

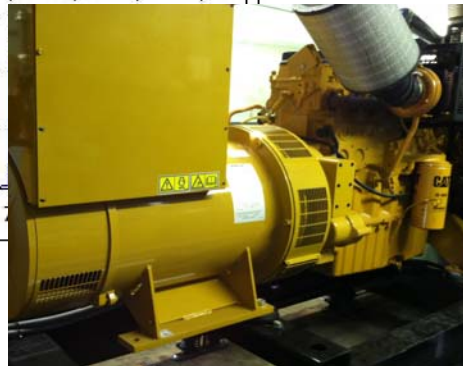
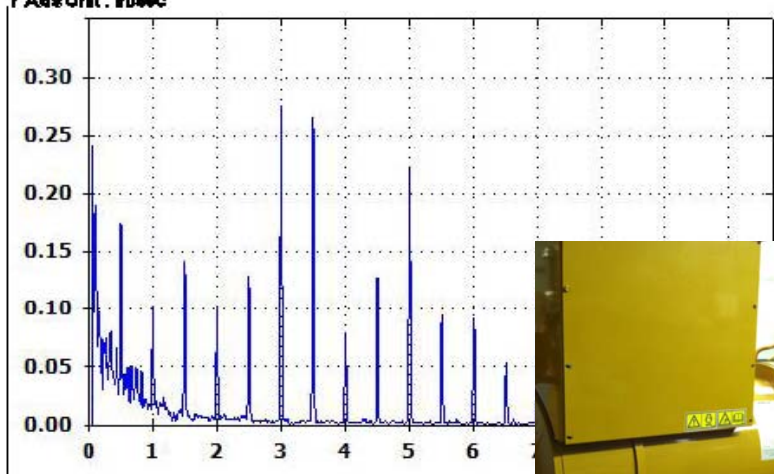
EQUIPMENT VIBRATION REPORT

SAMPLE CLIENT REPORT

LOCATION: XXX

January 17, 2014

X Axis Unit : Orders
Y Axis Unit : In/sec



FLUKE®

CMS | Condition
Monitoring
Services
Inc.

SAMPLE CLIENT REPORT
LOCATION XXX

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SAMPLE REPORT

- 1- CRITICAL
- 2- DEFECTS ARE IN MODERATE STAGES
- 3 - DEFECTS MAY BE PRESENT
- 4 - LEVELS ARE ABOVE NORMAL
- 5 - NORMAL

NO DATA COLLECTED

NOT ON ROUTE

CLICKABLE NAVIGATION



LATEST DATA	Unit Number	EQUIPMENT LOCATION	PROPERTY NUMBER	COMMENTS	CUSTOMER ACTION ITEMS	PRIORITY	PAGE
1/8/14	FRESHWATER PUMP B	PRODUCTION DECK	12345	THIS UNIT HAS NON-SYNCHRONOUS VIBRATION THAT MAY BE BEARING RELATED. THERE IS ALSO SOME RAISED FLOOR VIBRATION THAT MAY BE A RESULT OF RECIRCULATION.	MONITOR MONTHLY FOR REPEATABILITY AND INCREASES IN NON SYNCHRONOUS VIBRATION. ENSURE FLOW IS NOT RESTRICTED. IF PUMP PERFORMANCE IS POOR, RECIRCULATION MAY BE PRESENT AND SHOULD BE ADDRESSED.	PRIORITY 3	5
1/8/14	CIRC PUMP 2A	PRODUCTION DECK	23456	SLIGHTLY ELEVATED LOW FREQUENCY VIBRATION MAY BE DUE TO A BELT ISSUE OR TRANSMITTED VIBRATION FROM A NEARBY UNIT.	ENSURE BELTS ARE IN GOOD CONDITION. IF BELTS ARE INTACT AND VIBRATION REMAINS PRESENT, A NEARBY UNIT MAY BE DEGRADING AND SHOULD BE LOCATED AND ADDRESSED. ENSURE THIS UNIT IS MOUNTED ON A SECURE BASE.	PRIORITY 4	6
1/8/14	VACUUM PUMP 1	PRODUCTION DECK	34567	THIS UNIT IS OPERATING WITHIN ACCEPTABLE VIBRATION LEVELS.	MONITOR NORMALLY.	PRIORITY 5	7





