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BELT CONDITION MONITORING

XXX COAL MINE

XYZ1 CONVEYOR

20 MARCH 2010

REPORT REFERENCE: CW1000

PREVIOUS REPORT: CW0900 dd August 2009

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1. Recommendations and Findings

1.1 Recommendations

It is recommended that the following action be initiated on this conveyor. The number assigned to any recommendation is an indication of its priority. No. 1 assumes highest priority.

1. Remove the belt section from splice 6, (RTT22730), through to splice 8, (RTT28308) – 471 meters in total; this section has 12 significantly large events, mostly having over 30 %f the belt width with damaged or broken cords.

2. Remove the belt section from splice 10, (RTT26092), through to splice 11, (RTT26063) – 90 meters in total; this section has 4 significantly large events, mostly having over 20 %f the belt width with damaged or broken cords.

3. Remove Event 8 – 30 % of the belt width has broken or damaged cords.

4. Inspect event 9 for damage – 13 meters from splice 22 towards splice 23. If cords are exposed, repair as necessary.

5. Rescan the belt after a further 6 to 12 months of normal operation.

1.2 Summary of Findings

Belt Condition

There are 7 large events of damage identified in the belt where more than 20 % of the full belt width has broken or damaged cords.

The largest event had damage involving 40 % of the full belt width

All these events, except event 8, occur in two belt sections. These sections have been recommended for removal.

Other than these two sections, and after removal of event 8, the belting is in good condition.

There is only minor damage restricted to less than 10 % of the full belt width.

Splice Condition

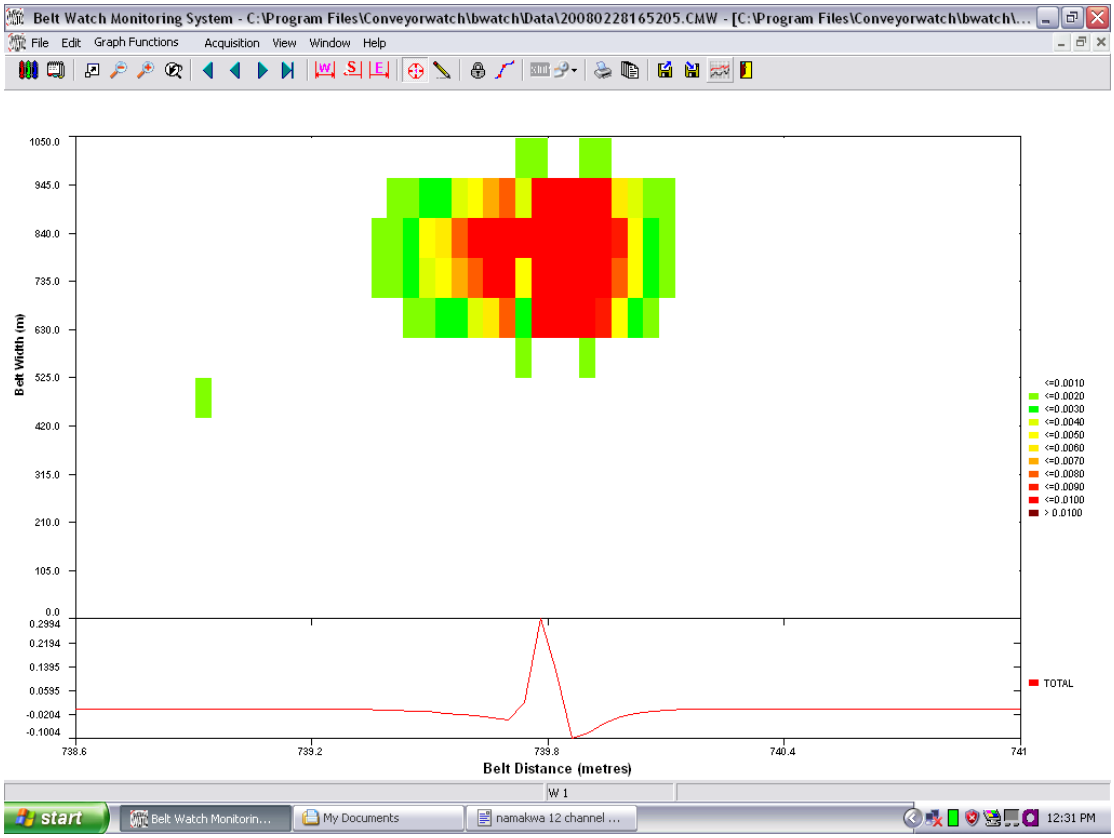
All the splice magnetic signatures show normal patterns except splices 7 and 11, which are recommended for removal – this will occur by removing the two belt sections as recommended above.

