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The following is a summary of findings from the September 2023 WEEK 1 vibration survey at the H2O2 Plant along with the 70% PUMPS and H2 WEEKLY FAN vibration survey.

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.

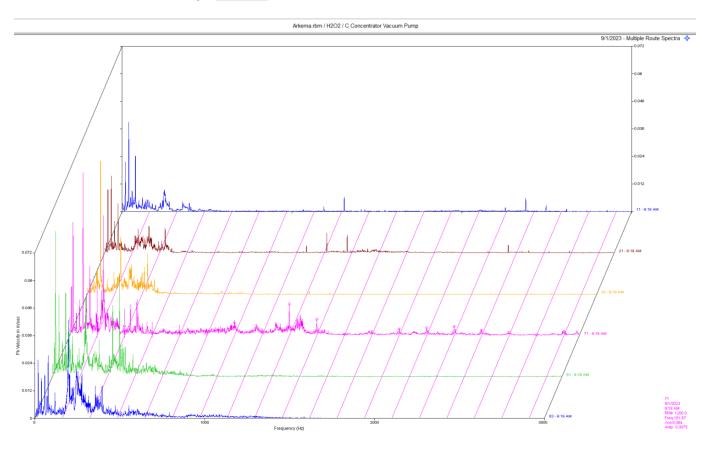
**<u>CLASS III</u>**; Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

**CLASS IV**; 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.

### H2O2 Plant

# C Concentrator Vacuum Pump CLASS I



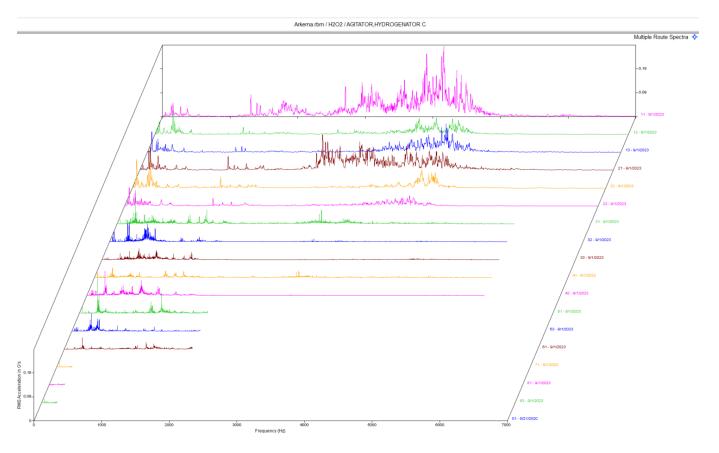
### **Observation:**

Data above is a multipoint spectral waterfall. Data point labeled 71 is the pump drive end horizontal. The small peaks in mid to high range of the spectrum are non-synchronous peaks and are very likely bearing defect frequencies.

#### **Recommendation:**

The pump appears to have early to mid stage bearing defects/wear. We are monitoring this issue closely.

# Agitator, Hydrogenator C CLASS I



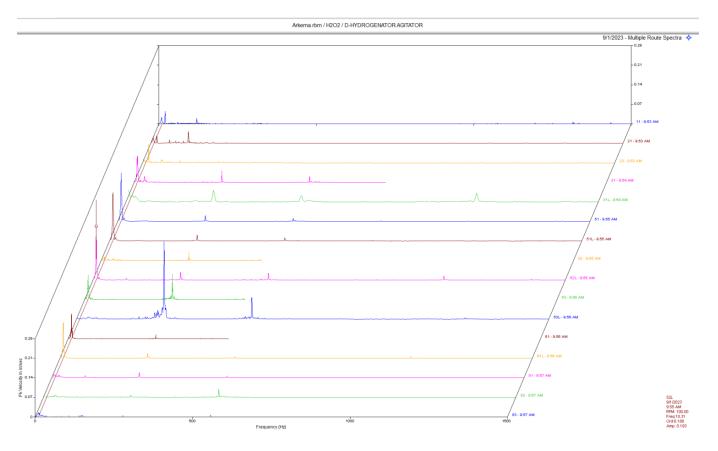
## **Observation:**

Data above is a multipoint spectral waterfall. Data still shows some noise floor in the motor data. Data points labeled 11-23.

### **Recommendation:**

Motor data still suggests a possible issue in the motor. May be rolling element defects in bearings. This issue appears to be minor at this time and we are monitoring this closely.

