Conveyor Condition Report

EXCERPTS FROM SAMPLE REPORTS

A full Conveyor Condition Report is much more extensive and lengthy.
**24” Conveyor C4**

Belt Width: 24”  
Design Capacity: 160 tph  
Belt Speed: 140 fpm  
Material Size: #4 mesh minus

Spillage and airborne dust along the entire length of this conveyor is excessive and is a huge housekeeping and safety issue. There is no chute wall system or belt seal. For proper material and dust containment, a new chute wall system with proper belt support and belt seals is recommended for the entire length of this conveyor. The load chute has sledge hammer marks which is evidence of chute pluggage. The chute slope is not adequate for proper material flow. At a minimum a vibrator should be added for proper material flow. A new feed chute with steeper slopes may also be necessary.

A full length chute wall system with belt supports and seals is needed.

The tail pulley guard has been removed, but it is not within OSHA guidelines. A new tail pulley guard is needed for worker safety.
Tail pulley guard removed, and not OSHA compliant.

There is a Martin primary QC1 standard belt cleaner on the head pulley. It appears to be in good condition and with proper maintenance, will be effective at cleaning the belt. A Martin 9x12 CYA door is needed for maintenance access. If space allows a secondary belt cleaner is recommended. A Martin brush cleaner is planned to be installed in the future.

**General Comments**

From my observations during my site survey, there is much need for improvement on the entire conveyor system. With no material containment or belt seal on most of the conveyors material spillage and airborne dust is a major issue. This causes a problem with housekeeping and is detrimental to plant personnel safety. Even with the dust collection systems in operating condition, a containment system and belt seal is critical to contain the air and dust that is carried with it. The dust collectors will work much more effectively once the material and airborne dust is contained. This will greatly decrease the amount of housekeeping that is required and will create a safer environment for plant personnel.

The belt speeds and design capacities of the conveyors is not consistent throughout the system. At a minimum, the belts farthest downstream should be able to handle the capacity of material they are being fed. This problem is currently being resolved by
Conveyor 61118

This is a short Belt Feeder with 42” Picking Idlers. Side rolls have been added to help control the belt from walking. Due to the shortness of this conveyor, I’d probably lean toward Trac-Mount Picking Idlers on 9” to 10” Centers to get better belt support as opposed to an Impact Cradle. If there is enough horse power on the drive, we could incorporate both. I also recommend adding EVO External Wearliner, Apron Seal Skirting and Clamps and a new Tail Box/Tail Seal.

We might want to consider a Return Tracker Trainer to assist with belt tracking.

At the head, the HD QC1 was flipped through and the picture below seems to suggest that the back of the blade had been rubbing against the belt. I didn’t stretch a tape on the shaft, but any time a cleaner flips through, I’m suspicious that the cleaner is mounted too far from the belt.

The QC2 appears to be at the correct angle from the picture.

The back of the HD QC1 looks like it's been worn from rubbing against the belt
The last belts I inspected were the quarry belts, starting with the Track Impact Crusher through to where the 21101 is loaded. All of these belts can use upgrades. The Metso Loko-Track Conveyors have very complicated and maintenance unfriendly Load Zones. To change skirts, it is a minimum of an 8 hour down day.

The Loko-Track Load Zones are going to require a lot more time and study than I was able to devote to it.

The conveyors that are fed by the Loko-Tracks need to also have the Load Zones re-designed. They have a 48” wide Hopper that feeds a 42” wide belt. This makes it close to impossible to properly seal the conveyor. At the head section, there is no walkway to service cleaners, if there were cleaners.

These conveyors ARE portable conveyors and portable conveyors are not typically designed with much thought given to Belt Cleaning, Belt Sealing or Spillage Control. Improvements can be made, but it will be up to GCC to determine where the urgency lies and I suspect that the urgency is in the plant as long as the quarry belts have good availability.

**SUMMARY**

We’ll put together some kind of upgrade program to systematically convert the QC2 Cleaners to the new SQC2S Cleaners. Many of the QC2 Cleaners are in need of new cartridges or other maintenance anyway.

In addition to 13304, 61110 and 61118 that are being studied and have had proposals submitted on, here are a few other conveyors to consider having proposals prepared on. From worse case to not as bad, I'd prioritize 31124 first, 21301 second, 31122 third, 13112 fourth and 13103 fifth. We at Martin Engineering can collect the additional information needed and begin work on upgrade proposals at GCC Cement’s direction.

Overall, it is obvious that GCC personnel pay attention to the conveyors and are good about inspecting and adjusting the HD QC1 Pre-Cleaners throughout the plant. The Richwood Impact Cradles are evidence that the plant is always looking to make improvements.
The load zone on this conveyor is totally exposed and very little has been done to contain the dust and material spillage as evidenced on the ground. Installing wear liners, belt support, and a self adjusting skirt board system will substantially reduce the issues you see on the ground.

The conveyor belt walks and the picture above shows how the skirting has slipped over the side and cannot resume its proper position on top of the belt. The solution is to install a tracking device that will keep the conveyor belt centered on the return run and eliminate the possibility of this situation occurring.
The chute wall is missing the inside wear liner and the skirting is being asked to contain material as well as dust. The lack of free belt restricts the use of an outside wear liner but installing an inside liner along with a self-adjusting skirt board system will reduce your issues with dust and spillage. Adding in a sweep at the end would help to contain airborne dust particles created with loading.

The lack of belt support in the load zones is creating the potential for fugitive dust as well as material spillage on the structure as well as the floor.
Martin Engineering offers a comprehensive selection of in-plant services, all focused on improving the handling of bulk materials. These specialized capabilities will improve the safety and productivity of an operation straight to the bottom line.

**MARTINPLUS® FIELD SERVICES**

New construction or retrofit, from belt cleaners to engineered belt-to-belt transfers, MartinPLUS® Installation Services handles the installation of material handling systems and components. Focus and experience with material handling systems makes certain project completion is on-time, on-spec and on budget.

**MARTINPLUS® INSTALLATION SERVICES**

MartinPLUS® Specialized Maintenance Team will take ownership for the maintenance of your belt conveyors and other systems, with standard packages and customization opportunities to meet your requirements.

**MARTINPLUS® SPECIALIZED MAINTENANCE SERVICES**

From material analysis to silo cleaning, MartinPLUS® offers advanced services that can take your operation to the next level. MartinPLUS® Process Improvement Services looks for the opportunities that will make a critical difference in your plant's performance and profitability.

**MARTINPLUS® PROCESS IMPROVEMENT SERVICES**