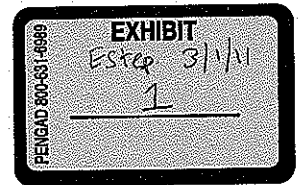




State of West Virginia
Earl Ray Tomblin, Governor

WV Office of Miners' Health, Safety & Training
C. A. Phillips, Acting Director
1615 Washington Street East • Charleston, West Virginia • 25311-2126
Telephone 304-558-1425 • Fax 304-558-1282
www.wvminesafety.org



IN THE MATTER OF:

**THE INVESTIGATION OF THE
APRIL 5, 2010 MINE EXPLOSION
AT UPPER BIG BRANCH MINE.**

SUBPOENA

TO: Tommy Estep

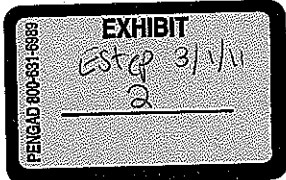
(b) (7)(C)

You are hereby **COMMANDED**, pursuant to W. Va. Code Section 22A-2-66(d), to appear and give testimony regarding the above referenced investigation on March 1, 2011 at 1:00 p.m. in classroom 121 at the Mine Academy located at 1301 Airport Road, Beaver, West Virginia 25813. The West Virginia Office of Miners' Health, Safety and Training, the Mine Safety and Health Administration, and the Governor's Independent Investigation Team will participate in the interview.

Given under my hand this 22nd day of February, 2011.

(b) (7)(C)

C.A. Phillips, Acting Director



STATE OF WEST VIRGINIA
Earl Ray Tomblin, Governor

WV Office of Miners' Health, Safety & Training
C.A. Phillips, Acting Director

AFFIDAVIT OF SERVICE

IN THE MATTER OF:

THE INVESTIGATION OF THE
APRIL 5, 2010 MINE EXPLOSION
AT UPPER BIG BRANCH MINE.

STATE OF WEST VIRGINIA,
COUNTY OF KANAWHA, to-wit:

I, Robert J. MacDonald, being first duly sworn, do testify and aver as follows:

1. That I am a credible person over the age of 21 years.
2. That on the 23rd day of February, 2011. I personally served (b) (7)(C) who is over the age of sixteen and resides with Tommy Estep, with a Subpoena at (b) (7)(C)

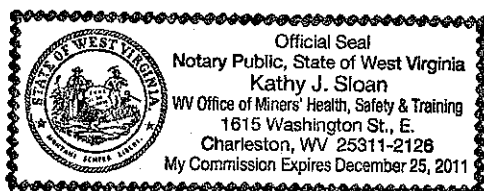
Further your affiant says not.

(b) (7)(C)

Robert J. MacDonald

Taken, subscribed and sworn to by Robert J. MacDonald, this the 25th day of February, 2011.

My commission expires: December 25, 2011



(b) (7)(C)

Longwall Production Report

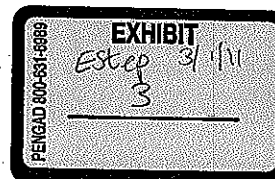
FOREMAN H Medley
Mnt. Foreman T Estep
SHIFT Eve
DATE 4-3-10
CREW C
Man-hours

AVG SEAM HGT
AVG COAL HGT
Chain Tension
FACE 11
GOB 9

Total

COAL SECTION

HEAD 44 SHIELD 88 SHIELD 132 SHIELD TAIL



SHEAR CUT OUT

HEAD TAIL
1/4 1/4
1/2 1/2
3/4 3/4
FULL FULL
CREEP

PASSES	START TIME	0	20	40	60	80	100	120	140	160	170	FINISH TIME	TOTAL TIME
8	4:28		34									5:28	60
1	5:32											6:41	69
1	6:46											8:00	74
4	8:05					98						8:50	45
3	8:55						119					9:15	20
1	9:20											10:18	58
2	10:22			34								10:50	28
4:7	TOTAL												354

