

May 31, 2021

IFF

Subject: May MSP/MS2P vibration report

Most of the machines surveyed were found to be in good condition with the exception of the following:

QualiTest® uses a four step rating system for defects.

<u>Class I:</u> Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

<u>Class II</u>: Defect (s) present that may cause problem in long term (2-6 months.). Repair during normal maintenance scheduling. Continue to monitor.

<u>Class III</u>: Defect (s) present that may cause failure in short term (less than 2 months.). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

<u>Class IV;</u> Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

Hi-Speed Industrial Service tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

This completes our assessment of your equipment for this survey. Thank you for your business and feel free to call if you have any comments or questions.

Sincerely, David W Shook

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MS2P WET

2P 3246 C-30 #1

Motor has a large jump in axial vibration at shaft speed. Inspect the unit. Check for drive train issues as well as structures and fasteners. **Rated a Class III Defect.**

2P 3266 C-30 #3

Motor has an increase in axial vibration at shaft speed. Inspect the unit. Check for drive train issues as well as structures and fasteners. **Rated a Class II Defect.**

2P 4085 SHARPLES #1

The centrifuge input bearing data shows a dominant shaft speed vibration. Flush and inspect as time allows. **Rated a Class I Defect.**

2P 3304 SHARPLES #2

The highest vibration in the unit is at or near 1"/sec velocity peak at shaft speed of the centrifuge inboard bearing. The bearing is also showing almost 6 g's of acceleration which is the result of a raised noise floor and modulation above the spectrum F max. Data amplitudes vary greatly between high resolution sets and 4 KHz sets. Consider upping the spectrum F max on the 4 KHz sets to 6 KHz and significantly upping the lines of resolution to improve the quality of the analysis. We believe the data indicates bearing wear. Clean and flush the centrifuge to help reduce the shaft speed vibration. Ensure the bearings are receiving adequate lubrication. **Rated a Class III Defect.**

2P 3320 SHARPLES #3

The Centrifuge bearing measurements still show multiple low amplitude harmonics of shaft speed. There is possibly slight imbalance and looseness. Flush and clean the centrifuge as time allows. **Rated a Class II Defect.**

2P 3296 SHARPLES #4

The inboard centrifuge bearing has a vibration at near 1.4"/sec velocity peak overall and is dominated by a 1x RPM peak with harmonics and either half harmonics or modulation at half speed. Inspect, flush, and clean the centrifuge. Inspect the centrifuge bearings and fasteners also. **Rated a Class III Defect.**

Point B1V overall vibration is 3.6"/sec velocity peak and B2V is slightly less and are dominated by a 1x and 2x spectral peaks. Inspect right away for loose fasteners, bent shaft, and alignment. **Rated a Class IV Defect.**

2P 3171 SHARPLES #5

Mostly low amplitude vibrations in unit. Clean and flush. Rated a Class I Defect.

2P 3149 SHARPLES #6

Vibration data shows a strong 1x shaft speed vibration for the C1H bearing measurement this survey with the overall above 1.0"/second velocity peak. Flush or clean the centrifuge. **Rated a Class III Defect.**

2P 3161 SHARPLES #7

Motor has an elevated 1x RPM vibration at near 0.5"/second velocity peak overall. Centrifuge has jumped up to 1"/second velocity peak and is dominated by a 1x and smaller 2x vibrations. Point B1V is over 1" also and has multiple harmonics of shaft speed. Inspect for drive train component wear, eccentricity, loose fasteners, and alignment as well as imbalance. Clean and flush. **Rated a Class III Defect.**

2P 3151 SHARPLES #8

Motor has rotor bar passing frequency peaks as well as non-synchronous peaks in the spectrum. We suspect some distress in the motor inboard bearing. Centrifuge vibrations are mostly 1x RPM. Point B1V vibrations have been increasing and could indicate distress in the bearing. Inspect the unit for coupling, alignment, or looseness issues. Ensure the motor bearings are receiving lubrication if greaseable. Clean and flush the Centrifuge. Point B1V issues makes this **Rated a Class III Defect**.

