



Reports

Mulga Mine

April 20, 1910 - May 1910

Mulga Mine Explosion

April 20, 1910

Notes By Geo. S. Rice

Detail of Evidence

Manway Going south on manway from the No. 2 shaft:—The first cross cut on left has damp dust on corners.

On the right there was a piece of canvas on a wire hanger, which had been blown north toward shaft No. 2. There was some damp dust on the north side of piece of the hanger.

The second wire hanger was turned north, splitting the plug. The first cross cut on the right was blank out. There was damp dust on the inner corner of the cross cut.

The rock stopping in the second cross cut on the right was intact. There was some damp dust on the inner rib of cross cut.

The supports for the first wire were driven north, splitting the plug. The first wire along the entry were down, but the trolley wire were up.

No stone stopping in the third cross cut on the right was blank out, and was scattered along roadway. No evidence was noted!

Diagonal East.

On the left air-course of Diagonal or Main East there was considerable standing water. Damp dust was found on both North and South facing.

The ~~first~~ stopping in the first cross cut on the right, which was of stone, was intact.

Seven or eight empty cars were on the switch; the only car was blown away and tipped on ledge. There was a wafer spray located on this switch and the dust was damp.

Going East on the Diagonal from the junction of the Mainway the rock stoppage in the first left cross cut was blown into the main entry. The stoppage in the right cross cut was blown into the South air-course and the rocks scattered. The stoppage in the second left and right cross cuts were blown on the main entry toward heading. The trolley wire was not disturbed along this section of the entry. The stoppage in the third cross cut on the left was blown toward the heading.

At the switch of the 1st Left heading, a piece of canvas was caught in the fork of the trolley, had been blown away. The

and timber, ² ~~stones~~ stopping in the ^{left} cross cut opposite the switch frog, which was made of straw and ~~timber~~, was blown out. It is not perfectly clear which way the material was blown but most of the evidence indicate that it was blown towards the heading.

No coking had been observed so far but the grogs were found to be scoured on the inby faces and fine dust on the outby faces.

~~About 10 feet inby the second left, coking was found on the inby face of a groy.~~

The stopping in the ^{first} cross cut inby 2nd left was blown out, toward heading. There was some coke on the face of grogs opposite the second cross cut, also just inby this cross cut coke was found on the outby face of the grogs. The floor of the road along this section of the entry was strewn with with much coarse rock. The stopping in the third cross cut was nearly intact. Some coke was found on rocks opposite 4th cross cut. Coke was found on inby face of grogs opposite the 5th and 6th cross cuts. No coking was observed at the 7th cross cut. Small amount of coke was found on both inby and outby faces of grogs inby the 1st East heading. Further inby coke was found on the outby side of grogs.

Just outby room 1 there was a loaded car on which there was considerable coke on the outby end. Coke was found on all sides of a groy opposite the 10th cross cut.

The body of the man who worked in room^{no. 1} was found lying on his face, badly burned, on the entry just outside room no. 1. Opposite room no. 2, the cars were off the track, showing the faces acting in by. The stoppage in the cross cut in by room no. 2 was blown into the entry. The track at this point was also torn up and blown ~~to~~ south. Dinner buckets opposite this cross cut were still filled with liquid. The track in the last cross cut was torn up, one section being moved about two feet toward the air-course. The south rail in the air-course track had been moved north, about 18 inches.

The bodies of a machine man and his helper were found near the face of the entry. A large rock had fallen on the machine board. Considerable coking was found at this point. There was evidence of gas at both the face of entry and air course, but no cap showed on safety lamp.

1st East off Diagonal: Insert page 4 here

Cross 40 feet in from the mouth had coke on in by faces. Stoppage in all the cross cuts were blown toward the entry. Two loaded cars were blown across the track and showed coke on in by end.

The badly burned bodies of the two men who worked in the air course were found in the last cross cut. The face of the entry was 50 feet in by the last cross cut. An empty car near the face ^{of the entry} had some scattered coke on the north end and heavy coke on the in by face.

Diagonal East (Cont'd.)

Timbers from the door near Shaft No. 1. was blown into the slant cross cut to the shaft. Trolley wires and hangers were blown East into this cross cut. In the 2nd cross cut was an old cabin which was blown to pieces, and a little further along was a door that had been blown from near the bottom.

On the main bottom a number of cars were piled up and more or less damaged.

The stopping in the cross cut, opposite the slant cross cut to the shaft, was blown toward the air course. A large post opposite this cross cut was blown South. A door was blown East 50 or 60 feet; coke was found on the East side of door frame and post.

But the next cross cut was a stone and cement stopping which was intact. This is one of the few stoppings in the mine that was left intact. The stone stopping in the next cross cut was blown in by, and a post at the mouth had coke on the East face. The bodies of three men were found on the curve into the South haulage.

On Diagonal East air-course opposite No. 4 Butte, some gobs show coking in northy faces, and 20 feet further in no coking was observed. Heavy coking was found on inby face of gog in air-course northy No. 4 Butte.

Main Havilage No. 2:

The air course at north end of entry is a "blind" entry. Near the face of this entry some coking was found on the north side of props. A piece of canvas was wrapped around a post, showing the direction of force inby. A prop at the second cross cut showed coking on north face.

At No. 1 Left room, going towards No. 2 shaft, the track was moved two feet. Considerable coke was found in the crevices of rock, opposite the mouth of this room. Opposite 1st Right entry, several heavy wire hangers were bent north. Considerable coking was found on north faces of props and cross cuts on this entry. The stopping in the 2nd cross cut from the shaft was blown into entry. Three trolley hangers at this point were bent north. The stopping in the first cross cut was blown into the entry. Trolley hanger wire bent south and wire was down. The trolley hanger 15 feet from shaft was bent inby. (insert back of page)

^{Off Air Course}
Room No. 1, A - Blisters were found on the roof 30 feet from the face and coke on pavement. Gas was bubbling up through water at the face of the room. Very heavy coking was found on inby faces of props.
Room No. 2 - Similar condition as room 1, except the coke is brighter, and 25 feet from face, the props are coked on all sides.

Room

The top of the stone stopping in the fourth cross cut was blown slightly toward the entry. The next two nine blocks were blown in.

The stopping in the fifth cross cut was intact except a small amount of the dirt was blown toward the entry.

~~On the left because of diagonal on main East there was considerable water~~

Haulage No. 2

Room No. 3: - About 60 feet from mouth of room an empty car was off the track against the right rib, with charred dust 2 inches thick on inside end. For the next 30 feet there was coke on the dusty exposures near top. About 100 feet in, for about 100 feet, the rib has coked dust on it, and the coal seems fused. Coke ceases about 30 feet from the face. There was gas in the bottom.

Room No. 4: - Coke was fused on the inside exposures in the neck of this room. Choke at different points in this room showed coking on both inside and outside faces. Gas was escaping from the bottom near the face.

Room No. 5: - Heavy coking was found on inside side of goz. Forty feet in a heavy fall had occurred from strike just inside last cross cut. - Choke at the room mouth had coke on inside faces. Coke linters were found on the roof. Choke 15 feet in has coke on outside face. Gas felder at face, but no cng showed on safety lamp.

On Air Course: - Once

Haulage No. 2

Room No. 1. off Main Entry.

At the mouth of the room, the inner rail on cross was moved two feet, and for 75 feet only the track was moved about one and one-half feet. Heavy coke found on inner faces of grops. About 150 feet only, and to within 8 feet of face, charred dust was found on inner side of ties.

Room No. 2: Grops have coke on inner side. Thirty feet in the track was bent at a sharp angle.

Room No. 3: - This room has a bad roof and heavy falls have occurred. Coke was on inner faces of exposures.

Room No. 4: - A groy at mouth of room was heavily coated with charred dust on the inner side. A heavy fall had occurred only the cross end.

Room No. 5: - The grops in this room have coke on inner faces.

1st Right off Main Haulage No. 2, -

Opposite the 1st cross cut there was heavy coke in a hole in the roof, and a trolley hanger had been bent East. About 60 or 70 feet in by some timbers had been jammed under the coal and a large rock had fallen; the timbers had been blown out by. A post just in by had a very heavy coating of coke on in by side, and a post further in was blistered on the out by side. The 2nd cross cut stoppings was blown into the air course, as was all the stoppings on this entry. Considerable coke was found on in by face of grops and projections on the rib.

~~On the west side of the main haulage road there had been much material in the air course.~~

Near the face of the air course the West rib had been plastered with mud and wet coal, as was the in by side of the third post from the face. In the connection into no. 4 ^{and 2} road off Mainway, the direction of force was apparently toward the Mainway, the floor of room 2 was swept clean, toward the mainway. No evidence of heaving was observed.

Opposite air course of no. 2 Haulage, the rib is lightly packed with coal dust and fragments of lumber that evidently came East on air course and thence the direction of force was through to the Mainway.

~~Stopping in the~~

The track at room 2 was detached and blown about two feet northy. At about room 3 the track was torn apart and thrown northy. An air pipe was bent over the track, apparently northy.

South Haulage: -

Being South from ^{the} junction of ^{the} Diagonal East, a large slag had been blown south. About 100 feet from the junction a number of cars had been piled up, and much dust was blasted against the iron surfaces. - Timbers blown from the North Haulage were lodged against the rib of the West Diagonal.

An electric locomotive was found near the junction of the Haulage South and Diagonal East. The truck wheel was still on the wire; the north headlight was filled with dust and coke. The motorman was one of the three ^{men} that were found on the curve from the Diagonal East. All the cross cut stopping in this entry were blown out

1st Left Haulage - North:

The ^{board} overcast at this entry was wrecked, the material being blown south. Three empty cars on the parting were blown off the track and moved into. Opposite the first cross cut, coke was found ^{on the} south face of ~~for~~ several props. All cross-cut ~~stopping~~ on this entry were blown out from No. 1 was filled with props which had been blown from the outside. Chops on the left side of the room had coke on ~~in~~ sides.

A blind room had been driven off room no. 1, and in this room, heavy coking was found on the south faces of props and on the near the face. A partly loaded car was jammed into the face of the room, and a miners cap was found near the face. The bodies of the two men who worked these two rooms were found at the mouth of the blind room. Their bodies were not badly burned; they were probably loading coal in the blind room when the explosion occurred.

3rd Left off Haulage North.

The ^{badly burned} bodies of three men were found in this entry. One of the bodies was under the edge of a fall of rock, 100 feet from the mouth of entry. The other two bodies were nearby the one under the fall. Thirty sticks of Ctna B were found, not damaged. One loaded and one partly loaded car was at the face, not disturbed. There was a fresh shot in the air course, said to have been shot by the day man before he left. The right hand hole pointed toward the right rib and if it was within a few inches of the depth of the mining, it was partly on the solid. The coal was badly crushed and the shot seemed to have their work. The coal was dropped, not thrown out.

Coming in to the entry, the sprags had heavy coke on both sides. The timbers near the face of the air course were not burned, but 15 feet back the timbers were burned on all sides. The track leading into the air-course had coke on both inside and outside side of rails.

Haulage North

The overcast inby the 1st Left was demolished. The direction of force seemed to be from three ways, as material was blown right and left and bricks were carried 50 feet or more to the South.

Outby 2nd Left a sharp wedge had been driven into trolley switch connection. The bolts of the switch showed dust on outby side. Opposite the 2nd Left, an electric locomotive was found, with trolley wheel on wire, and going North. The outby headlight was broken and filled with dust; the inby light was broken, but clear. Two dinner buckets with liquid in them were found on the motor. The body of the motorman was found on the ^{west} side of the motor; he was badly burned and dis-embowled. Coke was found on ^{inby and outby faces of} props to the right of the motor.

Was a cross cut between 2nd and 3rd Left, coking was found on the outby corners. Some coking was found on inby side of props in slant cross cut to 1st Right.

At the turn into 1st Right, props near the inby rib showed charred dust on outby side and dust on the inby side. A curtain frame showed heavy coke on outby side. At the corner of girt of air course a post has coke on both inby and outby faces.

24)

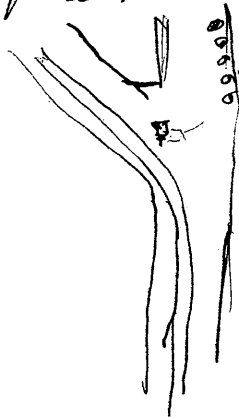
Starting at No 2 shaft
not much damaged

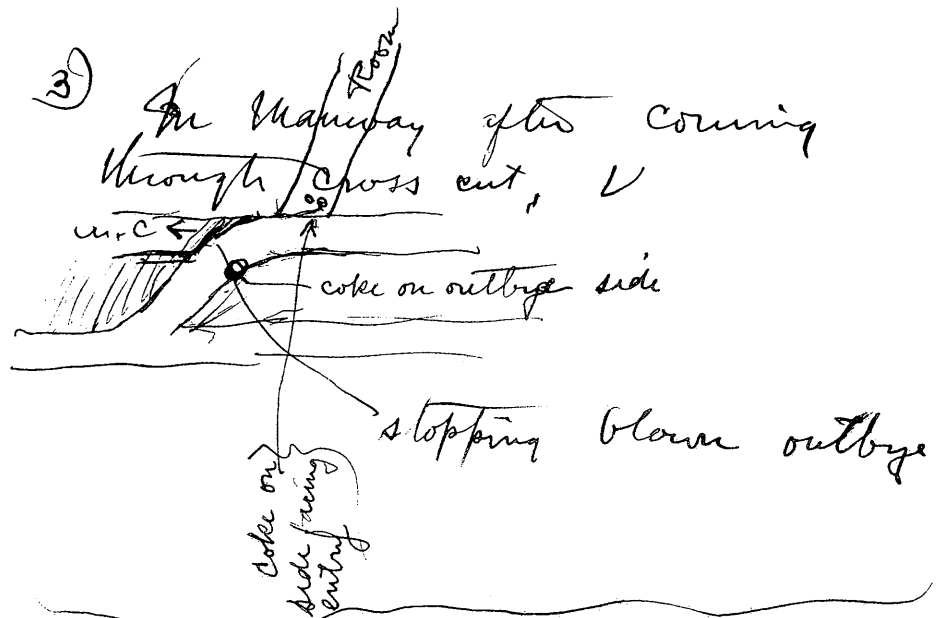
at first xcut off, the air course
receiver standing there thrown
into road (east), had coke on S. end
clean on north end -

at 2nd xcut, stopping blown out or in
coke on outbye corner, very little
considerable coke on inbye corner

Between 2 & 3 xcuts props on
right hand side, show coke on
outbye face, swept clean on inbye
face

at angling xcut, which track follows
a square timber set across the air course
timber down, post in
middle has coke on
props & coke
outbye face only





1st room, wall stopping blown inbye shows plainly
 coke on side facing entry

2nd Room, uncertain but rock stopping thought to be blown inbye
 Considerable number of props ~~are~~ not blown down, show coke (next entry) on outbye face

3rd Room dirt stopping intact
 Props opposite, coke on outbye faces
 Door frame ~~part 1st heading~~ broken up blown outbye about 35 feet

4)

1st heading to right
has a few props on right
side that show scattered
loose coke on outbye faces.

Car which stood at turn of
explosion (and after) at face
E.E. 100 feet from face of 1st
lift, stove in on inbye side
& coke on that side ~~and~~

4th Room - open,
at mouth, coke plastered
against outbye corner, i.e.
facing inbye on entry -

off Cross-cut, on one of several
posts, coke on outbye side, also
on same post a piece of canvas
wrapped around outbye side, not
certain if latter result of explosion

5 Room, loose coke plastered
against outbye corner, facing
inbye of entry -

Props in entry near Room
5 show coke outbye side

5) Room 6, heavy plaster ~~cks~~
 $\frac{1}{2}$ thick on outbye corner
facing inbye of entry
Propped off Room 8, shows us
coke

R. 8, Small Cameron
pump, ~~the~~ setting by side of
track lifted and thrown
~~about~~ up against outbye
corner with rock —

Reporter Coke on inbye side side up
to last x cut about 25
feet from face

Opening in 15 or 20 feet
a shov of wood driven into
outbye corner, from inbye of entry
Trolley wire down, hanger slightly
bent out, for 100 feet outbye
water in road to ~~the~~ top of hill

6) ^{3 throw} Opposite switch, a 6x8
timber, ~~16~~ long, thrown outbye
20 or 30 feet, ~~at a~~ /

Just outbye switch, a group of
4 props, knocked at top
outbye

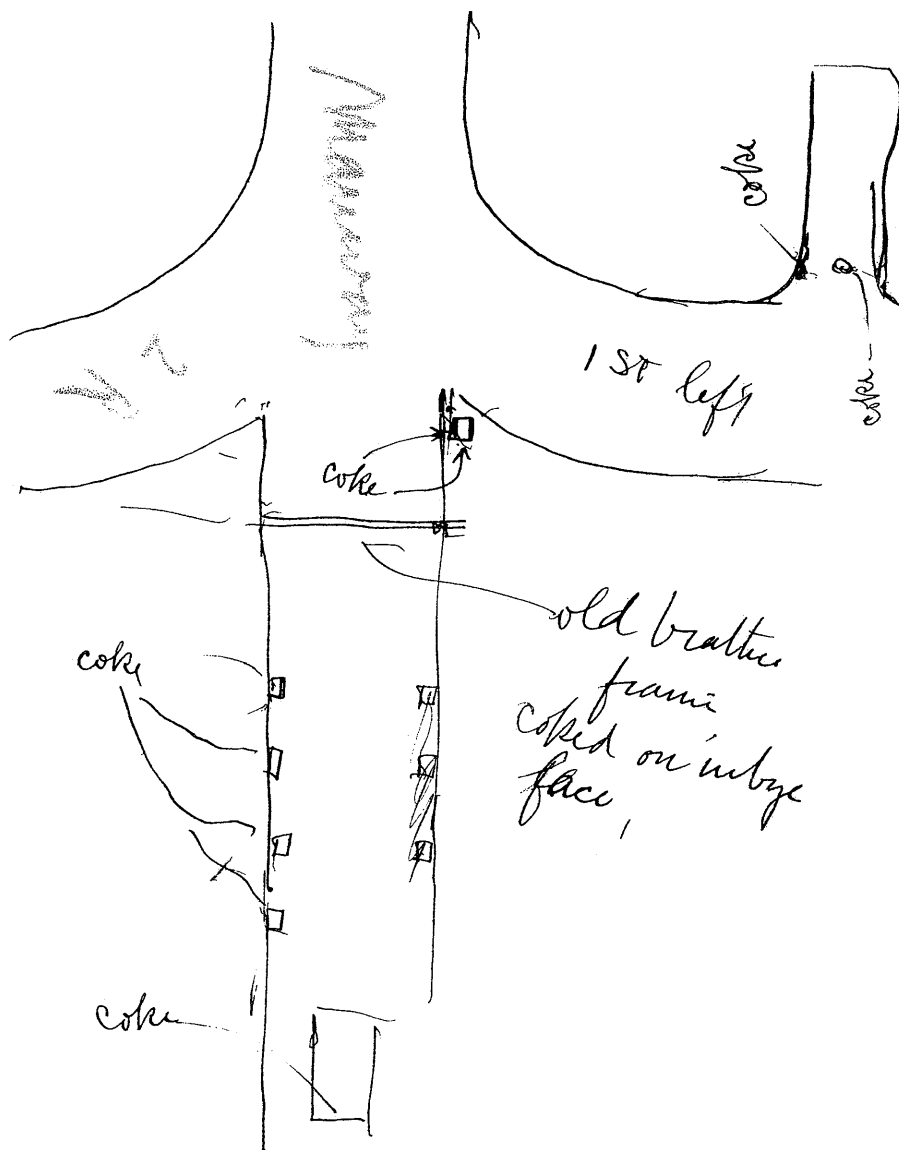
One of posts at switch, has
coke on ~~outbye~~ ^{inbye} side (strong)

Over frogs of 3 throw switch
a collar & legs show coke strong
on inbye face, none outbye

In straight ~~road~~ ^{manway}, coke on
props on outbye side, also on
a car about 100 feet in, on
back end facing outbye

This place had a fall at
face 3 or 4 days before
explosion - not working no

6 1/2



7) On 1st left, at room 1
Coke on outbye comm facing
inbye of entry -
Small patches coke on inbye
comm, facing outbye
Outprops and pieces rock -
thick coke $3/4$ inch thick,
on inbye faces.