TOTAL BELT DOWN TIME

TOTAL FT RETREAT (Passes x 3.6) 16.45
EQUIVALENT FT (Passes x 175) 822.5
CLEAN TONS (EQUIV. FT X 2.8) 230.3
RAW TONS (EQUIV. FT X 8) 6580
POWER TRAIN AT XCUT #
HEADGATE TIMBERS Good
INTAKE CRIBS Good
DESIGNATED SCALER (b) (7)(C)
RAW OIL LEVEL IN TANKER
HEAD START 54452
HEAD FINISH 54465
TAIL START 54446
TAIL FINISH 54469

SHEAR INSERTS
HEAD TAIL
SHEAR BITS
HEAD TAIL
TOTAL BITS 178
HEAD FT TOTAL 13
TAIL FT TOTAL 23

NEEDED SUPPLIES

BITS
INSERT
TIMBERS
CRIBS
WEDGES
1/2 HEADERS
320 OIL
460 OIL
TRANS FLUID
HYD. OIL
GREASE
OTHER

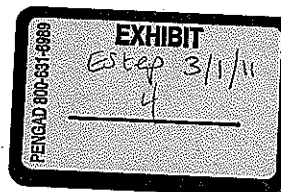
Delay Start	Delay Stop	Total Delay	Delay Description	Unit Code	Category Code	Comp. Code
3:05	3:10	5	switching rides			
3:35	3:45	10	safety meeting			
3:58	4:15	20	Bits & Service			
4:15	4:28	13	Getting Rock off HD	SHR	S	005
6:18	6:30	12	76 shield back of Ram Broke	HD	O	370
6:56	7:15	19	Bits	SH, D	M	330
8:30	8:40	10	Rock behind Shear	SHR	S	005
10:25	10:40	15	Head End Cutter shaft	SHR	C	370
10:50	11:04	14	Clean up & spot Chain	SHR	M	090
				LW	M	330
		118	TOTAL			

COMMENTS OR REMARKS

Note: Use another Prod. Report if additional lines are needed

Set Additional support & set up things outside

Unit Codes	Component Codes
ACT ACT	Bearing Down 001 Oil Pressure 310
BO Belts Outby	Belt/Remote 003 Oil Temperature 320
BR Breiby	Bits/Service 005 Other 330
CO Control	Bottom 010 Rack Wheel 340
CR Crusher	Breaker Knocked 015 Rang Arm Cyl. 350
FC Face Conveyor	Cable 020 Cut Chain Slack 360
GB Gate Box	Chain Broke 030 Rack 370
HD Head Drive	CIU 040 Safety Valve 380
KP Kamat Pump	Contractor 050 Sequence 385
LW Longwall	Coupling 060 Shear Pin 390
MB Mother Belt	Cowl 070 Shld - Shld Cbl 400
MR Monorail	Cutter Motor. 080 Shld - Shld Hose 410
C Other	Cut Torq Shft 090 SIM 420
PC LW Power CTR	End of Limit 100 Splice 425
SHD Shields	Fall To Extend 110 Sprocket 430
SHR Shearer	Fall 120 Top 440
SL Stage loader	Final Drive 130 Unplenn Retract 440
ST 4160v Starter	Flooded 135 VFD 460
SU Storage Unit	Fouled 140
TD Tail Drive	Gob Off 150
TP Tail Piece	Ground Fault 160
WP Water Pump	Grd Mon Fit 170
Category Code	Haul Torq Shft 180
C Cutting	Hose Blown 190
D Drill / Shoot	JNA 200
E Electrical	Lights 210
H Hydraulic	Line Fault 220
M Mechanical	Lock Out 230
O Other	Low Emulsion 240
P Power Outby	Low Raw Oil 250
R Push/Move	Methane Mon 260
S PM Service	Meth Mon Cbl 270
T Escapeway	Motor Down 280
V Ventilation	No 12470 290
W Water	No 4160 295
Z PM	No PLC Comm. 300