2P 3141 SHARPLES #9

Overall data shows high acceleration in the centrifuge input bearing. The current 13 g's overall is still considered extremely high by us. The acceleration and velocity spectral data below 4KHz still shows harmonics and near harmonics of a strong 1xRPM peak at neat 0.9"/sec velocity peak. The data looks like bearing fluting. There is an issue in the drive end of the centrifuge that will require investigation soon. We still recommend inspecting the bearing installation and bearing replacement. **Rated a Class IV Defect.**

2P 3137 WESTFALIA PUMP #8

The motor inboard bearing data indicates race defects. The motor bearings are still in distress. Rated a Class II Defect.

2P 3133 WESTFALIA PUMP #9

Data indicates slight distress in the pump bearings. Rated a Class I Defect.

2P 3090 WET-IN PUMP

Recent data shows a rise in the 2x RPM vibration. Inspect the coupling, fasteners, and structure, and check the shaft alignment. **Rated a Class II Defect.**

2P 3224 CLARIFIED TANK PUMP

Data still shows a 1xRPM vibration in the motor vertical. Inspect the fasteners and structure, as well as the motor fan and the coupling and alignment as time allows. **Rated a Class II Defect.**

2P 3156 BOOSTER PUMP

The motor bearings are still in some distress and have been for a while. The overall acceleration is just below 2 g's again this survey. We will watch this unit for changes. Expect to change the motor sometime in the future. **Rated a Class I Defect.**

2P 4453 HEAT RECOVERY PUMP

Pump vibration is still dominated by a 3x RPM vibration which we assume is vane pass. Check process parameters. **Rated a Class II Defect.**

2P 3727 EAST RESLURRY PUMP

Data still shows a strong 1xRPM vibration throughout the motor. Amplitudes are near 0.6"/second velocity peak overall. The pump shows a strong vane pass vibration. These vibrations have been high for a long time Inspect the fasteners and structure, as well as the motor fan and the coupling and alignment as time allows. Ensure the pump operational parameters are correct. **Rated a Class II Defect.**

2P 3289 WEST RESLURRY PUMP

Motor vibrations are significantly up at shaft speed at over 2"/second velocity peak. Inspect for a coupling issue. The unit should also be checked for fastener, structural, runout and alignment defects. **Rated a Class IV Defect.**

2P 3475 E BOGEY PUMP

Pump outboard vertical vibration is still near 0.6"/second velocity peak at 6x RPM (possible vane pass). We believe there is process issue. Check operating parameters as well as unit base fasteners and alignment. **Rated a Class II Defect.**

2P 3562 EAST HYDROLISIS TANK PUMP

Motor vibration has jumped to over 1"/second velocity peak at shaft speed. Inspect the unit fasteners and structure, as well as the coupling, motor fan, and alignment as the next opportunity. **Rated a Class III Defect.**

2P 3352 South Chill Tank Pump

The motor still suffers from bearing defects. The pump seems to show bearing defects also. The data seems to indicate bearing fluting. Change the motor and pump as time allows. **Rated a Class II Defect.**

2P 3539 WEST BOEGY VACUUM PUMP

Pump vibration has dropped but is still dominated by a 3x RPM vibration and multiple shaft speed harmonics. Check for looseness in the pump bearing or impeller to shaft fits, process parameters, drive line components, and all fasteners. **Rated a Class II Defect.**

MS2P-CIP

2P4203 HOT WATER PUMP

The motor vibration data shows a strong shaft speed vibration. Inspect the unit fasteners and structure, as well as the coupling, motor fan, and alignment as the next opportunity. **Rated a Class II Defect.**

2P 4019 CAUSTIC TANK PUMP

Large motor axial vibration is over 1"/second velocity peak. Data still suggests an alignment or coupling issue. Inspect the unit for defects and perform a precision alignment. **Rated a Class III Defect.**

2P 4007 RINSE TANK PUMP

1x and 2x RPM vibration still in the pump inboard bearing indicates an alignment issue. Pump axial shows a dominant 1x RPM vibration too. Inspect the unit for loose or missing fasteners, shaft run out, coupling defects and perform a precision alignment. **Rated a Class II Defect.**

MS2P FEED DRYER

2P 3843 Filter Blower

Motor has highest vibration. Fan speed vibrations still dominate the unit measurements. Check for drive train wear and alignment and that the fasteners and structures are tight and in good shape. Have the fan cleaned and inspected. **Rated a Class II Defect.**

2P 3844 DRYER EXHAUST FAN

The unit still appears to have a belt issue due to a sub synchronous vibration. Rated a Class I Defect.

