	506.39	112	
9 Weeks	4.097.77	991.26	2.034.45	7.399.60	53¾	2.325.27	4.573.47	1586	3.18
45 Weeks 1885 1886	31.967.33	6.010.11	11.288.93	38.412.40	285	18.529.96	22.649.27		
New blast.									
1886 March 27	283.33	94.45	139.44	193.50 / 700.80	5½	160.08	488.24	159	
April 3	394.69	131.57	209.92	816.00	6	216.57	489.26	170	
10	414.65	138.22	218.42	826.60	6¼	241.96	483.23	172	
17	437.95	246.25	311.04	995.60	6½	348.21	545.79	212	
24	399.77	184.83	253.98	867.20	6½	245.48	530.22	180	
May 1	430.92	200.23	275.14	936.00	6½	352.15	516.80	195	
8	406.61	188.93	259.62	873.60	6½	274.36	513.20	184	
15	381.94	177.82	243.22	820.00	6½	247.89	506.59	175	
22	377.87	178.75	240.25	823.80	6½	284.93	525.04	182	
9 Weeks	3.525.68	1.541.05	2.147.53	7.891.90	56¾	2.371.63	4.598.35	1629	3.32
May 29	388.67	185.56	247.41	926.40	6½	312.60	518.36	193	2.97
June 5	383.71	183.33	244.23	916.80	6½	303.12	506.43	191	3.02
12	377.68	180.45	240.40	902.40	6½	285.92	508.24	188	3.15
19	375.69	179.49	251.00	983.20	6½	263.43	575.08	187	3.47
26	413.84	197.72	281.58	988.58	6½	298.69	524.66	206	3.32
July 3	397.76	190.04	270.65	950.40	6½	292.52	512.76	198	3.25
10	343.53	164.13	233.74	820.80	6	248.98	462.28	171	3.36
17	349.56	167.00	237.84	855.60	6½	235.69	540.21	174	3.64
24	339.51	162.21	231.00	878.80	6½	238.38	479.24	169	3.69
31	347.55	166.05	236.47	830.40	6½	248.69	503.39	173	3.35
19 Weeks	7.243.16	3.317.03	4.631.85	16.875.28	121¼	5.094.68	9.668.98	3499	3.31
Aug 7	349.56	169.00	237.83	835.20	6½	259.38	514.95	174	3.22
14	312.33	146.97	210.24	766.00	6½	229.56	503.43	152	3.84
21	391.59	195.81	252.57	904.20	6½	266.50	480.06	179	3.40
28	361.21	170.90	245.51	844.80	6½	257.46	486.13	174	3.37
Sept 4	352.90	166.97	239.87	816.00	6½	289.50	459.14	170	2.87
11	348.75	165.00	237.00	806.40	6½	276.31	484.30	168	2.97
18	384.81	171.88	246.93	849.60	6½	296.98	422.29	175	3.06
25	378.46	163.97	238.46	811.20	6½	278.60	490.37	169	2.97
27 Weeks	10.099.27	4.645.53	6.530.26	23.508.68	173¼	7.205.94	13.565.15	4840	3.25

1886 Ashland Furnace J. B. Walker left 4th Feb 87 and C. P. Pein takes furnace

Charges	Fuel.		B	C	G	Fuel	Days	Iron	Slag	Slags	Yield	Fuel
182												
182		Oct 2	391.25	165.00	239.00	806.40	6½	280.56	604.83	168	.52³	2.88
198		9	399.98	177.77	255.39	868.80	6½	295.75	539.82	181	.51¹	2.94
224		16	324.85	144.38	207.42	728.00	6	221.21	527.11	149	.47¹	329
202		23	366.83	163.00	234.27	796.80	6½	245.23	496.43	166	.46²	3.25
188	ice	4 Weeks	1.462.91	650.15	934.03	3.200.00	25½	1.042.75	2066.19	662	.49³	3.06⁸
177		30	313.80	139.47	200.36	681.60	6½	193.81	538.88	142	.42⁹	3.53
121		Nov 6	382.30	169.92	244.92	830.40	6½	285.00	528.40	173	.51⁶	2.91
112		13	393.46	163.97	258.46	811.20	6½	259.65	520.08	169	.48³	3.13
1586	3.18	20	338.11	150.27	215.89	744.00	6½	226.86	472.60	153	.46⁶	3.29
		27	338.11	150.27	215.89	744.00	6½	229.99	634.54	153	.45⁶	3.34
		Dec 4	362.42	161.07	231.40	796.80	6½	244.91	529.84	164	.46⁷	3.25
		11	349.16	155.18	222.94	756.40	7	185.19	524.04	158	.36⁷	4.09
159		11 Weeks	3.920.27	1.740.30	2.523.89	8.564.40	71½	2.661.16	5.697.57	1774	.47	3.21⁸
170		27 "	10.097.27	4.645.53	6.530.26	28.508.68	173¼	7.228.94	13.865.15	4840		3.25³
172		38 "	14.017.54	6.385.83	9.054.15	32.073.08	244¾	9.889.10	19.262.72		.48⁴	3.24³
212		Dec 18	304.96	135.54	194.72	662.40	7.	176.71	569.05	138	.40¹	3.96
180		25	360.21	160.09	226.50	792.00	6½	217.39	586.13	168	.40⁸	3.94
195		1887 Jany 1	393.46	163.95	217.28	796.20	6½	237.30	509.89	169	.43²	3.34
184		8	362.42	161.07	217.74	764.24	6½	229.24	509.82	164	.43⁴	3.36
175		15	364.62	162.05	225.54	792.00	6½	236.60	541.68	168	.44⁹	3.36
182		5 Weeks	1.765.67	782.70	1.081.28	3.786.86	33.	1.085.24	2.186.85		.42¹	3.48⁹
1629	3.32⁷	22	349.16	155.18	215.98	758.40	6½	224.43	560.44	158	.44⁴	3.38
193	2.97	29	353.58	157.15	218.71	768.00	6½	287.73	538.15	160	.46⁵	3.24
191	3.02	July 5	373.45	163.97	231.00	811.20	6½	256.00	510.31	169	.47⁶	3.19
188	3.13	8 Weeks Walker left C.P. Pein	3.841.86	1.259.00	1.746.97	6.124.46	52½	1.803.40	4.295.46		.43⁹	3.39⁵
187	3.47	July 12	328.20	145.85	214.65	756.00	6½	228.92	503.46	148	.48²	3.30
206	3.32	19	310.12	252.42	250.14	868.80	6½	231.30	508.27	179	.41¹	3.76
198	3.25	26	315.63	315.63	285.75	974.40	7.	292.08	587.77	202	.46²	3.34
171	3.36	March 5	296.88	296.88	268.08	912.00	6½	257.52	550.00	190	.42⁸	3.50
194	3.64	12	325.00	295.38	291.54	1.005.30	7	337.39	550.00	208	.56¹	2.98
169	3.69	19	289.06	210.61	264.29	888.00	7	322.09	558.03	185	.64	2.75
193	3.35	26	370.72	185.36	244.09	830.40	6½	261.15	549.32	193	.43⁸	3.18
3479	3.31²	April 2	362.14	181.22	239.87	820.80	6½	246.36	568.50	161	.45³	3.33
		8 Weeks	2.599.75	1.863.75	2.058.39	7.055.70	53½	2.193.99	4.325.35	1446	.48⁷	3.24⁵
194	3.22	54 W $\frac{27\frac{1}{3}}{27\frac{1}{3}}$ $\frac{87}{7\frac{1}{4}}$	19.459.15	9.508.58	12.859.51	45.253.24	350¾	13.864.49	27883.52		.478	3.26⁴
152	3.34	1887 April 9	353.96	171.48	228.19	768.00	6	230.30	595.00	160	.43⁸	3.33
179	3.40	16	386.06	188.47	255.71	859.20	7	269.94	576.00	179	.46⁹	3.18
194	3.32	23	376.00	138.00	239.95	792.00	6½	244.23	555.00	164	.47⁵	3.24
170	2.82	30	394.25	169.91	244.10	830.40	6½	294.43	550.00	173	.53⁵	3.02
168	2.97	May 7	385.52	157.77	238.65	830.40	6½	256.88	555.00	171	.47	3.23
175	3.06	14	459.47	75.45	209.27	820.80	6½	238.91	555.00	169	.42⁹	3.58
169	2.97	21	411.07	64.29	196.03	792.00	6½	211.79	555.00	160	.44⁵	3.95
4840	3.25⁶	28	491.30	75.00	257.60	987.80	7	249.30	555.00	189	.45⁶	3.94
		8 Weeks	3.219.63	1040.32	1.853.50	6695.60	52½	1.965.78	4476.00	1365	.46¹	3.39⁵

T. B. Walker founder to 4th Feby 1889 and C. P. Perin to

	B 2¼	C 2¼	1 Lime	Fuel 1½	Labor	Iron daily	Yield	Iron		
1886 27 March to 5 Feby 1889 46W	.68^{8}	.31^{2}	.44	3.26	2.01^{5}	39.26	.47^{7}	12.55	Walker	
1887 5 Feby to 2 April 8W	.58^{2}	.41^{8}	.46^{1}	3.24^{5}	1.98^{9}	40.63^{5}	.48^{7}	12.42^{4}	Perin	
86 27/3 to 87 2/4 54W	.67^{1}	.32^{8}	.44^{3}	3.26^{4}	2.01	39.52^{8}	C.52 B.45^{8} .47^{8}	12.53^{5}		
89. 9th April to 28 May 8W	.75^{5}	.24^{5}	.43^{5}	3.39^{5}	2.27^{6}	37.44	C.52 B.44^{7} .46^{1}	13.18		
4th June to 16 July 9	.85^{8}	.14^{2}	.40	3.83^{4}	2.42^{2}	34.97	B.40^{6} .42^{2}	14.44^{5}		
12 Feby to 16 July 23W	.92^{7}	.27^{3}	.43^{2}	3.48	2.20^{9}	37.80	B.43 .45^{5}	13.29^{3}		
30 July to 27 Aug = 5W	.85^{7}	.14^{3}	.39^{4}	3.62^{3}	2.32^{3}	35.19	.42^{7}	13.94^{8}	Crowthur	
30 July to 1 Oct = 10W	.85^{7}	.14^{3}	.37^{8}	3.36^{6}	2.18^{9}	37.15^{9}	B.41^{7} .43^{2}	13.31^{9}		
8 Oct to 5 Nov = 5W	.84^{8}	.15^{2}	.30^{4}	3.04^{4}	1.92^{6}	42.39	B.40^{9} .42^{5}	12.49^{8}		
5th Nov to 10 Dec 10W	.84^{1}	.15^{9}	.30	2.96^{2}	1.94^{7}	41.64	.43^{7}	12.21^{7}		
1888 10/12 to Jany 28 6W				2.95^{6}	2.19	38.61^{9}	.43	12.53^{4}		
Feby 4 to Apr 1 9W	2.3 .83^{1}	2.3 .16^{9}	1. 0.29^{6}	1½ 3.37^{3}	2.49^{9}		.42^{9}	13.29^{2}		
to " 51W	.83^{1}	.16^{9}	.35	3.29^{8}	2.22^{9}		.43^{9}	13.20^{4}	I. M	Lake
1888/ 7 Apr to 16 June 11W	.71^{2}	.21	.31^{1}	3.52^{2}	2.03	36.46	.47^{5}	13.45	.03^{9}	03^{9}
23 June + 29 Sept 15W			.31^{1}	3.69^{4}	2.17^{2}	33.95^{8}	.47^{1}	14.18^{7}		
7 Apr to 29 " 26	.72	.18^{3}	.29^{6}	3.61^{8}	2.11	35.01^{7}	.47^{3}	13.86^{5}		

No 2	B 2.3	C 2.3	1. Lime	Fuel 1.5	~~Pilot Hole~~ 6.	Essex 6.5	Idlette 6.5	Iron	Labor	Yield
1888 to April 1st 9W	.49^{8}	.24^{4}	0.37^{1}	3.25^{9}	Iron daily			14.21^{9}	2.18^{3}	.49^{8}
7 Apr to 16 June 11 "	.60^{4}	.27^{8}	0.34^{3}	3.28^{4}	37.39^{5}	.05^{8}	.06	12.83	1.98	.50
23 June + 29 Sept 15 "				3.70^{4}	37.37^{2}			14.02^{4}	2.00^{5}	.47
7 Apr to 29/Sept 26	.67^{8}	.20^{8}	.30^{8}	3.52^{3}	37.38^{2}	0		13.51	1.99^{5}	.49^{4}

W. P. Perins Journeyman To 20th July - then Jos J. Carruthers

	B	C	Time	Task	Labor	Iron	Cwts	Fee	Days	Chgs	Daily Av
1887 June 4th	450.71	70.25	223.10	880.80	555.00	213.82	.41	4.11	6½	177	
11	417.60	65.10	195.54	876.40	555.00	191.82	.39⁷	4.32	6½	164	
18	525.40	80.59	241.68	1055.60	600.00	269.69	.44¹	3.95	7	203	
25	503.70	76.20	238.58	943.60	600.00	342.56	.41⁸	3.88	7	192	
July 2	496.72	84.89	221.00	859.20	550.00	241.21	.42⁹	3.56	6½	179	
9	436.77	79.55	202.48	787.20	552.00	215.17	.41⁶	3.66	6¼	164	
16	508.54	92.65	235.82	916.80	550.00	267.65	.43⁶	3.49	7	191	
7 Weeks	3319.44	549.21	1.548.20	6.269.60	3.960.00	1.634.92	.43⁷	3.83⁴	46¾	1270	
Perins 23 W 12 July to 16 July	2.736.82	3.453.28	5.460.09	20.000.90	12.761.35	5.774.69	.45⁵	3.48	152¾	4081	
23 "	444.75	81.00	206.18	801.60	550.00	236.30	.44²	3.39	6½	167	
24 Weeks 24 W	9.681.87	3.534.28	5.666.27	20.802.50	13.311.35	6.010.99	.45⁴	3.46	159¼	4.248	
July 30	491.26	78.49	216.46	848.00	Iron 229.00	Labor 550.00	.44²	3.93	6½	212	
Aug 6	493.05	82.15	229.20	912.00	249.83	560.00	.43	3.67	7	228	
13	441.99	73.61	203.68	800.00	221.60	525.00	.42⁹	3.62	6½	200	
20	501.50	83.50	231.12	896.00	252.17	585 00	.43¹	3.55	7	224	
27	492.55	82.00	229.00	880.00	247.91	560.00	.43³	3.57	7	220	Irons have printed down Best from this Lend.
5 Weeks	2.400.33	399.75	1.105.46	4.336.00	1.196.51	2.780.00	.42⁷	3.62³	34	1084	
Sept 3	446.19	74.31	204.09	764.00	214.83	525.00	.41²	3.85	6½	191	
10	498.79	83.01	218.43	820.00	269.62	560.00	.46³	3.04	7	205	
17	546.05	91.08	239.13	888.00	283.30	566.00	.44⁴	2.13	7	202	
24	536.20	89.35	229.60	828.00	293.34	560.00	.43⁶	3.03	7	209	
Oct 1	600.18	100.00	224.32	900.00	297.83	560.00	.42⁵	3.02	7	225	
10 Weeks	5.027.74	839.50	2.219.03	8.536.00	Iron 2.535.43	Labor 5.551.00	.43²	3.36⁶	68½		
Oct 8	537.92	89.67	198.36	852.00	255.22	525.00	.40⁶	3.34	6½	213	
15	617.83	102.99	225.96	944.00	309.87	560.00	.43³	3.04	7	236	
22	539.17	187.51	186.64	804.00	277.83	525.00	.44⁴	2.89	6½	201	
29	569.86	113.58	201.92	848.00	288.65	525.00	.43³	2.94	6½	212	
Nov 5	532.97	106.85	189.59	812.00	267.48	560.00	.43¹	3.04	6½	203	
5 Weeks	2.988.75	499.70	1.002.47	4.260.00	1.399.05	2.695.00	.42⁵	3.04⁴	38		47.39
12	549.75	109.85	194.85	852.00	279.74	560.00	.42	3.08	7		
19	520.98	104.38	185.30	824.00	274.87	560.00	.43⁹	3.00	6¾		
26	545.39	109.35	194.00	852.00	310.91	560.00	.47⁴	2.93	7	213	
Dec 3	558.92	111.98	198.80	884.00	296.82	560.00	.44²	2.98	7	221	
10	459 22	92.13	163.37	680.00	260.04	560.00	.49¹	2.86	7	184	
10 Weeks	5.421.01	1.027.39	1.938.79	8.352.00	2.821.43	5.495.00	.43⁷	2.96²	67¾		41.64
Iron 24	47.61	9 60	16.93	60.00	237.00	160.00					
Dec 31	496.94	99.49	174.00	732.00	560.00	560.00		2.92	7	199	
1888 Jany 7	508.34	101.85	180.81	804.00	274.04	560.00		2.93	7	201	
14	467.33	93.66	166.22	736.00	253.17	560.00		2.90	7	184	
21	582.56	116.74	207.20	884.00	304.91	560.00		2.89	7	221	
28	511.78	102.61	182.00	780.00	282.57	560.00		2.98	7	195	
6 Weeks	2614.56	523.95	927.16	3.996.00	1.351.69	2960.00	.43	2.95⁶	35		

No 1.

1888 — Altland Furnace — J. Schmitter

	Batts (2.3)	C (2.3)	Lime (1)	Fuel (1½)	Labor	Iron	Fuel	Yield	Days		
May 4	515.01	103.42	183.34	792.00	562.30	267.60					
11	303.82	61.81	107.31	520.00	534.50	142.61					
18	440.20	90.17	157.15	792.00	559.60	244.47					
25	457.32	97.35	161.12	812.00	550.00	278.21	2.91⁸	.51³			
Mch 3	348.43	71.29	124.37	720.00	541.38	175.17	4.11				
10	338.79	69.22	120.94	652.80	523.58	183.26	3.56				
17	397.00	77.00	134.53	726.40	535.32	200.30	3.63				
24	429.30	87.71	153.19	827.20	574.95	240.30	3.44	.46⁴			
31	445.91	91.10	159.12	859.20	575.00	257.91	3.38				
9 Weeks	3.649.88	743.07	1.301.07	6.701.60	4.954.63	1.986.83	3.37⁹	.47⁹			
5/W	23.695.01	4.802.44	9.993.93	41.382.40	27.946.63	12.537.38	3.29⁸	.439		Iron Alter	Labor
April 7	418.50	85.50	149.34	806.40	479.22	218.22	3.69	.4[illegible]	6½		
14	402.66	86.35	150.83	814.40	495.48	232.95	3.49	.45⁷	6½		
21	486.40	89.13	155.72	827.20	496.69	247.60	3.34	.47⁴	6½		
28	436.57	89.15	155.78	819.20	473.32	244.26	3.38	.46⁵	6½		
4 Weeks	1.741.13	350.13	611.67	3.267.20	1.944.71	941.03	3.47¹	.48⁵	26		
May 5	298.18	124.25	161.99	809.60	475.53	238.91	3.38	.48²	6½	37.28	37.28
12	263.42	109.76	143.09	723.20	471.17	200.43	3.61	.49⁴	6½	15.10	15.10
19	292.93	122.06	159.13	824.	484.07	230.91	3.56	.50⁵	6½	28.31	28.47
26	318.32	130.55	165.04	891.20	480.26	257.56	3.50	.50⁴	6½	30.40	30.21
June 2	320.06	133.36	168.60	910.40	485.06	257.60	3.15		6½	39.88	40.15
9 Weeks	3.202.04	970.11	1.409.52	7.425.60	4.340.80	2.123.44	3.49⁶	.47²	58½	150.97	151.21
June 9	317.79	107.35	160.57	857.60	479.30	235.22	3.65	.494	6½	25.21	25.02
16	369.47	79.18	141.97	900.80	478.25	248.30	3.62	.46⁶	6½	31.26	31.46
11 Weeks	3.889.30	1.156.64	1.702.06	9.184.00	5.298.35	2.606.96	3.52⁷	.47⁵	71½	207.44	207.69
June 23	368.16	78.89	142.49	897.60	480.50	320.52	4.07	.41⁸	6½	30.83	30.63
30	362.91	77.77	140.49	888.00	480.00	244.43	3.63	.49⁴	6½	26.85	27.00
July 7	294.00	63.00	113.79	716.80	444.00	180.04	3.97	.42⁸	6	31.40	31.60
14	315.66	67.64	122.17	775.60	480.00	209.65	3.70	.49	6½	22.00	21.87
21	335.10	70.74	127.96	804.80	479.00	211.26	3.81	.45⁵	6½	27.93	27.76
28	332.06	71.16	128.52	809.60	480.00	223.17	3.62	.48⁷	6½	27.30	27.13
Aug 4	290.06	62.02	112.03	710.40	480.00	199.26	3.56	.49⁸	6½	24.32	24.48
11	299.25	64.13	115.82	729.60	484.	199.52	3.64	.48⁹	6½	22.36	22.50
18	343.22	72.70	137.84	836.80	480.00	228.91	3.65	.48⁵	6½	27.93	27.76
25	398.18	116.66	169.94	993.60	491.00	265.91	3.73	.57³	7	34.21	34.42
Sept 1	337.97	81.19	136.10	841.60	470.00	213.91	3.93	.46⁶	6½	19.82	19.70
8	370.68	79.47	142.46	848.00	480.00	228.47	3.71	.46⁴	6½	21.38	21.39
15	320.75	83.74	149.05	844	482.	239.56	3.53	.44³	6½	22.83	22.83
22	348.00	74.58	132.58	768.	491.	223.00	3.44	.47⁷	6½	22.53	22.53
29	348.00	74.58	132.58	768.	490.	223.39	3.44	.48⁹	6½	17.09	17.09
15 Weeks	5.114.00	1.138.22	2.001.62	12.232.40	7.191.50	3.311.00	3.69⁴	.47¹	97.5	388.78	388.69
11 "	3.889.30	1.156.64	1.702.06	9.184.00	5.298.35	2.606.96			71.5	207.44	207.69
26 Weeks	9.003.30	2.294.86	3.703.68	21.416.40	12.489.85	5.917.96	3.61⁸	.47³	169	596.22	596.38

No 2 Ashland

1888 Furnace

	Batte 2.3	Smeltte 6½	O. 2.3	Lime 1.	Fuel 1½	Coke	Iron	Pig K 6.	Essex 6½	Fuel	Limest
Feby 4	236.28	70.88	165.40	172.47	910.00	482.40	188.91				
11	374.56	82.37	192.19	200.67	808 00	534.50	236 44				
18	290.23	10.44	147.88	217.88	896.—	557.60	291.21	55 29	76.13		
25	261.51	00.00	91.52	196.30	808.00	550.00	260.21	91.52	78.45	3.10	.447
Mch 3	225.36	— —	78.88	169.16	788.—	541.38	220.91	78.88	67.61	3.56	
10	229.33	— —	80 27	172.15	747 20	523.68	242.65	80.27	68.80	3.08	
17	194 96	— —	68 24	146.34	635.18	535.32	201.86	68 24	58.49	3.15	
24	240.63	—	84.22	180 63	787.60	574.95	278.83	84 22	8 11	2.83	.668
31	299.41	31.45	176 67	209.73	917.20	575.00	311 83	18.89	31 45	2.94	
9 Weeks	2.232.27	195 64	1.085 27	1.665.33	7.277.18	4874.73	2.232.85	477.31	389 04	3.254	.498
Apric 7	219 51	32.93	153.66	164.78	722.80	479.22	255.00	6½	32 93	2.83	.581
14	209.69	13.70	146 79	157.40	691 20	495 84	242.44	6½	13.70	2.85	.631
21	199.87	14.66	140.00	150.00	661.20	496.69	213.44	6½	14.66	3.11	.575
28	219.54	32.93	153.66	164.78	725.60	473.32	249.34	6½	32.93	2.91	.587
4 Weeks	848.61	94.22	594.11	636.96	2.800.80	1945.07	959 22	26	9 42 2	2.919	.588
May 5	278.15	12.38	115.90	157.92	763.20	475.53	229.43	6½	12.38	3.33	.547
12	300.54	31.60	125.23	163.26	826.80	471.79	261.87	6½	31.61	3.15	.535
19	291.06	36 80	121.28	158.11	819.20	484.07	245.04	6½	36.47	3.34	.505
26	317.25	27.58	132.19	167.12	902.40	480.26	287.84	6½	27.41	3.95	.471
June 2	280 69	34.98	116.96	147.87	798.40	485.06	212.34	6½	35.20	3.96	
9 Weeks	2.316.30	237.06	1.205.67	1.425.24	6.910.80	4.341.78	2.145.74	58½	237.29	3.22	.536
June 9	336.19	33.26	110.86	156.93	900.80	479.30	247.56	6½	31.31	3.64	.493
16	397.69	32.52	85.22	152.67	969.60	498.25	280.47	6½	32.73	3.46	.571
11 Weeks	3.050.16	302.84	1.401.75	1.734.84	8.781.20	5.299.33	2673.77	71½	291.33	3.284	.50
June 23	386.54	31.88	82.83	149.60	945.60	480.50	360.65	6½	31.68	3.63	.487
30	364.22	26.57	78 05	140.97	891.20	480.00	240.43	6½	26.74	3.71	.485
July 7	340 60	36.38	72.99	131.82	830.40	444.00	322.76	6	36.75	3.93	.455
14	381.94	26.17	81.85	147.82	933.60	480.00	259.48	6½	26.00	3.60	.502
21	421.97	34.78	90.42	163 31	1028.80	479.00	289.69	6½	34.56	3.57	.497
28	402.28	32.94	86.20	155.69	980.80	480.00	277.26	6½	32.73	3.60	.491
Aug 4	348 46	27.90	74.67	134.87	852.80	450.00	231.26	5½	28.08	3.85	.46
11	392.75	28.67	79.88	144.26	908 80	484.	255 31	6½	28.85	3.56	.50
18	299.57	17.43	59.91	108.20	645.60	400.	173.87	4½	17 31	3.91	.464
25	308.16	26 29	97.46	138.28	819.20	491.	200 56	7	26.46	4.09	.437
Sept 1	342.75	20.03	85.18	139.31	859.20	490.	207.78	6¾	19.91	4.23	.438
8	398.68	22.90	85.42	157.64	912.00	480.	238.34	6½	22.91	3.83	.45
15	394.25	32.42	84.49	150 40	852.00	482.00	260.48	6½	32.42	3.28	.479
22	380.63	24.47	81.57	145.00	846.00	491.00	219.61	6½	24.47	3.86	.439
29	367.94	18 06	78.85	140.17	812.00	490.00	233.66	6½	18.06	3.64	.463
15 Weeks	5.490.74	406.89	1.219.77	2.147.34	13.118.00	7.101.50	3.541.04	94¾	406.93	3.704	.47
11 "	3.050.16	302.84	1.401.75	1.734.84	8.781.20	5.299.33	2673.77	71½	291 33		
26 "	8.540.90	709.73	2.621.52	3.882.18	21.899.20	12.400.83	6.214.81	166¼	698.26	3.583	.494

Ashland No 1.

		Iron	Ore & C	Lime	Coal	Ore & Lime	Yield Ore	Fuel to 1 Iron	Fuel to 1 Metal	Labor
1888 2 June	Weeks 18	4.110.37	8.867.28	2.710.57	14.127.20	11.577.85	.464	3.437	1.22	
16	20	4.593.79	9857.02	3.003.13	15885.60	12.857.15	.466	3.453	1.235	2.21
7 Apr to 29 Sept	26	5917.96	12.490.76	3.703.68	21.416.40	16.194.44	.473	3.618	1.322	211

Ashland No 2

	Weeks	Iron	Ore	Lime	Coal	Ore & Lime	Ore Yield	Fuel to 1 Iron	Fuel to 1 Metal	Labor
1888 2 June 2 mo	18	4.398.59	8.375.85	3.090.57	14.187.98	11.466.42	.522	3.24	1.237	
" 16th	20	4906.62	9425.61	3.400.17	16.058.38	12.825.78	.52	3.272	1.252	2.073
7 Apr to 29 Sept	26	6214.81	12.570.41	3.882.18	21.899.20	16.452.59	.494	3.523	1.331	1.995

Ashland No. 1.

	Weeks	Batte	Cinder	Lime	Iron Mtn	Essex	Fuel	Iron	Labor	Fuel	Yield	Days
1888 Oct 6		346.20	74.19	131.90	16.90	16.90	764.00	224.65	490.00	3.41	.494	6½
13		368.98	49.20	126.34	33.21	5.63	760.	212.47	494.00	3.58	.475	6½
20		380.63	50.75	130.33	64.48	—	784.	209.65	489.	3.93	.422	6½
27		361.21	48.16	123.68	45.45	—	744	205.26	480.	3.62		6½
Nov 3		302.95	102.00	141.14	23.70		736	183.87	477.00	4.00		6½
10		249.22	135.94	150.64	44.67		700.	199.87	490.00	3.50		6½
17		272.46	177.51	177.79	24.08		778.40	205.65	490.00	3.99		6½
24		280.99	164.63	166.43			788	206.87	492	3.82		6½
Decm 1		361.88	126.88	150.38			812.00	198.65	494	4.10		6½
	9	2.924.52	929.26	1.298.63	252.42	22.53	6.866.40	1.846.94 (2381)	$4.396.00	3.717	.447	58½
Dec 8		338.00	124.85	146.68			792.00	204.56	488.	3.88		6¼
15		478.15	61.37	148.88			824.00	209.57	522.	3.94		7
22		436.66	53.70	143.20			776.00	215.69	489	3.60		6½
29		346.16	125.60	161.75			744.00	207.87	467	3.57		6¼
1889 Jany 5		363.50	196.38	217.47			860.00	261.91	481.	3.28		6½

Ashland No. 2.

		Batts	Cinder	Lime	Ironsilts	Essex	Fuel	Iron	Labor	Fuel	Yield	Soap
1888 Oct 6	Weeks	360.69	77.29	137.41	17.87	17.87	796.00	219.95	490.00	3.61	.465	6½
13		405.87	54.12	138.98	38.26	6.41	836.00	228.04	494.	3.66	.45	6½
20		415.58	55.41	142.27	69.91	—	856.00	238.82 ~~289~~.00	489	3.58	.441	6½
27		417.53	55.67	142.97	49.72	—	860.00	224.87	480	3.82		6½
Nov 3		386.45	51.22	132.32	24.86		796.00	212.26	477	3.75		6½
10		388.40	51.79	136.24	49.33		800.00	232.17	490.	3.44		6½
17		453.58	57.78	155.41	37.68		906.40	227.65	490.	3.99		6½
24		441.97	55.00	152.10			880.00	226.78	492.	3.87		6½
Dec 1		480.53	55.~~25~~	152.80			884.00	236.91	494	3.73		6½
	9	3.750.60	513.53	1.790.80	287.63	24.28	7.614.40	2.047.45	$4.396.00 2098	3.71	.447	58½
Dec 8		424.29	49.75	137.59			796.00	210.61	488.00	3.99		6¼
15		421.77	50.25	138.98			744.00	201.87	485.	3.70		6½
22		276.43	67.72	114.98			576.00	136.30	400.00	4.23		4¾
29		364.64	147.13	181.01			876.	222.56	535.	3.94		7
1889 Jany 5		340.98	194.02	214.89			908.	241.39	528.	3.76		7

Coal Quotations

R.O.M.	Olive Hill Fire Brick Co	May 31st 98	70¢	Kilgore	
R.O.M.	Licking Valley Ry Co	" "	70¢	"	
Nut	Mt Sterling Commission Co	June 2nd "	60¢	"	
Nut & S.	Central City Brick Co	" " "	35¢	"	
"	Huntington Cons Gas & E St Ry Co	" 6th "	25¢	"	
"	Dan A. Mossman	" " "	25¢	"	
"	Olive Hill F. B. Co	" " "	25¢	"	
"	C. G. Blake	" " "	25¢	"	
"	Louis des Cognets & Co	" " "	25¢	"	
Lump	" " " "	" 11 "	90¢	"	2500 tons
Nut & S.	Wm Davis - Maysville	" " "	30¢	"	
"	Kentucky Fire Brick Works	" " "	30¢	"	
Nut	" " " "	" " "	60¢	"	
Nut & S	F. D. Fuller	" 13 "	25¢	"	
"	Ensign Mfg Co	" " 14 "	25¢	"	
"	American Brewing & Ice Co	" " " "	25¢	"	
Nut	F. D. Fuller	" " " "	55¢	"	
"	Central City Brick Co	June 20 "	55¢	"	
Nut & S	" " " "	" " "	30¢	"	
Nut & Pea Stone	American Brewing & Ice Co	" " "	35¢	"	
Nut & S	Patton Milling Co	" 22 "	30¢	"	
Nut	" " "	" " "	55¢	"	
Pea & Nut & S	Ky Fire Brick Works	" 27 "	25¢	"	1 yrs
Nut	" " " "	" " "	50	"	to July 1st 99
Clint Lump	" " " "	" " "	90	Ash	
Nut & S	Limestone Milling Co	" 29 "	25	Kilgore	
"	William Davis	" " "	25	"	
Nut	" "	" " "	50	"	
"	Citizens Coal Co Augusta	" " "	50	"	
Nut & S	" " " "	" " "	25	"	
"	C. & O. Ry	" "	22 & 30¢	"	
"	Winchester Water Co	July 2nd 98	25	"	
"	" Light Co	" " "	25	"	
"	Mt Sterling Ice & Light Co	" " "	25	"	
Lump	Rose Run Iron Co	" 16 "	100	"	
Nut & Pea Stone	C. G. Blake	" " "	30	"	
Nut & S	C. & O. Fuel Co D. Macdonald Park	" 20 "	25	"	
Nut	Olive Hill Fire Brick Co	" " "	50	"	
Lump	Licking Valley Ry Co	Aug 11 "	1.00	"	
R.O.M.	Ponto & Tygart Valley Ry Co	" " "	70	"	
Slack	A. R. Johnson Greenup Flouring Mill	24 "	50	Ashland	
Lump	L. A. Howland & Son Quincy	" "	1.25	"	
"	C. L. Hudgins - Olive Hill	26 "	1.00	Kilgore	
"	W. H. Cox Co. Concord	" "	1.25	Ashland	
Clinton "	" "	" "	1.15	"	
Lump	W. R. Stephens Salt Lick	" "	1.00	Kilgore	

Coal Quotations

Clinton	Lumps	Wm Davis,	Maysville	Aug 27th 98	$1.00	Ashland	
"	"	Citizens Coal Co	Augusta	" " "	1.00	"	
"	"	Hays Bros -	Vanceburg	Sept 1st 98	1.00	"	
Ash.	"	"	"	" "	1.25	"	
"	"	C & O Ry	2240 lbs	" "	1.00	Kilgore	
"	"	Jo H. Campbell	Salt Lick	" "	1.00	"	
"	"	Chas Kitchen & Son	Leon	Oct 19 "	95	"	
"	Nut	"	"	" "	50	"	
"	Lump	W. H. Livingston	Soldier	" "	1.00	"	
Clinton	"	Citizens Coal Co	Augusta	Sept 7th "	1.00	Ashland in flats	
Ash	"	C. J. Moulton	Lucasville O	" 26 "	1.25	" —	
"	Nut	Rose Run Iron Co		" " "	50	Kilgore	
"	Lump	Scott & Keyser	Quincy Ky	Oct 31st "	1.25	Ashland	
"	"	Central Supply Co	Central City W. Va	Nov 1st "	1.00	Kilgore	
"	"	P. A. Dauerin & H. C. Dennis	Olive Hill	" 4 "	1.00	"	
	N & S.	Patton Milling Co		" 7 "	25	"	
	"	Limestone "	"	" " "	25	"	
	"	Olive Hill F. B. Co		" " "	20	"	
	"	Ky. F. B. Works		" " "	20	"	
	"	Dan A. Mossmann		" " "	25	"	
	"	Winchester Water Co		" 9 "	20	"	
	"	" Electric Light Co		" " "	20	"	
Ash	Lumps	Patton Milling Co		" " "	1.00	"	
"	"	J. C. Bingham	Russell Ky	" 12 "	1.25	Ashland	
Clinton	"	"	"	" " "	1.00	"	
"	"	L. P. V. Williams	Morehead	" 22 "	90	"	
Ash	"	"	"	" " "	1.00	Kilgore	
Clinton	"	Hays Bros	Vanceburg	" 23 "	1.00	Ashland	
"	"	Wm Davis	Maysville	" " "	1.00	"	
"	"	Patterson Bros	Piketon O	" 28 "	1.00	"	
"	"	Patton Milling Co	Catlettsburg	" " "	90	"	
"	"	F. W. Fuller	Huntington	Dec 2 "	90	"	
"	"	Olive Hill F. B. Co		" " "	90	"	
	N & S.	Hays Bros		" 14 "	50	"	
	R. O. M	Thompson & Collett	Salt Lick	" 17 "	75	Kilgore	
	Nut	"	"	" " "	50	"	
	"	Cushman Stove Co	Freestone Ky	99 Jan 11 -99-	50	"	
	N & S	Consolidated Light & Ry Co.	Huntington	" 17 "	20	"	
	"	Olive Hill Fire Brick Co		" " "	25	"	
	Pea	"	"	" " "	20	"	
	Nut	"	"	" " "	50	"	
	R. O. M.	"	"	" " "	70	"	
Clinton	Lumps	Hays Bros		27 "	90	Ash	
"	"	Citizens Coal Co		" " "	90	"	
"	"	Howland & Son	Quincy	Feb 4 "	90	"	

Coal Quotations

Clinton	Lumps	Patton Milling Co		Febry	10th	$1.00	Ashland
	Slack	Hays Bros Vanceburg		"	16th	.50	"
Ash.	R.O.M.	L des Cognets & Co		"	10th	.75	Kilgore
"	Lumps	W. H. Livingston	Soldier Ky	"	17	1.00	"
"	R.O.M.	J. H. Campbell	Salt Lick	"	18	.75	"
"	"	Kentucky Blue Stone Co	Freestone Rowan Co	April	18	.75	"
"	Lumps	" " " " "	" " " "	"	"	1.00	"
"	Nut S.	Cattettsburg Kenova & Ceredo Water Co		May	10th	.35	"
Clinton	Lumps	Kentucky Fire Brick Co		"	"	1.00	Ashland
"	R.O.M	" " " "		"	15th	85	"
Kilgore	"	" " " "		"	"	75	Kilgore
"	Nut S	Carpenter Light & Power Co		"	19	35	"
"	Lumps	Rose Run Iron Co		Aug	21	1.10	"
"	"	Kentucky Fire Brick Co		"	"	1.00	" August
"	"	" " " "		"	"	1.10	" Sept
"	R.O.M.	Olive Hill Fire Brick Works		"	"	.75	" Aug
"	Lumps	Kentucky Blue Stone Co		"	"	1.10	" Sept
"	"	A. L. Miller	Morehead	"	"	1.10	"
"	"	A. S. Lewis	C&O Conductor	"	"	1.10	"
"	"	W. F. Brown	Farmer	"	25	1.10	"
"	"	P. A. Damerin	Olive Hill	"	29	1.10	" Sept
"	"	J. P. Zimmerman	"	"	"	1.10	"
"	"	Armstrong	Preston	"	"	1.10	" Sept
"	R.O.M	Rose Run Iron Co	Olympia	Sept	1	.75	"
"	Nut S	" "	"	"	"	.35	"
"	"	Olive Hill Fire Brick Co		"	"	.35	"
"	Lumps	W. R. Stephens.	Salt Lick	"	9	1.20	"
"	"	L. P. V. Williams	Morehead	"	13	1.20	"
"	"	F. W. Anderson	C&O Conductor	"	19	1.20	"
"	"	W. F. Brown	Farmer	"	16	1.20	"
"	"	J. H. Campbell	Salt Lick	"	15	1.20	"
"	"	W. W. Barnes	" "	"	"	1.20	"
"	"	Patton Milling Co	Cattettsburg	"	22	1.20	Begin Sept 25th
"	"	W. H. Livingston	Soldier	"	"	1.20	"
"	"	Ky. Blue Stone Co	Freestone	"	"	1.20	"
"	"	Ky. Fire Brick Co	Firebrick	"	"	1.20	"
"	"	Rose Run Iron Co	Olympia	"	"	1.20	"
"	"	Olive Hill Fire Brick Wks	Olive Hill	"	"	1.20	"
"	"	A. L. Miller	Morehead	"	"	1.20	"
"	"	Chas Kitchen & Son	Leon	"	"	1.20	"
"	"	J. P. Zimmerman	Olive Hill	"	"	1.20	"
"	"	C. J. Moulton	Lucasville O	"	"	1.40	Ashland
"	"	G. R. Armstrong	Preston	"	28	1.20	Kilgore
"	Nut	Jas Foster	Russell	"	"	.90	Ashland
Clinton	Lumps	Howland & Son	Quincy	Oct	2	1.20	"
"	"	Hays Bros	Vanceburg	"	"	1.20	"

Coal Quotations

1899						f.o.b.	
Clinton Lumps	W. H. Thomas	Dover Ky	Oct 4th 99		$1.20	Ashland	Clinton
Kilgore "	Daniel Cox	Ceredo W. Va	" " "		1.20	Kilgore	Kilgore
" "	St Bernard Coal Co	Louisville	" " "		1.25	"	Clinton
" R.O.M.	T. J. Davis & Co	Olive Hill	" 6 "		85	"	Kilgore
Clinton Lumps	Citizens Coal Co	Augusta	" " "		1.20	Ashland	"
Kilgore "	T. J. Hall	Augusta to Cincinnati	" 7 "		1.25	Kilgore	"
Clinton "	Scott & Keyser	Quincy	" " "		1.20	Ashland	Clinton
Kilgore "	Ashland Steel Co		" 9 "		1.40	"	Kilgore
" "	D. A. Moorman	Huntington	" " "		1.25	Kilgore	"
Clinton "	"	"	" " "		1.20	Ashland	"
Kilgore "	J. M. Shultz	Sec. Forward Aden Ky	" 10 "		1.25	Kilgore	"
Clinton "	B. A. Hyman		" 19 "		1.10	Ashland	Clinton
Kilgore Nut	Olive Hill Fire Brick Co		" 25 "		80	Kilgore	"
" Nut & S	T. J. Davis & Co	Olive Hill	" 27 "		40	"	" 3
" Lumps	N. Flask	Lawton	Nov 1 "		1.25	"	Kilgore
Clinton "	C. H. Hill	Frost	" 1 "		1.20	Ashland	Clinton
" "	Wm Biggs	"	" 3 "		1.20	"	"
" "	C. J. Patterson	Dayton	" 3 "		1.25	"	
Kilgore "	W. R. Stephens	Salt Lick Ky	" 6 "		1.30	Kilgore	
" "	L. P. V. Williams	Morehead	" " "		"	"	
" "	W. F. Brown	Farmer	" " "		"	"	
" "	J. H. Campbell	Salt Lick	" " "		"	"	Clinton
" "	Patton Milling Co	Catlettsburg	" " "		"	"	Kilgore
" "	W. H. Livingston	Soldier	" " "		"	"	"
" "	Ky Blue Stone Co	Freestone	" " "		"	"	Clinton
" "	Ky Fire Brick Co	Firebrick	" " "		"	"	"
" "	Olive Hill Fire Brick Works		" " "		"	"	Kilgore
" "	A. L. Miller	Morehead	" " "		"	"	
" "	G. R. Armstrong	Preston	" " "		"	"	Kilgore
" "	Rose Run Iron Co		" " "		"	"	
" "	Clinton Mining Co	Soldier	" " "		"	"	R.
" Nut	Louis des Cognets & Co		" 7 "		75	Kilgore from 13th	
" Lumps	W. H. Burgess C & O Engineer	Lexington	" 10 "		1.30	"	
" Pea	Harp Bros		" 11 "		60	Ashland	Pea or N
" Lumps	H. O. Irwin C & O Agent	Olympia	" " "		1.30	Kilgore	Clinton
" "	Buchwalter & Co	Morehead	" 14 "		1.30	"	Kilgore
" "	W. S. Hicks	Olive Hill	" 20 "		1.30	"	"
" "	Jamesson Bros	Morehead	" 21 "		1.30	"	"
" R.O.M.	Olive Hill Fire Brick Co		Dec 1st "		80	"	"
" "	Ports & Tygart Valley Ry		" " "		80	"	"
" "	Norton Iron Works		" " "		1.05	Ashland	"
" Nut	" " "		" " "		"	"	"
" Mix	" " "		" " "		75	"	"
" R.O.M.	Cushman Stone Co	Slow Boy Freestone	" " "		85	Kilgore	"
" Lumps	Limestone Mining & Mfg Co		" " "		130	"	"

1899 Coal Quotations

Clinton Lump	B. F. Bennett	Greenup	Dec 5th 99		1,25	Ashland
Kilgore R.O.M.	C & O Fuel Co	Cincinnati	" " "		80	Kilgore
Clinton Lump	Central City Foundry Co		" " "		1,25	Ashland
Kilgore "	L. C. Wilson	Olive Hill	" 16 "		1.30	Kilgore
" "	F. B. Worter	" " & Soldier	" 19 "		1.30	"
" "	B. C. Hyman	Ashland	Jany 1-1900		1.40	Ashland
Clinton "	"	"	" "		1.20	"
Kilgore "	J. F. Austin	Denton O for Soldier Ky	" "		1.30	Kilgore
" R.O.M	"	"	" "		85	"
" Nut S	"	"	" "		40	"
" Lump	J. M. O'Brien	Henley O	Dec 27th 1899		1.50	Ashland
Clinton "	"	"	" "		1.25	"
" "	Clinton Fire Brick Works		Jan 1st 1900		1.10	"
" 3" Nut	" " "	"	" "		1.00	"
Kilgore Lump	Hughes Merchandise Co		Dec 28th 1899		1.30	Kilgore
Clinton Lump	J. W. Garrison	Frost Ky	Jan 2nd 1900		1.20	Ashland
Nut & Slack	The Grobmyer Coal Co	Carrollton	27 "		75	"
"	L. des Cognets & Co		Feb "		35	Kilgore
"	The Consolidated Light & Railway Co	Huntington	" "		35	"
"	Augusta Milling Co	Augusta Ky	" "		35	"
"	Dugan & Son	Howard P.O. Ky. (So Ripley)	" "		35	"
Clinton Lump	" "	" "	" "		1.20	Ashland
Kilgore "	Jerome Duval	Denton	" "		1.50	Denton
" "	T. B. Hutchinson	Catlettsburg	Hampton Switch "		1.20	Kilgore
Clinton Lump	G. D. Bush	Proctorsville O			1.50	Proctorsville
" R.O.M	"	"			1.25	"
Kilgore Lump	L. C. Wilson	Olive Hill			1.30	Kilgore
Slack	Olive Hill F. B. Co	"	Mar 16th 1900		1.30	"
Kilgore Lump	Kentucky Blue Stone Co	Freestone Ky	20th "		1.30	"
Nut	" " " "		" "		90	"
R.O.M	" " " "		" "		80	"
Lump	The Cambridge Tile Mfg Co	Covington	13th "		130	"
Nut	" " " "		" "		90	"
Pea or Nut S	" " "		" "		35	"
Clinton Lump	W. M. Glover	Frost Ky	8th "		1.20	Ashland
Kilgore Nut S	Chesapeake Stone Co	Olive Hill Ky	25 "		35	Kilgore
" Nut	C. E. Brown & Son	Jackson Mich	28 "		90	"
" Lump	Dan A. Mossman	Huntington W Va	30 "		130	"
" "	T. B. Hutchinson	Catlettsburg	" "		"	"
" "	K. B. Cecil	"	" "		"	"
" "	S. D. Boggs	"	" "		"	"
" "	Mead & Stockwell	"	" "		"	"
" "	J. M. York	"	" "		"	"
" R.O.M	Ky. Blue Stone Co	Freestone	" "		90	"
" "	Portsmouth Fire Brick Co		" "		"	"

Kilgore R.O.M.	Olive Hill Fire Brick Co	Mar 30th 1900		90 ¢	Kilgore
"	Cushman Stone Co	" " "		"	"
"	Portsto + Tygart Valley Ry Co	" " "		"	"
"	F. E. Hayward for Enterprise	" 28 "		"	"
Nut	"	" " "		"	"
Lump	"	" " "		1.40	"
Nut &	"	" " "		40	"
Pea	"	" " "		"	"

R.R. Co only pays 1¢ per ton 2240 for coal

1901 Nov 9th Lost 15 tons coal from car 18869 - 1 mile from Kaymoor $15.00

1902 Feb 15 Failure of car supply at Kaymoor several days past week

1900 April

May

July

Aug

Sept

Oct

Nov

Nov

Nov

Nov

1902 Dec

1903 Jan

1901 April	13	~~Located Lewisburg Cogate & Electric Light & Milling Co~~			~~Lump Coal at~~	~~1.60~~	~~f.o.b. mine~~	
	15	"	C. W. Rush	Covington Va	"	"	1.60	" "
	16	"	"	"	R.O.M	"	~~1.45~~	" "
	18	"	~~F. L. Spinner~~	~~Clifton Forge~~	"	"	~~1.45~~	" "
	"	"	"	"	~~Lump~~	"	1.60	" "
	"	"	R. P. Ird & Co	Lewisburg	R.O.M	"	1.15	" "
May	27th	"	C. W. Rush	Covington Va	"	2000 lbs	1.05	" "
July	18th	"	Frank M. Mann	Alderson	W.Va R.O.M	"	1.30	" "
		"	"	"	"	Egg	1.40	" "
		"	"	"	"	Lump	1.65	" "
Aug	19	~~J. J. Duff~~	~~Lewisburg Electric Light & Milling Co~~			"	~~1.60~~	" "
		"	"	"	"	~~R.O.M~~	~~1.45~~	" "
	~~26~~	~~W. P. Reed~~	~~Chicago~~			~~Lump~~	~~1.40~~	" "
	~~31~~	"				~~Lump~~	~~1.25~~	" "
Sept	19	~~C. W. Rush~~	~~Covington~~			~~R.O.M~~	~~1.15~~	" "
Oct	26	J. Mason Miller Jr		Staunton	Lump	"	1.40	" "
Nov	15	H. C. Dunn		Lewisburg W Va	"	"	1.70	" "
Nov	27	M. Erskine Miller & Bro		Staunton	"	"	1.65	" "
$15.00 Nov	21	Lewisburg Electric Light & Milling co			"	"	1.65	" "
Nov	21	"	"	"	"	R.O.M	1.20	" "
Nov	30	C. W. Rush		Covington	"		1.20	" "
	"	"		"	Lump		1.65	" "
	"	J. L. Spinner		Clifton Forge	"		1.65	" "
	"	"		"	R.O.M		1.20	" "
1902 Dec	1st	"		"	Lump		3.25	f.o.b. mine
		M. O Brooks			"		"	" "
		H C Dunn			"		"	" "
		E. M. Nettleton			"		3.50	" "
		Va Coal & Supply Co			"		"	" "
1903 Jan	10	F. L. Spinner		Clifton Forge	"		"	" "
		H. C. Dunn		Lewisburg	"		"	" "
		"		"	R.O.M		3.25	" "
	10	Va Coal & Supply Co			Lump		4.00	" "
	"	F. L. Spinner			"		4.00	" "
	"	H.C. Dunn			"		4.00	" "
	"	E. M. Nettleton			"		4.00	" "

Hamilton Furnace

Running time	lbs Ore Native	lbs Ore Lake	Bush Cinder	lbs Limestone	lbs Coke	Cost of Ore Native	Cost of Ore Lake		Limestone	Coke	
43 days Ending Dec 1'94	3698	1139		2125	2739	2.05	2.83		0.70	2.13	Includes Starting of Furnace
53 " " Jan 26th 95	3803	873	125 120	2157	8013	"	"	3.03 1.93	.70	2.13	
31½ " " Mar 2nd 95	4121	945		1769	3113	"	" 3.03		.70	2.00	
36 " " May 4th 95	7605 tons	1032 tons	960 tons	3878 tons	5971 tons	185	2.83	BB 2.40 Libbi 2.08	.65	1.98	
24½ " " June 8th 95	2504	BB 449 328 BB 403	356	1411	Coal 255 2882	1.85	2.83	BB 2.40 Cinder 2.08	.65	Coal 1.70 Coke 1.98	Stop 9 days & 18 hours for repairs
20 " " June 29th	2018	2 177 2 226	369	1309	2142	"	BB 2.40 2. 2.48 2. 2.83	" 2.08	.65	1.98	
46 " " Aug 31	3350	BB 366 1076	1001	2360	Coal 366 3816	"	BB 2.40 & 2.50	" 2.08	.65	Coal 1.65 2.33	Stop 21 days no coke.
26 " " Sept 28	2326	974	592	1654	Coal 331 2568	"	"	"	"	"	
31¼ " " Nov 2	3109	1243	621	2003	Coal 135 3444	"	"	"	"	"	
39 " " Dec 1st	3728	1641	1196	2742	195 4402	"	"	"	"	"	
40½ " " 96 Jan 1	3810	1791	1420	3470	36 5252	"	"	"	70	"	
51¼ " " Mar 28	4376	2208	2208	3594	61 39 22	"	"	"	"	"	
58 " " May 30	4412	2205	2205	3798	6165	"	"	"	"	2.45	
43½ " " July 18	3569	1063	1297	3538	4518	"	"	"	"	"	
26 " " Aug 15	1848	616	821	1346	2726	"	2.3814	"	"	"	Vermillion ore used
39¾ " " Sept 26	2684	1250	1132	2107	73 4225	"	2.50 3.11	"	"	1.73 "	
39 " " Jan 30	4076	1594	620	2636	4468	"	3.11 3.81¼	"	"	2.45 2.68	Vermillion ore 787 tons @ 3.81¼ Norman " 806 " @ 3.11 -
27¾ " " Mar 6	2722	1076	514	1718	2984	"	"	"	"	2.08	Includes 5 days stop high water.
59½ " " May 8	5401	2160	1090	3602	6483	"	Iron 3.11	Rd Beds 2.43	"	"	Rodd Scale cost 2.43
45½ " " June 26	4045	1853	574	2559	4671	"	"	"	"	"	Vermillion ore 780 tons @ 3.81¼ Norman " 240 " 3.11 Columbia " 532 " 2.81
31 " " July 31	2916	1367	376	1753	3536	"	3.41 2.81 2.61	"	"	"	Vermillion " 895 " 3.41 Negaunee " 261 " 2.61
39 " " Sept 11	3450	1746	327	2089	4062	"	"	"	"	"	
37½ " " Oct 23	2689	1414	628	1918	3875	"	"	"	"	"	
39½ " " Dec 4	3241	1396	1156	2391	4255	"	"	Cinder 1.83	"	2.00	
37 " " 98 Jan 15	2725	1226	919	1987	3818	"	"	"	.675	"	
39 " " Feb 26	3085	1364	955	2276	4048	"	"	"	"	1.93	
37½ " " July 23	2619	1414	759	2162	3896	"	3.00 2.96	"	"	2.00	
45½ " " Sept 10	2799	1691	1013	2118	4589	"	2.61 3.31	"	"	1.93	Lake: Negaunee 908 tons; Vermillion 394 "; Norman 489 "; Negaunee 1155 "; Vermillion 280 "; Norman 1139 "; Negaunee 1330 "; Cliff Shaft 1692 "; Negaunee 1563 "; Negaunee 1262; Norman 2327; Cliff Shaft 1460; Negaunee 1195; Norman 1416; Cliff Shaft 978; Negaunee 813; Negaunee 501; Norman 676; Cliff Shaft 1775; Michigan 2405
45½ " " Oct 29	2968	2576	1226	2475	4740	"	2.63 2.61 3.81	Cinder 1.75 Scale 2.35	"	1.93	Lake: Norman 1155 "; Negaunee 280 "; Vermillion 1139 "
49 " " Dec 17	2547	4887	593 1186	3056	6551	"	"	"	"	"	
47¾ 99 Feb 4	2669	5050	1894	3133	Coal 219 6836	"	2.61 2.63 3.03	Scale 2.30	"	Coal 1.00 1.95	
45¼ " Mar 25	2527	4400	1991	3287	697 6277	"	2.67 2.63 3.03 2.53	"	"	Coal 1.15 Coke 1.97	Negaunee 1416; Norman 978; Cliff Shaft 813; Michigan 501
49 " May 13	2514	5863	2004	2971	7576	1.90	"	Cinder 1.90 Scale 2.30	70	2.05	Negaunee 676; Norman 1775; Michigan 2905
47⅞ " July 1	1724	6302	907	2340	6814	2.00	2.50 Ton 350	"	75	"	Andrey 15183 tons @ 2.85; Cliff Shaft 15713 " " 3.03; Norman 17185 " " 2.63
27¾ " July 29	1141	3470	671	1705	3614	2.20	"	"	"	2.15	
25⅔ " Aug 26	543	4464	100	1046	146 3021	2.30	2.50 Ton 4.45	"	"	Coal 1.55 2.15	Andrey 1013 tons @ 2.85; Columbia 100 " " 2.90; Aivalio 819 " " 2.90
27½ Sept 23	672	3180	735	1340	221 3129	"	"	"	"	"	
27¾ Oct 21	887	3176	422	1295	3375	"	"	"	1.10 75	3.60 2.25	
27½ Nov 18	888	3859	429	1516	4186	2.75	"	3.00	"	"	
26⅔ Dec 16	1215	3637	725	1730	147 4052	"	2.75 " 3.50	3.20	"	"	
25⅚ 1900 Jan 13	1112	3325	665	1625	557 3386	"	"	3.60	"	5.30 2.90	
27⅛ Feb 10	960	4364	373	1876	4334	"	2.50 " 4.45	2.25	"	5.30 3.60	
27⅛ Mar 10	1342	3429	626	1942	5276	"	3.50 " 5.70	3.70 3.25	.83	4.60 3.60	

Hamilton Furnace

Date 94	Iron tons	% Si #1	% Si #2	% Si #3	% Silv.	% Forge	Ls	Ore	Coke	Lime	Arbit.	Total	Ship Metts	Stock	
7 weeks ending Dec 11th	3457 5/10	21.7	54.6	12.7	6.2	4.8	1.103	4.782	2.918	.656	.400	9.859	259	31985	
8 " " Jan 26th 95	4511 6/10	4.3	64.2	20.0	3.5	8.0	1.115	4.806	2.846	.668	.400	9.835	517	7193	
5 " " Mar 2nd "	2580 7/10	1.5	57.1	16.4	18.0	7.0	1.201	4.975	2.791	.556	.400	9.923	400	9140	
9 " " May 4th "	4436.6/10	5.3	56.4	23.1	8.3	6.9	1.119	4.272	2.665	.568	.400	9.104	3962	9747	
5 " " June 9th "	1727. 7/10	5.6	53.7	38.9	1.8		1.481	4.278	2.871	.583	.400	9.563	2644	8830	Stop 9 days relining for repairs
3 " " " 29th "	1677	22.8	48.4	24.1	4.7	other grades	1.053	3.448 (455)	2.528	.507	.400	8.393	1679	8828	
9 " " Aug 31st "	2955 1/10	14.3	51.7	28.7	3.9	1.4	1.367	4.008	3.212	.519	.400	9.506	8315	3468	Stop 21 days for coke
4 " " Sept 28th "	2069 7/10	9.6	46.6	33.0	8.9	1.9	1.243	3.847	3.155	.519	.400	9.164	2901	2636	
5 " " Nov 2nd "	2650 9/10	8.4	50.4	39.6	.6	1.0	1.172	3.830	3.027	.491	.400	9.004	3097	2189	
6 " " Dec 14th "	34 18 1/10	10.4	57.1	31.4		1.0	1.125	3.946	3.047	.521	.4000	9.086	4650	958	
7 " " Feb 1896	3694 7/10	9.3	61.2	27.4	1.1	0	1.215	3.967	3.339	.693	.4000	9.614	3143	1509	
8 " " Mar 28th "	4558 3/10	8.7	69.3	18.4	2.3	1.3	1.096	3.993	3.129	.545	.4000	9.306	4004	2063	
9 " " May 30th "	4639.9	16.8	57.9	23.9	.2	1.2	1.196	4.145	3.225	.571	.4000	9.357	4710	1993	
7 " " July 18th "	3155.4	9.5	61.3	26.2	1.4	1.6	1.376	3.789	3.507	.563	.4000	9.585	1804	4265	
4 " " Aug 15th "	1879.4	6.7	52.3	35.6	4.3	1.1	1.264	3.977	3.553	.501	.4000	9.695	826	5318	
6 " " Sept 26th "	2850.3	16.6	43.6	31.5	5.7	2.6	1.237	3.740	3.631	.516	.4000	9.555	1398	6771	
6 " " Jan 30 '97	3162	27.2	48.8	15.3	7.3	1.4	1.117	4.532	3.081	.583	.4000	9.713	6746 (18 weeks)	3187	
5 " " Mar 6th "	2238.9	38.7	49.3	10.4	.8	1.3	1.171	4.414	2.772	.537	.4000	9.294	1763	3662	Stop 5 days high water
9 " " May 8th "	4771.	11.3	67.1	19.0	.9	1.7	1.137	4.149	2.826	.528	.4000	9.040	1718	6715	
7 " " June 26	3438.3	13.0	61.1	24.0	.2	1.7	1.164	4.343	2.825	.521	.4000	9.253	2019	8133	
5 " " July 31	2406	9.7	58.6	28.2		3.5	1.107	4.255	3.057	.510	.4000	9.329	2056	8483	
6 " " Sept 11	2883	10.9	52.4	35.4		1.3	1.113	4.138	2.931	.507	.4000	9.089	3224	8141	
6 " " Oct 23	2656	9.6	56.3	31.0	1	2.1	1.174	3.956	3.033	.505	.4000	9.068	2479	8318	
6 " " Dec 4	3146	5.9	55.9	36.5		1.5	1.037	3.806	2.705	.475	.4000	8.423	3956	7509	
6 " 98 Jan 15th 98	2580	7.3	55.4	31.1	2.7	3.5	1.184	3.929	2.959	.481	.4000	8.943	4037 (615)	5436	
6 " " Feb 26	2829	6.4	49.4	37.5	4.9	1.8	1.138	3.948	2.763	.503	.4000	8.752	3763	4500	
6 " " July 23	2619	23.1	47.5	28.2		1.2	1.180	4.14	2.98	.51	.4000	9.21	4449	2219	
7 " " Sept 10	3024.8	12.1	38.2	49.3		1.4	1.206	4.037	2.928	.438	.4000	9.009	3121	2123	
7 " " Oct 29	3749.3	25.6	47.3	26.1		1.0	1.047	4.072	2.440	.413	.4000	8.372	2513	3358	
7 " " Dec 17	5241	15.4	63.4	20.6	.1	.5	.957	4.302	2.412	.365	.4000	8.436	4457	4142	
7 " 99 Feb 4	5359.8	2.2	80.3	15.8		1.7	1.059	4.288	2.528	.368	.4000	8.640	5836	3665	
7 " Mar 25	4927.8	11.2	65.3	22.5		1.0	1.155	4.250	2.673	.416	.4000	8.894	7702	891	
7 " May 13	5742.3	14.9	74.7	10.		4.0	1.191	4.311	2.714	.362	.6500	9.228	5731	902	
7 " July 1	5047	16.2	53.1	28		2.7	1.382	4.727	2.768	.347	.6500	9.874	4224	1725	
4 " " 29	3038.5	18.7	68.6	12.7			1.249	4.828	2.871	.421	.6500	10.019	3789	974	
4 " Aug 26	2819.5	10.7	13.8	9.2	W	Bessem	Malleable 66 2/3	1.319	5.70	2.58	.323	.6500	10.572	2745	1058
4 " Sept 23	2573	28.2	35.9	3.4		24.2	8.3	1.498	5.17	2.87	.422	.6500	10.61	3503	128
4 " Oct 21	2527.5	5	51.2	14.6		28.2	1	1.584	5.429	3.018	.419	.6500	11.10	2589	67
4 " Nov 18	2886	24	40.	1			34	1.386	5.601	3.479	.394	.6500	11.51	2408	544
4 " Dec 16	2946.7	29	69	1				1.417	5.527	3.319	.44	.6500	11.35	3715	275
4 " 1900 Jan 13	2739.9	21	70	8				1.538	5.633	4.453	.444	.6500	12.72	2138	877
4 " Feb 10	3316.7	7	32	8		47.	5	1.288	5.668	4.886	.472	.6500	12.964	3076	1117
4 1/2 Mar 10	3103	8	57	8		15	11	1.392	5.427	5.024	.471	.6500	12.964	2014	2206

Ru
43
53
31½
36
24½
20
46
26
31¼
39
40
51
58
43
26
39
39
27

Per Cent iron in Ore	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50		
Tons Ore per ton Iron	2.94		2.77	2.703	2.63		2.50		2.38		2.27		2.17		2.083		2.00	6.82	Ore
" Limestone " " "	1.85	1.745	1.65	1.560	1.48	1.403	1.328	1.257	1.188	1.125	1.065	1.010	.960	.915	.875	.862	.85	.68	Lime
" Coke " " "	2.113	2.018	1.930	1.849	1.775	1.708	1.648	1.594	1.541	1.498	1.456	1.419	1.384	1.352	1.324	1.299	1.277	3.58	Coke
							2.000											1.60	Laborite
Coke 2.80 Lime .80 Ore value	$0.994	1.870	1.343	1.513	1.6787	1.841	2.000	2.156	2.309	2.459	2.606	2.751	2.893	3.032	3.169	3.294	3.4106	12.68	per ton Iron

Eureka No 1 Furnace

	Ore 2000	Soft	Lime 2000	Coke 2000	Coal	Iron 2268			
1884 Jany 31	1499.20		603.40	1062.75		654.00			
Feby 7	917.60		399.57	659.10		416.00			
14	1182.35		408.35	781.95		484.			
21	759.00		293.86	493.35		330.00			
29	1139.55		457.27	774.15		494.00			
March 7	1148.55		458.38	785.85		502.00			
14	1041.		413.65	702.		444.00			
21	1102.35		435.84	750.75		486.00			
31	1483.80		633.52	1303.90		642.			
April 7	980.40		420.24	724.75		442.			
14	941.65		391.30	668.20		400.			
21	684.		303.18	498.55		292.			
30	1439.25		618.93	984.95		598.			
No 2.									
1884 March 21	141.65		59.04	185.89		18.00			
31	851.05		334.27	718.25		310.00			
April 7	595.80		244.38	444.60		248.00			
14	661.83		273.18	458.25		278.00			
24	521.55		230.58	366.60		206.			
30	886.20		631.80	400.		436.			