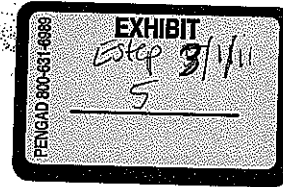
Performance
UBB Longwall
Saturday, 4/3/2010
B Crew, Shift Chief

Equipment	Job Description	Estimated Time	Comments/Initials
Face Conveyor	Utilize the bretby gauge to check the bretby trough to insure bretby will clear. If not wide enough, repair and record locations where repairs were made.		(b) (7)(C)
	Hang gauge at #5 shield when complete. (On-Shift)	20 minutes	OK
	Check slim line in cable handler, especially near couplings looking for fatigue do to movement, replace as needed. (On-Shift)	20 minutes	OK
	Did you put ACT in manual mode on your shift _____, if so explain why. Did you put yellow handle detent valve in and set to 1500 PSI? (On-Shift)	5 minutes	
General Longwall	Check oxygen and acetylene tanks. Record the number of empty oxygen tanks _____, full oxygen tanks _____, empty acetylene tanks _____, full acetylene tanks _____ (On-Shift)	10 minutes	OK
Monorail	Check cooling water manifold board confirm all flows are at least 8 gallons per minute, head#1, head#2, tail, crusher, stageloader #1 and stageloader #2 (On-Shift)	5 minutes	OK
	Check push-pull for leaks, repair as needed (On-Shift)	5 minutes	OK
Power Center	Verify that chirp alert is working at power center and splice box (On-Shift)	5 minutes	OK
Raw Oil Tanker	Check oil level and record inches of oil, _____ inches, record name of foreman notified if less than 12 inches of raw oil in tanker, _____ name (On-Shift)	5 minutes	
Shearer	Check cowl blade bolts, replace if more than one is missing (Pre-shift)	5 minutes	head end cowl broke

Shearer

changed cowl shaft on head end
 head end cowl needs changed out, tail end cowl slipping
 last section a little early to get everything locked
 up outside for holiday, water turned off at mouth
 of section

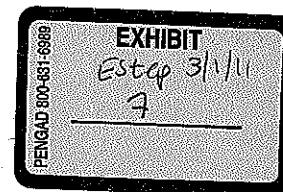
Performance
UBB Longwall
Monday, 3/1/2010
B Crew, Shift Chief



Equipment	Job Description	Estimated Time	Comments/Initials
Face Conveyor	Utilize the bretby gauge to check the bretby trough to insure bretby will clear. If not wide enough, repair and record locations where repairs were made.		
	Hang gauge at #5 shield when complete. (On-Shift)	20 minutes	(b) (7)(C) <i>OK</i>
	Check slim line in cable handler, especially near couplings looking for fatigue do to movement, replace as needed. (On-Shift)	20 minutes	<i>OK</i>
	Did you put ACT in manual mode on your shift _____, if so explain why. Did you put yellow handle detent valve in and set to 1500 PSI? (On-Shift)	5 minutes	
General Longwall	Check oxygen and acetylene tanks. Record the number of empty oxygen tanks <u>1</u> , full oxygen tanks <u>3</u> , empty acetylene tanks <u>2</u> , full acetylene tanks <u>3</u> (On-Shift)	10 minutes	(b) (7)(C) <i>OK</i>
Monorail	Check cooling water manifold board confirm all flows are at least 8 gallons per minute, head#1, head#2, tail, crusher, stageloader #1 and stageloader #2 (On-Shift)	5 minutes	<i>OK</i>
	Check push-pull for leaks, repair as needed (On-Shift)	5 minutes	<i>OK</i>
Power Center	Verify that chirp alert is working at power center and splice box (On-Shift)	5 minutes	<i>OK</i>
Raw Oil Tanker	Check oil level and record inches of oil, <u>24</u> inches, record name of foreman notified if less than 12 inches of raw oil in tanker, _____ name (On-Shift)	5 minutes	<i>OK</i>
Shearer	Check cowl blade bolts, replace if more than one is missing (Pre-shift)	5 minutes	<i>OK</i>