Machine History Report

SAMPLE CLIENT REPORT

CRITICAL
DEFECTS ARE IN MODERATE STAGES
DEFECTS MAY BE PRESENT
LEVELS ARE ABOVE NORMAL
NORMAL
NO DATA TAKEN

Equipment ID	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	CMS RECOMMENDATIONS	PAGE
CIRC PUMP 1A		4			4		LUBRICATE BEARINGS	
CIRC PUMP 1B		5						
CIRC PUMP 2A	4			5		4	ENSURE BELTS ARE IN GOOD WORKING ORDER. CHECK FOUNDATION FOR SIGNS OF STRUCTURAL LOOSENESS.	6
CIRC PUMP 2B	5			5				
FRESHWATER PUMP A			4		5		PREVIOUSLY ELEVATED MOTOR VIBRATION RETURNED TO NORMAL LEVELS.	
FRESHWATER PUMP B	5					3	MONITOR MONTHLY. ENSURE FLOW IS NOT RESTRICTED.	5
FRESHWATER PUMP C								
VACUUM PUMP 1			5			5	VIBRATION PATTERN APPEARS NORMAL.	7
VACUUM PUMP 2		5			5			
VACUUM PUMP 3			5					
VACUUM PUMP 4					5			
VACUUM PUMP 5	5							

VIBRATION EXCEPTION ANALYSIS REPORT

Company:	SAMPLE CLIENT	Machine name:	FRESHWATER PUMP B
Report Date:	January 17, 2014	Equipment Location:	PRODUCTION DECK
Ship Location:	SAMPLE CLIENT	Asset critical factor:	CRITICAL REDUNDANT
Data collected:	January 8, 2014	STATUS:	ALERT defects may be present

SUMMARY & RECOMMENDATIONS

Sheet 1 of 1

THIS UNIT IS EXHIBITING NON SYNCHRONOUS VIBRATION ON LOCATION 1 TANGENT THAT MAY BE BEARING RELATED AND WARRANTS MONITORING. A MORE DEFINITIVE DIAGNOSIS CAN BE MADE IF BEARING NUMBERS ARE PROVIDED. OVERALL AMPLITUDES ARE RELATIVELY MINOR AT THIS TIME AND IF THIS IS A BEARING ISSUE, IT CAN MOST LIKELY BE MONITORED ON A MONTHLY BASIS FOR MORE ADVANCED STAGES OF FAILURE. LOCATION 3 TANGENT HAS SOME RAISED FLOOR VIBRATION THAT MAY BE DUE TO POTENTIAL RECIRCULATION.

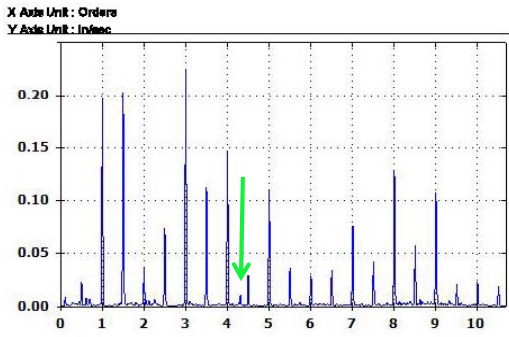
MONITOR MONTHLY FOR REPEATABILITY AND INCREASES IN NON SYNCHRONOUS VIBRATION. ENSURE FLOW IS NOT RESTRICTED. IF PUMP PERFORMANCE IS POOR, RECIRCULATION MAY BE PRESENT AND SHOULD BE ADDRESSED.



RESULTS UNDER LOAD

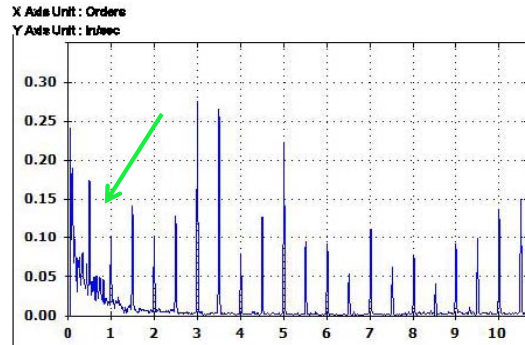
Fluke Location 1 Tangent

Data under load illustrates some non-synchronous vibration is present. Overall amplitudes are minor at this time and if a defective condition is indeed present, there is most likely time to monitor for more advanced stages. This may be bearing related.



Fluke Location 3 Tangent

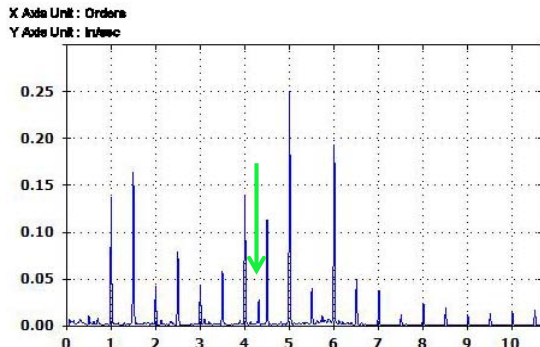
The fft graph below illustrates some raised floor vibration that is not a typical signature of this unit. This could be due to an ambient source of vibration or potential recirculation of flow.