R 2, full of cars 7 or 8
~~first four cars~~ jerked in
by explosion (?) off track,
3 or 4 cars shows coke
on inbye side, also
prop at mouth, on inbye
side

26 sticks extra B have
been found, opp 2 cut to
air course
Car driven inbye on top of another
~~strong coke~~ & to south by force
from air course

7 1/2
coke on cars on mby face
side loose, very much
on mby bumper

R 2 just mby cars, loose
particulates coke on top of
dirt on mby corner -

R 4, coke on mby outbye
corner facing mby

Prop ^{at} on mby face
_{at mby R4}

2 men found also betw
3 & 4, had been
supplied with extra B
for bushing

Betw 3 & 4 the right (going in)
rail, showed outbye 6", the
air ~~tripod~~ dull tripod upset
& tangled with hose base &
shoved under rail

Mulga Mine May 3

Sample of dust Can 20306
in first heading opp. air course

Sample of coked dust Can 20303
opposite 1st Right heading (going east)

Sample of coke Can 20334
in neck of Room 1 off No 2 haulage
air course

Mulga Mmi

Gas Samples May 10

Bottle 8654 (= #74) taken under
water, probably pure methane
at pump, near face of 2 left
off North Haulage

Bottle 8653 Sample of main ^{May 10}
return at fan, probably
100000 cu feet of air per mi.

Bottle 8655 Sample of main
return at fan May 11

Palos Samples

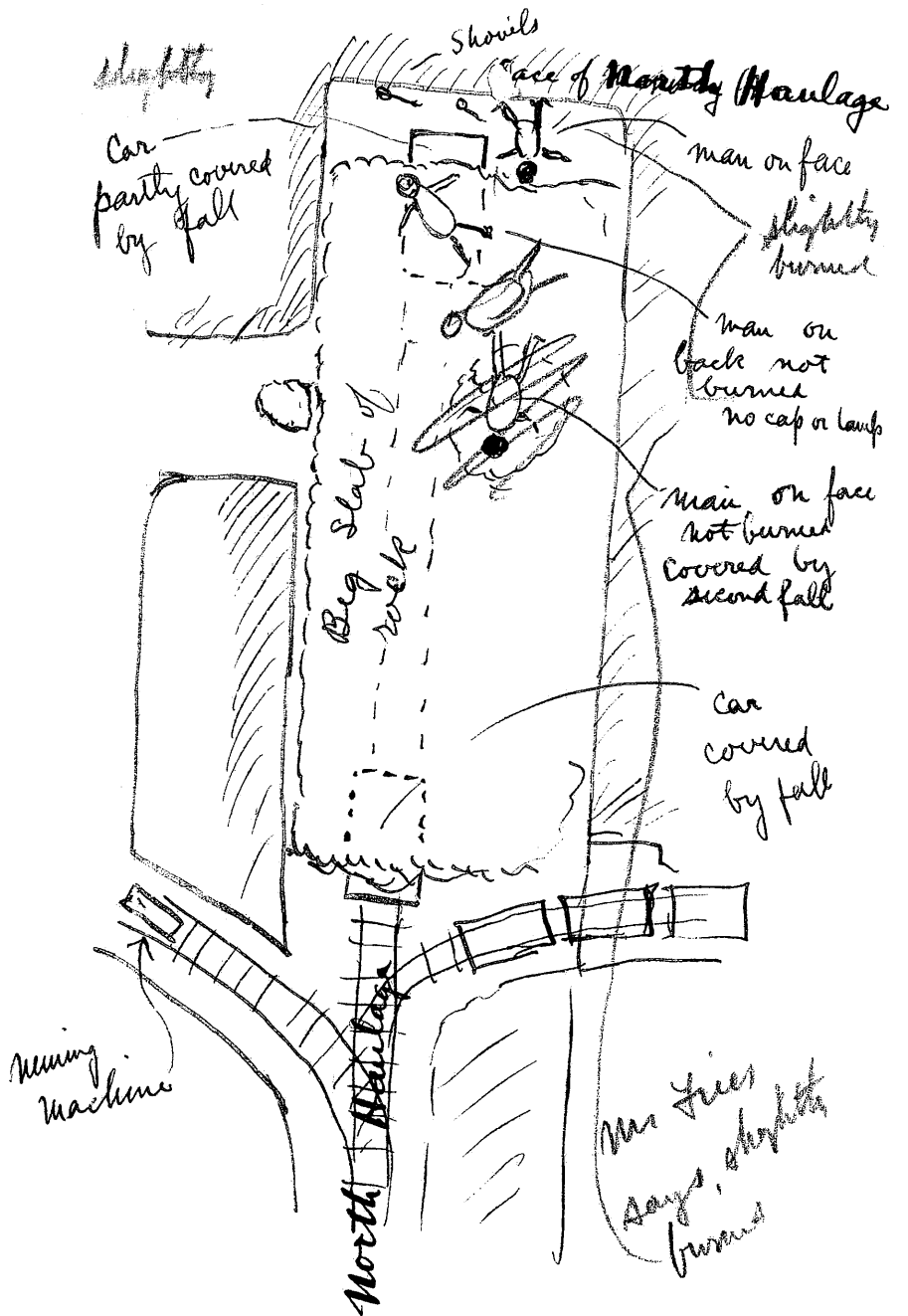
Coke in Can 20333

from cross-cut, 5th back
from entry stump pulling
2 left

Coke in Can 20354

From nearby side of door frame
of 4 Right Slant

Road



EVIDENCE IN "MANWAY" ENTRIES:

Go ing north from the No. 2 shaft at the first crosscut which is in line with the main haulage No. 2 aircourse, a compressed air receiver which had been standing in the mouth of the crosscut, the axis parallel with the manway, had been thrown into the roadway by a force coming through the aircourse, thus breaking the pipe connections. There was coked dust on the south end of receiver; it was clean on the north end.

The second crosscut stopping was blown away. The crosscut stoppings in this mine in almost all cases are lightly built of wood. There was a little coked dust on the outbye corner of the crosscut but considerable coked dust on the inbye corner.

Between the second and third crosscuts props on the right hand side showed coke on the outbye faces. The inbye faces were swept clean.

At the next crosscut which makes a acute angle to the left ~~of~~ the haulage track passes through same. to the parallel entry which becomes the main haulage road. At the mouth of the haulage crosscut a square timber set spanned both the crosscut and the straight entry. This had been blown down apparently outbye, although the evidence was not clear. A middle

post in the fork of the road had coke on the outbye face only.

The following evidence was gathered along the manway:

Starting at the haulage crosscut just mentioned in the parallel entry and which was considered to be the main entry and was therefore termed the manway. In other words, the term manway was applied to the passageway through which the track passed irrespective whether one or the other of the two parallel roads. Opposite the haulage crosscut above mentioned, the first room was turned to the left. The loose rock stopping in the mouth of this was blown inbye. The evidence appeared clear on this. There was coked dust on the outbye facing exposures at the mouth of this room. That is, exposures facing the entry.

SECOND ROOM: A loose rock stopping appeared to be blown inbye but the evidence was not clear. There was considerable number of props at the mouth which were still standing. These show coke on the outbye faces, i.e., facing entry.

THIRD ROOM: First stopping intact. Props in entry opposite mouth of room show coked dust on the outbye faces.

A door frame in the manway between the first and second east headings was blown outbye about 35 feet and broken up. First east

heading had a few props on the right or gob side which showed scattered loose particles on the outbye faces.

FOURTH ROOM: It was open. There was coked dust plastered against the outbye corner; i.e., facing inbye for entry.

~~On the left opposite~~
Opposite a crosscut rib on the left rib of entry ~~but~~ on one of several posts there was coked dust on the outbye face, also on same post a piece of canvas wrapped around the outbye side but it was not certain whether the latter effect was the result of explosion.

FIFTH ROOM: There was loose coked dust plastered against outbye corner; i.e. facing inbye for entry.

Props in entry near room 5 show coke on the outbye faces.

SIXTH ROOM: There was a heavy plastering of coked dust 1/2 inch thick on the outbye corner; i.e., facing inbye for entry.

At the mouth of room 8 there was a small Cameron pump which had set by the side of the entry track and was used for pumping water from a sump in the manway about this point. On account of this sump, the entry
feet
was naturally wet for 100 or so. The pump had been blown up by the explosion and thrown against the outbye corner of the room.

Just outbye the third throw-switch to right and left entries there was a group of props still standing but knocked a little outbye at top. Close to this point the body of a man was said to have been found.

Opposite the third throw-switch there was a 6 by 8 timber 16 feet long which had come from inbye 20 or 30 feet.

One of the posts at the side of switch had a scale of coked dust on inbye side.

Over frogs of the switch the legs and collar show coke scale on the inbye faces; none outbye.

Immediately inbye the corner of the first left entry, the body of a man was said to have been found.

A few feet inbye the foregoing corner, there was an old brattice frame with coked dust on the roof piece on the inbye exposure.

Beyond this point on the right there were 4 or more props on the right rib which showed coked dust on the outbye exposures.

About 100 feet in from the first left turn-out, there was a pit car with coked dust on the inner end passing outbye.

At the face of the entry (manway) which is about 150 feet inbye the first left, there was a fall which had occurred the management stated 3 or 4 days before the explosion. This entry had not been working.

**Page 3 missing
from report**

OPERING FOR ROOM (9: This is in about 15 or 20 feet only permanently
stopped. At the mouth a sliver of was driven into a crevice in
the outbye corner from inbye of entry.

Inbye this point, a trolley wire hanger was bent outbye, the
trolley wire was down. ^{slightly} At this point the water in the road was level
with the ~~outbye~~ top of the ties.



Correspondence

April 23, 1910 - January 27, 1911



STRICTLY FIREPROOF



SCOVILLE BROS. PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

Apr. 23/10

Mr. Geo. S. Rice;

U. S. Geol. Survey
Pittsburg, Pa.

My dear Mr. Rice: -

I arrived here yesterday and wired you in the afternoon. There was no call for the apparatus from Knoxville, as the Penn. Co. had their hospital car containing all their apparatus at Mulga, where I arrived. There was an abundance of skilled help, many good leaders, and the 36th body was taken out at



STRICTLY FIREPROOF

2,



SCOVILLE BROS., PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

one o'clock this morning.
Mr. Willhouse, the Chief In-
spectors, will make his exam-
ination on Monday, 25th,
and I will accompany
him through the mines.
I cannot force the mat-
ter, as I want to make as
thorough an examination
as possible, so must wait
until he makes his exam-
ination. I received your mes-
sage, from Pittsburg, on 21st,
in regard to Mulga, but had
just received one from Dr.
Holmes, instructing me to
proceed at once to Mulga.

3.



STRICTLY FIREPROOF



SCOVILLE BROS. PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

with the apparatus, so I started without waiting to receive a second message from you.

The surface plant at Mulga is first class, and the Company seems to have obeyed every instruction received from the inspectors. Mr. Neal, Asst. Mine Inspector, examined the mine on Monday, the 18th. Dr. Child's First Aid corps was holding its first meeting at the mine when the explosion occurred.



STRICTLY FIREPROOF



SCOVILLE BROS. PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

I will try to visit mine No-5 here, in which all shots are fired electrically, from outside the workings, before I return to Knoxville.

When yours and Dr. Holmes messages reached me, at Knoxville I was just completing the training of my 5th and 6th students.

The operators here are talking about establishing a station here.

It is said that Aetna B. powder was used in the Mulga mine. Some Bituminite (Jefferson Powder Co. Birmingham) is said to have been used.

5.



STRICTLY FIREPROOF



SCOVILLE BROS. PROPRIETORS,
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

I shall be at the morgue on 20th and probably on 21st.

There was considerable C & G in the mine yesterday, and it is reputed to be gaseous. Eye witness report two explosions, at about one minute apart, at 9:15 P. M. of Apr. 20th.

The Hospital Car of the Penn Co is magnificent in its equipment and had two competent surgeons in attendance. The Pulmotor rendered good service in two cases.

Very respectfully

J. J. Rutledge
% Hotel Morris
Birmingham Ala.



STRICTLY FIREPROOF



SCOVILLE BROS. PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

Apr - 24/10.

Mr. Geo. S. Rice,

U-S-Geol-Survey,
Pittsburg, Pa.

My dear Mr. Rice:—

I found your telegram of To day I
23d. addressed to me at
Mulga, here in Birmingham.
I confirm "am mailing
instructions general deliv-
ery Birmingham about
sampling coal Alabama
before returning." I will
I presume, receive your let-
ter to morrow, and will
then write you again.



STRICTLY FIREPROOF



SCOVILLE BROS., PROPRIETORS,
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

Mr. Hillhouse, Chief Inspector, will make his examination of Mulga mine to morrow and I will also make my examination to morrow and probably on Tuesday also. Actua Coal Powder is said to have been used at Mulga and all coal was undercut by chain breast machines. There is gas in the mine now and the mine is said to have been gaseous in times past - Bitumite made by the Jefferson Powder Co, a local concern

3.



STRICTLY FIREPROOF



SCOVILLE BROS., PROPRIETORS,
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

is also reported to have been used in the mine at some time, but not at the time when the explosion occurred, as Actua Coal Powder was used at that time.

I am afraid that the people here will be suspicious of permissible explosives after this vulgar explosion.

The tower is badly scorched by flames, but is still serviceable. There were two explosions with an interval of about one minute.

4-



SCOVILLE BROS., PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

STRICTLY FIREPROOF

I can do nothing but wait until the State Inspectors are ready to make their examination, before proceeding to make my own inspection. My equipment was not needed as the Penn. Co. had theirs at Mulgo. The Pulmotos did good work in the hands of their surgeons, as several in the rescue party were overcome. Their men, however, did not use their helmets very successfully, probably an account of want of training in their use. I may give a demonstration before I leave Birmingham.

5.



STRICTLY FIREPROOF



SCOVILLE BROS., PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

As soon as I have made my examination and received your instructions in regard to coal sampling in this district, I will write you again.

Dr-Shields' First aid Corps was meeting at Mulga mine when the explosion occurred.

Up to date 36 bodies have been recovered and no more are expected to be found.

Very respectfully
J. J. Rutledge
c/o Hotel Morris
Birmingham, Ala.



STRICTLY FIREPROOF



SCOVILLE BROS. PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

Apr. 26/10-

Mr. Geo. S. Rice,

U. S. Geol Survey,

Pittsburg, Pa.

My dear Mr. Rice:—

I am today in receipt of instructions referring to sampling the Glen Carbon and Massey mines near this City.

I have spent one day at Mulga and will spend another one in completing my examination of the explosion area, and will then do the sampling. I have no sampling outfit

2.



STRICTLY FIREPROOF



SCOVILLE BROS. PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

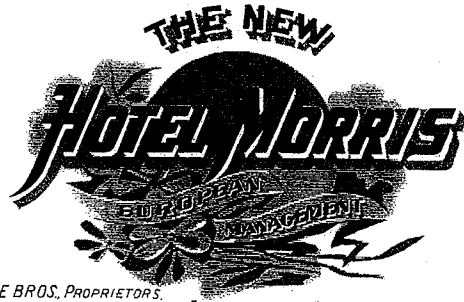
having sent mine to
you about two weeks ago.
I saw Mr Groves and A. C.
Ramsay last evening,
as well as Dr - Shields.
Mr Groves is lecturing
every evening to the mem-
bers of the I. C. & R. way Co.
The Muga explosion is a
very puzzling one to me.
There is unexploded Actua
B - Coal Powder everywhere
in the mine and little
or no dust.

Very respectfully

C/o Hotel Morris J. J. Rutledge
Birmingham, Ala.