2P 3847 INLET FAN

The motor bearings are still in distress. Overall acceleration 1-20 KHz trend is still over 4 g's. The motor will need replacing as some point in the future. Check the motor sheave for run out, eccentricity, wear, and alignment with the motor sheave. **Rated a Class II Defect.**

MS2P DRYER

2P 8054 #2 CMC BLOWER

Blower bearings show multiple harmonics of input shaft speed. The unit could be under high load and/or starting to show signs of wear. **Rated a Class I Defect.**

2P 8084 #3 CMC BLOWER

Blower bearings show multiple harmonics of input shaft speed. The unit could be under high load and/or starting to show signs of wear. **Rated a Class I Defect.**

2P 8074 #4 CMC BLOWER

Blower bearings show an increase in multiple harmonics of input shaft speed. The unit could be under high load and/or starting to show signs of wear. **Rated a Class II Defect.**

2P 3710 BLENDER

Looks good.

2P 8068 #1 EXHAUST FAN

The fan bearings seem to have an issue in high frequencies. Ensure the bearings are receiving proper lubrication. Inspect them if possible. We should increase the FMAX and lines of resolution on the data set to see if we can identify the frequencies responsible for the rise. Rated a Class II Defect.

2P 8088 #2 EXHAUST FAN

The fan bearings seem to have an issue in high frequencies. Ensure the bearings are receiving proper lubrication. Inspect them if possible. We should increase the FMAX and lines of resolution on the data set to see if we can identify the frequencies responsible for the rise. Rated a Class I Defect.

2P 8069 and 8089 HEAT FANS

Both motors still have an apparent fan speed vibration at about 42.5 Hz at or near 0.7"/sec velocity peak overall. Inspect the drive system and all fasteners and structures. Clean and inspect the fan also. **Rated a Class II Defect.**

2P 8008 STATIC INLET FAN

Vibration data still shows what appears to be non-synchronous vibration peaks in the fan bearings. We suspect early distress in the bearings. **Rated a Class I Defect for now.**

2P 8100 VF EXHAUST FAN

Increase in apparent fan speed vibration throughout the unit. Clean and inspect the fan. Check all drive train components. **Rated a Class II Defect.**

2P 8014 EXPORT BLOWER

Vibration data still shows what appears to be non-synchronous vibration peaks in the fan bearings. We suspect early distress in the bearings. **Rated a Class I Defect for now.**

2P 8064 #1 CMC BLOWER

2x RPM harmonics dominate the data. No immediate action necessary at this time. **Rated a Class I Defect.**

MSP WET

3246 C-30 #1

The data for C1V has increased recently at unit speed. Clean and flush as time allows. **Rated a Class I Defect.**

3256 C-30 #2

Data shows another increase in the motor vibration at centrifuge speed. There has also been a drop in the centrifuge vibration at shaft speed. Check for drive train issues like alignment, components defects or wear. Inspect, clean and/or flush the centrifuge. **Rated a Class II Defect.**

3266-C30 #3

Bad data.

3276 C-30 #4

Slight decrease in the centrifuge shaft speed vibration. Inspect, clean and/or flush the centrifuge as time allows. **Rated a Class I Defect.**

3141 SHARPLE #1

The motor appears to have substantial harmonic vibration peaks of a near 3.5 order fundamental peak. Overall 1-20 KHz acceleration is 9.5 g's. There could be a severe bearing defect in the motor drive end bearing. The centrifuge outboard axial is dominated by what looks to be a 2x RPM vibration. We suspect a drive train issue such as misalignment, or eccentricity. Inspect the drivetrain and be prepared to replace the motor in the future. **Rated a Class IV Defect.** Data For some M4 points are bad.

3151 SHARPLE #2

Both the centrifuge bearing measurements are at 0.7 to 0.9"/second velocity peak overall now and consist of multiple harmonics of shaft speeds. Inspect for loose fasteners, looseness in the bearings, and coupling and alignment issues. **Rated a Class II Defect.**

3161 SHARPLE #3

The motor still has non-synchronous harmonic vibrations at over 6 g's RMS overall that usually indicate defects in the bearings. The Centrifuge measurements show multiple shaft speed harmonic and half order harmonics. Check for a mechanical rub as well as looseness in the main centrifuge bearings. **Rated a Class III Defect.**

3149 SHARPLE #4

The centrifuge inboard bearing shows a strong 1xRPM vibration as well as multiple harmonics. Clean and flush the centrifuge and inspect the bearings for mechanical looseness. **Rated a Class II Defect.** Bad data on some points.