Added 5 gal oil to T/E ranging Arm

Had no water on either drum, cleaned several and stopped right back up, removed 8 on each end, ~~ran~~ like that rest of shift to try and flush drums, told 3rd shift



29-Mar-10

UBB LONGWALL 30 MINUTE REPORT

7:30
.2 passes
no downtime
shearer at 115
running

8:00
.8 passes
no downtime
shearer at 40
going to head
15 fpm
running

8:30
.8 PASSES
NO DOWNTIME
SHEARER ON HEAD
12 FPM
GOING DOWN AFTER SHUFFLE
TO BIT
RUNNING

9:00
.8 PASSES
19M-BITS & SERVICE
19M-REPLACE SHEARER
E-STOP
SHEARER ON HEAD
DOWN
EST 9:30

9:30
9 PASSES
25M-REPLACE E-STOP
SHEARER AT 15 GOING TO TAIL
19 FPM
RUNNING

10:00
1.4 PASSES
NO DOWNTIME
SHEARER AT 115
GOING TO TAIL
20 FPM
RUNNING

10:30
1.8 PASSES
NO DOWNTIME
SHEARER ON TAIL
12 FPM
RUNNING

11:00
1.8 PASSES
28M-HOSE ON 126 SHIELD
REPLACED
SHEARER ON TAIL
RUNNING

11:30
1.8
27M-CUTTING BOTTOM ON TAIL
GOING TO HEAD
SHEARER ON TAIL
RUNNING

12:00
1.9 PASSES
25M-BITS
SHEARER AT 160
GOING TO HEAD
18 FPM
RUNNING

12:30
2.2 PASSES
NO DOWNTIME
SHEARER AT 125
GOING TO HEAD
7 FPM
RUNNING

1:00
2.6 PASSES
NO DOWNTIME
SHEARER AT 70
GOING TO HEAD
12 FPM
RUNNING

1:30
2.8 PASSES
5M-BITS
EST 1:45
SHEARER ON HEAD
16 FPM
DOWN

2:00
3.2 PASSES
NO DOWNTIME
SHEARER AT 80
GOING TO TAIL
16 FPM
RUNNING

2:30
3.6 PASSES
10-BRETRY GOB OUT
SHEARER AT 145
GOING TO TAIL
20 FPM
RUNNING

3:00
3.8 PASSES
10M-ELLIS 2
SKIRTBOARD IN ROCKBOX
EST 3:10
SHEARER CUT OUT ON TAIL
10 FPM
DOWN

3:30
3.8 PASSES
29M-ELLIS 2
SKIRTBOARD IN ROCKBOX
SHEARER CUT OUT ON TAIL
RUNNING

FINAL
4 PASSES

Final Report
Head Start: 52 + 98
Head Finish: 53 + 11
Tail Start: 52 + 88
Tail Finish: 53 + 02

CONFIDENTIAL

PCC-MSHA00070362

Longwall Production Report

1. FOREMAN H. Medley
 2. 1st PRIMER T. E. Simpson
 3. CHIEF Day
 4. DATE 3-29-10
 5. CREW C
 6. Remarks

AVG SEAM HGT _____
 AVG DOWL HGT _____
 Chain Tension _____
 FACE 14
 GOR 11

	HEAD	#1 SHIELD	#8 SHIELD	#72 SHIELD	TAL.
Total					

Depart Postal	6:00
Arrive Section	6:30
Start Production	6:54
End Production	3:53
Depart Section	4:10
Arrive Outside	4:45
Travel In	30
Travel Out	35