STRICTLY FIREPROOF



SCOVILLE BROS. PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

Apr. 27-1910-

Mr. Geo. S. Rice,

*U. S. Geol. Survey,
Pittsburg, Pa.*

*My dear Mr. Rice: - I to day made
another examination of mine
mine and afterward listened
to the Inspector's examination
of the most important wit-
nesses. Some new facts were brought out.*

*The problem of determining
the initial point of the
explosion is very difficult.
I find coke
in varying quantities,
over most of the mine,
but at only two points
do I find what I call*

2.



SCOVILLE BROS., PROPRIETORS,
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

STRICTLY FIREPROOF

Birmingham, Ala.

"Coke globules." These are minute globules of clear, silvery coke about the size of a pin-head, and evidently distilled out of the coal bed by an intense heat doubtless due to the passage of a naked flame. I find dull, friable coke on the props (in byeside nearly always) at numerous places over the mine. There is no dust on the pavement and what fine coal there is on the roadways is suberut. There is gas in the mine yet in places. Until one

3.



STRICTLY FIREPROOF



SCOVILLE BROS., PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

year ago the mine was operated with closed lights. water sprays were in use at the time of the explosion - Aetna B Coal powder was used exclusively and all coal was undercut. I have found from 20-30 sticks of unburned Aetna B. at numerous points in the explosion area. No. 1 Shaft, the upcast, was wrecked. No. 2, the down cast was practically uninjured. I have located two points at ^{lower} which I think the explosion must have ~~occurred~~ ^{originated}, but I cannot say

4.



STRICTLY FIREPROOF



SCOVILLE BROS., PROPRIETORS.
ALSO OWNERS AND OPERATORS OF "THE WIGWAM," INDIAN SPRINGS, GA.

Birmingham, Ala.

which. I believe gas caused the explosion, but I have no way of proving it. All bodies, 39 are now out of the mine, and the property is being put in condition for operation.

Shall I send samples of Actua B - for testing?

The helmets (P. C. Co.) were used for some exploratory work before bodies were brought out of mine. Will proceed to coal saw thing to morrow.

Very respectfully
Hotel Morris - J. J. Rutledge

April 27, 1910.

Mr. J. J. Rutledge,
Hotel Norris,
Birmingham, Alabama.

My dear Mr. Rutledge:

Thanks for your informal letter of April 23, in response to my telegram. I am glad to know that you are doing good service in the way of making investigations at the Mulga mine disaster, even if there was no hope of saving the lives of any of the unfortunate miners. In Mr. Paul's work in Ohio at the Amsterdam mine disaster, he was fortunate in resuscitating three miners who had been in the mine for 26 hours following the explosion and who had been passed over as dead by rescuing parties.

Letters concerning the collection of samples for the War Department in the Birmingham district were sent you a few days ago. Samples from these three mines will, of course, only require a few days' time.

I am glad to know of your success in training men at the Knoxville station.


The outlook is now favorable for a better recognition of this mine rescue investigation and training work by both the Federal and State governments.

Please present my compliments to the new State Mine

J. J. Rutledge - 2

Inspector, Mr. Hillhouse. I received his telegram and will be glad to have you do everything you can to help him.

Yours very truly,



Chief Technologist.

Copy to Knoxville, Tenn.

" " Rice, Pittsburg, with letter from Mr. Rutledge Apr. 23.

THE NEW HOTEL MORRIS

C O P Y

Birmingham, Ala., April 22nd 1910



Dr. J. A. Holmes,
U. S. Geological Survey,
Washington, D. C.

My dear Dr. Holmes:

In compliance with your message, I left Knoxville on 21st, and arrived at Mulga yesterday, 22nd, at about 10:00 A. M.

I beg to confirm receipt of your message to Mr. Williams State Mine Inspector, today: "Wire me Geological Survey whether Rutledge Knoxville station is with you at Mulga mine disaster. Desire his remaining in Birmingham for further instructions." As Mr. Hillhouse assured me that he had answered your message, I did not wire you today.

We reached the city this afternoon, having spent last night at Mulga - The 26th body was taken out of the mine at about one o'clock this morning. It is not believed that there are any more bodies in the mine. The examination by the mine inspectors will be made on Monday the 25th, as I wish to make as careful an examination as possible, I will be forced to wait until Mr. Hillhouse and his assistance make their examinations.

There was no need of my helmets, as the Tenn. C. I & R. Co., had their Hospital car with helmets, stretchers, electric safety lamps, etc., on the ground when I arrived. I wore one of their helmets on my first trip underground, yesterday, but it was not needed, so I took it off. There was an abundance of volunteers for the work of removal of the bodies and bratticing up the air courses, and several good men led the various shifts. I will make as complete an examination as I can and render report. The operators and miners are talking of having a station established here in Birmingham.

I find one mine is firing all shots electrically from outside the workings.

I await further instructions, and will try to use discretion in making my examination.

Very respectfully,

Hotel Morris,
Birmingham, Ala.

Signed J. J. Rutledge.

BIRMINGHAM COAL AND IRON COMPANY

BIRMINGHAM, ALABAMA. May 24th, 1910.

MILTON H. FIES,
GENERAL SUPT. OF MINES

Mr. Geo. S. Rice,
Pittsburgh, Pa.

Dear Mr. Rice:--

I regret that I did not have an opportunity to see you before you left Birmingham. I was quite anxious to talk to you relative to your final decision as to where the explosion at Mulga originated and to have your opinion and suggestions as to our future policies in regard to safety. As you know, I am very anxious to use all known preventatives to avoid any possible recurrence of an explosion and I am most fortunate in being in the employ of a company whose advice to me is, "Spare no expense to make the mine safe".

This is what I propose to do:

FIRST: Continue to use permissible explosives. Shoot electrically from the outside after all men are out of the mine. Permit the men to carry into the mine only such explosives as they will use during the one shift.

SECOND: All brushing shots to be made at night, which will necessitate all rock drilling to be done at night. After each ten or twelve foot hole is "put up" by the driller, he will shoot his hole electrically after sprinkling for a radius of 25 feet from the brushing.

THIRD: All the coal to be undercut with machines and absolutely no holes to be shot from the solid.

FOURTH: In addition to sprays in all parts of the mine, including at least one in each air course, water will be carried to the faces in pipes and a crew of men employed whose sole duties will be to water at the faces.

BIRMINGHAM COAL AND IRON COMPANY

No. 2

FIFTH: Granulated calcium chloride to be given a thorough test and if successful, to be adopted. This chemical will be distributed more particularly in the air courses and in the gob.

SIXTH: Continue the use of open lights, electric mining machines and electric haulage.

SEVENTH: In addition to testing for fire-damp, the Fire Boss will be required to take hygrometric readings at various points in the mine. These readings to be recorded on reports along the lines suggested by you in a recent article in the T.A.I.M.E.

EIGHTH: A 2" water line to be laid to the top and bottom of each shaft and fire hose kept at each point. A crew of men will be drilled to fight any fire which might occur adjacent to or in the shaft, either outside or inside.

NINTH: The ventilation to be changed by degrees until each heading will be on a separate split. At present we have changed the ventilation so that we have five splits where we only had two at the time of the explosion.

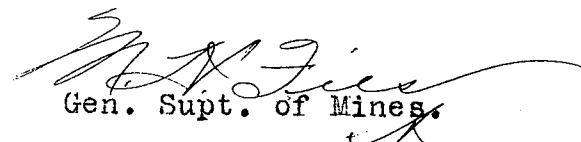
I will greatly appreciate your advice in reference to the above and assure you that I will be grateful for any further suggestions.

I hope to hear from you relative to your investigation as to the cause of the explosion at Mulga and shall treat your opinions and suggestions as confidential.

There is a possibility of my being in your section of the country before very long and I shall certainly make every effort to see you.

Please remember me to Mr. Paul and Dr. Rutledge. With best wishes, I beg to remain,

Yours very truly,


Gen. Supt. of Mines.

MHF-g

GSR/ACS

Pittsburgh, Pa., May 27, 1910.

Mr. J. J. Rutledge,
Knoxville, Tenn.

My dear Mr. Rutledge:

Regarding the Mulga Disaster, did you obtain any supplemental statements from Mr. Fies? If not, I will write to him direct as I find there is a letter from him.

Have you sent in cards for the Mulga samples?

Yours very truly,

Mining Engineer.

Pittsburgh, Pa., May 28, 1910.

Mr. Milton H. Fies, Gen. Supt. of Mines,
Birmingham Coal & Iron Company,
Birmingham, Ala.

Dear Mr. Fies:

I have your letter of May 24th. I returned only yesterday after having been away five weeks from this office. I had intended to have seen you at Birmingham, but received a wire which called me away a day earlier than I expected. On reaching Washington, I was delegated to other matters, so have not had opportunity to take up and study my notes on the Mulga explosion as I wish to do. I had anticipated that Mr. Rutledge, who remained after I came away, would see you and obtain further information, but it appears he did not.

At this time I am not fully determined as to the exact point of origin, but my general impression is that it originated in either the second left or in the third left off the north haulage roadway.

I will remind you that you expected to get a revised map for me showing the location of the bodies. I hope that if you have had such a map made that you will send me a copy.

There are several points about which I wish to make inquiry.

(1) In the second left heading, was there a crosscut at the face of this heading? The only one that I have recorded appears to be back 50 or 60 feet from the face. Rooms 3 and 4 were inside of this crosscut according to my notes, and room 4 at the face. You will recall there was water standing there.

Mr. Fies 5/28/10 #2

(2) Was the cable from the crab locomotive connected to the car standing in the face of the second left. The rope was laying along the ground but ^{we} did not note whether it was actually hooked onto the car.

(3) Was the hooker or attendant who was about to pull this car from the face found near the car, or was he some distance back, and was he burned.

(4) I met Mr. Flynn and understood from him that three men found in the face of the north haulage were not burned. Do you know if this was so?

(5) In cleaning up the rock fall in the third left heading, was any explosive found under the fall?

Have any additional facts been discovered since my examination?

I hope that you will visit us at Pittsburgh as you indicate.

Yours very truly,

Mining Engineer.

GSR/ACS

Pittsburgh, Pa., May 28, 1910.

Mr. Milton H. Ries,
Gen. Supt. of Mines,
Birmingham Coal & Iron Co.,
Birmingham, Ala.

Dear Mr. Ries:

Referring to your letter of May 24th in reference to the precautions you intend taking at your Mulga mine, I am very much interested in them, and think that in general they are very complete.

Whether or not you should continue open lights in some headings, I did not have sufficient opportunity for judging. That is, while my several trips about the mine did not show a dangerous quantity of fire damp, there were many indications of the issuance of methane all around the faces. Frankly, were it my property, I would feel safer if safety lamps were used exclusively, and there is no question that abroad they would be required under similar conditions. I will not pretend to judge of the advisability of your adopting them in view of all the related matters. Necessarily, if open lights are used, there is no need of taking out electric haulage, and in fact, where electric haulage only used on the intake roads, it can be employed with a certain degree of safety even where it may be considered necessary to use safety lamps. That is, it is not necessary to base the use of safety lamps on electric haulage. The merit of the safety lamp is that it shows at all times whether the conditions are becoming dangerous. I regard this of even more importance than the relative safety of the lamp itself inasmuch as a safety lamp may cause ignition if it has any defect or if the glass should break.

Taking up your proposed regulations in order, I think that there is nothing to indicate that the permissibles were responsible for any of the recent disasters. At the same time, your proposal to shoot electrically from the outside is a good and safe precaution. As an additional precaution, I think it would be advisable if you do not allow the miners to take explosives into the mine at all, but have them distributed by shot examiners who would also maintain the wires for the firing system; these men to also give out the detonators. In connection with the latter, I think that you should be very careful to use only electric detonators of the strength specified in the explosive's circular.

Second, all brushing shots to be done at night. I do not quite understand just why the drilling would have to be done at night. I think that it would be very advisable that instead of using dynamite for brushing shots that the permissibles should be used. Many of the explosions in England resulting from the use of explosives have originated on passageways while brushing.

Third and fourth are certainly good precautions.

Fifth: I hope that the granulated calcium chloride will prove very useful in the aircourses and in the gob.

Sixth: I have already commented upon.

Seventh: Regarding hygrometric readings by the fire boss, I think this very good. The chief purpose I have indicated in the article in the Transactions of the A. I. M. E. to which you refer is to determine the deficiency of moisture in the air so that it can be artificially remedied. In other words, it gives you quantities to figure upon. In this connection, I suggest if it is feasible, it might be a good plan to keep some check on

Mr. Fies 5/28/10 #3

the quantity of water which you use for the purpose of sprinkling.

Eighth: The precaution of water line is certainly very good.

I suggest that when installed you put in frequent taps.

Ninth: Changing the ventilation into numerous splits is admirable, provided you do not so lessen the velocity of the ventilating current that it will not sweep away the gases, as I have known to be done in some mines.

Very truly yours,

Mining Engineer.

c.c. to Messrs. Wilson, Paul and Rutledge

GSR/A 8

Pittsburgh, Pa., May 28, 1910.

Mr. H. M. Wilson,

Thru Engineer in Charge

Washington, D.C.

My dear Mr. Wilson:

I enclose herewith copy of letter received from Mr. Fies of the
Birmingham Coal and Iron Company and copy of my reply.

Yours very truly,

Mining Engineer.

Encl.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
TECHNOLOGIC BRANCH

Knoxville, Tenn.
May 30th. 1910.

Mr Geo. S. Rice,
U. S. Geol. Survey,
Pittsburg, Pa.

My dear Mr. Rice:-

I have the copy of your letter to Mr. Fies also the copy of his letter to you. I agree heartily with you as to what you write about the advisability of using closed lights. Previous to your arrival at Mulga Messers. John Neal and myself were stopped by gas at points three hundred feet from the face of the headings. I do not think that Mr. Fies fully realizes the amount of methane which his mine really does make. A mine like Mulga can develop dangerous conditions in a very short period of time, owing to the manner in which the workings are cut up. The use of dynamite in ^{cr}using is to be depreciated, and this is in line with Mr. Hamilton's suggestions. He complains that this is a too general practice in the Birmingham coal field.

I am glad to note what you write about numerous air splits. With the exception of Mr. Johns and myself, all the men ^{present} on the first exploratory trip favored a continuous current, even Mr. Hillhouse.

In conclusion I wish to say that the conditions at Mulga were such as I have found at several explosions during the last ten years., viz. A comparatively new mine with few working rooms, numerous headings, mostly narrow ones, a high velocity in the air currents and a generous supply of air on all headings, several doors, single ones, opening directly against the air currents, with no air locks, and a corresponding concussion in the air current every time the doors are opened, and little or no splitting of the air currents. These conditions always remind me of a gun-barrel in which a small quantity of quick firing rifle powder has been ignited without any tamping being placed over the powder. I shall hope to show by experiment at some future time just what I mean by the gun-barrel action.

Very respectfully

J. J. Rutledge

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
TECHNOLOGIC BRANCH

Knoxville, Tenn.
May 30th. 1910.

Mr. Geo. S. Rice,
U. S. Geol. Survey,
Pittsburg, Pa.

My dear Mr. Rice:-

In reply to your favor of the 27th. I beg to advise that I did not secure any additional information from Mr. Fies as I was unable to find him on the day before I left Birmingham.

I sent in the cards for Mulga some days ago.

Very respectfully.

J. J. Rutledge

BIRMINGHAM COAL AND IRON COMPANY

JAMES BONNYMAN,
VICE-PRES. & TREASURER

BIRMINGHAM, ALABAMA.

May 30th, 1910.

Mr. Jas. W. Paul,
c/o U.S. G.S., Testing Station,
Pittsburgh, Pa.

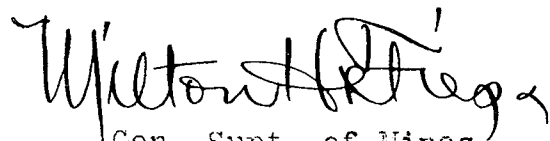
Dear Mr. Paul:--

We shipped you by freight from Mulga on last Friday a box containing between 25 and 30 sticks of Aetna B grade coal powder, which we found in the Third Left Heading off the North Haulage.

I would thank you to let me know the results of the test on this powder, whether or not it passed the same test to which you subject all explosives before listing them as permissible. I would be very much obliged to you for this information and will treat same as confidential.

Thanking you for any interest you may take in the matter and with best wishes, I am,

Yours very truly,


Gen. Supt. of Mines.

mhf-g

BIRMINGHAM COAL AND IRON COMPANY

RICHARD PETERS, JR.
PURCHASING AGENT

BIRMINGHAM, ALABAMA.

5-31-10.

Mr. Geo. S. Rice,
United States Geological Survey,
Pittsburg, Pa.

Dear Mr. Rice:-

I appreciate very much both your letters of the 28th inst., and am very much obliged to you for the information contained therein.

In regard to the data which you request, I beg to advise that you are right in your statement that the last cross cut in the second left off to the north haulage is 50 to 60 feet back from the face. There is considerable water in the face of this heading, and we cannot tell whether or not the rope was actually hooked to the car. As far as we have been able to figure, the indications are that it was. The coupler or attendant was found at the last cross cut in this heading. We surmise that he dropped the car down the hill to the face of the heading, trusting to the man who was driving the heading to release the rope. The man who was driving the heading was found with his face against the air pipe exhaust, (these are the blow pipes which we carry to the face of all headings.

I understand from men who assisted in rescuing the men from the face of the north haulage, that these men were

BIRMINGHAM COAL AND IRON COMPANY

Page 2.

RICHARD PETERS, JR.
PURCHASING AGENT

BIRMINGHAM, ALABAMA.

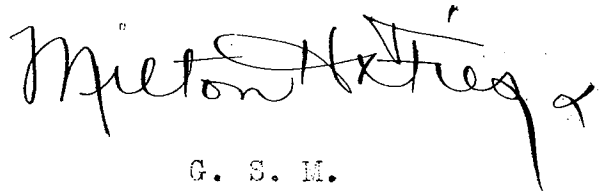
only slightly burned.

We have not entirely cleaned up the rock fall in the 3rd left heading, but I shall let you know if anything is found under the fall.