Cover Condition

Both the top and bottom covers appear to be in good condition with minimal wear evident.

1.3 Events inspected by Conveyor Watch Personnel

Event	Location	Findings
1	43 m from splice 10, (RTT26092) towards splice 11 (RTT26063)	**31 %** of the belt width has damaged cords, on the left edge. No cords are exposed. There are noticeable bumps visible on the covers. **This event is recommended for removal**



Event 1 - Magnetic Trace

2. Technical Specification

2.1 General Information

Client	XXX
Order Number	B54175
Location of Belt	Plant
Belt Identification	Trunk Conveyor
Client's Contact	Piet
CW Scanner	Glenn Williams
CW Data Analyst	Athol Surtees

2.2 Conveyor Details

Product	Sand
Manriding	No
Belt Turnover	No
Tramp Metal Detector	No
Tramp Metal Extractor	No
Conveyor Profile	Gradual Incline
Other Details	

2.3 Belt Specifications

Supplier		
Date of Commissioning		
Belt Rating	St 1250 ? St 800?	kN/m
Belt Width	1050	mm
Belt Length	5719	m
Belt Speed	4,63	m/s
Belt Cycle Time	21 min, 53 sec empty.	
Carry Cover Thickness		mm
Pulley Cover Thickness		mm
Breaker/Lateral Members		
Weight of Belting		kg/m
Number of Splices	23	
Splice Make-up	Single	Stage
Rip Detection Loops		
Number of Loops		

2.4 Splice Identification and Belt Section Lengths

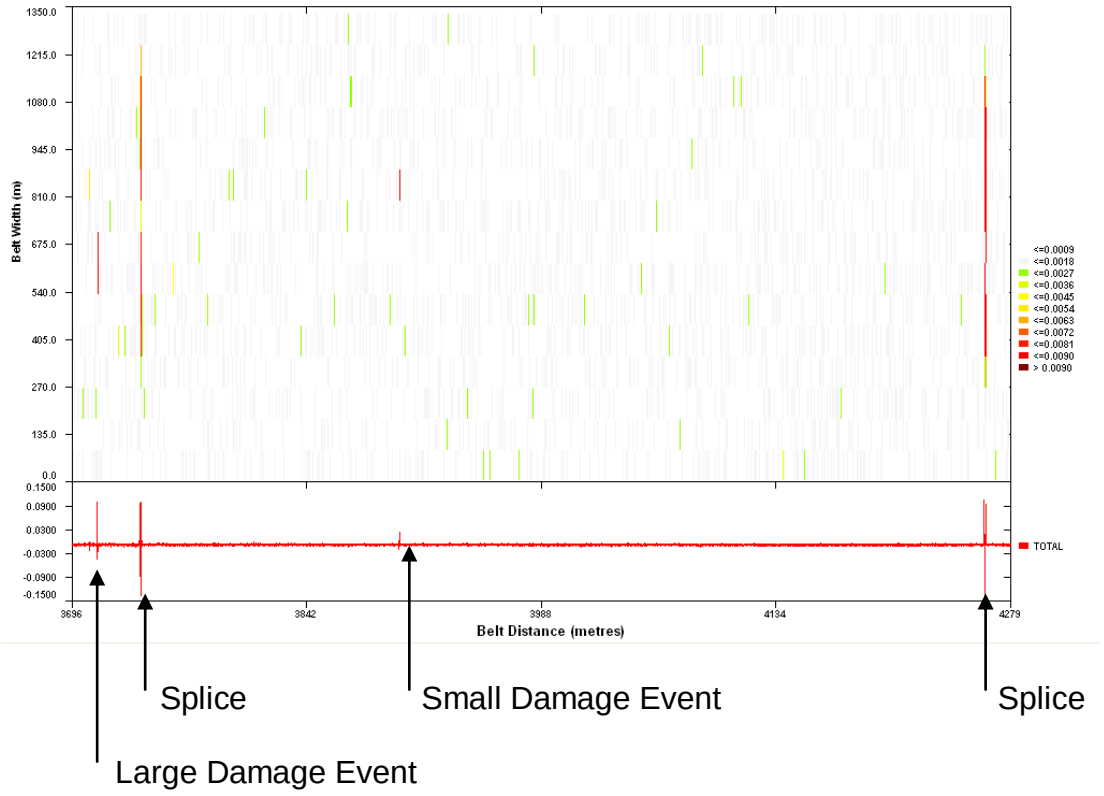
The following table shows the approximate lengths for each of the belt sections and the splice identification.