3171 SHARPLE #5

Centrifuge C1H measurement is at 1[°]/second velocity peak and mostly at 1xRPM The C1A axial measurement is dominated by a 2x RPM vibration. Check the drive train components for wear and alignment. Clean and flush also. **Rated a Class III Defect. Several measurements are bad.**

3304 SHARPLE #6

The centrifuge bearing data show a strong 1xRPM vibration as well as multiple low harmonics and a slight raised noise floor. Clean and flush the centrifuge and inspect the bearings for mechanical looseness. Ensure bearings are lubricated. **Rated a Class III Defect.**

3320 SHARPLE #7

The centrifuge inboard bearing data show a 1xRPM vibration as well as multiple harmonics and a slight raised noise floor. Clean and flush the centrifuge and inspect the bearings for mechanical looseness. Ensure bearings are lubricated. **Rated a Class II Defect.**

3296 SHARPLE 8

The centrifuge bearing data show a 1xRPM vibration as well as multiple small. Clean and flush the centrifuge. **Rated a Class II Defect.**

4085 SHARPLE #9

Centrifuge input bearing vibration data show a high 1x RPM vibration and an elevated noise floor. Centrifuge outboard bearing data is bad. M3 point data is also bad. Clean and flush the centrifuge and inspect the bearings. Ensure bearings are lubricated. **Rated a Class III Defect.** High quality data needs to be taken on this unit due to reported issues on the last report to ensure the best analysis is provided every month.

4085-08 OIL PUMP MOTOR #9

Motor data still shows several non-synchronous harmonic vibration peaks. This is most likely early bearing defect frequencies. **Rated a Class I Defect.**

3137 SHARPLES DEFOAMER PUMP #2

Motor data still indicates some misalignment due to a possible dominant 2x motor RPM vibration at near 0.6"/sec velocity peak. Check unit for coupling alignment issues. **Rated a Class II Defect.**

3207 SHARPLES DEFOAMER PUMP #3

Bad data on P1V.

4095 CURD GRINDER #4

32.5 Hz vibration increase again. Inspect the unit fasteners, drive train components and alignment as time allows. **Rated a Class III Defect.**

3425 East IND Pump

Pump bearing data shows shaft speed peak, shaft speed harmonics and cavitation. The pump bearing fits and impeller could be worn. Perform a lift check on the pump shaft and ensure the pump is operating optimally.

Rated a Class II Defect.

3550 NORTH BOGEY PUMP

Motor bearings are now a concern due to non-synchronous harmonic peaks. Possible cavitation in the pump. **Rated a Class I Defect.**

3534 NORTH CONDENSATE PUMP

Multiple vibration measurements for this unit are at or near 0.7"/second velocity peak with a frequency of around 15 Hz. Consider adding a low frequency-high resolution data set for this unit to help in analyzing this sub synchronous vibration. Inspect the unit for pipe strain, loose fasteners, and pump and flow issues. **Rated a Class III Defect.**

3475 SOUTH BOGEY PUMP

Pump vibration has increased and still shows high 1x and 2x RPM vibration at over 1.0"/sec velocity peak overall. Have the alignment checked as well as the coupling, hubs, and shafts for run out. Pump impeller could be worn too. **Rated a Class III Defect.**

3289 WEST RESLURRY PUMP

Pump has a 3x RPM vibration and first harmonic. Could be vane pass or a bad 3 ear Lovejoy coupling. **Rated a Class II Defect. Motor data is bad.**

3237 EAST RESLURRY PUMP

Pump still shows a 6x RPM. Possible vane pass or process flow issue. Rated a Class I Defect.

MSP CIP ROOM

No current data

MSP FEED DRYER

3828 RECYCLE BLOWER

Drop in blower vibration at just over 86 Hz. Inspect unit. Please confirm blower shaft speed and design. **Rated a Class I Defect.**

3836 MAC FILTER ASP FAN

Motor data shows a dominant sub-synchronous vibration. We believe the belts could be in distress. Inspect the belts and sheaves, and make sure they aligned and tensioned properly. **Rated a Class II Defect. Fan has** Bad data.