I am leaving tomorrow morning for the East, and as soon as I return I shall write you as to what further information we have obtained regarding the explosion.

Again thanking you for your interest and assuring you of my good wishes, I beg to remain

Yours very truly,

A handwritten signature in cursive script, appearing to read "Milton H. Hines", followed by a small flourish or mark.

G. S. H.

MHF/G

CSR/ACS

Pittsburgh, Pa., June 4, 1910.

Mr. H. M. Wilson,

Washington, D. C.

My dear Mr. Wilson:

I enclose herewith a copy of a letter from Mr. Rutledge about the Mulga mine, which will interest you.

Mr. Fies called at the station a couple of days ago and informed me that there was no intention to use dynamite in brushing; they expect to use Aetna A. They have equipped the mine to fire electrically from the outside. They have changed their ventilation from a single split and now have five splits with an increase in volume of air from about 50,000 cubic feet to about 80,000 cubic feet.

One weak point in their arrangement is in not using their safety lamps. They claim that they cannot trust the negro labor with safety lamps.

Yours very truly,

Encl.

Mining Engineer.

c.c. to Mr. Rutledge

BIRMINGHAM COAL AND IRON COMPANY

Birmingham, Ala., June 18th, 1910.

Mr. Geo. S. Rice,
Pittsburgh, Pa.

Dear Sir:--

Has anything interesting been found in regard to the Aetna coal powder B grade, which I shipped to Mr. Paul. I would thank you to let me have any information that you might have in regard to this explosive and I shall treat same as confidential.

We have not found anything further interesting in regard to the explosion at Mulga, except that in the Third Left of the North Haulage, where the Italians were found, we found two lamps and two caps near the face under the rock. One lamp and cap was close to the face and the others about 15 feet back. Of course, the lamps and caps were separated. You will recall that these men were found near their dinner buckets about 50 feet from the face and one lamp and cap was found with the three men. If anything further presents itself, I shall let you hear from me.

I had a very profitable trip to Pennsylvania and take this occasion to thank you for your courtesies.

Hoping to hear from you soon and with best wishes, I am,

Yours very truly,

Wilton A. Fries

Gen. Supt. of Mines.

f-g

man under fell, burned

GSR/AOS

Pittsburgh, Pa., June 21, 1910.

Mr. Milton H. Fies,
General Superintendent of Mines,
Birmingham Coal & Coke Company,
Birmingham, Alabama

My dear Mr. Fies:

I have your letter of June 18th. I was very much interested in your finding the two lamps and two caps of the Italians in the Third Left off the North Haulage Entry. This suggests that the origin could not have been in this entry, inasmuch as it would not have been likely that these men would have fired the shots in the aircourse when so near; the last crosscut being close to the face. It is, of course, possible that they were straightening out the firing line and it was accidentally fired by the third man farther out.

Regarding the Aetna B powder, this has not yet been received.

Regarding the samples of mine air taken at the top of the return shaft on May 10th and 11th, these showed the following results:

			May 10th	:	May 11th
CO ₂	...	...	.03	:	.35
O ₂	...	...	20.80	:	20.40
CH ₄	...	...	.17	:	.16
N	...	...	79.00	:	79.09

You will recall at the time of taking these samples, we had no anemometer. There were very great leakages and we assumed that the air passing where the sampling was being done was not less than 100,000 cubic

feet of air per minute. This being the case, it would mean that the mine was making from 160 to 170 cubic feet of pure methane per minute. On the basis of 8 percent, this would make an explosive mixture at the rate of 2000 cubic feet per minute. While this is not a large amount with good ventilation, where there was but a single split of air and possibility of same being checked or short-circuited, it is easy to see that a dangerous quantity of fire-damp might accumulate.

Yours very truly,

Mining Engineer.

Copy to Doctor Holmes

G 3/ACS

Pittsburgh, Pa., June 22, 1910.

Mr. H. M. Wilson,

Thru Engineer in Charge

Washington, D.C.

My dear Mr. Wilson:

I submit herewith two analyses, 10519 and 10521 of mine air taken at the Mulga Mine, May 10th and 11th.

The quantity of marsh gas is small but as the volume of air was very large at the fan, due to leaks, it makes the percentage seem too small to be of any moment. However, in a mine of one split of air and near the face, the quantity would be very perceptible with any diminution of the air current. I am glad to say that the Birmingham Coal & Iron Co. have changed their system of ventilation and now have five splits of air. I have already submitted a summary of the results, but if it is desirable, you might submit, formally, a copy of each result.

Yours very truly,



Mining Engineer.

Encl. (4)

GSR/ACS

Pittsburgh, Pa., June 22, 1910.

Mr. Milton H. Fies,
Gen. Supt. of Mines,
Birmingham Coal & Iron Co.,
Birmingham, Ala.

My dear Mr. Fies:

On May 10th, Mr. Paul took a sample of what we supposed to be gas that bubbled up at the pump in the second left off the north haulage. The analysis is practically the same as that of return air and we wonder whether there has been some error in mixing the bottles, or if the bubbling in question came from a pipe line by which water and air was running in, or else air alone.

Will you kindly advise me about this?

Very truly yours,

Mining Engineer.

GSR/ACS

Pittsburgh, Pa., June 23, 1910.

Mr. Milton H. Fies,
Gen. Supt. of Mines,
Birmingham Coal & Iron Co.,
Birmingham, Ala.

My dear Mr. Fies:

Referring to our conversation about the car in the face of the second left off the North Haulage, was the rope from the crab locomotive hooked into the draw bar or not? I will be glad to know about this point at your earliest convenience.

Yours very truly,

Mining Engineer.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
WASHINGTON

TECHNOLOGIC BRANCH.

June 23, 1910.

My dear Mr. Rice:

In reply to your letter of June 22, transmitting
two analyses of mine air from Mulga mine:

As I understand you have submitted a summary of
these results and as it has been the practice to have such
results submitted direct by you, I am filing these copies.
If I am incorrect in taking this action, please advise.

Yours very truly,



A.C.T.

BIRMINGHAM COAL AND IRON COMPANY

RICHARD PETERS, JR.
PURCHASING AGENT

BIRMINGHAM, ALABAMA.

6-25-10.

Mr. Geo. S. Rice,

U. S. G. S. Pittsburg, Testing Sta.,

Pittsburg, Pa.

Dear Mr. Rice:-

Referring to your letter of the 22nd inst., in regard to a sample of gas taken from the pump in the second left, off of the north haulage by Mr. Paul.

I do not think it very likely that the bottles became mixed and it is more likely that there was a leak in the air line, very near or at the same point where the gas was bubbling. If you desire me to take a sample of pure methane, such as was the original condition of the sample taken by Mr. Paul, I will be glad to do this for you immediately.

I am referring the matter of the car in the second left north haulage to Mr. John. I regret that this information has been delayed, as I requested him to get this for you when I was absent in Pennsylvania. I shall get this information for you at once.

Yours very truly,

Wilton Hakey &

G. S. M.

MHF/G

BIRMINGHAM COAL AND IRON COMPANY

Short Creek, Ala.

6-27-10.

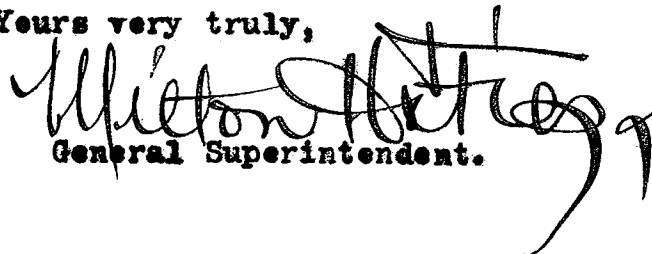
Mr. George S. Rice,
Mining Engineer,
Pittsburgh, Ala.

Dear Mr. Rice,

I was approached recently by one of our State Senators, who requested my aid in regard to altering our State Mine Laws. I am anxious to qualify myself in regard to the laws of other states and countries. I recall that when you were down here you made some references to a "Blue Book" of English Laws. Will you please advise me where I can get a copy of such laws and further where would you suggest my writing to get a copy of the mine laws of other countries (translated). Have you any other suggestion to make as to where I might be able to find some valuable information in regard to this subject, other than by means of a study of the laws of other states.

I realize that much good can be accomplished along these lines and I know of no better way to serve my State than by aiding in this movement. I will appreciate your advice.

Yours very truly,


General Superintendent.

GSN/ACS

Pittsburgh, Pa., June 28, 1910.

Mr. H. M. Wilson,

Thru Engineer in Charge

Washington, D.C.

My dear Mr. Wilson:

According to a notice I received from Mr. Fieldner, there has been sent to you four copies each of laboratory numbers 10507, 10509 and 10513.

The first two are standard full section samples taken in the Mulga Mine of the Birmingham Coal & Iron Co. The last is a composite of the two former. These samples were taken in connection with the explosion at the Mulga Mine but represent the quality of the coal at the face independent of their interest in connection with a comparison with the road dust and coked dust samples.

It was understood by the operator that we would send them copies of the analyses. I therefore suggest that you forward such copies to Mr. Milton H. Fies, Gen. Supt., Birmingham Coal & Iron Co., Birmingham, Ala., or to the company itself as you see fit. Their address is Birmingham, Ala.

Yours very truly,

Encl.

Mining Engineer.

ER/ACS

Pittsburgh, Pa., June 28, 1910.

Mr. H. M. Wilson,

Thru Engineer in Charge

Washington, D. C.

My dear Mr. Wilson:

Referring to samples taken in the Palos Mine, Alabama, samples 10505 and 10506 are two full section samples of the face. 10514 is a composite of these two.

It was understood by the operators that we were to send copies of these analyses. I note from a copy of letter from Mr. Fieldner to you that you have received four copies of each of these. I therefore wish you would transmit one copy to the operator, Palos Coal & Coke Co., The mine address is Palos, Ala. The President, Mr. Drennan, is in Birmingham. The firm name is Drennan & Company.

Yours very truly,

Mining Engineer.

C O P Y

Mulga, Ala. 6-28-10.

Mr. Milton H. Fies, G. S. M.

Birmingham, Ala.

Dear Sir:-

Replying to your letter of the 26th inst., with reference to car found in the face of the second left off the north haulage, beg to advise that the rope was attached to the car in second Left H, on N. H. The car was empty, nothing at all in it, as their caps and lamps were found in face, under low top. Men were found about 50 feet back, one with his mouth at air pipe. This Heading dipping towards face about four degrees.

Yours truly,

SJ/E

Sam John, Supt.

BIRMINGHAM COAL AND IRON COMPANY

WILSON H. FIES
GENERAL SUPERINTENDENT MINES

BIRMINGHAM, ALABAMA

7-8-10.

Mr. Geo. S. Rice, Mining Engineer,
U. S. G. S. Testing Station,
Pittsburg, Pa.

Dear Sir:-

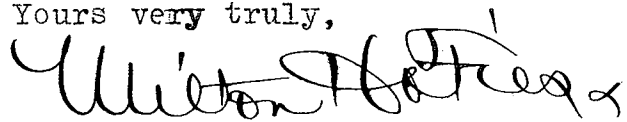
I am enclosing herewith copy of letter received from Mr. Sam John, containing information regarding the car in the second left, off the north haulage.

In addition to the information contained in Mr. John's letter, I beg to advise that two shovels were found under the coal in this heading, showing that ^{the} ~~this~~ ^{one} ~~man~~ must have been loading. I have not thoroughly platted up my notes in regard to explosions, but every indication shows that something must have happened in the vicinity of the mine locomotive which was standing on the north haulage at the ^{north} ~~north~~ of the second left entry.

I should like very much to have a day with you in regard to this accident. Have you changed your opinion about it having originated in the second or third left, off the north haulage. If there is any further information that I can give you, do not hesitate to call on me.

Trusting that you are well and that your work is progressing to your satisfaction, with best wishes I beg to remain,

Yours very truly,


General Superintendent

MHF/G

U. S. DEPARTMENT OF AGRICULTURE
LOCAL OFFICE OF THE WEATHER BUREAU

Birmingham, Ala., August 22, 1910.

Mr. Geo. S. Rice,
Bureau of Mines,
Department of the Interior,
Pittsburgh, Pa.

Dear Sir:

Complying with your request of the 18th instant, relative to the barometric conditions at Birmingham, Ala. of the period from April 10 to May 10, 1910, I have copied and enclosed the barograph record for said period.

The lines are corrected for the readings taken at 7 a.m. and 7 p.m., 90th meridian time, and represent the actual heights of the barometer at an elevation above sea level of 701 feet at Birmingham. The actual height at 7 a.m. and p.m. and the corresponding height at sea level have been entered below the lines. From these figures the the barometer readings in the intervening hours may easily be interpolated.

In going over the records of weather conditions prevailing during mine explosions in this district I have found much that should attract the attention of the meteorologist as well as of the mining expert, and I have become interested in the subject. You would greatly oblige me, if you could furnish me with a list of mine explosions of which you have a record and which occurred during the past 8 years in Tennessee, ^{the} Virginia, and Pennsylvania.

Enclosure.

Very respectfully,

W. F. Lehman
Local Forecaster

Pittsburgh, Pa., August 16th, 1910.

Director,
Bureau of Mines,
Washington, D.C.

Dear Sir:-

On June 22d I received one box containing 25-1/2 cartridges of Aetna Coal Powder from the Birmingham Coal & Iron Com any of Birmingham, Ala. These cartridges showed signs of having been exposed to a mine atmosphere to such an extent that the brands on 5 cartridges were indistinguishable. The remaining 20 were branded "B". These samples were said to have been found in the Mulga Mine after the recent disaster and were sent to this station to ascertain if there had been any change made in the composition from the original samples submitted for tests which would affect the safety qualities.

I beg to inform you that from the results of our analyses and tests there has not been any change or alteration made in this explosive which would affect the safety quality, and I am of the opinion that if this permissible powder was properly used the responsibility of this disaster could not be attributed to the use of this explosive.

At my request Mr. Milton H. Fies, General Superintendent of Mines, Birmingham Coal & Iron Company, shipped a sample of the electric detonators which were being used for firing shots at the Mulga Mine. The following is a result of our analysis:

Director --- 2.

Mercury Fulminate 89.74

Chlorate of Potash 10.26

Charge 0.7530 grams.

You will note that these detonators are the regular (single strength) No. 5 electric detonators, and while they may be of sufficient strength to detonate this particular explosive it would be better to use nothing less than No. 6 electric detonators (double strength) with all permissible explosives. By using No. 6 electric detonators complete detonation and a greater factor of safety is obtained.

I would suggest that when you report results of our tests to Mr. Fies that you lay particular stress on the importance of using strong electric detonators.

Yours very truly,



Expert in Charge
Explosives Section.

CH/W

c.c. to Mr. Rice,
Mr. Paul.

GSR/ACS

Pittsburgh, Pa., August 18, 1910.

Weather Bureau Observer,
Department of Agriculture,
Birmingham, Ala.

Dear Sir:-

In connection with my report on the Mulga and Palos mine disasters, I am very desirous of obtaining a record of the barometric conditions prior to and following each explosion. Will you kindly give me the record from April 10 to May 10, 1910? The Mulga explosion occurred about 9 p.m., April 20th, and the Palos explosion about 1:30 p.m., May 5th. I would very much like to have an hourly record for 24 hours prior to each explosion.

It may interest you to know we are now, through the operating company, taking a series of samples at the Mulga mine with a view to determining to what extent the flow of gas is influenced by changes in atmospheric conditions.

I will be very much obliged if you will give me the information which will be of public as well as personal interest.

Very truly yours,

Mining Engineer,
In Charge Mine Examinations.

GSR/ACS

Pittsburgh, Pa., August 24, 1910.

Mr. W. F. Lehman, Local Forecaster,
U. S. Weather Bureau,
Birmingham, Ala.

Dear Sir:-

I received your letter of August 22d and the accompanying barograph record April 10 to May 10, 1910. I have not had opportunity to make a thorough study of the records but from a casual look, the variations appear to be small and in the case of the Mulga explosion, which occurred at 9:15 April 20th, the barometer appeared high. On the other hand, at the time of the Palos explosion which occurred at 2:30 p.m., May 5th, there was a falling barometer.

I know from direct observations that with a falling barometer in certain mines there is a marked increase in issuance of methane. This is usually true only when there is a large number of old workings. It is not so likely to be true of advanced workings inasmuch as the gas pressure in the rocks is normally so high that it is not affected by weather changes.

Regarding a list of explosions, as yet we have not compiled a special list, although we are intending to do so in the near future. I am loaning you a bulletin of the American Institute of Mining Engineers in which there is an article by Mr. Mannakee. On page 1029 he gives a list of explosions in the Appalachian coal fields for 10 years; also plat shows a profile of the barometric pressures obtained from the Weather Bureau at Washington. I think that you will have to accept a list of

this kind with a good deal of caution inasmuch as the majority of explosions originate from blown out shots igniting coal dust and this might occur quite irrespective of the amount of gas present, although naturally where there is considerable present, the explosion is more wide-sweeping as for example, at Marianna.

My own experience with the issuance of methane in a mine is that it is more likely to be affected by a rising or a falling barometer than where there is a static condition either up or down.

I wish you would return the bulletin to me when you have examined it. You can get a copy by applying to the Secretary. I note that single copies are \$1.00; to members of the Institute, public libraries, etc., 50¢ each.

I thank you very much for your kindness in compiling the very complete records that you sent to me.

Yours very truly,

Mining Engineer,
In Charge Mine Investigations.

Encl.

Mr. Williams has a similar lecture tour in Indiana the latter part of September. Mr. Wolflin is engaged in sampling and will be for over a month. I have been instructed to represent the Bureau at the Mining Congress the latter part of Sept. Mr. Jones will be occupied with foundation work, &c. for the experimental mine.

January 23, 1911.

U. S. Weather Bureau,
Birmingham, Ala.

Gentlemen:

During September and October, 1910, the officials of the Birmingham Coal & Iron Company took a series of samples, together with barometric readings, at their Mulga Mine, to see what influence, if any, the barometric pressure had upon the issuance of gases. We have made analysis of their samples and have studied the data they submitted.