Please note that the section measurements include the half a length of splice at both ends.

From Splice No.	Splice Reference	To Splice No.	Section Length (m)	Condition/ Comments
1		2	464	
2		3	466	
3		4	472	
4	RTT19716	5	472	
5	RTT19715	6	440	
6	RTT22730	7	266	Remove
7	RTT9606	8	205	Remove
8	RTT28308	9	325	
9	RTT28093	10	23	
10	RTT26092	11	87	Ev1, Remove
11	RTT26063	12	324	
12		15	328	
15		16	329	
16		17	399	
17		18	8	
18		19	117	
19		20	36	
20		21	20	
21		22	50	
22		23	60	
23		24	6	
24		25	444	
25		1	469	

3. Cords - Interpretation of Data from the Break Traces, Splice Reference Locations and Schematic of Mayor Damage Events

The transients in the traces coincide with cord ends and cord breaks. This effect is easily seen at splice locations, where many cord ends are present. The presence of low-amplitude, high-density transients in the data indicates corrosion in the cords.
During scanning, the belt is divided into 15 segments across its width. The left and right sides of the belt are identified by facing the direction of product travel.



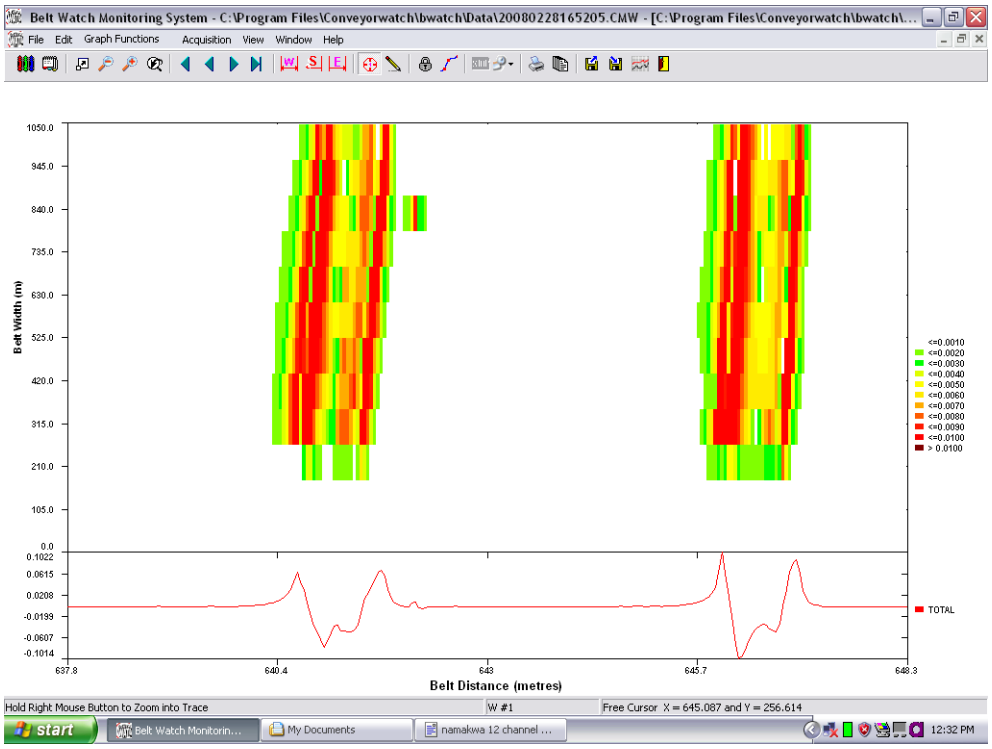
Typical trace of 600 metres of belting showing 2 splices and 2 damage events, one small and one large.

5. Splices

5.1 Interpretation of Splice Signature

The traces in this section of the report show the magnetic signature of the cord ends comprising a splice in the belt. The shape of these traces indicates the lay-up or type of splice construction such as Stage One or Stage Two. Magnetic signatures are filed and form a reference for future scans. Changes in these signatures are related to cord movement and precede splice failure. Please note that this instrument is not able to assess cord-cover adhesion or cord-cord pullout strength directly.
The following traces show typical signatures for splices laid-up in strict accordance with belt manufacturer's specifications.

5.2 Splice Evaluation



Typical example of 2 good single stage splices with some damage downstream of splice 1.