3863 Exhaust Fan

Motor appears to be on a drive at 45 HZ. Motor shows Rotor Bar pass with 2x line frequency sidebands, which is not a concern at this time. Fan could have distress in the bearings due to non-synchronous harmonic peaks and an elevated noise floor. Some points also appear to have bad data. Fan bearings are **Rated a Class II Defect for now to be prudent.**

3800 MIXING CONVEYOR

Motor outboard has a strong overall vibration over 1"/second velocity peak consisting of a subsynchronous and shaft speed vibration of the same amplitude. Inspect the unit structure, fasteners, and drive train. **Rated a Class III Defect.**

3847 NORTH INLET FAN

Check the unit and belts. Ensure motor bearings are lubricated if applicable. Rated a Class I Defect.

3844 SOUTH COMBUSTION FAN

Motor data shows a vibration of interest at 22 Hz. Inspect the unit drive train for wear if so equipped. Route notes suggest a guarding issue. **Rated a Class I Defect.**

3843 SOUTH INLET FAN

Motor data shows a vibration of interest near 22 Hz. Inspect the unit drive train for wear if so equipped. **Rated a Class II Defect.**

MSP DRYER

3608 Cooling Fan

Looks like belt and sheave issues. Inspect the belts and sheaves for wear and alignment. Clean and inspect the fan wheel. Trim balance might be needed. **Rated a Class II Defect.**

3618 EAST EXHAUST FAN

Please confirm unit speed (motor and fan) and drive train. (Is it on a variable drive?). We suspect looseness in the fan bearings. Inspect the drive train also. **Rated a Class I Defect.**

3761 INLET FAN

A sub synchronous vibration still dominates the data. We suspect a belt, structural or fastener issue. Inspect as time allows. Possible early bearing issue in fan also. Ensure the fan bearings are lubricated. **Rated a Class II Defect.**

3627-1 NE CS FILTER BLOWER

The blower vibrations have decreased. Rated a Class I Defect.

3642-1 NW CS Blower

Blower bearing data shows a shaft speed vibration and an elevated noise floor. Inspect for drive train defects and ensure blower bearings are lubricated. Consider adding a low frequency-high resolution data set for this unit to help in analysis. **Rated a Class II Defect.**

3649 PRODUCT COLLECTOR FAN

Large vibration in motor last month at fan speed has decreased substantially. Motor vibration overall is at 0.56"/second velocity peak. Inspect the unit and drive train for wear and eccentricity. Check all fasteners and the motor support structure. Clean and inspect the fan wheel for good measure if time allows. **Rated a Class II Defect.**

3634-1 SW CS FILTER BLOWER

Blower shaft speed vibrations have decreased in the vertical but increased for the horizontal measurements. Inspect the unit structure, fasteners and drive train components for defects wear, eccentricity, and alignment. **Rated a Class II Defect.**

3655 TURBO FAN Bad data on fan again.

3636 WEST EXHAUST FAN

Fan shows slight increase in axial vibrations. Fan bearings have a few shaft speed harmonics. Perform a lift check on the fan shaft to confirm the degree of looseness if any. Inspect the motor to fan drive train for wear and alignment. Check fan for process variables. **Rated a Class II Defect. Some motor points have bad data.**

5304 PH1 PACKER SURGE BIN ASP FAN

A few harmonic peaks and fan shaft speed vibrations are about the same in the fan bearings. Inspect the drive train components and alignment. Clean and inspect the fan wheel. Perform a lift check on the fan shaft to confirm the degree of looseness if any. **Rated a Class I Defect.**

3712 BLENDER EXHAUST FAN

All unit bearings show multiple harmonics of around 45 Hz. Multiple measurement have more than doubled. Check the drive train for wear, run out, eccentricity, and alignment. Perform a lift check on the fan shaft to confirm the degree of looseness if any. We suspect the bearings are in poor condition. **Rated a Class III Defect.**

800 T GRINDING

2P100AC ATLAS COPCO COMPRESSOR

Vibration data for the motor still shows non-synchronous harmonics but have increased again. We suspect bearing defects are present. **Rated a Class III Defect.**

2040 TRACK 5 BLOWER

Data for the motor bearings seem to be influenced by blower vibrations. We will watch for changes carefully. The blower data shows harmonic vibrations throughout the spectrum which indicates increasing wear. **Rated a Class I Defect.**

2P 3034 GROUND FLAKE BLOWER

Increase in motor 1x vibration. Check fasteners, structure, shaft runout and drive train for issues. Rated a Class II Defect.