We find some inconsistencies in their barometric readings and it would greatly aid us to have the records of your office for the corresponding times at which they took the samples. I therefore will be very grateful if you will place these records opposite the dates and hours given on the attached list.

Very truly yours,

Mining Engineer,
In Charge Mine Investigations.

Encl

U. S. DEPARTMENT OF AGRICULTURE
LOCAL OFFICE OF THE WEATHER BUREAU

Birmingham, Ala., January 25, 1911.

Mr. Geo. S. Rice,
Bureau of Mines,
Pittsburg, Pa.

Dear Sir:

Enclosed please find barometer readings as requested.
The figures represent the corrected station readings for the
elevation, of the barometer cistern, above sea level of 700 feet.

Encl.

Very truly yours,

W. J. Lehman,
Local Forecaster.

Sept. 12	3:00 P. M.
" 13	7:30 A. M.
	3:00 P. M.
" 14	7:30 A. M.
	3:00 P. M.
" 15	8:00 A. M.
	3:00 P. M.
" 17	8:00 A. M.
" 19	8:00 A. M.
	3:00 P. M.
" 20	8:00 A. M.
" 21	9:00 A. M.
" 22	8:00 A. M.
	3:00 P. M.
" 23	8:00 A. M.
	3:00 P. M.
" 24	8:00 A. M.
" 26	8:00 A. M.
	4:00 P. M.
Oct. 15	8:00 A. M.
" 16	8:00 A. M.
" 18	8:00 A. M.
	3:00 P. M.
" 19	7:30 A. M.
	3:00 P. M.
" 20 p	7:30 A. M.
	3:00 P. M.
" 21	7:30 A. M.
	3:30 P. M.
" 22	7:30 A. M.
	3:30 P. M.

January 27, 1911.

Mr. W. T. Lehman, Local Forecaster Weather Bureau,
Birmingham, Alabama.

Dear Sir:

Your letter of January 25th, enclosing barometric
readings, received. I thank you very much for your kind-
ness in sending them.

Yours very truly,

Mining Engineer.



Newspaper Accounts

12 Known Dead In Alabama Mine

State Mine Inspector Be-
lieves All Forty-three En-
tombbed Men Are Lost.

[By Associated Press to The Dispatch.]

BIRMINGHAM, Ala., April 21.—Black damp is slowly disappearing tonight from the workings of the Mulga mine, in which 43 men were entombed by an explosion yesterday, and rescuers are now able to stay underground 45 minutes at a time. Twelve bodies have been brought to the surface.

Mine Inspector Neal today entered the mine and later said he did not believe that anyone was alive in the mine. Gas has penetrated every cranny of the mine since the explosion.

Pathetic scenes were witnessed about the shaft all day as the rescuing parties were lowered time after time only to be brought back to the surface unconscious. Nearly 7,000 persons gathered to watch the futile work.

EXPLOSION OF GAS CAUSED DISASTER

State Mine Inspector Makes
Report On Calamity At
Mulga.

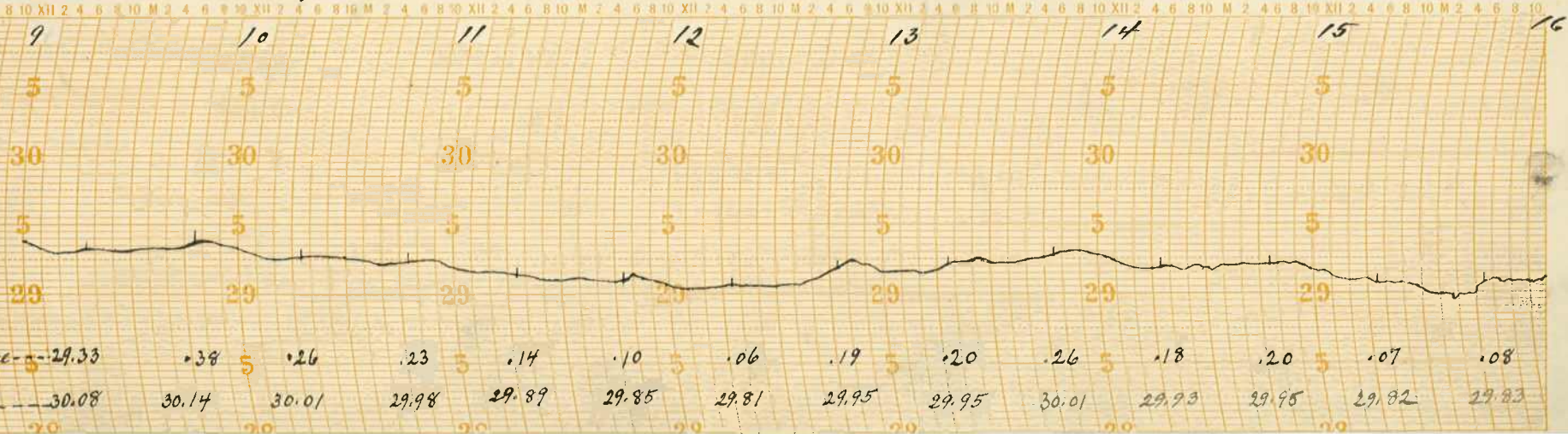
The report of the chief state mine inspector, James Hillhouse, on the explosion in the Mulga mines on April 20, in which 40 men lost their lives, has just been made public. The inspector asserts that a gas explosion occurred intensified by dust.

The paragraph in his report covering the matter follows:

"In our summary we beg to say that we are of the opinion that a small body of gas was ignited in some part of the mine. The machines were making sufficient dust, that was held in suspension of the air, so when the flame of the gas reached the dust, the hydrocarbons became ignited."

Birmingham, Ala. Barograph Record, April 9 to 16, 1910. Elevation above Sea Level of barometer = 701 feet.

25,000 ft. - 12, 1906.

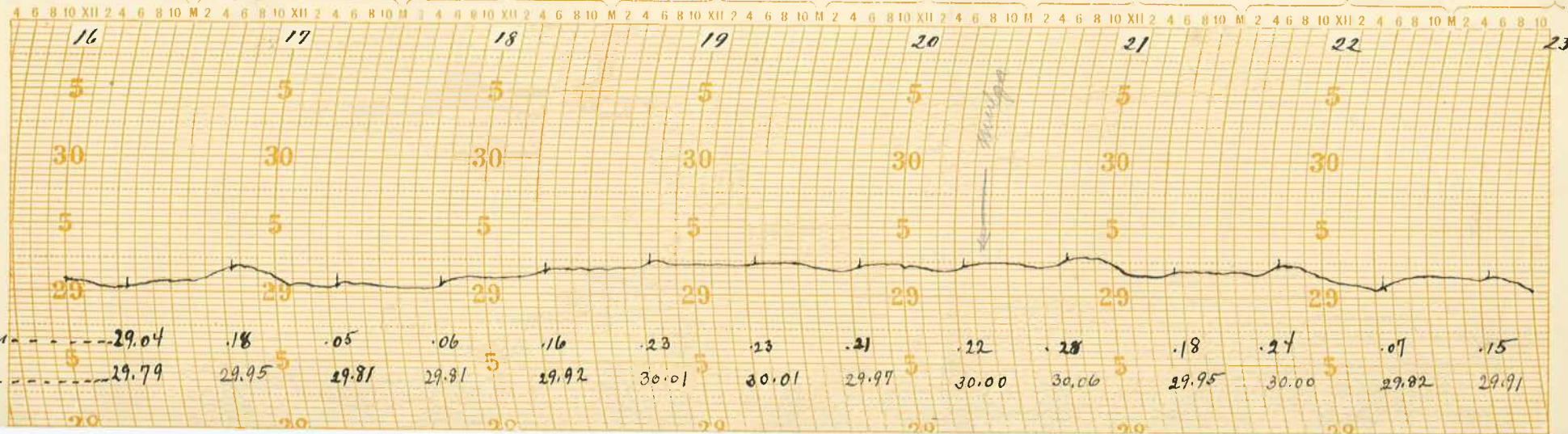


Readings at
7 am and 7 pm
90th Mer. time -
Reduced to
Sea Level

Birmingham, Ala. April 16 to 23, 1910

25, 609 - 12, 1906.

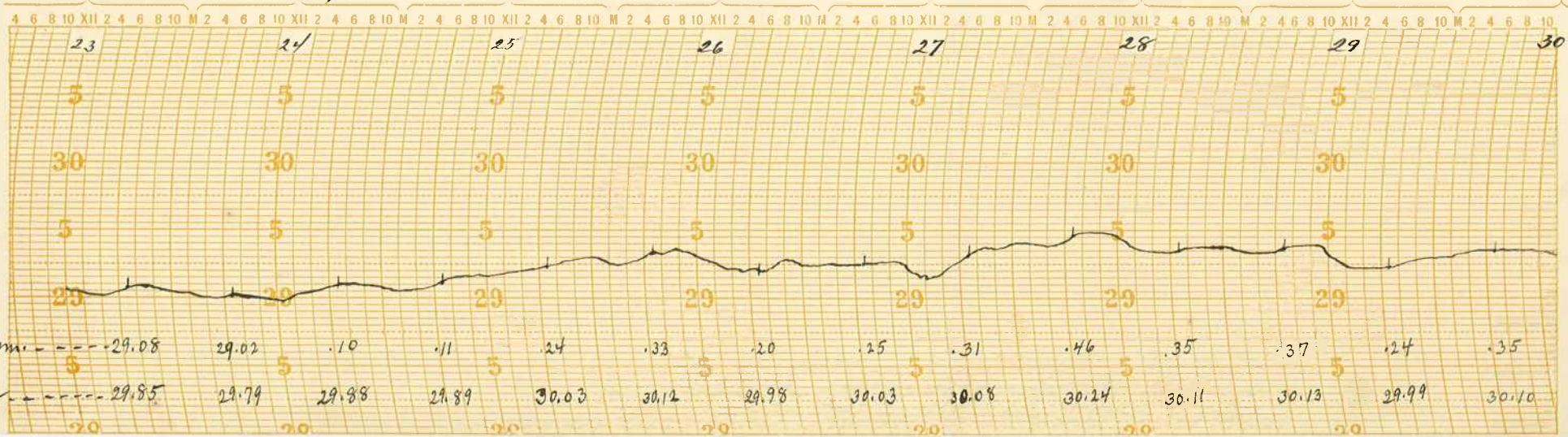
Form 608 - Met.



Birmingham, Ala. April 23 to 30, 1910

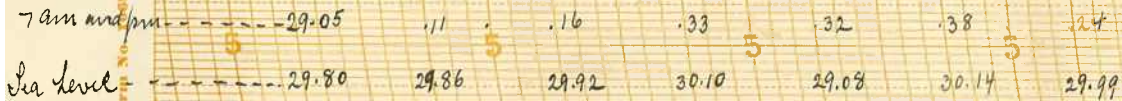
25,000-12, 1906.

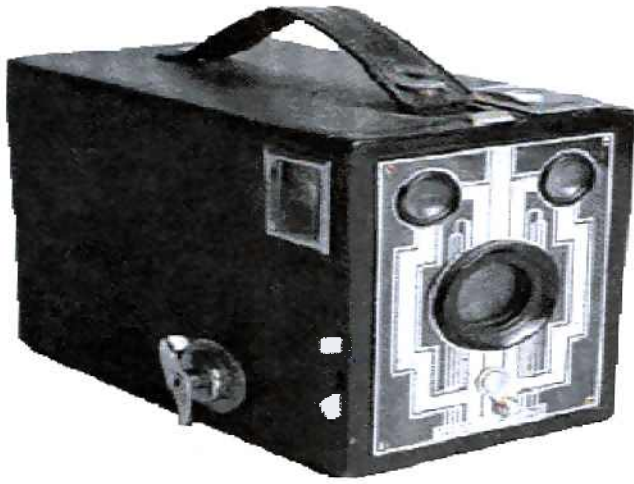
Form No. 1-188-Met'l.



1906, 1912, 1906.

Form No. 1008-Met'l.





Photographs





Telegraph

April 21, 1910 - May 01, 1910

To Manager of Telegraph Co.:
This message should be sent "Paid
Gov't" Rate and forwarded with your
monthly report as voucher for your
credit.

9-132.

OFFICIAL TELEGRAM.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Charge: ~~M. A.~~ ³ A.

The ~~POSTAL TELEGRAPH~~ Company

WILL SEND THE FOLLOWING MESSAGE SUBJECT TO THE RATES FIXED BY THE POSTMASTER-GENERAL.

Geo. S. Rice		Mining Engineer	
[Sender's name in full.]		[Title.] I-2	
Time filed.	Receiver's No.	words, PAID. Government Rates, at rate. [Day or night.]	

Pittsburgh, Pa., April 21, 1910, 190

To Wilson, Geological Survey, Washington, D.C.

Newspapers report forty men entombed Mulga mine
Birmingham. If Rutledge is to go wire him

R I C E

To Manager of Telegraph Co.:

This message should be sent "Paid Gov't" Rate and forwarded with your monthly report as voucher for your credit.

9-132.

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Time filed.	Receiver's No.	words, PAID. Government Rates, at	rate. <small>[Day or night.]</small>

Pittsburgh, Pa., April 21, 1910, 190

To Rutledge, Two thirty two Federal Building, Knoxville, Tenn.

Newspapers report forty men entombed Kulga mine
Birmingham. Telephone there and prepare going if advisable.
Am wiring
~~XXXXXXXXXX~~ Washington for authority.

R I C E

SPECIAL RUSH

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

24,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

RECEIVED at

1 Ki Jo

22 Collect LSR

Mulga Ala April 22-10

Rice, W S Geol Survey
Pgh Pa.

No need for apparatus
bodies now being taken out
no fire or other complications
Rutledge.

To Manager of Telegraph Co.:
This message should be sent "Paid
Gov't" Rate and forwarded with your
monthly report as voucher for your
credit.

9-132.

OFFICIAL TELEGRAM.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Charge: M. A.

The Postal telegraph Company

WILL SEND THE FOLLOWING MESSAGE SUBJECT TO THE RATES FIXED BY THE POSTMASTER-GENERAL.

<u>Geo. S. Rice</u> [Sender's name in full.]		<u>Mining Engineer</u> [Title.]	I-2
Time filed.	Receiver's No.	words, PAID. Government Rates, at _____ rate. [Day or night.]	

Pittsburgh, Pa., April 22, 1910., 190

To Wilson, Geological Survey, Washington, D.C.

Have ~~had~~ no reply to yesterday's wire to Rutledge
at Knoxville. Suggest wiring care Birmingham Coal and
Iron Company. Shall we express sampling kit.

³
R I C E

POSTAL TELEGRAPH COMMERCIAL CABLES

CLARENCE H. MACKAY, PRESIDENT.

TELEGRAM

REGISTERED TRADE-MARK. DESIGN PATENT NO. 36360.

The Postal Telegraph-Cable Company (Incorporated) transmits and delivers this message subject to the terms and conditions printed on the back of this t

Received at

13G Bc Js

13

20

Govt (WHERE ANY REPLY SHOULD BE SENT.)

Washington D C April 22nd 1910

Roberts Geological Survey Pgh Pa

Have rice with me Rutledge address want him to sample mines alabama
before returning .

Wilson.

3 20 Pm

To Manager of Telegraph Co.:

This message should be sent "Paid Gov't" Rate and forwarded with your monthly report as voucher for your credit.

9-132.

OFFICIAL TELEGRAM.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Charge: M. A.

The WESTERN UNION Company

WILL SEND THE FOLLOWING MESSAGE SUBJECT TO THE RATES FIXED BY THE POSTMASTER-GENERAL.

Geo. S. Rice <small>[Sender's name in full.]</small>		Mining Engineer <small>[Title.]</small>		I-2
Time filed.	Receiver's No.	words, PAID. Government Rates, at <u> </u> rate. <small>[Day or night.]</small>		

Pittsburgh, Pa., April 22, 1910, 190

To J. J. Rutledge, United States Geological Survey, Care Birmingham Coal and Iron Company, Mulga, Alabama.

Wire situation. Do you need help?

R I C E

Confirmation of telephone message.

Copy to Mr. H. M. Wilson

To Manager of Telegraph Co.:

This message should be sent "Paid Gov't" Rate and forwarded with your monthly report as voucher for your credit.

9-132.

OFFICIAL TELEGRAM.

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Charge: M. A.

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<u>Geo. S. Rice</u> <small>[Sender's name in full.]</small>		<u>Mining Engineer</u> <small>[Title.]</small>	<u>I-2</u>
Time filed.	Receiver's No.	words, PAID. Government Rates, at	rate. <small>[Day or night.]</small>

Pittsburgh, Pa., April 23, 1910, 190

To Wilson, Geological Survey, Washington, D.C.

{ Rutledge wires from Mulga no need for
apparatus. Bodies now being taken out? No
fire or other complications. Can Webb be
headed off. If Pope wants us to make
mine reports send his and Riefkins notes
including H cards.

R I C E

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

24,000 OFFICES IN AMERICA.

CABLE SERVICE TO ALL THE WORLD.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

RECEIVED at

4 Wh. Jo

18 B GR

Birmingham Ala 24-11

Rice, W. S. Geol Survey Pgh.

Bodies all out will examine
mine Monday have written
pittsburg Rutledge

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

RECEIVED at 1613 Sherman Avenue,

Phone 186. Evanston, Ill.

23 ch pk s 16 Paid- GOVT

Birmingham, Ala., May 1-1910.

Geo. S. Rice,

Evanston, Ills.

Come to Mulga if possible case very interesting one answer.

Rutledge,

329p

Form 1864

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

24,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

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ROBERT C. CLOWRY, President and General Manager.

RECEIVED at *1613 Sherman Avenue,*
'Phone 186, Evanston, Ill.

13 ch pk s 22 Paid- GOVT

McWashington, D. C. May 1-1910.

Geo. S. Rice,

Evanston, Ills.

Glad to have you visit Mulga Mine Geological Survey paying
expenses, letters at Morris Hotel Birmingham.

Holmes,

1038am.