SHEAR CUT OUT	
HEAD	TAIL
1/4	1/4
1/2	1/2
3/4	3/4
FULL	FULL
CREEP	

START												FINISH		TOTAL	
PASSES	TIME	0	10	20	30	40	50	60	70	80	90	TIME	TIME		
8	6:56	←										1150	8:09	73	
1	8:18	←										→	10:25	127	
1	10:54	←											13:45	111	
1	12:50	←										→	2:55	125	
2	3:35	←										←	3:52	17	

TOTAL BELT DOWN TRK:	<u>32</u>	
TOTAL FT RE/REAR (PASSER X 8.6)	<u>14</u>	
EQUIVALENT IT (PASSER X 175)	<u>700</u>	
CLEAN TONS (EQUIV. FT X 2.1)	<u>1960</u>	
RAW TONS (EQUIV. FT X 8)	<u>5600</u>	
POWER TRAIN AT SCUT R		
HEADGATE TIMBERS	<u>Good</u>	
INTAKE CHIBS	<u>Good</u>	
DESIGNATED SCALER		(b) (7)(C)
RAW OIL LEVEL IN TANKER		
HEAD START	<u>52+96</u>	TOTAL
HEAD FINISH	<u>53+11</u>	HEAD FT TOTAL
TAIL START	<u>52+58</u>	TAIL FT TOTAL
TAIL FINISH	<u>53+02</u>	

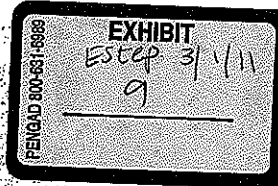
SHEAR INSERTS	
HEAD	TAIL
<u>1</u>	<u>-</u>
SHEAR BITS	
HEAD	TAIL
<u>48</u>	<u>6</u>
<u>19</u>	<u>45</u>
<u>30</u>	<u>24</u>
<u>AL BITS 172</u>	
<u>15</u>	
<u>14</u>	

NEEDED SUPPLIES

BITS
INSERT
TIMBERS
CRIBS
WEDGES
1/2 HEADERS
320 OIL
460 OIL
TRANS FLUID
HYD. OIL
GREASE
OTHER _____

Day	Start	Total	Delay Description	Code	Unit	Time
Start	Stop	Delay				
6:30	6:40	10	Safety meeting	O	O	330
6:56	7:04	8	Bretby-out of Trough	BR	O	330
8:28	8:47	19	Bit & Service	SHR	S	005
8:47	9:30	43	Shear E Stop switch	SHR	E	31.2
10:25	10:38	13	126 shield blown hose	SHD	M	19.2
11:15	11:37	22	Bits	SHR	S	005
12:05	12:20	15	Rock behind shear	SHR	C	370
1:07	1:37	30	Bits	SHR	S	005
2:10	2:20	10	Bretby Curb out	BR	O	180
2:55	3:27	32	Elliot #2 Sld Board in Rock box	BO	M	150
4:00	4:49	49	Trimming Bottom	SHR	C	0.0

UNIT COSTS		UNIT COSTS	
ACI	ACT	Bearing Drain	001 Oil Pressure
BO	Bells Only	Bell Remote	002 Oil Temperature
BR	Bulby	Blw/Servico	003 Other
CO	Control	Bottom	010 Rack Wheel
CR	Cushion	Breaker Knocked	015 Rang Arm Cyl.
FC	Face Conveyor	Callie	020 Oil Chain Slack
GB	Gate Box	Chain Brake	030 Rock
HD	Head Drive	CU	040 Safety Valve
KP	Kernal Pump	Concator	050 Sequence
LIV	Louvers	Coupling	060 Shear Pin
MB	Motor Bell	Owin	070 Solid - Rld Cbl
MR	Moswell	Outer Motor	080 Solid - Rld Hose
O	Other	Out Torq Shd	090 Sld
PC	PL Power CTR	End of Limit	100 Splice
SRD	Sensors	Fcl To Extend	110 Sprndel
SHR	Shower	Fell	120 Top
S	Slage loader	Final Drive	130 Unlatch Hyster
ST	Stab. Slane	Flashed	135 VFD
SU	Storage Unit	Flashed	140
TD	Tail Drive	Gob Oil	150
TP	Tail Piece	Ground Fault	160
WIP	Water Pump	Grd Wrt. Fa.	170
Extension Costs		Head Torq. Sld	180
C	Culling	Hoer Flamp	190
E	Ent. Circuit	Int.	200
W	Welding	Light	210
S	Welding	Light	220