RESULTS UNDER NO LOAD

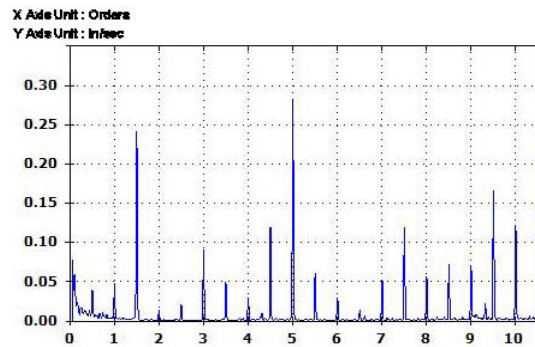
Fluke Location 1 Tangent

Non-synchronous vibration remains present even when unit is under no load. Without more equipment information a determination cannot be made as to if this unit has a defective condition. This may be bearing related.



Fluke Location 3 Tangent

Raised floor vibration remains present when tested under no load but in lower amplitudes.





VIBRATION EXCEPTION ANALYSIS REPORT

Table with 4 columns: Field (Company, Report Date, Ship Location, Data collected), Value (SAMPLE CLIENT, January 17, 2014, SAMPLE CLIENT, January 8, 2014), Field (Machine name, Equipment Location, Asset critical factor, STATUS), Value (CIRC PUMP 2A, PRODUCTION DECK, CRITICAL REDUNDANT, NOTATION comments only)

SUMMARY & RECOMMENDATIONS

Sheet 1 of 1

THIS UNIT HAS SOME SLIGHTLY ELEVATED LOW FREQUENCY VIBRATION THAT MAY BE COMING FROM A NEARBY UNIT, BUT COULD BE DUE TO BELT ISSUES. THIS VIBRATION WAS PRESENT WHEN THE UNIT WAS TESTED UNDER LOAD AND UNLOADED CONDITIONS.

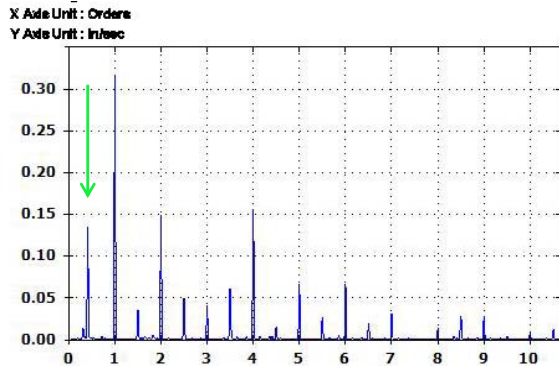
ENSURE BELTS ARE IN GOOD CONDITION. ONCE INSPECTED IF THIS VIBRATION REMAINS PRESENT, IT IS LIKELY A NEARBY UNIT HAS ELEVATED VIBRATION THAT IS TRANSFERRING TO THIS MACHINE. TRANSMITTED VIBRATION CAN BE REDUCED BY ENSURING THE UNIT IS SECURED ON A SOLID FOUNDATION. IF THIS VIBRATION CONTINUES TO INCREASE, A NEARBY UNIT MAY BE DEGRADING AND SHOULD BE LOCATED AND ADDRESSED.



RESULTS UNDER LOAD

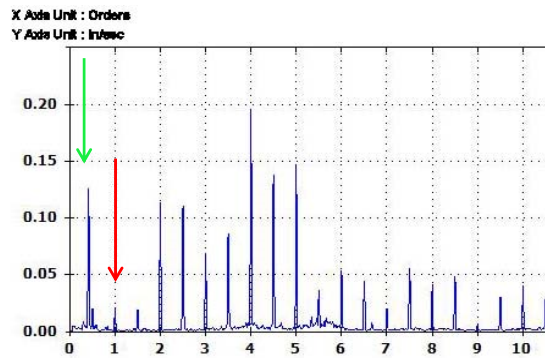
Fluke Location 1 Tangent

The peak marked by the green arrow below is coming in around .4x, and is likely due to an ambient source of vibration such as a fan belt, water pump, or another auxiliary drive.



Fluke Location 3 Tangent

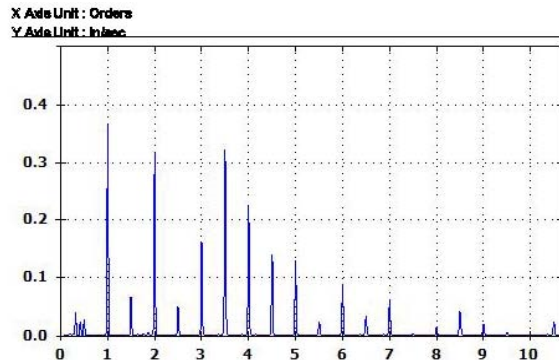
This elevated .4x is present throughout the unit as seen in the fft graph below. The green arrow marks the .4x vibration around .12 ips, while the red arrow marks the normal .5x peak at a low amplitude.