1885

July

CITIES
KEN

POPULATION
BLUE G

WASHINGTO
The populatio
cities and tow
Ashland 68
8226, Bellevue
Catlettsburg 3
Dayton 6104, D
ton 3012, Fran
2146, Fulton 28
Glasgow 2019
Henderson 10,2
Ludlow 3334,
ville 6423, Ma
dlesboro 4162,
ganfield 2046,
Nicholasville 3
189, Paris 4
Princeton 253
Russellville 25
Somerset 3384,
ester 5964.

Eureka No 1 Alex Davidson Founder

1885	Ore	Lime	Coke	Coal	Iron	Charges		Iron	Ore	Coke
July 4	745.76	244.55	542.26	—	—	274.00	284			

Commencement of Blast 3 "B"---
Amount of stock to fill Furnace "B" Sept. 26th, 1895--

Eight (8) cords of wood, built up compactly in hearth on which was placed 84,000 Lbs. (37,1120/2240 Tons) coke with sufficient lime to flux.

		Low Moor	Dolly Ann	Stack		
5	Charges of ore	150	150	150	450--	2250 lbs
5	" " "	200	200	200	600--	3000 "
5	" " "	350	350	350	1050-	5250 "
5	" " "	500	500	500	1500-	7500 "
5	" " "	1000	1000	1000	3000-	15000 "
5	" " "	1200	1200	1200-	3600-	18000 "
15	" " "	1333	1333	1333-	3999-	59985 "
		Total	(49,1225/2240 Tons)			110985 "

5	Charges of coke	3600 lbs.	18000 Lbs.
5	" " "	3600 "	18000 "
5	" " "	3600 "	18000 "
5	" " "c	3600 "	18000 "
5	" " "	3600 "	18000 "
5	" " "	4200 "	21000 "
15	" " "	4200 "	63000 "
	Total	(77,1520/2240 Tons)	174000 "

5	Charges Limestone	180 Lbs.	900 Lbs.
5	" " "	240 "	1200 "
5	" "	420 "	2100 "
5	" " "	600 "	3000 "
5	" " "	1200 "	6000 "
5	" " "	1440 "	7200 "
15	" " "	1600 "	24000 "
	Total	(19,840/2240 Tons)	44400 "

1.89

Master Phillips Merry fired furnace, 8:40 A.M. September 27th, 1895
Blast applied 4:40 P.M. " " "
First Cinder 6:00 A.M. " 28th, 1895
First cast of iron 3:00 P.M. " "

CITIES IN KENTUCKY

POPULATION OF POINTS IN BLUE GRASS STATE.

WASHINGTON, Nov. 15.—(Spl.)—The population of some Kentucky cities and towns is as follows:

Ashland 6800, Bowling Green 8226, Bellevue 6322, Carrollton 2205, Catlettsburg 3081, Cynthiana 3257, Dayton 6104, Danville 4285, Earlington 3012, Frankfort 9487, Franklin 2146, Fulton 2860, Georgetown 3823, Glasgow 2019, Harrodsburg 2876, Henderson 10,272, Hopkinsville 7280, Ludlow 3334, Lebanon 3043, Maysville 6423, Madisonville 3628, Middlesboro 4162, Mayfield 4081, Morganfield 2046, Mt. Sterling 3561, Nicholasville 2393, Owensboro 13,189, Paris 4603, Pineville 2072, Princeton 2556, Richmond 4653, Russellville 2591, Shelbyville 3016, Somerset 3384, Versailles 2337, Winchester 5964.

	.03	298.01	460.84	25.23	240.		268	7.08			
	.53	248.11	433.33	9.06	239		252	6.86			
	4.74	4.158 01	7.429.50	252.14	4130. Blast 12.455.	Days 324	Average 38.44		7.22	2.49	1.998

Loose Item

Commencement of Blast 3 "B"---
Amount of stock to fill Furnace "B" Sept. 26th, 1895--

Eight (8) cords of wood, built up compactly in hearth on which was placed 84,000 Lbs. (37,1120/2240 Tons) coke with sufficient lime to flux.

	Low Moor	Dolly Ann	Stack	
5 Charges of ore	150	150	150	450-- 2250 lbs
5 " " "	200	200	200	600--3000 "
5 " " "	350	350	350	1050- 5250 "
5 " " "	500	500	500	1500- 7500 "
5 " " "	1000	1000	1000	3000-15000 "
5 " " "	1200	1200	1200-	3600-18000 "
15 " " "	1333	1333	1333-	3999-59985 "
	Total	(49,1225/2240 Tons)		110985 "

5 Charges of coke	3600 lbs.	18000 Lbs.
5 " " "	3600 "	18000 "
5 " " "	3600 "	18000 "
5 " " "c	3600 "	18000 "
5 " " "	3600 "	18000 "
5 " " "	4200 "	21000 "
15 " " "	4200 "	63000 "
Total	(77,1520/2240 Tons)	174000 "

5 Charges Limestone	180 Lbs.	900 Lbs.
5 " " "	240 "	1200 "
5 " "	420 "	2100 "
5 " " "	600 "	3000 "
5 " " "	1200 "	6000 "
5 " " "	1440 "	7200 "
15 " " "	1600 "	24000 "
Total	(19,840/2240 Tons)	44400 "

Master Phillips Merry fired furnace, 8:40 A.M. September 27th,1895
Blast applied 4:40 P.M. " " "
First Cinder 6:00 A.M. " 28th,1895
First cast of iron 3:00 P.M. " "

Copy

Loose Item

CITIES IN KENTUCKY

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Eureka No 1 Alex Davidson Founder

1885	Ore	Lime	Coke	Coal	Iron	Charges		Iron	Ore	Coke
July 4	745.76	244.55	547.26	— —	274.00	289				
11	613.84	221.01	433.33	19.17	226.	246	7.21			
18	736.44	269.33	529.62	— —	250	300	7.57			
25	805.05	304.63	582.93	18.50	377.	329	6.80			
August 1	829.23	301.11	570.89	9.56	330.	332	6.87			
8	736.57	279.45	505.58	6.00	284.	294	6.78			
15	831.87	316.95	569.18	25.00	350.	331	6.18			
22	768.28	310.20	550.27	8.35	326.	320	6.33			
29	626.19	260.91	457.80	37.05	260.	263	6.53			
Sept 5	442.41	154.52	319.84	— —	140.	136				
12	673.81	280.95	486.64	— —	268.	283	6.87			
19	630.15	220.83	469.44	14.18	248	273	7.13			
26	495.85	247.05	392.06	28.58	190.	228	7.53			
Oct 3	609.22	309.81	467.21	25.75	222.	272	8.13			
10	729.01	368.47	531.34	25.71	304.	308	6.91			
17	646.08	289.13	492.94	25.23	255.	298	7.36			
24	716.60	269.94	496.95	9.06	224.	289	8.42			
31	641.53	197.10	421.29	114.80	217.	245				
Nov 7	231.90	73.81 660.0	154.96		107.	90.				
	12.508.09	4.997.55	8.968.33	366.94	4797. Blast 34.903 Days 705	Average 49.578		#7.96	2.60	1.87
No 2										
July 4	740.67	234.10	476.32	— —	288.00	277				
11	638.36	230.01	436.73	19.18	242.00	257	6.89			
18	663.69	242.39	462.56	— —	262.00	265	6.68			
25	653.37	246.78	462.57	18.50	267.	267	6.67			
Aug 1	614.42	227.03	439.87	9.55	260.	254	6.87			
8	648.01	245.57	464.28	6.00	260.00	270	6.70			
15	653.11	251.31	453.53	25.00	282.00	264	6.12			
22	607.34	234.26	433.33	8.35	278.00	252	5.91			
29	590.47	246.03	426.41	37.05	262.	248	6.16			
Sept 5	580.95	242.06	419.59	— —	253.00	244	6.21			
12	589.52	228.83	419.59	— —	240.00	244	6.60			
19	515.49	221.22	383.46	14.17	202.00	223	7.14			
26	516.45	259.42	404.05	28.58	214.00	235	7.09			
Oct 3	494.06	249.24	410.99	25.75	196.	232	7.94			
10	565.59	285.64	440.21	25.72	236.	226	7.30			
17	616.03	278.01	460.84	25.23	246.	268	7.08			
24	609.53	248.11	438.33	9.06	239	252	6.86			
	10.294.74	4.158.01	7.429.50	252.14	4.130. Blast 12,455. Days 324	Average 38.44		7.22	2.49	1.798

Low Moor Furnace A. Blast 5

Weekly Report

1894 Output — Burden — On Mixture

Date	Tons Iron	No 1 Tons	No 2 Tons	No 3 Tons	Silvery Tons	Coke lbs	Limestone lbs	OR lbs	Lumshaw lbs OR	Stack lbs OR	Daley Ann lbs OR	Iron Ridge lbs OR	Pig's tailed Ore
Week ending							27000	6300	3150	1050	1575		525
Sept 29	737	0	352	322	62	4200	28000	6550	3300	"	1650		550
							28000	6674	3375	"	1687	0	562
							27000	6674	3375	"	1687		562
Oct 6	725	26	373	227	97	"	29000	6750	3300	2100	1100		0
							30000	6750	3375	0	2250	0	1125
							31000	6850	3450	525	1725		1150
13	742	86	272	383	0	"	32000	6987	3525	"	1762		1175
							"	6712	3375	"	1687	0	1125
						4418	31000	6740	3390	"	1695		1130
20	689	97	280	311	0	4200	30000	6575	3300	"	1650	0	1100
							31000	6575	3300	"	1650		"
							32000	6437	3225	"	1612		1075
27	649	27	206	414	0	4418	"	6425	3225	1050	1075	0	"
						4418	28000	6300	3150	"	1050		1050
						4200	30000	"	"	"	"		"
Nov 3	634	43	78	513	0		28000			"		0	"
				Better Coke		4200	"			"		"	"
						"	29000	6550	3300	"	1100	0	1100
						"	"	"	"	"	"	"	"
						"	"	6749	3375	525	562	1162	1125
10	827	182	406	46	191	4000	30000	6957	3525	"	562	1175	1175
							31000	7125	3600	"	600	1200	1200
							"	"	"	"	"	2400	
17	835	198	399	237	0	4200	32000	"	"	"	"	"	
							30000	6850	3450	"	575	2300	0
24	821	158	339	287	36	"	"	"	"	"	"	"	0
						4200	30000	6850	"	"	"	"	
						4800	29000	6675	3375	"	562	2250	
Dec 1	745	32	254	458	0	4200	28000	6550	3300	1050	550	1650	0
								6550	3300	1050	550	1650	
8	751	52	596	68	34	4200	28000	6674	3375	"	562	1687	0
8 ft bell, part in							28440	6750	3420	"	570	1710	
15	860	28	141	33	657	"	29000	6924	3525	"	576	1762	0
							29400	7050	3600	"	600	1800	
						4000	"	"	"	"	"	"	
22	930	202	542	84	100	3900	"	"	"	"	"	"	0
1895 29	840	95	575	169	0	"	"	"	"	"	"	"	0
							30000						
Jan 5	949	275	650	22	0	3783	"	"	"	"	"	2400	0
						3720	"	"	"	"	0	"	
12	880	266	485	127	0	"	"	"	5400	"	0	600	0
								6900	4800	2100	0	0	0
19	932	229	528	129	44	3840	"	7050	2400	1050	0	3600	0
													1200
26	896	293	454	147	0	3900	"	"	3600	"	0	1200	1200
									"	"		"	1200
									3000	"	600	"	"
Feb 2	933	333	520	79	0	"	"	7125	"	525	2400	Included in Night Turn	"
	866	262	533	69	0	"	"	"	"	"	"		"
							"						
16	844	74	707	62	0	"	2900	7050	3600	1050	1200	0	"
								7125	3600	525	1800		600
23	907	199	512	195	0	"	"	7050	2400	1050	0	0	"
							"		3600	"	3600		"
Mar 2	816	171	404	240	0	"	3000	7125	3600	525	3600	0	0
	886	327	471	86	0	3866	"	"	3600	"	3000	0	0
						3900							0
16	869	285	457	127	0	"	"	7050	"	1050	1800	0	600
									"	"	"		"
23	900	173	599	128	0	"	"	"	"	"	2400	0	0
30	897	375	450	70	0	"	"	"	"	"	"	0	0
Apl 6	913	331	506	76	0	"	"	"	"	"	"	0	0
13	950	146	464	34	305	3867	"	"	"	"	"	0	0
									1200	"	4800		
20	861	121	469	96	173	3866	3060	7050	2400	"	3600	0	0
27	954	237	639	77	0	"	"	"	"	"	"	0	0
May 4	973	231	691	50	0	"	"	"	"	"	"	0	0
11	886	388	396	101	0	3900	"	"	1200	"	"	0	1200
18	959	248	669	41	0	"	"	"	"	"	"	0	"
25	893	271	527	94	0	"	"	"	"	"	"	0	"
June 1	924	504	349	70	0	"	"	"	2400	"	"	0	0
									2 "	"	2400	0	Seaford 1200
8	885	217	413	255	0	"	2800	"	4 "	"	3600	0	0
15	900	285	485	129	0	"	2900	"	"	"	"	0	0
22	953	170	737	46	0	"	"	"	"	"	"	0	0
29	914	414	378	122	0	"	"	"	"	"	"	0	0
July 6	911	444	252	214	0	8945	"	"	"	"	"	0	0
						7 3935							
13	891	252	398	240	0	4000	"	"	3600	"	1800		Seaford 600
						"							
20	894	492	311	90	0	3945	"	"	4200	"	1200	Big Kill	600
27	976	568	374	33	0	"	2940	"	3600	"	"	600	600

Date	
Week ending	
95 Aug 3	
	10
	17
	24
	31
Sept 7	
	14
	21

Furnace A. Blast 5 — Low Moor — Weekly Report

Out put → ← Burden → ← Ore Mixture —

Date	Tons Iron	No 1	No 2	No 3	Other Grades	Lbs Coke	Limestone	Ore	Low Moor	Stack	Iron Mt Dolly Arm	Other	
Week ending 95 Aug 3	947	182	645	58	S 62	28 3945 / 1 3900	2940	7050	2400	1050	28 1200 / 2 1800	2400 / 1800	RP 1200 / Teaf 600
10	928	365	457	105	0	"	"	4 7125	"	525	2400	"	
17	902	387	483	31	0	"	"	"	16 3600	"	1200	"	
24	901	670	173	57	0	"	"	"	18 2400	"	2400	"	
31	925	350	518	55	0	"	"	"	"	"	"	"	
Sept 7	931	635	250	45	0	"	"	7200	3600	0	1200	2400	Teaford 1200 / Rich P 1200
14	931	306	529	95	0	12 3945	2800	"	2400	0	2400	Rich Patch 1200	Teaford 1200
21	798	210	451	136	0	15 "	2860	"	"	0	"	"	"

Furnace Blown out — Sept 21st 1895 — 10 A.M. — after one years blast Mt. Savage Brick

Height 75 ft — Bosh 22 ft high — Boshes 18 ft wide — Hearth 9 ft wide at bottom —

Low Moor Iron Co of Va.

Covington Furnace Weekly Report Blast No 1.

1895 Total Tons by Grade

Date. Week ending	Tons Prod	No 1	No 2	No 3	Silvery Mottled White	Burden in lbs: Coke	Limestone	Ore	Stock	Daily Ave + Limit	Iron Mt
						To fill furnace					
95 April 27	47					130.200	25.275	64.500	30.00	30.00	
May 4	537 20/23	14	49	395	M. 78	4200	2520	6.000	30.00	30.00	
							2800	6.600	22.00	44.00	
							2700	6.000	20.00	40.00	
							2700	6000	20.00	40.00	
11	797 1/2	99	180	516	0	"	2500	6300	21.00	42.00	
							2600	6000	20.00	40.00	
18	751 1/2	72	238	439	0	"	"	"	10.00	50.00	
					M 155				0	60.00	
25	689 17/24	68	159	222	W 66	"	2700	6400	0	64.00	
					S		2400	6000	10.00	60.00	
					M 20		2100	"		50.00	
June 1	669	0	65	525	S 57	"	"	"	"	"	
					M 75	"					
							2100				
8	622	10	50	436	S 48	"	2200	6300	10.50	52.50	Changed bell for smaller
					M 32	"	2400	6000	20.00	40.00	
15	711	27	248	397	W 55	"	2500	6150	20.50	41.00	
					M 39		2600	6450	21.50	43.00	
22	670	143	123	345	W 20	"	2700	6150	2050	4100	
							2500				
							2200	5700	1900	3500	
29	613	8	106	419	M. 78	"	2300	6000	1000	5000	
					M. 102	"	2400	"	3000	3000	
July 6	637	153	154	190	W 36	"	2700	6300	3150	3150	
							2600	"	2100	4200	
							2640	"	"	"	Let rotation go 8 7/8 ins
13	679	153	178	346	0	"	2700	6450	2150	4300	Shorter tuyeres.
							2640	"	1075	5375	
20	759	120	264	374	0	"	2600	"	2150	4300	
								"	1075	5375	
27	722	76	177	418	M. 50	"	2500	6600	1100	5500	
							2600	6300	1050	5250	
Aug 3	774	163	240	350	M. 20	"	2500	"	"	"	
					M. 55						
10	682	58	92	406	W 69	"	2300	6000	1000	5000	
					M. 203						
17	711	106	125	253	W 22	"	2100	"	"	"	
24	764	166	316	281	0	"	2140	6150	1025	5125	
31	684	46	277	310	M. 50	"	2180	6300	1050	5250	
Sept 7	767	121	238	343	M. 63	"	2160	"	"	"	
14	700	15	91	350	M. 243	"	2280	"	"	"	
21	706	3	132	496	M. 72	"	"	"	"	"	
28	804	65	338	396	M 3	"	"	"	"	"	
Oct 5	763	46	379	260	M 77	"	"	"	"	"	
12	829	38	540	230	" 20	"	2300	6360	1060	5300	
							2320	6450	1075	5375	
								6510	1085	5425	
19	821	35	485	300	0	"	"	"	2170	4340	
26	766	2	397	343	W 23	"	2400	"	"	"	
Nov 2	803	97	466	239	0	"	2480	6600	1200	4400	
9	758	52	347	318	M 39	"	2400	"	0	6600	
16	714	64	482	167	0	"	"	"	0	"	
23	771	45	331	381	M 14	"	"	"	1100	5500	
30	756	28	338	389	0	"	"	"	"	"	
Dec 7	749	1	286	461	0	"	"	"	"	"	
14	710	0	20	609	M 81	"	"	"	"	"	
21	690	0	22	651	" 16	"	2360	"	"	"	
28	699	0	38	661	0	"	"	"	"	"	
96 Jan 4	727	0	20	681	M 25	"	2380	"	"	"	
11	540	0	25	496	S 8 M 9	"	2360	"	"	"	

Furnace blown out Jan 10th 95 260 days blast.

Furnace 75 ft high - Hearth 10 ft, Bosh 18 ft. wide x 22 ft. high - Stock Line 12½ ft

Blast No 2 see page 37. To fill Furnace see below: 80.000 coke

	N. A.	Stock	Total	Coke	Lime
5 Charges	200	200	400	3150	180
5 "	300	300	600	"	270
5 "	500	500	1000	"	450
5 "	750	750	1500	"	675
5 "	1500	1500	3000	"	1350
5 "	1500	1500	3600	"	1620
20 "	2000	2000	4000	"	1800
9 "	2500	2500	5000	4200	2250

Week Ending
96 April 18
25
May 2
9
16
23
30
June 6
13
20
27
July 4
11
18
25
Aug 1
8
15
22
29
Sept 5
12
19
26
Oct 3
10
17
24
31
Nov 7
14
21
28
Dec 5
12
19
26
97 Jan 2
9
16
23
30
Feb 6
13

Covington Furnace Blast No 2 Beginning 4 P.M. April 15th 96

Week Ending	Tons made	Grade - Tons No 1	No 2	No 3	other Grades	Burden - Lbs Coke	Lime	Ore	Stock	Dolly Ann		Ores by Lbs	
96 April 18	1296	0	0	67	62	16 4200	2100	5000	2500	2500			
						18	2800	6600	3300	3300			
25	786 10	0	95	691	0	"	24 3000	6900	1150	5750			
							25 2800	"	"	"			
May 2	900 8	0	130	770	0	27 4425	26 2700	23 7050	1175	5875			
							1 2880	7200	1200	6000			
9	857 1	0	88	664	Sil 104	"	5 3000	"	5 "	"	4800	Teaford 1200	
							7 3200						
							9 3300						
16	901 12	89	352	454	S 5	"	" 3400	7500	1250	Dolly Ann 3125	Donald't 2500	Teaford 625	
23	825 2	128	182	454	M. 59	"	17 3500	14 7250	"	2500	2250	1250	
							24 3600	7200	1200	2400	2400	1200	
30	793 1	373	219	174	M. 25	"	"	"	"	"	"	"	
June 6	857 28	393	234	229		"	"	"	"	"	"	"	
13	829 5	363	194	266	M. 5	"	3400	"	10 "	3600	"	0	
20	774 9	164	163	392	" 53	4500	"	"	17 "	3000	"	600	
27	819 20	316	281	222		"	"	"	"	"	"	"	
July 4	798 27	22	293	443	S 21 M 18	"	36	"	"	"	"	"	
11	815 20	87	382	346		"	"	"	9 "	2400	2400	1200	
18	802	75	229	497		"	"	"	15 "	"	"	Low Moor 1200	
25	803	280	293	229		"	"	"	"	"	"	"	
Aug 1	786	166	411	208		"	"	"	"	"	"	"	
8	842	155	180	388	S 74 M 42	"	3 3740	7350	1225	4900		1225	
15	738	35	106	522	S 19 M 54	"	10 "	7200	1200	4800		1200	
22	734	6	183	541	M 2	"	3200	7050	1175	4700		1175	
29	740	92	190	334	S 108 M 14	"	24 3500	"	"	"		"	
Sept 5	813	282	284	162	S 83	"	"	"	4 0	"		2350	
12	878	403	239	235		"	"	"	9	7050		0	
19	819	163	393	261		"	"	"		5875		1175	
26	896	213	455	228		"	"	"		"		"	
Oct 3	814	177	422	214		"	"	"		7050		0	
10	864	366	255	219	M 23	"	"	"		"			
17	851	309	350	190		"	18 3300	"		"			
							18 3400	7200	1200	6000			
24	877	214	403	147	S 112	"	24 3600	7500	1250	6250			
31	860	201	434	173	S 51	4650	"	"	"	"			
Nov 7	904	191	423	289		"	"	"	"	"			
14	803	147	312	343		"	"	"	"	"			
21	756	105	381	268		"	"	"	"	"			
								22 7650	1275	6375			
28	861	262	393	204		"	27 3720	7800	1300	6500			
Dec 5	821	151	348	247	Sil 73	"	"	4 7650	1275	6375			
12	832	164	294	347	M 26	"	7 3820	7500	" 2500	5000			
19	858	173	400	243	Sil 41	"	"	"	1250	6250			
26	884	158	475	243	Sil 6	"	3600	"	"	"			
97 Jan 2	896	158	579	158		"	"	"	"	"			
9	915	279	506	102	Sil 27	"	"	"	"	"			
16	991	151	536	264	Mot 39	"	"	"	"	"	R.P.		
							17 3200	"	"	3750	2500		
23	1009	92	569	329	" 17	"	20 3400	7650	1275	3825	2550		
30	981	53	532	335	Sil 24 Sil 34	"	25 3500						
							27 3600	"	27 637	4462	"		
Feb 6	904	46	282	548	Sil 26	"	"	"	31 0	5100	2550		
13	866	49	338	388	Sil 21 Mot 60	"	"	"	1275	2550	3825		

Blown out May 16th 97

Furnace B Block 3. Low Moor

Date	Tons Iron Made Total	No 1	No 2	No 3 Still	Other	Burden Lbs Coke	Limestone	Ore	Ore Mixture Lbs Low Moor	Stack	Wally Arm	
						8 cwts mod 84.000			Lighted 8.30 A.M.		Blast on 4.40 PM Sept 27 95	
95 Sept 27				To fill Furnace		174.000	44.400	110.985	First Cinder 6.00 A.M.		First iron 3.00 P.M.	
											Teaford	Rich Patch
28	72 5/20				Mat. 72	4200	1920	4800	1600	1600	1600	
						29 "	2160	5400	2700	900	1800	
						30 "	2400	6000	3000	1000	1000	1000
						1 "	2660	6600	3300	1100	1100	1100
						2 "	3000	6950	3525		1225	1225 1175
Oct 5	805 29/30	202	221	36	Sil 34 55 3	4000	3040	7200	3600		1200	1200 1200
							3100	"	"		"	"
12	885 16/30	412	346	116	" 10	4200	3000	"	"		"	" "
								47125	4125		"	" 600
19	844 6/30	14	529	250	" 50	" 14	2900	16 7050	4650		"	600 McClinton
						20	2800	"	3000	1050	"	" 1200
26	929 6/30	10	382	17	" 518	23 4000	24 2900	24 7125	"	525	"	1200 1200
									29 3600	"	24.00	600
Nov 2	908 3/30	63	537	182	" 1253	3900	"	"	"	"	3000	0 0
9	895 9/30	496	308	91	0	"	"	"	"	"	"	0 0
16	894 12/30	299	472	122	" 04	4000	"	"	"	0	"	525 0
23	900 10/30	462	414	23	0	"	"	"	"		"	" 0
30	893 13/30	94	696	103	0	28 4200	2800	"	3000		"	" 600
									4200	525	1200	600 "
Dec 7	870 19/30	19	656	100	Sil 94	"	3000	"	3000	"	2400	1200 0
14	834 7/30	55	653	76	" 48	14 4000	3100	7050	2400	1050	"	"
						16 3940	15 3200		3000	525	"	"
21	939 13/30	174	473	17	" 279	21 3900	23 3280	17125	3600	"	1800	"
						25 3840	3280					
28	930 2/30	137	713	54	" 24	26 3720	"	"	"	"	"	0 1200
						31 3840	"		2400	"	1200	1800 "
96 Jan 4	783 15/30	135	319	40	" 28	3 "	3200	7200	1800	0	"	3000 "
						4 "	"	"	3600		"	1200 "
						5 3600	3400	"	"		"	" "
11	925 11/30	204	571	27	" 121	10 3840	3000	"	"		2400	" 0
						3600						
18	1035 15/30	395	341	34	" 263	3360	"	"	"		"	"
						3600						
						19 3360	3100					
25	914 3/30	536	274	103	0	20 3600	3200	"	2400		3600	"
Feb 1	977 11/30	436	522	19	0	"	"	"	"		"	"
							3800					
8	984 12/30	476	333	174	0	24200	3600	8520	3195	1065	3195	1065
15	960 1/30	595	254	110	0	"	"	"	"	"	"	"
22	947 11/30	398	499	49	0	17 4400	"	"	"	"	"	"
												McClinton
29	963 7/30	450	385	127	0	29 "	"	8660	3255	"	3255	1085
Mar 7	979 13/30	295	664	19	0	"	"	"	"	"	"	"
							3400					
14	991 14/30	122	795	73	0	"	13500	"	"	"	"	"
21	977 7/30	338	586	52	0	5 4800	3600	"	3797	"	"	543
28	1029 27/30	278	607	144	0	28 "	3700	8520	3728	"	3195	532
April 4	966 6/30	479	414	71	0	30 4000	3200	7050	2400	1050	2400	1200
11	942 18/30	300	595	46	0	5 4400	3300	7125	3600	525	"	600
						12 4000	3200	"	"	"	"	"
18	1022 16/30	569	292	160	0	15 4800	3600	8400	4200	"	3150	525
												"
25	1133 7/30	475	597	60	0	"	"	"	"	"	"	22 Teaford
									26 3150	"	4200	"
May 2	1177 15/30	463	551	163	0	27 "	"	8600	27 3225	538	4300	537
9	1145 13/30	378	582	184	0	"	"	"	"	"	"	"
16	1205 13/30	593	576	34	0	"	"	"	"	1075	"	0
23	1132 4/30	366	465	299	0	"	"	"	"	"	"	
30	1141 18/30	422	633	85	0	"	"	"	"	"	"	
June 6	1104 12/30	531	395	177	0	"	"	"	"	"	"	
							7 3700	8400	2625	1050	4200	Rosie 525
13	1087 3/30	320	703	63	0	"	13 3600	"	3150	"	"	0
20	1123 14/30	234	634	162	S 92	"	19 3700	8600	3225	1075	4300	Teaford
											3225	1075
27	1066 7/30	251	630	183	0	"	24 3600	28400	25 3150	1050	3150	1050 Rosie
									26 2625	"	"	525
July 4	1116	643	440	32	0	"	2 3760	"	2 1050	D.F.	R.F. 1050	5775 "
									4200	1050		3150
11	1025	93	465	388	S 37 M 40	"	7 3600	"	11 5250	"		2100
14	399	8	254	89	S 46	"	"	"	13 2100	Baker out 15 in.		6300

Date	To
96 Sep 19	2
26	9
Oct 3	9
10	10
17	11
24	10
31	10
Nov 7	11
14	11
21	10
28	10
Dec 5	10
12	10
19	9
26	10
97 Jan 2	10
9	11
16	11
23	11
30	11
Feb 6	10
13	11
20	10
27	10
Mar 6	10
13	11
20	10
27	11
April 3	10
10	10
17	11
24	10
May 1	10
8	10
15	10
22	9
29	9
June 5	9
12	9
19	9
26	9
July 3	9
10	9
17	10
24	10

Furnace B Blast 4 same lining as Blast 3

Tons Iron Made | Burden Lbs | Ore Mixture

Date	Total	No 1	No 2	No 3 & Mill	Others	Coke	Lime	Ore	Lowellton	Iron Mt Dolly Ann	Stack		
96 Sep 19	231			33	S 179 M 11	16 3600	2270	5400 6000	1800 2000	1800 2000	1800 2000		
26	936	47	407	148	3332	22 4200 26 4800	3100 3700	7200 8400	2700 4380	2700 2920	1800 1100		
Oct 3	960	87	232	315	3325	29 " 3 "	3600 3700	8225 8475	4275 4425	2850 2950	" "		
10	1052	371	411	15	253	"	3900 3920	8700 8740	4500 4520	3000 3020	1200 "		
17	1105	613	455	36		"	4000 4040	8750	4530	"	"		
24	1073	527	505	41		"	4060	8825 8925	4575	3050	" 1300	Craigo Creek	
31	1088	697	285	105		"	"	"	3812	"	"	763	
Nov 7	1132	498	549	84		"	"	"	8 1525	" 4575	"	1525	
14	1157	736	378	43		"	"	"	10 2288 12 3050	3812 3050	" "	" "	
21	1078	383	548	145		"	"	"	"	"	"	"	
28	1083	330	666	86		30 "	"	8912	3812	"	Bernardita 750	1300	
Dec 5	1091	261	643	161	M 24	"	"	"	"	"	"	"	
12	1071	241	602	227		8 "	4160	8924	"	3812	Stack	"	
19	981	107	483	73	Sil 317	"	14 4200	8925	3050	3050	1300	1525	Bernardita
26	1041	247	543	146	" 93 Mat 10	"	"	9038	"	"	650	"	763
97 Jan 2	1063	202	519	235	mat 106	"	3800	8900	3000	3750	"	1500	
9	1137	176	919	40		"	7 4000	9037	2287	3812	"	1525	763
16	1158	364	679	75	Sil 40	"	"	"	12 3050	3050	"	"	"
23	1132	273	744	114		4850	"	"	"	"	"	"	"
30	1105	137	887	80		"	"	24 9175	3100 3875	3100 "	" "	1550 775	775 "
Feb 6	1059	225	508	326		"	"	1 9300	4650	"	0	1550	0
13	1113	252	700	160		"	"	9175	3100	"	650	1550	775
20	1077	401	608	67		"	"	"	"	"	"	"	"
27	1071	327	642	101		"	4200	"	3875	"	"	1550	0
Mar 6	1093	440	558	94		"	4300	"	"	"	"	775	775
13	1141	282	723	134		"	4100	"	2325	4650	"	"	" Rich Patch
20	1087	65	393	628		"	4000	9200	3100	3100	"	"	1575
27	1125	249	803	72		"	"	8900	3000	3000	"	750	1500
April 3	1035	85	496	452		"	"	"	"	"	"	"	"
10	1088	66	642	378		"	"	8762	3687	1475	"	737	2213 R.P. & B.V.
17	1107	164	638	303		"	12 3800	8487	2137	2850	"	1425	1425
24	1057	79	544	421	Sil 12	"	20 4000	8350	2100	2800	"	1400	1400
May 1	1048	396	503	148		"	4100	"	3500	1400	"	2100	700
8	1022	169	502	317	Sil 32	"	5 4200	8625	3625	1450	"	2175	725
15	1005		106	734	Mat 165	"	10 4000	8550	2175	2900	1300	0	2175
22	986		174	812		"	19 4000	8050	2700	2700	"		1350
29	955	258	469	227		"	"	8000	"	3350	"		650
June 5	946	271	407	267		"	1 4130	8249	2750	4812	0		687
12	955	22	121	812		"	9 3600	7800	3250	4550			0
19	974	46	254	673		"	15 3300 19 3700	7650	2550	3825			1275
26	908	120	385	402		"	25 3600	7500	2500	3750			1250
July 3	904	33	225	645		"	3800	8400 8700	2800 2900	4200 4350			1400 1450
10	967		83	851	Mat 32	"	3600	8550	2850	4275			1425
17	1050	41	691	317		"	3800 3900	8700 8880	2900 2960	5075 5180			725 740
24	1076	338	509	228		"	"	"	"	"			"

Furnace B. Low Moor Black 3-4

Date	Total	№ 1	№ 2	№ 3	Other	Coke	Lime	Ore	Flux	Stock	N. A	
												R.P.
97 July 31	1047	323	591	132		4850	3900	8880	2960		5180	740
Aug 7	1104	419	516	169		"	"	8700	2900		5075	725
14	1164	745	353	64		"	"	8799	"		5162	737
21	1165	466	524	174		"	"	8910	2970		5198	742
28	1124	282	538	303		"	"	8849	2950		5162	737
Sept 4	1190	491	568	83	Sil 47	"	"	"	"		"	"
11	1130	231	646	252		"	"	"	"		"	"
18	1143	376	700	66		"	"	"	"		"	"
25	1003	295	551	155		"	4000	8911	2970		5198	743
Oct 2	1187	500	610	76		"	"	9000	3750		5250	
Blast 9	1225	550	608	66		"	"	"	"		"	
16	1145	226	719	174	M 24	"	"	"	"		"	
23	1178	603	571	3		"	"	"	"		"	
30	1168	247	863	57		"	"	"	"		"	
Nov 6	1201	342	856	3		"	"	"	"		"	R.P.
13	1263	256	980	26		"	"	"	"		4500	750
20	1274	527	717	30		"	4100	9149	3812		4575	762
27	1270	624	602	43		"	"	9300	3875		4650	775
Dec 4	1240	472	750	17		"	4000	"	"		"	"
11	1253	681	553	17		"	"	9450	3937		4725	788
18	1206	252	735	219		"	"	9537	"		"	775
25	388	128	183	75		"	4100	9637	"		4925	775

Commenced to blow out at 11 P.M. Dec 20th 97 Furnace fell 9.35 P.M. Dec 21st

5B

Furnace started May 24th 1898

						5 charges	3600	180	400			
						5 "	"	280	600			
						5 "	"	400	800			
						5 "	"	700	1500			
						5 "	"	1100	2400			
						5 "	"	1700	3600			
						5 "	"	2160	4800			
1898					25		"	2340	5200			
				Silvery 27			"	2700	5800			
May 28	298	47	40	208 28			"	2800	6000			
				#3	Silvery 29		"	"	6100			R.P.
June 4	1066	180	712	132	41	31	"	3840	8850	4425	2950	1475
						4	"	3840	9000	4500	3000	1500
11	1197	266	878	52			"	"	"	"	"	"
18	1182	98	1015	45	23		4850	3900	9150	4575	3050	1525
25	1231	304	868	22	36	20	"	4040	9300	4650	3100	1550
							"	4100	9450	4725	3150	1575
July 2	1240	254	971	15			"	"	"	"	"	"
9	1190	181	600	52	355		"	3800	9150	4575	3050	1525
16	379		42		336	Blast off Fur July 17th 11 A.M. split sheets in jacket						

Fur Lighted Aug 3d 10:10 A.M. Blast on Aug 3rd midnight first cast 8 P.M. Aug 4th

To fill Fur 6 cords wood + 60000 lbs Coke

						5 charges	3600	180	400			
						" "	"	280	600			
						" "	"	400	800			
				R 27		" "	"	800	1500			
				W 9		" "	"	1100	2400			
						" "	"	1700	3600			
		#1	#2	#3		" "	"	1840	4000			
					32	" "	"	2160	4800			
Aug 6	200		58	105	4th		"	2400	5200	3600	2600	
					6		"	2800	6000	3000	3000	
13	1043	212	680	150		4	4850	3800	9000	4500	4500	
20	1177	159	953	65		4	"	3600	"	"	"	
27	1156	202	933	21		25	"	4000	9300	4650	4650	

See page 44

Norton Iron Water Furnace — Akron Founder

	Furn	B	C	L	Iron	Furn	Yield	Percent of Burden		
								B.	C.	L.
1889 July 31	924.00	584.00	38.00	249.00	247.00	3.74	.39⁹			
Aug 7	1.006.00	589.00	52.00	266.00	264.00	3.81	.41³			
14	1.011.00	466.00	189.00	276.00	312.00	3.24	.47⁷			
21	853.00	388.00	163.00	241.00	238.00	3.58⁴	.43¹			
28	839.00	394.00	155.00	253.00	253.00	3.29⁷	.47⁸			
Sept 4	1.031.80	435.08	216.07	300.18	299.50	3.44¹	.45⁹			
11	1.001.00	434.00	203.12	293.00	288.00	3.47⁴	.45²			
18	397.00	118.00	53.00	76.00	60.00					
25	1020.00	540.00	87.00	295.00	294.00	3.92²	.44			
Oct 2	1090.00	563.00	96.00	297.00	261.00	4.09⁹	.39⁶			
10 Weeks	9.057.80	4.489.08	1.245.19	2.521.18	2.496.50	3.62⁶	.43⁵	.78⁷	.21⁸	.43⁹
Oct 9	1.143.00	533.00	178.00	319.00	306.00	3.73⁷	.43			
16	1.069.00	566.00	91.00	290.00	284.00	3.96⁴	.43⁷			
23	996.00	519.00	87.00	269.00	243.00	4.01⁶	.40⁶			
30	1060.00	409.00	344.00	311.00	296.00	3.58¹	.45⁴			
Nov 6	1078.00	438.00	236.00	317.00	297.00	3.62⁹	.44			
5 Weeks	5.346.00	2.461.00	831.00	1.506.00	1.426.00	3.93⁴	.43³	.74⁸ (3.40⁸)	.26²	.45⁷
Nov 13	1050.00	391.00	276.00	315.00	305.00	3.44⁷	.47⁹			
20	1.099.00	421.00	252.00	332.00	301.00	3.65¹	.44⁷			
27	1.204.00	467.00	279.00	371.00	334.	3.60⁴	.45¹			
Dec 4	999.00	454.00	184.00	299.00	243.00	4.11¹	.38			
11	1055.00	447.00	214.00	320.00	283.00	3.92⁷	.42⁸			
10 Weeks	10.733.00	4.616.00	2.034.00	3.143.00	2.897.00	3.71¹	.43⁴	.69⁴	.30	.47²
Dec 18	1.088.00	464.00	303.00	330.00	318.00	3.42¹	.47⁶			~~.47²~~
25	920.00	384.00	195.	269.	265.00	3.47¹	.45⁹			
1888 Jany 1	981.00	491.00	177.00	288	265.—	3.70¹	.40⁸			
8	1106.00	534.00	209.00	317.00	309.—	3.87⁹	.41⁵			
15	1129.00	542.—	216.—	313	308	3.66⁵	.40⁶			
22	1097.00	526.—	167—	296.00	269—	4.07	.39			
29	892.00	611.—	26—	214.00	244 —	3.65⁵	.36⁷			
Feby 5	888.00	693.00	— —	193.00	226 —	3.92⁹	.32⁶			
12	726.00	584.00	— —	147.00	200 —	3.62⁵	.34²			
19	981.	533.	169.	255.	266.	3.68⁹	.37⁸			
26	995.00	559.00	171.	259.	315.00	3.15⁸	.43¹			
March 4	962.00	585.00	166.	250.	289.—	3.32⁵	.41²			
11	894.00	698.00	169.	221.	223.	3.91⁹	.32²			
18	906.00	464.00	174.00	222.00	215	4.21⁴	.33⁷			
25	762.—	323.—	165—	207 —	189.00	4.03	.38⁷			
April 1	1060.—	483	203	291 —	309.—	3.43	.45			
36 Wks	15.366 —	8.384 —	2403.—	4072.	4210.—	3.65	.39	.77⁷	.22³	.37⁸

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Norton

	Fuel	Butts	C	Lime	Ore	Fuel to 1 Ton Material Ore C. & Lime	Fuel	Yield	Days	Average Daily
1888 April 8	1060 —	483 —	203.00	284 —	317 —		3.34³	.46²		
15	1092	511	301 00	292 —	340 —		3.21¹	.47⁸		
"	995	457	171 —	289 —	375 —		3.61⁵	.43⁷		
29	1036	488	179 —	310	295		3.51	.44²		
4 Weeks	4.183	1.939	754	1175	1.227		3.40⁹	.45⁵		
May 6	930	448	149	283	266.		3.49⁴	.44⁵		
13	1125	550	181	367	299		3.76	.42⁶ / .44⁶		
20	911	446	114	293	245		3.91⁸	.43⁹		
27	1069	486	170	330	282		3.79	.43		
June 3	1060	474	173	339	296		3.58	.45⁷		
9 Weeks	9.278	4.343	1511	2782	2.615		3.54⁷	.44⁶		
10	967	418	157	311	257		3.76	.43⁹		
17	1013	436.	175	309	264		3.83⁷	.43²		
11 Weeks	11.258	5.197	1.843	3.402	3.136.	1.078	3.59	.445		
June 24	1.050	453	156	333	276		3.80⁴	.45³		
July 1	1.083	573	56	340	284		3.81	.451		
8	1064	492	183	303	257		411	.406		
15	906	391.	130	253	237		3.81	.454		
22	1060	464	157	282	287		3.69³	.46⁴		
29	1074	493	157	298	302		3.18⁵	.47⁹		
Aug 5	1046	455	151	267	271		3.86	.447		
12	1041	450	150	266	278		3.94⁴	.46³		
19	1013	439	145	259.	282.		3.59²	.484		
26	1060	462	154	274	274		3.86⁸	.444		
Sept. 2	1069	462	145	269	273		3.91⁵	.44⁹		
9	1004	448	125	242	229		4.38⁴	.39⁸		
16	939	411	128	225	250		3.95²	.46³		
23	971.85	419 86	139 95	239 59	261		3.92³	.46⁶		
30	976 00	433.00	140.00	235 00	258.		3.78²	.45		
15 Weeks	15.356.85	6.803.86	2.083 45	4.075 59	4.016 00	1.184.	3.82³	.451		
8 Apr 15 to 30 Sept 26 Wks	26.614 85	12.000 86	3.926.95	7.477 59	7.152 00	1.14	3.72¹	.44⁹		
Oct 7th	1.041.00	465.00	150.00	237 00	284 00		3.66⁵	.46¹	6 1/4	
" 14	976.00	445.	140.	222.00	266.00		3.66⁹	.45⁴	7	
" 21	939.00	441.	135	213 00	251 00		3.74¹	.43⁵	6 1/4	
" 28	1162 00	476	225	302 00	313		3.71²	.44⁶	6 3/4	
Nov 4	1116.00	441	230	296 00	314 00		3.55⁴	.46⁷	6 1/4	
11	678.00	268	140.	180.00	174.				4 3/4	
18	446	160.	90	114 00	89.				3	
25	827	287	166	204	223				4 3/4	
Dec 2	981	331	197	241	276		3.55	.52²	5 3/4	
Week 9	8166.	3314	1473		2190.		3.72⁸	.45⁷		
Dec 9	1.055	405	212	281	286		3.69	.46³	6 3/4	
16	771	296	148	219	226				6	

Norton

		Fuel	Batts & Sel	C	Lime	Iron		Fuel	Yield	
1888	Dec 23	985.00	402.00	198.00	245	269.				
	30	999.00	407	201.00	253	280				
1889	Jan 6	999.00	393.00	201.	257	265		3.77	.446	

Same Furnace 1896 – W. G. Putnam in charge for A. C. & Ry Co

		Fuel Tons Coal	Fuel Tons Coke	Ore Tons	Cinder Tons	Lime Tons	Iron Tons	To ton of Iron Coal	Coke	Ore	Cinder	Lime	Labor
1896	Jan 11	738	155	267	409	216	329 69	2.23	.47	.81	1.24	.65	1.43
	18	777	166	291	437	232	358 06	2.17	.46	.81	1.22	.64	1.22
	25	736	158	369	369	231	368 39	1.99	.43	1.00	1.00	.62	1.23
	Feby 1	676	165	355	355	222	370 43	1.82	.44	.96	.96	.59	1.26
	15	694	155	348	348	216	349 15	1.98	.44	.99	.99	.62	1.29
	22	731	190	389	389	242	409 30	1.79	.46	.95	.95	.59	1.11
	29	716	153	364	364	244	378 84	1.89	.40	.96	.96	.59	1.28
	Mar 7	602	196	349	349	217	362 30	1.66	.54	.96	.96	.59	1.28
	14	625	207	365	365	228	381 60	1.63	.54	.95	.95	.59	1.21
97	Jan 2	410	264	251	377	221	336	1.22	.78	.74	1.12	.65	1.36
	9	484	242	259	388	228	342	1.41	.70	.75	1.13	.66	1.37
Inquire	16	484	242	259	388	228	336	1.48	.71	.77	1.15	.67	1.45
	23	580	193	259	388	228	337	1.72	.57	.76	1.15	.67	1.30
	30	561	280	626	—	247	Ferro- 289	1.93	.96	2.16	–	.85	1.58
	Feb 6	530	285	507	140	239	Ferro 201 287	1.84	.99	1.76	.48	.83	1.62
	20	491	249	306	306	206	315	1.55	.79	.97	.97	.65	1.50
	Sept 18	717	154	236	354	237	292	2.43	.52	.80	1.21	.81	1.50

Low Moor Black 5B Fire

Begun ℔ 40-

Date	Draw	#1	#2	#3	Sil	Mat	Coke	Lime	Ore	Low Moor	Dalby Amb	Stock	Rich Retort	Shipments		Date 1899
1898 Sept 3	1280	218	632	429			4850	4200	9750	3250	4875		1625	732		July 15
10	1331		369	961			"	"	"	"	"		"	1213		22
17	1117		853	123	140		"	12 3 4000	"	4875	4875			1667		29
24	1186	79	1073	34			"	"	"	"	"			1658		Aug 5
Oct 1	1154	28	1101	24			"	"	"	3250	6500			1424		12
8	996		991	4			"	"	"	"	"			1536	Engine off	19
15	1005		759		246		"	"	16c 9900 9750	3300 "	6600 4950	1500		1429		26
22	1048	97	890		61		"	4200	19 9900	"	6600			992		Sept 2
29	1059	262	796				"	"	20 9750	"	4950	1500		1305		9
Nov 5	1049	138	874	36			4550	"	"	"	"	"		1308	Stock	16
12	1056	86	953	16			"	84300	"	"	"	"		1297	387	23
19	1002		937	70			4850	4200	"	"	"	"		935	454	30
26	1177	60	997	33	86		"	21 4100	"	"	"	"	Black Band	1019	613	Oct 7
Dec 3	1177	29	981	16	150		"	4100	27 10250 1 9800	3100 3320 "	4650 3320 4980	" " "	1000 1660 "	1318	472	14
10	1278	144	1071	17	46		"	"	" 14 "	2450 1225	3675 "	1225	R.P.H.P. 2450 3675	1050	701	21
17	1172	55	870	159	86		"	14 4200	16 9600 17 "	1200 2400	3600 "	1200 0	3600 "	736	1137	28
24	1086		836		249		"	18 4300 21 " 23 " 25 4400	9680 9800 10000 27 10200	2420 1225 1250 1375	3630 3675 3750 3825	1225 1250 1275	3630 3675 3750 3825	798	1425	Nov 4
31	1192	237	895	60			"	"	"	" "	" "		5100	944	1673	11
99 Jan 7	1150	59	866	223			"	"	"	5 2550	"		4825	1010	1821	18
14	1139	104	882	153			"	14 4300 17 4400	" 10280	12 3825 2570	2550 3855		" 3855	1261	1700	25
21	1203	26	1078	14	84		"	21 4400	"	3555	"		2570	1195	1708	Dec 2
28	1244	418	721	104			"	23 4500 25 4400	"	24 2570 25 2855 26 2570 29 2570	" " " "	1285 " " 1285	3855 " 3855 2570	974	1975	9
Feb 4	1244	81	994	45	123		"	"	10400	2600	3900	1300	2600	1173	2050	16
11	1134	87	870	61	115		"	"	"	8 3900	2600		3900	938	2247	23
18	960	45	418	196		148 M151	"	18c 3900 4100 22 4300 24 4200	9600 10000 " 10200	2500 2550	9600 10000 3750 3825		3750	270	2938	30
25	1079	128	899	28	27		"	"	"	22 "	2550	1275	3825 "	1521	2497	1900 Jan 6
Mar 4	1183	188	969	26			"	"	"	4c "	3825	"	2550	1376	2304	13
11	1225	167	1030	34			"	"	"	"	"		3825	1071	2460	20
18	1183	216	929	4	32		"	"	"	"	"	1275	2550	1760	1883	
25	1193	208	956	29			"	"	"	"	"	"	"	1521	1555	
April 1	1215	320	862	33			"	"	"	3825	2550	"	"	1904	867	
8	1346	519	553	173			"	"	"	3 2550	3850	"	"	922	1192	
15	1213	358	816	38			"	4100	10000	"	2550	1250	3750	923	1481	
22	1214	244	953	16			"	4000	10140	3780	"	1260	2550	1571	1124	
29	1150	15	911	223			"	4100	10000 9800	2500 2450	2500 3675	1250 1225	3750 2450	961	1313	
May 6	1145	38	685	422			"	3900	9600 10000	2400 3750	3600 2500	1200 1250	2400 2500	923	1536	
13	1067	130	907	29			"	4000	9800	2450	2450	1225	3675	842	1761	
20	1141	41	908	191			"	4100	9600	2400	2400	1200	3600	859	2043	
27	1145	17	1047	85			"	"	9400	3525	2350	1175	2350	1248	1940	
June 3	927	28	681	217			"	3800	9200	3450	2300	1150	2300	1270	1597	
10	1020		184	835			"	"	8600	2150	3225	1075	2150	807	1810	
17	993		462	239		Mat 291	"	3600	8000	2000	3000	1000	2000	517	2291	
24	1002	17	698	286			"	3750	8400	2100	3150	1050	2100	628	2666	
July 1	996	255	679	62			"	3900 4000 4100	8600 8800 "	2150 2200 "	2150 2700 1100	1075 1100 2200	3225 3300 "	985	2678	
8	999	136	740	172			"	4200	9000	2250	1125	2250	3375	639	3038	

Low Moor Blast 5 B. Fce

Began fe 40

Shipments	Date 1899	Dow	#1	#2	#3	Sil	Mat	Coke	Lime	Ore	Low Moor	Dudley Arm	Stock	Richards	Ship.	Stock
732	July 15	966	164	717	84			4850	4200	9000 43.7%	2250	3375	2250	1125	610	3394
213	22	960	19	671	173		96	"	4100	8800 42.3	2200	2200	1100	3300	1093	3261
1667	29	994	321	661	11			"	"	" 44.3	"	"	"	"	898	3357
1658	Aug 5	982	193	713	74			"	4140	9000 45.4	2250	2250 Lignite	1125	3375	807	3532
424	12	994		339	655			"	3600	8600 45.5	3225	2150	1075	2150	1393	3133
534	19	1007		821	181			"	3400	8400 47.3	3150	2100	1050	2100	840	3295
429	26	1030	39	546	401		43	"	3440	8000 46.6	2000	3000		3000	790	3535
992	Sept 2	1067	106	904	22	34		"	3600	8200 46.8	2050	3075		3075	1512	3090
305	9	948	243	650	54			"	"	" 46.4	"	"		"	566	3472
308	16	1079	434	645				"	3700	8400 44.6	2100	3150		3150	538	4013
297 387	23	1021 6	68	797	27	127		"	"	8200 44.9	2050	2050		4100	824	4210
935 454	30	1093 17	201	841	13	37		"	"	8600 44.2	2150	2150		4300	1320	3953
019 613	Oct 7	1063 15	54	941	66			"	"	" 43.5	"	"		"	785	4262
318 472	14	1043 19	52	941	23	26		"	3800	" 43.6	"	"		"	1320	3986
050 701	21	1017	44	863	15	94		"	3900	8800	2200	2200		4400	1389	3614
736 1137	28	1027		822		204		"	4300	9000	2250	2250		4500	1460	3181
798 1425	Nov 4	972		544	120	307		"	4200	8800 41.4	2200	1100		5500	1530	2624
944 1673	11	949		226	117	605		"	3900	8600	2150	1075	1075	4300	877	2696
010 1821	18	1020	72	379	286	283									689	3027
261 1700	25	864	34	433	61	335		"	4100	8600 41.	2150	2150	Dudley Arm 2250	4300	295	3596
195 1708	Dec 2	921		608		312		"	4300	8900	2225	Stock	2225	4450	1182	3335
974 1978	9	968		826	9	132		"	4400	" 41.4	1113	1112	2225	4450	1449	2854
173 2050	16	1006	236	748	21			"	4500	"	2225	1113 Griskany	"	3337	1314	2546
938 2247	23	989	224	728	35			"	4400	" 43.2	1112	1113	3338	"	976	2559
270 2938	30	824	69	597	157			"	4200	" 46.2	"	"	"	"	382	3001
521 2497	1900 Jan 6	889		606	148	134		"	4000	9200 45.4		Stock 1150	3450	4600	586	3304
376 3304	13	858		802	55	not	White	"	4200	9400	3525		2350	3525	1192	2970
071 2460	20	723	21	476	76	129	20	"	4000	"	"	"	"	"	1364	2330
760 1883	Blast 5 B Ended Jan 20 at 9 A.M. — 584 days															
521 1555																
904 867																
922 1192																
923 1481																
571 1124																
961 1313																
923 1536																
842 1761																
359 2043																
248 1940																
270 1597																
807 1810																
512 2291																
628 2666																
985 2678																
639 3038																

To fill furnace Ore 127050
Coke 249340
Lime 60810

Covington Furnace Blast No 4 Begun Mar 12th 1899

1899	Total from	#1	#2	#3	Sil		Coke	Lime	Ore	Dolly Lm	Stack	Kell Cinder		Shipment	Stock
Mar 14							4020	2480	5400	3600	1800				
15								2720	5880	3910	1960				
16								2760	6000	4000	2000				
18	150			120	18	Not 11	3800	3240	6300	4201	2101			18	133
25	565		42	331	170	21	"	3760	6600	4400	1650	550		159	509
"							3880	3940	6800	4500	1687	580			
April 1	676		374	328			4470	3980	6960	4640	1740	580		577	608
6								4100	7200	4800	1800	600			
8	749		7537	204			4410	4160	7380	4920	1845	615	Scale 615	908	449
11								4100	"	4305	"	"			
15	737		261	471			"		7200	4801	1800	600	from #4	626	555
18								3940	7260	3600	"	660	1200		
22	696		543	152			"	3900	7260	4800	1800	660		798	453
29	703		481	221			26 4950	4000	7200	"	1200	1200		567	589
May 6	804		745	58			"	3840	7350	4900	1225	1225		659	734 2057
13	802	68	589	144			"	3760	"	"	"	"		840	696 2014
20	777	8	659	109			"	"	7500	5000	1650	850		857	616
27	804	101	622	80			"	"	"	"	"	"		976	444
June 3	781	19	582	180			"	3800	"	"	"	"		741	484
10	716	6	332	377			"	"	"	"		1250	P.Y. 1250	633	567
17	782	8	557	217			"	3900	"	"		850	1650	681	668
24	714	31	395	287			"	4000	7650	5100		875	1675	769	613
July 1	698	3	503	192										994	317
8	624	1	309	169	144		5450	4500	7500	5000	1650	850		560	381
15	633	3	478	151			"	"	"	6250		850	400	737	277
22	650	10	417	222			"	"	"	"		1250		644	283
								24 4400	7350	6500		850			
29	626	6	330	288			"	28 4120	7500	6650		"		675	234
								31 4240	7650	6775		875			
Aug 5	647	18	431	197			5440	4240	7350	6500		850		499	382
								" 4260	7200	6350		850			
12	660		329	330			"	12 4160	7050	6250		800		479	563
19	634	13	513	107			"	13 4140	6900	6100	Stack	"		622	575
26	613	7	391	214			"	25 4340	7200	4800	1200	1200		573	615
Sept 2	628	4	320	303			"	4400	"	"	"	"		632	611
9	649	16	273	309		50	"	3460	6900	6050		850		551	710
								17 3240	7200	5150	1200	850			
16	685	5	216	337	100	76	"	16 3700	6900	4900	1150	"	R.P.	402	994
										2225	1075	"	2050		
23	569		31	303	83	134 17	"	3320	6150	3075	3075			366	1197
30	399			96	246	56	4760	3125	6300	4550	1050	700		504	1092
Oct 7	408			244	176	38	5440	3520	"	"	"	"		487	1015
								" 3760	6600	3675	1100	725	1100		
14	490		16	246	123	103	"	14 3860	6420	4650	1075	"		816	690
								5910	10170	7540	2260	370			
21	486	33	260	153	38		5160	5970	10350	7650	2300	370		406	770
								6270	11475	8555	2550	"			
28	625	3	421	200			"	6360	11700	8400		700	2600	770	625
									11760	7980		"	2480		
Nov 4	590	3	434	157			"	6300	11250	8150		600	2500	577	638
11	609		403	206			"	"	"	"		"	"	746	501
18	427		73	77	277									507	421
								2700	6000	3750			1500		
25	483		201		282		5600	3060	6000	5250		750		275	630
Dec 2	475		105	16	353		"	7940	"	5250		"		251	854
9	600		246		354		"	3300	6360	5300		1060		384	1070
16	557		55	423	55	22	"	"	"	6270	5225	1045		606	1021
23	433		66	138	228		"	2760	6060	5050		1010		335	1119
30	185		174	11	stops & slags		"	"	"	"		"		18	1287
1900							5400	4900	8520	8520					
Jan 20	683		351	331			"	5600	9600	9600				668	651