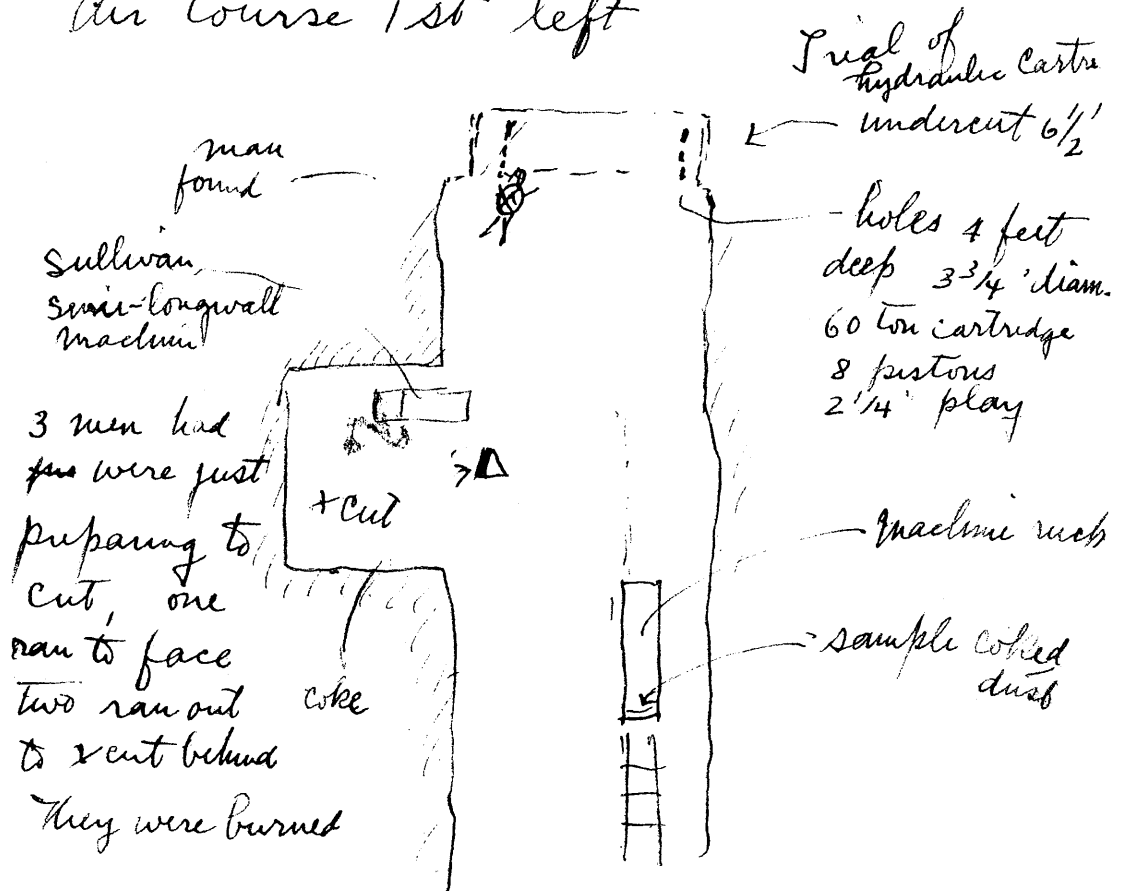
Notes

May 03, 1910 - May 11, 1910

Mulga Mine

May 3, 1918

Run course 1st left



88/

May 10/10

Bottle # 865

sample of gas at fan
probably 100000 cu ft

Going south on east side
of Main North haulage

coke on mby ~~exposures~~
of ~~right~~ rib - very strong

also on mby side of pups
at next outcrop & cut

coke mby exposure 1/2 from
heading -

Further south past & cut
on air. C The posts for
30 feet have coke mby
& outcrop

Starting at no 2 shaft
Not much damaged, but frames
at bottom blown out -

At first X cut opp the air course, a
reever standing there thrown into
road 12 eastward, had coke on South
end - Clean on north end

at 2nd X cut stopping blown out
or in? coke on outbye corner of
rib, very little. Considerable coke
on inbye corner

Between 2nd 3rd X cuts, props on
right hand side show coke on outbye
face, swept clean on inbye face

at angling X cut, which track follows
a square timber set across the
air course, Timber
down, post in middle
has coke on outbye
faces only.

May 4 16

Souths on mainway from No 2

1st x cut ^{on left}, has damp dust on
② corners

on right rib, on wire hanger
piece of canvas driven north
(toward No 2)

On pieces of hangers —

damp dust more on North side

2nd hanger knocked north
splitting plug

1st x cut on right, stopping out
damp dust on S. corner facing No

2nd left x cut on L R

damp dust North facings
rock stopping in

Support of feed wire driven

North splitting ~~seam~~ plug —

feed wires along entry down
but trotting up

feed wire hanger broken N5

" " " leaning NO

I cut on right, stopping stone
blown east, rock along road
no heat noted -

I cut right, stone stopping
at top, blown slightly east
but generally unshaken

② Hanger has sticks driven into
spikes from south
next hanger knocked in

I cut on right, stopping
intact except a little dirt
knocked east

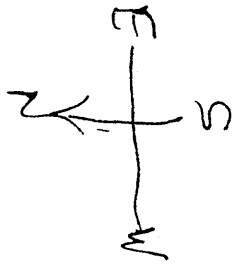
On left air ^{coming} of diagonal or main
east, filled water, deep, always
had been - dirt caking damp
on both north & south facings

On right I cut stone stopping
intact

Right hand side corner

~~features~~ bagging a little

camp road



wood bridge, slightly broken
- lost house, not much broken
to road SW

side road

Antelope Creek
road -

Main route heading
on lie, 4 or 8 'empty' cars
only car said to have been ^{swung}
& tipped on side, apparently
blown out by -

Spray on lie, dust now dampish
apparently thick dust
said to be dry

Left stopping rock, thought to be
pushed toward or into heading
from AC.

Right stopping has been blown
South toward right AC
rock scattered

Left stopping was blown toward
heading

Right stopping blown on toward
heading

6) Trolley up

Scut on left, stopping blown
toward heading

Get switch of 1st left heading
✓ a piece of canvas caught
in fork of trolley, thrown outbye

Opp fog, a scut at left
with storm & timber stopping
out, not perfectly clear
which way, but ~~readily~~
more evidence that it came
toward heading

1st heading — A ^{piece} canvas
caught behind trolley hanger
blown outward unmistakably

Sample of dust 20306
taken in 1st heading opp
air course

20306

7)

1st x cut, caked dust on west
face^{of prop} (toward air course)

Props on left side just
inby of a.c., has thick coat
caked dust outby face

Opposite 1st right heading
(going east) considerable loose
caked dust blown into west
rib ~~from~~ crevices -

Sample of above caked dust
in Can 20303

Machine stood on road, before
explosion

On prop at right side (east)
outby side - A little further
in 6 to 10 feet, several
posts set on inby face

On several props on left, caked
on inby side -

3 or 4th xent inside of
door at 1st Right
stopping out

Much coke on props and
coal on side, on inbye
faces

Just outbye of room shot
to right (not working) there
is a car shoved up on
some large rocks, with a
stick propating up & pointed
outbye coke on under side.
Car stove ~~in~~ by props
from face - In other
words blast outward -

Water in face & falls
no one supposed to be in
this place

1st ~~Right~~ heading (east)
post on left 5~~th~~ feet in by
corner shows considerable coke
on inbye face

~~In 1st room~~
at the 1st x cut coke on inbye
face

In 1st room (off 1st R. heading)
strong coke on inbye side

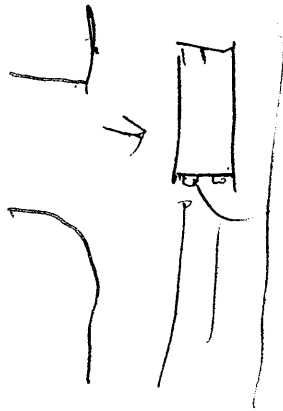
2nd x cut stopping
out don't know which way
3rd Room

Posts on right, strong coke
inbye side

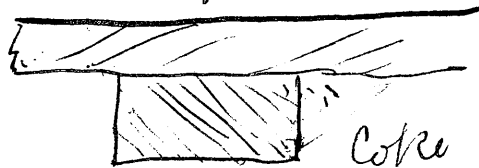
R 4, coke on inbye faces
of posts

In Room. 4, coke on subway
faces, a little coke outbye face
of a post

A car app. R 4 driven
off track to south, also
pushing rail apart -



a trifle of coke on
corner of iron



3 Cars ^{small} not much
disturbed

Opp. room 5, coke facing
road or room, also sbp
last vent

Face, undercut by puncher
in room neck R1) 2 men

Evidently loading bug dust
No Cap on Lamp

Car has bright spots of
coke on outbyo and ^{also} loose coke ^{on road?}
Partly burned paper dummy by
side of car - ~~also~~

3 holes at face not fired

Stick of explosive ^{extra B} with
scorched paper wrapper -
just on by car

Hubby of last cross cut
coke on mbyo sides of
props

In air course opp last
cross-cut, a prop has
coke on reverse side from
1 cut

Along out on air course
a prop showed coke on
12) outbyo face, further

out opp a 2 cut, ~~the~~ a
prop shows coke on inbye side

It looks as if the
explosion followed thro
the cut to the main
heading, ~~at~~ in the cut
Many props show coke
on inbye face

Main Diagonal East
inbye of 1 lift heading
✓ ~~stopping~~

2 or 3 cut stopping, blown
into heading slightly

✓ no coke observed so far
but props scoured on inbye
face dust on outbye

✓ 2nd lift off main east connecting
with parallel heading above
described, no coke on props at
13) _{most}

about 60 feet inbye 2 left
✓ on prop on right side, coke
on inbye face

off 1st cut inbye 2 left, props
on right side, coke on
✓ inbye side - stopping out
uncertain which way but
looks as if toward heading
120 from air course

off 2nd cut, coke on
✓ props off cut, on face
off same -

✓ just inbye cut, prop on right
has coke outbye -

✓ floor of road along here
has much coarse rock

✓ 3rd cut ^{rock}, stopping nearly
intact

✓ off 4th cut coke against
rock on opp side facing 3c
14

✓ xcut to right, prop at
mouth coke facing xcut

Opp 6 left xcut, coke on props
✓ on of opp xcut but mainly
facing inbye

~~Prop 7~~ xcut no coke noted

✓ 8 xcut opp / Right head

Props inbye on R of / Right
✓ show small amount of
coke both inbye & outbye

Opp 9 xcut, props on right
✓ have coke mostly outbye

✓ Props on left, coke on
outbye

~~Prop 10~~ ^{near outbye Room}
Loaded Car has considerable coke
✓ on outbye end, also one chunk

10 xcut, prop at mouth ^{on inbye end} coke
15) on all sides, mostly in & out

Just ~~in by~~ Room 2 on
switch 3 cars off track
face


exactly drive in by

one man found just out by
room 1, on left or N. side
behind car, on face, burner
worked in Room 1

cut out by R 2, stopping
blown into heading
Track torn up, knocked
towards south

Dinner bucket off cut
still filled with liquid

✓ at last cross-cut, track
into same lifted and ~~stood~~
~~the~~ one section ~~to~~ moved towards
an course about 2 feet

16) ~~off~~ an course track in heading
south rail moved out by 18"

at face of heading board
+ an machine man
close to board or on it?
big work on board, with
loose coke - Much
of coke -

✓ another man machine
helper in middle track

No caps at face, but
much shingling of gas
✓ also in air course

1st Right entry

✓ prop 40 feet in from
mouth off 1 Diagonal
has coke on mby side

✓ 1st & cut, rock wall
towards entry

✓ 2nd cut wood brattice
seems to be towards entry

Survival props on night
✓ coke inbye side

2 loaded cars off track
✓ coke on inbye end of mine
car

✓ Truck across track

✓ Old trucks against side
shows coke inbye & outbye

In haulage & cut two
men facing out, badly
burned - had been working
on air course

But at corner thrown into
entry

Face 50 feet inside & cut
✓ Empty a little inside of
& cut has some rock
scattering on outbye face
of inbye end, but much more
inbye face -

(18)

4 Butt heading
not working for 6 months

In, Main diagonal air course
off 4 Butt, first thin
or four props show coke
✓ on outbye face, several
to to 20 feet further in
show no coke

At Inbye corner of wide
air course about a prop
shows strong coke inbye
or toward face of 4 Butt

Outbye diagonal air course
✓ coke on outbye (toward W)
side of props -

Diagonal East
angling cross-cut to Shaft No 1
has some timbers said to
have come from ^{door} frame
near shaft —

✓ Hanger Knocked East
Door frame blown east

Road to South, stone stopping
blown south

✓ 1 cut to shaft has trolley
wire blown into same

2nd cut, to main bottom had old
cabin blown to pieces, further
✓ along, a door blown from
nearer bottom —

✓ At main bottom, cars
piled up more or less

cast diagonal continued
✓ & cut to left (opp & cut to shaft)
slipping blown south

Big Post opp & cut to shaft
✓ pushed east

~~& cut~~
Water nozzle still standing
& cut, brattice blown in by
or south -


Door blown east, ~~for~~ 50 or
✓ 60 feet - Frame still up
coke on ~~both~~ post and frame
on East side

✓ & cut stone brattice ~~to~~ and
cement, stood, (about only
one standing in mine)

& cut, stone & cement brattice
✓ blown in by (30)

Post at mouth has coke on
2) East face

At Curve into South haulage
✓ 3 men found at outside of rail
not badly mangled

In South haulage
going south,
✓ Large prop knocked south-leans
against, next
a door beyond, spiders
blown south  not

✓ Cars or more piled up
about 100 feet in from diagonal east
the furthest in across cutting
on its side

✓ Unmistakably have gone
south — Much dry dust
plastered on ~~floor~~ mby surfaces
looks as if it had been wet
Ran around

Two or more ~~crippled~~
cars damaged cars near diagonal west

22) Timbers piled against side of
Diagonal west — Come from North
no one worked in diagonal west

~~North~~ (Westinghouse)
no 2

on track, trolley wheel on wire
was going south -

Motor man found back
on curve ~~into~~ east haulage

In for North headlight, filled
with dust & coke. Much ~~dust~~ ^{grind}
~~with bumper have coke scale~~ on 30 exposure
~~found on South side of posts, next collar on N. side~~

In of into shaft a
crib at point ^{off coal} blown South
a few feet -

Asst boss found just
beyond toward shaft
~~posts on left of north haulage, charred~~
~~dust on South side & one on right on N. side~~

A running machine stood
in cross cut, has been pushed
out and into entry running
North 40 feet - Still on track
~~on S side of cut bright faces on W exposure~~

In of at entrance to No 1
Props show coke outbye toward
shaft - at corner facing north
on main haulage, north faces
23) peppered with dents -

1 Lift haulage North

Overcast, side boards gone
except bottom ones, that appear
broken towards south (i.e. both
sides - Floor of overcast crossing
1st lift gone, a piece of wood
said to be carried south in air course

3 empties off tracks, driven
out on apparently possibly, a
block under inbye end

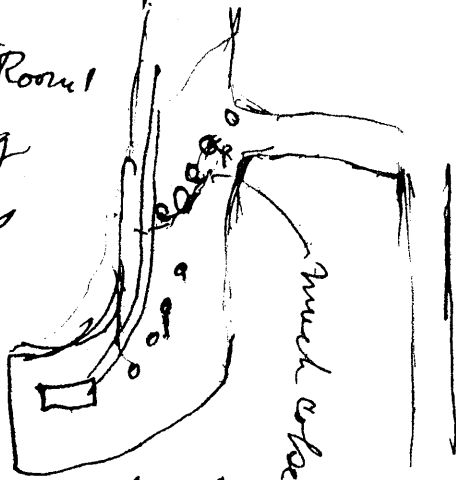
Opp - ~~1st room~~ cross-cut
to a triple inbye, some
coke on several props
faces x cut & partly facing
outbye

~~Blind room off Room 1~~
Coke strong

on inbye faces
of props

also much on
top near face
partly water
can shovel into

24) coal at face, & over shovel
new upper cap at face



Room 1 filled with props
✓ driven from outside?

✓ Prop on left has coke on
mbye. side -

Two men, were found at
mouth of blind room - These
two worked both rooms, they
were probably loading coal
in Blind -

They were not badly burned

Haulage north ~~to south~~ ^{back} Canvas caught
around ~~post~~ ^{on right}, going south -
? At air course of 1st left
apparently ^{dry} stone ~~of~~ slopping
has come toward road

Main Return overcast, passing
over from air course

✓ Overcast looks as if burst
right & left and also to S.