Performance
UBB Longwall
Wednesday, 1/20/2010
B Crew, Shift Chief

Equipment	Job Description	Estimated Time	Comments/Initials
Face Conveyor	Utilize the bretby gauge to check the bretby trough to insure bretby will clear. If not wide enough, repair and record locations where repairs were made.		(b) (7)(C)
	Hang gauge at #5 shield when complete. (On-Shift)	20 minutes	OK
	Check slim line in cable handler, especially near couplings looking for fatigue do to movement, replace as needed. (On-Shift)	20 minutes	replaced first 50 ft (b) (7)(C)
	Did you put ACT in manual mode on your shift _____, if so explain why. Did you put yellow handle detent valve in and set to 1500 PSI? (On-Shift)	5 minutes	
General Longwall	Check oxygen and acetylene tanks. Record the number of empty oxygen tanks <u>1</u> , full oxygen tanks <u>2</u> , empty acetylene tanks <u>2</u> , full acetylene tanks <u>2</u> (On-Shift)	10 minutes	OK (b) (7)(C)
Monorail	Check cooling water manifold board confirm all flows are at least 8 gallons per minute, head#1, head#2, tail, crusher, stageloader #1 and stageloader #2 (On-Shift)	5 minutes	OK (b) (7)(C)
	Check push-pull for leaks, repair as needed (On-Shift)	5 minutes	OK
Power Center	Verify that chirp alert is working at power center and splice box (On-Shift)	5 minutes	OK
Raw Oil Tanker	Check oil level and record inches of oil, <u>22</u> inches, record name of foreman notified if less than 12 inches of raw oil in tanker, _____ name (On-Shift)	5 minutes	OK
Longwall Scoop	Complete permissability examination on scoop and record in examination book. (On-Shift)	30 minutes	

Performance
UBB Longwall
Wednesday, 1/20/2010
B Crew, Shift Chief

Equipment	Job Description	Estimated Time	Comments/Initials
Longwall Scoop	Complete weekly electrical examination on scoop charger and record in examination book. (On-Shift)	30 minutes	(b) (7)(C)
Shearer	Check cowl blade bolts, replace if more than one is missing (Pre-shift)	5 minutes	<i>[Signature]</i>
	Check ranging arm covers, replace missing covers. (On-Shift)	5 minutes	<i>[Signature]</i>
Sunflow High Pressure Water Pumps	Verify that both UVR ready lights are on; if not determine why. (On-Shift)	5 minutes	<i>[Signature]</i>
Water Stations	Check for water leaks. (On-Shift)	5 minutes	<i>[Signature]</i>

Reviewing Manager: *[Signature]*

replaced ram in 35 shield
replaced last 50 ft of water line in britbox
Also ~~loosened~~ loosened clamp and pulled slack
out of shear cable, put all caps back on.

day shift needs to take in new terminator
for gate box to have an extra to
trouble shoot, needed it last night
was not one there.

Longwall Production Report

FOREMAN H Medley
Mnt. Foreman T Estep
SHIFT EvP
DATE 4-2-10
CREW C
Man-hours

AVG SEAM HGT
AVG COAL HGT
Chain Tension
FACE 13
GOB 13

Total

COAL SECTION

HEAD 44 SHIELD 88 SHIELD 132 SHIELD TAIL

Depart Portal 3:00
Arrive Section 3:30
Start Production 3:50
End Production 12:55
Depart Section 1:15
Arrive Outside 1:45
Travel in 30
Travel Out 30