Covington Furnace Black No. 4 Continued

1900	Total Iron	#1	#2	#3			Coke	Lime	Ore	Dolby Ann			Shipments	Stock
						Pipe			43.5					
Jan 27	715		529	111	Sil	74	5400	5100	10000	10000				657 709
						other			39.7					
Feb 3	644		119	109	272	143	4000	2800	7500	7500				419 934
									42.1					
10	647		116	51	23	456	5200	4000	8200	8200	Cinder			190 1391
									46.7					
17	623		361	234	27		"	4700	9000	7875	1125			552 1463
24	447		88	238	50	69	"	4300	8200	7175	1025			150 1760
						Pipe			43.7					
Mar 3	624		456			168	"	4500	7700	6600	1100			692 1692
												Ri Road		
10	495		57	260	19	158	2700	1900	4000	3000		1000		351 1836
						42								
17	591		361	48	19	Mot 119	"	"	"	4000				346 2082
24	427		166	196		64	"	"	4200	4200				181 2328
						Pipe								
31	671		174	146		351								106 2893
April 7	707	14	449	221		21	"	2100	3800	3325	475			696 2918
						10								
14	646		203	88	21	322	"	2000	"	3800				726 2838
						50				3238	462			
21	610		222	304		33	"	2200	3700	3700				685 2764
									40.8		R. P.			
28	541		484	57			"	"	4000	2000	2000			862 2444
									38.6					
May 5	560		361	106	67	Mill 67	"	2250	4200	4200				572 2432
									41.2					
12	598		426	147		24	"	"	4300	4300				587 2444
									42.4					
19	568		139	285		143	"	2150	4000	4000				265 2747
									40.3					
26	547		395	84	50	18	"	2200	4300	4300				358 2936
									41.0					
June 2	567		225	284	36	21	"	1800	4100	4100				414 3089
									44.6					
9	589		85	442	43	17	"	2100	4100	"				95 3583
									44.3					
16	577		256	321			"	2000	"	"				444 3717
									44.3					
23	466		265	128		Sil 72	"	2180	4240	4240	Primary	Stock		553 3631
									43.8					
30	514		74	246	G.F. 104	Pipe 28 Mot 61	"	2040	4100	3075	513	512		442 3703
out for Repairs					• 26	• 34	"	4390	31.0	750		250		
Sept 8	300			66	Sil 154	Pipe 18	"	2020	4200	3150		1050		167 1820
								2100	4400 40.	3300		1100		
15	659	4	377	230	46		"	2220	4620	4235		385		466 2013
					22	15			42.8					
22	512		200	193	55	25	"	2020	4200	3850		350		641 1884
									44					
29	702		111	415	55	119	2500	2200	4000	3665		335		357 2229
									43.6					
Oct 6	700	3	508	162	1	Sil 26	2600	2360	4200	3850		350		934 1996
									39.8					
13	610		433	168			"	2340	"	"	Fenwick	"		569 2037
									40.7					
20	737		463	186		Pipe 87	"	2460	4410	3307	735	368		848 1926
									39.					
27	685		340	255	47	22 • 66	"	2300	4200	3150	700	350		730 1851
									39.5					
Nov 3	712		425	241		" 46	2500	2360	"	3500	350	350		985 1609
					C.F. 28				38.9					
10	606		171	133	Mot 200	" 72	"	2300	3875	3550		325		584 1631
									40					
17	704		489	214			"	2360	4200	3150	700	350		788 1547
									38.4					
24	531		278	211	GF 41		"	2320	4350	3262	735	363		722 1357
									37.4					
Dec 1	424		183	219		" 20	"	2180	4450	3312	750	388		557 1224
									39.2					
8	592		364	227					41.4					757 1059
15	708		435	88	Sil 185									780 987
22	19					Pipe 19								128 878

Low Moor Fee "A" Block 6

1900	Draw Total	#1	#2	#3				Coke	Lime	Ore	Low Moor	Rich R.	Wallsyburn		Shipments	Stock
									2060	41.3	4800					
Feb 10	681	250	366	33				3600	3060	6600	2200	2200	2200	Exquisite	425	256
17	903	84	818					"	2980	" 42.5	2200	3300		1100	729	430
24	963	163	799		Silvery			"	3280	7200 41.8	2400	3600		1200	736	657
Mar 3	827	40	604	15	168			"	3100	7050	2350	3525		1175	884	601
10	917	31	796	84	17			3600	3200	7050	"	"		"	953	560
17	811	18	650	27	114			"	3040	6750	2250	3375		1125	635	737
24	803	10	531		261			"	3300	7200	2400	3600		1200	733	855
31	863	45	572	26	218			"	3500	7500	2500	3750		1250	451	1267
								coal 320								
April 7	879		727		152			"	3460	7650 7800	1275 1300	3825 3900	2550 1330	Fennick 1300	555	1591
14	861	119	476		176			"	3520	7500	1250	3750	2500		423	2029
21	650	49	356	91	14	25	93	"	3400	7200 40.7	2400	3600		1200	452	2227
28	452	132	148 704	258	124		W 15	"	2760	6000	3000	3000			483	2206
						M 19	W 17									
May 5	31							Mochanges		Furnaces out for repairs				Scaffold Hickory	736	1501
17	216		21	45	149			3600	3150	6900 38.6	3450	2300		1150	26	1691
19	811	23	573	115	98			"	3220	6960 37.9	1160	4640	Stock 1160		476	2026
26	958	132	704		121			"	3400	7200 39.6	2400	2400 Fennick	600	B.L. 1800	631	2353
June 2	1016	214	742	59				"	3440	7350 41.7	1225	1836	612	3675	954	2415
9	1038	427	572	38				"	3400	7200 42.7	1200 MIRA	3000	600	3400	736	2717
16	1022	107	878	36				"	"	" 405	2400	"	"	2400	756	2983
23	984	201	653	130				"	"	" 43.1	1200	1800	"	3600	758	3209
30	1041	96	915	29				"	"	" 42.1	"	"		4200	1063	3187
July 7	1004	95	859	49				"	3360	" 42.8	"	1200		4800	723	3468
14	988		925	35	26			"	3320	" 43.6	"	"		"	1269	3187
21	1029	144	779	105				"	3400	" 438	1200	3600		2400	706	3510
						M 62										
28	888	10	592	186		W 36		"	3300	7050 42.2		2350	1175 Fennick	3525	867	3531
Aug 4	956	90	814	52				"	3400	" 428	2400	1200	1200	2400	996	3491
11	902		603	298				"	3160	6750 39.7	3375		1125	2250	852	3541
18	855	22	381	290	34	M 126		"	3460	6900 41.9	2300	2300		2300	689	3707
25	913	178	651	134				"	3400	6750 39.7	3375	3375			593	4027
Sept 1	887	61	690	82	52			"	3480	6900 39.9	3450	2300	1150		416	4498
8	894	180	670	43			Mill 138	"	"	" 41.1	2300	3450	"	B.a.	1326	4066
15	884	22	498	101			Mat 124	"	3200	6750 40.7	2250	2250	1125	1125	802	4148
22	875	19	346	216	173	Mat 151 W 18		"	3100	6450 43.1	3225	2150	1075		940	4084
29	959	169	561	49	179			"	3300	6600 41.3	2200	4400			485	4558
Oct 6	854	155	591	85			Mat 20 Mill 109	"	"	" 39.6	2200	4400			1410	4002
13	519		264	24			Mat 65 W 55	"	3800	7430 40.2	2510	4920			886	3635
20	895	101	587	66	92	Mill 48		"	3900	7650 39.4	2550	5100			921	3610
27	781		441	5	285	Mat 48		"	"	" 41	"	"			952	3439
Nov 3	724		250	244	78	Mat 150		4200	3500	7500 405	5000	2500			866	3297
10	929	48	164	34	681			"	4100	8100 41.2	4050	4050			326	3900
17	929	73	650	94	111			"	4200	" 41.4	"	"			698	4132
24	938	196	688	53				"	"	" 42.	"	"			1145	3926
Dec 1	905	249	603	52				"	4320	8250	4125	4125			480	4351
8	765	17	427	273		Mat 47									1068	4048

Shipments	Stock
425	256
729	430
736	657
884	601
953	560
635	737
733	855
451	1267
555	1591
423	2029
452	2227
483	2206
736	1501
26	1691
476	2026
631	2353
954	2415
736	2717
756	2983
758	3209
063	3187
723	3468
269	3187
706	3570
867	3531
996	3491
852	3541
689	3707
593	4027
416	4498
326	4066
802	4148
940	4084
455	4558
1410	4002
886	3635
921	3610
952	3439
863	3297
326	3900
698	4132
145	3926
480	4351
068	4048

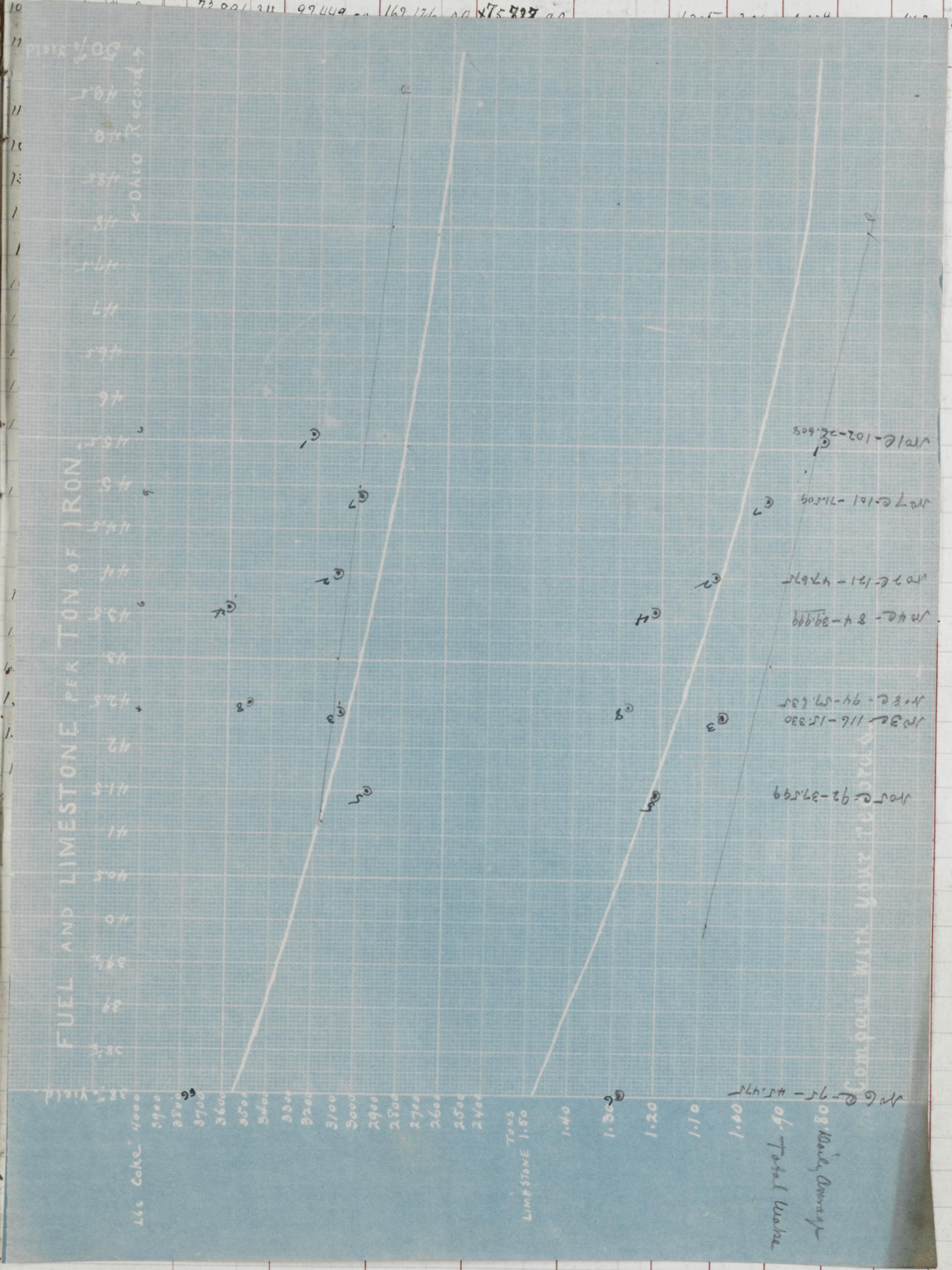
Lowmoor Blast No 3, Started 17th November 1884

		Iron	Coke	Ore	Limestone	Labor	Coke Tons	Ore Tons	Lime Tons	Labor	Yield Ore	N.G. Effect
1884	November	1.361.87	1.945.90	3.381.50	1.580.93	2.403.46	1.42⁸	2.41⁸		£1.76½	.40⅞ pig	
	December	3.909.00	4.853.59	9.280.59	4.388.39	5.061.14	1.24'	2.36'		1.29½	.42³	
1885	January	3.936.00	4.722.05	9.027.46	4.305.41	5.126.35	1.19⁹	2.29'		1.30¼	.43⁶	11.95
	February	3.486.79	4.342.50	8.302.00	4.093.49	4.719.09	1.24⁵	2.38		1.36	.42	12.30
	March	3.743.56	4.622.73	8.696.66	4.470.32	5.192.39	1.23⁴	2.32³		1.38⅝	.43	11.92
	April	4.036.56	4.934.39	9.163.82	4.564.39	5.046.56	1.22⁷	2.27		1.25	.44	11.53
	May	3.955.57	4.682.77	8.687.95	4.277.15	4.948.65	1.246	2.313		1.31¾	.43'	11.57
	June	3.645.95	4.480.72	8.090.18	3.982.86	4.790.45	1.228	2.218		1.31⅜	.45	12.00
		27.875.30	34.584.97	64.580.16	31.662.92	37.288.09	1.24	2.316	1.103	1.337	.43¹	
	July	3.763.83	4.727.77	8.638.62	4.252.86	4.836.70	1.25⁶	2.29⁵		1.28½	.43⁵	12.02
	August	3.513.87	4.407.95	8.171.43	4.022.86	5.123.55	1.25⁴	2.32⁵		1.45⁷	.43	11.98
	Sept	3.594.39	4.429.56	8.159.83	4.017.15	5.199.99	1.23²	2.29		1.44'	.44	11.89
	October	3.475.26	4.475.72	8.290.41	4.081.43	5.283.11	1.27⁷	2.38⁵		1.52	.44⁹	11.95
	Novm	3.298.43	4.384.38	8.142.42	4.086.52	5.019.46	1.33⁷	2.48³		1.53⁸	.40²	11.40
	Decm	3.403.95	4.351.52	7.997.32	4.183.22	5.137.34	1.27⁸	2.34⁹		1.52⁹	.42⁵	11.89
		21.029.73	26.776.90	49.400.03	24.644.04	30.579.95	1.27³	2.34⁴	1.171	1.45⁴	.42⁵	11.96
1886	Jany	3.494.26	4.901.25	8.491.97	4.060.82	5.060.92				1.45	.	12.88
	Feby	3.189.58	4.045.32	7.397.15	3.197.15	4.697.56				1.47	.43	12.06
	March	3.798.73	4.635.94	8.477.15	3.311.39	5.246.71				1.38	.44⁸	11.30
Floods	April	1.991.39	2.378.80	4.293.35	1.790.98	5.083.39				1.55	.41⁴	14.95
	May	3.672.87	4.639.60	8.220	3.281.95	5.434.91				1.48	.44⁶	11.65
	June	3.163.00	3.982.71	6.797.15	3.166.95	5.050.26				1.57⅜	.46⁵	11.59
		19.089.83	24.373.62	43.656.77	18.809.24	30.593.95	1.27⁶	2.28⁶	0.985	1.60	.43⁷	11.31
	July	3.588.39	4.580.36	7.817.15	3.725.36	5.222.28	1.27⁶	2.17⁸		1.45⁵	.45⁹	11.60
	Aug	3.559.95	4.489.96	7.662.86	3.682.50	5.076.39	1.24			1.42⅔	.46⁴	11.37
	Sept	3.701.87	4.638.00	7.848.58	3.699.00	5.112.59				1.38'	.47'	11.34
	Oct	3.990.08	4.850.09	8.168.58	3.949.00	5.227.99	1.27⁷			1.39⁹	.48³	11.42
	Nov	3.789.43	4.294.89	7.222.86	3.555.00	5.078.56	1.30⁶			1.57³	.45⁵	11.85
	Decm	3.708.13	5.119.80	8.622.84	4.256.90	5.061.01				1.36⁶	.43	12.09
		21.633.85	27.973.10	49.342.87	22.799.76	30.773.62	1.29³			1.42²	.45⁶	
1887	Jany	3.226.43	4.436.16	7.471.43	3.923.00	5.536.41	1.37⁴			1.37⁵	.43'	12.67
	Feby	3.128.61	4.112.15	6.925.72	3.573.58	5.001.40	1.31⁴			1.60	.46⁴	12.11
	March	3.829.00	5.063.08	8.920.00	4.223.95	5.433.92	1.32⁸			1.42	.48⁸	
	April	3.372.66	4.386.98	7.405.69	3.613.00	5.245.01	1.30⁷			1.55½	.45⁵	
	May	2.443.06	3.240.14	5.317.14	2.596.25	4.887.63	1.30			1.46	.46⁸	
		16.047.75	21.238.51	35.839.96	17.849.58	26.104.37	1.32³	2.23³	1.115	1.63⁶	.44⁷	
Blast No 4 — B July 28th 87	July & August	3.571.21	4.993.80	8.951.61	3.895.80	5.557.60	1.39⁸			1.55⅝	.40⁸	Material to Fuel
	Sept	3.401.43	4.317.19	7.894.29	3.453.75	4.863.07	1.26⁹			1.43	.43	
	Oct	3.536.87	4.361.52	7.982.86	3.492.50	5.143.21	1.25⁵			1.45⁴	.44³	
	Novm	3.448.65	4.221.10	7.925.72	3.467.50	5.014.71	1.22⁴			1.45⁴	.43⁵	
	Decm	3.537.43	4.343.71	8.068.55	3.530.00	4.964.57	1.22⁸			1.40²	.43⁸	
		17.495.59	22.237.32	40.623.03	17.839.55	26.643.16	1.37⁰	2.32'		1.46		0.38

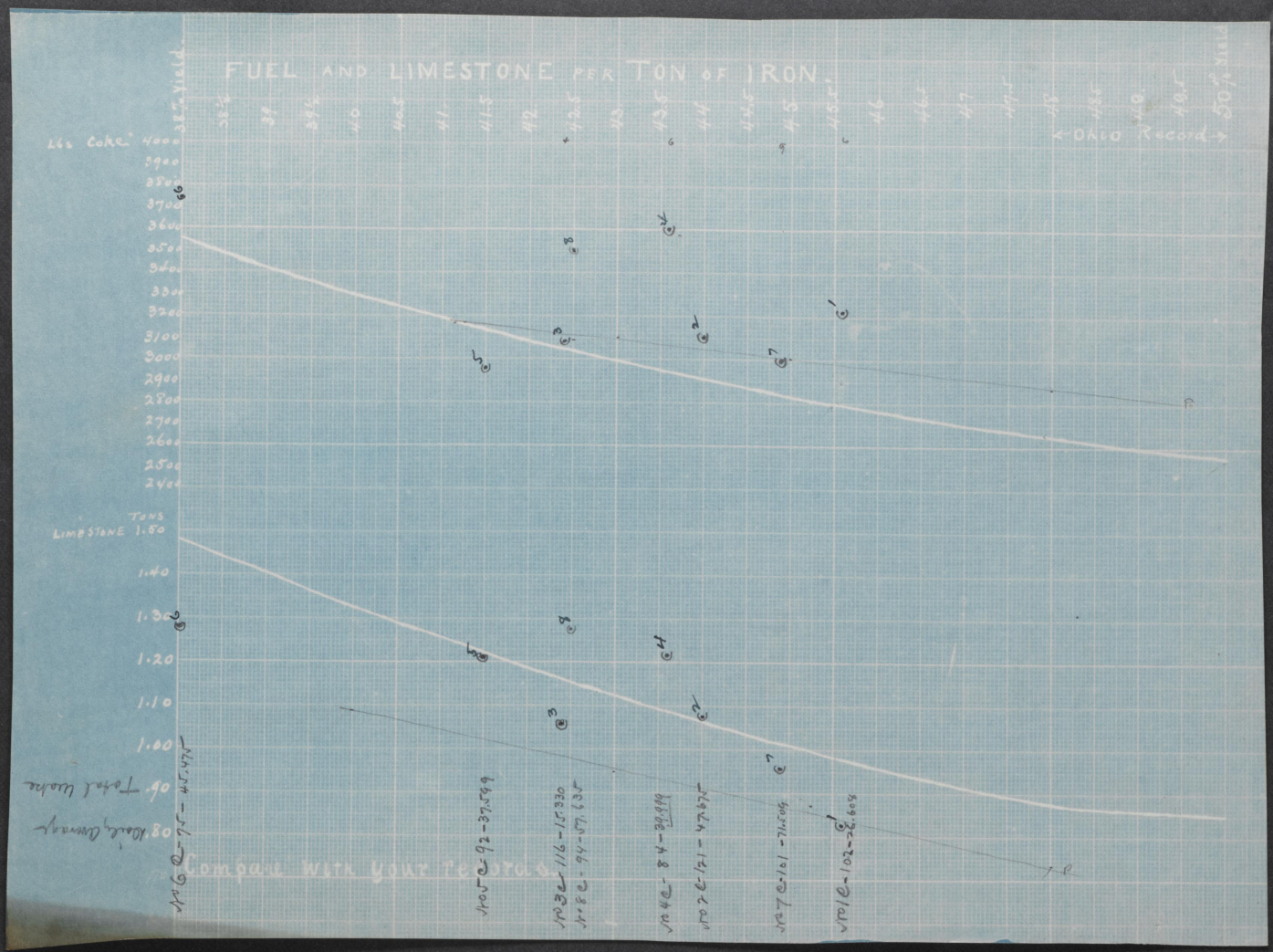
Daily Average

Low Moor Summary.

	Iron	Coke	Ore	Limestone	Labor	Coke	Ore	Lime	Labor	Ore Yield	Material to Fuel
77 Blast A. No 1 A.	46.786.28	58.993.00	113.614 00	56.038.00		1.26	2.428	1.197		.41'	0.34'
											0.40'
											0.378
											0.378



N.Y. Office	
11.95	
12.30	
11.92	
11.53	
11.57	
12.00	
12.02	
11.98	
11.99	
11.95	
11.40	
11.89	
11.86	
12.88	
12.06	
11.30	
14.95	
11.65	
11.07	
11.31 and prices	
11.60	
11.37	
11.34	
11.42	
11.85	
12.09	
12.67	
12.11	
Material to Fuel	
0.38	


FUEL AND LIMESTONE PER TON OF IRON.
Lbs Coke
Ohio Record
Tons
Limestone
Total Coke
Compare with your records

Loose Item

Last Quarry

Lowmoor Summary.

		Iron	Coke	Ore	Limestone	Labor	Coke	Ore	Lime	Labor	Ore Yield	Material to Fuel
77	Blast A. № 1 A.	46.786.28	58.993.00	113.614.00	56.038.00		1.26	2.42⁸	1.19⁷		.41¹	0.34¹
100	A. № 2 A.	73.896.34	97.449.00	169.126.00	475.727.00		1.30⁵	2.26	1.02⁴		.44²	0.40¹
114	A № 3 A.	105.676.46	134.946.85	240.819.79	115.813.57	155.819.98	1.27⁶	2.27⁸	1.09⁴	1.46⁹	.43⁸	0.37⁸
		226.359.08	291.388.85	521.559.79	347.578.54		1.28⁷	2.30⁴	1.09³		.43⁴	0.37⁸
113	B № 1 B	80.226.35	100.673.00	184.742.58	82.131.48		1.22	2.24	.99⁷	1.45	.44⁵	
105	A № 4 A	116.184.78	165.026.80	274.226.40	133.326.83		1.38	2.30	1.12	1.72	.43⁴	
134	B № 2 B	101.208.10	131.107.70	226.745.00	92.256.82		1.26	2.18	.88⁷	1.24	.45⁸	
120	A № 5 A	46.083.21	59.250.21	104.234.41	44.137.07		1.25	2.20	.93²	1.29	.45³	
102	C № 1 C	26.608.17	39.714.19	59.840.61	22.598.61		1.45	2.19	.82⁷	1.46	.45⁶	
140	Blast "B" № 3 B.	40.866	51.209.63	92.868.06	39.491.26		1.25	2.26	.97	1.14	.44	
156	B № 4 B	71.623	91.940.05	168.057.13	75.607.57		1.29	2.34	1.05	.90	.42⁶	
121	C № 7 C	47.675	67.014.67	108.130.62	51.456.35		1.40	2.26	1.08	1.11	.44	
153	B № 5 B	89.447.21	108.067.90	208.031.63	90.176.92		1.21	2.33	1.01	1.07	.43	
116	C № 3 C	15.330.08	21.328.04	36.081.50	16.220.70		1.39	2.35	1.06	1.02	.42⁴	
84	C № 4 C	39.999.53	64.870.79	94.588.50	48.901.09		1.62	2.29	1.22	1.63	436	
124	A. № 6 A.	43.134.94	54.894.20	104.983.62	50.540.19		1.27	2.43	1.17	1.35	.41⁰	
92	C. № 5 B.	37.994.53	50.627.39	90.570.06	45.658.85		1.48	2.41	1.21	1.71	.41⁵	
145	C. № 6 B	45.475.02	85.139.05	119.463.00	58.132.04		1.87	2.63	1.28	1.73	.38	
141	A. № 7 A	41.403.08	58.045.72	97.567.39	48.244.40		1.40	2.36	1.17	1.22	.42⁴	
118	A. № 8 A.	64.293.00	103.133.34	158.883.04	74.605.83		1.60	2.47	1.16	1.45	.40⁴	
155	B. № 6 B.	48.666.48	71.379.78	115.539.21	58.802.69		1.47	2.37	1.21	1.18	.42¹	
135½	A № 9 A.	18.296.	26.525.	42.353.	21.571.		1.45.	2.31.	1.18.	1.38	43²	
154.	B. № 7 B.	26.237.99	40973	59452	30862		1.56	2.27	1.18	1.11	44¹	
118.	№ 10 A	13058.59	23242	30654	16956		1.78	2.34	1.29	1.65	42⁶	
170.	№ 8 B	60032.	88685.	131521.	63281.		1.47	2.19	1.05	1.11	45⁶	
169.	№ 11 A	68390.	106534.	158814.	74183.		1.55	2.32	1.08	1.44	43⁰	
101	№ 7 C	71509.	107462	158963	68867		1.50	2.22	.96	1.36	44⁹	
165	№ 9 B	96515.	158733.	234176	124924		1.64	2.42	1.29	.77	41³	
94	№ 8 C	57635	101346	135333	73629		1.75.	2.34	1.28	1.18	42⁵	
146	№ 10 B	108274	191648	262072	158094		1.77	2.42	1.46	.93	41³	
	№ 9 C											

Low Moor Blast No 4 (No 1 B)

		Iron	Coke	Ore	Lime	Labor	Coke	Yield Ore	Lime	Labor	Material to Fuel
1888	Jany	3.656 00	4.552 77	8.445 72	3.895 00	5.169 16	1.24⅝	.43⅜	1.01	1.41⅜	
	Feby	3.255 17	3.991 19	7.325 72	3.205 —	4.918 99	1.21⁹	.44⁴	.98	1.51'	
	Mar	3.618 52	4.417 19	8.077 15	3.533 75	5.332 66	1.26⅝	.44⅞	.97	1.45	
	April	3.457 26	4.179 69	7.642 86	3.361 61	5.009 46	1.20⁹	.45	.97	1.44⅞	
	May	3.487 87	4.218 50	7.705 72	3.431 45	5.099 74	1.20⁹	.45⅔		1.46⅞	
	June	3.326 04	4.055 33	7.381 46	3.278 78	4.940 81	1.21⁹	.45⁵		1.48½	
		20.800 86	25.394 67	46.559 63	20.505 59	30.368 62	1.22	.44⅝		1.459	0.378
	July	3.224 52	4.064 11	7.314 29	3.257.15	5.116 43	1.26	.44		1.58⅞	
	Aug	3.255 17	4.022 28	7.302 86	3.265 27	5.080 79	1.23⁴	44⁵		1.56	
	Sept	3.268 60	4.206 48	7.657 15	3.409 83	5.037 38	1.28⁶	42⁶		1.54	
	Oct	3.463 74	4.450 80	8.197 15	3.671 96	4.810 84	1.28⅝	.42⅛		1.39	
	Nov	3.380 08	4.491 13	8.271 43	3.722 15	4.828 77	1.32⁸	.40⁸		1.43	
	Decm	3.319 43	4.450 95	8.185 72	3.683 58	4.752 60	1.34'	.40⁵		1.43	
		19.911 54	25.684 75	46.928 60	21.009 94	29.626 81	1.28⁹			1.48⁹	
1889	Jany	3.528 90	4.531 46	8.345 72	3.755 57	5.063 61	1.25	42⅞		1.43	

Furnace 'B' blown out July 1st 1889 — output 80.226 Gross Tons

Blast No 5 (No 4 A)

		Iron	Coke	Ore	Lime	Labor	Tons Coke per Ton Iron	Yield Ore	Labor	% No 1	% No 2
1890	Sept	3148 12/23	4458 2080/2240	7255 1773/2240	3678 1358/2240	5278 84	3089	.44⅝	1.67⁹	56	31
	Oct	3017 4/23	4416 100	7186 581	3643 680	5474 80	3178	.43⅛	1.81	38	58
	Nov	3175 7	4671 160	7633 1223	3870 300	5250 47	3223	.42⅞	1.65	54	39
	Dec	2714 14	4077 1420	6595 317	3344 940	5366 72	3277	.42⅛	1.97⅞	44	26
1891	Jany	3094 18	5344 1648	7694 95	3785 804	5513 28	3767	.41	1.73	41	45
	Feby	2958 19	4956 242	7319 340	3604 214	5299 35	3654	.41	1.79	43	51
	Mar	3315 3	5370 672	8157 1970	3979 320	5760 46	3629	.41⁶	1.75	34	62
	April	3334	5232 1248	8019 1691	3899 160	5458 87	3899	.42⅞	1.63	53	41
	May	3206 13	4901 1040	7614 149	3698 500	5700 77	3424	.43⅜	1.77	31	52
	June	3215 17	4632 900	7462	3634	5506 64	3226	.44⅛	1.71	28	49
	July	3349 2	4755	7661	3787	5391 50	3180	.44⅝	1.61	50	41
	Aug	3079 2	4393	6999	3473	5539 05	3196	.45⅛	1.79	35	36
	Sept	3168 7	4528	7054	3522	5792 75	3202	.46'	1.82	49	39
	Oct	3170 22	4644	7234	3612	5958 32	3281	.45	1.87	35	55
	Nov	2977 17	4568	7117	3553	5637 32	2977	.42⁹	1.89	13	71
	Dec	3372 9	5105	8292	4047	5395 35	3391	.41⅞	1.59	34	58
1892	Jany	3513	5072	8490	4081	5446 56	3234	.42⅝	1.55	28	59
	Feb	3247 3	4526	7580	3663	5267 97	3122	.44	1.62		
	Mar	3327 13	4629	7665	3691	5552 29	3117	.44⅝	1.66	13	61
	April	3146 12	4464	7516	3594	5607 20	3171	.43	1.78	27	53
	May	3202 4	4558	7588	3893	5522 48	3189	.43³	1.72	27	46
	June	2958 8	4094	6805	3748	5386 55	3104	.44⅙	1.82	38	34
Part A & B	July	1481 17/23	2053 220/2240	3368	1802	2701 35	3103	.45'	1.82	20	48

Furnace 'A' blown out 16th July 1892 — blast lasting 3 years and 7 days

Total iron made 116.184 1800/2240 tons.

Low Moor Blast № 6 (№ 2 B)

Furnace Started July 21st 1892

		Iron	Coke	Ore	Lime	Labor	lbs Coke	Yield % Ore	Labor	% № 1 Iron	% № 2 Iron
1892	Aug	3422 13/23	4909 840/2240	7530 21/90 2240	3573 550/2240	5447 84	3213	.466 6/6	1.59	55 7	22
	Sept	3737 3/23	5027 1970	7960 250	3369 1600	5201 06	3013	48 2	1.39	68	22 7
	Oct	4116 8	5369 1065	8783 2001	3827 100	5264 05	2922	48 07	1.27 8	47 4	39
	Nov	3987 12	5338	8863	3663	5206 88	2998	46 19	1.305	37 4	27 2
	Dec	4268 19	5534 1740	9329 48	3599 1240	5235 13	2865	46 98	1.22 6	42 2	31 3
1893	Jany	4110 11	5591	9404	3762	5245 94	3047	44 87	1.27 4	37 7	34
	Feby	3794 16	5188	8648	3582	4784 17	3062	45 05	1.26	49 64	37 68
	Mar	4446 6	5935 1200	9907 1909	4093 1450	5117 17	2990	46 88	1.15 98	52 5	38 67
	April	4101 1	5510 750	9082 820	3784 540	5098 00	3009	46 36	1.24 3	56 2	34 2
	May	4155 21	5615 2100	9247 1887	3868 680	5378 60	3027	46 14	1.29	31 4	43 7
	June	3626 11	5096 5620	8229	3637 600	5343 72	3147	45 24	1.47 3	33 8	34 1
	July	3761 8	5149	8429	3557	5256 84	3086	45 52	1.39	28 5	48 2
	Aug	4110 6	5191	9030	3663	5264 89	2829	46 73	1.28	46 1	46 2
	Sept	4188 19	5309	9579	3863	4841 28	2755	44 89	1.15 52	46	44 2
	Oct	4281 19	5329	9952	3959	5145 7.6	2710	44 17	1.20 1/10	61 8	29 2
	Nov	4342 9	5390	10343	4015	4971 19	2688	43 1/10	1.14 3/10	58 1	32 7
	Dec	4520 13	5446 1300	10362 1845	4076 560	5144 83	2620	44 78	1.13 8	68 5	22 6
1894	Jany	4502 4	5448	10231	4008	5019 18	2620	45 18	1.11 1/2	40 8	35 7
	Feby	4329 4	5198 540	9742 1795	3828 1680	4451 14	2598	45 60	1.02 8	34 6	57 1
	Mar	4464 6	5389 1460	10118 1355	3992 1420	4873 21	2688	45 3	1.09 1	24 4	53 6
	April	4143 9/87 9/262 9/9	5232 430	9517 1795	3725 2100	4699 56	2755	44 6	1.13	17 7	66 7
	May	3971 12	4961	8880	3514	4839 84	2710	45 9	1.21 8	5 11	66 07
	June	3958 4	4993	8509 1565	3243 2150	4841 00	2755	47 2	1.22 4	10 2	60 7
	July	4125 1	5285	8938	3517	4834 48	2800	47	1.17 2	12 9	74 4
	Aug	2001 21/963 1/9 1/1	2383	4236	1522	2781 94	2665	48 5	1.38	31 6	59 2

Furnace "B" blown out Aug 14th 1894 - Output 10.208 2/2300 tons

Blast 5A Furnace A.

Date		Iron made	Coke Tons	Tons of Iron	Ore	Tons of Iron	Lime	Tons of Iron	Labor $	Tons of Iron	Yield % Ore	Shipments month	Days	% № 1 Iron	% № 2 Iron
1894	Sept	1647 9/23	2567	1.51	3847	2.27	1581	.93	2623	1.59	.438	4137	17	.0	28
	Oct	3053 2/23	4622	1.47	7179	2.28	3296	1.05	4776	1.56	.436	5114	30½	7 7	39 5
	Nov	3409 18	4657	1.33	7587	2.16	3356	.95	4561	1.33	.461	3770	29½	18	39 9
	Dec	3752 12	4910	1.27	8401	2.18	3521	.91	4777	1.27	.458	3412	30½	11	56 1
1895	Jany	4043 8	5022	1.21	9258	2.23	3942	.95	4748	1.17	.448	4224	31	30 7	56 8
	Feby	3465 18	4495	1.29	8182	2.36	3400	.98	4302	1.24	.434	2929	27½	20 9	61 7
	Mar	3936 7	4978	1.23	9053	2.24	3833	.94	4671	1.18	.446	3445	31	33	56
	April	3953 16	4912	1.21	8928	2.19	3842	.95	4805	1.21½	.454	4615	30	22 2	55 6
	May	4124 12	5027	1.18	9111	2.15	3954	.93 3	4919	1.19	.464	6516	30½	37	55
	June	3888 3	4847	1.21	8752	2.19	3577	.89	4752	1.22	.456	7076	29	31 4	53 8
	July	4082 12	5032	1.20	8973	2.14	3709	.88	4958	1.21	.467	5855	31	42 4	41 7
	Aug	4065 1	4969	1.19	9068	2.17	3745	.89	5075	1.24	.460	5750	31	45 7	49 4
	Sept	2661 18	3206	1.17	5888	2.15	2374	.87	3605	1.35	.464	4184	20½	43 3	47

273 days Furnace A out of Blast 21st Sept 95 Output 46.083 2100 tons

Monthly — Law Moor Covington Fce — Blast No 1

Date	Iron Made		Tons Coke	Per ton iron	Tons Ore	Per ton iron	Tons Lime	Per ton iron	% Labor	Per ton iron	Yield Ore	Shipments	Days	% No 1	% No 2
1895 May	3159	100	4661	1.43	6729	2.07	2720	.838	4430	1.40	.482	661	30½	8	22
June	2786	900	4148	1.45	6360	2.22	2481	.807	4442	1.59	.449	2205	29	6	22
July	3170	1300	5025	1.54	7284	2.23	3068	.940	4723	1.49	.447	3265	30½	19	29
Augt	3166	1200	4933	1.51	7263	2.23	2660	.818	4632	1.46	.447	2762	30½	14	28
Sepr	3202	500	4818	1.47	7228	2.19	2569	.780	4456	1.39	.454	3246	30	7'	27
Oct	3536	600	5116	1.40	7854	2.16	2850	.780	4623	1.30	.462	3216	31	5	56
Nov	3225	1300	4509	1.36	7086	2.14	2576	.780	4807	1.49	.467	2672	30	6	50
Dec	3190	600	4621	1.41	7262	2.21	2627	.800	5179	1.62	.451	1592	31		11

260 days Furnace C Blown out 9th Janry 1896. Output 26608 17cwt Tons

Blast No 2

	Iron Made		Tons Coke	Per ton iron	Tons Ore	Per ton iron	Tons Lime	Per ton iron	% Labor	Per ton iron	Yield Ore	Shipments	Days	% No 1	% No 2
1896 April	1542	12	2426	1.52	3718	2.34	1529	.97	2187	1.42	.426	715	15	0	11
May	3764	5	5221	1.35	8586	2.22	3965	1.02	4303	1.14	.450	1305	31	17	25
June	3517	6	4957	1.37	8003	2.21	3826	1.06	4489	1.27	.451	1080	29¾	34	27
July	3535		4873	1.34	7797	2.14	3898	1.07	4150	1.17	.465	1830	31	17	39
Aug	3396	4	4799	1.37	7665	2.19	3767	1.08	4006	1.19	.455	1628	31	10	24
Sepr	3638	5	5096	1.36	7984	2.13	3964	1.06	3820	1.33	.467	2433	29½	29	42
Oct	3819	5	5374	1.37	8552	2.18	4113	1.05	3999	1.05	.458	2566	30½	31	42
Nov	3565	23	5142	1.40	8358	2.28	3994	1.09	3821	1.07	.438	3948	29¼	21	44
Dec	3807	18	5463	1.39	8885	2.27	4348	1.11	4007	1.05	.440	2769	31	18	48
1897 Jan	4297	21	5893	1.33	9578	2.17	4462	1.01	4007	.93	.460	2520	31	14	55
Feb	3620		4857	1.31	7990	2.15	3760	1.01	3636	1.01	.465	1023	27½	4	42
Mar	3890	9	5407	1.35	8895	2.23	3963	.99	3997	1.03	.449	4457	31	3	40
April	3600	12	5141	1.39	8375	2.27	4053	1.09	3885	1.08	.441	3686	30	5	49
May	1680		2357	1.37	3736	2.17	1807	1.05	2148	1.28	.460	3240	15	1	36

Blast No 3

	Iron Made		Coke		Ore		Lime		Labor		Yield Ore	Shipments	Days	% No 1	% No 2
1898 March	2324	15	3576	1.53	5582	2.40	2606	1.12	2557	1.10	.416	1816	22	4	75
April	3732	10	5052	1.36	8808	2.36	4075	1.09	3531	.95	.423	3613	29½	5	82
May	3654		4975	1.37	8503	2.32	3847	1.06	3663	1.01	.429	3531	31	5	74
June	3500		4828	1.39	8330	2.38	3571	1.02	3500	1.01	.420	2830	29½	4	51
July	2117	20	2893	1.37	4855	2.29	2119	1.00	2454	1.16	.436	2627	18¾	4	60

Blast No 4

	Iron Made		Coke		Ore		Lime		Labor		Yield Ore	Shipments	Days	% No 1	% No 2
1899 Mar	1281	15	2230	1.74	3228	2.52	1744	1.36	2092	1.64	.397	652	18½		24
April	3099		4363	1.41	6904	2.23	3841	1.24	3611	1.17	.449	3031	30		64
May	3524	11	5229	1.45	7832	2.22	3982	1.13	3524	1.08	.45	3752	31	5	80
June	3148		4794	1.52	7090	2.25	3690	1.17	3671	1.16	.444	3249	29½	1	62
July	2829	17	4650	1.64	6345	2.24	3751	1.32	3770	1.33	.446	2911	31	1	64
Aug	2812	3	4930	1.75	6406	2.28	3785	1.34	3720	1.33	.438	2442	30½	1	59
Sepr	2482	19	4515	1.81	5787	2.32	2999	1.21	4039	1.63	.43	2037	28½	1	26
Oct	2286	14	4378	1.91	5488	2.40	3075	1.34	4459	1.95	.416	2703	29½	1	40
Nov	2139		3964	1.86	4781	2.24	2414	1.13	4550	2.13	.448	2106	26¾	0	47

Furnace B –

Low Moor — Blast № 3 & 4

Monthly Date		Iron Made		Tons Coke	per ton iron	Tons Ore	per ton iron	Tons Lime	per ton iron	Labor	per ton iron	Yield Ore	Shipments	Days	% №1	% №2	
1895	October	3936	11	5139	1.27	8.945	2.21	3695	.910	5042	1.28	.451	3664	31	17	47	
	Novemb.	3853	18	4912	1.24	8.772	2.21	3550	.89	4956	1.28	.451	4149	30	36	53	
	Decemb.	3906	13	5137	1.28	9.205	2.29	4061	1.07	5072	1.29	.435	2826	31	11	67	
1896	Jany	4176	14	4827	1.13	9.666	2.25	4206	.98	5029	1.20	.443	3686	31	37	42	
	Feby	3983	21	4588	1.11	9.098	2.22	3857	.94	4538	1.14	.449	2870	29	49	38	
	Mar	4401	11	5375	1.19	10.048	2.22	4154	.92	4798	1.09	.448	2831	31	28	65	
	April	4474	18	5893	1.28	10.217	2.22	4513	.98	4807	1.07½	.449	3148	30	44	45	
new boilers.	May	5151	9	6447	1.22	11.552	2.18	4835	.914	4830	.937	.457	3496	31	38	49	
	June	4673	19	5916	1.23	10.479	2.18	4486	.935	4641	.99	.458	3284	30	33	54	
same lining Blast 4	July	2067	5	2470	1.17	4.323	2.03	1888	.880	2067	1.07	.480	4647	14	23	45	
	Sept	1691	20	2549	1.46	4.336	2.49	1867	1.08	2253	1.33	.400	1115	15	5	30	
	Oct	4755	21	6169	1.26	11.245	2.32	5084	1.04	4330	.93	.434	3536	31	48	37	
	Nov	4776	22	6060	1.23	11.267	2.29	5125	1.04	4160	.87	.435	3875	30	41	48	
	Dec	4601	7	5901	1.25	10.999	2.32	5156	1.09	4426	.962	.429	2769	30½	21	50	
1897	Jan	5020	5	6281	1.22	11.772	2.29	5157	1.00	4313	.86	.437	1710	31	20	70	
	Feb	4309	2	5350	1.21	10.147	2.29	4564	1.03	3796	.89	.436	1089	28	29	56	
	Mar	4876	5	6060	1.21	11.320	2.26	5066	1.01	4172	.855	.442	4281	31	20	53	
	April	4610	2	6062	1.28	10806	2.28	4997	1.05	4049	.88	.439	3717	30	15	56	
	May	4392	4	6233	1.38	10676	2.36	5081	1.12	4126	.94	.422	4673	31	13	32	
	June	3987	14	5882	1.43	9566	2.33	4516	1.10	3958	.99	.427	2120	30	8	28	
	July	4570	8	6023	1.29	10.901	2.23	4762	1.01	4570	.84	.430	5061	31	16	44	
	Aug	5066	3	6313	1.21	11549	2.22	5093	.98	5066	.74	.450	5520	31	41	44	
	Sept	4813	5	5984	1.21	10959	2.22	4881	.99	3713	.78	.451	8038	29½	32	54	
	Oct	5231		6476	1.21	12017	2.23	5341	.99	3750	.72	.447	3465	31	35	58	
	Nov	5366		6387	1.20	12458	2.26	5490	.99	3476	.65	.442	3189	30	36	62	
	Dec	3553	19	4753	1.17	8032	2.20	3419	.94	3553	.76	.454	3403	20½	27	53	

Blast № 5

		Iron Made		Tons Coke	per ton iron	Tons Ore	per ton iron	Tons Lime	per ton iron	Labor	per ton iron	Yield Ore	Shipments	Days	% №1	№ 2	
1898	May	718	6	1204	1.68	1850	2.57	845	1.18	1017	1.42	.38	1627	7	17	21	
	June	5154	17	6192	1.20	11.703	2.27	5040	.98	4131	.80	.44	3291	30	19	77	
	July	1914	21	2297	1.20	4,429	2.31	1856	.97	3205	1.67	.433	2037	11¼	12	#1 49 #2 36	Free split jacket
	Aug	4269	21	5540	1.30	10,112	2.37	4313	1.01	4079	.95	.422	3616	28	18	72	
	Sept	5234	14	5952	1.14	11.965	2.28	5006	.96	4095	.79	.437	6068	30	2	65	
	Oct	4564	20	5294	1.16	10.799	2.36	4538	.99	4062	.89	.422	5754	31	9	81	
	Nov	4654	13	5316	1.15	11.071	2.38	4752	1.02	4153	.89	.420	5101	29½	6	88	
	Dec	5228	22	6151	1.18	12,507	2.39	5441	1.04	4462	.86	.418	4083	31	8	77	
1899	Jan	5271	15	5908	1.12	12,475	2.37	5341	1.01	4300	.82	.422	4797	31	12	76	
	Feb	4381		5025	1.15	10.527	2.40	4409	1.01	4109	.94	.416	4016	27½	9	71	
	Mar	5337	15	5878	1.10	12.362	2.32	5090	.96	4544	.86	.432	6932	31	16	80	
	April	5160	13	5705	1.11	11.848	2.30	4812	.93	4275	.83	.435	4606	30	24	64	
	May	4823	18	5707	1.18	11,364	2.35	4847	.99	4521	.94	.424	4388	30½	5	79	
	June	4307	2	5729	1.33	10,137	2.35	4492	1.04	4477	1.04	.424	3557	30	5	53	
	July	4339	5	5484	1.26	10,085	2.32	3751	1.08	4566	1.05	.43	3510	31	18	71	

Law Moor Fee "B" Block No 5

1899	Iron Made	Labor	Per ton Iron	Ore	Per ton	Coke	Per ton	Limestone	Per ton	Yield	Shipments	Running time	No Days	No Hrs	Stock	
August	4500 9	4851	1.08	9726	2.16	5590	1.24	4159	.92	46²	4755	31	4	65	3239	1899
Sept	4446 6	4613	1.04	9733	2.19	5668	1.27	4281	.96	45⁶	3693	29½	22	71	3990	1900
Oct	4580 14	4835	1.06	10542	2.30	5856	1.28	4671	1.02	43⁴	5561	31	3	83	3008	
Nov	4036 17	4751	1.18	9655	2.40	5434	1.34	4517	1.12	41⁷	3533	28½	2	43	3511	
Dec	4183 11	4912	1.18	9829	2.35	5356	1.28	4837	1.15	42⁵	4553	30	11	75	3141	
1900 Jany	2340 7	2998	1.28	5301	2.27	2773	1.18	2338	1.00	44'	5280	19½	1	75	241	

Law Moor Fee "A" Block No 5

	Iron Made	Labor	Per ton Iron	Ore	Per ton Iron	Coke	Per ton Iron	Lime	Per ton Iron	Yield	Shipments	Running time days	Stock	
1900 Feb 17	2998 5	4765	1.59	7315	2.44	4047	1.35	3323	1.11	41	2713	25	1713	McIlvain
Mar	3768 14	5174	1.37	8792	2.33	4450	1.18	3975	1.06	42⁸	2836	31	1268	
April	2845 10	4795	1.68	6844	2.40	3293	1.16	3192	1.12	41⁵	1979	28	2134	
May	2701 5	4599	1.71	7196	2.66	3761	1.39	3360	1.24	38	2461	22	2374	1901
June	4387 19	4912	1.12	10444	2.38	5171	1.18	4907	1.12	42	3569	30	3192	
July	4316 2	5060	1.18	10028	2.32	5049	1.17	4696	1.09	43	3736	30½	3771	
Aug	3980 22	5200	1.30	9670	2.43	5041	1.26	4687	1.18	41²	3307	31	4445	
Sept	3873 9	4887	1.26	9546	2.46	5105	1.32	4657	1.20	40⁵	3620	30	4697	
Oct	3766 9	4709	1.44	8114	2.48	4147	1.27	4101	1.25	40²	4643	30½		
Nov	3961 30	4641	1.17	9604	2.48	5041	1.27	4848	1.22	41²	3042	30	4240	
Dec	3864 9	4060	1.25	9729	2.52	5139	1.26	4880	1.26	39⁷	4013	31	4091	
1901 Jany	3470 14	3910	1.23	7696	2.42	4643	1.46	3940	1.24	41'	4348	25	2914	
Feb	1126	2143	1.90	2834	2.52	1753	1.56 tho	1447	1.29	39⁷	920	9	3119	
Mar	4698 18	4686	.99	11476	2.44	6593	2806	5484	1.17	40⁹	4501	31	3317	
April	4246 17	4586	1.08	10768	2.54	6246	2942	5281	1.24	39⁴	3490	28¾	4073	Black 6
May	3883 3	5156	1.32	9693	2.49	5789	2981	5101	1.31	40	3392	30½	4564	1902
June	4137 17	4622	1.11	9735	2.35	5770	2789	4837	1.16	42⁴	3810	30	4837	Bird
July	3899 5	4702	1.20	9482	2.43	5475	2782	4815	1.23	41'	3363	31	5427	
Aug	4490 10	4949	1.10	10247	2.28	6180	2752	4772	1.06	43⁸	4727	30	5238	
Sept	4456 13	4927	1.10	9803	2.19	6135	2753	4974	1.12	45⁴	5250	28¾	4445	
Oct	4848 22	5442	1.12	11060	2.28	6727	2775	5201	1.07	43⁵	6800	30½	2494	
Nov	4240 2	5059	1.19	9659	2.27	5640	2660	4909	1.15	43⁸	5478	29	1255	
Dec	1375 11	1808	1.31	2803	2.03	1782	2591	1418	1.03	49	2216	9½	364	
1902 Jany 7a	877 21	1930	2.19	2384	2.71	1587	3616	1210	1.37	36⁸	834	10	408	
Feb	3597 3	4852	1.34	9188	2.55	5582	3103	4217	1.17	39'	3705	28	300	
Mar	3934	4541	1.15	9620	2.44	5923	3011	4698	1.19	40⁸	3522	31	712	
April	4574	4683	1.02	10875	2.37	6564	2870	5145	1.12	42°	4586	30	700	
May	4176	5204	1.22	9875	2.36	5980	2864	4371	1.04	42²	4717	28	158	190
June	3831 3	5258	1.37	9672	2.52	5895	3077	4340	1.13	39⁶	3856	29	158	
July	4213	5107	1.21	11300	2.68	6890	3184	5127	1.21	37²	4095	31	232	
Aug	4013	4776	1.19	10368	2.58	6305	3142	4995	1.24	38⁷	3512	30	732	
Sept	3697	4775	1.29	10000	2.70	6098	3295	4250	1.14	36⁹	4108	30	321	
Oct	3548	5438	1.53	8796	2.47	5462	3078	3264	.92	40³	3393	27	475	
Nov	3603	5244	1.45	8353	2.32	5896	3273	3990	1.10	43	2897	29	1181	
Dec	3126	4785	1.52	8055	2.56	5950	3794	3636	1.16	38⁹	2810	30	1535	

Covington Ice Blast 4 C Continued from p 54

			Iron Made	Labor	Per Ton Iron	Ore	Per Ton Iron	Coke	Per Ton Iron	Lime	Per Ton Iron	Yield	Shipments	Running time days	Iron in Stock	
1899	Dec		1951 16	83939	2.07	4339	2.22	4023	2.06	2188	1.12	45%	1369	24½	1297	
1900	January		1839 19	3377	1.83	4419	2.40	2731	1.48	2314	1.25	41⁶	2356	19½	780	
	Feby		2332 9	4202	1.80	5370	2.30	3284	1.41	2645	1.13	43⁴	1399	26	1713	
	Mar		2459	4554	1.85	5536	2.17	3719	1.51	2917	1.19	46	1265	27	2907	
	April		2698	4291	1.59	6152	2.28	4250	1.58	3463	1.29	43⁵	3149	30	2456	
	May		2478	4285	1.73	6012	2.42	3898	1.57	3153	1.27	41²	3091	30	3091	
	June		2321	4262	1.83	5293	2.28	3508	1.51	2629	1.13	43⁵	1705	26¾	3707	
	July		314	1200	3.81	604	1.92	397	1.26	300	.96	52¹	609	4½	3412	Ice out July 5th 5C
	Sept		2267 9	3812	1.68	5581	2.46	3554	1.56	2773	1.22	40⁶	1683	26	2328	
	Oct		3060 15	4638	1.51	7565	2.46	4582	1.49	4245	1.38	40⁴	3848	29½		
	Nov		2504	4453	1.77	6402	2.55	3879	1.55	3509	1.40	39¹	3060	28½	1284	
	Dec		1374 2	3238	2.35	3342	2.43	2179	1.58	1741	1.26	41¹	2011	18	702	Bird 7th
1901	Jany		1955 5	4102	2.04	4979	2.54	2991	1.53	2150	1.09	39	1201	23	1401	
	Feb		3075 2	4554	1.48	7537	2.45	4407	1.43	3689	1.20	40⁸	3066	28	1410	
	Mar		3654 13	4863	1.33	9026	2.47	5060	2769	4498	1.23	40⁴	2902	31	2162	
	April		3420 16	4724	1.38	8250	2.41	4602	2691	4169	1.22	41⁴	2264	29⅜	3318	
	May		3548 6	5144	1.45	7979	2.22	4673	2634	3718	1.04	44⁴	2674	28⅞	4192	
	June		3199 9	4714	1.47	7808	2.44	4630	2894	3868	1.20	41	3495	29½	3896	Barnes
	July		3037 6	4880	1.60	7062	2.32	4446	2927	3497	1.15	43	3332	29	3600	"
	Aug		2005 8	4599	2.29	4720	2.35	3412	3403	2461	1.22	42²	2693	23½	2889	"
	Sept		2712 4	4773	1.75	6356	2.34	~~4685~~ 2721	3307	3261	1.20	42⁶	2724	29½	2876	Bird
	Oct		1783 15	3266	1.83	3962	2.22	~~3987~~ 3051		2075	1.16	45⁰	3166	19	1494	
	Nov		out of Blast													
	Blast 6 C - Dec		1653	3354	2.02	4514	2.73	2911	3523	2338	1.41	36⁶	702	18½	1233	
1902	Jany		3104 4	5109	1.58	7933	2.55	~~4573~~ 2946	3920	1.26	39¹	3682	28½	655		
	Feb		2902 3	4467	1.53	7262	2.50	4385	3103	3298	1.13	39⁹	2745	27	811	
	Mar		2882 17	4547	1.57	7933	2.75	4992	3463	2901	1.00	36³	2779	30	914	
	April		3044	4671	1.46	8769	2.88	6053	3976	3708	1.22	34⁰	3088	29	870	
	May		2971	4574	1.53	8064	2.71	5235	3523	3355	1.12	36⁸	3251	29	590	
	June		1470 10	2757	1.87	3900	2.65	2867	3900	1884	1.28	37⁶	1773	17	285	
	July		Idle										1		67	
	Aug		1697 ~~2370~~	2873	1.69	4609	2.71	3549	4182	2302	1.35	36⁸	1016	23	748	
	Sept		2309	3636	1.57	6796	2.94	4957	4293	3200	1.38	33⁹	2459	29	567	
	Oct		2317	3913	1.68	6467	2.79	4760	4109	3123	1.34	35⁸	2509	30	375	
	Nov		2768	3813	1.38	7533	2.72	5602	4046	3823	1.38	36⁷	1856	30	1287	
	Dec		2079	3777	1.81	5808	2.79	4437	4267	2713	1.30	35⁶	2607	27	760	
1903	Jany		2306	3945	1.71	5985	2.59	4522	3921	3110	1.34	38⁵	2217	27	848	Lake Ore used 234 tons
	Feby		1781	3548	1.99	4344	2.43	3324	3112	2182	1.22	41	1964	23	665	
	Mar		2534	4035	1.59	5949	2.34	~~4646~~ 4661	3667	3137	1.23	42⁵	2806	31	394	
	Apl		2445	~~3953~~	1.61	5987	2.45	4416	3612 540	3573	1.46	409	1446	29	1413	
	May		2450	4526	1.84	5899	2.40	~~4600~~ 4625	3698 225	3468	1.42	41.5	1490	31	2393	
	June		2344	4488	1.91	5936	2.53	4569	3898	3209	1.37	~~995~~	2120	30	2647	
	July		2119.	4555.	2.14	5055.	238	4189	3902.	2481	1.17	41.2	1316.	28	2718.	
	Aug		2944.	6711.	1.67	7120.	2.42	6115.	4195.	4000	136	413	1276	4	2605	

Low Moor Blast T.A.

	Iron Made	Labor	per ton	Ore	per ton	Coke	per ton	Lime	per ton	Yield	Running time	Ship'd	Stock
1903 January	2537	4183	1.64	6173	2.43	4820	3799	2916	1.15	419	25	3013	1059
Feb	2885	4257	1.47	7039	2.43	5045	5045	3606	1.25	400	27	2541	1403
Mar	3319	4774	1.43	8012	2.41	5662	3937	3937	1.18	414	31	4315	407
April	3747	4656	1.24	8454	2.26	5598	2988	4009	1.07	443	30	3783	424
May	3661	4899	1.33	8684	2.37	5640	3081	4252	1.16	42.1	30	3329	802
June	3171	4781	1.50	7739	2.44	5404	3408	4270	1.35	40.1	30	2953	1060
July	1767	3669	2.07	4287	2.42	2855	3231	2363	1.33	41.2	20	1822	1089
August													
September													
October													
November													

See new Blast page 59

Low Moor Blast 6 B.

Stock	1903.	Iron Made	Labor	Per Ton	Ore	Per Ton	Coke	Per Ton	Limestone	Per Ton	Quel	Running Time	Shipped	Stock
1059	August	3632.	988.	1.37	9043.	2.49	6084	3350	5056	1.39	40.2	28	3432	1895
1403	September	4186	5210.	1.24	9978.	2.38	5793	2767	5304	1.26	41.9	29	3138	3056
407	October	4950	5306.	1.07	11697.	2.36	7471	3018	5817	1.17	42.4	30	3783	4355
424	November	4899	5102.	1.04	11671.	2.39	6727	2747	5380	1.09	41.1	29	5282.	4104
802	December 1904	4121	4860.	1.17	9849.	2.39	5535	2686	4730	1.14	41.8	26	4724	3611
1060	January	5014	5369.	1.07	11792.	2.35	6971	2780	5991	1.19	42.5	30	5195	3560
1089	February	4877	5090.	1.11	11197.	2.44	7043	3078	6102.	1.33	40.8	28	4341	3924
	March	5767	5539.	.96	13388.	2.32	8061	2795	6599	1.14	43	30	4892.	4824
	April	5861	5549.	.94	12986.	2.21	7936	2707	6755	1.15	45.1	30	4904	5909
	May	4969	5744.	1.15	11888.	2.39	7595	3057	5978	1.20	41.8	29	6029	3234
	June	194	376.	1.93	453.	2.32	1090	1820	240	1.35	42.9	2	x	x

Lone Mont Furnaces. A & B

Blast of a Lone Moor.