2) Some chimneys & bushes, current
50 feet or more south

✓ Props on right & left
show coke bothuby & outby

✓ 3 left, from Mr. Jue -

3 men, one under edge of
fall 100 feet from mouth
some buckets were open
✓ at this point

2nd man a little outside
3rd man further out -
all burned -

✓ 30 sticks of Etua B -

2 Cars, 1 loaded, 1 partly
loaded -

An course fresh shot
✓ Ray man said he shot this
before he left

✓ Coming in props tuby has
coke strong tuby

3rd Lift
In Air Course timber at
face not burned, timber
back 15 feet burned all
around - i.e. coke -

Track leading into air course
has coke on mbye side
principally - Sometimes
bitly -

Wires from shot led the
scut nearest face (not
shown on map) The
right hand hole looks
in towards right rib
& if the hole was within
a few inches of depth of
mummy, was on solid
coal badly crushed &
shots seemed to have done
their work, coal dropped
not thrown out

2nd Heavy coke on mbye side of

props when widened for
parting -

Going South, on haulage
North - half way between
✓ 3 & 2 lefts, a cross cut
has coke on outbye, coming
from inbye

Main haulage to No 2 shaft
Air-course ^{at North east} is a blind entry?
has coke on inbye side props
✓ air course at right, to South
has coke on outbye or South
side props -

A piece of canvas wrapped
around post from South

At end & cut to left props at L
show coke inbye on East side
or toward shafts -

29) Canvas caught over trolley wire
+ against hanger going East

No 1 left room (going south)
tracks at first point lifted
2 feet on inner part of
✓ curve -

Considerable ~~top~~ coke
opposite mouth stuck in
crease of rock

✓ 4 or 5 hangers bent eastward
towards shaft
3 ~~Two hangers just in by~~ Right bent outward
Off Main 1st Right off Main No 2
✓ haulage, at heavy hangers
bent ~~west~~ east toward shaft

Props at right side up to
Room 3 or 4th, coke in by
✓ off this room coke out by
but at inner sub corner of
room coke on props in by
Props further in coke on in by

Cross-cut open coke on
✓ South rib, apparently on
exposures facing westward -
and cross-back, shows coke
more on west facing exposure

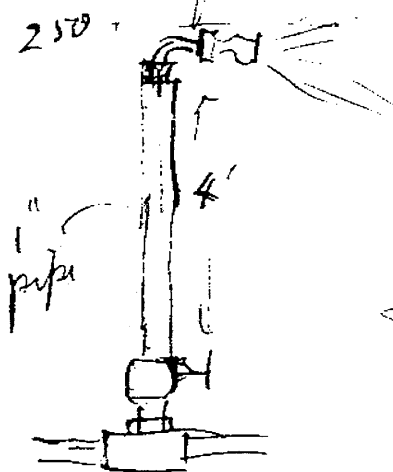
break thro into No 4 off
manway, heavy coke
on West exposures & toward
our course to 1st right

In 5th room at break thro
? & water comes up to the
break thro, deep further
back
shows a little coke on
west exposures

✓ Opposite the & cuts the coke
31 on props in 1 Right is outbye
between & cuts is inbye

May 10/00
Went west from No 2 shaft
on No 2 haulage

E of Boston
Spray American Manufacturing Co
(had 16 of these moved the
spray) - these fresh water
270 ft head, no trouble
from clogging makes a good
(Shaft 220 feet) spray



Had been in
operation 6 weeks prior
to explosion - Up to
about 2 weeks before
watered this air-line
using a hose at face, didn't
do it afterwards gave trouble

Trolley hanger 15 feet from bottom
bent in bye

✓ cut on Right Hand side material
seems to be toward entry

✓ 6 ft xent (60 ft from shaft) hanger bent
southward (from xent) Trolley wire wrenched
34) down - 1 1/2 tons

2nd tent, stopping material brown
south to off rib, under fall
just outbye 1st right 3 hours
bent outbye

1 Right off main w 2 haulage
going over same ground
opposite 1st tent, new long
beater, a post on right, has
cork outbye -

✓ opposite air course to left, in
~~1 left~~ 1 right, a hanger
bent east (from air course)
In a ~~then~~ projection or hole
in roof facing outbye, cork
a thick clod of same,

In No 2 haulage air course
up 50 or 71 feet

✓ a Prop, struck and knelled
outbye, leaning - in Paul
found fragments of this timber

At a turn a piece of crib
blown out, at right, some
timbers jammed under the coal
35) & a big rock, been blown outward

On left, a pile of ~~at~~ opp
✓ debris against some posts at
left -

~~across~~ - out stopping blown ~~into~~
in toward in course

A post, just in by & cut has
a ridge $1\frac{1}{2}$ inches deep on in by
side. A, feels slightly very
burned(?) dust out - by feels gritty
The roof on out by face has
a heated appearance almost coke
Post further in by - blocked
out by

~~2nd~~ 2nd tent, stopping
pieces apparently toward
✓ Air course and against
out by corner - with fine dust
piled against it -

Bottom generally damp -
A prop lying down has bunch
of ~~mud~~ in by end

✓ Opp 3 tent, props have strong
36) coke out by - In tent, prop
has coke on side toward entry

Opposite ~~4~~ cut water, gas
bubbling up - sent stopping
✓ blown into ^{recess} ~~gap~~ in outbye rib of
sent toward air course

At left rib, behind a project
ion, dirt accumulated & ^{struck} coke
on outbye face.

On inbye side of projection
coke thrown into crevices.

5th cut - dry stone stopping
blown toward air course, scatters
12 or 15 feet.

Opp cut coke on several
props outbye

Sample in back Room 1

Can 20 334, coke 1" thick
on inbye side of post

Track in room moved bodily
out 6 or 7 feet

37) Coke 1" thick on inbye side
of ties full length of ties

After shooting from the
coal was on fire,
before had open lights

Second with ~~Star~~ B, then
used open lights. "me
a heading,"

Coal caught on fire

May 11/10

8655

Man Return taken

~~at 4~~ in Fan conduit
abt 1000000 cu ft
per minute

Have had two ignitions
of coal -

First with Carbonite #2
shot by regular
shopper with battery
iron Brand fuses

+ holes 2 sticks
in each of rib holes $7 \frac{1}{2}$
in each of middle bar
Five sticks in left hand
hole, Tamped with same

C. STATION HUMIDITY REPORT (1)

Date 19 Hour
 Mine
 Station
 Distance from entrance or shaft ft.
 Dry bulb ° Wet bulb ° Barometer in.
 Depression (t-t') ° Relative humidity %
 Passage width ft. Height ft. Area sq. ft.
 Velocity air per min. reading ft. Corrected ft.
 Volume air per min. cu. ft.
 Intake or return
 At station, is floor dry or moist?
 At station, are ribs dry or moist?
 At station, is roof dry or moist?
 Method of sampling air Sample No.

Date 19 Hour
 Station
 Distance from entrance or shaft ft.
 Dry bulb ° Wet bulb ° Barometer in.
 Depression (t-t') ° Relative humidity %
 Passage with ft. Height ft. Area sq. ft.
 Velocity air per min. reading ft. Corrected ft.
 Volume air per min. cu. ft.
 Intake or return
 At station, is floor dry or moist?
 At station, are ribs dry or moist?
 At station, is roof dry or moist?
 Method of sampling air Sample No.

D. GENERAL HUMIDITY REPORT (2)

General humidity condition of	Mine
Is the coal naturally dry or moist?	
Are the working places dry or moist?	
Are goaves dry or moist?	
In entries, is floor clean or dusty?	
Is dust pure or mixed with rock-dust or clay?	
In entries, is floor dry or moist?	
Are ribs and roof coated with dust?	
Is the above dust dry or moist?	
Are timbers, if any, coated with dust?	
Method of humidifying	
(a) Sprinkling by cars	How often?
(b) Sprinkling by hose	How often?
(c) Are ribs and roof sprinkled?	
(d) Water sprays	Number
How located?	
(e) How many hours do sprays run?	
(f) Exhaust steam sprays	
Where located?	
(g) How far does steam fog the air?	
How much water, by any of above methods, is artificially intro-	
duced, in gallons per minute	per 24 hours
General humidity notes:	

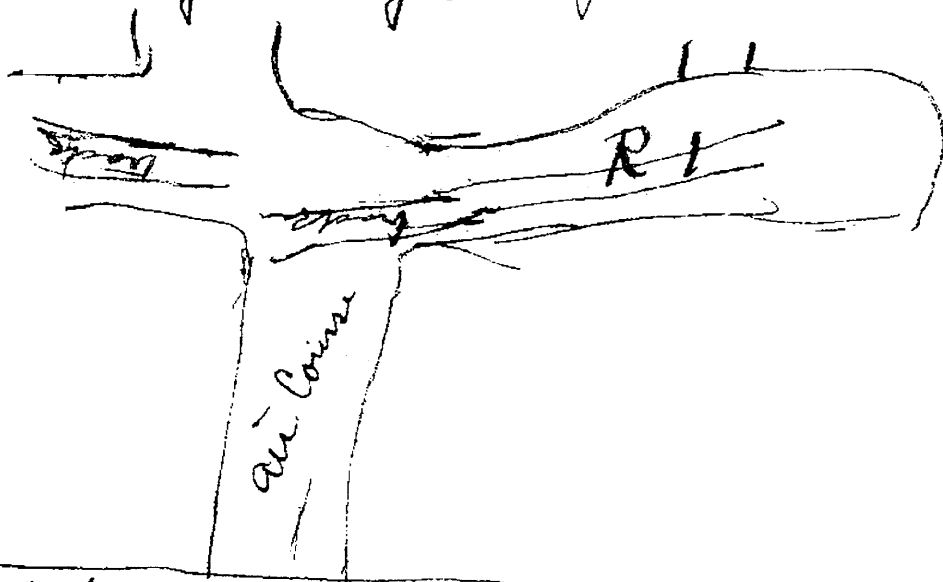
F.—COAL SAMPLE (Sheet 1).

State, _____ Date, _____ 19____
County, _____ No. _____
Township, _____
Mine name, _____
Location (distance and direction from nearest railway
station). _____
Operator, _____
Address, _____
R. R. connections, _____
Selling agent, _____
Address of same, _____
Trade name of coal, _____
Coal-bed name, _____ Geologic formation, _____
Entrance: Drift, slope, shaft, _____
Vertical depth, _____
Kind of coal, _____
Range in thickness of coal as mined: From _____ feet
_____ inches, to _____ feet _____ inches.
Variability in character of coal bed, introduction of bone,
local partings, cannel, etc., _____
System of mining, room and pillars, long wall, etc., _____
Proportion of coal taken in advance work, _____
What percentage of recovery is claimed (exclusive of roof
coal)? _____ per cent.
Roof (a) Draw slate (coming down with coal). _____ thickness.
(b) Shale or slate, quality, color, etc., _____
(c) Roof coal, _____ Quality, _____ Thickness, _____
(d) Sandstone or limestone, _____
Is immediate roof smooth or does coal stick? _____
Does immediate roof fall in rooms? _____
Is there a cap rock or main roof above? _____
Height of cap rock, etc., above coal, _____ ft.

38) 1st Room off air course of Main ³ ~~May 2~~
Blasts on roof 30 feet from
face and coke on pavement
water in face of room, gas
bubbling up through
Face squeezed up -

Tracks in mouth of room
leading this air course detached
and thrown outbye

On last prop inby, splinters
outbye side carbonized -
all posts mostly coked inbye
very heavy -



6th tent (opp no 20 room)
brattice boards blown toward
air course and against outbye rib
Props have coke on side facing entry

39) Coke on prop on outbye side

✓ 7' 8" brattin boards against tracks of a.c.

Track, curved into Room 2 ~~drawn~~, detached and driven outbye from room also outbye 2 feet ~~drawn~~ out and course

Room 2 like Room 1 except coke brighter, and 25 feet from face on all sides props ~~and~~ toward middle coke only sides of props - water in face ~~yes, no coke~~

✓ Outbye R. 2, props show coke outbye face

Room 3 Empty ^{60 feet in} car hop track against right rib, charcoal dust on outbye end $\frac{1}{2}$ inch thick for next 30 feet coke on outbye. Exposures near top - R 3 opposite 8 cross cut

40) about 100 feet in for 4 feet
ribs have coke dust and
veal itself seems fused
coke ceases about 30 feet
from face, gas in bottom

✓ Inbye 8 Cross-cut, side
& top of a tool box - along
left rib -

{ Opp & int 8, a curtain
thrown against track

✓ Inbye 8 & cut, track, pulled
apart thrown outbye 8 tracks

Air pipe bent over
tracks apparently inbye?

Room 4, in neck has
coke on inbye exposures -

✓ In Room 4 30 feet in, coke
inbye exposures

✓ Opp. & cut to right, has
coke all side

Prop 6 feet inbye & cut
has coke outbye -

41) R 4 center - 30 feet
mby bent, prop has coke
mby side - coke blisters on roof
Prop 5 x 15 feet from face
coke on mby exposure
✓ Prop 25 feet from face coke
globules on both face
Rib - 25 feet from face globules
of coke
gas escaping from bottom
~~no coke~~ no cap. -

~~Room 65~~ ^{app 8 feet} prop at intersection
coke mby, facing room
1/2" thick, has funny wire embedded in ^{exterior}
✓ 1st prop, has coke on mby
side, dust outby
Prop in 15 feet ditto -
- " " 30 " "

40 feet mby, 4 props one prop
track has coke 1/2 inch thick
✓ fell off prop below assuming
curve -

Prop by Right X cut coke mby
for 15 feet beyond break ^{dust outby}
~~off break line~~ coke
on ribs bright, coke on props mby

Heavy fall from this point
in, no cap on top of rock
✓ In mouth of rent app-
room, coke faced room -

✓ Inby of rent, a prop has
coke outbye

~~4~~ or 5 others suits

Opp 10 ~~and~~ last rent, post
has bright coke diagonally
outbye & away from rent

Room starts just inby ~~rent~~

✓ Props at mouth have
coke facing inby
coke blisters on roof -

Prop, 15 feet inbye has
coke outbye - no coals
further in. Gas feeder
at face, which is square
up - but no cap -

In 10 to 12 last rent
coke on outbye for exposure

43/

R1 off Haulage W2
~~Coke on~~ its mouth
tracks heaved up. & inner
rail on curve lifted 2 feet
at first joint, 75 feet of track moved $\frac{1}{2}$ out
Prop 30 feet in, ^{heavy} coke in by
~~slightly out by~~
Prop 50 feet coked in by, slightly
out by
about 150 feet up, charred
dust 3 inches in by side
Charred dust on this in by side
up to 8 feet from face, about
5 feet from face out by -
for a distance of 28 feet begin-
ning 5 feet from face coke
out by, from there out by coke
on in by side.

No gas cap

1 In hole to dull hole, two
props in mouth, coked.
partly in by to room, and one
out by to entry -

44) Room 2, props coke
on mby side

30 feet up tracks have
sharp angle (of 30 degrees)
by tracks being pushed out
1st best the opp - racks
Prop at intersection has
coke facing No 1 room

R 3 coke on corner at
entrance, on inner corner
exposures facing outby of entry
On face of offset, quantity of
dry coal down into cracks

(Trip of cars in here shown
in same explosion?)

Bad roof, heavy fall

In main tunnelage to 2
mby R 3, prop, has
coke outby

R 4 prop at mouth, heavily
coated with charred dist on
mby side

46 up 125 feet last
25 feet has no coke

The right corner of face
at the bottom cut through
into something ahead,
8' high x 3 feet wide a
pressure of wind appears
to have come this from
other side, cleaning off
prominent - Some persons
in breathing have thrown
a piece of canvas on other
side

In both shut in 75 feet
or so, coke on right side
of props up to 25 feet
from face, also of this
from there to face no coke
noted - Props 40 to 50 feet
in were carbonized.

47)

North Haulage

Slanting at left but
 coke loose, thrown into crevices
 of corner facing ^{covered with dust} in by fine
 coke on in by corner, ~~as~~
looks healthy -

Props on right have corks
on E. & W side at ~~off~~ R Acut

on left rib ^{1/2} colse outbye
exposures

In cross-cut ^{heavy} coke on
two props, east side -

On outbye corner at air course
much loose ~~dark~~ coke in crevices
facing inbye

On July 10, 1900, coke on
outbye exposures chiefly

49) At turn into first right
on left prop, ^{a little} ~~coke~~ charred dust
inby side. More outby. fine
dust on charred on inby side
Two props at corner coke dust
chiefly on side facing R heading
and outby, some in eye
a prop 3 ft further in, also
exposed, has thick coke inby
to Cantaro frame shows coke
on outby side

at right of switch points —
3rd left, coke in ~~the~~ wads
thrown against prop, one further
out has coke outby.

On up at corner into 3 left
^{small amount} charred dust on inby exposures
Post opp 1 left, coke on north?
& west exposures —
on inby rd of 3 left, ~~fine~~ charred
dust on outby exposures covered with
fine dust

50)

At corner of gob of air
course to right a post
has coke outbye also mby
20 feet further in posts on
right have coke mby exposures
ms. at left, rib has bright
coke outbye exposures

Props further in have most
charred dust mby side

Two Props at near corner seat
have coke all around but
mostly mby.

Mby corner of seat has
a little charred dust on mby
facing exposures toward a.c.

Left rib shows coke exposures

On props predominance of coke is
mby. Gradually diminishes

Pool box outbye ~~last right~~ ~~ac~~
intact except one board burst
out. Some particles coke mby

51) At ^{last night} ~~2nd night~~ heading
Prop shows heavy coke on
inbye face.
On roof exposure facing
North Haulage, coke strong
facing entry, probably
~~thrown there~~ a piece
of cloth stuck to coke.

Machine stands in cut
to air course, fine coke
particles on machine, and
on surface near by.

Prop in air course has
coke on outby side also
West side.

Machine jack blown with
^{heavy} hauling chain off machine
on left side.