2P 3043 NORTH MILL RECEIVING FAN

The fan was replaced after the data collected for this report. Would have been a Class III Defect.

2P 3048 SOUTH MILL RECEIVING FAN

Fan bearings are completely shot according to the data. We believe the unit was worked on after the current data was collected, **otherwise this is Rated a Class IV Defect.**

TRACK 1 RECEIVER ASP BLOWER

The motor data still shows a strong 1x RPM vibration. Inspect the base, fasteners, and drive train components for defects and wear. Check the drivetrain alignment. **Rated a Class II Defect.**

3043 North Collector Fan

Bad data.

3016 NORTH GRINDER

Motor has increase in axial shaft speed vibration and grinder has some non-synchronous harmonic vibration peaks. Inspect the unit drive train components, structure and fasteners for defects and alignment. We will watch the grinder bearings for changes. **Rated a Class II Defect.**

3029 SOUTH GRINDER

Vibration 1-20 KHz acceleration trend in the grinder inboard bearing has dropped, however there are still non-synchronous vibration peaks in the spectrum. Make sure they are properly lubricated. **Rated a Class II Defect.**

3008 FLAKE RECEIVER FAN

Motor axial data shows both motor and fan speed vibrations. Inspect the unit for defect/issues with the fasteners, structure, sheaves, belts, run out and alignment. **Rated a Class I Defect.**

5032 TRACK 1 SOUTH BLOWER

Multiple harmonic vibration peaks in all unit measurements. Inspect the fasteners, structure, drive train components, alignment, and shaft run out. The spindle bearings or fits could be loose. Perform a lift check to confirm. **Rated a Class II Defect.**

5031 TRACK 1 NORTH BLOWER

Motor vibration data is dominated by a motor 1x RPM peak in the spectrum but has dropped substantially since last report. Check the drive train since the axial is over 0.4"/second velocity peak. The blower input bearings acceleration has increased, and the data shows what looks to be non-synchronous harmonic peaks. Ensure the blower bearings are lubricated. We will watch for changes. **Rated a Class II Defect.**

MS2P GROUND FLAKE

No noted issues on collected units.

SOUTH PLANT UTILITIES

2P 4112 #2 COOLING TOWER WATER PUMP

Motor shows jump in rotor bar passing frequency vibrations. We will watch this but should be a non-factor. The pump shows an increase in non-synchronous harmonics. Ensure the bearings are lubricated. **Rated a Class II Defect.**

29 4112 CENTER CHILL WATER PUMP

Motor shows extremely high shaft speed vibration and a few smaller harmonics. Inspect the fasteners, structure, drive train components, alignment, and shaft run out. Rated a Class IV Defect.

29 4162 EAST CHILL WATER PUMP

Motor axial data shows an elevated shaft speed vibration and one harmonics. Inspect the fasteners, structure, drive train components, alignment, and shaft run out. **Rated a Class II Defect.**

2P 4160 WEST CHILL WATER PUMP

Poor quality data.

4161 #2 SUPPLY PUMP

Pump vibrations have jumped to over 2"/second velocity peak at shaft speed. Inspect the unit including the coupling and all fasteners and structures at the next opportunity. Pump impeller could be damaged, or something could be stuck in it. Rated a Class IV Defect.

4114 WEST CIRCULATION PUMP

Motor has still has strong rotor bar passing frequency vibrations. No immediate concern. Rated a Class I Defect.

MSP GROUND FLAKE

3050 SOUTH ASPIRATION FAN

Vibrations have dropped. No issues.

3085 WET-IN CONVEYOR

Motor vibrations have increased, and the data is dominated by a 10 Hz vibration. Inspect the unit and structure for issues. **Rated a Class I Defect.**

3090 MSP WET IN PUMP

Vibrations have dropped in this unit. Pump has dominant shaft speed vibration with multiple harmonics and slight noise floor in the spectrum. Check for looseness in the pump bearing fits as well as issues in the drive train. Inspect the unit for other normal maladies. **Rated a Class I Defect.**