	Iron Made	Labor	per ton	Ore	per ton	Coke	per ton	Limestone	per ton	Yield	Time Running	Shipped	Stock
1904.													
June	1967	3289	1.65	5062	2.57	3096	3148	2555	1.29	388	15	3637	1758
July	3991	5750	1.44	9065	2.27	5432	2721	4964	1.24	44.0	29	4183	1568
August	4394	5560	1.26	9937	2.26	6264	2861	5498	1.25	44.2	30	4358	2444
September	4219	4816	1.14	9891	2.34	6386	3027	4803	1.13	426	29	5222	1441
October	3724	4228	1.13	8398	2.25	5347	2871	3751	1.00	443	26	4690	475
* 7 B.						— Blast 7 B. —							
November	4218	4652	1.10	9524	2.26	6736	3193	4926	1.16	442	30	4139	554
December	4802	5105	1.07	10744	2.23	7348	3060	5585	1.16	446	31	5229	1301
1905.													
January	4721	5281	1.12	10603	2.24	7615	3025	5388	1.14	445	30	5494	528
February.	3987	4944	1.24	9267	2.32	6097	2056	4778	1.19				
		2512		6630		5354	385	3263	.819	43	26	3311	1704
March	5467	5585	1.02	12565	2.29	8597	3147	6679	1.21				
		3046		8111		5538	1447	3854	.705	43.5	30	4670	2001
April		3225	1.09	1815		1237	385	2554	.845	45.	18		
				1447		1088	448	723	.157	3.8	6	4135	906
* 10 A. April 10 A.	#76	1123	2.36	3457	7.27	2818	5936	5172	1.07				
				9818.	2.37	7720.	3493	5145.	1.24				
May.	4133	5356.	1.29	22697.	5.73	20899	505	3152	.763	47.	30	3868	1705
				8912.	2.30	6479.	3351	4759	1.23				
June	3867	4999.	1.29	21876.	5.65	16726.	432.	3260.	.843	43.3	29	5787	810
				8097.	2.34	6567.	3769	4852	1.40				
July	3458	4812	1.39	20871.	6.03	19131.	5578	3998	.975	47.7	30	3677	146
August.	1125	1709.	1.51	5783	5.13	4937.	1343	1845	1.64	47.7	10		
				4583	2.33	3527.	3665	2777.	1.44				
* 8.13. August 8.13.	1924	2397	1.24	11221	5.83	9249	4180	2044	1.063	44.9	14	3497	357
				10910.	2.26	7491	3108	5720	1.18				
Septeuber	4820	4754	.98	26636	5.52	21104	4.38	3746	.778	44.1	29	4989	288
				11835.	2.18	8131	3000	6034.	1.11				
October	5421	5141	.95	29126	5.37	21475	3.96	4006	.739	45.8	30	4685	1029
				12004.	2.39	7888	3073	6341	1.26				
Novemeber	5003	5102	1.02	29242.	5.84	21066	4.21	4533	.906	46.6	29	5267	770
				11972	2.39	7836.	3000	6061	1.16				
December.	5224	5039	.96	28710	5.49	20974	4.01	4307	.825	43.6	30	5508	486
1906				11536	2.19	7943	3019	5825	1.10				
January 8-13	5261	5426.	1.03	30381	5.77	23711	4.50	4730	.90	45½	29	5069	678
				11203	2.14	7831	2992	5446	1.04				
February	5235	4957	.953	29641	5.66	22966	4.38	3825	.73	46¾	27¼	4750	1163
				12861	2.26	8555	3010	5347	.96				
March	5684	5468	.962	34964	6.15	25154	4.42	4052	.71	44½	30	5671	1176
				12528	2.15	7886	2711	5243	.85				
Apine	5817	5263	.905	34207	5.88	23895	4.11	4036	.69	46¼	29	6004	989
				11400	2.22	7904	3085	5221	1.01				
May	5123	5245	1.02	30723	6.00	24162	4.72	4074	.79	449	30	5399	713
				10488	2.27	7425	3219	4696	1.01				
June	4613	5843	1.26	28314	6.13	22402	4.85	4344	.94	43⅜	29½	4953	373
				9513	2.22	6978	3261	4304	1.00				
July	4279	6076	1.42	25657	6.00	20272	4.74	3912	.91	44½	29½	3739	1990
		1601	1.82	1461		3338		680	.79				
August 8.13	857	1480	1.72	3300	3.85	2844	3323	1658	1.94	535	7		
August 8.13	1435	2604	1.81	4901	3.42	3187	3763	2338	1.63	40½	11	2783	1499
				9119	2.24	6623	3257	4378	1.07				
September	4066	5724	1.41	27001	6.64	16672	4.10	3988	.98	44¼	29	4373	1192
				10756	2.38	6702	2974	5272	1.16				
October	4506	5907	1.31	31941	7.08	20425	4.53	4280	.95	41½	30½	5246	453
				11230	2.32	7044	2920	5280	1.09				
Novemeber	4824	5770	1.19	33132	6.87	21418	4.44	3926	.81	42⅝	2½	4699	578
				8961	2.28	6102	3115	3966	1.01				
December	3918	5704	1.45	26375	6.73	19786	5.05	3536	.90	43½	27	3852	644
1907				10388	2.33	6981	3144	4500	1.01				
January	4441	6171	1.39	28586	6.43	24113	5.43	4139	.93	42⅔	30½	5498	—
				9384	2.44	6306	3285	4275	1.11				
February	3838	5560	1.45	28124	7.32	21829	5.69	4249	1.10	40°	27¼	3404	434
				10246	2.36	7122	3286	4450	1.02				
March.	4334	6043	1.39	23961	5.53	25399	5.86	3561	.82	42⅔	30¾	4142	626
				9378	2.41	6270	3229	4040	1.04				
April	3883	5953	1.53	28442	7.33	22341	5.75	3306	.85	41¼	28	3874	635
				10907	2.30	7125	3005	4779	1.00				
May	4741	6227	1.31	40809	8.61	21834	4.61	3502	.74	43¼	30½	5500	124
				9008	2.25	6225	3119	4095	1.02				
June	3991	5893	1.48	26567	6.66	21698	5.44	3117	.78	44⅔	28½	4156	303 (overrun)
				9602	2.33	6636	3228	4629	1.12				
July	4111	6005	1.46	32353	7.87	23278	5.66	3887	.95	42⅝	29½	3794	573
				9958	2.44	7065	3464	4824	1.18				
August	4074	5892	1.45	29433	7.23	25851	6.35	4202	1.03	40⅝	30½	3181	1466
				9620	2.44	6663	3385	4748	1.20				
September	3936	5817	1.48	24394	8.74	23280	5.92	4278	1.09	40⅝	30	4538	864
				9316	2.38	6132	3139	4778	1.22				
October	3908	5964	1.53	36677	9.38	22153	5.67	4233	1.08	41⅝	28	3602	1171
				9551	2.41	6399	3240	4822	1.22				
Novemeber	3949	5847	1.48	38218	9.68	22945	5.81	3704	.94	41¼	30	3476	1246
				7808	2.38	5004	3061	3928	1.20				
December	3269	4362	1.34	26475	8.10	17754	5.43	2862	.88	41⅝	24½	2228	2287

See Page 64.

Red figures denote Guanetelus
Black figures, cost.

Blast. T. C. Covington

1906	Drawn Made	Labor	per Ton	Ore	per Ton	Coke	per Ton	Limestone	per Ton	Time Lost	Running Time	Shipped	Stock
January.	883	1642.	1.86	2478 / 6444	2.85 / 729	1962 / 5711	4445 / 646	1103 / 937	1.24 / 1.06	35⁶	11	257	625
February	2912	#3862	1.32	#6831 / 17761	2.34 / 6.09	#4821 / 13772	3311 / 473	#2739 / 2289	.94 / .78	42⁶	27½	1070	2467
March	3219	4001	1.24	7334 / 18918	2.28 / 5.87	5037 / 14310	3129 / 444	3036 / 2121	.94 / .66	43⁷	30	1991	3695
April	3318	3880	1.17	7204 / 24500	2.17 / 6.18	4458 / 14264	2700 / 430	3034 / 2222	.91 / .67	46	29	3138	3875
May	3583	4355	1.21	7628 / 22998	2.12 / 6.42	4695 / 13953	2620 / 390	3032 / 2413	.84 / .67	46⁹	30	4580	2878
June	3211	4498	1.40	6883 / 20187	2.14 / 6.28	4249 / 13101	2659 / 408	2803 / 2228	.87 / .69	46⁶	29½	3597	892
July	2985	4414	1.48	6662 / 20770	2.23 / 6.96	4428 / 13005	2967 / 435	2697 / 2410	.90 / .81	44⁸	30	3251	821
August	3311	4336	1.30	7566 / 23891	2.28 / 7.21	4626 / 13632	2792 / 412	3093 / 3281	.93 / .99	43⁷	30	3967	165
September	3141	4292	1.37	7140 / 22466	2.27 / 7.15	4338 / 13453	2762 / 428	3027 / 2848	.96 / .90	43⁹	29	3372	—
October	3380	4346	1.28	7885 / 25683	2.32 / 7.60	4942 / 14891	2924 / 440	3329 / 2816	.89 / .83	43⁰	30	3625	—
November	3311	3926	1.18	7527 / 24128	2.27 / 7.29	4938 / 14926	2982 / 450	3999 / 2623	.96 / .79	43⁹	29½	3344	—
December	3050	3945	1.29	6867 / 20127	2.25 / 6.60	4677 / 14364	3067 / 471	3764 / 3406	1.23 / 1184	44⁴	29	2663	388
1907													
January	3060	3978	1.30	7182 / 25967	2.34 / 8.48	4860 / 16772	3057 / 548	2927 / 2681	.95 / .87	42⁶	28	2882	934
February	2783	3652	1.31	6214 / 21768	2.23 / 7.82	4078 coal 29 / 13341	2931 / 480	2546 / 2520	.91 / .91	44²	25	3016	701
March.	3281	4079	1.24	7350 / 23961	2.24 / 7.34	4840 coal 105 / 18424	2958 / 561	3025 / 3242	.92 / .99	44⁶	30½	3214	768
April	3204	4049	1.26	7159 / 21698	2.23 / 6.77	4797 / 16193	2995 / 5.05	2934 / 3002	.91 / .94	44⁷	29	3786	185
May	3070	4077	1.33	7009 / 17205	2.28 / 5.61	4731 / 16203	3082 / 5.28	2920 / 3019	.95 / .98	43⁷	30½	2991	663
June	2797	4201	1.50	6420 / 21398	2.29 / 7.65	4403 / 14278	3148 / 5.12	2828 / 2938	1.01 / 1.05	43⁵	29	3216	244
July	2672	4176	1.56	5926 / 17875	2.21 / 6.69	4389 / 15181	3284 / 5.68	2635 / 2772	.98 / 1.03	45⁰	30½	2438	382
August	2234	3901	1.75	5133 / 13427	2.29 / 6.01	4363 / 15012	3906 / 6.72	2490 / 2671	1.11 / 1.20	43⁵	30	1688	928
September	2727	3817	1.40	6185 / 17003	2.26 / 6.24	4413 / 15461	3236 / 5.67	3040 / 3577	1.11 / 1.24	44⁰	28	3179	476
October	3254	4180	1.29	7265 / 21338	2.23 / 6.56	5270 / 18616	3239 / 5.72	3486 / 3755	1.07 / 1.15	44⁷	29	2845	885
November	3280	4058	1.25	7570 / 23840	2.32 / 7.34	5392 / 18676	3242 / 5.75	3827 / 3965	1.17 / 1.22	43²	30	4026	1001
December	1689	2285	1.35	3546 / 11733	2.39 / 6.95	2490 / 8429	2948 / 4991	1577 / 1567	.93 / .93	47⁶	17	1193	1497
1909													
Blast & C.													
January	2608	2983	1.14	6186 / 14209	2.37 / 5.45	4808 / 13672	3687 / 5.24	2953 / 2619	1.13 / 1.00	42¹	27¾	1099	1513
February	3242	3048	.94	7382 / 16905	2.27 / 5.22	3393 / 14125	3393 / 436	3501 / 3209	1.09 / .98	43⁹	27½	1032	4015
March	3793	3377	.89	8742 / 20026	2.30 / 5.28	5932 / 16121	3127 / 425	4663 / 4131	1.22 / 1.09	43³	30	1275	6241
April	3005	3009	1.00	6848 / 15559	2.27 / 5.18	5241 / 14144	3492 / 471	2863 / 2588	.95 / .86	43⁸	29½	1711	7535
May	2995	2953	.99	6669 / 14906	2.22 / 4.98	5450 / 13928	3470 / 465	2724 / 2967	.98 / .99	44²	30½	2711	8319
June	2569	2843	1.10	5864 / 12855	2.28 / 5.00	4813 / 13070	3747 / 509	2758 / 2498	1.07 / .97	43⁸	29	2395	8493
July	2705	3211	1.19	6711 / 13149	2.29 / 4.86	5842 / 14091	3728 / 521	3248 / 2008	1.20 / 1.11	43⁵	30½	3575	7697
Aug	2818	3483	1.24	6571 / 13537	2.33 / 4.80	4870 / 12298	3456 / 4.36	3356 / 3530	1.33 / 1.25	72	42⁸	28½	6510
Sept	2806	3268	1.16	6494 / 13325	2.31 / 4.75	4524 / 12566	3224 / 4.48	3612 / 4045	1.25 / 1.44	43²	29½	3154	2960
Oct	2775	3330	1.20	6465 / 13120	2.33 / 4.73	4713 / 12851	3396 / 463	3720 / 3809	1.34 / 1.37	42²	29½	3394	2341
Nov.	2845	3263	1.15	6438 / 13597	2.24 / 4.78	4907 / 13761	3883 / 4.84	3776 / 3653	1.49 / 1.28	42²	29½	2827	2859
Dec.	2577	3483	1.36	6658 / 13777	2.24 / 5.45	5024 / 13774	3501 / 5.45	3833 / 3406	1.34 / 1.35	39²	30	3024	2362
1910													
Jan	2890	3601	1.25	7122 / 16879	2.46 / 5.84	5182 / 14994	3585 / 5.19	4245 / 3816	1.46 / 1.32	40⁵	30½	1388	4514
Feb.	2624	3363	1.28	6330 / 16042	2.41 / 6.11	4686 / 13084	3571 / 4.99	3804 / 3249	1.44 / 1.24	41⁴	27	1928	5113
March	2871	3621	1.26	6712 / 18466	2.33 / 6.43	4996 / 14048	3480 / 4.89	3948 / 3774	1.37 / 1.31	42²	30½	3317	5094
April	2766	3445	1.25	6645 / 18838	2.40 / 6.81	4957 / 14042	3584 / 5.08	4064 / 4125	1.46 / 1.49	41⁶	30	2044	5872
May	3087	3356	1.09	7239 / 20258	2.34 / 6.56	5267 / 15117	3412 / 4.90	4216 / 3819	1.39 / 1.24	42⁶	30	1187	8338
June	2724	3357	1.23	6699 / 15715	2.45 / 5.77	5114 / 14509	3753 / 5.33	3686 / 3188	1.35 / 1.17	40⁶	29½	1015	10047
July.	2727	3541	1.30	6458 / 15364	2.36 / 5.63	4904 / 14259	3549 / 5.23	3738 / 3795	1.37 / 1.39	42²	29½	2412	9672

Blast 8 C – Covington

1910	Iron made	Labor	Per Ton	Ore	Per Ton	Coke	Per Ton	Limestone	Per Ton	Yield	Running Time	Shipped	Stock
August	2950	3485	1.18	6966 18114	2.36 6.14	5187 13755	3516 4.66	3753 3374	1.27 1.14	44.3	30½	1950	10762
September	308	478	1.55	643 1715	2.08 5.57	480 1369	3120 4.44	380 311	1.23 1.01	47.8	4	1745	9411
October												1021	8528
Nov.												808	7816
Dec												515	7459

Totals { Jan 3 '09 to Sept 4 '10 — Iron made 57635
Ore 135.333 tons — 610 days – 94 tons average
Coke 101.346 " — Yield 42.5% — Labor $1.18
Lime 73.629 "

20' of Top & Newhearth & bosh Put in – Main part of lining used both blasts

1911 Blast 9 C – Covington – Robt A Lipscomb – Supt.

September	482	621	1.291	1277	2.65	1054	4373	707	1.46	37.7	5 17/24	674	2530
October	4255	3407	.800	9481	2.22	5843	2746	5176	1.21	44.8	30 15/24	3923	2862
November	4387	3320	.757	9865	2.24	5907	2692	5319	1.21	44.4	29 15/24	~~3828~~ 4791	2458
December	3982	3473	.872	9276	2.32	5830	2927	5004	1.25	42.9	29 8/24	3572	2868
1912 Jany	4350	3770	.867	10023	2.30	6131	2819	5448	1.25	43.3	30 13/24	3429	3778
Feby	4088	3332	.815	9273	2.268	5751	2813	4912	1.201	44.0	28 15	3930	3936
March	4408	3586	.813	10110	2.293	6535	2965	5539	1.25	43.5	30 1	4068	4276
April	4249	3533	.831	9671	2.276	6296	2963	5440	1.28	43.9	29 14	2973	5552
May	4380	3856	.880	9789	2.235	6162	2813	5271	1.203	44.7	29 16/24	4804	5128
June	3999	3738	.935	9558	2.390	6316	3159	5296	1.324	41.8	28 20	4895	4232
July	3505	3881	1.105	8257	2.355	5837	3330	4510	1.286	42.4	28 11	4385	3352
August	3687	3772	1.024	8917	2.418	5980	3244	4968	1.347	41.3	29 10	4828	2211
Sept	3672	3889	1.059	8978	2.445	5800	3159	5005	1.363	40.9	29 11	3771	
October	3792	3761	.992	9338	2.462	5981	3154	5069	1.336	40.6	29 21	3046	2858
Nov	694	786	1.134	1641	2.351	1040	2998	886	1.277	42.3	5 22	2776	776

Arck
0762
1411
528
816
1459

Supr.
2530
2862
2458
2868
3778
3936
4276
5552
5128
4232
3352
2211

2858
776

all Coal figures in red ink.

Iron Mountain Furnaces "A" & "B"

Blast #9 B.

1908	Iron Made	Labor $	Per Ton	Ore	Per Ton	Coke	Per Ton	Stone	Per Ton	Yield	Running Time days	Shipped	Stock
				$17198	$1.64	$16050	$1.62	3944	$1.55				
February	2589	$2370	.916	4368	2.46	4568	3528	3696	1.42	40.6	20½	2312	1284
March	4935	3624	.735	35565	7.21	23890	4.74	4659	.95				
April	5030	3646	.725	32163	6.39	25503	5.07	4301	.86				
May	5190	3753	.723	12456	2.47	7818	3108	5805	1.15	40.2	29½	5190	1305
June	5195	3738	.719	31903	6.15	23934	4.61	4869	.94				
July	4908	3693	.753	33726	6.49	25077	4.83	4815	.93				
August	5069	3873	.764	13192	2.53	8250	3176	6126	1.17	39.2	29½	5356	1348
September	5351	3860	.721	30607	6.24	24330	4.96	4394	.90				
October	5775	3979	.688	12046	2.45	7863	3204	5714	1.16	40.7	29½	2952	3860
November	5435	3891	.716	31420	6.20	24781	4.89	5001	.99				
December	5156	4008	.777	12771	2.51	7905	3118	6129	1.20	39.6	30¼	4185	4744
1909				33534	6.27	24624	4.60	5587	1.04				
January	4631	4024	.87	13744	2.53	8057	3000	6830	1.27	39.5	29½	4535	5560
February	4951	3447	.69	33847	5.86	25200	4.36	5771	1.00				
March	5433	3630	.67	14245	2.46	8663	3000	7624	1.32	40.5	30½	5275	6060
April	5260	3773	.72	33051	6.08	23832	4.39	5728	1.05				
May	5824	3909	.73	13634	2.50	8265	3041	7178	1.32	39.8	29½	7347	4148
June	4811	3773	.77	34216	6.64	23948	4.65	5579	1.08				
July	4597	3884	.85	13095	2.53	8221	3188	7256	1.40	39.3	30½	6131	3173
August	4764	4415	.93	32976	7.12	22236	4.80	5105	1.10				
September	4814	882	.87	11755	2.53	7691	3321	6744	1.45	39.3	29	5720	2590
October	5031	4345	.86	34678	7.01	22195	4.48	5295	1.07				
November	4946	4264	.86	12181	2.46	7822	3159	7059	1.42	40.6	27½	3526	4015
December	5260	4171	.98	36378	6.70	24646	4.72	5758	1.06				
1910				13828	2.54	8978	3305	7976	1.46	39.2	30¼	3146	6302
January	5433	3630	.67	35184	6.68	24329	4.63	5518	1.05				
February	5260	3773	.72	13743	2.57	8698	3307	7570	1.43	38.8	29½	4562	7000
March	5824	3909	.73	31964	6.00	24150	4.54	5301	1.00				
April	4811	3773	.77	12964	2.43	8668	3256	7302	1.37	41.2	30½	4887	7489
May	4597	3884	.85	26456	5.50	23207	4.82	4804	1.00				
June	4764	4415	.93	12766	2.54	8327	3461	6862	1.42	39.2	29½	3954	8346
July	4597	3884	.85	25437	5.53	22584	4.91	4316	.94				
August	4764	4415	.93	11896	2.58	8203	3568	6272	1.36	38.2	28½	4058	5924
September	4814	882	.87	26289	5.52	23702	4.98	4385	.92				
October	5031	4345	.86	11955	2.50	8350	3535	6399	1.33	39.8	30	3634	10055
November	4946	4264	.86	25026	4.96	4930	4.86	13220	1.30				
December	4261	4171	.98	25999	6.10	21763	5.10	5007	1.17				
1911				11177	2.62	7704	3616	6494	1.52	38.1	29	6107	5357
January	4882	4485	.92	34094	6.98	23672	4.85	5769	1.18				
February	4205	3983	.95	12344	2.52	8203	3373	7755	1.58	39.5	30½	5654	4739
March	4335	4288	.99	30831	7.33	21915	5.21	5146	1.22				
April	4865	4304	.88	10549	2.50	7608	3618	6631	1.57	39.8	27½	3795	5238
May	5198	4391	.85	31151	7.19	22572	5.21	5168	1.19				
June	4493	4346	.97	11205	2.58	7974	3678	6809	1.57	38.6	30½	3623	6067
July	4159	4365	1.05	35713	7.34	24546	5.05	5614	1.15				
August	3919	4174	1.06	12312	2.53	8435	3467	7829	1.50	39.5	29	5695	5237
September	4397	4188	.95	37646	7.24	25238	4.85	5191	1.00				
October	5002	4263	.85	12456	2.39	8710	3351	7015	1.34	41.2	30½	5748	4687
November	3162	4416	1.40	28996	6.45	23775	5.29	5529	1.23				
December	4639	4279	.923	11099	2.39	7968	3435	6745	1.45	41.2	30	4561	11016
1911				27982	7.01	22694	5.79	4793	1.22				
January	4460	4467	1.00	10870	2.43	8073	3620	6585	1.47	41	31	4243	11737
February	4301	3627	.843	27964	6.94	20816	4.84	5204	1.21				
March	5234	3881	.743	31799	7.39	20816	4.84	5204	1.21				
April	4971	3500	.704	10045	2.33	7424	3482	6115	1.42	42.8	28	5520	10013
May	4832	3796	.786	34730	6.64	24256	4.64	4684	.89				
June	3819	3811	.999	11153	2.13	8531	3259	6452	1.23	46.9	29½	6552	8695
July	3807	3753	.986	34776	6.89	24134	4.86	4366	.88				
August	4311	3737	.866	11039	2.22	8316	3035	6737	1.35	45	29	4113	9552
September	3672	3629	.991	33948	7.03	24584	5.09	4973	1.03				
October	1275	1015	.797	10984	2.27	8519	3526	6954	1.43	43.9	30	5599	8785
				28016	7.34	19069	4.99	4339	1.16				
				9015	2.36	6955	3044	5500	1.44	42.2	27	6463	6141
				27159	7.134	23587	6.19	3968	1.03				
				8943	2.34	8264	4341	4825	1.26	42.5	26	5067	4381

Blast 10B. Oct. Coming fire 35 minutes + new hearth blown.

Sept 30 to Oct 10 1911 — 741 days daily average 146 tons yield 1.13

Average labor 1.93 ¢

Low Moor Blast 12 A.

1912	Iron Made	Labor $	Per ton of iron	Tons of Ore	Per ton of iron	Tons of Coke	Per ton of iron	Tons of Limestone	Per ton of iron	Yield	Running Time Days	Shipped	Stock
November	2896	2305	.796	7683	2.65	5424	3745	4315	1.49	37.7	18 23/24	1196	1701
December	4784	4065	.850	11897	2.48	7478	3126	6750	1.41	40.2	26 13/24	5359	1297

1913

Sept 30th 89 to Oct 10th 1911 – 741 days daily average 146 tons yield 41 3/4
Average labor .93 ¢

COSTS OF KAY MOOR COAL - MINE NO. 2.

	Year - 1903		Year - 1904		Year - 1905	
	Amount	Average per Ton Mined	Amount	Average per Ton Mined	Amount	Average per Ton Mined
TO SALARIES	304.85	.033	1,030.00	.052	950.00	.027
" LABOR(MINING)	5,280.50	.576	10,169.95	.511	17,622.45	.504
" YARDAGE	1,345.05	.147	4,123.65	.207	4,648.50	.133
" TIMBER	79.53	.009	619.20	.031	1,039.10	.030
" DRIVERS TRACKS ETC.	889.90	.097	1,885.50	.095	3,141.15	.090
" OUTSIDE WORK, WEIGHING & TIPPING	304.90	.033	476.80	.024	1,120.00	.032
" INSIDE WORK	707.65	.077	1,348.15	.068	1,609.30	.046
" POWER HOUSE & PIPE LINE	354.75	.039	--	--	--	--
" VENTILATION & DRAINAGE	78.45	.009	554.58	.028	599.35	.017
" SHOPS	313.55	.034	381.75	.019	175.72	.005
" PIPE & FITTINGS RAIL & SUPPLIES	2.33	--	213.90	.011	234.47	.006
" EXPLOSIVES	9.95	.001	10.53	-	25.27	.001
" ROYALTY	432.47	.047	898.78	.045		
" TAXES	109.79	.012	283.07	.014	230.05	.006
" USE OF TEAMS	520.00	.057	1,350.00	.068	2,160.00	.062
" MACHY. & EQUIPT.W.VA.	150.00	.016	425.00	.021	875.00	.025
" GENERAL EXPENSES	18.21	.002	81.43	.004	71.20	.002
" INSURANCE	30.00	.003	139.20	.006	139.20	.004
" RESERVE FOR SINKING FUND					1,531.51	.044
"						
TOTAL COST	$10,930.98	1.192	$23,991.49	1.204	$36,172.27	1.034
PRODUCTION	9,171 tons		19,915 tons		34,971 tons	

Loose Item

COSTS OF KAY MOOR COAL - MINE NO.2.

	Year - 1906		Year - 1907		Year - 1908	
	Amount	Average per Ton Mined	Amount	Average per Ton Mined	Amount	Average per Ton Mined
TO SALARIES	1,589.30	.038	1,200.00	.037	1,557.33	.036
" LABOR (MINING)	21,034.30	.504	18,153.70	.561	22.829.35	.524
" YARDAGE	7,261.35	.174	4,739.70	.147	6,630.85	.152
" TIMBER	1,740.06	.042	846.06	.026	1,415.75	.033
" DRIVERS TRACKS ETC.	4,268.90	.102	4,291.55	.133	6,708.25	.154
" OUTSIDE WORK WEIGHING & TIPPING	1,959.20	.047	1,482.40	.046	1,826.84	.042
" INSIDE WORK	2,479.55	.059	1,593.55	.049	1,392.85	.032
" VENTIALTION & DRAINAGE	657.24	.016	855.90	.027	970.16	.022
" SHOPS	17.70	--	379.85	.012	366.35	.009
" PIPE FITTINGS, RAIL & SUPPLIES	331.10	.008	294.45	.009	485.44	.011
" EXPLOSIVES	6.49	--	--	--	--	--
" RESERVE FOR SINKING FUND	1,857.05	.044	1,468.13	.045	1,952.80	.045
" TAXES	275.00	.007	300.00	.009	300.00	.007
" USE OF TEAMS & OTHER CHARGES	2,085.00	.050	2,955.03	.091	3,890.81	.089
" MACHY. & EQUIPMENT W. VA.	962.20	.023	1,056.00	.033	1,092.00	.025
" GENERAL EXPENSES	881.28	.021	332.45	.010	261.02	.006
" INSURANCE	139.20	.003	139.20	.004	139.20	.003
" POWER HOUSE & PIPE LINES			50.00	.002	225.00	.005
" BAD & DOUBTFUL DEBTS WRITTEN OFF					194.30	.004
TOTAL COST	$47,544.92	1.138	$40,137.97	1.241	$52,238.30	1.199
PRODUCTION	41,760		32,348		43,571	

Loose Item

COSTS OF KAY MOOR COAL - MINE NO.2.

	Year - 1909 Amount	Year - 1909 Average per Ton Mined	Year - 1910 Amount	Year - 1910 Average per Ton Mined
TO SALARIES	2,138.02	.041	2,556.26	.052
" LABOR (MINING)	25,501.32	.484	25,349.95	.520
" YARDAGE	8,599.55	.163	6,459.80	.133
" TIMBER	1,279.34	.024	1,992.14	.041
" DRIVERS TRACKS ETC.	7,552.65	.143	7,090.53	.146
" OUTSIDE WORK-WEIGHING & TIPPING	2,906.38	.055	3,127.98	.064
" INSIDE WORK	1,736.30	.033	1,580.20	.032
" POWER HOUSE & PIPE LINE	1,503.21	.028	1,585.75	.032
" VENTILATION & DRAINAGE	2,458.49	.047	3,025.87	.062
" SHOPS	431.22	.008	516.10	.011
" PIPE & FITTING, RAIL & SUPPLIES	1,045.45	.020	3,533.69	.073
" RESERVE FOR SINKING FUND	2,301.35	.044	2,058.40	.042
" TAXES	305.80	.006	429.72	.009
" USE OF TEAMS & OTHER CHARGES	3,959.36	.075	4,560.15	.093
" MACHINERY & EQUIPMENT- West Va.	1,500.00	.028	4,038.00	.083
" GENERAL EXPENSE	322.59	.006	682.81	.014
" INSURANCE	139.20	.003	139.20	.003
" BAD & DOUBTFUL DEBTS WRITTEN OFF			483.85	.010
TOTAL COST	$63,680.23	1.208	$69,210.40	1.420
PRODUCTION	52,729 Tons		48,731 Tons	

Loose Item

Loose Item

LIEBER'S CODE USED.

GENERAL OFFICE

THE LOW MOOR IRON COMPANY OF VIRGINIA

E. C. MEANS, PRESIDENT AND GENERAL MANAGER

LOW MOOR, VA.,

Loose Item

Low Moor Blast 12 A.

	1912	Iron Made	Labor $	Per ton of iron	Tons of Ore	Per ton of iron	Tons of Coke	Per ton of iron	Tons of Limestone	Per ton of iron	Yield	Running Time Days	Shipped	Stock
	November	2896	2305	.796	7683	2.65	5424	3745	4315	1.49	37.7	18 23/24	1196	1701
	December	4784	4065	.850	11897	2.48	7478	3126	6750	1.41	40.2	26 13	5359	1297
1913	January	5578	4590	.823	13666	2.45	8884	3185	7519	1.35	40.8	30 4	3906	2969
	February	5293	4060	.767	12443	2.35	7894	2983	6814	1.28	42.5	27 2	5289	2973
	March	5634	4570	.811	13378	2.37	8785	3118	7149	1.269	42.1	29 13	3942	4666
	April	5950	4535	.762	13398	2.25	8349	2806	7251	1.218	44.4	29 2	4514	6102
	May	5332	4539	.851	12250	2.29	8457	3172	6710	1.258	43.5	29 10	5504	5929
	June	4452	4498	1.011	10680	2.399	8018	3602	5996	1.347	41.7	29 1	4336	6044
	July	3948	4514	1.144	9876	2.501	7416	3757	5763	1.459	39.9	27 1	2806	7185
	Aug	3189	2878	.902	7228	2.26	4936	3096	4282	1.34	44.1	20	4199	6175

Fenwick Mine.

1902.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Mined	29521 320	22781 1780	30994 440	34032 2080	52851 1500	54801 1000	50553 300	57368 860	45569 960	38489 980	33858 800	20051 1500
Salaries	.070	.0915	.0621	.0568	.0268	.0316	.036	.031	.0307	.036	.041	.069
Labor	.862	1.0083	1.0046	.9387	.7334	.6562	.793	.781	.7777	.931	.927	.905
Explosives	.021	.2219	.0393	.0315	.0241	.0266	.102	.016	.0237	.076	.044	.009
Fuel	.020	.0325	.0581	.094	.0174	.0014				.001		.001
Supplies	.078	.1723	.1909	.0365	.0463	.0189	.046	.028	.0019	.111	.179	.064
Timber &c.			.0007		.0568	.0301	.082	.042	.0886	.066	.132	.063
C&O. Ore Frt	.318	.3506	.3153	.3058	.3155	.3201	.330	.348	.3170	.34	.34	.343
R.R. " "	.151	.15	.15	.1588	.1562	.15	.150	.150	.15	.15	.15	.149
Teams	.088	.1316	.0968	.0882	.0567	.0547	.055	.052	.0658	.078	.088	.149
Analysis	.001	.0013	.0021	.0016	.0009	.002	.001	.001	.0009	.002	.001	.001
Transportation				.0119	.0291	.0037		.0000	.0008			.001
Telephone Service	.0006	.0008	.0006	.0005	.0003	.0003	.0003	.0003	.0004	.0005	.0006	.0009
Mach. & Equip.	.03	.0397	.029	.0264	.0170	.0164	.018	.016	.0197	.023	.026	.044
Taxes	.015	.0197	.0145	.0132	.0085	.0082	.009	.008	.0099	.011	.013	.022
Insurance												
Royalty	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
Cost Mining	1.7546	2.3202	2.064	1.8639	1.5890	1.4202	1.7223	1.5733	1.5871	1.9255	2.0416	1.9209
Washing												
Labor	.178	.1967	.1877	.1818	.1446	.1183	.142	.141	.1656	.165	.181	.209
Supplies	.028	.1122	.0353	.0547	.0792	.0323	.003	.058	.0628	.005	.145	.121
Coal	.037	.0468	.1164	.065	.0566	.0025		.02		.054	.065	.127
Repairs												
Settling Dam												.105
Cost Washing	.243	.3557	.3394	.3015	.2804	.1531	1.45	.219	.2284	.224	.391	.562
Total Cost.	$1.9976	$2.6759	$2.4037	$2.1658	$1.8719	$1.5738	$1.869	$1.7923	$1.816	$2.153	$2.4246	$2.491

Fenwick Mine

Nov.	Dec.	1903.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
388 800	2005 1500	Mined	1909 40	2736 1760	2861 1760	2917 320	3134 140	3666 440	2524	2707	2374	3482	4329	2643
.041	.069	Salaries	.073	.055	.053	.032	.049	.041	.074	.063	.072	.049	.037	.076
.427	.905	Labor	1.528	1.166	1.042	1.072	1.031	.902	1.002	1.326	1.672	1.063	.809	.662
.044	.009	Explosives	.087	.044	.046	.037	.218	.073	.113	.069	.058	.059	.043	.004
	.001	Fuel		.039	.009	.025	.056	.009	.011	.026	.023	.012	.011	.046
.179	.064	Supplies	.181	.146	.069	.068	.053	.032	.106	.095	.137	.058	.029	.08
.132	.063	Timbering	.075	.077	.041	.035	.025	.034	.073	.065	.069	.039	.019	.054
.34	.343	6 & O Ore Frt	.359	.395	.287	.341	.412	.385	.342	.341	.434	.37	.322	.342
.15	.149	RR " "	.150	.15	.151	.15	.15	.15	.15	.146	.15	.15	.15	.150
.088	.149	Teams	.167	.11	.112	.109	.102	.087	.127	.118	.152	.106	.088	.083
.001	.001	Analysis	.001	.002	.001	.001	.002	.001	.0006	.0009	.0006			
	.001	Transportation		.001	.0002	.005				.001			.002	
.0006	.0009	Telephone Service	.001	.0007	.0007	.0006	.0006	.0005	.0008	.0007	.0008			
.026	.044	Mach. & Equip.	.052	.036	.035	.034	.032	.027	.040	.037	.042	.026	.023	.038
.013	.022	Taxes	.023	.016	.015	.015	.014	.012	.018	.017	.019	.013	.01	.017
		Insurance	.001	.0007	.0007	.0006	.0006	.0005	.0008	.0007	.0008			
.10	.10	Royalty	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
2.0416	1.9209	Cost Mining	2.768	2.3384	1.9626	2.0452	2.2552	1.8240	2.458	2.4063	2.9302	2.045	1.643	1.655
		Washing												
.181	.209	Labor	.270	.219	.165	.151	.166	.169	.130	.233	.275	.165	.087	.104
.145	.121	Supplies	.079	.013	.009	.042	.01	.009	.013	.006	.013	.005	.002	.005
.065	.127	Coal	.020	.072	.076	.099	.112	.021	.036	.064	.05	.012	.012	.036
	.105	Repairs	.003	.001	.002	.065	.005	.062	.004	.001	.082	.013		.002
.391	.562	Cost Washing	.372	.305	.252	.357	.293	.261	.353	.304	.42	.195	.101	.147
2.4246	$2.491	Total Cost	$3.145	$2.645	$2.217	$2.404	$2.551	$2.085	$2.811	$2.715	$3.35	$2.242	$1.746	$1.802

Fenwick Mine

1904.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Produced	2726.	3026.	3677.	3494.	3473.	4965.	4896.	5957.	5396.	6956.	7164.	4423.
Salaries	.072	.059	.049	.052	.054	.036	.037	.031	.038	.029	.029	.047
Labor	.927	.819	.829	.864	1.002	.848	1.037	.922	.868	.598	.535	.604
Explosives	.055	.021	.186	.067	.184	.051	.032	.134	.039	.023	.054	.037
Fuel	.065	.004	.009	.019	.025	.045	.025	.039	.056	.043	.045	.053
Supplies	.146	.097	.075	.135	.043	.020	.070	.059	.069	.075	.024	.069
Timber &c.	.025	.057	.057	.053	.042	.044	.045	.055	.045	.054	.037	.029
C&O. Ore Frt.	.314	.325	.326	.324	.329	.319	.328	.331	.325	.292	.276	.249
R.R. " "	.15	.25	.25	.250	.250	.250	.250	.250	.250	.250	.25	.250
Teams	.142	.124	.098	.103	.103	.081	.103	.084	.094	.073	.069	.113
Analysis								.001	.000	.000	.000	.000
Transportation	.001	.037	.007	.013	.233	.000	.024	.018	.000	.000	.000	.000
Telephone Service	.001	.001	.001	.000	.001	.000	.000	.000	.000	.000	.000	.000
Mach. and Equip	.036	.033	.027	.028	.029	.020	.021	.017	.019	.014	.014	.023
Taxes	.016	.015	.012	.013	.013	.009	.009	.007	.008	.006	.006	.000
Insurance												
Royalty	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
Stripping									.094			
Cost Mining	2.05	1.942	2.026	2.022	2.408	1.823	2.081	2.012	2.005	1.557	1.439	1.577
Washing												
Labor	.133	.116	.114	.136	.143	.103	.125	.118	.116	.101	.098	.121
Supplies	.004	.012	.004	.009	.004	.020	.009	.007	.009	.011	.007	.006
Coal	.027	.057	.065	.000	.044	.019	.029	.029	.089	.021	.019	.053
Repairs	.024		.049	.008	.000	.000	.009	.028	.037	.016	.005	.048
Cost Washing	.188	.185	.232	.153	.191	.142	.172	.182	.251	.149	.129	.228
Total Cost	$2.236	$2.13	$2.259	$2.176	$2.598	$1.968	$2.253	$2.194	$2.256	1.706	1.568	1.805
N.B. Stripping cost ~~to Octo 1st 1904 Rumney and Fenwick~~ now charged off										.287	.418	.553
									Total	$1.993	$1.986	$2.358

Fenwick Mine

Nov.	Dec.	1905	Jan.	Feb.	Mar.	April	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.
7164.	4423.	Produced.	2591.	2730	3149	5023	5997	5370	3602	6975	5319	5910	5398	4522
029	047	Salaries	.079	075	065	.038	037	038	057	029	039	035	039	087
535	604	Labor	1.257	1133	1225	764	738	861	1174	706	813	739	813	737
054	037	Explosives	.10	057	061	047	037	068	131	042	024	106	.024	049
045	053	Fuel	.052	005	205	057	074	046	025	029	016	041	036	071
024	069	Supplies	123	098	063	142	097	034	242	035	043	061	050	058
037	029	Timber &c.	.024	014	057	043	016	013	052	016	012	025	039	053
276	249	C & O. Ore Frt	293	322	284	311	296	297	296	308	292	300	300	294
25	250	R. R. " "	265	250	250	250	250	250	250	250	250	250	250	250
069	113	Teams	189	183	159	099	070	079	117	060	079	071	078	091
000	000	Analysis	001	.	-	.	.	.	.	.	.	.	.	.
000	000	Transportation			001	.	.	.	.	.	.	001	007	011
000	000	Telephone Service	001	001	001	.	.	.	001	.	.	.	.	001
014	023	Mach'y & Equip.	039	037	039	025	020	023	034	018	024	021	023	028
006	000	Taxes	017	016	014	009	008	009	013	006	008	007	.	008
		Insurance	000	-	-	.	.	.	.	.	.	.	.	.
10	10	Royalty	10	100	100	100	100	100	100	100	100	100	100	100
1439	1577	Cost Mining	2543	2286	2524	1885	1738	1818	2492	1600	1700	1787	1759	1822
		Washing.												
098	121	Labor	233	201	219	146	137	154	202	113	127	126	127	121
007	006	Supplies	021	010	010	014	007	005	003	001	003	001	006	003
019	053	Coal	015	050	097	047	040	083	029	048	.	006	037	023
005	048	Repairs	016	087	021	054	018	081	054	004	019	024	047	056
129	228	Cost Washing	285	348	347	261	197	323	288	166	149	157	212	203
1568	1806	Total Cost	$2828	2634	2871	2146	1935	2120	2767	1762	1849	1914	1971	2022
418	553													
$1.956	$2.358													

Fenwick Mine.

1906	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Produced	5581	5536	6165	7223	8059	7408	7734	7867	7282	6466	8835	5688
Salaries	043	046	043	036	032	035	034	035	038	043	030	046
Labor	938	928	983	1049	.956	.914	.897	951	1123	1187	841	875
Explosives	124	059	119	049	145	030	020	028	039	035	029	031
Fuel	098	068	078	044	079	065	033	054	056	057	041	129
Supplies	107	094	180	085	069	083	109	020	086	069	034	094
Timber &c	032	027	022	111	034	043	019	019	012	015	037	060
C&O Ore. Frt	301	300	304	295	315	338	296	328	317	300	309	315
Rail Road	250	250	250	250	250	250	250	250	250	250	250	250
Team &c	074	078	079	047	042	044	042	041	045	049	037	057
Analysis	.000	-	-	.	.	.	.	.	.	.	.	
General Expense Transportation	035	015	015	007	003	019	017	009	007	009	009	008
Telephone Service	000	005	-	-	.	.	.	.	.	.	-	.
Mach & Equip	022	022	020	018	016	017	018	018	019	023	016	026
Taxes	009	008	007	006	006	006	006	006	006	007	005	.
Insurance	000	-	.	.	.	.	.	.	.	.	.	.
Royalty	100	100	100	100	100	100	100	100	100	100	100	100
											Cr. 010	
Cost Mining	2.132	2.000	2.200	2097	2047	1.944	1841	1.889	2098	2144	1728	1991
Washing												
Labor	.138	128	114	104	117	124	102	113	111	105	081	
Supplies	020	028	.	011	007	011	.	007	005	008	007	
Coal	062	054	030	039	036	013	057	026	028	035	033	
Repairs	010	064	092	063	094	113	036	065	052	044	015	
Cost Washing	.230	266	236	217	254	261	195	211	196	192	136	259
Total Cost	2.346	2266	2436	2314	2.301	2205	2036	2.100	2294	2336	1864	2.250

Fernwick Mine

1907	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Produced	4776	2980	3847	3062	1937	1784	3187	3670	3742	4371	3940	3571
Salaries	.055	089	069	.087	128	.119	.069	.060	.057	.051	.056	.044
Labor	1545	1729	1500	1527	2.341	2.406	1.918	1.791	1.659	1.638	2.087	1.388
Explosives	049	044	046	.077	.059	.063	058	.048	.051	.068	.046	.174
Fuel	088	150	146	.006	.135	.144		.051	.046	.132	.126	.034
Supplies	137	204	219	.253	.145	234	.334	.186	351	.255	321	.103
Timber &c	085	068	113	.136	.186	.171	048	.117	.096	.069	.182	.110
Oil & Waste	314	327	341	.325	.325	x	x	x	x	x	x	x
Rail Road	250	250	264	250	250	250	250	250	250	250	250	250
Teams	068	091	054	086	151	130	110	116	105	140	102	154
Analysis	x	x	x	x	x	x	x	x	x	x	x	x
General Expense	039	038	024	071	057	163	006	027	021	036	016	001
Tel. Service	x	001	001	001	002	002	002	002	002	002	002	002
Mach'y Equip.	038	061	047	058	103	101	031	028	027	020	026	028
Taxes	009	015	011	015	026	025	015	013	012	010	012	013
Insurance	x	x	x	x	001	001	000	x	x	001	x	x
Royalty	100	100	100	100	100	100	100	100	100	100	100	100
New Shaft										218	001	~~111~~
Cost Mining	2.777	3.162	2.934	2.992	4.795	4.578	3.181	3.200	3.048	2.990	3.327	2.401
Washing												
Labor	182	219	155	176	306	259	168	193	179	181	201	141
Supplies		024	x	001	005	035	002	012	092	002	007	002
Coal	030	096	049	019	160	088	057	077	060	109	024	075
Repairs	043	192	074	122	026	088	012	040	081	068	129	217
Cost Washing	255	531	278	318	495	470	239	322	412	360	361	435
Total Cost	3032	3693	3212	3310	5290	5048	3420	3522	3460	3350	3688	2836

Fenwick Mine

1908	Jan	Feb	mar	Apr	may	June	July	Aug	Sept	Oct	Nov.	Dec.
Produced	1219	2909	2617	3564	3978	3376	3699	4904	4618	5047	3603	3287
Salaries	.250	.127	.136	.087	.071	.077	.077	.047	.049	.057	.063	.069
Labor	2.342	1.145	1.485	1.146	1.049	1.236	1.253	1.098	1.147	1.059	1.362	1.357
Explosives	.024	.091	.031	.054	.158	.062	.073	.100	.054	.053	.069	.063
Fuse	.009	.089	.242	.117	.056	.199	.242	.067	.078	.046	.099	.238
Supplies	.151	.125	.066	.129	.085	.072	.067	.083	.043	.109	.184	.101
Timber	.104	.099	.197	.187	.128	.169	.217	.067	.119	.236	.241	.110
Co. Exp.	x	x	x	x	x	x	x	x	x	x	x	x
Railroad	.250	.250	.250	.249	.250	.250	.250	.250	.250	.250	.250	.250
Teams	.167	.186	.208	.139	.145	.125	.109	.083	.089	.085	.119	.131
Analysis	x	.001	.003	.001	.001	.001	.001	x	x	.001	x	x
Genl. Exp.	.005	.005	x	.001	.001	.003	.042	.005	x	.004	.005	.009
Taxes Home	.005	.002	.002	.002	.002	.002	.002	.002	.003	.002	.003	.004
Mchy + Equip	.082	.034	.038	.029	.026	.029	.027	.020	.021	.020	.028	.031
Interest	.037	.016	.017	.013	.012	.014	.013	.009	.009	.009	.012	.014
Insurance	.002	x	x	x	x	x	x	x	x	x	x	.000
Royalty	.100	.100	.100	.099	.100	.100	.100	.100	.100	.100	.100	.100
Cost Mining	3.810	2.270	2.775	2.253	2.084	2.339	2.473	1.931	1.992	2.025	2.535	2.477
Washing												
Labor	.303	.147	.186	.148	.147	.175	.154	.129	.141	.156	.176	.169
Supplies	.018	.022	.006	.005	.007	.036	x	x	.011	.004	.010	.026
Coal	x	.044	.074	.049	.017	.104	.075	.009	.036	.044	.036	.043
Repairs	.188	.019	.058	.018	.013	.019	.030	.064	.025	.015	.013	.019
Cost Washing	.509	.232	.324	.221	.184	.334	.259	.202	.213	.219	.235	.257
Total Cost	4.319	2.502	3.099	2.474	2.268	2.673	2.732	2.133	2.205	2.244	2.770	2.734

Fenwick Mine

1909	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Produced	3159	3010	4743	3966	5777	8013	5985	6193	4900	5046	4857	3736
Salaries	.075	.069	.046	.056	.040	.027	.041	.039	.050	.049	.050	.067
Labor	1.764	1.881	1.439	1.703	1.107	.548	1.097	1.179	1.333	1.253	1.277	1.384
Expensive	.249	.034	.067	.229	.188	.107	163	.153	.089	.145	.095	.032
Fuel	.207	.063	.244	.269	.175	.052	.176	.088	.171	.060	.087	.261
Supplies	.228	.168	.113	.079	.075	.039	103	.084	.207	.089	.103	.117
Timber	.049	.099	.116	.134	.078	.074	.064	.084	.026	.097	.214	.170
F.O. St.	x	x	x	.024	.000	x	x	x	x	x	x	x
Rail Road	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250
Teams	.136	.151	.099	.124	.080	.058	.080	.080	.096	.095	.098	.173
Analysis	x	.001	x	x	x	x	x	x	x	x	x	.007
Mine Expense	.016	.006	.002	.002	.004	.001	.003	.003	.007	.009	.017	.004
Telephone	.005	.004	.002	.004	.004	.001	.001	.001	.001	.001	.001	.003
Mach'y & Equip.	.197	.101	.065	.081	.053	.038	.051	.049	.065	.063	.066	.085
Taxes	.014	.015	.009	.012	.008	.005	.008	.007	.009	.009	.009	.015
Insurance	x	x	x	x	x	x	x	x	x	x	x	x
Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100
Cost Mining	3.390	2.912	2.552	3.067	2.110	1.545	2.138	2.062	2.895	2.716	2.363	2.563
Washing												
Labor	.402	.230	.141	.166	.179	.095	.176	.179	.140	.153	.182	.186
Supplies	.041	.011	.028	.023	.005	.002	.004	.000	.002	.009	.008	.035
Fuel	.093	.022	.042	.037	.055	.016	.013	.006	.040	.026	.024	.036
Repairs	.086	.027	.005	.049	.015	.005	.019	.069	.017	.091	.080	.003
Cost Washing	.622	.290	.216	.285	.204	.118	.162	.204	.194	.279	.294	.260
Total Cost	3.812	3.232	2.768	3.352	2.314	1.663	2.295	2.266	2.089	2.995	2.657	2.823

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Dolly Ann Mine

1902	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Produced	1007 230	981 160	1374 1240	1994 40	1613 1380	1928 1380	2073 1480	2145 800	2414 80	2626 1260	1745 1600	1452 120
Salaries	.131	.1016	.1198	.0824	.102	.0894	.040	.032	.0265	.066	.016	.117
Labor	1.650	1.9206	1.4448	1.2591	1.2977	1.2296	1.106	1.145	.9966	.967	1.208	.992
Explosives	.034	.1973	.0425	.0509	.1268	.0509	.069	.069	.0869	.067	.119	.123
Fuel		.0237	.0264			.0355	.001			.011	.020	.049
Supplies	.316	.2332	.0586	.0647	.1452	.1251	.084	.086	.0519	.079	.060	.054
Timber &c	.27				.2168	.0256	.103	.0521	.0333	.104	.223	.146
L.T.O. Ore Frt.												.017
R.R. " "	.15	.287	.1799	.15	.15	.15	.15	.0485	.1415	.152	.154	.151
Teams	.337	.3964	.3054	.2001	.2478	.1762	.176	.147	.1243	.114	.172	.207
Analysis	.003	.004	.0043	.0036	.0046	.0018	.0002	.002	.0029	.002	.003	.004
Transportation	.0005	.0257	.0153	.0066	.0024	.0003		.001				
Telephone Service	.001	.002	.0014	.001	.0012	.001	.001	.001	.0008	.0008	.001	.001
Mach. & Equip.	.039	.0407	.029	.02	.0247	.0207	.019	.018	.0165	.015	.022	.027
Taxes	.044	.0458	.0327	.0225	.0278	.0233	.022	.021	.0186	.017	.025	.032
Insurance												
Royalty	.10	.0887	.0999	.10	.10	.10	.10	.10	.10	.10	.10	.10
Cost Mining	3.0755	3.3469	2.3703	1.9609	2.4470	1.9994	1.8702	1.722	1.5996	1.6928	2.123	2.020
Washing												
Labor	.295	.2927	.1533	.0996	.099	.0826	.134	.160	.1501	.132	.141	.184
Supplies	.064	.0806	.045	.0093	.0347	.0150	.034	.030	.0312	.013	.032	.046
Coal	.06	.0826	.0687	.0225	.0207		.010	.029	.0164	.01	.036	.029
Repairs												
Cost Washing	.419	.4559	.2670	.1414	.1544	.0976	.178	.219	.1977	.155	.209	.259
Total Cost	$3.48	$3.791	$2.6379	$2.101	$2.60	$2.0977	$2.081	$1.942	$1.7973	$1.851	$2.332	$2.280

Dolly Ann Mine.

Nov.	Dec.	1903	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Octo	Nov.	Dec.
1745 (1600)	1452 (1200)	Produced	2064 (1740)	1673 (1740)	2100 (1700)	2312 (1980)	1969 (1740)	2136 (1860)	1633	2462	2469	2164	2568	2443
.016	.117	Salaries	.032	.029	.032	.028	.034	.031	.053	.035	.034	.04	.031	.032
1.208	992	Labor	1.114	1.248	1.206	.976	1.107	.988	1.237	.95	.988	1.241	1.062	.782
.119	.123	Explosives	.071	.083	.086	.066	.086	.083	.116	.054	.074	.101	.047	.147
.020	.049	Fuel	.016	.054			.052	.026			.056	.01	.003	
.060	.054	Supplies	.084	.072	.072	.049	.009	.024	.042	.063	.087	.088	.05	.10
.223	.146	Timber &c.	.111	.094	.102	.042	.047	.033	.121	.055	.028	.024	.072	.044
	.017	C & O. Ore Frt.						.003	.194	.048	.087	.109	.186	.237
.154	.151	R.R. " "	.144	.189	.150	.143	.15	.15	.15	.15	.15	.15	.15	.15
.172	.207	Teams	.15	.179	.152	.139	.142	.126	.151	.089	.073	.12	.102	.107
.003	.004	Analysis	.002	.002	.002	.002	.003	.006	.006	.0004	.0004		.001	
		Transportation		.034			.008			.0006	.03			
.001	.001	Telephone Service	.0009	.001	.0009	.0008	.001	.0009	.001	.0008	.0008			
.022	.027	Mach. & Equip.	.019	.024	.019	.017	.021	.019	.024	.016	.016	.018	.016	.017
.025	.032	Taxes	.019	.027	.021	.019	.023	.021	.028	.018	.018	.021	.018	.018
		Insurance	.0009	.001	.0009	.0008	.001	.0009	.001	.0008	.0008			
.10	.10	Royalty	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
2.123	2.020	Cost Mining	1.8638	2.102	1.9638	1.5826	1.784	1.6118	2.223	1.5806	1.7130	2.025	1.838	1.734
		Washing												
.141	.184	Labor	.261	.241	.189	.149	.126	.113	.119	.126	.109	.138	.157	.123
.032	.046	Supplies	.115	.001	.005	.01	.011	.001	.005	.005	.004	.004	.009	.006
.036	.029	Coal	.006	.052	.019	.011			.01	.007	.016	.014	.024	.012
		Repairs	.112	.246	.022	.002	.089	.042	.024	.017	.023	.034	.038	.019
.209	.259	Cost Washing	.494	.54	.205	.172	.196	.156	.158	.155	.152	.19	.228	.16
$2332	$2280	Total Cost	$2377	$2642	$2169	$1755	$198	$1769	$2381	$1738	$1867	$2218	$2067	$1896

Dolly Ann Mine.

1904	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct	Nov	Dec.
Produced	2182	3211	2613	2212	2096	2207	2038	2693	2643	2619	2994	2612
Salaries	.047	.026	.032	.038	.040	.034	.037	.024	.038	.039	.033	.039
Labor	1.116	.879	.996	1.048	1.153	1.107	1.232	1.158	1.126	1.130	1.018	.832
Explosives	.067	.069	.064	.069	.132	.054	.093	.068	.055	.064	.065	.064
Fuel	.015	.022	.056		.037	.009	.011	.046	.012	.012	.048	⅛
Supplies	.062	.045	.112	.091	.144	.066	.082	.119	.071	.059	.050	.064
Timber &c	.189	.047	.079	.055	.061	.016	.124	.074	.087	.129	.168	.086
6 & 0 on Trk.	.20	.204	.203	.200	.204	.199	.200	.198	.200	.204	.194	.20
R.R. " "	.15	.25	.25	.250	.250	.250	.250	.250	.250	.25	.249	.25
Teams	.157	.105	.115	.109	.143	.109	.114	.097	.106	.105	.094	.106
Analysis				.001	.001	.000	.000	.000	.001	.005	.006	.013
Transportation				.009	.000	.000	.013	.001	.000	.000	.001	⅛
Telephone Service				.000	.000	.000	.000	.000	.000	.000	.000	.000
Mach'y & Equip.	.018	.012	.015	.018	.019	.019	.019	.014	.015	.015	.014	.015
Taxes	.022	.014	.017	.020	.022	.021	.022	.016	.017	.017	.015	.005
Insurance												
Royalty	.10	.10	.10	.100	.100	.10	.10	.10	.10	.10	.10	.10
Cost Mining	2.143	1.803	2.039	2.008	2.296	1.983	2.301	2.165	2.078	2.132	2.040	1.776
Washing												
Labor	.168	.127	.121	.129	.189	.116	.163	.112	.100	.097	.092	.088
Supplies	.005	.006	.021	.018	.010	.002	.023	.005	.004	.002	.002	.004
Coal	.019	.023			.019	.012	.033	.015	.019	.008	.036	.007
Repairs	.022	.031	.035	.014	.025	.074	.037	.038	.009	.002	.004	.046
Cost Washing	.214	.187	.177	.161	.243	.204	.256	.17	.132	.109	.134	.145
Total Cost	$2.36	$1.993	$2.219	$2.170	$2.539	$2.187	$2.557	$2.338	$2.210	$2.241	$2.174	$1.921

Dolly Ann Mine

Nov	Dec.	1905	Jan.	Feb.	Mar.	April	May	June	July	Aug	Sept	Oct.	Nov.	Dec.
2994	2612	Produced	2168.	2796	3133	2666	2963	2743	2191	2520	2071	2405	2821	1935
.033	.039	Salaries	.046	.035	021	031	028	035	043	037	046	039	034	036
1.018	832	Labor	1.289	1.012	1054	1116	1.060	1.109	1.131	1.173	1248	1218	1.053	1.114
.065	.064	Explosives	07	.052	069	073	056	078	064	047	077	116	.011	059
.048	½	Fuel	.049	.042	038	049	045	043	047	059	006	058	042	044
.050	.064	Supplies	.123	.061	071	052	080	049	072	055	070	042	044	089
.158	086	Timbers	.122	.096	074	027	074	179	192	167	161	113	064	027
.194	20	6 & O Ore Frt.	208	198	195	203	202	196	205	151	200	200	163	187
.249	25	R.R. " "	.250	.250	251	250	250	250	250	250	250	250	250	250
.094	.106	Teams	126	.092	076	057	073	021	082	065	074	054	070	114
.006	.013	Analysis	.000	000				001	001		001	001		
.001	∧	Transportation	000					002				1	003	016
.000	.000	Telephone Service	000					001	001	.001	002	001	001	007
.014	.015	Mach'y Equip.	.019	014	024	026	025	028	034	029	036	032	027	038
.015	005	Taxes	.021	016	014	017	015	017	021	018	022	019		018
		Insurance	.001						001		001			001
.10	.10	Royalty	.10	.100	100	100	100	100	100	100	100	100	100	100
2045	1776	Cost Mining	2424	1968	1997	2001	2008	2109	2344	2155	2289	2243	1856	2069
		Washing												
.092	.088	Labor	.157	115	100	110	109	125	137	137	141	124	111	114
.0022	.004	Supplies	.008	003	003		004	002	004	004	003	003	003	009
.036	.007	Coal	.022	045	006	015	022	026	033	022	005	026	010	043
.004	.046	Repairs	.107	058	024	038	069	024	103	071	023	009	026	048
134	145	Cost Washing	292	.221	133	163	204	177	272	234	175	172	200	214
2179	$1.921	Total Cost	$2716	2189	2.130	2164	2.212	2.286	2.616	2.389	2464	2.415	2.056	2.283

Jolly Ann Mine.

1906	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Produced	2864	2822	3142	2762	2946	2288	1933	2694	2521	2894	2845	1749
Salaries	073	075	070	078	073	094	111	086	092	080	078	127
Labor	1.112	1100	1169	1299	1.215	1.418	1708	1397	1481	1.398	1175	1338
Explosives	084	071	088	120	160	067	143	100	146	108	118	098
Fuel	018	043	051	053	019	.	039	.	127	127	047	143
Supplies	139	038	027	069	088	149	082	085	056	098	143	014
Timber &c	059	060	059	107	099	077	149	097	047	001	059	223
C&O. Ore Fit	128	[illegible]	.	.	.	.		.				
Rail Road	250	250	250	250	250	250	250	250	250	250	250	250
Teams	068	072	070	049	056	056	069	050	055	039	041	067
Analysis	000	-	-	.		.	.			.	.	
General Expense Transportation	010	011	017	008	017	036	009	037	026	010	016	026
Telephone Service	001	001	001	001	001	001	002	001	002	001	001	003
Machinery & Equip.	027	027	025	027	026	033	027	035	037	032	034	054
Taxes.	015	016	014	016	015	019	047	017	018	016	016	-
Insurance	000	-			.	001	001	001	.	.	.	001
Royalty	100	100	100	100	100	100	100	100	100	100	100	100
Cost Mining	2.084	1864	1941	2.177	2.119	2301	2738	2256	2237	2258	2078	2.444
Washing												
Labor	.115	105	091	085	098	121	155	138	140			108
Supplies	000	.	.	002	.	.	.	.	.			018
Coal	018	007	051	-	017	023		056	015			027
Repairs	027	093	082	004	083	006	148		041			049
Cost Washing	160	215	224	0.83	198	150	303	194	196	.244	218	202
Total Cost.	2.244	2079	2165	2.260	2.317	2451	3041	2.450	2633	2.491	2283	2.646

Dolly Ann Mine

Nov	Dec	1907	Jan	Feb.	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2845	1749	Produced	2341	2427	2913	2454	2221	2222	2930	3147	2995	3185	3320	2045
078	127	Salaries	.096	.091	076	.086	.073	.073	.056	043	.058	.055	.053	.047
1175	1338	Labor	1.610	1.445	1.403	1400	1517	1.692	1.396	1301	1.473	1.508	1459	1.298
118	098	Explosives	158	134	139	113	145	166	143	116	122	091	099	104
047	143	Fuel	200	063	123	087	160	148	091	088	131	075	083	100
143	014	Supplies	187	103	137	146	122	077	096	136	099	115	081	486
059	223	Timber	036	046	064	049	142	159	113	107	129	123	108	136
		C & C. on Fir	x	x	x	x	x	x	x	x	x	x	x	x
250	250	Rail Road	250	250	250	250	250	250	250	170	250	250	250	250
041	067	Teams	044	062	052	061	070	068	084	088	096	090	080	158
		Analysis	x	x	x	x	x	001	x	x	x	x	x	x
016	026	General Expense	036	019	034	052	062	075	018	042	017	041	027	x
001	003	Tel. Service	001	002	001	001	001	002	002	001	001	001	001	002
034	054	Mach & Equip	046	044	036	043	048	048	045	041	044	041	039	064
016	-	Taxes	019	018	016	019	020	020	015	014	015	014	014	022
	001	Insurance	x	001	x	x	001	001	x	001	001	001	x	001
100	100	Royalty	100	100	100	100	100	100	100	100	100	100	100	100
2078	2444	Cost Mining	2.783	2.278	2431	2447	2711	2.880	2409	2248	2536	2505	2394	2762
		Washing												
	108	Labor	177	153	147	181	196	195	142	119	143	106	100	115
	018	Supplies	000	x	005	x	000	001	005	000	000	x	008	x
	027	Coal	024	052	025	025	022	032	034	008	009	005	005	004
	049	Repairs	159	029	034	061	034	064	077	058	022	080	030	043
218	202	Cost Washing	360	234	211	267	253	292	270	185	174	141	153	162
2282	2646	Total Cost	3143	2612	2642	2714	2964	3172	2679	2433	2710	2646	2547	2924

See Page 150.