SHEAR CUT OUT

HEAD TAIL
1/4 1/4
1/2 1/2
3/4 3/4
FULL FULL
CREEP

NEEDED SUPPLIES

BITS
INSERT
TIMBERS
CRIBS
WEDGES
1/2 HEADERS
320 OIL
460 OIL
TRANS FLUID
HYD. OIL
GREASE
OTHER

PASSES	START TIME	0	20	40	60	80	100	120	140	160	170	FINISH TIME	TOTAL TIME
1.3	3:50											4:10	20
1	4:15											5:45	90
1	5:51											9:33	222
1	9:38											11:30	112
1	11:34											12:55	81
4.3	TOTAL												525

TOTAL BELT DOWN TIME 137
TOTAL FT RETREAT (Passes x 3.5) 15.05
EQUIVALENT FT (Passes x 175) 952.3
CLEAN TONS (EQUIV. FT X 2.8) 2107
RAW TONS (EQUIV. FT X 8) 6020
POWER TRAIN AT XCUT #
HEADGATE TIMBERS Good
INTAKE CRIBS Good
DESIGNATED SCALER (b) (7)(C)
RAW OIL LEVEL IN TANKER
HEAD START 54426
HEAD FINISH 54412
TAIL START 54409
TAIL FINISH 54423

SHEAR INSERTS
HEAD TAIL
SHEAR BITS
HEAD TAIL
TOTAL BITS 168
HEAD FT TOTAL 16
TAIL FT TOTAL 14

Delay Start	Delay Stop	Total Delay	Delay Description	Unit Code	Category Code	Comp. Code
3:30	3:40	10	Safety meeting			
4:26	4:50	24	Bit & Service			
5:53	8:10	137	5 North overspeed & Blow plugs	SHR	S	005
9:49	10:40	51	Bits and replacing covert waterspray	SHR	S/M	005/330
12:00	12:15	15	Tram shaft tail end	SHR	M	180
Thru Shift		35	Trimming Bottom	SHR	C	010
		272	TOTAL			

COMMENTS OR REMARKS

Notal Use another Prod. Report if additional lines are needed

Unit Codes	Component Codes
AC1 AC1	Bearing Down 001 Oil Pressure 310
BO Belts Outby	Belt/Remote 003 Oil Temperature 320
BR Bretby	Blts/Service 005 Other 330
CC Control	Bottom 010 Rack Wheel 340
CR Crusher	Breaker Knocked 015 Rang Arm Cyl. 350
FC Face Conveyor	Cable 020 Cut Chain Slack 360
GB Gate Box	Chain Broke 030 Rock 370
HD Head Drive	CIU 040 Safety Valve 380
KP Kamal Pump	Contactor 050 Sequence 385
LW Longwell	Coupling 060 Shear Pin 390
MB Mother Belt	Cowl 070 Shld - Shld Cbl. 400
MR Monorail	Cutter Motor 080 Shld - Shld Hose 410
O Other	Cut Torq Shft 090 SIM 420
PC LW Power CTR	End of Limit 100 Splice 425
SRD Shields	Fail To Extend 110 Sprocket 430
SHR Shearer	Fall 120 Top 440
SL Stage loader	Final Drive 130 Unplann Retract 440
ST 4180v Starter	Flooded 135 VFD 450
SU Storage Unit	Fouled 140
TD Tail Drive	Gob Off 150
TP Tail Piece	Ground Fault 160
WP Water Pump	Grd Mon Flt 170
Category Code	Haul Torq Shft 180
C Cutting	Hose Blown 190
D Drill / Shoot	JNA 200
E Electrical	Lights 210
H Hydraulic	Line Fault 220
M Mechanical	Lock Out 230
O Other	Low Emulsion 240
P Power Outby	Low Raw Oil 250
R Push/Move	Methane Mon 260
S PM Service	Meth Mon Cbl 270
T Escapeway	Motor Down 280
V Ventilation	No 12470 290
W Water	No 4180 295
Z PM	No PLC Comm 300