RESULTS UNDER NO LOAD

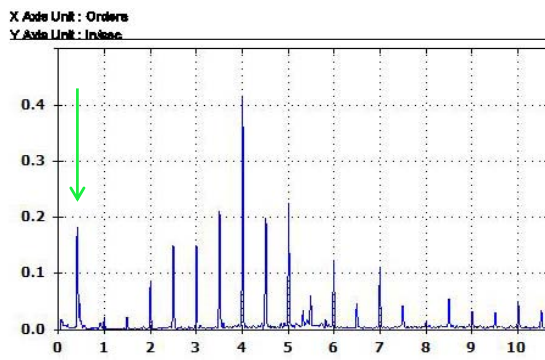
Fluke Location 1 Tangent

Low frequency vibration remains present when unit is under load as seen in the fft graph below.



Fluke Location 3 Tangent

Low frequency vibration increases to nearly .2 ips as seen marked by the arrow below.



VIBRATION EXCEPTION ANALYSIS REPORT

Company:	SAMPLE CLIENT	Machine name:	VACUUM PUMP 1
Report Date:	January 17, 2014	Equipment Location:	PRODUCTION DECK
Ship Location:	SAMPLE CLIENT	Asset critical factor:	CRITICAL REDUNDANT
Data collected:	January 8, 2014	STATUS:	NORMAL no action needed

SUMMARY & RECOMMENDATIONS

Sheet 1 of 1

ALL VIBRATION FOUND ON THIS MACHINE IS SYNCHRONOUS TO RUNNING SPEED. THERE ARE NO INDICATIONS OF MECHANICAL DEFECTS AT THIS TIME, WHICH WOULD BE IDENTIFIED BY THE PRESENCE OF RANDOM AND NON-SYNCHRONOUS PEAKS. OVERALL AMPLITUDES ARE WITHIN ACCEPTABLE LEVELS FOR THIS TYPE OF MACHINE.

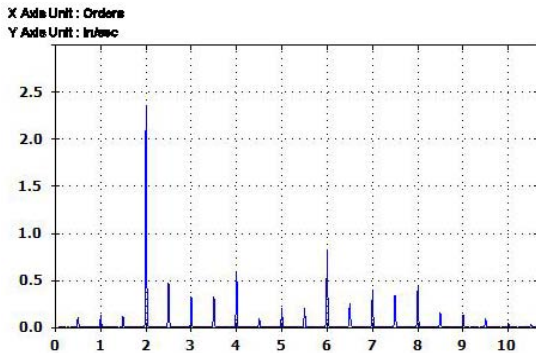
MONITOR ON A NORMAL SCHEDULE.

RESULTS UNDER LOAD



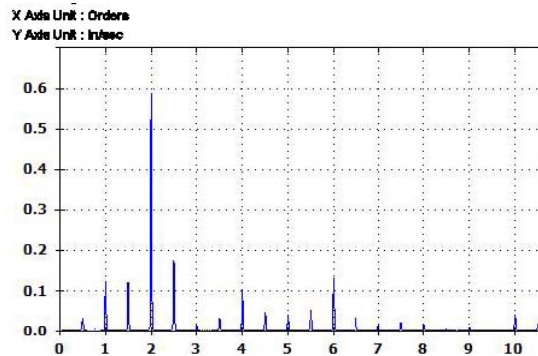
Fluke Location 1 Tangent

All vibration is synchronous to running speed as seen in the fft graph below. (Peaks are only found at multiples of .5x and 1x).



Fluke Location 3 Tangent

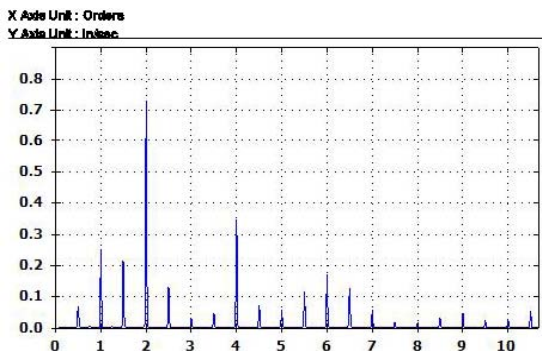
All vibration is synchronous to running speed as seen in the fft graph below. (Peaks are only found at multiples of .5x and 1x).



RESULTS UNDER NO LOAD

Fluke Location 1 Tangent

All vibration is synchronous to running speed as seen in the fft graph below. (Peaks are only found at multiples of .5x and 1x).



Fluke Location 3 Tangent

All vibration is synchronous to running speed as seen in the fft graph below. (Peaks are only found at multiples of .5x and 1x).