Rumsey Mine

1902	Jan	Feb	Mar	Apl	May	June	July	Aug	Sep.	Oct	Nov.	Dec
Produced	1020 200	818 1850	1798 280	2933 2030	3486 160	2978 1980	3156 160	2856 260	2801 500	2368 1650	1862 920	977 100
Salaries	.073	.2242	.061	.0426	.0357	.0418	.039	.082	.0321	.048	.064	.129
Labor	1.164	1.8617	1.1203	.7658	.7962	.7714	.960	.874	.7243	.887	.747	.709
Explosives	.047	.5397	.0035	.0246	.0891		.185	.019	.0003	.012		
Fuel			.0787	.0957								
Supplies	.004	.0528	.0245	.0088	.0320	.0397	.015	.036	.0157		.012	
Timber &c		.2992			.0824		.016			.0008		.106
C V O Ore Cut					.0045	.0084						.025
R. R. " "	.294	.2428	.2836	.2749	.2977	.3343	.318	.203	.2306	.264	.284	.289
Teams	.264	.5944	.1668	.1023	.0867	.1022	.108	.112	.1142	.135	.172	.327
Analysis	.005	.0038	.0027	.0025	.0021	.0018	.001	.001	.0023	.003	.003	.004
Transportation	.076	.0993			.0033		.011	.001				
Telephone Source	.001	.0038	.0011	.0006	.0005	.0006	.001	.001	.0007	.0008	.001	.002
Mach'y Equip.	.044	.0867	.0260	.0153	.0129	.0151	.014	.016	.0160	.018	.024	.046
Taxes	.049	.0963	.0248	.017	.0143	.0167	.015	.018	.0178	.021	.026	.062
Insurance												
Royalty	.10	.0944	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
Cost Mining	2.111	4.1996	1.89	1.4501	1.5574	1.432	1.753	1.433	1.264	1.4896	1.403	1.759
Washing.												
Labor	.801	.4224	.1745	.1345	.1505	.1457	.180	.157	.1239	.157	.126	.210
Supplies	.110	.1164	.0512	.0125	.0028	.0244	.046	.03	.0258	.016	.029	.053
Coal	.103	.1194	.0781	.0439	.0314		.014	.028	.0136	.013	.033	.032
Repairs												
Cost Washing	.714	.6585	.3038	.1909	.2347	.1701	.24	.215	.1633	.186	.188	.298
Total cost	$2.62	$4.8588	$2.1943	$1.641	$1.7845	$1.6026	$1.994	$1.648	$1.4277	$1.678	$1.592	$2.059

Ramsey Mine

Nov.	Dec	1903	Jan.	Feb.	Mar.	Apl	May	June	July	Aug	Sept.	Oct.	Nov.	Dec
1862 920	977 100	Produced	59 340	174 340	823 1780	1096 1760	2122 620	2001 140	1618	2186	1786	1466	243	140
.064	.129	Salaries	2135	.724	.182	.118	.061	.062	.038	.068	.082	.10	.145	7
.747	.709	Labor	9.309	2.612	.727	.589	.541	.528	.743	.398	.553	.625	.244	
		Explosives	.016	.281	.466	.052	.017		.015	.014				
		Fuel				.121								
.012		Supplies			.029		.019	.022		.017	.019	.03		
	.106	Timberve	.792	.538	.127			.026	.014		.007			
	.025	680 Ore Fit						.015	.202	.045	.075	.059	.154	
.284	.259	A.R. " "	272	276	.273	.269	.224	.329	.269	.199	.241	.247	.124	
.172	.327	Teams	4395	1.724	.350	.279	.138	.122	.14	.08	.101	.109	.184	
.003	.004	Analysis	.008	.003	.004	.005	.003	.006	.004	.0005	.0003			
		Transportation	.035				.009			.002	.023	.002	.009	
.001	.002	Telephone Service	.034	.012	.002	.001	.0009	.0009	.001	.0009	.001	.001	.008	
.024	.046	Wash Repairs	.764	.259	.054	.042	.021	.022	.028	.021	.025	.031	.185	
.026	.062	Taxes	.847	.287	.062	.045	.024	.024	.031	.023	.028	.034	.205	
		Insurance	.017	.005	.001	.0009	.0004	.0004	.0006	.0005	.0006		.004	
.10	.10	Royalty	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	
1.403	1.759	Cost Mining	18.744	6.821	2.387	1.6189	1.1613	1.1473	1.5826	.99	1.2559	1.338	1.365	
		Washing												
.126	.213	Labor	.414	.228	.198	.178	.112	.134	.172	.103	.13	.135	.063	
.029	.053	Supplies	.185	.001	.007	.012	.008	.001	.006	.004	.005	.004	.004	
.033	.032	Coal	.01	.044	.023	.012			.012	.006	.019	.013	.01	
		Repairs	.179	.230	.028	.002	.052	.046	.027	.014	.028	.034	.016	
.188	.298	Cost Washing	.786	.508	.256	.204	.172	.181	.217	.127	.182	.186	.093	
1.592 $2.057		Total Cost	$1929	$733	$2613	$182	$1333	$1342	$180	$1.117	$1438	$1.524	$146	

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Rumsey Mine

1904.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec	1905 Jan	Feb	March	Apl
Produced	Sale	Sale	Sale	956.	925	976.	764	535	587	324	907	808
Salaries				.118	.146	138	.183	.252	.230	.417	.149	157
Labor				.764	.708	.635	.731	.659	.728	1.335	.713	.500
Explosives				.001	.037	.027	.013	.027	.038	-	.037	-
Fuel				.000	.000	.037	.126	.002	.000	129	.013	.052
Supplies				.057	.118	.009	.021	.028	.072	.010	.001	.179
Timber &c.				.002	.000	.000	.022	.009	.000	.008	.007	.003
Stripping .744												
C.P.O. Ore Frt.				.000	.000	.000	.000	.000	.198	.235	.187	.216
R.R. " "				.236	.210	.213	.191	.201	.221	.253	.231	.278
Teams				.145	.129	.120	.154	.216	.197	.364	.133	.158
Analysis				.000	.000	.001	.000	.000	.001	.001	-	-
Transportation				.000	.000	.002	.000	.000	.000	-	-	.062
Telephone Service				.002	.002	.002	.003	.004	.003	.006	.007	.002
Mach'y & Equip.				.047	.048	.046	.059	.084	.077	.139	.049	.055
Taxes				.037	.043	.036	.045	.021	.059	.108	.039	.043
Insurance				.001	.001	.001	.001	.003	.002	.004	.001	.001
Royalty				.100	.100	.10	.10	.10	.10	.100	.100	.100
Cost Mining				1.505	2.336	1.316	1.605	1.53	1.86	3.109	1.558	1.751
Washing												
Labor				.158	.132	.127	.117	.109	.156	.225	.182	.184
Supplies				.008	.004	.003	.003	.005	.008	.007	.003	-
Coal				.021	.024	.011	.046	.009	.02	.088	.006	.022
Repairs				.053	.013	.003	.004	.056	.106	.114	.076	.053
Cost Washing				.240	.173	.144	.17	.179	.29	.434	.217	.229
Total Cost				$1.745	$2.509	1.460	1.775	$1.709	$2.14	3.543	1.775	1.980
N.B. Stripping	Cost ~~to Oct. 1st 1904~~ now assumed					.753	.962					
					Total	$2.213	$2.737					

Rumsey Mine.

Mar	Apl	1905	May	June	July	Augt.	Sep.	Oct.	Nov.	Dec
902	808	Produced	829	718	491	203	362	660	427	140
149	152	Salaries	148	188	275	665	373	205	316	786
713	500	Labor	558	631	619	2603	1332	533	736	1405
032	-	Explosives	013	014	011	103		038	035	365
013	052	Fuel		120						
001	179	Supplies	004	016	017	036	010	032	027	042
002	003	Timbers	002							
187	216	C&O. Ore Frt.	200	184	089		200	199	140	200
231	228	R.R. " "	224	179	253	266	221	172	192	171
133	158	Teams	215	083	245	591	332	182	188	572
-	-	Analysis			002		001			
	062	Transportation	032				005			
002	002	Telephone Service	002	003	004	009	005	002	004	014
049	055	Mach'y & Equip.	054	063	067	163	091	050	077	236
039	043	Taxes	042	049	071	172	097	052		199
001	001	Insurance	001	001	002	005	003	001	002	008
100	100	Royalty	100	100	100	100	100	100	100	100
558	1751	Cost Mining	1595	1599	1721	4714	2750	1505	1763	2970
		Washing								
182	184	Labor	089	113	157	096	167	103	076	080
003	-	Supplies	002	002	004	003	004	003	002	006
006	022	Coal	018	024	038	015	006	020	007	029
076	053	Repairs	056	021	118	050	028	007	052	034
217	229	Cost Washing	165	160	317	164	205	133	137	149
775	1980	Total Cost	1760	1760	2033	4878	2955	1638	1900	3119

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Stack Mine

1902.	Jan	Feby	Mar.	April	May	June	July	Aug.	Sept.	Octo	Nov	Dec	19
Produced	997 1420	797 202	1161 1960	1627 1220	1597 807	1783 180	2424 1440	1728 2100	1002 420	870 1100	811 1260	746 261	Prod
Salaries	.035	.0989	.0605	.0797	.064	.0724	.057	.097	.1174	.164	.172	.214	Sala
Labor	170	1.8802	2.0402	1.522	1.8823	1.5486	1.156	1.534	2.0442	1.807	1.371	1.358	Lab
Explosives	.073	.0672	.13	.1524	.0892	.0012	.079	.081	.1313	.111	.254	.078	Explo
Fuel	.095	.0751	.0940	.0787	.0531	.0966		.071	.0510	.092	.315	.234	Fuel
Supplies	.178	.1126	.2041	.2242	.1221	.1208	.091	.127	.0986	.314	.092	.228	Supp
Timber &c.			.1053	.1924	.0581	.0279		.044	.0034	.347	.134	.134	Tim
C.W.O. ore Frt	.203	.2083	.2288	.2093	.243	.3399	.249	.260	.2541	.270	.249	.266	C.W.O.
R.R. " "	.051	.0513	.0516	.0503	.0507	.0530	.049	.045	.0479	.047	.043	.044	R.R.
Teams	.12	.2534	.1734	.1351	.1388	.1269	.11	.140	.2395	.275	.295	.323	Tea
Analysis	.004	.005	.0043	.0036	.0028	.0014	.003	.002	.0019	.002	.003	.003	Ana
Transportation	.013	.0773		.0102	.0145	.003		.001	.0021	.001			Trans
Telephone Service	.002	.0025	.0017	.0012	.0012	.0011	.001	.001	.0019	.002	.002	.003	Telep
Mach'y & Equip.	.05	.0626	.0430	.0306	.0313	.0288	.020	.029	.0499	.057	.062	.067	Mac
Taxes	.035	.0438	.0301	.0215	.0281	.0201	.014	.020	.0349	.042	.043	.047	Taxe
Insurance													Insu
Royalty	.099	.10	.0999	.10	.10	.10	.10	.100	.1000	.100	.100	.100	Roy
Cost Mining	2.658	3.0382	3.2669	2.8112	2.8792	2.5427	1.929	2.552	3.1765	3.631	3.135	3.088	Cost
Washing													Was
Labor	.383	.4016	.2721	.1922	.3347	.3244	.18	.201	.2344	.190	.210	.174	Lab
Supplies	.146	.0183	.1944	.01	.0665	.0549	.016	.034	.2140	.144	.041	.185	Sup
Coal	.138	.2067	.1153	.0875	.0548	.014		.107	.1437	.081	.052	.102	Coa
Repairs													Repa
Cost Washing	.667	.6266	.5818	.2897	.456	.3933	.196	.342	.5921	.415	.303	.461	Cost
Total Cost	$3.325	$3.642	$3.8487	$3.1009	$3.3352	$2.9360	$2.125	$2.894	$3.7686	$4.046	$3.438	$3.549	Total

Stack Mine

Nov	Dec	1903	Jan	Feby	Mar.	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
811 1260	746 260	Produced	363 1820	464 340	737 820	495 100	232 420	378 2080	339	38	667	777	128	
.172	.214	Salaries	.286	.218	.193	.286	.609	.373	.476	.424	.242	.208	.945	
1.371	1.355	Labor	2.699	1.848	1.424	1.807	2.622	1.327	1.375	1.013	1.222	1.244	3.449	
.254	.071	Explosives	.146	.034	.076	.049	.042	.116	.043	.051	.051	.039	.306	
.315	.234	Fuel	.147	.191	.201	1.129	.456							
.092	.228	Supplies	.509	.259	.166	.005	.319	.072	.019	.026	.119	.246	.382	
.134	.124	Timber &c.	.023	.049	.387	.086	.295	.091	.121	.167	.219	.223	1.228	
.249	.268	C. & O. Ore Frt.	.509	.234	.269	.221	.165	.307	.287	.271	.231	.215	.203	
.043	.044	R.R. " "	.059	.031	.043	.044	.044	.045	.044	.042	.042	.044	.039	
.295	.323	Teams	.566	.430	.298	.323	.689	.422	.407	.373	.112	.138	.694	
.003	.004	Analysis	.004	.005	.004	.005	.003	.004	.004	.003	.001	.003	.004	
		Transportation					.121		.008	.022	.008			
.002	.003	Telephone Service	.005	.004	.002	.004	.008	.005	.006	.005	.003	.003	.015	
.062	.064	Mach'y & Equip	.142	.108	.068	.101	.215	.132	.147	.131	.075	.064	.391	
.043	.047	Taxes	.099	.076	.047	.071	.151	.092	.103	.092	.052	.045	.273	
		Insurance	.005	.004	.003	.004	.008	.005	.006	.005	.003	.003	.015	
.100	.100	Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	
3.135	3.083	Cost Mining	5.299	3.591	3.261	4.235	5.836	3.091	3.146	2.725	2.474	2.575	8.094	
		Washing												
.210	.174	Labor	.295	.326	.191	.239	2.00	.190	.190	.156	.258	.214	.185	
.041	.185	Supplies	.025	.030	.016	.288	.0005	.023	.002	.001	.026	.003	.002	
.052	.102	Coal	.240	.296	.186	.366					.094	.030		
		Repairs	.525	.072	.059	.082	.176	.005	.040	.020	.009	.226	.296	
.303	.461	Cost Washing	1.085	.724	.451	.975	.3765	.218	.232	.177	.384	.473	.483	
3.438	3.549	Total Cost	$6384	$4315	$3.712	$521	$62125	$3309	$3378	$2902	$2858	$3048	$8577	

1

Stack Mine

1906	July	Aug	Sep.	Oct	Nov	Dec	1907 Jan	Feb.	Mar
Produced	162	718	817	870	1191	879	7.01	1660	1378
Salaries	617	302	266	249	174	236	2.96	125	150
Labor	6.072	2254	1.921	1.94	1.508	1.494	2.91	1.209	1.462
Explosives	037	251	007	222	012	276	007	002	076
Fuel	213	128	094	636	508	176	531	.256	106
Supplies	313	074	139	124	119	045	361	115	048
Timber &c.	624	014	038	269	163	062	125	.060	059
C&O. Ore Frt	166	200	200	200	200	200	257	.192	220
R.R. " "							x	x	x
Teams	741	167	147	138	102	137	171	072	087
Analysis	007	090	~~035~~				x	x	x
General Expense Transportation	120	152	~~0~~035	024	049	.041	075	039	033
Telephone Service	012	002	002	002	001	002	002	001	001
Mach & Equip	333	075	066	062	045	.062	086	036	043
Taxes	216	049	043	040	029		049	021	025
Insurance	015	003	002	002	002	003	003	001	001
Royalty	100	100	100	100	100	100	.100	100	100
Cost Mining	9.585	3.683	3.060	4014	3.012	2834	4.975	2229	2.411
Washing									
Labor	2513	621	527	.538	396	423	741	314	347
Supplies			004	024	009	009	020	001	
Coal		195				098		x	
Repairs	647	021	009	059	041	078	005	030	.085
Cost Washing	3.160	.837	.540	626	.446	607	756	345	432
Total Cost	12.745	4.520	3.600	4.640	3.458	3.441	5.731	2.574	2.843

Stack Mine

	1907 April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1908 Jan	Feb.	Mar.
Produced	771	1237	902	1036	1463	1402	1581	1777	995	642	1298	1513
Salaries	.283	.127	.174	.180	.124	.237	.219	.102	.218	.359	.188	.211
Labor	2.280	1.840	2.134	2.597	1.923	1.860	2.026	2.040	2.116	1.809	1.357	1.332
Explosives	.183	.005	.112	.128	.080	.080	.051	.113	.161	.018	.124	.193
Fuel	.819	.277	.102	.555	.205	.247	.521	.168	.164	.210	.353	.381
Supplies	.319	.069	.256	.226	.334	.117	.145	.180	.280	.246	.094	.234
Timber &c	.245	.180	.207	.128	.170	.199	.353	.249	.115	.135	.087	.094
C.&O. Ore Frt	×	.225	×	×	×	×	×	×	×	×	×	×
R.R. " "	×	×	×	×	×	×	×	×	×	.136	.099	.091
Teams	.144	.098	.133	.199	.155	.131	.139	.177	.264	.401	.206	.073
Analysis	×	×	×	×	×	×	×	×	×	×	×	.004
Gen Expense Transportation	.226	.038	.204	.051	.050	.046	.037	.145	.037	.016	.011	.002
Telephone Service	.002	.001	.002	.005	.003	.004	.003	.003	.005	.008	.004	.003
Mach & Equip	.077	.049	.066	.096	.068	.071	.064	.056	.100	.171	.085	.073
Taxes	.046	.029	.039	.034	.024	.024	.022	.019	.036	.054	.027	.023
Insurance	.003	.001	.002	.002	.001	.002	.001	.001	.002	.004	.002	.001
Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100
Cost Mining	4.952	3.039	3.531	4.199	3.237	3.118	3.681	3.353	3.524	3.735	2.737	2.915
Washing												
Labor	.541	.381	.520	.496	.344	.380	.360	.304	.393	.285	.309	.303
Supplies	.009	×	.001	.158	.027	.060	.036	.007	.022	.018	.003	.041
Coal	—	×	×	×	×	×	×	.047	.000	.126	.202	.136
Repairs	.072	.003	.071	.032	.057	.148	.098	.003	.031	.799	.088	.103
Cost Washing	.622	.385	.592	.686	.428	.588	.404	.361	.446	1.228	.602	.583
Total Cost	5.574	3.424	4.123	4.885	3.665	3.706	4.175	3.714	3.970	4.963	3.339	3.498

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Low Moor Mine

1902	Jan.	Feb.	Mar.	April	May	June	July	Aug	Sept.	Octo.	Nov.	Dec.
Produced	890 800	1030 900	1263 1980	1337 1120	1774 140	1718 1480	1493 1980	1526 160	2068 1580	1797 1020	1577 220	1175 800
Salaries	.195	.1242	.1066	.1066	.075	.1115	.070	.056	.0241	.037	.048	.183
Labor	3.064	2.3241	2.7162	2.6091	2.452	2.4237	2.498	2.327	2.0138	2.500	2.154	2.374
Explosives	.142	.0709	.0465	.1012	.099	.1085	.178	.149	.1134	.140	.117	.088
Fuel	x	x	x	x	.191	.3094	.237	.180	.2260	.227	.332	.530
Supplies	.855	.3515	.4726	.3650	.369	.4011	.239	.201	.1511	.022	.018	.104
Timber &c.	.203	.177	.3322	.2497	.238	.1702	.189	.233	.2531	.366	.204	.327
C. & O. Ore Frt.	x	x	x	x	x	x	x	x	x	x	x	x
R.R. " "	.149	.15	.1499	.1499	.15	.15	.150	.150	.1500	.150	.150	.150
Teams	.247	.2523	.2056	.2092	.158	.1628	.178	.153	.1063	.112	.127	.170
Analysis	.008	.0082	.009	.0075	.007	.004	.006	.004	.0058	.007	.004	.005
Transportation	.003	.0211	.0247	.0144	x	.0028	x	.001	x	.019	x	x
Telephone Service	.002	.0019	.0015	.0014	.001	.0011	.001	.001	.0009	.001	.001	.001
Mach'ry & Equip.	.084	.0727	.0593	.056	.042	.0436	.050	.049	.0362	.041	.047	.064
Taxes	.05	.0436	.0356	.0336	.025	.0261	.030	.029	.0217	.025	.028	.038
Insurance	x	x	x	x	x	x	x	x	x	x	x	x
Royalty	.10	.10	.0999	.10	.10	.10	.100	.100	.1000	.100	.100	.100
Coal	.208	.2201	.2396	.2125	x	x	x	x	x	x	x	x
Pd. S.R. Wickline Entry			.0988									
Cost Mining	5.31	3.9176	4.5980	4.2161	3.907	4.0148	3.926	3.633	3.2024	3.747	3.330	4.134
Washing												
Labor	.353	.2873	.2521	.2498	.284	.1987	.237	.229	.2089	.209	.215	.214
Supplies	.054	.0854	.0671	.0114	.018	.0804	.014	.030	.0039	.021	x	.048
Coal	.112	.1143	.1101	.0254	.019	.0989	x	x	x	.001	x	x
Cost Washing	.519	.487	.4293	.2866	.321	.378	.251	.259	.2128	.231	.215	.262
Total Cost	$5.829	$4.4046	$5.0273	$4.5027	$4.228	$4.3928	$4.177	$3.892	$3.4152	$3.978	$3.538 (3.538)	$4.383

Low Moor Mine

Nov.	Dec.	1903.	Jan	Feb	Mar	April	May	June	July	Aug.	Sep.	Octo.	Nov.	Dec.
1577 220	1175 800	Produced	762 1920	990 1900	780 300	1089 140	796 1060	787 1520	807.	892.	909.	1181.	212.	
.048	.183	Salaries	.109	.075	.107	.077	.105	.107	.107	.096	.095	.074	.254	
2.154	2.374	Labor	2.966	2.000	2.581	1.852	1.909	1.962	1.664	1.391	1.497	1.295	1.526	
.117	.088	Explosives	.070	.111	.172	.102	.085	.167	.141	.113	.061	.097	x	
.332	.530	Fuel	.287	.210	.731	.119	.276	.272	.183	.168	.114	.103	.069	
.018	.104	Supplies	.170	.123	.204	.125	.109	.151	x	.079	.122	.119	.160	
.204	.327	Timber &c.	.146	.411	.078	.064	.059	.148	.020	.087	.139	.110	.018	
x	x	C.&O. Ore Frt.	x	x	x	x	x	x	x	x	x	x	x	
.150	.150	R.R. " "	.150	.149	.151	.150	.150	.150	.150	.150	.150	.150	.150	
.127	.170	Teams	.316	.221	.203	.143	.146	.087	.012	.075	.097	.055	.186	
.004	.005	Analysis	.015	.046	.007	.005	.005	.004	.007	.004	.002	.002	.002	
x	x	Transportation	.015	x	.0005	x	.016	x	x	x	x	x	x	
.001	.001	Telephone Service	.003	.002	.002	.001	.002	.002	.002	.002	.002	.002	.009	
.047	.064	Mach. & Equip.	.065	.050	.064	.046	.064	.064	.062	.056	.055	.042	.236	
.028	.038	Taxes	.058	.046	.057	.042	.056	.057	.056	.050	.050	.038	.212	
x	x	Insurance	.003	.002	.002	.001	.002	.002	.002	.002	.002	.002	.009	
.100	.100	Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	
x	x													
3.330	4.134	Cost Mining	4.473	3.546	4.459	2.827	3.084	3.273	2.506	2.373	2.486	2.189	2.931	
		Washing												
.215	.214	Labor	.331	.239	.248	.143	.169	1.24	.133	.107	.104	.095	.071	
x	.048	Supplies	.008	x	.003	.002	.004	x	.003	.005	x	x	x	
x	x	Coal	.318	x	.029	x	x	x	x	.078	x	x	x	
		Repairs	x	x	.015	.004	.0008	.001	x	.0005	x	x	x	
.215	.262	Cost Washing	.657	.239	.295	.149	.1738	.125	.136	.1905	.104	.095	.071	
$3.538 (3.538)	$4.383	Total Cost	$5.130	$3.785	$4.759	$2.976	$3.2578	$3.398	$2.642	$2.5635	$2.590	$2.284	$3.002	

To folio 104

		Outside accts	Engine No 1 Repairs	Engine No 2 Repairs	Engine No 3 Repairs	Engine No 4 Repairs	Engine No 5 Repairs	Engine No 7 Repairs	Engine No 8 Repairs	Engine No 9 Repairs	Car Repairs	Caboose Repairs	Passenger Car Repairs	Foreign Car Repairs	Outside Station
June	1891	404.90	24	81	651	68	22		7	21	471	178	14	36	29
July		479.13	3		2167	30	13		28	45	325	158	3	15	32
Aug		850.29		8	874	10	5		26	32	431	151	37	3	31
Sept		1055.51		40	781	34	2		18	17	468	106	20	7	34
Oct		544.12	4	29	469	7	51	8	63	47	145	248	16	74	56
Nov		695.84	13	25	261	29	12		209	23	178	25	60	5	
Dec		305.84	1	17	19	30	31		238	6	169	47		24	
			45	20 10	57 22 2	208	136	8	588	191	218 7	91 5	150	164	
Jany	1892	385.83	4	29	102	17	34		186	159	283	12	111	91	
Feby		941.15		2	20	36	216		16	11	214	29	29	16	
Mar		415.30		1	9	46	88		16	37	188	24	17	77	
April		215.76		6	9	24	7		25	20	63	28	12	12	27
May		407.60	1	4	22	32	12		28	25	144	32	14	21	21
June		326.18	1	6	22	10	17		64	62	98	41	188	19	34
July		539.14		24	11	9	55	4547	562	24	81	82	131	23	35
Aug		617.86		17	37	205	44	227	49	24	334	77	322	42	32
Sept		1643.63		146	3	296	14	45	15	25	112	28	115	16	31
Oct		2464.75	1	23	111	17	11	22	183	98	396	19	124	30	34
Nov		875.43		19	211	21	11	32	37	364	263	44	10	15	32
Dec		1271.67	52	130	23	73	40	46	20	270	180	60	15	16	30
				60 7	58 0 2	0 6 2	6 8 5	49 1 9	17 2 0	13 1 0					
Jany	1893	637.05		194	39	38	35	26	21	35	183	80	22	57	29
Feby		1220.78		99	29	10	6	25	43	6	162	347	3	129	31
Mar		799.23		27	3	226	61	72	162	24		103	11	50	33
April		1174.83		7	4	128	81	11	15	97	323	38	7	13	8
May		759.39		7	96	82	40	45	24	30	63	36	12	38	64
June		442.08		15	57	37	101	18	110	39	125	30	91	26	167
July		327.28		13	13	29	33	15	60	45	287	35	12	2	31
Aug		198.01		16	6	19	105	31	10	29	203	152	110	20	30
Sept		436.40		55			1	15	31	6	33	17	135	14	
Oct		196.53		197	1	6	2	15	20	58	230	6	99	12	22
Nov		274.96		14	19	15	38	9	39	21	251	20	19	67	
Dec		259.49		16	9	42	89	21	52	28	220	46	117	77	
Jany	1894	291.75		134	10	6	25	27	143	22	439	208	8	14	
Feby		360.14		24	63	13	32	5	41	20	169	326	4	100	34
Mar		361.92		233	18	22	31	10	40	29	135	60	23	296	32
April		718.21		20	2	23	200	18	36	20	111	190	3	128	55
May		366.03		45	2	12	38	26	22	30	41	124	4	10	28
June		180.85						4	23	1	50	11	38		23
July		178.58		4		1	1	14	31	7	55	2	13	18	85
Aug		239.58		12	5	8	44	16	12	18	54	26	75	18	
Sept.		354.13		9	33	5	20	17	60	38	77	890	15	432	171
Oct		263.71		197	3		19	6	531	21	113	335	78	2	59
Nov		269.29		53	21	13	61	11	571	17	148	29	112	77	49
Dec		144.44		55	6	63	93	10	543	25	79	36	3	73	45
Jan	1895	226.57		30	28	238	36	102	46	46	146	234	12	2	52
Feb		190.31		3	35	13	22	73	39	25	301	117	19	47	43
Mar		585.05	5	15	17	18	34	28	42	11	138	221	133	1	43

		Outside accounts	Engine №2 Repairs	Engine №3 Repairs	Engine №4 Repairs	Engine №5 Repairs	Engine №7 Repairs	Engine №8 Repairs	Engine №9 Repairs	5 ton car Repairs	Gondola Repairs	Passenger Repairs	Foreign Car Repairs		Cooling Station	
1895	April	686.36	22	11	13	34	3	202	54	157	36	11	5		52	
	May	424.13	69	9	14	16	9	33	23	116	74	12	1		57	
	June	2.332.11	26	45	21	44	7	20	40	351	294	33	40		48	
	July	276.04	19	13	17	49	23	20	16	303	157	113	17		65	
	Aug	282.33	5	5	22	78	15	33	13	385	18	229	29		51	
	Sept	398.15	8	1	10	67	16	11	9	226	198	19	23		52	
	Oct	480.02	8	10	1	26	39	29	118	347	26	80	16		61	
	Nov	266.79	124	13	5	35	30	66	19	173	223	36	26		71	
	Dec	262.74	385	10	27	14	12	48	31	386	577	31	5		61	
1896	Jany	193.69	380	22	18	1	10	32	25	366	51	26	5		62	
	Feby	357.73	180	24	23	23	75	58	19	352	269	6	7		49	
	Mar	328.30	22	1	24	#6 37	46	38	9	325	390	1	10		53	
	April	265.15	3	64	3	23	73	30	28	227	368	7	86		101	
	May	172.02	8	10	5	#6 40 #5 26	10	4	121	121	415	17	3		77	
	June	584.46	25	8	7	#5 46 #6 50	10	264	596	42	25	128	9	Furn	72	Mines
	July	175.05	10	110	5	19 #6 44	9	19	598	174	29	31	20	51	95	154
	Aug	107.29	72	25	7	5 #6 122	4	13	13	173	48	10	5	209	84	76
	Sept	150.20	32	6	10	37 #6 96	85	97	236	120	195	15	6	113	77	116
	Oct	145.32	4	10	46	87	32	6	81	195	300	12	1	128	98	3097
	Nov	290.45	16	11	130	62	10	17	28	105	206	8	7	53	79	254
	Dec	252.89	10	42	47	32	24	93	23	115	260	10	21	83	86	460
1897	Jan	227.52	20	21	32	33	28	55	26	96	75	58	8	146	103	349
	Feb	281.91	27	111	6	44	50	23	16	85	71	5	15	202	37	148
	Mar	342.32	10	88	37	28	19	70	7	436	21	3	44	35		131
	April	303.87	89	91	38	20	21	168	24	74	12	218	115	450	57	223
	May	319.93	25	30	53	14	9	32	8	199	64	6	8	74	105	595
	June	207.88	2	14	616	37	5	18	12	175	164	53	34	120	111	363
	July	367.29	5	1	419	16	6	19	14	172	49	45	42	92	93	232
	Aug	298.22	58	15	298	124	11	96	14	176	25	28	22	71	68	140
	Sept	309.61	24	21	460	26	5	58	17	116	23	50	24	32	66	177
	Oct	592.34	12	11	23	46	27	17	53	99	68	178	165	67	81	324
	Nov	743.89	3	20	30	123	10	82	30	256	79	168	13	63	114	133
	Dec	552.21	52	9	26	45	2	98	129	152	204	29	19	243		647
1898	Jany	374.10	49	14	17	23	64	64	15	118	144	17	43	867	81	307
	Feby	522.59	16	42	29	80	7	39	33	181	425	6	6	68	89	201
	Mar	338.63	19	8	17	27	1	224	13	117	14	5	7	462	75	92

School Districts

Boyd County

	7		none		Acreage 1639	$ (8195)
No 18		Rail Road	2.08 miles	(37,440)	none	
✓	10	"	0.75 "	(13,500)	1576	(7880)
✓	11	"	2.977 "	(53.586)	700	(3500)
✓	14	"	2.00 "	(36.000)	1000	(5000)
✓	15	"	1.61 "	(28,980)	none	
✓	19		none	Acreage 1840		(9200)
✓	20		none	" 1600		(8000)
✓	32	"	1.10 (19800) "	Acreage 940		(17.900)
✓	36	"	2.04 (36720)	" ~~1300~~ 960 - 1240		(17.400)
	40	"	0.00 "	" 1120 -		(5.560)
	2			Acreage 1500 = $7500		

1895 Carter County

No	37	R. R.	2 47/100 miles $44460	Acreage 1300 - $13000	
No	46	R. R.	2 33/100 miles $41940	Acreage none -	
No	56	R. R.	2 995/100 miles $53.910	Acreage 2600 - $26000 - 4000 (66)	
No	25	R. R.	none	Acreage 35 -	In Boyd 32.
	66	RR	none	Acreage 800 4000	

School Districts in Boyd and Carter Counties

And required list of property for Auditor of State - A C & Ry

Boyd County -

No 8 Rail Road 2.08/100 miles

10 Rail Road 75/100 miles

11 Rail Road 2 977/100 miles

14 Rail Road 2 miles

15 Rail Road 1 61/100 miles

32 Rail Road 1 10/100 miles ~~Acreage 1325~~ Changed to 421

~~[illegible] miles of Star Switch~~

36 Rail Road 2 04/100 miles ~~Acreage 1050~~ - Changed to 1300 -

40

Carter County

No 37 Rail Road 2 47/100 miles - Acreage 1250 1300.

46 Rail Road 2 33/100 miles -

56 Rail Road 2.995 ~~3~~ miles - Acreage 2905 2780.

25 Rail Road - ~~Star Switch 1 12/100 miles~~ 66 acreage Change

Assessment 1892

Boyd	No 8	2.08 miles @ $18,000.		$37,440.
	10	.75 " " "		13,500.
	11	2.977 " " "		53,586
	14	2, " " "		36,000
	15	1.61 " " "		29,980
	36	2.04 " " "	36,720	
	Coulton	Other property	13,650	50,370
	32	1.10 miles @ $18,000.	$19,800	
	Rush	other property	17,225	37,025
Carter	No 37	2.47 miles @ $18000	$44,460	
	Deigersville	Other property	16,250	60,710
	No 25	~~1.12 miles @ $18,000 66 acres~~		20,160
	56	2,995 " "	53,910	
	Music	other property	37,765	91,675
	No 46	2.33 miles @ $18000		41,940

		Purchases	Sales
1897	Inventory	2033585	
	April	1349192	719572
	May	619025	832650
	June	940461	904860
	July	603581	955183
	Aug	1233226	1291294
	Sept	1183405	1202027
	Oct	1106391	1302678
	Nov	1156732	1282664
	Dec	929925	1237645
98	Jan	651287	1163355
	Feb	618523	1049662
	Mar	556592	1219018
	Rent	125000	
	Inventory		2207075
	P+L	2267883	
		15374808	15374808
1898	Inventory	2207075	
	April	1581161	1204732
	May	1193715	1237869
	June	1207623	1132093
	July	744946	1229713
	Aug	915237	1070998
	Sept	1373934	1034609
	Oct	952621	1239517
	Nov	1071388	1275904
	Dec	927016	1363948
99	Jan	812856	1189286
	Feb	837339	1146455
	Mar	664660	1283904
	Rent	125000	
	Inventory		2169485
	P+L	1963942	
		16578513	16578513
1899	Inventory	2169485	
	April	1504822	1209392
	May	1386243	1297318
	June	1050582	1296236
	July	828324	1262790
	Aug	852108	1323166
	Sept	1732039	1673135
	Oct	1597668	1515047
	Nov	1544629	1568307
	Dec	1641284	1669912
	Jan	953520	1596305
	Feb	969944	1385523
	Mar		

Coalton & Rush Stores.

	Purchases		Sales		Purchases		Collections		4 Stores		
1890 Inventory	106598				1892 Invent	1727521			95 Invt	1573016	
April	787809		824711		April	945667	737158		April	1171948	996260
May	870592		779180		May	742138	650799		May	1005017	1111437
June	573922		733946		June	480545	706586		June	907493	996894
July	541022		743856		July	651312	705290		July	952903	973515
Aug	660777		688707		Aug	500762	758642		Aug	937224	999971
Sept	488723		778156		Sept	834904	655795		Sept	877315	956627
Oct	932806		838821		Oct	534794	754913		Oct	1173571	968928
Nov	844127		799643		Nov	916034	773447		Nov	875841	1000837
Dec	489399		815993		Dec	513976	865649		Dec	826135	1063614
1891 Jany	523038		889207		93 Jan	573614	792785		96 Jan	590513	983800
Feby	423861		760231		Feb	450144	863241		Feb	586204	908946
Mch	197498		802747		Mar	312916	962298		Mch	365663	971466
Rent	200000				Rent	100000			Rent	110000	
Sundry Credits			35941		Inventory		1223682		Invt		1988358
Inventory			912279		a/cs		309522		P&L	1967790	
P & L	212646				P&L	1475470				13920653	13920653
	1072718	1072718				10759807	10759807		Invt	1988358	
1891 Inventory & March purchases	163057				Annual report shows P&L			1475470	96 April	1158716	901775
April	1077019		849277		1893 Invt	1533204			May	886204	880915
May	678692		761722		April	957960	790313		June	722840	807681
June	538425		721163		May	1203593	916968		July	591156	817053
July	684581		839505		June	575945	874769		Aug	868037	897401
Aug	599474		740248		July	744123	790053		Sept	773225	984391
Sept	701657		776307		Aug	609977	957402		Oct	948963	1076955
Oct	922117		811256		Sept	409281	392759		Nov	1192588	1104998
Nov	866202		810478		Oct	531658	537747		Dec	974482	1224836
Dec	637837		816314		Nov	505172	552849		97 Jany	717845	1109731
1892 Jan	480132		779388		Dec	624079	686668		Feby	518047	1000504
Feb	524344		913233		94 Jany	540218	734836		Mar	321245	996130
March	386707		874147		Feb	499974	797480		Rent	110000	
Rent	100000				Mar	449338	955879		Invt		2033585
Inventory			1727521		Rent	100000			P&L	2059249	
Annual Report					Invt		1733462			13835955	13835955
shows Profit	1594892				P&L	1436663					
						10721185	10721185				
1894 Inventory	1733462		Sales			Purchases		Sales			
Purchases											
April	927493		773139		Oct	834783		767739			
May	386215		510844		Nov	521874		751165			
June	221357		271624		Dec	636786		789712			
July	245495		313987		95 Jan	700121		796211			
Aug	434112		465798		Feb	633725		792984			
Sept	627683		604331		Mar	207025		831703			
					Rent	110000					
					Invt			1573016			
					P&L	1022112					

Summary

April	1891	2127646
	1892	1594892
2 Stores	1893	1475470
3 "	1894	1436663
3 "	1895	1022112
4 "	1896	1967790
4 "	1897	2059249
4 "	1898	2267883
4 "	1899	1963942

Lump 65¢
R.O.M. 43¢

Ashland Coal and Iron Railway Company

Report of Coal Mines

1891	Tons Lump	Ton R.O.M.	Totals Cost	Per ton Cost	Lump & R.O.M.	Cost per ton Estimated as Lump	Expense other than miners proper
April 11,751	11049	702	12033 41	1.02 40			
May 8.749	8132	617	10067 89	115 07			
June 8.246	7611	635	8868 54	107 54	1.1038		
July 9.344	8726	618	9983 42	106 83	109 15		
Aug 9.441	8701	740	9857 46	104 41	107 18	3883 18	
Sept 10.043	9366	677	10090 48	100 47	102 80	3711 36	
Oct 10.876	10166	710	10666 69	98 07	100.26	3753 01	
Nov 11.150	10357	813	11351 61	99 57	104.46	4039 91	
Dec 10.829	9720	1109	10442 64	96 43	99 90	3647 09	
1892 Jan 12.008	9837	2171	11127 63	92 66	98 70	3789 58	
Feb 13.072	11142	1929	11786 88	90 16	94 94	3714 23	
Mar 13.385	10590	2795	11625 06	86 84	93 45	3539 54	
Annual Report	115956	13.520	130.206 04	100 56	104 25	49047 12	

1892	Total output Lump & R.O.M.	Lump @ 65	R.O.M. @ 43	Total Cost $	L & R.O.M. Cost ¢	Allas Lump ¢	Expenses $	
April	10.176	6416	3760	9570 33	.94	1.075	3789 47	
May	8.232	4757	3464	8216 86	.99 93	1.1637	3634 69	
June	8.201	7281	904	8627 96	1.05 20	1.0933	3506 03	
July	8.581	6863	1693	8513 01	99 2	1.066	3323 71	
Aug	9.914	7243	2671	9368 27	94 5	1.0416	3522 44	
Sept	8.224	7048	1176	8178 09	99 43	1.0462	3097 47	
Oct	10.527	9408	1119	9761 09	92 75	96 25	3170 82	
Nov	11.523	9899	1623	10194 57	88 5	93	3095 21	20 tons waste Box 58 " Stock
Dec	13.570	10689	2881	11102 91	82	88 2	2922 75	15 " waste box
1893 Jan	13.324	12607	717	12246 44	91 75	93	3747 76	10 " " "
Feb	12.463	10556	1907	11012 34	88 51	93 3	3339 21	20 " " "
Mar	14.804	10647	4157	12428 01	84	94	3844 35	15 " " "
Annual Report		104111	25897	120965 96	93 04	99 66	42130 68	

1893.	Total output Lump & R.O.M.	Lump tons @65	R.O.M. tons @43	Total Cost	Per ton Cost Lump & R.O.M.	Cost Estimated as Lump	Expenses other than per ton	
April	10.456	7865	2591	9773 72	.93 5	1.02	3555 44	20 tons waste Box
May	12.221	10084	2022	11383 21	.93	98	3911 10	20 " " "
June	10.464	9485	@68¢ 393 @43¢ 584	10856 39	103 75	107	4396 77	20 " " " 393 " R.O.M. @ 68¢ Opening No 7 Mine $22.338
July	8.339	7461	@68 106 @43 771	9024 89	108 25	112 25	3775 44	25 tons waste Box
Aug	8.814	7875	@68 29 @43 909	9913 18	112 5	116 75	4387 34	10 " " " Mine No 7 $731.75
Sept	4.573	@55 2599	@37 1973	4163 61	91	106 25	2007 32	10 tons waste Box Mine No 7 $322.63
Oct	6.486	" 3562	" 2923	6466 46	99	117	3425 18	Mine No 7 $1503.63
Nov	8.104	" 4859	" 3245	6030 97	74 5	86	2170 83	35 tons waste Box Mine No 7 $259.49
Dec	9.452	" 7472	" 1980	9213 67	97 5	104 75	4376 73	15 tons waste Box Mine No 7 $1515.74
94 Jany	11.448	" 9202	" 2246	8303 51	72 5	77 75	3010 86	25 tons waste Box
Feby	11.716	" 8441	3275	9347 26	79 75	88	3498 26	15 " " "
Mar	12.957	" 9345	3612	10514 91	81 25	89 33	4044 03	15 " " "
Annual Report		88716	26570	119198 23	103 39	111 81	56298 93	No 7 mine and Injuries & Employees } 17.538.77

Report of Coal Mines

1894	Tons Lumps & R.O.M.	Tons Lumps	Tons R.O.M.	Total Cost $	Cost per ton Lumps & R.O.M.	Cost per ton as Lumps	Expenses other than Mining	Strike (May, June, July, Aug) part	
April	9.422	@55 8249	37 1172	860920	.913	.955	364726	25 tons waste box.	
Aug	1.590	1590		375631	2.36	2.36	288169	Guards $1283.83	
Sept	5.562	@60 5272	@40 289	644789	1.16	1.18	317650	" 1147.31 20 tons waste box	
Oct	8.836	8427	408	830072	.94	.955	309471	Guards $462.94 20 tons waste box	
Nov	10.141	8570	1570	892852	.88	.93	317395	Guards $ 232.17 40 tons waste box	
Dec	8.895	7303	1591	848229	.95½	1.01¼	347317	Guards $ 137.71 25 tons waste box	
95 Jany	9.653	9474	179	1062296	1.10	1.10¾	488247	Extras $ 535.22 40 tons waste box.	
Feby	8.112	8043	68	848411	1.04½	1.04¾	364840	40 tons waste box.	
Mar	9.591 73.422	8185	1405	915090	96½	1.00¼	369122	35 tons waste box.	
Annual Report		66478	6944	8511973 7771458	110½	1.14	3874148	Counterpoise, survey and Strike Cash $6.373.91	
April	9.286	@55 8828	@37 457	882813	.95	.96¾	382153	50 tons waste box	
May	11.186	10583	603	1108277	.99	1.01	505731	50 tons waste box	
June	10.318	10200	118	1043459	1.01	1.015	479924	50 " " "	
July	10.359	10196	162	983748	95	.955	417854	25 " " "	
Aug	10.143	10110	33	975465	.96	.962	418492	40 " " "	
Sept	9.742	9542	199	1109530	1.14	1.14½	578600	35 " " "	Revolving screen cost in this no
Oct	10.052	@60 10714	337	1139954	103	1.04¼	539279	30 " " "	Extra Supplies
Nov	10.444	10275	169	1119785	1.07	1.07¾	496888	10 " " "	
Dec	10.414	10300	114	1030689	99	99½	408491	10 " " "	
96 Jany	12.095	12070	24	1142184	94	94¾	416941		
Feby	11.059	10934	125	1053985	95⅓	95⅔	393113	5 " " "	
Mar	10.336 126.659	9986	350	917549	88½	89¾	304959	15 " " " 507 tons House Coal.	
Annual Report		123743	2409	12672187	1.00.0	1.00.6	5472507		
~~April~~	~~9667~~	@55 ~~9667~~	@37 ~~2534~~						
April	9667	7143	2534	915735	94⅓	1.036	429263	5 tons waste box	
May	8772	6413	2358	835376	95¼	1.045	395722	10 " " "	
June	7496	6129	1367	688508	91¾	.97½	301206	10 " " "	
July	9265	7085	2179	869216	93¾	1.01¾	398217	10 " " "	
Augt	9943	8272	1670	877274	88¼	.93¾	360476		
Sept	12010	10484	1526	1066346	88⅞	.927	433234		
Oct	12832	11667	1164	1118874	87⅛	.90	434233	5 " " "	
Nov	12114	10447	1667	1133047	93½	.9801	491132		
Dec	12949	11200	1748	1295164	100	1.047	511920		
97 Jan	13216	10438	2778	1164288	88	.944	487378		
Feby	11033	9131	1840	993889	90	.953	422773	51 tons Machine Coal	
Mar	11278	7509	3768	1083712	96	1.08	560888		
Annual Rept	128.381	102629	23244	11975311		998	5229256		

Report of Coal Mines

1897		Tons Lump & R.O.M.	Tons Lump	Tons R.O.M.	Total Coal	Cost per Ton as Lump	Expenses other than mining
6 & 7 & 8	April	6828	3820	3008	6395.51	1.095	3794.28
"	May	10283	6589	3694	8413.09	.934	4633.26
"	June	9858	7235	2622	8889.87	.989	4955.29
"	July	14073	6723	7350	10665.73	.917	4611.23
"	Aug	23663	6961	16702	14956.35	.826	4938.38
6 & 7	Sept	17919	10194	7725	13239.93	.863	5269.98
8	"	4617		4617	2315.67	.700	1282
6 & 7	Oct	16066	11987	4079	13669.05	.929	5704.53
8	"	5197		5197	2496.00	.720	1355.75
6 & 7	Nov	16388	12361	4027	13618.24	.905	5694.19
8	"	5447		5447	2512.19	.691	5066
6 & 7	Dec	13630	11350	2279	11388.79	.885	4639.10
8	"	702	228	374	469.99	.983	1250.00
6 & 7	Jany 98	14359	12544	1831	12475.39	.907	5259.79
8	"	421	267	254	364.35		3200
6 & 7	Feb	13474	11081	2413	10784.70	.854	4504.12
8	"	288	288		233.25	.780	
6 & 7	Mar	12980	10927	1962	10467.06	.855	4085.80
8	"	1028	535	492	762.02	.883	764.3
Annual Report		190696	104588	78800	151708.87	0.924	65269.81
6 & 7	April	12084	9993	2091	11237.62	.986	4867.85
8	"	1132	799	333	822.20	.805	
6 & 7	May	10339	8929	1420	11086.38	1.12	5345.03
8	"	1626	962	664	1172.66	.840	51.25
6 & 7	June	8520	7485	1035	9077.85	1.11	4712.01
8	"	1123	1071	52	1103.76	.997	201.30
6 & 7	July	9355	7707	1647	9518.96	1.081	4755.07
8	"	889	807	65	823.11	.972	130.93
6 & 7	Aug	9005	7229	1675	9680.84	1.146	5247.94
8	"	1482	987	495	1111.25	.843	7800
6 & 7	Sept	7583	6218	1264	7949.41	1.119	4013.29
8	"	2028	598	1429	1115.60	719	
6 & 7	Oct	12719	11166	1489	11886.55	.920	4534.63
"	Nov	13569	11686	1883	12453.84	.962	5349.24
8	Nov	720	392	428	472.55	73	
8	Oct	644	392	205	558.22	1.05	144.33
6 & 7	Dec	15062	12247	2820	13576.82	.963	5876.49
8	Dec / Jan	3097 / 2806		3091	1391.12 / 1378.03	.675	1.17
6 & 7	Jan	12705	10915	1790	12023.53	.993	5368.99
8	Feb	3748			1686.73	.675	
6 & 7	Feb	12720	11716	1503	10897.05	.892	5004.98
	Mar	3873					
	Mar	13924	8343	5581	11497.45	.953	4949.29

155 tons clay @ 18½¢ = 28.25

45 tons clay

Stack Mine

1908	Apr	May	June	July	Aug	Sept	Oct	Nov.	Dec.	1909 Jan	Feb	Mar	Apr.
Produced	1716	1134	1536	1395	1264	1840	1689	1645	985	1692			
Salaries	.190	.254	.158	.187	.176	.135	.142	.125	.211	.109			
Labor	1.232	1.648	1.508	1.576	1.673	1.369	1.739	1.706	2.144	1.903			
Explosives	.145	.256	.176	.146	×	.095	.039	.281	.178	.072			
Fuel	.066	.132	.220	.288	.257	.091	.150	.091	.147	.079			
Supplies	.097	.386	.114	.401	.817	.440	.461	.264	.433	.149			
Lumber, etc.	.022	.084	.056	.004	.143	.032	.023	.113	.368	.139			
C.O. Int.	×	×	×	×	×	×	×	×	×	×			
Rail Road	.076	.110	.107	.126	.178	.083	.072	.169	.135	.142			
Teams	.147	.228	.173	.188	.209	.157	.172	.139	.286	.169			
Analysis	.004	.003	.004	.002	.002	×	.003	×	.001	.001			
Gen'l. Expense	.003	.023	.018	.010	.011	×	.026	.037	.031	.015			
Telephone	.002	.004	.003	.004	.005	.003	.003	.004	.006	.009			
Mchy & Equip.	.064	.097	.071	.078	.087	.060	.065	.067	.112	×			
Taxes	.021	.031	.022	.025	.028	.019	.021	.021	.036	.021			
Insurance	.001	.002	.001	.001	.002	.001	.001	.001	.002	.001			
Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100			
Cost Mining	2.170	3.358	2.731	3.136	3.688	2.579	3.017	3.118	4.190	2.909			
Washing													
Labor	.267	.413	.321	.353	.446	.279	.299	.289	.446	.307			
Supplies	×	.007	.003	.007	×	.002	.015	.029	.047	.024			
Coal	.066	.109	.121	.132	.198	.131	.205	.059	.159	.116			
Repairs	.024	.040	.024	.042	.035	.023	.070	.013	.089	.004			
Cost Washing	.357	.569	.469	.534	.679	.435	.589	.390	.741	.451			
Total Cost	2.527	3.927	3.200	3.670	4.367	3.014	3.606	3.508	4.931	3.360			

Lead Moon Mine (Fossil)

1905	June	July	Aug	Sep	Oct	Nov	Dec	Jan 1906	Feb	Mar	April	May	June	July
Produced.	250	553	624	802	803	794	526	961	933	978	1062	1178	1190	1170
Salaries	.100	.045	.040	.031	.031	.031	.030	.045	.046	.055	.047	.039	.042	.043
Labor	1544	1558	1449	1486	1511	1708	1620	1807	1843	1877	1836	1770	1921	1971
Explosives	.073	.095	.116	.102	.136	.138	.133	.160	.213	.147	.183	.191	.160	.186
Fuel	-	.	.	.	.	.	.004	-	.002	.001	.	-	.	.
Supplies	.319	.110	.096	.026	.081	.028	.050	.129	.077	.130	.075	.057	.100	.095
Timber & C	-	.005	.011	.005	.	.	.004	.018	.054	.106	.076	.013	.075	.029
Ox C. & Fdr.	.	.	.	.	.	.	.	-	.	.	.	.	.	.
Rail Road	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150
Teams	.160	.073	.	.050	.050	.050	.076	.042	.064	.062	.042	.058	.050	.051
Analysis	.009	.008	.005	.007	.008	.004	.015	.000	.000	.001	.001	.	.	.
Transportation	.	.	.	.484	.	.	.	.016	.018	.005	.022	.014	.017	.017
Telephone Service	.008	.003	.003	.002	.002	.003	.003	.002	.002	.002	.002	.001	.001	.001
Machinery & Equip	.	.021	.019	.015	.015	.015	.022	.012	.012	.012	.011	.009	.010	.013
Taxes	.140	.063	.056	.044	.044	.	.053	.036	.037	.036	.033	.028	.029	.029
Insurance	.009	.004	.004	.003	.002	.013	.004	.003	.002	.002	.002	.001	.002	.002
Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100
Coal														
Entry, Tunnel	Development Work maintain			.484	.370	.270	.380	Development H. Mtn.				.070		
Cost Mining	2612	2225	2227	2500	2500	2500	2500	2520	2562	2631	2530	2450	2657	2686

Washing

Labor

Supplies

Coal

Total Cost

Lord Moon Mine (Fossil)

1906	Aug	Sep	Oct	Nov	Dec	1907 Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Produced.	1029	1347	1400	1262	978	1376	890	1165	1220	1433	1156	1368	1318	985	1220	1095	666
Salaries	065	049	048	045	059	111	148	113	.109	.093	.114	.104	.107	.144	.116	.129	.196
Labor	2236	1721	1.550	1713	1458	1492	1.656	1.800	1.688	1.594	1.696	1.591	1.696	1.807	1.555	1.463	1035
Explosives	145	168	100	179	140	099	163	136	.190	.110	.162	.099	.182	.126	.144	.123	.105
Fuel	.	.		.	.	x	x	x	x	x	x	x	x	x	x	x	x
Supplies	103	104	035	057	052	069	056	101	.053	.174	.034	.067	.055	.092	.074	.069	.062
Timber &c	009	003	003	129	001	009	004	062	.037	.031	x	x	.050	.019	.030	.023	x
C & O. Orc. Frt	.	.		019	.	x	x	x	x	x	x	x	x	x	x	x	x
Rail Road	150	150	150	150	150	150	150	150	.150	.150	.150	.150	.150	.150	.150	.150	.050
Teams	073	055	053	083	107	076	118	103	.135	.115	.129	.131	.148	.184	.150	.166	.270
Analysis		001	001	-	.	x	001	x	.001	x	x	x	x	x	x	x	.006
General Expense	027	029	019	029	036	024	041	020	.044	.042	.040	.038	.043	.029	.028	.022	.003
Telephone Service	001	001	001	001	002	x	002	001	.001	.001	.001	.004	.004	.006	.005	.004	.008
Mach & Equip	015	011	010	012	015	011	017	013	.012	.010	.012	.018	.019	.025	.026	.023	.038
Taxes.	034	026	025	029	.	026	039	030	028	.025	.030	.025	.026	.036	.029	.031	.053
Insurance	002	002	001	002	002	001	003	001	.001	.001	.002	.001	.002	.002	.002	.002	.003
Royalty	100	100	100	100	100	100	100	230	.128	.132	.130	.138	.138	.136	.127	128	.123
Development H. Mtn.		080	.410	.	.376	.332	x	x	x	.022	x	.134	x	x	.064	x	.170
Cost Mining	2.960	2.500	2.500	2.546	2.500	2.500	2.500	2.760	2.577	2.500	2.500	2.500	2.622	2.755	2.500	2.500	2.222

Lookout Mine (Fossil)

1908	Jan	Feb	Mar	Apr.	May	June	July	Aug	Sept	Oct	Nov	Dec.
Produced	952	1025	2096	2100	2019	2132	2218	1937	2043	1913	1802	1414
Salaries	.127	.181	.059	.060	.063	.059	.057	.076	.073	.074	.080	.094
Labor	.909	1.036	.863	.884	.896	.944	.954	1.106	1.051	1.032	.967	1.008
Explosives	.079	.102	.137	.091	.115	.105	.108	.131	.088	.123	.095	.119
Fuel	x	x	x	x	x	x	x	x	x	x	x	x
Supplies	.015	.077	.018	.003	.011	.003	.005	.007	.018	.048	.013	.003
Timber etc.	x	.004	.011	.011	.033	.009	.029	.065	x	x	.039	.012
C & O On Ft.	x	x	x	x	x	x	x	x	x	x	x	.150
Rail Road	.150	.150	.150	.150	.150	.050	.150	.150	.050	.151	.150	.150
Teams	.189	.176	.088	.077	.081	.075	.072	.095	.096	.104	.128	.178
Analysis	x	.003	.001	x	.001	.002	x	x	x	x	x	x
Incl Expense	x	x	x	x	x	x	.004	x	x	x	x	x
Telephone	.006	.005	.002	.002	.002	.002	.002	.006	.006	.006	.006	.009
Mch'y & Equip.	.026	.024	.012	.012	.012	.012	.011	.013	.012	.013	.014	.017
Taxes	.037	.035	.016	.015	.017	.016	.016	.018	.017	.018	.019	.025
Insurance	.002	.002	.001	.001	.001	.001	.001	.001	.001	.001	.001	x
Royalty	.123	.126	.125	.126	.121	.131	.129	.117	.129	.134	.140	.141
Cost Mining	1.666	1.913	1.483	1.428	1.503	1.503	1.538	1.785	1.641	1.704	1.652	1.761

Low Moor Mine (Fossil)

Nov.	Dec.	1909	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov.	Dec.
1802	1414	Produced	1313	1147	1772	1712	1449	1888	1673	1586	1323	1554	1821	1136
.080	.094	Salaries	.114	.113	.074	.076	.095	.068	.077	.081	.097	.081	.071	.115
.967	1.008	Labor	1.174	1.314	1.106	1.135	1.248	.979	1.118	.936	1.103	.904	.926	1.066
.095	.119	Expensives	.102	.121	.097	.135	.116	.098	.114	.095	.099	.079	.102	.123
×	×	Fuel	×	×	.025	×	×	×	×	×	×	×	×	×
.013	.003	Supplies	.039	.057	.025	.012	.015	.019	.035	.021	.032	.016	.040	.042
.039	.012	Timber etc.	.011	.029	.026	.024	.018	.011	.009	.014	.009	.015	.038	×
×	.150	C&O Ore Frt.	×	×	×	×	×	×	×	×	×	×	×	×
.150	.150	Rail Road	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150
.128	.178	Teams	.195	.217	.142	.147	.182	.143	.162	.171	.203	.171	.150	.241
×	×	Analysis	×	×	×	×	×	×	×	×	×	×	×	×
×	×	Genl. Expense	×	.001	×	×	×	×	.001	×	×	×	×	×
.006	.009	Telephone	.009	.011	.007	.007	.008	.007	.008	.008	.009	.008	.007	.010
.014	.017	Machy & Equip.	.023	.026	.017	.017	.020	.017	.018	.019	.024	.020	.016	.027
.019	.025	Taxes	.027	.031	.019	.021	.024	.019	.021	.022	.026	.023	.020	.040
.001	×	Insurance	.001	.002	.001	.001	.001	.001	.001	.001	.002	.001	.001	.002
.140	.141	Royalty	.141	.146	.135	.134	.143	.134	.138	.132	.140	.134	.136	.129
1.652	1.761	Cost Mining	1.986	2.218	1.799	1.859	2.020	1.646	1.852	1.650	1.894	1.602	1.657	1.945

Low Moor Mine

1910	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Produced	1014	713	1327	1284	1406	1050	998	1296	1165	988	812	787
Salaries	.128	.219	.097	.101	.092	.123	.129	.100	.110	.131	.160	.167
Labor	1.257	1.474	.974	1.130	.953	1.093	1.044	.837	.676	.737	.704	.719
Explosives	.127	.222	.030	.139	.135	.122	.068	.066	.104	.078	.097	.084
Fuel	X	X	X	X	X	X	X	X	X	X	X	X
Supplies	.043	.019	.023	.030	.026	.024	.022	.008	.030	.001	.049	.006
Timber, Etc	.056	.050	.028	.017	.038	.070	.022	.013	X	.001	X	
C. & D. Re Tak	X	X	X	X	X	X	X	X	X	X	X	
Rail Road	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150	.150
Teams	.267	.380	.206	.195	.165	.220	.243	.168	.181	.214	.259	.264
Dividends	.001	X	.001	X	X	X	X	.004	X	X	X	X
Legal Expense	X	X	X	X	X	X	.002	X	X	X	X	X
Telephone	.012	.017	.009	.010	.009	.011	.012	.010	.010	.012	.015	.014
Wtr. & Equipt.	.048	.069	.037	.039	.036	.048	.050	.038	.042	.052	.062	.064
Taxes	.040	.056	.030	.031	.028	.038	.040	.031	.035	.040	.050	.164
Insurance	.002	.002	.002	.001	.001	.002	.002	.002	.002	.002	.003	.003
Royalty	.130	.142	.141	.147	.141	.142	.148	.145	.150	.150	.140	.127
Cost of Mining	2.261	2.800	1.728	1.990	1.774	1.993	1.942	1.567	1.490	1.564	1.689	1.760

Lon Moor Mine.