Tool box in right side -
Chain thrown out of
sprocket wheel

52)

Electric Cable Sulfur
some longwall ~~mach~~ + has
loop around ~~the~~ entry end
Machine throttle open it
was running - Can't be
positive that it had not
been moved -

Cover to machine, thrown
out into entry to off rib

Roll half filled thrown
from ^{outbye} end of machine off
outbye - one loop of cable
over entry end of machine
can't account for - It was
stated by Mr. Fles that the
right air course had been cut
and the machine was being
moved in to ~~cut~~ the left
air course - The face ~~had~~ of
~~been~~ the heading had been shot
down & the two men were loading
the coal

53)

May 11/10

Outside ~~230~~ P.M. 8-30

Wet 62

Dry 67

at foot shaft no 2 intake

W. 62

D. 64

just outbye first spray

150 feet inbye at Hog first Right

W. 61½

D 62½

just dry
will peat

Sandstone roof damp

Coal ribs dampish

no water drops -

At North Haulage at

mouth of 3rd

W- 62

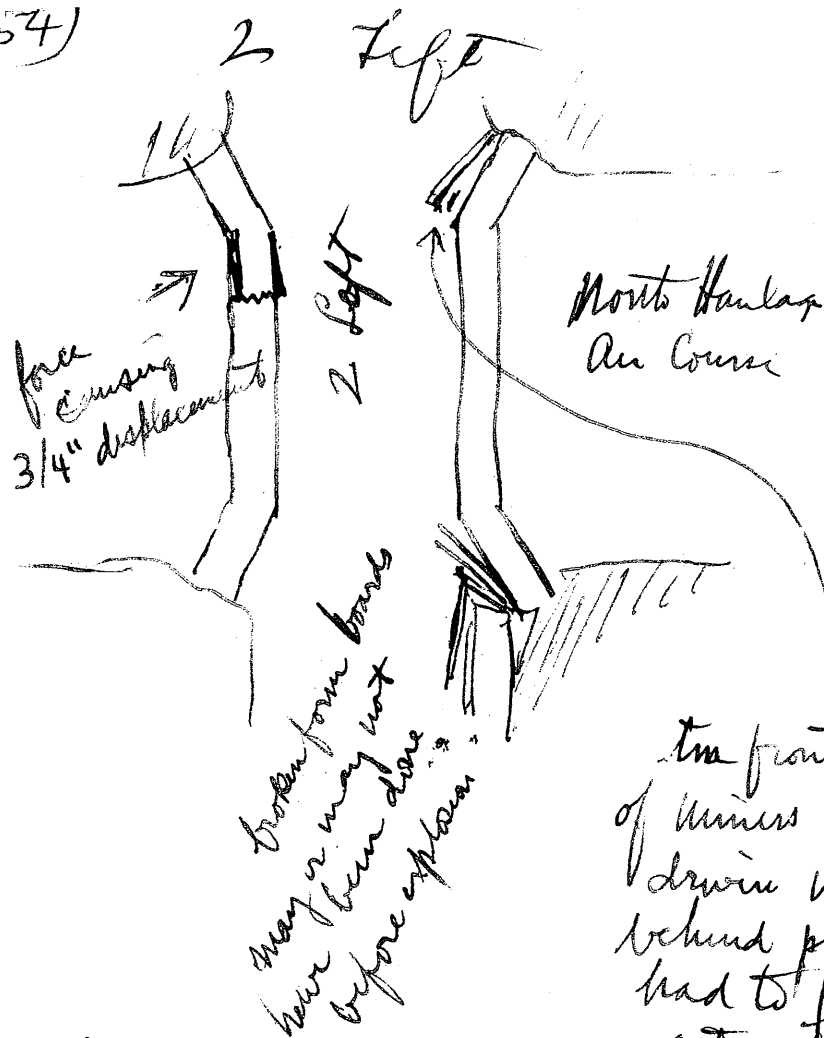
D 60

Road dusty

dry ribs

roof dry

54)



the front piece
of miners cap
driven in tightly
behind planks
had to pry to
get out - coke
behind board

This overcast was under construction
no floor, Concrete walls
about 4 feet. high - Roof shot
down - Canvas hung in mouth of
heating ~~at~~ 3? men for and at mouth
2? motorman (one new one) and
trip rider who was thought to
be heading - motor stood on
north haulage in line with heading

55) ~~Two~~ Trolley hangers just mby
Overcast bent strongly inward
Trolley ^{went} down

Opp ~~7~~ ² - charred dust
Prop on right, ~~also~~ mby
little low as job -

Part of lattice frame with piece
of canvas attached - from mouth
of heading? Were said to be mby

Water car, round tank, fine
globules outbye end, heavy coke
in main hole cover at mby end
Car off tracks, said to have been
stood mby on siding, ~~draw~~ if
so it was drawn out by off track
at end of siding

Some broken boards & debris
piled mby end of tank car

On ledge to right fine particles
charred dust

On left coke mby exposures
only -

Opp 2nd AC, counting AC
Crab motor (Goodman Roan type) standing
on main track, brake not set, but
rope out for hauling car -

56 Some scales of coke on outby
end, outby light reflector intact
has nothing but glass & bulb
broken - Inby ~~and~~ reflector
has bulb broken & has some
loose coke - Inby side 15' outby
Motorman where? out by
other motor

Heavy coke scales on inby
bumpers.

Props to right, have heavy
coke chiefly inby

Center posts coke both inby
& outby chiefly latter

Room 1 at mouth coke bright facing
room

1st coke both sides chiefly
outby?

2nd Room, car stands at mouth
heavy bright coke behind (inby)
projections, at front end - coke on
West side of car, some inby
side of front gate - Considerable
loose coke on bottom of car &
much bright globular coke on
inby rib facing outby This

57) was when Rutledge thought
~~it~~ came from coal, but, does
of not so appear to me, the rib
evidently heated, but some
of globules attached to slate
on outbye corner of this
room, much bright globular
coke one particle $3/8"$ diam
Collected sample in box from
bottom of car -

App - haulage & sent a tool
box, lid (loose) ^{has 6 sticks} exposed
showing out from rib by
~~total~~ ~~entirely~~ outbye? force. Some
coke outbye and more inbye
end -

Empty Car in haulage ^{off track} & sent strong
coke inbye end, posts at left
of car in sc. have ~~bright~~ coke
inbye

10 feet beyond sent two marks
have found, supposed to be trap
water - Beyond sent little

58) dust, no tracks ballast
at Room 3, slight globular
coke on both corners -
slight amount on props -
Water begins opposite R 3
& runs to face, entries going
to dip - Much bubbling of
gas - The rope from locomotive
runs to face when it is attached
to a car at face

where two men were found
~~about the~~ burned only slightly
one of them Mr. Fies says was
the best preserved brought out

Bent took sample of gas
when it bubbled up at pump
by filling under water -

Bottle # 8654, (# 74) 1/4" cap at
pump -
Globules of coke on props 40
feet back from face, outbye side

59) Air course = prop standing
at intersection of haulage &
& a.c., have bright coke
on all sides, posts carbonized
Lining were insulating material
burned off -

Coke on ties at turn mby
chiefly -
for 10 feet mby curve
posts coked both sides,
for two posts beyond this
coke outlays, mby this
no noticeable coke

Nearly loaded car, at face
water in face
lost evidence of fire 50 feet
back from face -
a tie laying length
diagonally within rails
coke mby and
No cap of gas at car, but
beeders along right rib

60 Use Etna B for coal
or Etna A for rock [1,34]
Single Strength Explosives Lion Brand

3rd left North Haulage
Props have much coke
mostly subby, about 100
feet in width, widened
for parting, behind the
outby gog, or facing subby
~~heaviest kind of~~ much
loose spongy coke in some
cases. 2 or 3 inches thick
and containing pieces of
stone.

Heavy fall one man under
edge, coats and 3 buckets
at right rib not overturned
though one is deeply dented.

There was a sack of 30 sticks
of Etna B, sack nearly burned
off, but, sticks not scorched
Other two men were back
a short piece 20 x 40 piece feet

(67) on inner side of ties
up to 40 feet in from
air course - beyond
this - heading widens
to ~~40~~ to 50 feet, not to
much evidence of coke

~~Track~~

Face in about 80 feet
from Air course.

Ties displaced for 30 feet
in, South rail detached
an old pipe ^{at an corner} looks as
if twisted & blown from
South,

An air pipe along track
bent toward north - ~~3 feet~~
apparently by force from
~~face as well as south~~
the south, also a small
piece of pipe bent over
rail from south

61 Had been timbered when
fall occurred -

In face of entry, one partly
loaded one loaded, & 6 more
^{can down ready to load}
The air course recently shot
no empty cans, but there
are 3 empty cans in tent
from heading.

Air course freshly shot
2 or 3 can full -

5 or 6 Italians worked together
3 days 3 or nights -

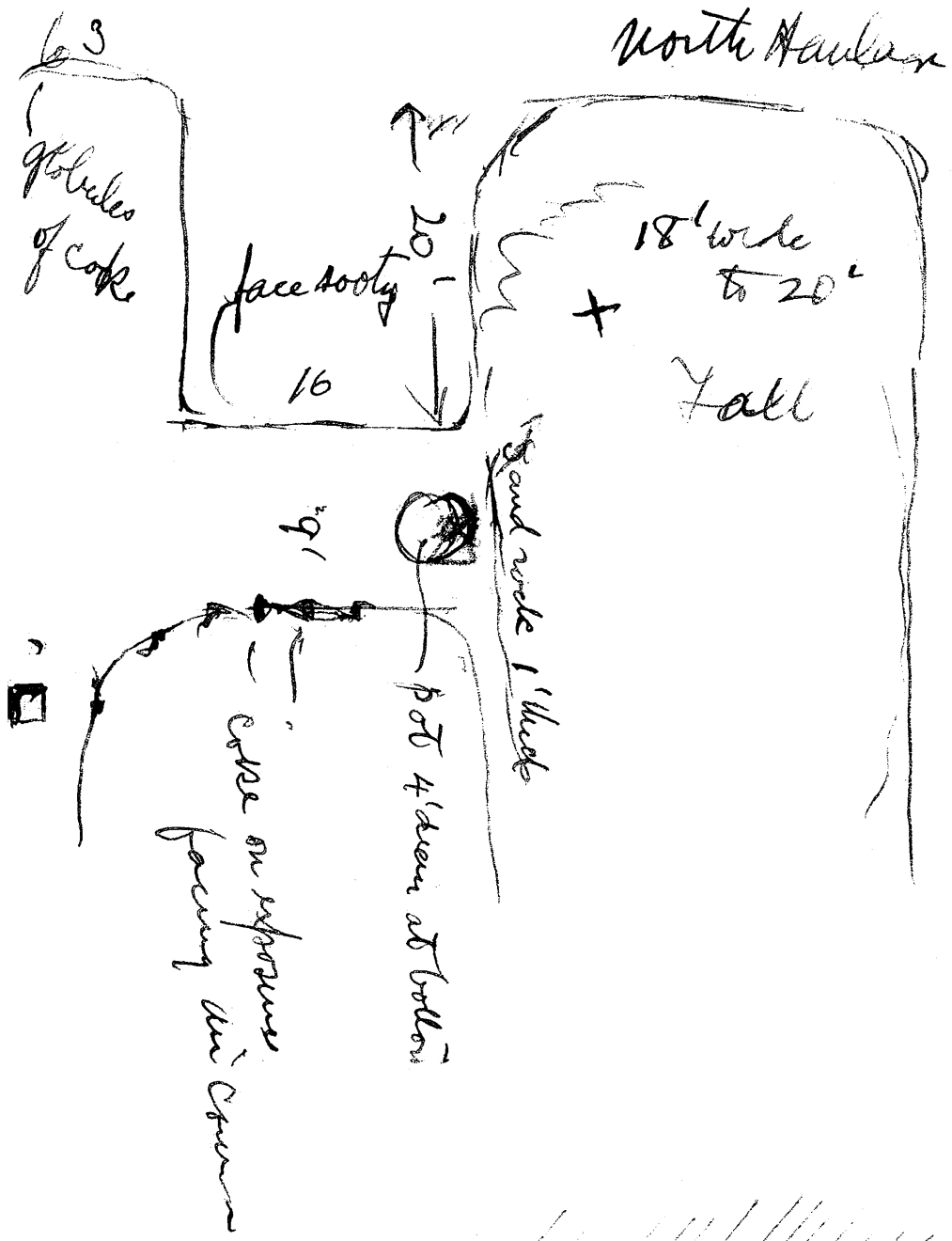
Face 40 to 50 feet from
front of fall -

Haulage tent to A.C.,
in line with North heading A.C.
Empty cans in tent show
some coke scale - Posts show
coke ~~black~~ thick, both ruby
& outby (influenced by N. air c.)
In 2' L air course which is

62) in beyond 2nd & cut
props all show heavy
coke mostly in byz, face
15 feet or so beyond last
open & cut, in latter much
coke on props,

10 feet back from face
of A.I. coke less, there
but last ports show
scattered and globules on
outbyz faces - Globules
adhering to roof -

Coal at face dropped
down on cutting in ore
mass, except fine coal
blown off top - Suggests the
lead wires this & cut may
~~must~~ have been ~~used~~ laid
preparatory to pulling in a
block shot -
no caps, but hushing at face



64

Man & two helpers found
at edge of fall

There was said to be a
brad car at face, now
covered by rock and
another car now visible
under edge of fall, just
nby haulage: 1 cut -

Prop at ^{man} corner of right side.
has coke strong, outbye
another prop. at outbye
corner has some coke nbye

There are 2 empties
~~on~~ breakthru ^{at top of track} show little
coke, Car under fall
shows coke nbye on ~~irons~~

Right air course Paul
noticed only dust on sub-
shop scaly. 1 prop, coke
outbye side. Face mined
~~dust~~ sh cuttings still there
no shot -

65

Heavy charred dust
at on ~~inby~~ side of ties, 10
to 15 feet inby break thro
Prop 25 feet inby ^{Cross cut} as stated
~~with~~ has coke outbye -

Carbon deposit thick over
gobs and ribs -

Mr. Jess says always bar
bug dust out before shooting
only 11 or 20 men did
them own shooting, the
rest fired by shot fire -
40 men final count

Have two tubs for bailing
at right ~~left~~ ^{left} & ~~cuts~~ ^{cuts} in heading

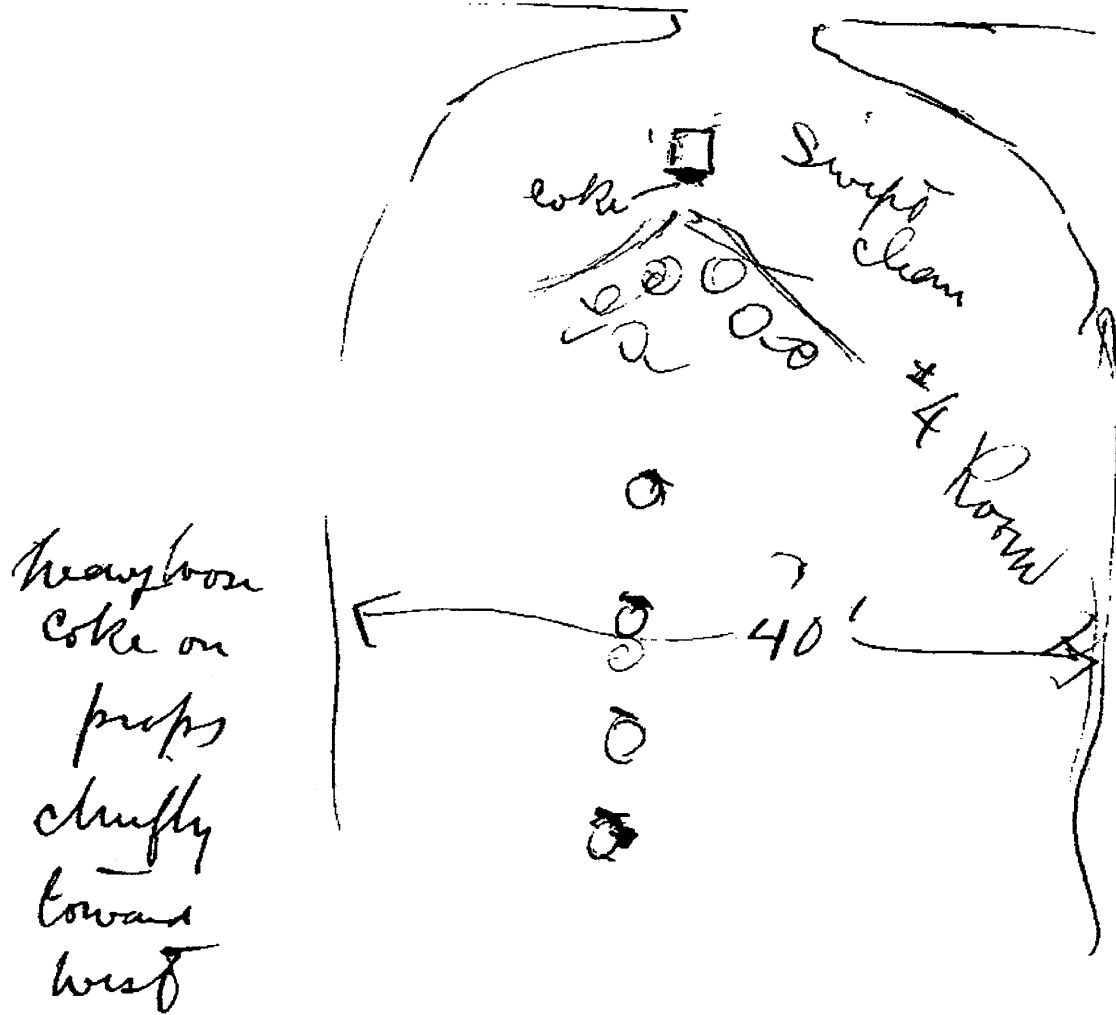
a prop at ~~two~~ outbye corner
of right cross cut - has coke
inby (facing face of heading)
On left rib corner into left
air course, small amount charred dust
facing inby

66 Dinner buckets ~~out~~ type
tool box on heading
~~also a~~ not disturbed
still have food in them
Over dinner buckets some
coats -

Fast sent back from haulage
on left, has a dirt stopping
which appears (partly) blown
from left air course to new
heading -

1st Right Heading
Entrances ~~to~~ curve, props
have coke both in by & out by
at intersection of air course
A post at left ^{much} coke
~~all a shuffly~~ all around
except north side
Props beyond cross cut a c
show coke variously
Heavy deposit of coke

1 R ac. No



The connection into No
2 ~~Shaft~~ - Room off Manway
Floor swept clean at
✓ the apparent direction of
wind from 1 Right - No
Coke or heat observed
in this room

✓ The First right, most
of coke on props is
mbye -

✓ Opposite an corner of
No 2 haulage - the
gob rib is lightly
packed with coal dust
and fragments of lumber
that evidently came east
on ac & thence current
passed this to Manway

Birmingham

STRICTLY FIREPROOF

69) First Right Air Course
HP

Last connection into R5
opposite this mud & wet
Coal thrown against opp ^(W) Rib =
✓ but in by opening, the face
is not plastered with mud
~~except~~ except bottom foot has
a little mud on same,

The two ~~rocks~~ next the face
were clean, then one mud
& wet coal very

One opp connection to R5
has wet coal in by

✓ In connection into ~~with~~
rocks off Manway the
wind movement was apparently
toward Manway -

**Maps
Not
Scanned**