1911	Jan	Feb	Mar.	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Produced	806											
Salaries	.145											
Labor	.779											
Explosives	030											
Fuel	X											
Supplies.	.003											
Timber, etc	X											
C. & O. Ore Frt.	X											
Rail Road	.150											
Teams.	.262											
Analysis	X											
Gen'l Expense	X											
Telephone	.015											
Mchy. & Equipt.	.062											
Taxes	.059											
Insurance	.003											
Royalty.	.122											
Engineering Services	043											
Coal Mining	1.667											

Closed Down

Year ending 1st Sept.	Tons mined Estimated as dump over 12 in screen	Total Costs	1 Mining cost	2 Laboring	3 Carriage	4 Pit & Office Exp.	5 Handling at Coal Depot & Screening	6 Weighing & Office	7 Average Cost of Coals at Depot	8 Rates Rolls & Co.	9 Wages Repairs Horse Hospital	10 Sundries, Stationery, Horses	11 Farm	12 Horses Repairs	13 Estate
1887	95562	0.919	.600	.030	.016	.022	.119	.035	.042	.017	.023		.010	.007	
1888	106.223	0.963	.624	.027	.011	.024	.123	.052	.033	.019	.023		.009	.012	.030
1889	125.368	0.987	.625	.023	.016	.022	.131	.046	.060	.028	.027		.009	.015	
1890	113.223	1.119	.626	.025	.030	.018	.101	.044	.072	.029	.030		.006	.008	.130
91	127.235	1.042	.650	.021	.059	.020	.077	.041	.064	.019	.010	.016	.003	.044	.016
92	124.970	1.042	.649	.024	.062	.019	.094	.042	.063	.022	.016	.008	.009	.037	
93	121.376	.996	.650	.021	.029	.018	.104	.032	.074	.024	.023	.021	.001	.015	
94	106.430	1.119	.591	.021	.018	.024	.104	.030	.089	.015	.024	.019	cr.	.015	.165
95	71.253	1.138	.595	.037	.022	.019	.128	.034	.129	.011	.036	.002	cr.	.017	.086
96	125.856	1.006	.572	.024	.026	.032	.094	.041	.100	.017	.080	.005	.002	.013	
97	120.153	.998	.561	.026	.026	.036	.083	.035	.121	.011	.055	.013	.001	.020	.010
98	162.991	.924	.530	.019	.022	.025	.079	.025	.111	.008	.047	.007	.0002	.009	.046
99	143.033	1.023	.584	.023	.027	.029	.104	.029	.150	.011	.046		.001	.012	.007

Month	Tons mined Estimated as pumps over 1½" power	Total Cost	1 Mining	2 Salaries	3 Yardage	4 Posts, Caps & Ties	5 Haulage Feed, Oil, Repairs	6 Weighing & Tips	7 Drain work & misc. Materials etc	8 Picks Drills	9 Stores Repairs Mgrs. Stores Supplies	10 Compressing & Pumping	11 Fans	12 Horses Repairs	13 Ex Face	14 Misc. Mat
96 Aug	9.386	0.934	.5506	.0282	0403	.0350	.06804	.0308	.0985	.00532	0606	.0000	0072	.00655	.00319	
Sept	11.502	0.927	.5504	.0230	0365	.0458	.0759	.0347	0962	.0004	.0468		0043	0101	00260	
Oct	12.444	0.899	.5501	0212	0470	0344	0665	0300	0960	0036	0289		0079	0104	00241	
Nov	11.559	0.980	.5553	0229	0385	0352	0672	0355	.1293	0107	.0593		0105	0130	.00260	
Dec	12,365	1.050	.5525	0214	0239	0770	0731	0344	1231	0210	0634	0050		0480	00242	.00416
97 Jan	12.290	0.947	.5507	.0215	0119	0211	0948	0317	1181	0085	0562	Machinery	0007	0160	0024	0024
Feb	10,420	0.953	.5479	.0265	.0105	0185	0788	0373	1409	0126	0584	0097		0039	0028	.0069
Mar	10.023	1.080	.5216	.0264	.0060	0319	1818	0359	1590	0128	1161	0043	cr 0928	0120	0545	0105
April	5.841	1.094	.4453	.0453	.0608	0314	1084	0350	1600	0378	0794	Instruments	0218	0228	0460	
May	9.005	.934	.4198	.0366	.0388	0250	0750	0291	1050	0267	0793	0430	0098	0130	0320	
June	8.983	.985	.4564	.0281	.0388	.0261	1091	0261	1183	0114	0900	Nil	0171	0526	0112	
July	11.623	.916	.5209	.0228	.0347	.0104	0746	0283	1117	0117	0617	0037	0172	00556	0134	
Aug	18.097	.826	.5535	.0146	.0157	0165	0611	0236	0810	0082	0356		0041	0033	0094	Average Cost all mins
Nil 8	3.316	.698														
647 Sept	15.344	.866	.5196	0176	.0292	0401	0551	0277	1042	0036	0567		0010	0052	0066	.833
Nil 5	3.464	.720														
647 Oct	14.707	.930	.5419	0180	.0212	.0606	0737	0307	1148	0107	0364		0070	0067	0082	.889
Nil 8	3.631	.691														
647 Nov	15.046	.906	.5266	.0176	.0255	.0315	.0657	.0297	1081	.0080	0617		0136	0104	0076	.864
Nil 8	478	.783			.2820											
647 Dec	12870	.885	.5244	.0206	.0290	.0230	.1165	.0280	0653	0080	0900		cr 0002		cr 0024	.888
Nil 8	437	.84			.080											
647 Jan 98	13751	.907	.5247	.0192	.0312	.0242	.0815	.0279	0815	0045	0878		0053	0103	0091	.904
Nil 5	288	.780														
647 Feb	~~12770~~	~~844~~	~~.4910~~	~~.0207~~	~~.0353~~	~~.0272~~	~~.0708~~	~~.0262~~	~~.0846~~	~~.0078~~	~~.0632~~		~~cr 0006~~	~~.0227~~	~~.0045~~	~~.7853~~
corrected	11847	.915	.5301	.0223	.0390	.0294	.0765	.0282	.0913	.0084	0666		cr .0006	0234	.0046	.907
647 Mar	12236	.855	.5215	.0217	.0422	.0184	.1572	.0293	.0972	.0061	0470		cr .0912	0058	cr 0096	.857
8	863	.883			.088											
8	1021	.805														
647 April	11387	.986	.5594	.0232	.0550	.0350	.0930	.0329	.1105	.0190	.0255		.0205	0090	0030	.972
		.840			.0400											
647 May	9884	1.1276	.5809	.0268	.0814	.0395	1.139	0384	.1387	.0171	.0599	.0020	.0063	0119	00481	1.08
8		.997			.181											
June	8175	1.1098	.5334	.0324	.0996	.0274	.0978	0337	.1562	0115	0924		0170	0073	0011	1.09
8		.972			.154											
July	8806	1.0889	.5409	.0300	.0802	.0245	.0867	.0349	.1518	0152	0732	.0095	0125	0167	0048	1.07
8		.843			.059											
Aug	8446	1.1462	.5249	.0314	.0898	.0352	.1103	0330	.1550	0075	0931	0071	0128	0146	0315	1.10
8		.719														
Sept	7161	1.1100	.5497	.0370	.0342	.0454	.0857	0320	.1666	0180	0767	0113	0073	0151	0310	1.04
8		1.105			.274											
Oct	12158	.9200	.5470	.0201	.0240	.0297	.0588	0307	.1259	0087	0445	0103		0154	0049	
8		.73														
Nov	12942	.9622	.5489	.0204	.0150	.0241	.0719	.0317	.1333	0071	0738		0003	0320	0037	
8		.675														
Dec	14097	.9631	.5463	.0188	.0122	.0250	.0934	.0274	.1449	0159	0515		0032	0240	0005	
		.737			.062											
Jan 99	12109	.9929	.5495	.0219	.0170	.0259	.0738	.0332	.1428	0162	1091			0035		
		.675														
Feb	12219	.8918	.5273	.0217	.0060	.0168	.0862	.0347	.1456	.0106	.0382		0015	0030		
		.675														
Mar	12064	.9530	.5428	.0219	.0051	.0271	.0792	.0294	.1645	.0157	.0590			0061	0022	
	2449	.675														
April	11809	.9622	.5714	.0225	.0043	.0178	.0815	.0293	.1428	.0112	.0614		0006	0074	0120	
	2884	.747			.072											
May	13259	.9643	.5814	.0200	.0080	.0278	.0879	.0294	.1088	.0111	.0500	.0157	0032	0146	0064	
June	12959	.9931	.5836	.0205	.0063	.0096	.0935	.0299	.1196	.0100	.0443	.0293	0073	0348	0041	
5 July	12150	1.0535	.5908	.0218	.0028	.0314	.0733	.0304	.1434	.0129	.0422	.0286	.0035	.0722	.0002	
	2716															
8 Aug	12690	1.1423	.6467	.0200	.0296	.0309	.0949	.0324	.1526	.0123	.0275	.0852	.0009	.0063	.0030	
	2990															
Sept	13160	1.1970	.6953	.0171	.0648	.0246	.0956	.0368	.1724	.0190	.0568		.0016	.0098	.0032	
Nil 8	3370															
Oct	13280	1.2885	.7055	.0268	.0876	.0438	.1034	.0410	.1182	.0135	.0470		.0011	.0885	.0121	
	3450	.854			.0580											
Nil 8																
6.7.1910 Nov	14776	1.1626	.6986	.0152	.0703	.0282	.0807	.0398	.1425	.0040	.0527	Coal pierceh.	.0060	.0192	.0054	
Dec	14058	1.2114	.6962	.0185	.0850	.0265	.1040	.0420	.1400	.0060	.0788	.0076		.0024	.0042	
1900																
Jan	14924	1.1875	.6968	.0175	.0659	.0390	.0887	.0431	.1438	.0061	.0750	.0082		.0034		
Feb	13986	1.1375	.6938	.0186	.0500	.0308	.1096	.0398	.1232	.0032	.0584	.0089		.0012		
Mar	15292	1.1383	.6449	.0170	.0638	.0359	.1029	.0433	.1393	.0095	.0537	.0069	.0009	.0030	.0172	

Kaymoor Mine No 1.

Months	1 Mining Coal	2 Salaries	3 (Yardage	4 Timber	5 Drivers, Track, etc	6 Weighing & Tipping	7 Inside work	8 Outside work	9 Powerhouse & Pipe Lines	10 Ventilation	11 Drainage	12 Shops	13 Supplies	14 Royalty	15	16
1902=Jany	.454	.040	.139	.036	.107	.029	.057	.013	.035	.004	.006	.009	.171	.10	8490.	1.20
Feby	.42	.057	.124	.016	.082	.027	.068	.022	.038		.005	.006	.037	.10	6610	1.00 4/10
March	.426	.027	.120	.023	.091	.030	.054	.013	.028		.002	.008	.109	.10	07495	1.03 7/10
April	.421	.030	.152	.015	.083	.035	.067	.018	.039		.006	.010	.073	.10	6763	1.05
Mbay	.438	.035	.159	.029	.117	.037	.067	.029	.051	.006	.008	.011	.099	.699	7012	1.8 10
June	.462	.133	.068	.019	.156	.049	.253	.111	.08	.006	.003	.013	.19	.10	1518	1.65
July	none														851	
Aug	"														1321	
Sept	.362	.998	.062	.249	.227	.041	.327	.66	.482	.023	.080	.069	.666	.10	2866	.436
Oct	.083	.703	.064	.02	.135	.055	.084	.181	.150	x	.051	.038	.107	.10	5270	1.79
Nov	.658	.055	.112	.011	.104	.039	.092	.113	.103	.089	.032	.021	.131	Trans .101 .10	7770.	1.76
Dec	.664	.047	.147	.002	.170	.038	.101	.077	.075	.034	.025	.023	.27	Trans .027 .10	8406.	1.80

1903.	Jan	Feb	Mar	April	Mbay	June	July	Aug	Sept.	Oct	Nov	Dec	1904. Jan	Feb	Mar	April
Produced	5916.	5029.	7367.	6116.	7024.	8753.	9486.	10099.	9986.	11855.	7668.	7700.	7395.	8278.	9366.	8173.
1. Salaries	.038	.049	.042	.054	.047	.033	.034	.029	.03	.025	.040	.038	.037	.042	.024	.027
2. Labor (Mining)	.639	.586	.568	.566	.526	.495	.498	.516	.498	.512	.558	.482	.507	.509	.515	.453
3. Yardage	.174	.185	.165	.167	.154	.113	.104	.104	.096	.068	.093	.089	.094	.087	.09	.115
4. Timber	.034	.014	.021	.019	.045	.035	.022	.043	.028	.036	.041	.023	.032	.032	.017	.019
5. Drivers, Track &c.	.119	.138	.108	.158	.153	.103	.115	.115	.109	.109	.163	.139	.135	.119	.11	.121
6. Outside Work (Weigh & Tipping)	.147	.09	.122	.156	.167	.125	.086	.071	.077 x	.079	.124	.113	.106	.084	.064	.073
7. Inside Work	.10	.139	.102	.123	.122	.137	.093	.088	.082	.073	.055	.054	.054	.053	.034	.033
8. Power House & Pipe Lines	.156	.193	.141	.145	.162	.046	.051	.052	.027 ~~.058~~	.018	.035	.044	.047	.03	.036	.066
9. Vent & Drainage	.051	.046	.034	.039	.047	.039	.018	.01	.050 ~~.2~~	.019	.051	.036	.021	.011	.016	.017
10. Shops	.011	.019	.023	.037	.019	.018	.01	.015	.016 ~~.10~~	.015	.018	.011	.009	.006	.007	.006
11. Supplies	.096	.064	.048	.047	.034	.11	.025	.041	.038 ~~.04~~	.042	.029	.032	.045	.074	.074	.026
12. Royalty	.072	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
13. Fares	.033	.039	.027	.033	.028	.023	.021	.02	.02	.017	.026	.026	.024	.022	.018	.021
14. Mach. Equipmt. M. V.	.033	.039	.027	.033	.028	.023	.021	.02	.02	.017	.026	.026	.027	.024	.021	.024
15. Teams M. V.	.066	.088	.057	.072	.063	.05	.051	.047	.044	.035	.049	.049	.049	.036	.034	.042
16. Explosives	.002	.002	.0005	.002	.001	.001	x	.0003	.0004	x	.001	x	x	x	x	x
17. General Expense	.036	.017	.027	.083	.134	.049	x	.002	.016	.026	.005	.01	.022	.015	.009	.006
18. Insurance	.005	.006	.004	.004	.004	.003	.003	.003	.003	.002	.004	.004	.004	.003	.003	.003
19. Weigh & Tipping																
20. Drainage																
21. Transportation																
22. Telephones																
23. Outside Work																
24. Ventilation																
Totals	1.812	1.815	1.626	1.838	1.834	1.493	1.253	1.279	1.264	1.193	1.418	1.246	1.313	1.249	1.172	1.152

Mach. Equipmt. M. V. Teams Explosives General Expense Insurance

Kay Moor Mine No. 1

1904.	May	June	July	Aug	Sept	Oct	Nov	Dec	1905 Jan	Feb	Mar	Apl	May	June	July
Produced	8491	8483	6692	9665	10114	10560	8697	8882	7442	8618	11273	9050	8337	10696	9558
Salaries	.025	.030	.042	.028	.021	.022	.027	.027	.031	.027	.021	.021	.024	.019	.021
Labor (Mining)	459	458	467	469	455	453	46	468	469	459	456	464	462	462	465
Yardage	.129	.139	.155	.133	.112	.113	.122	.114	.179	.118	.121	.099	.104	.107	.086
Timber	.036	.032	.056	.028	.011	.016	.021	.014	.016	.024	.031	.028	.023	.025	.043
Drivers, Trackmen	.112	.122	.138	.100	.112	.106	.127	.119	.129	.122	.126	.131	.119	.109	.117
Outside Work, Engineering	.073	.079	.124	.064	.058	.055	.069	.059	.064	.057	.055	.052	.057	.062	.066
Inside Work	.034	.039	.026	.023	.024	.017	.029	.027	.042	.039	.038	.037	.036	.021	.027
Power, Rents & Lines	.048	.049	.089	.072	.065	.061	.077	.083	.124	.103	.082	.127	.128	.078	.095
Vent'n & Drainage	.013	.011	.026	.010	.010	.035	.021	.026	.0321	.030	.027	.035	.025	.033	.031
Shops	.007	.004	.004	.009	.006	.007	.006	.007	.007	.004	.005	.008	.003	.006	.005
Supplies	.029	.034	.027	.043	.026	.025	.03	.042	.057	.031	.051	.037	.038	.014	.031
Royalty	.10	.098	.097	.098	.096	.10	.096	.095	.093	.094	.093	.091	.090	.084	.092
Taxes	.019	.021	.026	.018	.018	.016	.02	.001	.028	.020	.016	.019	.021	.016	.018
Mach'y & Equipment	.022	.023	.029	.032	.029	.029	.035	.034	.041	.039	.029	.037	.040	.031	.036
Teams, Mules	.036	.041	.054	.037	.036	.034	.041	.038	.045	.039	.032	.039	.048	.037	.041
Explosives	x	x	.001	x	.001	.002	x	x	x	x	.	–	.	.	.
General Expenses	.012	.007	.042	.002	.003	.006	.012	.016	.009	.003	.004	.005	.011	.016	.003
Insurance	.003	.003	.004	.003	.003	.003	.005	.004	.004	.004	.003	.003	.004	.003	.004
Totals	1.157	1.193	1.407	1.169	1.086	1.10	1.198	1.180	1.265	1.213	1.190	1.223	1.253	1.120	1.181

Kay Moor Mine No 1

June	July	1905	Aug.	Sep.	Oct	Nov.	Dec	1906 Jan	Feby.	Mar	April	may	June	July	Aug	Sept	Oct
10696	9558	Produced	11246	11744	10591	10517	8195	9994	8750	9533	8826	9284	10652	7619	9859	8504	8867
019	021	Salaries	019	019	021	021	033	023	026	025	027	025	022	031	013	011	025
462	465	Labor Mining	463	465	454	456	453	445	449	448	518	480	467	464	461	468	466
107	086	Yardage	067	061	085	081	071	106	098	091	077	093	076	071	064	095	102
025	043	Timber	032	042	032	032	049	029	055	028	047	028	046	019	019	020	044
109	117	Drivers Trackmen Weighing &c	109	111	113	112	122	168	147	119	097	101	087	103	114	115	113
062	066	Outside Work	056	071	079	079	092	099	082	084	134	123	073	071	074	075	088
021	027	Inside Work	020	019	021	024	031	034	034	032	018	019	017	028	029	029	033
078	095	Power House & Elec	084	062	069	065	082	089	107	099	097	101	092	111	098	123	111
033	031	Track & Drainage	027	027	036	034	056	048	043	029	037	036	038	029	031	041	037
006	005	Shops	003	005	009	007	007	009	011	010	009	007	009	006	014	012	007
014	031	Supplies	037	036	039	023	074	084	069	052	062	040	071	035	042	087	109
089	092	Royalty	094	091	094	095	095	097	097	097	095	095	076	095	097	099	094
016	018	Taxes	015	015	016	.	017	017	020	018	019	019	016	022	018	021	019
031	036	Mach & Equip	030	030	032	033	042	035	038	037	039	037	032	050	036	044	042
037	041	Team Work Va	032	032	034	038	048	040	044	038	030	029	025	035	026	031	027
		Explosives	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
016	063	Gen Expense	004	007	009	001	029	013	046	060	042	026	044	046	058	004	022
003	004	Insurance	003	003	003	003	004	004	004	003	004	003	003	004	004	004	004
1123	1181	Totals	1095	1086	1146	1104	1273	1340	1370	1270	1352	1262	1194	1220	1198	1279	1343

Kay Moor Mine No. I.

1906	Nov	Dec	1907 Jan	Feb	Mar	Apr.	May	June	July	Aug	Sep.	Oct	Nov	Dec
Produced	8655	8504	5207	6250	10632	9503	9848	9063	8388	9813	8332	9335	9210	6428
Salaries	029	029	026	023	02	.029	.029	.032	.034	.035	.041	.036	.030	.044
Labor	460	470	482	479	47	.474	.468	.471	.462	.448	.450	.445	.462	.461
Yardage	089	089	115	123	08	.129	.118	.123	.124	.135	.108	.121	.108	.141
Timber	028	027	023	055	02	.009	.032	.016	.047	.038	.032	.040	.032	.071
Driven Tracks &c	129	120	115	099	12	.109	.103	.135	.158	.220	.192	.139	.161	.171
Outside Work	104	069	083	084	10	.100	.113	.099	.129	.118	.138	.110	.097	.152
Inside Work	045	035	043	036	03	.039	.030	.031	.027	.015	.017	.014	.014	.022
Power house &c	111	110	105	081	08	.081	.087	.083	.084	.076	.088	.088	.114	.139
Vent. & Drainage	046	040	043	053	04	.040	.045	.046	.065	.044	.055	.050	.043	.073
Shops.	007	006	003	003	01	.008	.007	.008	.008	.005	.007	.013	.011	.017
Supplies	057	105	056	029	02	.048	.051	.064	.066	.073	.060	.052	.092	.141
Royalty	091	075	088	088	10	.086	.088	.086	.087	.087	.085	.085	.087	.091
Taxes.	020		033	028	02	.018	.017	.019	.020	.018	.021	.019	.019	.027
Mach. & Equip	043	044	076	063	03	.042	.040	.043	.048	.040	.048	.043	.044	.062
Teams W. Va	028	034	052	040	03	.030	.029	.031	.052	.045	.054	.053	.053	.071
Explosives	000		x	x	x	x							x	x
Genl. Expenses	033	017	013	005	01	.009	.002	.019	.005	.008	.011	.019	.011	.015
Insurance	004	004	006	005	x	.003	.003	.003	.004	.003	.004	.004	.004	.005
Total.	1.324	1.274	1.362	1.294	1.18	1.254	1.262	1.309	1.420	1.408	1.411	1.331	1.382	1.703
									9301[15]	11815[19]	10873[62]	11908[35]	11463[68]	10833[2]

Kay Moor Mine #1.

1908	Jan	Feb.	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov.	Dec.	1909 Jan	Feb	Mar
Produced	6051	9085	11833	7632	11011	11223	10330	11576	10157	12207	10076	9900	10940	11137	12913
Salaries	.047	.032	.024	.038	.026	.026	.031	.028	.034	.031	.039	.038	.036	.033	.029
Labor	.464	.438	.440	.442	.447	.443	.427	.420	.429	.433	.435	.428	.436	.436	.453
Yardage	.111	.082	.079	.122	.095	.137	.121	.133	.126	.109	.101	.105	.112	.115	.130
Timber	.058	.076	.043	.066	.052	.044	.049	.061	.037	.061	.041	.019	.030	.014	.049
Drivers, Track, etc	.142	.129	.116	.124	.116	.129	.118	.015	.106	.121	.119	.136	.123	.115	.125
Outside Work	.106	.087	.080	.127	.086	.079	.078	.097	.098	.082	.096	.106	.099	.092	.089
Inside Work	.021	.015	.020	.020	.020	.027	.044	.048	.040	.030	.025	.027	.028	.022	.019
Power House &c.	.148	.089	.079	.103	.073	.078	.088	.101	.129	.090	.104	.109	.037	.084	.074
Vent & Drainage	.071	.036	.026	.051	.048	.036	.038	.034	.044	.023	.022	.024	.024	.022	.021
Shops	.019	.013	.007	.016	.005	.004	.004	.009	.009	.009	.011	.011	.009	.011	.009
Supplies	.068	.025	.027	.049	.028	.065	.042	.087	.045	.065	.076	.063	.124	.034	.050
Royalty	.086	.081	.088	.082	.083	.089	.090	.093	.093	.098	.098	.097	.098	.098	.098
Taxes	.029	.019	.015	.023	.016	.015	.017	.015	.017	.014	.017	.018	.016	.016	.014
Mchy & Equip.	.066	.045	.034	.053	.036	.036	.039	.035	.039	.033	.040	.041	.048	.047	.040
Teams, W.Va	.073	.049	.036	.069	.046	.049	.052	.049	.047	.054	.056	.057	.048	.052	.046
Explosives	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Gen. Expense	.011	.011	.008	.002	.004	.010	.006	.005	.011	.016	.008	.009	.012	.003	.011
Insurance	.005	.003	.003	.005	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003
Total	1.525	1.230	1.125	1.402	1.184	1.270	1.235	1.323	1.307	1.272	1.291	1.291	1.333	1.197	1.260
Total Cost Gross	7093.73	8086.18	12624.52	11904.35	12442.39	11868.78	11904.45	13819.28	11758.26	12421.14	12734.79	10947.10			

See page 160

Kay Moor Mine No. 2.

1903.	July	Aug	Sept	Oct	Nov.	Dec	1904 Jan	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept	Oct
Produced	542	1525	1285	1639	1985	1674	1776	2055	1801	898	1213	1271	1167	1290	1176	1457
Salaries	.101	.036	.043	.033	.015	.033	.031	.039	.044	.089	.066	.063	.107	.097	.085	.051
Labor (Mining)	.602	.591	.618	.603	.502	.621	.622	.579	.599	.527	.535	.536	.532	.536	.534	.539
Yardage	.060	.183	.159	.181	.137	.155	.069	.124	.134	.272	.306	.248	.218	.205	.227	.318
Timber	.009	.057	.009	.024	.024	.018	.039	.052	.04	.039	.045	.032	.022	.03	.026	.013
Drivers, Track &c	.085	.087	.112	.098	.10	.124	.10	.096	.101	.069	.161	.094	.072	.069	.109	.137
Outside Work - Weighing & Tipping	.074	.063	.024	.023	.042	.011	.008	.018	.027	.047	.055	.021	.039	.035	.031	.029
Inside Work	.341	.052	.084	.064	.051	.077	.075	.047	.069	.106	.079	.078	.095	.099	.097	.081
Power House & P. Lines	.012	x	.030	.030	.055	.004	x	x	x	x	x	x	.03	x	x	x
Vent & Drainage	.042	x	x	.005	.007	.019	.019	.026	.026	.036	.029	.031	x	.032	.046	.049
Shops	x	.021	.043	.026	.026	.023	.026	.021	.016	.032	.028	.033	.024	.02	.034	.009
Supplies	.080	.016	.025	x	.006	x	.033	x	.009	.011	x	.045	.004	.013	.008	x
Royalty	.049	.050	.050	.050	.050	.050	.050	.051	.050	.05	.05	.05	.05	.05	.05	.05
Taxes	.020	.020	.020	.020	.003	.003	.014	.012	.014	.028	.021	.019	.022	.02	.021	.018
Mach. & Equipment W.Va.	.046	.016	.019	.015	.012	.015	.014	.012	.014	.028	.021	.019	.022	.039	.042	.034
Teams W.Va.	.073	.052	.062	.049	.060	.072	.068	.068	.061	.134	.082	.095	.085	.077	.085	.069
Explosives	x	x	.002	x	.004	x	x	x	x	x	x	.004	x	x	x	x
General Expense	x	x	.011	x	.001	x	x	.001	.006	x	.004	x	.027	.015	.003	.001
Insurance	.009	.003	.004	.003	.003	.003	.006	.004	.005	.011	.008	.008	.008	.009	.009	.005
Totals	1.605	1.25	1.317	1.224	1.098	1.228	1.274	1.151	1.215	1.479	1.49	1.376	1.357	1.348	1.407	1.406

Kay Moor Mine No. 2.

Aug.	Sept	Oct	1904.	Nov.	Dec	1905 Jan	Feb.	Mar.	Apl.	May	June	July	Aug	Sept	Oct	Nov.	Dec
1290.	1176.	1457	Produced	1835.	2035.	1843.	2522.	3389.	2573.	2282.	2740.	2307.	2799.	1951.	2981.	2977.	2266.
.097	.085	.051	Salaries	.042	.037	.041	.029	.022	.025	.028	.028	.033	.027	.038	.025	.025	.067
.536	.534	.539	Labor (mining)	.588	.582	.572	.582	.579	.567	.570	.575	.598	.591	.584	.569	.564	.559
.205	.227	.318	Yardage	.306	.287	.234	.158	.151	.180	.183	.167	.166	.122	.090	.125	.124	.143
.03	.026	.013	Timber	x	.022	.057	.013	.017	.025	.022	.069	.063	.016	.044	.010	.044	.049
.069	.109	.137	Drivers, Track, &c	.123	.11	.119	.124	.098	.111	.131	.117	.092	.087	.090	.085	.087	.100
.035	.031	.029	Outside Work, Weighing & Tipping	.016	.019	.024	.030	.025	.018	.030	.032	.037	.034	.129	.043	.034	.022
.099	.097	.081	Inside Work	.059	.061	.072	.049	.045	.052	.061	.045	.065	.058	.062	.045	.042	.049
x	x	x	Power House, Pipe Lines	x	x	x	.	.	.	.	.	.	.	.	.	.	.
.032	.046	.049	Ventilation and Drainage	.029	.028	.014	.017	.021	.024	.022	.025	.030	.020	.029	.014	.010	.011
.02	.034	.009	Shops	.015	.013	.011	.008	.003	.	.009	.002	.007	.008	.002	.006	.006	.010
.013	.008	x	Supplies	.006	.022	.01	.014	.003	.006	.004	.002	.001	.015	.016	.013	.004	.009
.05	.05	.05	Royalty	.050	.05	.05	.050	.050	.050	.050	.049	.050	.050	.050	.050	.050	.050
.02	.021	.018	Taxes	.013	.004	.014	.010	.007	.009	.011	.009	.011	.009	.013	.009	.	.008
.039	.042	.034	Mach. & Eqpmt. W. Va.	.026	.025	.028	.029	.022	.029	.033	.028	.033	.027	.038	.025	.025	.034
.077	.085	.069	Teams, W. Va.	.065	.059	.065	.048	.048	.062	.087	.072	.087	.071	.092	.073	.067	.088
x	x	x	Explosives	.001	x	x	.001	.002	.	.002	.	.001	.	.	.001	.	.
.015	.003	.001	General Expense	.000	.001	.005	.002	.	.	.	.004	.004	.001	.000	.	.	.012
.009	.009	.008	Insurance	.007	.005	.006	.005	.003	.004	.005	.004	.005	.004	.006	.004	.004	.005
1.348	1.407	1.406	Totals	1.346	1.325	1.322	1.117	1.096	1.162	1.248	1.228	1.283	1.140	1.283	1.097	1.086	1.200

Taxes 108 / 1094

Kay Moor Mine No 2.

1906	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Produced	3504	2888	3508	2815	3356	3113	2831	3452	3190	3132	3067	2276
Salaries	.048	058	051	062	052	056	062	014	008	016	041	055
Labor	.556	554	593	557	566	564	567	565	565	563	560	575
Yardage	162	195	175	227	238	210	175	183	194	163	224	209
Timber	013	053	035	066	048	044	043	048	046	057	049	024
Drivers Tracks &c	106	101	100	112	120	119	118	114	118	127	121	130
Outside Work	022	054	040	088	092	050	046	050	047	045	061	042
Inside Work	042	058	067	075	060	076	069	071	059	078	074	078
Power House	-	.	.						.		.	
Ventilation & Drainage	.009	014	016	014	016	017	024	018	019	022	023	024
Shops	.005	.	001	-	006	003	001	.	.	.	.	003
Supplies	006		001	016	018	010	013	013	029	001	003	032
Royalty	.050	050	050	050	050	050	050	050	050	050	050	050
Taxes	.007	009	007	009	008	008	009	007	008	008	008	008
Machinery & Equip	021	025	022	027	022	024	030	025	027	027	028	039
Teams W. Va	063	076	063	059	045	048	053	043	052	053	049	078
Explosives	-	.	.									
General Expenses	006	055	008	020	019	063	010	014	005	024	051	011
Insurance	003	004	003	004	003	004	004	003	003	003	003	005
Total	1.129	1336	1232	1.386	1.363	1.340	1272	1.207	1.230	1.237	1.345	1.349
							3601.26	4172.36	3925.08	3880.43	4125.34	3070.30

1901

Blake 954 N & Slack Coal daily

	May	June	July	Aug	Sept	Oct	Nov
	2	2					

Kay. Moor. Mine. No. 2.

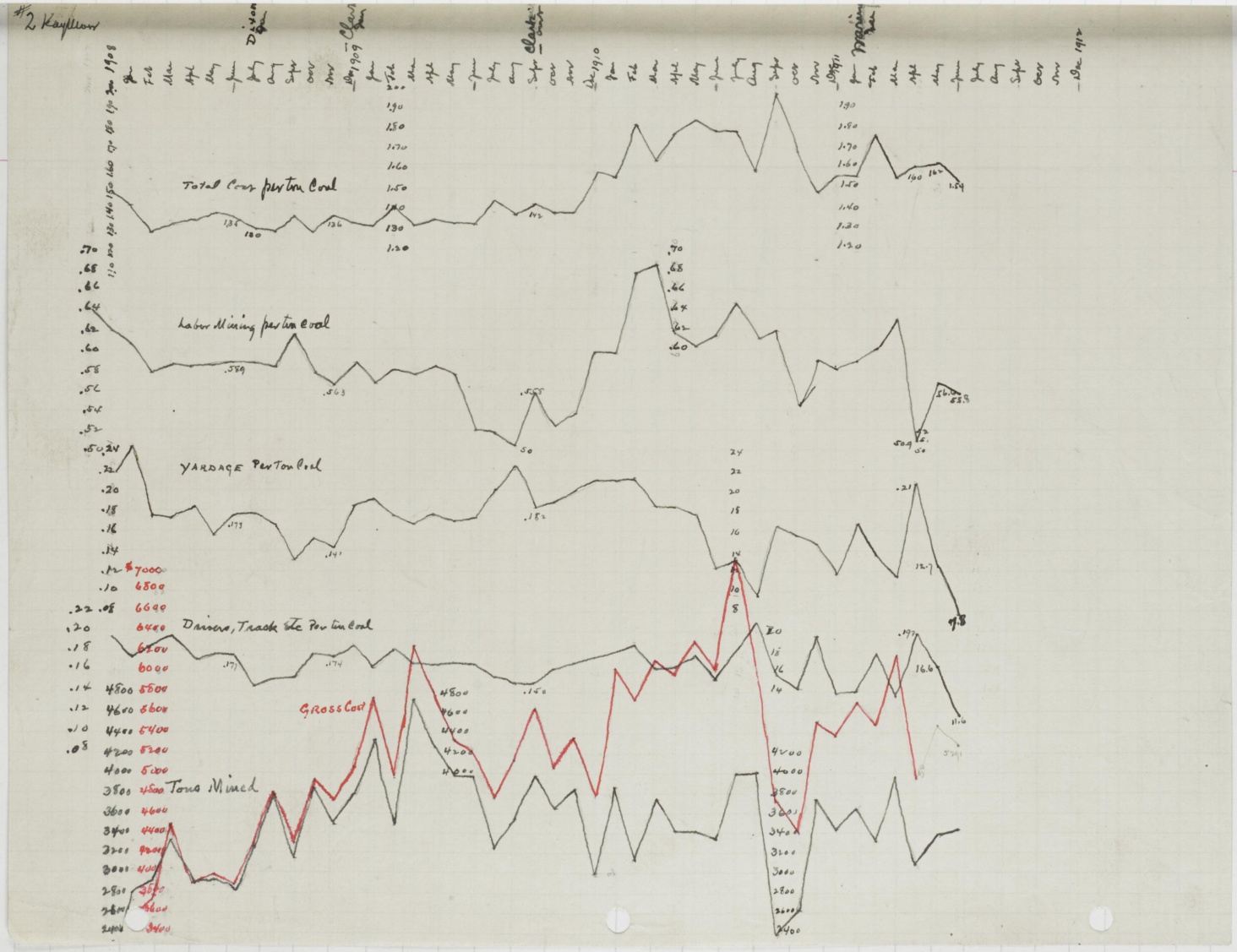
1907	Jan	Feb	Mar	Apr.	May	June	July	Aug	Sep.	Oct	Nov	Dec	1908 Jan	Feb.	Mar.	Apr.
Produced	2768	2386	3145	2926	2339	2169	1672	1938	1775	2992	2894	2359	2807	2927	3366	2888
Salaries	036	042	03	.034	.043	.046	.059	.052	.056	.033	.035	.042	.035	.034	.029	.035
Labor	595	581	62	.582	.631	.624	.621	.636	.626	.649	.639	.619	.606	.579	.584	.583
Yardage	169	213	13	.143	.122	.111	.128	.117	.189	.181	.200	.219	.243	.177	.171	.182
Timber	011	018	06	.045	.014	.011	.026	.013	.041	.051	.024	.016	.025	.015	.048	.040
Drivers Tracks &c	139	144	14	.138	.135	.126	.098	.144	.174	.161	.149	.191	.175	.184	.193	.172
Outside Work	023	036	03	.039	.035	.039	.087	.075	.112	.065	.063	.046	.041	.045	.032	.047
Inside Work	054	044	04	.069	.054	.061	.081	.067	.073	.044	.039	.047	.039	.038	.033	.039
Power House	x	021	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vent & Drainage	041	006	03	.029	.039	.041	.046	.028	.028	.019	.019	.023	.029	.015	.014	.015
Shops.	.006	001	01	.009	.020	.019	.025	.022	.026	.014	.017	.018	.006	.008	.010	.013
Supplies	001	029	01	.022	x	.013	.001	.004	.024	.001	.028	.023	.005	x	.015	.007
Royalty	050	050	05	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050
Taxes.	009	010	01	.008	.010	.012	.015	.013	.014	.009	.009	.011	.009	.008	.007	.009
Mach. & Equip	031	036	02	.029	.036	.039	.054	.047	.051	.031	.031	.038	.032	.031	.027	.031
Teams. W. Va	065	082	06	.066	.084	.089	.189	.137	.152	.112	.103	.139	.113	.104	.091	.115
Explosives	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
General Expense	003	004	02	.005	.016	.016	.000	.016	.003	.030	.010	.005	.014	x	x .010	x
Insurance	005	005	x	.004	.004	.005	.007	.006	.006	.004	.004	.005	.004	.004	.003	.004
Total.	1.226	1.320	1.26	1.272	1.293	1.302	1.487	1.427	1.525	1.454	1.420	1.492	1.426	1.292	1.317	1.342
	3394.37	3149.41	3992.89	3728.45	3026.20	2829.97	2490.42	2765.53	2883.85	4352.50	4107.42	3522.81	4012.09	3783.55	4435.93	3873.70

Kay Moor Mine #2

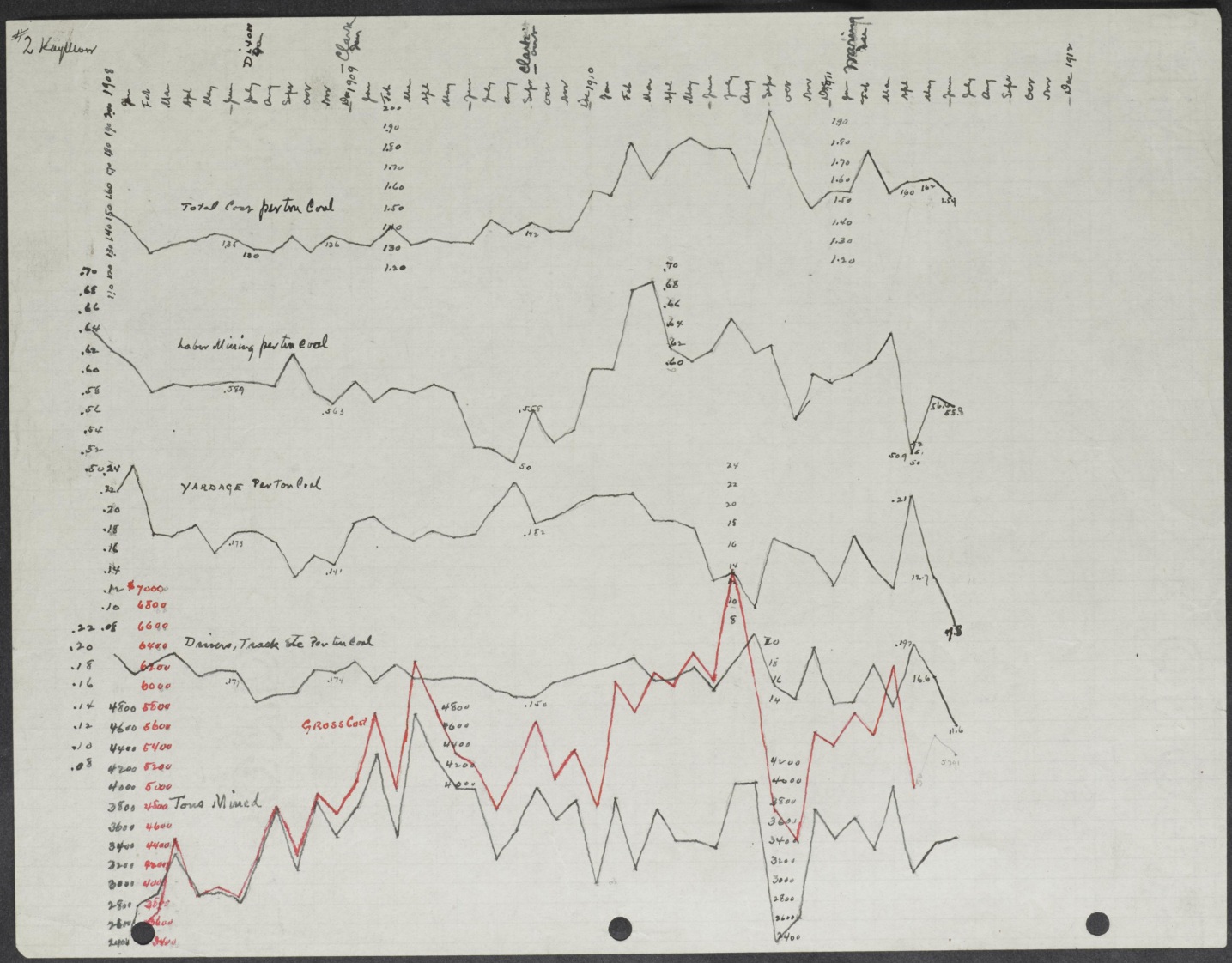
1908	May	June	July	Aug	Sept	Oct	Nov.	Dec.	1909 Jan	Feb	Mar	Apr	May	June
Produced	2907	2860	3263	3783	3148	3829	3484	3794	4352	3488	4722	4267	3983	3974
Salaries	.035	.035	.039	.038	.049	.047	.051	.047	.045	.050	.037	.041	.046	.044
Labor	.585	.589	.589	.584	.616	.578	.563	.587	.567	.580	.575	.582	.575	.570
Yardage	.153	.173	.176	.169	.130	.152	.141	.184	.190	.177	.169	.176	.169	.172
Timber	.037	.025	.049	.042	.047	.029	.076	.019	.025	.023	.028	.015	.025	.025
Drivers, Lackets etc.	.176	.177	.145	.151	.154	.176	.174	.185	.162	.182	.168	.166	.168	.166
Outside Work	.079	.037	.033	.032	.045	.042	.065	.046	.058	.058	.049	.058	.059	.058
Inside Work	.038	.039	.034	.032	.035	.029	.037	.038	.034	.046	.031	.034	.036	.034
Power House	×	×	×	×	×	.019	.021	.019	.017	.021	.016	.017	.016	.062
Vent & Drainage	.027	.022	.022	.027	.031	.023	.030	.039	.038	.057	.047	.056	.049	.051
Shops	.012	.011	.010	.007	.017	.011	×	.007	.009	.005	.013	.009	.013	.009
Supplies	.008	.019	.003	.011	.023	.004	.016	.008	.013	.019	.031	.019	.031	.010
Royalty	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050
Taxes	.009	.009	.008	.007	.008	.007	.007	.007	.006	.007	.005	.006	.005	.006
Machy & Equip.	.032	.032	.028	.027	.029	.024	.026	.024	.029	.036	.026	.029	.026	.029
Teams, W. Va.	.122	.107	.095	.088	.104	.085	.096	.088	.075	.093	.068	.082	.068	.082
Explosives	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Genl Expense	.003	.024	.005	.003	.023	.004	.006	.002	×	.014	.008	.015	.008	.000
Insurance	.004	.004	.003	.003	.003	.003	.003	.003	.003	.003	.002	.002	.002	.002
Total Cost per ton	1.370	1.353	1.303	1.271	1.363	1.283	1.362	1.333	1.321	1.421	1.323	1.357	1.336	1.320
Gross Cost	3977.93	3869.75	4250.54	4798.46	4290.70	4921.39	4747.19	5061.32	5748.10	4959.59	6265.69	5799.33	5325.29	5242.78

Kay Moor Mine #2.

May	June	1909	July	Aug.	Sept	Oct	Nov.	Dec	1910 Jan	Feb	Mar	Apr	May	June	July	Aug.
3983	3974	Produced	3231	3565	3962	3643	3843	2997	3877	3166	3729	3420	3407	3343	4006	4039
.046	.044	Salaries	.055	.049	.045	.048	.046	.059	.049	.058	.050	.069	.071	.075	.059	.059
.575	.570	Labor	.519	.504	.558	.523	.537	.598	.597	.676	.683	.617	.604	.613	.646	.610
.169	.172	Yardage	.201	.224	.182	.189	.200	.210	.210	.210	.183	.182	.178	.122	.130	.095
.025	.025	Timber	.024	.035	.026	.041	.027	.027	.036	.049	.043	.057	.052	.043	.030	.076
.168	.166	Drivers Tracks etc	.153	.150	.150	.162	.170	.175	.180	.186	.163	.168	.178	.153	.180	.209
.059	.058	Outside Work	.109	.055	.055	.062	.068	.088	.082	.088	.077	.116	.073	.077	.069	.063
.036	.034	Inside Work	.045	.040	.037	.032	.037	.040	.030	.037	.031	.041	.067	.033	.032	.030
.016	.062	Power House	.047	.053	.043	.046	.043	.050	.040	.047	.048	.034	.035	.045	.033	.029
.049	.051	Vent & Drainage	.067	.053	.050	.053	.056	.065	.073	.072	.062	.069	.077	.074	.067	.082
.013	.009	Shops	.008	.009	.009	.009	.010	.013	.009	.011	.011	.012	.011	.011	.009	.020
.031	.010	Supplies	.020	.017	.089	.042	.012	.013	.026	.051	.019	.099	.188	.243	.204	.040
.050	.050	Royalty	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050	.050
.005	.006	Taxes	.008	.007	.007	.007	.007	.010	.008	.010	.008	.009	.009	.010	.007	.007
.026	.029	Mchy & Equipt	.040	.035	.032	.034	.032	.045	.078	.095	.081	.088	.088	.090	.093	.092
.068	.082	Teams. W. Va	.094	.088	.077	.085	.090	.120	.086	.125	.102	.130	.142	.126	.101	.099
x	x	Explosives	x	x	x	x	x	x	x	x	x	x	x	x	x	x
.008	.000	Gen. Expense	.002	.008	.010	.002	.004	.024	.004	.042	.026	.010	.018	.028	.007	.021
.002	.002	Insurance	.003	.003	.002	.003	.003	.004	.003	.003	.003	.004	.003	.003	.003	.003
		Bad Debts written off													.060	.001
1.336	1.320	Total Cost per ton	1.445	1.380	1.422	1.388	1.392	1.591	1.561	1.810	1.640	1.755	1.844	1.796	1.780	1584
5325.29	5242.78	Gross Cost	4668.80	4918.23	5629.30	5058.78	5350.03	4766.46	6050.91	5730.44	6112.86	6001.71	6281.65	6004.39	7130.42	6397.17


#2 Kayllow
Total Cost per ton Coal
Labor Mining per ton Coal
YARDAGE Per Ton Coal
Drivers, Track etc Per ton Coal
GROSS Cost
Tons Mined

Loose Item


#2 Kayllow
Total Cost per ton Coal
Labor Mining per ton Coal
YARDAGE Per Ton Coal
Drivers, Track etc Per ton Coal
Gross Cost
Tons Mined

July Aug.
327.9
.103

Lowell Mar

Pig Iron Due On Contracts.

1902	Current Mo.	Next Mo.	Second Mo.	Later	Total	Remarks.
Dec 1	15710			18332	34042	
1903 Jan. 6	6636	6369	6149	12181	31335	
Feb 2	9381	6289	5339	7633	28642	
Mar 2	12055	5514	4443	3715	25727	
April 1	11126	4693	6465		22284	
May 1	11227	4258		2675	18160	
June 1	4538	3300		7877	15715	
July 1	4258	3837		3568	11663	
Aug 1	4140	3991		3991	12122	
Sept 1	2881	2881		2885	8647	
Oct 2	2843	2366	2363		7572	
Nov 2	3588	2663		200	6451	
Dec 1	2503		1614	2000	6117	
1904 Jan. 1	6108	3911	2209	1021	13249	
Feb 1	6360	2205	931	305	9831	
Mar 1	3150	1081	255	3482	7968	
April 1	4229	1046	766	Weld up 964	7005	
May 2	5110	1814		1498	8422	
June 1	4752	1084	438	374	6648	
July 1	4115	913	787	487	6302	
Aug 1	3708	1720	720	125	6273	
Sept 1	4404	1641	520		6565	
Oct 1	4160	2179	1877	1000	9216	
Nov 1	6098	4153		3000	13251	
Dec 1	8313	1715	1555	1305	12888	
1905 Jan 1	6767	2794	2469		12030	
Feb 1	6785	2853			9638	
Mar 1	6638	2026	2072	1582	12318	
April 1	4875	3651	2484	1685	13195	
May 1	3744	3501	1740	1946	12336	
June 1	6505	1873	981	734	9993	
July 1	4877	1361	998	1100	8336	
Aug 1	5567	3105	2480	3643	14795	
Sept 1	6684	3107	2555	1856	14147	
Oct 1	5666	3629	3495	1755	14539	
Nov. 1	5187	4255	1074	1401	12411	
Dec 1	6556	1615	1539	1646	11356	
1906 Jan 1	4508	2024	1471	449	9007	
31	3114	3720	3803	3790	13987	
Feb 3	1774	2501	1398	781	11950	
April 2	7501	2774	1756	150	12181	
May 1	9304	4369	1977	1593	16173	

Pig Iron Deliveries on Contracts

Remarks		Current Mos.	Next Mos.	Second Mos.	Later	Total	Remarks
	June 1906	8590	3444	7045	1871	15900	
	July "	17194	6317	4767	3711	32589	
	Aug "	13608	5581	7471	7966	34626	
	Sept "	14118	3673	3679	3017	24487	
	Oct "	10697	5094	3755	5875	25416	
	Nov. "	~~11059~~	~~3949~~	~~3884~~	~~17629~~	36521	
	Dec "	~~9127~~	~~4280~~	~~4143~~	~~17821~~	35371	
	Jan 1907	9806	4852	4444	25581	44683	
	Feby "	8825	5869	6041	26394	47129	
	Mch "	11007	6619	5895	21902	45423	
	Apl "	11870	6167	6170	25078	49285	
	May "	10918	6316	4905	22825	44964	
	June "	9867	5561	5217	24719	45364	
	July "	10187	5548	5678	14757	36170	
	Aug "	8897	5613	6048	13611	34169	
	Sept "	11341	6913	6437	7895	32581	
	Oct "	13167	5977	5647	11755	36911	
	Nov "	17457	5568	1056	1146	20771	
	Dec "	11107	4655	4994	6457	27118	
	Jany 1908	10774	7994	5978	1774	27345	
	Feby "	11761	1761	10001	1773	25296	
	Mch "	10399	11054	10001	934	32388	
	Apl "	10737	14855	9094		33186	
	May "	10794	11553			22347	
	June "	8107	11750	2000	2000	23857	
	July "	6190	10007	2333		18530	
	Aug "	2770	4791	2353		9914	
	Sept "	1679	4196	2767	4994	13636	
	Oct "	3744	3381	2181	1955	11261	
	Nov "	4164	8138	1101	3169	16572	
	Dec "	7535	2479	1691	2741	14446	
	Jany 1909	10335	3780	1497	1000	16607	
	Feby "	6441	5350	868	2157	14816	
	Mch "	4532	5445	1355	1805	13137	
	Apl "	5991	6546	3456	1905	17898	
	May "	7730	8011	2357	5083	22761	
	June "	4730	8009	5110	7099	24948	
	July "	8476	8677	5766	1719	25638	
	Aug "	12707	11699	1037	1707	26663	
	Sept "	12069	6767	1761	1158	21780	
	Oct "	12630	6897	3001	1850	24373	
	Nov "	11591	7487	3570	6970	29568	
	Dec "	15834	9351	4717	4577	34479	

Pig Iron due on Contracts

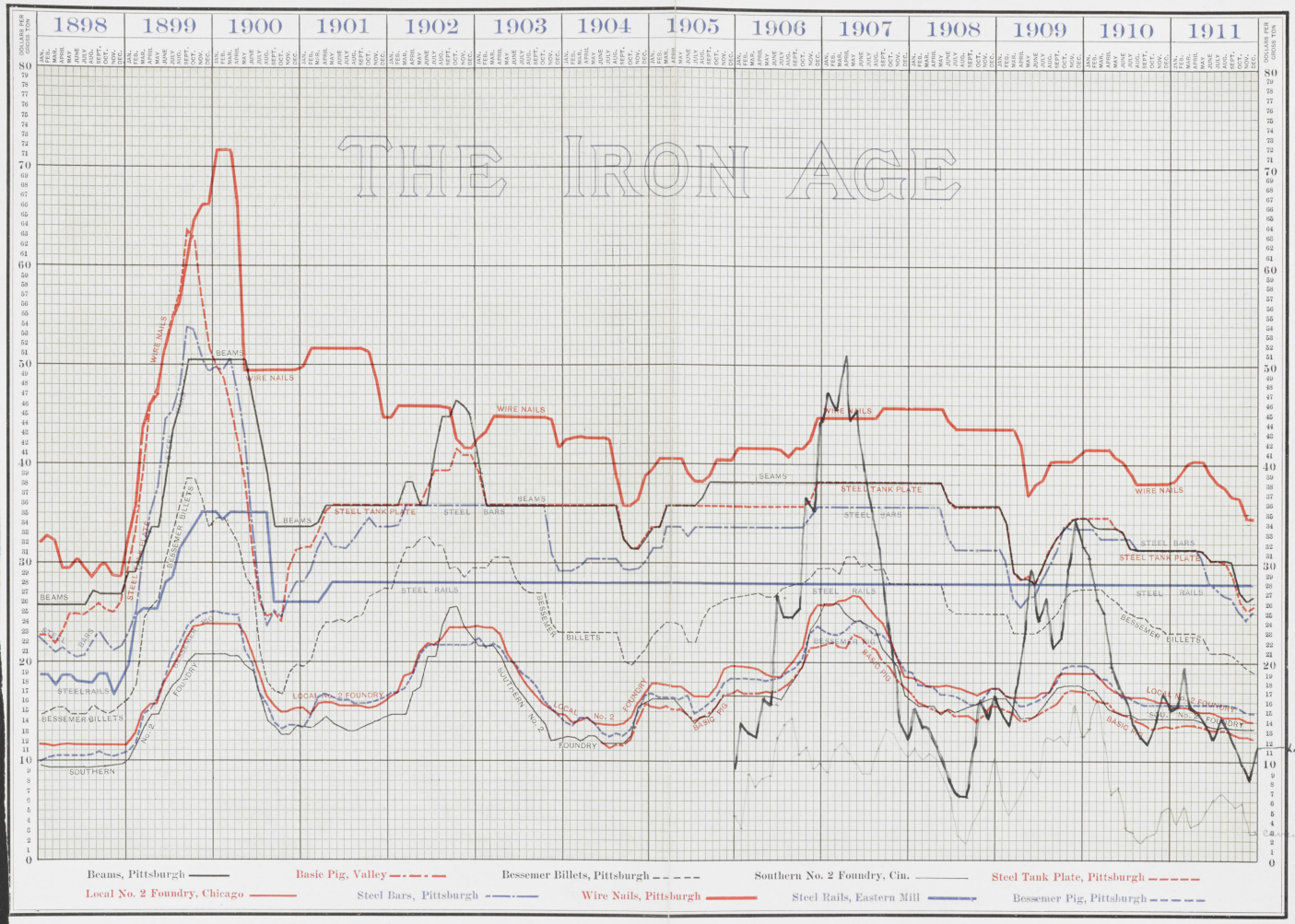
1910	Current mo	Next mo	Third mo	Later	Total Payments
Jany 1st	17 681	11 605	5587	7017	31930
Feby 1	13147	11975	1572	7940	30611
March 1	16866	160	1134	7154	26334
April 1	11977	7637	7555	7945	27054
May 1	6753		2638	3737	19668
June 1	7466		1096	3627	17382
July	3283	Held up	1185		16328
Aug	2912	4291	1340		13682
Sept	1985	4529	1062		12125
Oct	2430	4017	1237		11502
Nov	2518	3553	3333		13368
Dec	5010	4215	2357		16703
Jany 1911	5339	3356	2472		15492
Feb	3874	4664	2566		15833
Mar	~~3295~~ 5445	5040	2877		19663
April	3295	4447	3258		15873
May	3783	5003	3801		14858
June	5091	4778	1175		13671
July	6126	2701	1133		12132
Aug	6855	2916	2160		14286
Sept	6187	4107	2025		13439
Oct	5534	4291	275		11310
Nov	5990	1488	875		9655
Dec	2642	2331	793		8001
Jany 1912	2796	1930	3336		11487
Feb 1st	3285	1690 Steel + wrote	2422		10494
Mar	2483	1484	1265		9713
April	1775	1347	1317		8278
May	2684	3158	1319		12732
June	3028	2074	2100		11608
July	4601	3169	2896		13959
Aug	4058	3076	1068		14338
Sept	3301	1406	1397		11228
Oct	4313	2030	2033		13214
Nov	4929	2062	2307		16808
Dec	6233	2923	1943		17508
Jany 1913	5499	2315	2096		14638
Feby	5221	2758	400		13384
Mar	5375	525	364		10820
April	3726	842	768		9565
May	3815	1146	289		10321
June	2058	555	410		6901
July	1117	719	585		5771

Pig Iron due on Contracts

1913	Current Mo.	Next mo.	2nd mo.		Total
June 1	29.5	18.0	5.5		



le and Finished Iron and Steel
uary 1, 1912—Gross Tons.



Fluctuations in the Prices of Crude and Finished Iron and Steel from January 1, 1898, to January 1, 1912—Gross Tons.

Loose Item

Pig Iron due on Contracts

1913	Current Mo.	Next mo.	2nd Mon.		Total
Aug 1	2954	1849	852		5414
Sept	1358	1226	731		7079
Oct	1920	1604	1571		9292


MAY
JUNE
burgh

BLANK
PAGE(S)

Jordan Mine

	1907 July	Aug	Sept	Oct	Nov	Dec	1908 Jan	Feb	Mar.	Apr.	May	June	July
Produced	1510	3024	2293	3699	4114	2201	1662	2893	2477	3902	4683	4027	4203
Scarre	.127	.063	.073	.047	.032	.079	.135	.096	.111	.070	.060	.083	.094
Labor	.992	.698	.857	.785	.912	.791	1.265	.730	1.049	.656	.619	.595	.687
Explosives	.369	.066	.182	.126	.089	.273	.076	.054	.064	.046	.049	.120	.048
Fuel	.016	×	×	×	×	×	.040	.109	×	.025	.023	.075	.034
Supplies	.305	.127	.032	.070	.039	.113	.124	.042	.035	.015	.026	.014	.009
Timber, etc	×	×	.016	.017	.011	.061	.022	.020	.005	.001	.002	×	.005
F.O. Frt.	×	.039	.173	.042	.042	.039	.069	.011	.075	.043	.063	×	×
RR "	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250
Scarre	.053	.047	.072	.047	.034	.324	.236	.140	.146	.117	.109	.199	.132
Analysis	.001	×	.004	.003	.002	.002	×	.001	.003	.003	.001	.002	.002
Gen Expense	.005	.046	.056	.087	.017	.009	.002	.001	.001	.005	.067	.004	.007
Telephone	×	×	.001	×	×	×	.006	.003	.004	.003	.002	.002	.002
Mchy Eqpt.	.199	.099	.131	.081	.073	.137	.180	.104	.121	.077	.064	.075	.070
Taxes	.006	.003	.004	.003	.002	.005	.006	.003	.004	.003	.002	.002	.002
Insurance	.003	.001	.002	.001	.001	.002	.003	.001	.002	.001	.001	.001	.001
Royalty	.200	.201	.200	.198	.200	.200	.200	.200	.200	.200	.200	.200	.200
Cost Mining	2.526	1.669	2.053	1.757	1.680	2.219	2.570	1.725	2.060	1.515	1.534	1.622	1.543
Washing													
Labor	.021	.121	.153	.105	.099	.109	.123	.119	.123	.109	.129	.124	.123
Supplies	.001	.000	000	×	.008	×	×	.008	.006	.004	.001	.012	.002
Coal	.008	.008	.009	.005	.015	.004	.017	.032	.019	.011	.010	.015	.032
Repairs	.021	.059	.023	.029	.031	.041	.044	.029	.033	.039	.038	.029 .069	.040 .085 c cr'd frt on waste to washer
Cost Washing	.071	.188	.285	.139	.152	.158	.184	.188	.181	.163	.178	.249	.283
Total Cost	2.597	1.775	2.238	1.841	1.759	2.246	2.649	1.832	2.162	1.615	1.609	1.730	1.677

Jordan Mine.

June	July	1908	Aug	Sept	Oct	Nov.	Dec	1909 Jan	Feb	Mar	Apr	May	June	July	Aug
027	4203	Produced	3300	4578	6183	5649	3688	4638	4072	5993	6899	7542	7841	8920	9633
83	094	Salaries	.103	.068	.057	.051	.079	.066	.069	.048	.041	.039	.036	.037	.029
95	687	Labor	.802	.899	.604	685	.832	.892	1.082	.903	.747	.649	.771	.624	.569
20	048	Explosives	.070	.176	.036	.121	.037	.166	.059	.114	.045	.098	.188	.055	.075
075	034	Fuel	.036	.050	.015	.019	.043	.038	^	.039	.015	.037	.019	.008	.097
014	009	Supplies	.058	.038	.053	.024	.031	.116	.058	.037	.051	.079	.037	.045	.048
x	005	Timber, etc.	.021	.007	.008	.005	.009	.015	.001	.026	.014	x	.017	001	009
x	^	C.O. St.	x	x	x	x	x	x	x	x	x	x	x	x	x
250	250	R.R.	250	250	250	250	250	250	250	250	250	250	250	250	250
199	132	Teams	162	098	078	090	123	116	135	092	082	074	097	061	050
002	002	Analysis	005	001	001	001	003	x	003	002	006	x	004	x	x
004	007	Gen. Expens.	029	043	014	004	012	005	007	013	003	017	003	016	004
002	002	Telephone	005	004	002	002	004	004	004	002	002	007	002	002	004
075	070	Mach'y & Equip.	091	066	048	053	081	044	049	034	029	026	026	023	077
002	002	Taxes.	003	002	001	002	003	002	002	001	001	001	001	001	001
001	001	Insurance	001	001	001	001	001	001	001	001	x	x	x	x	x
200	200	Royalty.	200	200	200	200	200	200	200	200	200	200	200	200	200
1622	1543	Cost Mining	1834	1903	1362	1508	1708	1915	1918	1762	1486	1417	1534	1316	1781
		Washing													
124	123	Labor	147	253	168	164	229	184	219	184	163	217	171	159	155
012	002	Supplies	008	003	015	004	016	019	022	013	022	015	011	017	036
015	032	Coal	024	x	021	067	160	022	x	045	007	049	046	005	076
029	040	Repairs	044	089	049	071	334	710	228	046	017	118	157	089	006
069	086	C.O. St. on waste	140	003	x										
249	283	Cost Washing	363	353	279	306	739	945	461	288	195	394	385	270	273
1730	1677	Total Cost.	2022	2219	1619	1807	2421	2260	2379	2050	1681	1806	1914	1586	1503

Jordan Mine

1909	Sept	Oct	Nov	Dec	1910 Jan	Feb	Mar	Apr	May	June
Produced	9309	9860	11179	7756	5606	8767	10143	11387	11578	12685
Salaries	.030	.030	.025	.037	.064	.036	.028	.025	.025	.021
Labor	.525	.553	.538	.793	1.399	.896	.860	.627	.739	.595
Explosives	.097	.097	.097	.097	.160	.043	.096	.118	.060	.069
Fuel	.023	.016	.007	.036	.047	.047	.047	.081	.017	.038
Supplies	.051	.026	.023	.043	.110	.078	.039	.038	.056	.075
Timber etc	X	.005	.007	X	.004	.001	.001	.005	.016	X
C.F.&O. Fds	X	X	X	X	X	X	X	X	X	X
R R "	.250	.250	.250	.248	.250	.250	.250	.250	.250	.250
Teams	.056	.053	.050	.071	.134	.076	.071	.056	.060	.043
Analysis	X	.001	X	X	.001	X	.001	X	.004	X
Gen Expense	.018	.016	.054	.003	.004	.010	.003	.033	.001	.004
Telephone	.004	.004	.001	.004	.025	.004	.004	.004	.004	.004
Mdse Equipt	.035	.035	.030	.044	.080	.046	.039	.035	.035	.030
Surplus	.001	.001	X	.001	.003	.004	.001	.001	.001	.001
Insurance	X	X	X	.001	.001	X	.009	.008	.008	.006
Royalty	.200	.200	.200	.200	.200	.200	.200	.200	.200	.200
"Deficiency 5488/09			.098	.130	.634	.275	.211	.168	.160	.104
Cost Mining	1.287	1.260	1.380	1.798	3.104	1.957	1.858	1.633	1.618	1.438
Washing										
Labor	.156	.166	.153	.213	.351	.183	.186	.186	.206	.157
Supplies	.028	.054	.035	.060	.065	.007	.037	.047	.027	.027
Coal	.057	.004	.037	.057	.033	.018	.071	.060	.014	.076
Repairs	.051	.096	.060	.137	.197	.110	.073	.088	.036	.176
Cost Washing	.287	.370	.280	.457	.646	.318	.317	.381	.283	.376
Total Cost	1.574	1.580	1.660	2.250	3.748	2.275	2.170	2.014	1.901	1.814

Jordan Basin

1910	July	Aug	Sept	Oct	Nov	Dec	1911 Jan	Feb	Mar	Apr.
Produced	10186	10981	11554	10693	7961	5539	4893	4739	5219	5956
Salaries	.028	.026	.025	.029	.039	.057	.073	.067	.063	.054
Labor	.760	.735	.695	.584	.553	.673	1.107	.920	.677	.526
Explosives	.107	.100	.090	.054	.109	.057	.079	.270	.178	.074
Fuel	.026	.051	.045	.041	.077	.131	.041	.042	.127	.136
Supplies	.110	.086	.042	.027	.069	.091	.035	.075	.058	.080
Timber &c	.029	.006	X	.009	.006	.004	.013	.008	X	.001
C & E. Exh	X	X	X	X	X	X	X	X	.000	X
P R	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250
Teams	.077	.054	.046	.049	.068	.099	.173	.115	.114	.086
Analysis	X	.001	X	.003	.003	X	X	.001	.001	.001
Gen. Expense	.010	.007	.004	.003	.004	.011	.007	.007	.006	.003
Telephone	.003	.004	.003	.003	.003	.005	.006	.006	.005	.005
Mchy & Equip	.045	.041	.040	.042	.057	.081	.105	.097	.088	.077
Taxes	.001	.004	.001	.001	.004	.007	.004	.004	.004	.003
Insurance	.009	.008	.009	.008	.011	.016	.021	.018	.017	.015
Royalty	.200	.200	.200	.200	.200	.200	.200	.200	.200	.200
Depreciency	.211	.180	.161	.190	.320	.554	.771	.680	.597	.500
Engineering Service							.011	.014	.006	.002
Cost Mining	1.861	1.735	1.611	1.499	1.764	2.228	2.815	2.714	2.391	2.043
Washing										
Labor	.201	.256	.209	.150	.189	.229	.316	.254	.212	.160
Supplies	.025	.017	.020	.028	.028	.022	.003	.041	.005	.046
Coal	.030	.034	.026	.047	.001	.110	.065	.018	.080	.098
Repairs	.164	.109	.094	.046	.147	.236	.072	.020	.108	.029
Cost Washing	.420	.411	.348	.271	.363	.597	.456	.333	.405	.457
Total Cost	2.281	2.146	1.959	1.770	2.127	2.825	3.271	3.047	2.796	2.346

Indian Mine

1911	May	June	July
Produced	6304	6300	5413
Salaries	.051	.060	.058
Labor	.659	.624	.629
Explosives	.063	.148	.079
Fuel	.027	.187	.044
Supplies	.042	.070	.091
Timber &c	.013	.009	.006
C & O. Fds	×	×	×
R.R. "	.250	.250	.250
Teams	.070	.057	.034
Analysis	.001	.001	.006
Rent &c.	.008	.014	.007
Telephone	.004	.004	.006
Medy & Equip.	.073	.073	.084
Taxes	.003	.003	.003
Insc.	.014	.014	016
Royalty	.200	.200	.200
"Depreciation	461	.467	.570
Mng Service		003	.037
Cost Mining	1.919	2.115	2.108
Washing			
Coal	.188	.175	.213
Supplies	.016	.017	.029
Coal	.009	.117	.038
Repairs	.078	.155	.018
Cost Washing	.291	.464	.298
Total Cost	2.210	2.579	2.406

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Dolly Ann Mine

1908	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov.	Dec.
Produced	2452	2945	3206	3016	2754	3069	2899	2879	3610	4040	3287	2269
Salaries	.056	.074	.109	.068	.102	.081	.070	.078	.063	.055	.067	.098
Labor	1.242	1.229	1.111	1.088	1.247	1.214	1.206	1.205	1.036	1.115	1.148	1.267
Explosives	.085	.139	.126	.093	.144	.092	.138	.083	.133	.148	.141	.208
Fuel	.053	.074	.158	.074	.122	.074	.115	.137	×	.079	.140	.012
Supplies	.102	.124	.044	.086	.092	.044	.063	.035	.081	.068	.069	.119
Timber, etc.	.094	.094	.149	.073	.111	.146	.089	.114	.092	.065	.151	.161
Cr O Ore Frt.	×	×	×	×	×	×	×	×	×	×	×	×
Rail Road	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250
Teams	.134	.107	.101	.105	.118	.113	.113	.114	.089	.076	.090	.131
Analysis	×	.001	.002	.002	.001	.001	.001	.001	×	×	×	×
Genl Expense	.002	.003	×	.002	×	.003	.005	.015	×	.009	×	.001
Telephone	.001	.001	.001	.001	.001	.001	.001	.001	.001	×	×	.001
Mchy & Equip.	.056	.047	.043	.046	.050	.045	.048	.048	.038	.034	.042	.061
Taxes	.018	.015	.014	.014	.016	.015	.015	.016	.012	.011	.014	.019
Insurance	×	×	×	×	×	×	×	×	×	×	×	×
Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100
Cost Mining	2.193	2.258	2.208	2.002	2.354	2.173	2.214	2.197	1.888	2.010	2.211	2.428
Washing												
Labor	.135	.119	.123	.108	.129	.127	.119	.133	.142	.135	.160	.298
Supplies	×	.008	.006	.003	.001	.013	.001	.007	×	.006	.004	.005
Coal	.016	.032	.019	.012	.010	.016	.034	.022	×	.016	.013	.012
Repairs	.015	.029	.033	.041	.038	.029	.039	.039	.081	.111	.027	.036
Cost Washing	.166	.188	.181	.164	.178	.185	.193	.201	.223	.268	.204	.351
Total Cost	2.359	2.446	2.389	2.166	2.532	2.358	2.407	2.398	2.111	2.278	2.415	2.779

Dolcy Anne Mine.

1909	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec.
Produced	3253	3416	3900	2858	3127	9483	3071	3551	3194	2561	3063	2481
Repairs	.073	.061	.054	.072	.069	.061	.067	.058	.065	.073	.068	.084
Labor	1.212	1.187	1.177	1.337	1.287	1.145	1.203	1.007	1.050	1.138	1.133	1.047
Explosives	.098	.079	.142	.120	.122	.117	.129	.111	.108	.108	.122	.090
Fuse	.069	.063	.124	.076	.108	.069	.032	.084	.070	.069	.095	.109
Supplies	.017	.065	.047	.063	.036	.079	.038	.032	.085	.043	.037	.089
Timber etc.	.039	.099	.089	.083	.104	.063	.094	.063	.063	.097	.107	.077
Cost R.R. Frt.	X	X	X	X	X	X	X	X	X	X	X	X
Rail Road	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250
Teams	.089	.086	.070	.120	.114	.099	.113	.095	.107	.125	.115	.138
Analysis	X	X	X	X	X	X	X	X	X	X	X	X
Gen. Expense	.009	.008	.007	.002	.015	.005	.002	.001	.016	.010	.011	.002
Telephone	X	X	X	.001	.000	.000	.001	.000	.001	.001	.001	.001
Machy & Equip.	.042	.041	.035	.048	.044	.040	.044	.039	.043	.049	.045	.056
Taxes	.014	.013	.012	.016	.014	.013	.015	.011	.014	.016	.015	.022
Insurance	X	X	X	X	.000	.000	.000	X	X	.001	.000	.001
Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.101
Cost Mining	2.112	2.092	2.107	2.281	2.203	1.991	2.088	1.851	1.972	2.080	2.099	2.057
Washing												
Labor	.104	.145	.146	.173	.154	.142	.164	.168	.167	.174	.164	.211
Supplies	.002	.001	.011	.001	.000	.002	.027	.002	.056	.005	.005	.002
Coal	X	X	.011	.016	.035	.009	.026	.007	.020	.022	.012	X
Repairs	.019	.022	.012	.009	.006	.001	.020	.028	.040	.022	.070	.096
Cost Washing	.127	.168	.180	.199	.195	.154	.237	.205	.283	.273	.251	.309
Total Cost	2.239	2.220	2.287	2.484	2.398	2.145	2.325	2.056	2.255	2.353	2.350	2.366

Daily Ann Arbor

1910	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov.	Dec
Produced	2794	2936	3031	2775	2764	2746	2345	3197	2735	2648	2740	1280
Salaries	.074	.079	.070	.075	.092	.075	.088	.065	.076	.079	.076	.163
Labor	1.261	1.197	1.204	1.236	1.305	1.358	1.481	1.190	1.373	1.407	1.408	1.328
Explosives	.117	.105	.094	.129	.129	.177	.150	.095	.152	.146	.152	.047
Fuel	.091	.149	.189	.102	.080	.071	.045	.086	.194	.083	.098	.100
Supplies	.112	.065	.049	.115	.112	.045	.091	.040	.050	.063	.064	.186
Smithing etc	.070	.071	.097	.111	.062	.079	.090	.068	.090	.089	.096	.010
C. & O. Ry Frt.	X	X	X	X	X	X	X	X	X	X	X	X
Rail Road	.250	.250	.250	.250	.250	.250	.250	.250	.139	.175	.225	.250
Taxes	.117	.109	.104	.114	.147	.128	.139	.099	.107	.114	.114	.316
Analysis	.001	.000	.001	.001	.001	.001	.000	.001	.000	X	X	X
Genl. Expense	.001	.001	.004	.004	.032	.051	.000	000	.000	X	.007	.027
Telephone	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.002
Mchy & Equipt	.054	.051	.049	.054	.066	.055	.064	.047	.055	.056	.055	.117
Taxes	.018	.017	.016	.018	.022	.018	.022	.016	.018	.019	.018	.129
Insurance	.001	.000	.001	.001	.001	.001	.001	.000	.001	.001	.001	.002
Royalty	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100
Coal Mining	2.274	2.195	2.229	2.311	2.390	2.410	2.522	2.058	2.356	2.483	2.415	2.777
Washing												
Labor	.205	.179	.210	.210	.265	.170	.214	.141	.192	.212	.223	.205
Supplies	.007	.000	.007	.001	.002	.000	.009	.008	.002	.011	.045	.006
Coal	.027	.028	.015	.021	.027	.010	X	.010	.046	.012	.020	.044
Repairs	.045	.016	.089	.013	.015	.001	.031	.002	.006	.016	.125	.016
Coal Washing	.284	.223	.321	.245	.309	.181	.254	.161	.246	.251	.413	.271
Total Cost	2.558	2.418	2.550	2.556	2.699	2.591	2.776	2.219	2.602	2.734	2.828	3.048

Dolly Ann Mine

Nov.	Dec	1911	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
2740	1280	Produced	1231	2398	2510	2038	2028	2100	838					
.076	.163	Salaries	.177	.090	.087	.106	.106	.144	.146					
1.408	1.328	Labor	1.920	1.961	1.317	1.727	1.294	1.179	1.264					
.152	.047	Explosives	.230	.148	.146	.196	.185	.208	.140					
.098	.100	Coal	.066	.071	.093	.244	.113	.202	.153					
.064	.186	Supplies	.010	.114	.099	.094	.095	.049	.067					
.096	.010	Timber etc	103	.029	.059	.083	.077	.072	.095					
X	X	C & O. Office	X	X	X	X	X	X	X					
225	250	Railroad	.250	.250	.250	.250	.250	.250	.250					
.114	.316	Teams	.274	.139	.135	.165	.174	.159	.143					
X	X	Analysis	X	.001	.003	.005	.002	.003	.002					
.007	.027	Gen. Expense	.003	X	.001	.003	.003	.003	X					
.001	.002	Telephone	.002	.001	.001	.001	.001	.001	.002					
055	.117	Mchy & Equip.	.172	.063	.061	.075	.075	.273	.083					
.018	.129	Taxes	.049	.026	.025	.025	.025	.024	.027					
.001	.002	Insurance	.002	.001	.001	.001	.001	.001	.001					
100	100	Royalty	.100	100	.100	.100	100	.100	.100					
		Engineering Service	.029	.008	.014	.006	.002	X	X					
2.415	2.777	Cost - Mining	3.332	2.332	2.392	2.581	2.497	2.468	2.473					
		Washing												
223	205	Labor	.309	.190	216	.241	.207	.223	.283					
.045	006	Supplies	.001	.006	.004	.003	.008	.004	.012					
.020	.044	Coal	.018	X	.041	.057	.017	.024	.016					
125	016	Repairs	021	.012	025	.066	102	.069	.061					
.413	.271	Cost Washing	.349	208	.286	.367	.334	.320	.372					
2.828	3.048	Total Cost -	3.681	2.540	2.678	2.948	2.831	2.780	2.845					

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Kay Moor Mine #1

1909	Apr	May	June	July	Aug.	Sept	Oct	Nov.	Dec.	1910 Jan	Feb	Mar
Bodies cut	13379	17601	12191	11600	17738	12427	13366	10400	10087	11584	10476	11077
Salaries	.027	.024	.030	.023	.024	.030	.024	.036	.038	.034	.035	.032
Labor Mining	.445	.440	.438	.425	.431	.490	.449	.445	.441	.438	.445	.426
Yardage	.126	.120	.097	.075	.084	.095	.105	.124	.111	.120	.103	.086
Timber	.017	.022	.029	.031	.021	.035	.031	.004	.023	.005	.014	.040
Drivg Tracklay	.110	.120	.114	.130	.112	.113	.112	.122	.120	.122	.132	.146
Outside Work	.097	.092	.094	.093	.109	.087	.079	.095	.109	.110	.107	.090
Inside Work	.019	.019	.019	.014	.013	.014	.012	.016	.016	.016	.021	.015
Power House	.077	.093	.082	.078	.084	.077	.083	.110	.110	.099	.098	.102
Vent & Drainage	.019	.021	.023	.024	.026	.025	.027	.026	.031	.025	.020	.028
Shops	.007	.009	.017	.013	.005	.006	.005	.006	.007	.006	.006	.012
Supplies	.057	.066	.046	.062	.039	.070	.034	.028	.065	.057	.042	.056
Royalty	.097	.096	.096	.097	.098	.095	.094	.093	.093	.094	.095	.097
Taxes	.013	.014	.015	.015	.014	.014	.013	.017	.021	.016	.018	.017
Machy & Equip	.039	.042	.043	.045	.042	.042	.039	.050	.052	.078	.086	.084
Trans W. Va	.046	.045	.045	.052	.041	.047	.043	.055	.064	.054	.060	.054
Explosives	X	X	X	X	X	X	X	X	X	X	X	X
Gen Expense	.012	.004	.004	.007	.009	.013	.009	.001	.025	X	.007	.009
Insurance	.002	.002	.003	.003	.003	.003	.002	.003	.003	.003	.003	.003
Total Cost	1.210	1.234	1.190	1.192	1.210	1.256	1.171	1.231	1.329	1.277	1.302	1.316

Kay Moor Mine #1

1910	Apr.	May	June	July	Aug	Sept	Oct	Nov.	Dec	1911 Jan	Feb	Mar
Produced	10783	10824	11680	11755	9288	10893	11679	10887	8961	10582	10460	13770
Salaries	.034	.044	.039	.037	.045	.042	.038	.037	.038	.043	.043	.033
Labor Mining	.438	.463	.434	.422	.441	.422	.430	.436	.441	.447	.453	.458
Yardage	.107	.100	.089	.114	.129	.132	.122	.125	.152	.131	.114	.074
Timber	.018	.023	.061	.001	.034	.069	.042	.036	.095	.045	.052	.046
Diving Tracks etc.	.140	.136	.140	.151	.154	.142	.126	.141	.171	.135	.160	.143
Outside Work	.091	.089	.104	.105	.166	.124	.129	.128	.136	.126	.115	.087
Inside Work	.016	.017	.015	.013	.018	.014	.012	.015	.017	.014	.014	.011
Power House	.110	.099	.098	.093	.138	.119	.145	.116	.171	.100	.094	.093
Vent. & Drainage	.044	.034	.031	.024	.036	.024	.022	.026	.033	.022	.024	.026
Shops	.012	.011	.012	.010	.010	.146	.009	.009	.004	.005	.006	.011
Supplies	.043	.058	.054	.073	.122	.008	.025	.059	.106	.054	.053	.052
Royalty	.094	.094	.093	.091	.094	.089	.087	.086	.085	.090	.088	.087
Taxes	.017	.018	.016	.016	.020	.017	.016	.018	.071	.021	.022	.017
Mchy. & Equip.	.083	.083	.077	.080	.100	.085	.080	.085	.103	.088	.089	.068
Leases. W. Va.	.057	.055	.050	.050	.060	.049	.045	.049	.058	.050	.051	.040
Explosives	X	X	X	X	X	X	X	X	X	X	X	X
Coal Spread	.012	.005	.013	.006	.016	.009	.015	.010	.009	.015	.021	.007
Insurance	.003	.003	.003	.003	.004	.003	.003	.003	.004	.003	.003	.003
Old Debts settled off				.003	.004	X	X	X	X	X	X	.001
Total Cost	1.319	1.332	1.329	1.284	1.591	1.494	1.346	1.374	1.644	1.389	1.402	1.250

Kay Moor Coal Mine No. 1

1911

	Apr	May	June	July	Aug.	Sept.	Aug	Oct	Nov.
Produced	11997	11565	10961	4755					
Salaries	.038	.039	.049	.057					
Labor Mining	.447	.453	.456	.453					
Yardage	.101	.086	.087	.097					
Timber	.004	.020	.018	.008					
Drivers Feed etc	.157	.160	.154	.161					
Outside Work	.079	.078	.084	.095					
Outside Work	.014	.019	.020	.016					
Power House	.087	.117	.111	.098					
Blk. & Drainage	.035	.059	.047	.040					
Shops	.018	.014	.020	.017					
Supplies	.059	.085	.058	.086					
Royalty	.087	.093	.093	.093					
Taxes	.015	.016	.017	.019					
Mchy & Equip.	.078	.080	.085	.095					
Rents W. Va	.047	.051	.049	.058					
Explosives	X	X	X	X					
Gen. Expense	.003	.003	.017	.007					
Insurance	.003	.003	.003	.004					
Bond Debts Interest	.003	X	X	X					
Total Cost	1.260	1.375	1.358	1.399					

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Fenwick Mine —

1910	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Produced	2375	3734	4174	2,852	3636	3319	3900	5379	3973	4177	3725	3877
Salaries	.102	.072	.061	.085	.068	.074	.063	.046	.061	.058	.067	.064
Labor	2.756	1.754	1.604	2.066	1.589	1.870	1.573	1.265	1.547	1.380	1.583	1.154
Explosives	.324	.136	.095	.151	.152	.151	.147	.185	.219	.294	.213	.198
Fuel	.290	.196	.179	.140	.135	.176	.090	.093	.121	.112	.132	.090
Supplies	.359	.159	.097	.081	.088	.074	.148	.051	.098	.127	.120	.125
Timber	.278	.123	.175	.070	.149	.097	.109	.043	.051	.183	.078	.024
C & O. Fr.	x	x	x	x	x	x	x	x	x	x	x	x
Railroad	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.250	.237
Teams.	.191	.118	.105	.152	.128	.131	.099	.066	.089	.084	.105	.068
Analysis	.002	x	.001	.004	.002	x	x	x	x	.002	x	x
Genl Expense	.059	.002	.007	.015	.008	.049	.027	.019	.009	.005	.007	.014
Telephone	.005	.003	.003	.004	.003	.004	.003	.002	.003	.004	.003	.003
Mchy & Equipt.	.147	.094	.084	.122	.096	.106	.098	.070	.095	.090	.101	.097
Taxes	.021	.014	.012	.018	.014	.016	.013	.009	.013	.012	.013	.043
Insurance	.001	x	x	.001	.001	.001	x	x	x	x	x	x
Royalty	100	100	.100	.100	.100	.100	.100	.100	.100	100	100	100
Cost Mining	4.885	3.021	2.773	3.259	2.783	3.099	2.720	2.199	2.656	2.701	2.772	2.217
Washing												
Labor	.310	.189	.196	.305	.212	.211	.168	.135	.146	.145	.179	.148
Supplies	.027	.001	.011	.009	.004	.006	x	.004	.004	.016	.006	.022
Coal	.068	x	x	.048	.054	.010	.023	.025	.051	.018	.054	.010
Repairs	.012	.017	.028	.046	.023	.088	.046	.011	.024	.090	.089	.013
Cost Washing	.417	.207	.235	.408	.293	.315	.237	.175	.225	.269	.328	.198
Total Cost	5.302	3.228	3.008	3.667	3.076	3.414	2.957	2.374	2.881	2.970	3.100	2.415

Jennick Mine

1911	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Produced	3638	4790	4314	3038	2540	3021	2455					
Salaries	.067	.053	.054	.085	.100	.112	.126					
Labor	1.613	1.235	1.189	1.477	1.876	1.600	1.722					
Explosives	.319	.192	.221	.245	.288	.150	.228					
Steel	.116	.197	.068	.103	.107	.278	.077					
Supplies	.159	.060	.113	.079	.157	.042	.172					
Timber	.109	.096	.144	.061	.112	.149	.266					
C.S.O. Tab.	X	X	X	X	X	X	X					
Railroad	.250	.250	.250	.250	.250	.250	.250					
Teams	.097	.073	.082	.116	.133	.119	.097					
Analysis	X	.004	.003	.003	.004	.003	.003					
Gen. Expense	.019	.006	.004	.017	.016	.012	.013					
Telephone	.004	.002	.003	.004	.005	.004	.005					
Mchy & Equipt	.103	.079	.088	.125	.146	.126	.155					
Taxes	.016	.013	.017	.017	.019	.016	.020					
Insurance	X	X	X	.001	.001	X	.001					
Royalty	.100	.100	.100	.100	.100	.100	.100					
Eng. Services	.013	.009	.019	.010	.024	.031	.048					
Cost Mining	2.985	2.369	2.360	2.668	3.338	3.022	3.233					
Washing												
Labor	.165	.125	.160	.182	.247	.197	.150					
Supplies	.001	.026	.007	.036	.015	.008	.023					
Coal	X	.050	.034	.046	.053	.058	X					
Repairs	.004	.016	.009	.193	.045	.030	.001					
Cost Washing	.170	.217	.210	.457	.360	.293	.172					
Total Cost	3.155	2.586	2.570	3.125	3.698	3.315	3.405					

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FORM 7.

THE LOW MOOR IRON CO. OF VIRGINIA.

Weekly Report ..... Blast 5 B

Ending Aug 6th 1898

57 Day of Blast.

Lump Ore used	
Wash Ore used	
Total Ore used	706. 660
Total Coke used	578. 480
Total Limestone used	327. 1140
Total Iron made	200. 1600
No. 1 Foundry	
No. 2 Foundry	58. 1700
No. 3 Foundry	106. 200
Silvery	
Mottled	27. 900
White	9. 1100
Iron Shipped	454
Iron on hand	2079

Loose Item

FORM 7.

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Total Iron made	200. 1600	
No. 1 Foundry	—	
No. 2 Foundry	68. 1700	
No. 3 Foundry	105. 200	
Silvery	—	
Mottled	27. 900	
White	9. 1100	
Iron Shipped	454	
Iron on hand	2079	

Loose Item

To fill fce – 6 cords wood & 60000 lbs. coke

Ovr –	L.M.	Coke	Lime
5 chgs –	400 lbs –	3600	180
5 "	600 "	"	280
5 "	800 "	"	600
5 "	1500 "	"	800
5 "	2400 "	"	1100
5 "	3600 "	"	1700
5 "	4000 "	"	1840
32 "	4800 "	"	2160

Ovr –

4	L.M.	2600	
	Da.	2600	5200
6 –	L.M.	3000	
	Da	3000	6000
			3600

Coke

Limestone

4 –	2400
6 –	2800

Fce lighted Aug 3 10:10 a.m. by Mr. McLewains little daughter "Johnnie"

Blast put on Aug 3 – 12 midnight

First cinder " 4 – 1 P.M.

" Cast " 4 – 8 "

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	Steamer	Nos of Tons Towed 770
1897	Lucay Coles	10.853

Has Recently Undergone an Operation from Whose Results She May Not Recover—Her Home Life at Charlotte, N. C.

Some weeks ago the widow of Gen. Stonewall Jackson had a critical operation performed in a Baltimore hospital, and her friends are afraid that she will not recover from its effects. Although now over 70 years old her face, according to a Charlotte (N. C.) correspondent of the Chicago Chronicle, retains much of the beauty which enthralled the then ...

Memo — Dec 31 1901 —

				Cost	Per ton	
Iron made						
Blast 7a	23310	1950/2300		$264283.32	$11.33 7	
" 5C	9538	1700		129103.85	$13.53 4	$13.65
" 6C	1653	—		23654.43	$14.31	
				417041.60		
Iron sold						
Low Moor	28986	1455		$339016.73	$11.69 5	
Covington	14657	992		162815.52	$11.10	
				511832.25		
Coal produced						
Kay Moor	42506	2240		$47883.02	$1.12 6	
Fayette	14983	20/2240		16721.88	$1.11 4	
Coal sales						
Kay Moor	43694	1000/2000		$48264.07	$1.14	
Coke produced						
Kay Moor	2284	700/2000		$6560.82	$2.87 2	
Fayette	1339	1700/2000		2932.87	2.18 8	

MANUFACTUR

19.36

38.01

Extr

En

R.O.T

as Lin

Cost

Ab

... graduate of the university ... the state, and of the same class a... President James K. Polk, Bisho... Green and others of note in churc... and state."

Mrs. Jackson's mother was Mar... Graham, daughter of Gen. Josep... Graham, of revolutionary fame, an... sister of Gen. W. A. Graham, who wa... once secretary of the navy.

Mrs. Jackson was one of ten chi... dren, six daughters and four son... She spent much of her early life i... Washington with her uncle, Gen... Graham. While on a visit to Lexing... ton, Va., she met her future husban...

... the furnace would produce 890 tons, or 163 ... per 1000 cubic feet capacity per week. ... he leaner and more silicious is the ore the ... e limestone must be used. This requires ... e fuel to drive off the carbonic acid, which, ... en liberated, weakens the reducing power of ... gas. This again requires more fuel to enrich ... gas that it may do its work properly and in ... e. Iron can be made on a low fuel consump... by cutting down the limestone, but this is ... e at the expense of quality, especially when ... phur is present. The use of a small amount ... limestone is the cause of the low fuel con... mption in a well-conducted charcoal furnace. ... e Lehigh iron manufacturers demonstrated 25 ... urs ago the value of plenty of lime to make the ... t qualities of pig iron. This policy was adop... by the English ironmasters some years later. (See Bell's *Phenomena*, Section 35.)

TAWS & HARTMAN.

Philadelphia, Nov. 2, 1885.

SOUTHERN IRON SHIP...

... ould have to be ... ow that the de... sold as the com...

... Sup't of Mines.

Memo — Dec 31st 1901 —

				Cost	Per ton	
Iron made						
Blast 7a	23310	1950/2300		$264283.32	$11.33 7	
" 5C	9538	1700		129103 85	$13.53 4	$13.65
" 6C	1653	—		23654 43	$14 31	
				417041 60		
Iron sold						
Low Moor	28986	1455		$339016 73	$11 69 5	
Covington	14657	992		162815 52	$11 10	
				511832 25		
Coal produced						
Kay Moor	42506	2240		$47883 02	$1 12 6	
Fayette	14983	20/2240		16721 88	$1 11 4	
Coal sales						
Kay Moor	43694	1000/2000		$48264 07	$1 14	
Coke produced						
Kay Moor	2284	700/2000		$6560 82	$2 87 2	
Fayette	1339	1700/2000		2932 87	2.18 8	

Loose Item

1886 Jany

List wages paid "Ashland Furnace"

1	Night Boss	Per day	2 00
1	Engineer 1st	"	2 50
1	Do 2nd	"	1 80
2	Keepers	"	1 65
4	Helpers	"	1 25
	Hot Blast Man 1st	"	1 60
	Do 2nd	"	1 50
2	Cinder Snappers	"	1 25
2	Weigh Boss	"	1 35
2	Fillers (Top)	"	1 80
14	Do (Bottom)	"	1 25
3	Iron Carriers	"	1 40
1	Carpenter	"	1 45
1	Blacksmith	"	2 00
1	Do (Helper)	"	1 35
3	Cast Men	"	1 15
1	Gang Boss	"	1 50
	Laborers	"	1 00

Loose Item

THE BEST BLAST FURNACE WORK ON RECORD — NORTH CHICAGO FURNACES.

Written for the Engineering and Mining Journal, by Edmund C. Pechin, Cleveland, Ohio.

Under date of July 22, Messrs. Gordon, Stroble & Laureau, of Philadelphia, issued a circular, giving the work of the North Chicago Rolling Mill Company's furnaces for the preceding week, as follows:

	Tons iron.	Pounds coke to ton of iron.
No. 5	1257	2118
No. 6	1281	2006
No. 7	1432	1972

Product, all No. 1 Bessemer iron.

These results were so exceptional that I wrote to Mr. E. C. Potter, manager of the furnaces, asking for further information and for his permission to make use of it.

His courteous and ample reply enables me to lay before American ironmasters some highly interesting and instructive facts.

The furnaces under consideration are four in number, and were built in 1880–81, and were each 75 feet by 21 feet. Three Whitwell stoves to a furnace, and the four driven by eight engines

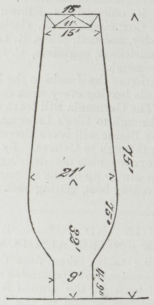

Fig. 1.

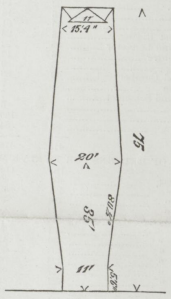

Fig. 2.

built by the Cuyahoga Steam Furnace Company, of Cleveland; 36-inch steam, 84-inch blast cylinders, 54-inch stroke.

The lines of these furnaces were originally as shown in Fig. 1. They averaged 950 tons a week, with a coke consumption of from 2600 to 2800 pounds per ton of iron.

When No. 5 was blown out, it was decided to remodel her after designs furnished by Mr. Gordon, above mentioned, as shown in Fig. 2. This was so great an improvement over the old form that the other furnaces were remodeled as fast as blown out, and they are all after the new form at present.

During the first year No. 5 made 47,489 tons, and No. 6 47,471 tons, although both were banked two and a-half months. These figures indicate careful attention.

The new lines had given decidedly better results, but Mr. Potter was satisfied that there was room for further improvement, and began to make experiments as to the manner of burdening. Finally, satisfied with the results reached, on March 30 last, No. 7 was blown in, with the new lines, and with the new method of burdening.

Month.	Iron output.	Coke per ton of iron.
April	5167	2022 lb.
May	5097	2182 lb.
June	5892	2190 lb.
July	6075	2012 lb.
Week reported above	1432	1972 lb.
Last week in July	1447	1982 lb.

All No. 1 Bessemer.

The coke consumption has been as low as 1962 pounds, and Mr. Potter hopes to reach an average of 1900 pounds to the ton of iron.

Eighteen thousand cubic feet of air per minute at a temperature of from 1200 to 1400 degrees Fahr. are delivered through seven 7-inch tuyeres 5 feet 6 inches from the hearth floor. Temperature of out-going gases, from 350 to 500 degrees Fahr.

Large as the above output is, it has been exceeded by several American furnaces, notably, the Edgar Thomson and Lucy, of Pittsburgh, and the Central, of Cleveland; but I do not think there is on record, *in this or any other country, by any coke or coal furnace, large or small, so low a fuel consumption per ton of iron.* If there is, it is to be hoped that this statement will bring a rejoinder to show it.

The Cleveland Rolling Mill Company's Central furnace made in the month of November last 6660 tons, but with a high fuel consumption.

No. 1 Lucy made in March last 7979 tons, with a consumption of 2502 pounds of coke to the ton of iron, on an ore mixture of 63 per cent iron. The surprising results reached can scarcely be called accidental. To use Mr. Potter's own words, "Our present low fuel consumption is the result of some new ideas in burdening, and while it is much lower than we ever before attained, we hope to make it our regular work. We have maintained it now for four months, with results in other directions that rather surprise us. We are making more iron, by 100 tons a week, with considerably less blast than ever before. The iron is remarkably uniform in grade and percentage of silicon."

The burden is as follows:

Connellsville coke		6400 pounds.
Limestone		1668 "
Ore—		
Cleveland	No. 1 specular	2000 pounds
"	" 2 "	1900 "
"	Hematite	2000 "
Chapin	"	2000 "
Superior	"	1900 "
Cambria	"	1900 " 11,700 pounds.

These

Loose Item

good work is in the proportion of CO_2 to CO in the escaping gases. It will be remembered by those familiar with Sir I. Lowthian Bell's "Chemical Phenomena of Iron Melting" that he adopted 50 volumes of CO_2 to 100 volumes of CO as the basis of calculation to obtain the theoretical minimum of coke. Mr. Potter gives the CO_2 in his gases at .45 to .50, thus showing a close identity between his practice and theory.

P. S.—Since the above was written, I have received from Mr. Potter, under date of the 17th inst., another week's work, "beating his previous record," and certainly entitling him to first place:

	Tons of iron.	Pounds coke per ton iron.
No. 5	1376	1910
No. 6	1406	1914
No. 7	1482	1833

He assures me that these figures are reliable, and that the circumstances were in no way especially favorable.

Knowing that many furnaces estimate the weight of coke at so much per barrow, and calculate accordingly, I wrote to him, asking his method, and have the following reply of the 20th inst.: "Each barrow of coke is weighed and the empty barrows balanced each day. I am certain that the weights of coke are correct."

I feel assured that our American iron-masters have not had for many a day more interesting data brought to their attention. It shows what may be done by careful, intelligent management, and should serve as an incentive to those who are lagging in the rear to improve their methods, and adopt proved appliances, or make up their minds to "shut up shop."

No one thing, in my judgment, has more radically advanced American furnace practice than the enlargement of the hearth by the Soho Furnace, of Pittsburgh, in 1877–78, in connection with the steep bosh, as established by Mr. Fayette Brown, of Cleveland, some 8 or 9 years previously, in the Fayette charcoal furnaces, and which has now become the rule in all well-engineered furnace plants. Large bells materially improved the regularity of the working of the furnace, by providing a better distribution of the stock.

The advent of highly-heated blast and hard driving swung us still further along; but while English experts admitted our larger yields, they claimed, and justly so, much greater economy in the use of fuel.

Mr. Potter has removed this reproach, and shows, with a yield far exceeding anything abroad that has come under my notice, a fuel consumption per ton so much lower than any record I can find as to make it almost phenomenal.

CLEVELAND, OHIO, August 23.

THE NEW IRON FIELDS IN LOUISIANA.

Some interesting information, the result of its editor's personal observations, regarding the newly-discovered iron fields of Northern Louisina, is being published by the Shreveport *Times*: "Specimens gathered on the trip have been assayed, yielding from 38 to 52 per cent pure iron. This is of a quality sufficient to pay handsomely for working it. The only question seems to be that of quantity. From Red River to Dixon's X Roads in Bossier parish, the country bears only slight indications of the outcroppings of ore. From this point to Collingsburg, in the same parish, the ore is seen on every side. The buggy wheels roll over great masses of iron ore. The country is literally covered with it. The district is one mass of ore. From Collingsburg to Red Land the quantity in sight increases. In traveling the road ore in small or large quantities is always within the sight. The specimens gathered here were assayed with a result of more than 45 per cent of iron. From Red Land to Rocky Mount the country bears the same appearance—iron hills everywhere. Specimens gathered by citizens in anticipation of our visit were furnished us, some of them of a high quality of purity. All in all, the section we have just described will furnish iron sufficient to run many furnaces."

Loose Item

THE S. S. Nachtigal, built in England, has turned out to be so top-heavy, says *Engineering*, as to be absolutely useless until reconstructed. And still we are invited to go to England for our war vessels, as well as for our merchant ships. The invitations are extended by the London *Engineer* and by American free traders. We must politely refuse all such invitations. In fact, we can't afford to accept them, and thank fortune we don't need to. After all that has been said about the "Dolphin," she is not "useless until reconstructed," nor does she stagger around like a drunken man.

THE following table shows the lake shipments to Wednesday night, September 9th, from eight of the largest mines of the Lake Superior district this season:

	Tons.
Republic	172,006
Minnesota Iron Company	158,920
Lake Superior	158,001
Cleveland	154,694
Chapin	124,469
Champion	107,443
Vulcan	95,287
Luddingtou	84,183

The Minnesota Iron Company now ranks No. 2, being led by the Republic 13,086 tons.

IN his letter this week our English correspondent very entertainingly tells how German manufacturers are introducing their wares into Great Britain. He also gives attention to the well-known fact that the Germans are becoming more and more troublesome in "neutral" markets hitherto almost wholly supplied by the English manufacturers. Our correspondent adds that "Birmingham merchants instead of ordering coach clips from Wednesbuy four miles away, are now ordering them from France."

EX-MINISTER LOGAN says that in his opinion "Chili is the most enlightened, refined and progressive country of Spanish America," and the New York *Bulletin* argues from this that the United States should adopt the policy of free trade! There appears to be a "missing link" or two in the *Bulletin's* logic.

THERE were 415 furnaces in blast in Great Britain on the 1st of September, compared with 423 on the 1st of August, being a reduction of 8 during the intervening month. On September 1st, 1884, there were 458 furnaces in blast in the Kingdom, or 43 more than on the 1st of September, 1885.

IT was an odd fancy of the President—or was it an accident?—to send "Sunset" Cox towards sunrise. No matter, the little humorist will at least see in Turkey the effects of the tariff policy he advocates for the United States, and this will offset the paradox of "Sunset" being at sunrise.

THE Cleveland *Iron Trade Review* notes that 25,000 tons of New York iron ore has been sold in that market within three weeks. One sale alone amounted to 12,000 tons, which was to be delivered between the date of sale and the 1st of October.

THE following cheering item comes from London, under date of the 13th inst.: "There has been a great revival of the iron trade in Dean Forest, Gloucester. The demand is chiefly from America."

OUR English correspondent gives a very interesting account of the narrow escape of Mr. Walter Ness from death by shipwreck and at the hands of savages, on the West Coast of Africa.

THE Eastern Pig Iron Association will meet at Philadelphia next Friday, September 25, to consider the tariff, undervaluation, etc., in answer to the late circular of Secretary Manning.

THE NEW STEAMER ADAM JACOBS.

The new Pittsburgh, Brownsville and Geneva packet Adam Jacobs started on her first trip on on Monday, the 14th inst.

The Jacobs is 166 feet in length, 32 feet beam, 4 feet 10 inches hold; engines 17 inches in diameter and 6 feet stroke; three steel boilers 24 feet in length and 38 inches in diameter; the machinery and boilers were built by J. Herbertson & Son, of Brownsville. The cabin, which presents an elegant appearance, being finished in hard wood, was constructed by Leonard & Co., of Brownsville, and reflects great credit to both the designer and builder. Chandeliers were furnished by Cavitt, Polluck & Co., of this city, and the painting, a first-class job, was done by W. R. Boggs & Co., also of this city. The Jacobs is also furnished with a McTighe electric light of great power, which will be very useful, particularly in passing through the locks. She is of remarkably light draft for a boat of her class, and will trim up on 30 inches. The Jacobs was built under the special superintendence of Captain A. C. Cock, at present in charge of the James G. Blaine, assisted by Cap. I. C. Woodward, the president, and Captain S. S. Graham, superintendent of the line.

The Jacobs is officered as follows: Master, Captain M. A. Cox; clerks, A. J. Gaskell, chief, and I. R. Beasley, assistant; pilots, R. L. Demain and G. L. Hendrickson; engineers, C. L. Gaskell and John Cavenaugh.

By the addition of the Jacobs to the line there will be two boats leaving every week day and one on Sunday. The Germania will leave daily at 8 a. m., going through to Rice's Landing, while the Jacobs and the Blaine will leave alternate days at 4 p. m., going through to Geneva. By this new arrangement excursionists not desiring to make the round trip can go up on the morning and return on the evening boat, getting back the same day.

FURNACES IN AND OUT OF BLAST IN THE UNITED KINGDOM.

The following tables, taken from the London *Iron Trade Exchange*, show the number of furnaces in and out of blast in the United Kingdom on the 1st of September, and on the 1st of each month of the year then ended:

	In.	Out.	Total.
South Staffordshire	32	81	113
North do.	22	18	40
Shropshire	6	18	24
Cleveland	95	61	156
Yorkshire, West Riding	16	28	44
Derby, Notts and Leicester	35	22	57
Northamptonshire	16	12	28
Lincolnshire	13	9	22
Lancashire and Cumberland	49	53	102
Gloucestershire	1	7	8
Hants, Wilts and Somerset	1	7	8
North Wales	4	6	10
South Wales	36	100	136
Scotland	89	54	143
	415	476	891

SUMMARY OF RETURNS FOR TWELVE MONTHS.

	In.	Out.	Total.
Sept. 1, 1884,	458	434	892
October 1, "	461	430	891
November 1, "	456	436	892
December 1, "	459	434	893
January 1, 1885	456	438	894
February 1, "	451	444	895
March 1, "	440	454	894
April 1, "	433	462	895
May 1, "	426	466	892
June 1, "	427	465	892
July 1, "	427	463	890
August 1, "	423	468	891
September 1, "	415	476	891

PROGRESS OF KRUPP'S WORKS.

The progress of the works of Herr Krupp at Essen continues to be one of the marvels of modern industry. The most recent and authentic data, as summarized in *The Engineer*, show that in 1860 the total number of workmen employed by Herr Krupp was 1764. In 1870 they had increased to 7084. At the present time—1885—the total number employed in all of the establishments of Herr Krupp exceeds 20,000. If we add the wives and children dependent upon the workmen, the total number of persons supported by the Krupp works is not less than 65,381. Of this number fully 29,000 dwell in cottages built by Herr Krupp and belonging to his works. There are eight separate and distinct departments belonging to this enormous concern. In the first place, we have the vast extent of workshops at Essen; secondly, three coal mines at Essen and Bochum; thirdly, no fewer than 547 iron ore mines in various parts of Germany; fourthly, several iron mines near Bilbao, in Spain; fifthly, an extensive series of smelting furnaces; and sixthly, the ranges at Meppen for the testing of the Krupp guns. Besides the eleven smelting furnaces, there are 1542 puddling and heating furnaces. The number of steam boilers employed in Herr Krupp's works is 439, and the total horse-power of the 450 steam engines in use is 185,000. There are 37 miles of railroad in the works, on which the traffic is performed by 88 locomotive engines, and a park of 893 freight cars. There are no fewer than 35 telegraph stations, with 40 miles of telegraph wire and 55 Morse apparatus in operation on the works.

INVENTIONS AND PATENTS.

Messrs. Plumb & Brown, of Streater, Ill., have patented a device for removing flues from boilers. The end of the machine is inserted in the flue, and a set of cutters revolved rapidly by hand cut the flue from the inside. The work is done both rapidly and neatly.

Mr. J. N. S. Williams, of San Francisco, has recently patented an improved water-pressure engine The principal features are two or more cylinders having pistons, two or more series of valves for admitting and exhausting the liquid, a connection between said valves and cylinders, and a mechanism by which the piston of one cylinder operates the valves connected with and operating the piston of the other cylinder. Other noticeable points are in the construction of the valve-chests, and in the series of inclined planes being arranged upon sliding bars connected with the pistons in such a manner that when the pressure valve is open the exhaust valve is shut, and vice-versa. This style of valve gear is both cheap and simple, doing away with the hydraulic rams, etc., necessary in single-acting, water-pressure engines. The engine is expected to be valuable when applied to pumps, that require to be placed underground, winding-engines, ventilating-fans.

Loose Item

POPULATION OF OHIO.

It Is Officially Announced at 4,157,545, Against 3,672,316 in 1890—Population By Counties.

Washington, Nov. 15.—The population of the state of Ohio, as officially announced Wednesday, is 4,157,545, against 3,672,316 in 1890. These figures show an increase since 1890 of 485,229, or 13.2 per cent. The population in 1880 was 3,198,062, showing an increase of 474,254, or 14.8 per cent., from 1880 to 1890. The population by counties follow:

Population By Counties.

Adams	26,328	Licking	47,070
Allen	47,976	Logan	30,420
Ashland	21,184	Loraine	54,857
Ashtabula	51,448	Lucas	153,559
Athens	28,728	Madison	20,590
Auglaize	21,192	Mahoning	70,334
Belmont	60,875	Marion	28,678
Brown	28,237	Medina	21,958
Butler	56,870	Meigs	28,620
Carroll	16,811	Mercer	28,021
Champaign	26,642	Miami	43,105
Clark	58,939	Monroe	27,031
Clermont	31,610	Montgomery	130,146
Clinton	24,202	Morgan	17,905
Columbiana	68,590	Morrow	17,879
Coshocton	29,337	Muskingum	53,186
Crawford	33,915	Noble	19,456
Cuyahoga	439,120	Ottawa	22,213
Darke	42,532	Paulding	27,528
Defiance	26,387	Perry	31,841
Delaware	26,401	Pickaway	27,016
Erie	37,659	Pike	18,172
Fairfield	34,259	Portage	29,246
Fayette	21,275	Preble	23,713
Franklin	164,460	Putnam	32,725
Fulton	22,803	Richland	44,289
Gallia	27,918	Ross	40,940
Geauga	14,744	Sandusky	34,311
Greene	31,613	Scioto	40,981
Guernsey	34,425	Seneca	41,163
Hamilton	409,479	Shelby	24,625
Hancock	41,993	Stark	94,747
Hardin	31,187	Summit	71,715
Harrison	20,486	Trumbull	46,591
Henry	27,282	Tuscarawas	53,751
Highland	30,982	Union	22,342
Hocking	24,398	Van Wert	30,394
Holmes	19,511	Vinton	15,330
Huron	32,330	Warren	25,584
Jackson	34,248	Washington	48,245
Jefferson	44,357	Wayne	37,370
Knox	27,768	Williams	24,953
Lake	21,680	Wood	51,555
Lawrence	39,534	Wyandot	21,125

The population of cities, towns, villages and hamlets having a population of more than 2,000, but less than 25,000, is as follows, those above 25,000 already having been announced:

Population of Towns and Cities.

Ada	2,576	Madisonville	3,140
Alliance	8,974	Manchester	2,003
Ashland	4,087	Mansfield	17,640
Ashtabula	12,949	Marietta	13,348
Athens	3,066	Marion	11,862
Barberton	4,354	Martins Ferry	7,760
Barnesville	3,271	Marysville	3,048
Bellair	9,912	Massillon	11,944
Bellefontaine	6,649	Medina	2,230
Bellevue	4,101	Miamisburg	3,941
Berea	2,510	Middleport	2,799
Bowling Green	5,067	Middletown	9,215
Bridgeport	3,963	Mingo Jct.	2,954
Bryan	3,131	Mt. Vernon	6,633
Bucyrus	6,560	Napoleon	3,639
Cambridge	8,241	Nelsonville	5,421
Canal Dover	5,422	Newark	18,157
Celina	2,815	Newburg	5,909
Chicago Jct.	2,348	Newcomerst'n.	2,659
Chillicothe	12,976	New Phila'pa.	6,213
Circleville	6,991	New Sts'ville	2,302
Clyde	3,515	Niles	7,468
Collinwood	3,639	N. Baltimore	3,561
Conneaut	7,338	Norwalk	7,074
Coshocton	6,673	Norwood	4,865
Cuyahoga F'ls.	3,186	Oberlin	4,082
Defiance	7,579	Ottawa	2,322
Delaware	7,940	Oxford	2,009
Delphos	4,517	Painesville	5,024
Dennison	3,763	Paulding	2,080
E. Cleveland	2,757	Piqua	12,172
E. Liverpool	16,485	Pomeroy	4,639
E. Palestine	3,493	Pt. Clinton	2,450
Eaton	3,155	Portsmouth	17,870
Elmwood	3,582	Ravenna	4,003
Elyria	8,791	Reading	3,076
Fairport	3,073	Ripley	2,248
Findlay	17,613	Rockport	2,038
Fostoria	7,730	St. Mary	5,359
Franklin	2,724	Salem	7,582
Fremont	8,439	Salineville	2,353
Galion	7,282	Sandusky	19,664
Gallipolis	5,432	Shawnee	2,966
Geneva	2,432	Shelby	4,685
Girard	2,630	Sidney	5,688
Glenville	5,588	S. Brooklyn	2,343
Glouster	2,155	Steubenville	14,349
Greenfield	9,979	Tiffin	10,989
Greenville	5,501	Toronto	2,526
Hamilton	23,914	Troy	5,881
Hicksville	2,520	Uhrichsville	4,582
Hillsboro	4,535	Up. Sanducky	3,355
Ironton	11,868	Urbana	6,808
Jackson	4,672	Van Wert	6,422
Kent	4,541	Wapakoneta	3,915
Kenton	7,832	Warren	8,529
Lakewood	3,351	Washington	5,751
Lancaster	8,091	Wash'tnville	2,492
Lebanon	2,867	Wauseon	2,148
Leetonia	2,744	Wellington	2,094
Lima	21,723	Wellston	8,045
Lisbon	3,330	Wellsville	6,140
Lockland	2,636	Wilmington	3,613
Logan	3,480	Wooster	6,063
London	3,511	Xenia	8,696
Lorain	16,028	Zanesville	23,538

Loose Item

interfere with the men demanding a higher rate whenever they believe the conditions are favorable. It will do no harm for the workmen of the different pools to hold meetings and calmly discuss the proposition in the same frank and manly way in which it was presented to them, and if better arguments can be produced, showing that more than 2½ cents can be paid for river mining, let the public have them at once, and let the reputable men of the river mines send their best and most capable agents to treat accordingly with the employers for more reasonable and just terms.

The employers, representing the controlling interests of the river coal trade and the principal firms of every pool, have, for the first time, officially recognized the Miners' Association, and courteously treated for an amicable settlement with its agents. It is now our place to meet them in a like spirit of conciliation. If we can show by figures that, in seeking more than 2½ cents, we do the interests of our trade of our district no injustice that can be attributed to our want of a due regard for fairness and the best interests of industrial capital that has been attracted to our community by its illimitable mineral resources, then we shall have won a position that will be envied by all unjust employers, and the battle is more certain to be successfully terminated (and at once) than if the strike should be prolonged for an indefinite period to the loss of the community, the permanent embitterment of labor and capital, and the continued privations of thousands of men, women and children in the homes of well-meaning and thrifty workmen.

Whatever the settlement may be, one suggestion I respectfully submit to the employers, viz.: For the sake of the wives and children or friends who might innocently suffer through the "black list," let no man be discharged or put under the ban of the Coal Exchange for active or offensive participation in the strike. Let the men of every mine assemble at their usual meeting places and report on or before Saturday, the 21st inst., to the undersigned, any suggestions they may think proper, and give such instructions as to them may seem likely to establish justice and more amicable relations between them and their employers.

This circular is admirable in temper, and reflects great credit upon the author. It is in marked contrast to the inflammatory appeals that are frequently made to workmen by so-called labor leaders, and will no doubt have a salutary effect upon the miners, especially the fair-minded, the home-loving and the industrious.

THE LABOR SITUATION IN THE NAIL MILLS OF THE WEST.

The situation in the nail mills of the West has assumed a new phase by the issuance of a circular ... the nails manufactured

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Loose Item

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ARE WE ADVANCING IN FURNACE PRACTICE?

To the Editor of the Bulletin:

SIR: In these days of fast furnace driving and large production of pig iron it is well to turn back five years and see what advances have been made. Furnace A of the Edgar Thomson Steel Works, during March, 1880, made in 30 days 2762.5 gross tons of Nos. 1 and 2 Bessemer pig iron. One day was lost by a stoppage. The details of the run are as follows, in tons of 2240 pounds:

Coke,	Iron ore.	Limestone.	Pig iron.	Cinder.
2843.4	5074.71	2214.10	2762.5	2390.94

Coke per ton of pig iron	2,305 lb.
Ore " " (54.44 p. c.)	3,952 "
Limestone per ton "	1,795 "
Cinder " "	1,938 "
Volume of blast per minute	12,505 cu. ft.
Temperature of hot blast	1,050°
" of escaping gas	340° to 350°
Ratio of escaping gas by weight	$\frac{CO2}{CO} = .738$
Product per week of 7 days and 24 hours per day	.668 tons.
" " for each 1000 cubic feet contents of furnace	122 tons.
Silicon in pig iron	1.7 to 2 per cent.
Stock contents of furnace	5,467 cu. ft.
Air per minute for each 1000 cubic feet of contents	2,290 "

The dimensions of the furnace are as follows:

Bosh	13 ft. 0 in.	Bell	7 ft.
Stock line	10 " 6 "	Number of tuyeres	6
Height	65 " 0 "	Top of bosh from hearth	28 ft. 6 in.
Hearth	8 " 6 "		

The three Siemens-Cowper-Cochrane stoves were intended to heat 8000 cubic feet 1500 degrees, but with the increase of 50 per cent in the volume of blast the stoves heat but 1050 degrees. The following points should be noticed: 1. The ore mixture is silicious and comparatively lean. 2. The height of the furnace is low compared with the more modern plants. 3. The quantity of pig iron made per 1000 cubic feet of contents per week was 122 tons. With a 65 per cent ore mixture the furnace would produce 890 tons, or 163 tons per 1000 cubic feet capacity per week.

The leaner and more silicious is the ore the more limestone must be used. This requires more fuel to drive off the carbonic acid, which, when liberated, weakens the reducing power of the gas. This again requires more fuel to enrich the gas that it may do its work properly and in time. Iron can be made on a low fuel consumption by cutting down the limestone, but this is done at the expense of quality, especially when sulphur is present. The use of a small amount of limestone is the cause of the low fuel consumption in a well-conducted charcoal furnace. The Lehigh iron manufacturers demonstrated 25 years ago the value of plenty of lime to make the best qualities of pig iron. This policy was adopted by the English ironmasters some years later. (See Bell's *Phenomena*, Section 35.)

TAWS & HARTMAN.

Philadelphia, Nov. 2, 1885.

SOUTHERN IRON

Loose Item

Ashland Coal & Iron R'y Company.

Report of Coal Mines for Month ending April 30" 1899.

	Labor.	Sundries.	Credits.	
			Dollars.	Cts.
2249 Tons M. M. as Lump 45¢	10 12 59			
6683 1800 Tons Lump @ 60¢	4010 34	11 36 7 48		
4313 1700 " R. O. M. @ 40¢	1725 14	6 7 48 07		
Superintendent	150 00	46 14 41	Expense other than Mining	
~~Assistant Superintendent~~ Timbering	102 60			
Clerks	115 00			
Foreman Mine r Assts	245 00			
Tips	345 58			
~~Running Machinery~~ Roadsman	252 51			
Stable-men	43 00			
Drivers r Haulage	784 67			
Water-haulers	37 80			
Furnaces Ventilation	11 25	48 00		
Tending-doors	18 40			
Rooms	14 90			
Low Coal	6 50			
Bottom	27 18			
Rocks, Top, Etc	83 27			
~~Main Entry~~ Ditch	118 08			
Cross Entry 15 Yards	18 74			
Air Courses 55/8	32 75			
Smith Shops	157 78	2 40	125	40
Carpenters Wagon Repairs	83 93			
Gin Hands	64 52 5			
Farm	90 25		83	25
Store		56 49		
Supplies		550 50		
Posts, Caps, and Ties		209 75		
House Repairs	87 48			
Oil				
Feed		96 15		
Extras	92 00	130 00	79	36
Engine Roads	24 52 1			
Total	1055 70	1093 29	288	01

R. O. Mine Estimated as Lump 11809
Cost 1362.48
Av .9622¢

No. Tons Mined 13246 1500
Total Cost 1136248
Average Cost per ton 85 3/4¢

Rush, Ky., [signature] Sup't of Mines.

Store Collections 8207.99
Pay Roll 2411.88

Loose Item

Ashland Coal & Iron Railway Co.

DOUGLAS PUTNAM, Jr.
Superintendent.

Ashland, Ky.

7 June 1888

No 1 ~~8½ days~~

18 Weeks 4.110.27 Iron Fuel 3.437 Ore Yield .464

Fuel to 1 Ton Ore melted 1.59

8.967.28 Ore 14.127.20 Fuel

11.577.89 Ore & Lime " 1.23'

No 2 ~~8½ days~~ 18 Weeks

4378.59 Iron, Fuel 3.24 Ore Yield .552

8.375.85 Ore 14.187.98 Coal 1.69

11.466.42 Ore & Lime 1.237

Loose Item

Week	B 2.3	C 2.3	L 1	F 1½	I	La			
8	3.217.63	1.040.32	1.853.50	6.675.60	1.965.78	4.476.00	B	$ 54.498	52
7	3.319.44	549.21	1.548.20	6.269.60	1.634.92	3.960.00	C	11.045	61
1	444.75	81.00	206.18	801.60	236.30	550 —	L	9.993	93
10	5.027.74	837.50	2219.03	8.536 —	2.535.43	5551 —	F	61.998	68
10	5.421.01	1.027.39	1.938.79	8.352 —	2.821.43	5495 —	L	27.946	63
6	2.614.56	523.95	927.16	3996 —	1.351.69	2960 —	12.532.38	165.483	37
9	3.649.88 .83¹	743.07 .16⁹	1.301.07 .256	6.701.60 .337	1.986.83	4.954.63 .249	13.29 [illegible] 429	13	20⁴
51	23.695.01	4.802.44	9.993.93	41.332.40	12.532.38	27.946.63	[illegible] 2½	13	97
	.83¹	.16⁹	.35	3.29⁸		$2.22⁹			
	.43⁹				Per Week .245.73				
	B .42³	C .57							
	[illegible]								
	.49⁸	.24⁴	.37¹	3.25⁹		2.18³		14	21⁹
	.49⁸			over 1 & 2					

Loose Item

B.	N°1	23.695.01			
	N°2	2.230.27	25.927.28	2.½	64.818.20
C	N°1	4.802.44	5.887.71	2½	14.719.28
	N°2	1.085.27			
L	1	9.993.93	11.659.26	1.	11.659.26
	2	1.665.33			
J	1	41.332.40			
	2	7.277.18	48.609.58	1½	72.914.37
L	1	27.946.63			
	2	4.874.73	32.821.36		32.821.36
J. Mm	2	195.64		6½	1.271.66
P.H.		477.31		6.	2.863.86
Esq		389.04		6½	2.428.76
N°1	12.532.38			14.765.23	203.476.95 13.78
	2.232.85				

15.37

Loose Item

FORM 7.

THE LOW MOOR IRON CO. OF VIRGINIA.

Weekly Report ..... Blast 3 C

Ending June 4th 1898

87 Day of Blast.

Lump Ore used	
Wash Ore used	
Total Ore used	1813. 1980
Total Coke used	1118. 1280
Total Limestone used	777 180
Total Iron made	777 1300
No. 1 Foundry	
No. 2 Foundry	537. 1400
No. 3 Foundry	244. 2200
Silvery	
Mottled	
White	
	Old Stock
Iron Shipped	234 1146
Iron on hand	2365 2189

4r8

Loose Item

Ore –

May 29 –	D.A.	5800
June 2 –	D.A.	2950
	L.M.	1475
	R.P.	1475
		5900
Coke		3600
Limestone –		
May 29 –		2540
30 –		2460
June 2 –		2540

Loose Item

PERRY TRIPLICATE TELEGRAM BLANKS.

BADGER BOOK & BINDERY CO., FOND DU LAC, WIS.

CONFIRMATION.

39

WE SENT YOU A TELEGRAM THIS DATE PER

THE WESTERN UNION TELEGRAPH COMPANY,

OF WHICH THE FOLLOWING IS CORRECT COPY:

10 30 am 36 Paid

Lowmoor Va 12/22/97

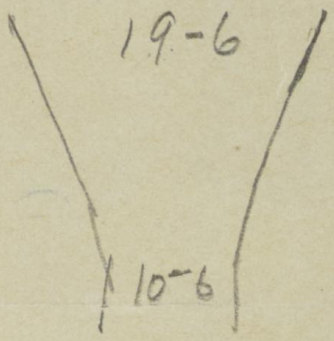
E. C. Means Pres.

Ashland Ky.

Last night nine thirty when about to take blast off furnace the top fell into cast house pulling down hoist tower. Will be necessary to rebuild furnace from Mantle up also new hoist tower. No body hurt.

H G Merry
Gen Mgr

Loose Item



DOMESTIC POSTAGE.

First-Class matter (Letters, etc.) ..... 2c. an oz.
Second-Class matter (Newspapers and Periodicals) .. 1c. for 4 oz.
Third-Class matter (Books, Circulars) ..... 1c. for 2 oz.
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THE BLAST FURNACES OF THE NORTH CHICAGO ROLLING MILL COMPANY.*

By FRED. W. GORDON, Philadelphia, Pa.

The North Chicago Rolling Mill Company, of Chicago, have four furnaces at South Chicago, built during 1881. Each furnace is 20 feet diameter of bosh and 75 feet total height, the hearth being 11 feet diameter and the top 15 feet 4 inches. They are blown through 7-inch tuyeres placed 5 feet 6 inches above the hearth level. Cubical contents, 15,000 cubic feet. Each furnace is supplied with two blowing engines, 84-inch blowing cylinder, 36-inch steam cylinder and 54-inch stroke. These two have one jet condenser worked by an auxiliary pump. The blast for each furnace is heated by the aid of three Whitwell fire-brick stoves, each 21 feet diameter and 60 feet high. In the batteries of boilers furnishing steam for furnaces there are 36 double length boilers 72 feet long, 48 inches diameter and 16,000 square feet heating surface.

The plant was designed to produce 3600 tons per week, or 900 tons for each furnace, and was fitted as above with such engines, boilers and hot-blast stoves as were thought requisite for that production; hence, calculated from the present make—not the least remarkable feature in the economy of construction—there are less engines, less boilers and less hot-blast power for the iron made than at any plant within my knowledge, or it could to-day be duplicated for less money per ton of iron made per week than could any plant now in existence, whether there are fire-brick or cast-iron stoves for heating the air used in the contrast. This is a practical demonstration of my assertion in a paper on fire-brick stoves, read before the Institute, that the application of fire-brick stoves in construction really lessens the first cost.

In view of the statements just made, I must [illegible] most emphatic in assuring the members that she [illegible] is strained or overburdened. The engine [illegible] but give a [illegible]28 revolutions, the piston speed be[illegible]duce in the [illegible]minute. The hot-blast stoves at pres[illegible]e blast to 1450° F. have ample power [illegible] heat, and the boilers, which are [illegible]

PROF. J. A [illegible] three furnaces, are continually [illegible]Tokio, has publi[illegible]n generated is so great that [illegible]am without any extra attention. [illegible]he points out to the [illegible]y can be entertained when [illegible]neers of Japan the su[illegible]on. As for the engines [illegible]English types of bridge[illegible]ly those used which be[illegible]t work. With the four [illegible]neers wrote letters to th[illegible]ent average there will [illegible]they took issue with Pro[illegible]face per ton of iron [illegible]Professor replied in a spiri[illegible]engine is furnishing [illegible]accounts appeared to have th[illegible] per day, and 350 [illegible]ment. We trust the Profess[illegible]ve plant are heat[illegible]keep the "old flag" "full high [illegible]original furnaces [illegible]believe he can and will, "first, [illegible] they were re[illegible]time."

THE introduction of machinery i[illegible]t time, and [illegible]of England has occasioned, as it [illegible]proceeded [illegible]country, some disturbance in the wa[illegible]e make of [illegible]In the iron mills of [illegible]Cleveland [illegible]sons. No. [illegible]

Metallic iron	62.790 per cent.
Phosphorus	
Earths	

The yield from the or[illegible] however, only 62 per cent, [illegible]ed 2 per cent of silicon an[illegible] The metallic iron in [illegible] 59.22 per cent, so that [illegible] 8.74 — 2.68 SiO_2 = 6.06, [illegible] iron of the analysis (62 [illegible] added, equal to 606 + 3[illegible] lowing for the silicon [illegible] the ore.

During the last four w[illegible] has averaged to each to[illegible] iron:

Ore...3555.5 pounds containin[illegible]		
Fuel..1862 " "		
Flux. 608 " "		

The waste gas analys[illegible] taken repeatedly and c[illegible] volumes of carbonic aci[illegible] bonic oxide. The temp[illegible] was 480° F., while t[illegible] 1375° F.:

The average make for 24 h[illegible] tons	
The average make for wee[illegible]	
Product per week per 100[illegible] Hy	
Average total engine reve[illegible]	
Average time in motion [illegible]	
Displacement of piston e[illegible]	
Pressure of blast in engi[illegible] inch	
Pressure of blast at tuyer[illegible]	
Work done by blowing [illegible] " " horse-power	
Add 50 per cent to this [illegible] and total per ton, 24 h[illegible]	
Heating surface of boile[illegible] nace per horse-power	

The work of this [illegible] Sir I. Lowthian B[illegible] Phenomena of Iron[illegible] using his cwts.-unit[illegible] easily compared wit[illegible]

Composition

	By vo[illegible]
Carbonic acid	12.8
Carbonic oxide	28.0
Nitrogen	59.1
Total	100.0

Coke used, cwts. per 20[illegible]	
Carbon in coke	
Less carbon in lime	
Total	
Leaving carbon burne[illegible]	
Carbonic oxide, 13.82[illegible]	
Carbon of this carbo[illegible] acid, 14.16*, x 5.142, [illegible] 4.46 x 5600 =	
Total cwt.-heat-u[illegible] bon per gross t[illegible]	
Gases—Weight per to[illegible]	
Total carbon	
Less carbon taken [illegible]	
Weight of carbon	
Nitrogen in gases...1[illegible]	
Car. oxide	
Car. acid	
Total	
Weight of blast: [illegible]itrogen as before [illegible] with it...	

come in with the blast. much of the economy terials, to assume the gases in an equally economical con-

THE IRON

Please apply in Pittsburgh at offices of the PITTSBURGH AND LAKE ERIE RAILROAD.
A. E. CLARK, Gen'l Superintendent, Cleveland, Ohio.
CLARK, PATE, Asst. Gen'l Passenger Agent.

Condition

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For Maps, Time Tables, Rates, and Tickets apply to
R. M. PRUDEN, Gen'l Pass. and Ticket Agt.
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THE RAILROAD.
On and after Monday, June 22, 1885, Passenger Trains will depart from and arrive at Anderson Street Depot, Allegheny, as follows (City time):
LEAVE FOR. Shenango, Greenville, Meadville, Jamestown, Buffalo and Cleveland. 7.40 a. m. Butler, Mercer, Clarion, Kane and Erie. 10.30 a. m. No. 4—Butler, Foster Accom., Chicago, Youngstown, Akron, Cleveland, Toledo and Detroit. 2.00 p. m. No. 2—Butler, Foster Accom., Chicago and Cleveland. 4.30 p. m. Meadville, Jamestown, Buffalo and Cleveland. 6.00 p. m. Butler, Mercer, Clarion, Kane and Erie. 6.30 p. m. No. 14—Shenango, Greenville and Meadville. 9.00 p. m. Chautauqua Lake Junction and New York. 11.30 p. m.
ARRIVE FROM. No. 5—Butler, Foster Accom., Chicago, Youngstown, Akron, Cleveland, Toledo and Detroit. 6.28 a. m. Meadville, Jamestown, Buffalo and Cleveland. 7.40 a. m. Butler, Mercer, Clarion, Kane and Erie. 10.30 a. m. No. 1—Shenango, Greenville and Meadville. 12.30 p. m. No. 3—Butler, Foster Accom., Chicago, Youngstown, Akron, Cleveland, Toledo and Detroit. 4.30 p. m. Butler, Mercer, Clarion, Kane and Erie. 5.30 p. m. No. 13—Shenango, Greenville and Meadville. 7.30 p. m. Chautauqua Lake Junction and New York. 9.00 p. m.

| DISTRICTS. | DECEMB[illegible] | | |

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For Maps, Time Tables, &c., address—

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65 Fifth ave., Pittsburgh, Pa.

J. A. FELLOWS, Gen' Pass. and Ticket Agt.,
Buffalo, N. Y.

THE PITTSBURGH AND WESTERN RAILROAD.

On and after Monday, June 22, 1885, passenger trains will depart from and arrive at Anderson Street Depot, Allegheny, as follows (city time):

LEAVE FOR.

No. 4.—Butler, Mercer, Shenango, Greenville, Meadville, Jamestown, Buffalo and New York.. 6:38 a. m.

No. 2.—Butler, Foxburg, Clarion, Sheffield, Bradford, New Castle, Youngstown, Akron, Cleveland, Toledo and Chicago..... 7:40 a. m.

No. 8.—Butler, Mercer and Greenville.....10:00 a. m.

No. 14.—New Castle, Butler, Foxburg, Clarion, Mercer, Shenango, Greenville and Meadville, Chautauqua Lake Junction and New York..... 2.00 p. m.

*No. [illegible] Chicago Fast Line..... 4:20 p. m.

Loose Item

ST. LOUIS, Oct. 14, 1885.

The market is firm but quiet. Owing to the fair and other attractions but little has been done here the past week. There is a good demand for old rails. We quote:

Charcoal Foundry.	
Missouri	$15 00@16 00
Southern	16 00@17 50
Coal and Coke Foundry.	
Missouri	14 00@15 00
Southern	15 00@17 00
American Scotch	16 00@19 00
Mill Irons.	
Missouri	14 50@15 00
Southern	14 00@14 50
Car Wheel and Malleable Irons.	
Southern	20 00@24 00
Lake Superior	20 00@23 00
Scrap Iron.	
Old car wheels	$14 00@14 25
Old rails, iron	17 25@17 50
Old rails, steel	0 00@00 00
No. 1 wrought scrap	0 55@ 0 65
No. 1 cast scrap	45@ 55
Connellsville coke, East St. Louis	$5 30

LOUISVILLE.

Specially reported by GEO. H. HULL & CO., *Louisville, Ky.*

LOUISVILLE, Oct. 14, 1885.

The market for pig iron is very active, and large sales have been booked for present and future delivery. Double the amount might have been sold, but furnaces are so largely sold ahead many of them are declining sales of all regular grades. Now that a demand has sprung up it looks as though the supply would be short of the demand. We revise our quotations as below, which are for cash in round lots, with a tendency to outside figures.

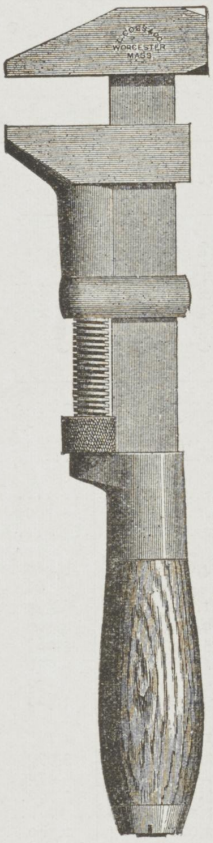
Pig Iron.	
Southern coke, No. 1 foundry	$16 00@17 00
" " No. 2 "	15 00@16 00
" " No. 2½ "	14 00@14 50
Hanging Rock coke, No. 1 foundry	16 00@16 50
" " charcoal, No. 1 foundry	19 00@20 00
Southern charcoal, " "	17 00@18 00
Silver gray, different grades	14 50@15 50
Southern coke, No. 1 mill, neutral	13 50@14 00
" No. 2 " "	13 00@13 50
" No. 1 " cold-short	13 00@13 25
Southern charcoal, No. 1 mill	15 00@17 00
White and mottled, different grades	11 50@12 50
Southern car wheel, standard brands	23 00@24 00
" " " other brands	18 00@20 00
Hanging rock, cold-blast	23 00@24 00
" " warm blast	18 00@20 00

Loose Item

Condition of the Anthracite and Bituminous Furnaces of the United States, December 1, 1884.

December 1.	Anthracite.					Bituminous.				
Districts.	Total number.	Number in blast.	Capacity per week.	Number out of blast.	Capacity per week.	Total number.	Number in blast.	Capacity per week.	Number out of blast.	Capacity per week.
New England	1	0	.....	1	160	.....	.....	.....	.....	.....
New York	40	11	2,700	29	7,415	1	0	.....	1	285
New Jersey	17	4	1,090	13	3,675	.....	.....	.....	.....	.....
Spiegel	4	2	134	2	88	.....	.....	.....	.....	.....
Pennsylvania:										
Lehigh Valley	51	25	8,205	26	6,730	.....	.....	.....	.....	.....
Schuylkill Valley	45	16	3,940	29	6,155	1	0	.....	1	700
Upper Susquehanna	24	9	2,154	15	2,485	.....	.....	.....	.....	.....
Lower Susquehanna	38	20	4,620	18	3,050	.....	.....	.....	.....	.....
Juniata and Conemaugh	.....	.....	.....	.....	.....	26	14	4,669	12	2,990
Allegheny Valley	.....	.....	.....	.....	.....	4	2	585	2	162
Youghiogheny Valley	.....	.....	.....	.....	.....	6	4	1,526	2	575
Allegheny County	.....	.....	.....	.....	.....	17	11	9,130	6	4,700
Shenango Valley	.....	.....	.....	.....	.....	28	10	5,693	18	5,087
Virginia	.....	.....	.....	.....	.....	12	4	1,691	8	2,720
Maryland	5	1	120	4	700	1	0	.....	1	130
West Virginia	.....	.....	.....	.....	.....	7	1	800	6	1,926
Ohio:										
Hanging Rock Region	.....	.....	.....	.....	.....	15	8	1,650	7	1,165
Mahoning Valley	.....	.....	.....	.....	.....	18	7	2,910	11	3,970
Hocking Valley	.....	.....	.....	.....	.....	15	1	130	14	2,472
Miscellaneous	.....	.....	.....	.....	.....	18	9	3,810	9	3,700
Kentucky	.....	.....	.....	.....	.....	3	3	1,150	0	.....
Tennessee	.....	.....	.....	.....	.....	8	5	2,060	3	1,540
Georgia	.....	.....	.....	.....	.....	1	1	600	0	.....
Alabama	.....	.....	.....	.....	.....	10	8	4,130	2	520
Indiana	.....	.....	.....	.....	.....	2	0	.....	2	400
Illinois	.....	.....	.....	.....	.....	16	4	2,800	12	9,175
Missouri	.....	.....	.....	.....	.....	8	0	.....	8	4,360
Michigan	.....	.....	.....	.....	.....	2	0	500	2	580
Wisconsin	.....	.....	.....	.....	.....	3	1	.....	2	1,040
Total	225	88	22,963	137	30,458	222	93	43,834	129	48,197

Loose Item



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Genuine and Mechanics,

PATENT

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MANUFACTURED BY

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Worcester, Mass.

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Our Genuine Wrenches are made with straight bars, full width and enlarged jaw, having ribs cast inside, which strengthen the jaw and give a full bearing on front of bar. These improvements, in combination with our new ferrule, made with double bearings, an iron tube, fitted to the shank and resting against the lower bearings, rigidly held in position by the handle and nut, effectually preventing back thrust of ferrule (see sectional view), verify our claim that we manufacture the heaviest and strongest Wrench in the market. None genuine unless stamped

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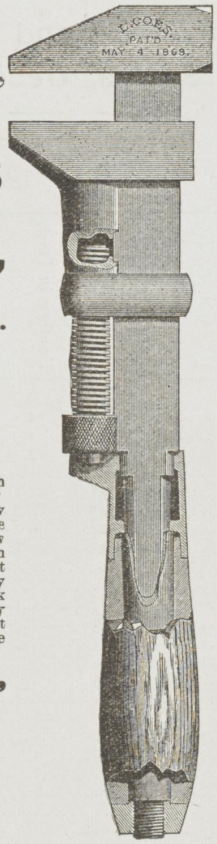
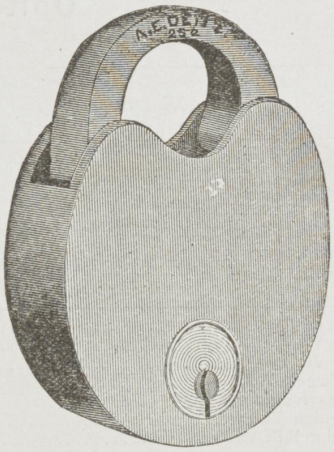


THE BEST COMBINATION

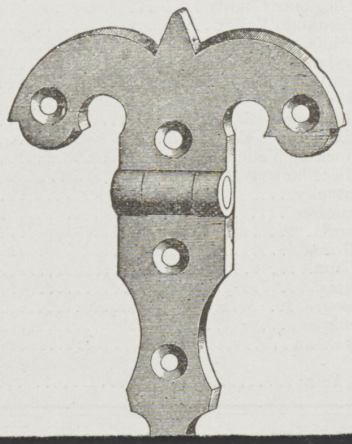
RAZOR STROP.

A. E. DEITZ.



DURRIE & McCARTY, Agents,

97 Chambers & 81 Reade Sts., New York.



Loose Item

CONDITION OF THE BLAST FURNACES OF THE UNITED STATES, OCTOBER 1, 1884.

(*Compiled for The Iron Age.*)

Location of Furnaces.	Charcoal.					Anthracite.					Bituminous or Coke.				
	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.
New England	15	2	165	13	1,040	1	0	.....	1	160	....	....	.....	....	.....
New York	15	4	349	11	854	41	11	2,865	30	7,535	....	....	.....	....	.....
New Jersey	....	....	.....	....	.....	18	3	790	15	4,075	....	....	.....	....	.....
Spiegel	....	....	.....	....	.....	3	....	.....	....	.....	....	....	.....	....	.....
Pennsylvania	36	10	580	26	1,469	....	....	.....	....	.....	....	....	.....	....	.....
Lehigh Valley	....	....	.....	....	.....	51	24	7,875	27	7,060	....	....	.....	....	.....
Schuylkill Valley	....	....	.....	....	.....	46	16	3,880	30	6,915	....	....	.....	....	.....
Upper Susquehanna Valley	....	....	.....	....	.....	24	10	3,279	14	2,730	....	....	.....	....	.....
Lower Susquehanna Valley	....	....	.....	....	.....	41	20	4,630	21	3,325	....	....	.....	....	.....
Pittsburgh	....	....	.....	....	.....	....	....	.....	....	.....	17	9	7,530	8	6,300
Allegheny Valley	....	....	.....	....	.....	....	....	.....	....	.....	4	2	585	2	162
Shenango Valley	....	....	.....	....	.....	....	....	.....	....	.....	30	5	3,100	25	8,370
Youghiogheny Valley	....	....	.....	....	.....	....	....	.....	....	.....	6	2	685	4	1,416
Juniata and Conemaugh Valley	....	....	.....	....	.....	....	....	.....	....	.....	20	14	4,569	12	2,770
Maryland	16	5	470	11	705	5	2	220	3	600	2	0	.....	2	230
Virginia	30	9	418	21	1,135	....	....	.....	....	.....	14	5	1,451	9	3,820
North Carolina	5	0	.....	5	290	....	....	.....	....	.....	....	....	.....	....	.....
West Virginia	6	0	.....	6	625	....	....	.....	....	.....	7	2	1,200	5	1,526
Ohio—Mahoning Valley	....	....	.....	....	.....	....	....	.....	....	.....	18	5	2,260	13	4,620
Eastern, Central and Northern	....	....	.....	....	.....	....	....	.....	....	.....	19	7	2,950	12	5,060
Hocking Valley	....	....	.....	....	.....	....	....	.....	....	.....	15	0	.....	15	2,602
Hanging Rock	27	10	935	17	1,540	....	....	.....	....	.....	15	4	930	11	1,705
Miscellaneous	3	0	.....	3	263	....	....	.....	....	.....	....	....	.....	....	.....
Kentucky	....	....	.....	....	.....	....	....	.....	....	.....	3	2	750	1	400
Hanging Rock	7	3	310	4	355	....	....	.....	....	.....	....	....	.....	....	.....
Western region and miscellaneous	8	0	.....	8	875	....	....	.....	....	.....	....	....	.....	....	.....
Tennessee	11	3	470	8	575	....	....	.....	....	.....	8	5	2,060	3	1,540
Georgia	6	2	84	4	363	....	....	.....	....	.....	1	1	600	0	.....
Alabama	12	7	1,710	5	680	....	....	.....	....	.....	9	5	3,090	4	1,410
Indiana	1	0	.....	1	140	....	....	.....	....	.....	2	0	.....	2	400
Illinois	....	....	.....	....	.....	....	....	.....	....	.....	16	8	7,100	8	4,875
Michigan	26	10	2,038	16	3,280	....	....	.....	....	.....	2	0	.....	2	580
Wisconsin	11	1	140	10	1,241	....	....	.....	....	.....	3	2	1,000	1	540
Minnesota	1	....	.....	....	.....	....	....	.....	....	.....	....	....	.....	....	.....
Missouri	9	3	1,000	6	888	....	....	.....	....	.....	8	1	550	7	3,810
Texas	1	....	.....	....	.....	....	....	.....	....	.....	....	....	.....	....	.....
Utah	1	....	.....	....	.....	....	....	.....	....	.....	....	....	.....	....	.....
Oregon	1	....	.....	....	.....	....	....	.....	....	.....	....	....	.....	....	.....
Colorado	....	....	.....	....	.....	....	....	.....	....	.....	1	....	.....	....	.....
Total	248	69	8,669	175	16,318	230	86	23,539	141	32,460	226	79	40,410	146	52,136

Loose Item

CONDITION OF THE BLAST FURNACES OF THE UNITED STATES, JULY 1, 1884.

(Compiled for The Iron Age.)

Location of Furnaces.	Charcoal.					Anthracite.					Bituminous or Coke.				
	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.
New England	15	4	335	11	870	1	0	.....	1	160	.....	.....	.....	.....	.....
New York	15	5	439	10	764	41	16	4,275	25	6,125	.....	.....	.....	.....	.....
New Jersey	.....	.....	.....	.....	.....	18	3	940	15	3,925	.....	.....	.....	.....	.....
Spiegel	.....	.....	.....	.....	.....	3	2	110	1	55	.....	.....	.....	.....	.....
Pennsylvania	36	13	795	23	1,344	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh Valley	.....	.....	.....	.....	.....	51	25	7,745	26	6,630	.....	.....	.....	.....	.....
Schuylkill Valley	.....	.....	.....	.....	.....	46	18	4,685	28	6,070	.....	.....	.....	.....	.....
Upper Susquehanna Valley	.....	.....	.....	.....	.....	25	11	3,109	14	3,650	.....	.....	.....	.....	.....
Lower Susquehanna Valley	.....	.....	.....	.....	.....	41	23	5,665	18	2,350	.....	.....	.....	.....	.....
Pittsburgh	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17	10	7,730	7	6,100
Allegheny Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	2	585	2	162
Shenango Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	10	5,397	20	6,073
Youghiogheny Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	4	1,321	2	575
Juniata and Conemaugh Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	14	4,569	12	2,770
Maryland	16	7	575	9	600	5	3	420	2	400	2	0	.....	2	230
Virginia	31	9	378	22	1,175	.....	.....	.....	.....	.....	13	6	2,851	7	1,920
North Carolina	5	0	.....	5	290	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia	6	0	.....	6	625	.....	.....	.....	.....	.....	7	1	400	6	2,326
Ohio—Mahoning Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18	8	3,060	10	3,820
Eastern, Central and Northern	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	11	4,860	9	3,150
Hocking Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	1	112	14	2,490
Hanging Rock	28	9	860	19	1,710	.....	.....	.....	.....	.....	15	7	1,250	8	1,385
Miscellaneous	3	0	.....	3	263	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2	750	1	400
Hanging Rock	7	2	220	5	445	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Western region and miscellaneous	8	0	.....	8	675	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	11	1	160	10	885	.....	.....	.....	.....	.....	8	5	2,830	3	770
Georgia	6	1	200	5	257	.....	.....	.....	.....	.....	1	1	600	0	.....
Alabama	12	7	1,560	5	830	.....	.....	.....	.....	.....	9	4	2,390	5	2,110
Indiana	1	0	.....	1	140	.....	.....	.....	.....	.....	2	1	200	1	200
Illinois	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	8	7,175	8	4,800
Michigan	26	15	3,258	11	2,060	.....	.....	.....	.....	.....	2	0	.....	2	580
Wisconsin	12	3	390	9	1,131	.....	.....	.....	.....	.....	3	2	1,000	1	540
Minnesota	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Missouri	9	4	1,200	5	688	.....	.....	.....	.....	.....	8	1	550	7	3,810
Texas	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utah	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oregon	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Total	251	80	10,280	167	14,752	231	101	26,949	130	28,765	226	98	47,630	127	44,211

Loose Item

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INDIANAPOLIS

CONDITION OF THE BLAST FURNACES OF THE UNITED STATES, JANUARY 1, 1884.

(Compiled for The Iron Age.)

Location of Furnaces.	Charcoal.					Anthracite.					Bituminous or Coke.				
	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.	Total number of stacks.	Number reported in blast.	Capacity per week.	Number reported out of blast.	Capacity per week.
New England	15	7	585	8	620	1	0	.....	1	160	.....	.....	.....	.....	.....
New York	15	7	609	8	594	41	20	5,465	21	4,990	.....	.....	.....	.....	.....
New Jersey	.....	.....	.....	.....	.....	18	6	1,650	12	3,225	.....	.....	.....	.....	.....
Spiegel	.....	.....	.....	.....	.....	3	0	.....	3	155	.....	.....	.....	.....	.....
Pennsylvania	35	17	1,095	18	987	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh Valley	.....	.....	.....	.....	.....	51	28	8,460	23	5,915	.....	.....	.....	.....	.....
Schuylkill Valley	.....	.....	.....	.....	.....	46	20	5,240	26	5,385	.....	.....	.....	.....	.....
Upper Susquehanna Valley	.....	.....	.....	.....	.....	25	12	3,539	13	2,585	.....	.....	.....	.....	.....
Lower Susquehanna Valley	.....	.....	.....	.....	.....	41	22	4,070	19	2,810	.....	.....	.....	.....	.....
Pittsburgh	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	11	9,030	5	4,000
Allegheny Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	1	85	3	682
Shenango Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31	12	4,850	19	5,780
Youghiogheny Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	4	1,255	2	575
Juniata and Conemaugh Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27	11	3,885	16	3,210
Maryland	16	4	360	12	875	5	1	400	4	330	2	0	.....	2	230
Virginia	31	3	135	28	1,352	.....	.....	.....	.....	.....	13	6	3,021	7	1,740
North Carolina	5	0	.....	5	290	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia	6	0	.....	6	625	.....	.....	.....	.....	.....	7	6	2,480	1	160
Ohio—Mahoning Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18	8	3,050	10	3,420
Eastern, Central and Northern	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	9	3,510	12	4,090
Hocking Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	3	362	12	2,240
Hanging Rock	28	11	1,065	17	1,505	.....	.....	.....	.....	.....	15	8	1,217	7	1,340
Miscellaneous	3	0	.....	3	263	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2	750	1	400
Hanging Rock	7	2	220	5	435	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Western region and Miscellaneous	8	1	125	7	570	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee	12	2	230	10	1,015	.....	.....	.....	.....	.....	7	5	2,660	2	980
Georgia	6	2	284	4	173	.....	.....	.....	.....	.....	1	1	600	0	.....
Alabama	12	6	1,200	6	840	.....	.....	.....	.....	.....	9	6	3,500	3	920
Indiana	1	0	.....	1	140	.....	.....	.....	.....	.....	2	2	400	0	.....
Illinois	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	5	4,510	11	6,520
Michigan	26	10	1,928	16	3,415	.....	.....	.....	.....	.....	2	0	.....	2	580
Wisconsin	12	4	550	8	971	.....	.....	.....	.....	.....	3	0	.....	3	1,540
Minnesota	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Missouri	9	2	550	7	1,338	.....	.....	.....	.....	.....	8	1	800	7	3,560
Texas	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utah	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oregon	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Total	251	78	8,936	169	16,008	231	109	28,824	122	25,555	227	101	45,365	123	41,967

Loose Item

CONDITION OF THE BLAST FURNACES OF THE UNITED STATES, OCTOBER 1, 1883.

(*Compiled for The Iron Age.*)

Location of Furnaces.	Charcoal. Total number of stacks.	Charcoal. Number reported in blast.	Charcoal. Capacity per week.	Charcoal. Number reported out of blast.	Charcoal. Capacity per week.	Anthracite. Total number of stacks.	Anthracite. Number reported in blast.	Anthracite. Capacity per week.	Anthracite. Number reported out of blast.	Anthracite. Capacity per week.	Bituminous or Coke. Total number of stacks.	Bituminous or Coke. Number reported in blast.	Bituminous or Coke. Capacity per week.	Bituminous or Coke. Number reported out of blast.	Bituminous or Coke. Capacity per week.
New England	15	7	585	8	605	1	0		1	160					
New York	15	6	489	9	624	41	19	4,645	22	5,530					
New Jersey						18	7	2,075	11	2,425					
Spiegel						3	0		3	155					
Pennsylvania	36	17	1,107	19	925										
Lehigh Valley						51	37	10,054	14	3,290					
Schuylkill Valley						47	20	5,170	27	5,600					
Upper Susquehanna Valley						25	12	3,045	13	3,069					
Lower Susquehanna Valley						41	24	4,300	17	2,520					
Pittsburgh											16	13	10,540	3	2,500
Allegheny Valley											4	0		4	742
Shenango Valley											31	12	4,820	19	5,810
Youghiogheny Valley											6	4	1,165	2	625
Juniata and Conemaugh Valley											25	12	3,840	13	2,855
Maryland	16	7	530	9	705	5	3	510	2	220	2	0		2	230
Virginia	31	10	480	21	982						13	8	3,670	5	1,210
North Carolina	5	0		5	290										
West Virginia	6	0		6	625						7	3	780	4	1,960
Ohio—Mahoning Valley											18	9	3,030	9	2,940
Eastern, Central and Northern	3	0		3	263						21	13	5,060	8	2,540
Hocking Valley											15	3	362	12	2,240
Hanging Rock	28	20	1,880	8	685						15	9	1,555	6	890
Miscellaneous															
Kentucky											3	3	1,150	0	
Hanging Rock	7	3	345	4	320										
Western region and Miscellaneous	8	1	125	7	570										
Tennessee	12	4	500	8	675						7	5	2,160	2	980
Georgia	6	1	200	5	257						1	1	500	0	
Alabama	12	8	1,660	4	330						9	8	4,000	1	220
Indiana	1	0		1	140						2	1	200	1	200
Illinois											16	6	5,410	10	5,920
Michigan	26	14	1,500	12	200						2	0		2	580
Wisconsin	12	3	385	9	1,076						3	0		3	1,540
Minnesota	1														
Missouri	10	3	900	7	1,188						8	4	2,210	4	2,050
Texas	1														
Utah	1														
Oregon	1														
Colorado											1				
Total	253	104	10,686	145	10,460	232	122	29,799	110	22,969	225	114	50,452	110	35,032

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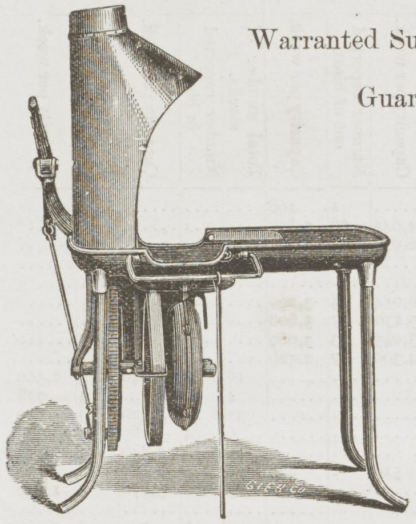

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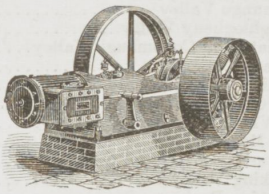

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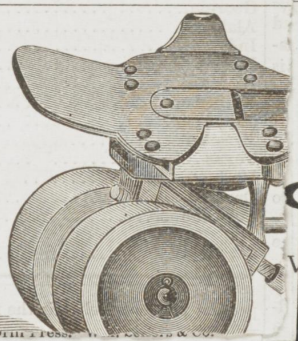

Loose Item

THE BLAST FURNACES OF THE NORTH CHICAGO ROLLING MILL COMPANY.*

By Fred. W. Gordon, Philadelphia, Pa.

The North Chicago Rolling Mill Company, of Chicago, have four furnaces at South Chicago, built during 1881. Each furnace is 20 feet diameter of bosh and 75 feet total height, the hearth being 11 feet diameter and the top 15 feet 4 inches. They are blown through 7-inch tuyeres placed 5 feet 6 inches above the hearth level. Cubical contents, 15,000 cubic feet. Each furnace is supplied with two blowing engines, 84-inch blowing cylinder, 36-inch steam cylinder and 54-inch stroke. These two have one jet condenser worked by an auxiliary pump. The blast for each furnace is heated by the aid of three Whitwell fire-brick stoves, each 21 feet diameter and 60 feet high. In the batteries of boilers furnishing steam for furnaces there are 36 double length boilers 72 feet long, 48 inches diameter and 16,000 square feet heating surface.

The plant was designed to produce 3600 tons per week, or 900 tons for each furnace, and was fitted as above with such engines, boilers and hot-blast stoves as were thought requisite for that production; hence, calculated from the present make—not the least remarkable feature in the economy of construction—there are less engines, less boilers and less hot-blast power for the iron made than at any plant within my knowledge, or it could to-day be duplicated for less money per ton of iron made per week than could any plant now in existence, whether there are fire-brick or cast-iron stoves for heating the air used in the contrast. This is a practical demonstration of my assertion in a paper on fire-brick stoves, read before the Institute, that the application of fire-brick stoves in construction really lessens the first cost.

In view of the statements just made, I must be most emphatic in assuring the members that nothing is strained or overburdened. The engines run at 28 revolutions, the piston speed being 252 per minute. The hot-blast stoves at present heating the blast to 1450° F. have ample power to sustain the heat, and the boilers, which are now all on for three furnaces, are continually blowing off steam without any extra attention. The surplus of steam generated is so great that no thought of difficulty can be entertained when the fourth furnace is put on. As for the engines and stoves, there are only those used which belong strictly to the plant at work. With the four furnaces at work at the present average there will be but 21 feet of boiler surface per ton of iron per 24 hours. One 84-inch engine is furnishing blast for over 100 tons of iron per day, and 350 square feet of surface in the stove plant are heating the blast for each ton of iron per day.

After a blast with each of the original furnaces which was not entirely satisfactory, they were remodeled to the writer's designs, and No. 5 started March 22, 1884. The work was most satisfactory, compared with the best work at that time, and the remodeling of Nos. 6, 7 and 8 was proceeded with, all being built exactly alike. No. 8 has not been blown in, but is ready. The large make of the others and slack orders are the reasons. No. 6 was [illegible]

Metallic iron	62.790	per cent.
Phosphorus	0.072	"
Earths	8.740	"

The yield from the ore in the furnaces was, however, only 62 per cent, while the pig contained 2 per cent of silicon and 4 per cent of carbon. The metallic iron in the ore would be but 59.22 per cent, so that the earths would be $8.74 - 2.68\ SiO_2 = 6.06$, to which the supposed iron of the analysis $(62.79 - 59.22)$ should be added, equal to $606 + 3.57 = 9.63$ per cent, allowing for the silicon of the pig coming from the ore.

During the last four weeks the charge on No. 7 has averaged to each ton of 2240 pounds of pig iron:

Ore...3555.5 pounds	containing	2105 pounds iron.
Fuel..1862 "	"	1612 pounds carbon
Flux. 608 "	"	553 pounds limestone.

The waste gas analysis and temperature were taken repeatedly and carefully, and averaged 46 volumes of carbonic acid to 100 volumes of carbonic oxide. The temperature of the waste gases was 480° F., while the blast temperature was 1375° F.:

The average make for 24 hours' running time was, tons	209
The average make for week, running time was, tons	1463
Product per week per 1000 cubic feet furnace capacity .....tons,	97.5
Average total engine revolutions, per minute	56
Average time in motion per day, hours	22
Displacement of piston each revolution, cubic feet	345
Pressure of blast in engine-room, pounds per square inch	6
Pressure of blast at tuyere, pounds per square inch.	4
Work done by blowing engine, horse-power	507.8
" " " " per ton in 24 hours, horse-power	2.44
Add 50 per cent to this for hoisting and pumping and total per ton, 24 hours, horse-power	3.66
Heating surface of boilers apportioned to each furnace per horse-power developed, square feet	5.25

The work of this furnace is here analyzed by Sir I. Lowthian Bell's system (see "Chemical Phenomena of Iron Smelting, page 154, &c.), using his cwts.-units, &c., that it may be more easily compared with European data:

Composition of the Waste Gases.

	By vol.	By weight.	Carbon.	Oxygen.
Carbonic acid	12.88	18.85	5.142	13.712
Carbonic oxide	28.00	26.08	11.178	14.904
Nitrogen	59.12	55.06	....	....
Total	100.00	99.99	16.320	28.616

Coke used, cwts. per 20 cwt. of iron			16.62
Carbon in coke	14.39	Total carbon cwt.	14.96
Less carbon in limestone	0.57		
Total	13.82		

Leaving carbon burned to:

	Heat-units.
Carbonic oxide, 13.82x2,400=	33,168
Carbon of this carbonic oxide burned to carbonic acid, 14.16*, x 5.142, divided by 16.32, equal to 4.46 x 5600 =	24,976
Total cwt.-heat-units from combustion of carbon per gross ton of iron produced	58,144

Gases—Weight per ton of iron made:

Total carbon	14.96
Less carbon taken up by iron	0.80
Weight of carbon in gases	14.16

					Car.	Ox.
Nitrogen in gases	16.32:	14.16 ::	55.06=57.73			
Car. oxide	...	...	26.08=22,62		9.70	12.92
Car. acid	...	...	18.85=16.36		4.46	11.90
Total			86.71		14.16	24.82

Weight of blast:	
[illegible]itrogen as before	47.73
[illegible] with it	14.40
[illegible]	0.50
[illegible]	62.63

come in with the blast, much of the economy must be credited to superheated blast, independent of the changed condition of the descending material tending toward further economy in part resulting from this heat.

Inasmuch as from April till the present time no change whatever has been made in the furnaces or their appliances, an examination of what a furnace may be doing is no criterion of what it should do in fuel economy. The examinations by Sir I. Lowthian Bell and others of furnaces to which superheated blast has been applied is only of existing facts, and not of the possibilities. I maintain from this experience that such practice as should have accompanied the increase of blast heat was not resorted to; hence but little economy was found to follow. If with a given consumption of fuel 1000° F. in the blast sufficed for all the heat requirements, any additional heat introduced in the blast must be found in the escaping gases, or the proportion of carbonic acid will be reduced, or both. This is what examinations have shown, but they have not shown that the fuel could not be saved. It is hoped that the record given does establish that it can. Below I calculate the fuel consumption required when using similar materials to that used at the Durham Furnace, as given in B. F. Fackenthal, Jr.'s, carefully prepared paper read at the late Chattanooga meeting. The work of this furnace is perhaps as good as any under similar conditions.

It has good hight to absorb the heats, has good regular heats in the blast, and the contrast seems as favorable to the cast iron stove practice as its most ardent advocates could wish. The only change I have made from the charges in Mr. Fackenthal's paper is a small reduction in the limestone required to meet the reduction of fuel ash. The fuel is calculated at the same percentage of carbon, and it is assumed that the gases may be made to pass away containing as large a percentage of carbonic acid and at as low a temperature. These two latter propositions may not be admitted, but comparative data* and reasoning on the subject would lead to the conclusion that more carbonic acid† and a lower temperature might be found‡ where the larger quantity of limestone is used.

In the calculation just made, 69,217 heat-units were developed from 16.62 cwt. of fuel, or for each hundredweight of fuel 4160 heat-units. If the unit requirements in the new case are divided by this number, the quotient will be the approximate hundred-weight of coke required. Let us arrive as closely as can be at what the requirements are:

Heat Units Approximated When Using Durham Materials, Conditions Being Similar to Those at South Chicago.

Constant requirements, as before	50,820
Evaporation of water of coke, say	100
Expulsion of carbonic acid from limestone, 20x370	7,400
Decomposition of carbonic acid from limestone, 2.18x 3200	6,976
Decomposition of water of blast, 0.1x34,000	3,400
Fusion of slag, 20x550	11,000
Carried off by gases, say	8,000
Expansion of blast	3,000
Total	90,696

90,696÷4160=21.8 cwt. of fuel required (approximately); but 21 cwt. will probably suffice, as the following calculation will establish:

Hundredweights of fuel required	21.00
Less ash	2.82
Carbon	18.18

Gases as before by weight	[illegible]	[illegible]on.	Oxygen.
Carbonic acid, 18.85	[illegible]		13.712
Carbonic o[illegible]			14.904
			....

terials, to assume the gases in an equally economical condition with the former is understanding the probabilities.

Heat contributed by the blast, 87.06x746x 237=		15,392
Add heat by combustion of the carbon		73,232
Total		88,624
Heat carried off by the gases, 121.46x249x 0.24=	7,258	
Assumed units required		90,696
Less 8,000—7,258=	742	
Less for silicon in the pig, 3,360÷ 3=(Estimated from description of pig.)	1,120—	1,862
Total		88,834
Heat furnished		88,624
Difference		210

It would seem from this that the additional fuel required for the material used at the Durham as compared to that used at South Chicago is 21 —16.62=4.38 cwt., and that a reduction in consumption of fuel might be effected at the Durham of

1.24x2,240=2,777
112 x 21=2,352

425 pounds of fuel.

INVENTIONS AND PATENTS.

The Ansonia Brass and Copper Co., of Ansonia, Conn., have procured a patent for refining and preparing copper for casting.

L. Stevens, of Washington, D. C., is the patentee of a method of casting hollow metal bodies with a non-oxidizable lining.

Shear blades which will cut hot blooms and bars without becoming injuriously softened have been patented by S. M. Guss, of Reading, Pa.

H. P. Phipps, of Cleveland, Ohio, is the patentee of forging dies designed more particularly for forging chord-heads on bridge-chords, eyebars and other similar work.

A new process of casting compound metal ingots has been patented by A. J. Lustig, of St. Louis, Mo. This process is designed to produce an ingot from different metals of different textures, and having different degrees of temper and tenacity.

A cupola furnace, the tuyeres of which diffuse the blast instead of concentrating it, has been patented by J. H. Whiting, of Detroit, Mich. The tuyeres occupy the usual position, but they enlarge from their inlet opening toward their discharge opening.

The Harvey Screw and Bolt Company, of Connecticut, are the part assignees of the patent right in hardened-steel dies having a curved working face. The dies are hardened only on their working faces, while the remainder is left comparatively soft.

A machine for corrugating heavy metal plates and tubes, particularly those which are used for fire boxes, has been patented by G. S. Strong, of Philadelphia, Pa. The machine contains two corrugated rolls, one above the other, of which the upper roll is supported in movable journal-boxes.

An axe which, it is claimed, can be easier driven and more quickly withdrawn than those of the ordinary construction has been patented by W. C. Kelly, of Louisville, Ky. The blade is practically of uniform thickness at that point usually consumed by wear and in grinding. From a central point in the line of juncture between blade and head a bevel or taper extends toward the back and front edges of the blade. The line of taper radiates from its starting point outwardly on both sides and meets the edges at the point of juncture with the cutting edge of the blade.

[illegible]he National Needle Co., of Springfield, Mass., [illegible]rocured a patent for a machine for remov[illegible]rrs from the ends of needle-blanks which [illegible] off from the wire, and for grinding [illegible]iform conical shape. Heretofore [illegible]omary to pay any attention to [illegible] ends of the short blank [illegible]made by swaging or [illegible] that the [illegible]

[illegible]er 20th
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ain to start a fleet of ships
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ain, on August 3, 1892, the
nniversary of the sailing of
ave the fleet sail to San Sal-
route taken by the great dis-

d clock, 4 feet in diameter and
brass, is being erected in Wall
ork, by the Commercial Cable Co.
e three dials the time at London will
The clock will be run by electricity,
dials will be lighted at night by elec-

McFernan, John M. Robinson, Lester

Loose Item

American Manufacturer
AND
IRON WORLD.

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PITTSBURGH, FRIDAY, Oct. 30, 1885.

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with nailers' demands and 515 on the terms of the manufacturers.

The nailers affect to believe, in the face of these facts, that the strike is nearly at an end; that the demand for a 10 per cent advance by the mills in the East will aid them in securing their price in the West. Possibly if it were only a question of price it would, but they seem in their utterances to ignore the fact that the struggle is no longer one for price, but one involving the character of the nailers' trade, and whether it is possible for feeders, within a reasonable time, to become nailers. This is a phase of the question that will not down, and the introduction of feeders into the mills is a move that the nailers would contest with much greater determination than they would the question of price. If prices were made satisfactory to them they would not consent to resume work unless the feeders were discharged from the machines, and this the manufacturers have pledged themselves not to do.

In the meantime, the Nail Association refuses to advance the card, and it remains where it did, at $2.25, with the usual discounts. This is the price at which nails are being sold. It does not necessarily follow, however, that everybody who wants to buy nails can buy them at this price, as the mills decline to supply any but their regular customers.

BELGIAN STEEL SLEEPERS FOR ENGLISH RAILWAYS.

Our English friends have again been rudely awakened from the dream of their supremacy in iron and steel matters by the purchase by the Midland Railroad Company of a large number of Bessemer steel sleepers from the John Cockerill Company, of Seraing, Belgium. The number is reported to be ten thousand. Coming, as it does, on the heels of the recent purchases in large quantities in that country of foreign iron and steel material, such as the large order for axles for India, beams and girders for various large buildings, and hardware and locks for some government houses, it is not at all a pleasant state of affairs. The *Ironmonger*, while stating that this is the first order of any moment for steel sleepers given out by any leading British railway company, though several of the large English works are producing English sleepers on a large scale for India and other foreign and colonial destinations, suggests that, "such being the case, it would be very interesting to learn why they failed to meet the requirements of the Midland, or, if they were able to supply exactly what was wanted, how it was that they were unable to compete in price. We take it for granted, of course, that the Midland gave every opportunity of competing to the works in the country before deciding to entrust the order to the Cockerill Company. Our Bessemer [illegible] any

their arguments constantly refer to what they are pleased to term the "ad valorems" of whatever specific duties may have been inserted in the tariff, and if in a given condition of affairs, when prices are low, specific rates of duty show a high ad valorem rate on the values reported, they instantly cry for a reduction of the duties, because the ad valorems are high. The practical argument of the Protectionists, on the other hand, is that no matter what such an investigation as the Free Traders conduct shows, as to the percentages which the rates of duty bear to the invoice values returned, duty should be levied, if protection is adopted as a principle, so as to give protection, and because in a depressed market these ad valorems seem high, it is no excuse for changing the duty, providing it is a protective one, in a normal state of the market.

We imagine, however, that in some cases it will be difficult, owing to the wide range of products included under a given name, to agree upon a specific rate that shall be protective on all varieties of this product, and yet we do not think that it is absolutely impossible, though the principle of specific duties will need to be employed with discretion. The proper way out of this would be to levy upon certain manufactures several specific duties. In textile manufactures, for instance, we need to develop the production of fine fabrics which we still import in large quantities—though of the coarse we produce more than enough. Now the levying of a single specific duty upon cotton goods would protect the cotton goods, but would reduce materially the protection upon the finer goods, and they would come in in greater quantities than they do under the ad valorem duty now levied. This could be overcome by levying a specific duty with reference to the number of threads of warp or picks to an inch, or yards of cloth to a pound of cotton or wool. It would also be difficult to provide for steel under a single specific duty without causing injustice.

It is in the line of the change of ad valorem duties for specific that we think that the Protectionist should adopt Mr. Manning's suggestions, and if he is really in earnest in his desire to make this substitution, as he seems to be, all assistance should be given him unless it becomes evident that this is but a covert way of providing for a reduction of duties. If the specifics adopted are such as to give an equal protection to that now given by the ad valorems, there can be no objection to the substitution.

THE CONGRESSIONAL ORDNANCE COMMITTEE.

The Commission of the House of [illegible] tives, consisting of Cong[illegible] Burns, Cri[illegible]

will be so foolish and wicked as to use his power to discriminate against and oppress a portion of the people, and that too simply because they do not see proper to join a union? "In the name of all the gods at once," what next? We wonder an attempt has not been made to take away the right of the non-union man to vote, for this right is not nearly as sacred as the right to earn a living.

—On Wednesday night there was a meeting, in this city, of the different labor organizations of Allegheny county and of the Trades Assembly of Western Pennsylvania, at which it was decided to present a petition to Secretary Manning asking that in awarding future contracts for Government work they be given out, if possible, in such a manner that the wages will be paid by the Government directly to the men employed. There is nothing unjust in such a petition as this, which is in marked contrast with the petition proposed by the Executive Committee, and the Secretary should give it fair consideration.

ACCORDING to the *Railroad Gazette*, 1870 miles of new railway have been laid to date this year, compared with 2932 miles last year at same date. This year's mileage will be insignificant compared with the total mileage for 1882—11,596 miles—but in the not very remote future there will come along a year whose mileage will eclipse that of 1882. Comparatively speaking, the railroad industry of this country is only in its infancy. Think of it: Prior to 1853—within the easy recollection of a person of middle-age—Pittsburgh was entirely without railroads, and in that year the mileage of the entire country was only 15,360 miles, compared with 125,542 miles at the close of 1884. This is an average increase of 3443 miles a year, and there are no indications that this rate will decrease for many years to come, but the indications are rather that it will increase. Those sections that already have railroads will need more as population and business increase, and the vast region occupied by the territories will in the near future be striped and checked with many thousands of miles.

IN visiting business offices one meets a great variety of persons. Most are kind, courteous and accommodating; others are fair to medium in these respects; another class—fortunately very small—are in ill-humor nearly all the time, full of gruffness, and cranky, having much of the nature of such unpleasant and fretful animals as

she [illegible]
but give a [illegible]
duce in the [illegible]

PROF. J. A[illegible] Tokio, has publ[illegible] he points out to the [illegible] neers of Japan the a[illegible] English types of bridge[illegible] neers wrote letters to th[illegible] they took issue with Pro[illegible] Professor replied in a spiri[illegible] accounts appeared to have t[illegible] ment. We trust the Profess[illegible] keep the "old flag" "full high [illegible] believe he can and will, "first, [illegible] time."

THE introduction of machinery i[illegible] of England has occasioned, as it [illegible] country, some disturbance in the wag[illegible] In the iron mills of Cleveland [illegible]

Loose Item

Waiting

Loose Item

ACCOUNT No. .....

SHEET No. .....

Blast	Yield	Coke	Lime	No 1 Fly	No 2 Fly	Silvery	L M Mines	Stack	Dollyann	Rumsey	Fenwick
4 A	.42^{3} %	1.42 Ins	1.15 Ins	.40 %	.48 %	.00^{6} %					
5 A	.44^{2} %	1.28 "	.96 "	.28	.50	.04					
6 A to No. 1	.41^{2} %	1.25 "	1.15 "	.10	.69	.07	.18	.01^{8}	.18	.03	.20^{8}
1 B	.43^{4}	1.25 "	1.03 "	.47	.42	.00^{4}					
2 B	.44^{6}	1.29 "	.91 "	.40	.42	.02					
3 B	.44	1.25 "	.97 "	.32	.50	.05					
4 B	.42^{6}	1.29 "	1.05 "	.27	.50	.02	.37^{4}	.05^{4}	.44		
5 B	.43	1.21 "	1.01 "	.10^{9}	.71	.06	.30^{3}	.06^{4}	.30^{9}		
1 C	.44^{5}	1.49	.85	.08	.30	.00^{6}					
2 C	.44	1.40	1.08	.16	.39	.01					
3 C	.42^{4}	1.39	1.06	.05	.69	.00^{7}	.23	.04	.57		
4 C	.43^{6}	1.62	1.22	—	.50	.08	—	.08	.78		
5 C to No. 1	.40^{5}	1.52	1.50	—	.51	.04	—	.10	.85		.05
1 A	.40^{7}	1.26	1.21								
2 A	.42	1.37	1.08								
3 A	.43^{8}	1.28	1.07								

Leaves and Binder Patented Aug. 19, 1897.

Loose Item

Condition of the Blast Furnaces of the United States, Oct. 1, 1884.

Herewith we present our regular quarterly report of the condition of the blast furnaces of the United States. In a condensed form the table presents the following results:

CONDITION OF BLAST FURNACES, OCTOBER 1, 1884.

Fuel.	In blast.		Out of blast.	
	No.	Weekly capacity.	No.	Weekly capacity.
Charcoal	69	8,669	175	16,318
Anthracite	86	23,539	141	32,460
Bituminous	79	40,410	146	52,136
Total	234	72,618	462	100,914

As compared with the condition of the furnaces on July 1, a considerable shrinkage in production is apparent, there being 45 furnaces less in blast now than then, with 13,213 tons less weekly capacity. The shrinkage extends throughout the three classes of furnaces. The following table shows, for comparison, the condition of the furnaces on the 1st of January, 1st of April and 1st of July:

	Fuel.	In blast.		Out of blast.	
		No.	Weekly capacity.	No.	Weekly capacity.
Jan. 1.	Charcoal	78	8,936	169	16,008
	Anthracite	109	28,824	122	25,555
	Bituminous	101	45,365	123	41,967
	Total	288	83,225	414	83,530
April 1.	Charcoal	62	8,713	185	16,654
	Anthracite	107	27,612	121	26,605
	Bituminous	100	49,236	126	39,420
	Total	269	85,561	432	82,679
July 1.	Charcoal	80	10,280	167	14,725
	Anthracite	101	26,949	130	28,765
	Bituminous	98	47,630	127	44,211
	Total	279	84,859	424	87,701

In the following table a comparison is made between the condition of the furnaces on October 1 a year ago and at the present time:

Fuel.	No. in blast.		Weekly capacity.	
	1883.	1884.	1883.	1884.
Charcoal	104	69	10,686	8,669
Anthracite	122	86	29,799	23,539
Bituminous	114	79	50,452	40,410
Total	340	234	90,937	72,618

This table shows that there has been a diminution of over 31 per cent. in the number of active furnaces within a year, and a decrease of over 20 per cent. in productive capacity of the furnaces in operation. For the last seven years the relative condition of the furnaces on October 1 has been as follows:

NUMBER OF FURNACES IN BLAST, OCTOBER 1.

	'78.	'79.	'80.	'81.	'82.	'83.	'84.
Charcoal	83	97	153	153	158	104	69
Anthracite	88	128	143	148	157	122	86
Bituminous	80	112	128	134	128	114	79
Total	251	337	424	435	443	340	234

NUMBER OF FURNACES OUT OF BLAST, OCTOBER 1.

	'78.	'79.	'80.	'81.	82.	'83.	'84.
Charcoal	186	159	116	119	93	145	175
Anthracite	135	98	96	87	72	110	141
Bituminous	133	90	91	87	111	110	146
Total	454	347	303	293	276	365	462

It will be noticed as a significant fact that fewer furnaces are now in blast than on October 1, 1878.

Loose Item

makes Three-Square Files by the
we present to the public a Three-

that they will do twice, and some

e Saw File.
n see at a glance that from the

buying any other file of its class.
BEWARE OF IMITATIONS.

March 6th, 1884.

The principle is right. Have given your File a fair trial, and when we have used up our present stock will order some of yours.

FREELAND TOOL WORKS,
558 West 34th street, New York.

January 25th, 1884.

I find the File the best I ever used. Stop when you come this way. A. WHITE,
98 Washington street, Boston.

February 2d, 1884.

The Files are the best. Please send us two dozen 4½-inch Taper Saw Files, at earliest convenience.

HARVEY SCREW AND BOLT COMPANY,
Providence, R. I.

January 21st, 1884.

The Files are the best; principle right. Have filed 10 saws. W. W. DAVIS,
Taunton, Mass.

February 16th, 1884.

I have used your File, and have filed more saws than with any other file, and the File is good yet.

EUGENE P. BASSETT, Taunton, Mass.

January 29th, 1884.

Your Files are good, and I hope to send you an order for some soon.

FREDERICK SHEFFIELD,
1712 Washington street, Boston.

January 16th, 1884.

The Files are as good as can be. I have used files for the last 18 years, and find sample best I ever used. M. CUSHMAN, Boston.

March 1st, 1884.

I have filed more saws with that File than any other. Have shown it to several and all like the principle. JETHRO. C. DAVIS,
New Bedford, Mass.

March 13th, 1884.

The Files are the best; principle right; put them in the market soon as you like; are bound to sell.

JOHN CRONK, 105 W. 37th st., New York.

February 27th, 1884.

The Files are the best; the principle is right. They are better than the old style, filing smoother and not chattering. R. F. CORDNAM,
Jersey City, N. J.

March 7th, 1884.

Having found your sample excellent, let your agent call for order when passing.

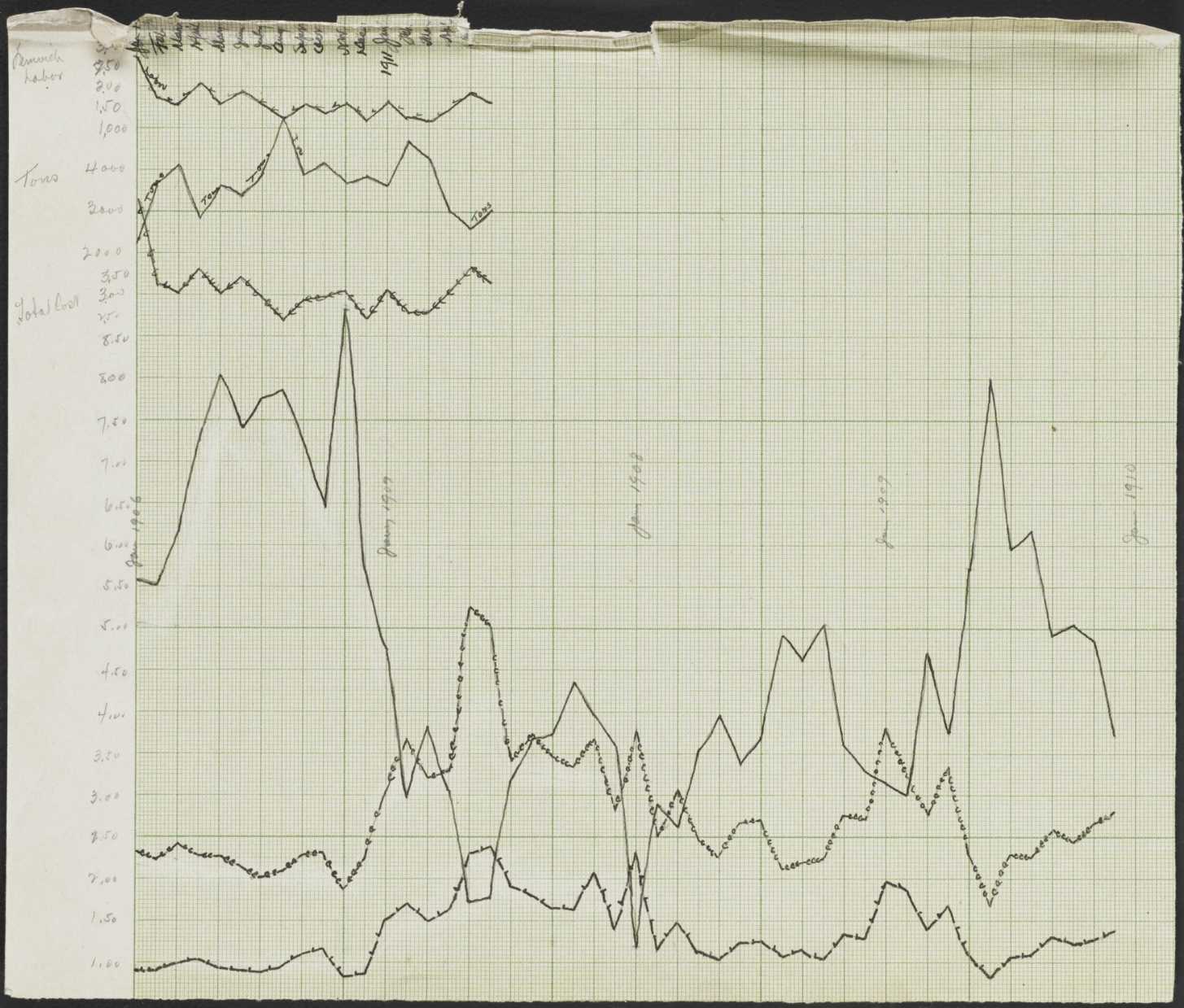
S. BRUTSCKE, 105 W. 37th st., New York.

March 8th, 1884.

The Files are the best; the principle is correct. These Files I shall use hereafter, and can well recommend them to all users of files.

WM. H. PLAYFOOT.

Loose Item



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(See below for Explanations and Exceptions.)

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SECOND-CLASS.—Newspapers and periodicals, published quarterly and oftener, and not for gratuitous distribution. Such publications must be entered as second-class matter at the Post-office where they are published, and their being so entered must be printed conspicuously in each number. Publishers and news-dealers pay by bulk at 1 cent a pound. The general public pay by affixing stamps at the rate of 1 cent for each 4 ounces or part thereof, when not sealed.

THIRD-CLASS.—Books (printed, not blank), circulars, other printed matter, proof-sheets and manuscript copy accompanying same, valentines, sheet-music, heliotypes, chromos, posters, lithographs and printed advertising matter in general, all, when not sealed, 1 cent for 2 ounces or fraction.

FOURTH-CLASS.—Merchandise and samples, including printed matter in quantity, blank books and paper, ores, bulbs, roots, and all matter not included in any of the other classes, and not in its nature perishable or liable to injure the contents of the mails. All, when not sealed, and not exceeding 4 pounds in weight, 1 cent an ounce or fraction.

SEALING.—Any matter is regarded as sealed when it is not so wrapped as to allow of a thorough examination without in any way injuring the wrapping or contents. The name and address of the sender and a description of the contents can be *written* on the wrapper of unsealed packages, or a business card may be printed, pasted or impressed on such a wrapper.

REGISTRATION.—First, third and fourth-class matter may be registered at any Post-office by affixing 10 cents in stamps in addition to the regular postage.

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POSTAL NOTES—For amounts under $5 cost 3 cents.

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FOREIGN POSTAGE.

Almost all the principal countries are included in the POSTAL UNION, to which the rates are as follows: Letters, per half ounce, 5 cents; second and third-class matter, per 2 ounces, 1 cent; postal cards, 2 cents each.

The following are the only countries not in Postal Union, and that have special rates: New South Wales. Victoria, Queensland, Cape Good Hope, Bolivia, China, Natal, New Zealand.

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JOHN MEANS.