# D Hydrogenator Agitator CLASS II



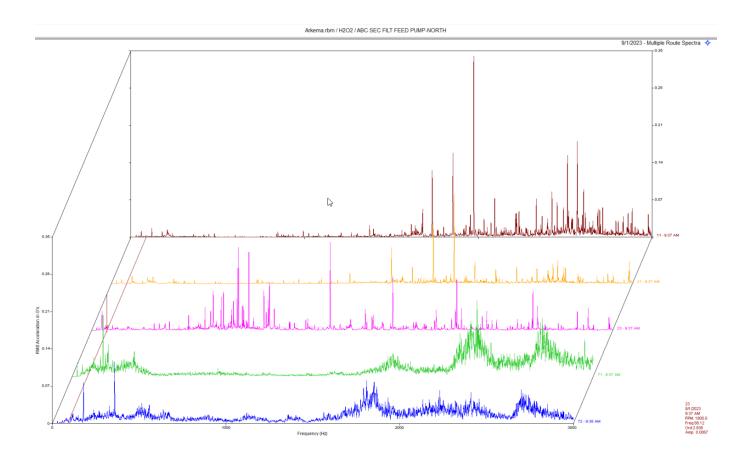
#### **Observation:**

Data above is a multi-point spectra of the motor and gear drive. There is quite a bit of low frequency vibration in the gear drive. Spectral and waveform data shows a dominant low frequency vibration that is likely a harmonic of output speed of the gearbox. Gearbox does appear to have visible torsional movement. There is also some gear mesh harmonics on the output axial.

#### **Recommendation:**

Ensure output shaft does not excessive shaft defection. Check coupling hubs and shaft for run out using a dial indicator. Will continue to monitor closely.

# ABC Secondary Filter Feed Pump NORTH CLASS II



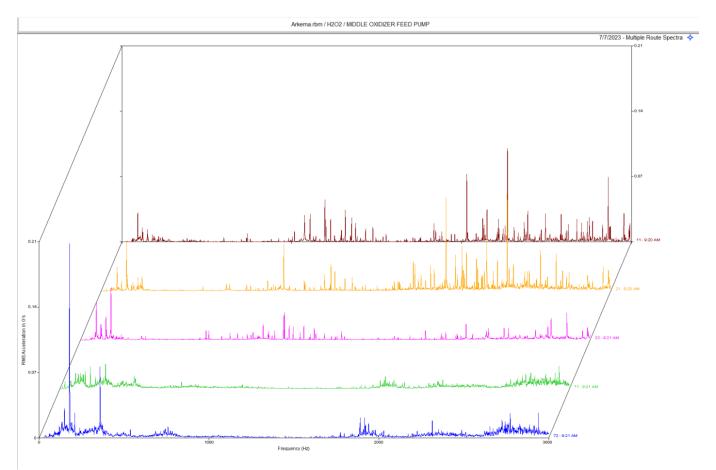
## **Observation:**

Data above is a multi-point spectra. Non-synchronous peaks can be seen in the motor data (points 11-23).

## **Recommendation:**

Motor data suggests defects are present in the motor bearings. Pump also has quite a bit of noise floor and signs of internal issues such as cavitation and possible bearing defects. Inspect motor and pump as scheduling allows.

# Middle Oxidizer Feed Pump CLASS I



# **Observation:**

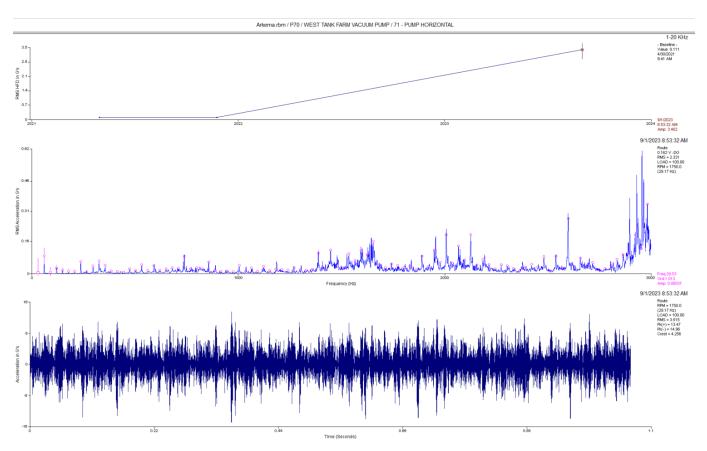
Data above is multi-point spectra of the motor and pump. Points 11-23 are motor points. Non-synchronous peaks present at these points indicate bearing defects of the motor bearings.

### **Recommendation:**

Motor data suggests defects are present in the motor bearings. Motor may need attention in the next few months.

## H2O2 70% PUMPS

# West Tank Farm Vacuum Pump CLASS III



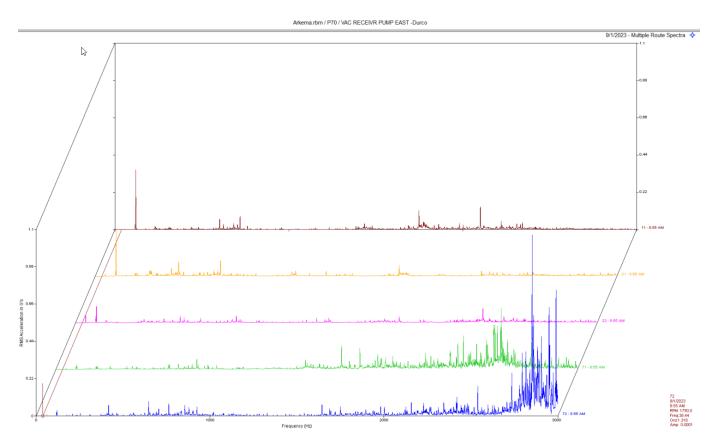
### **Observation:**

Data above is the pump horizontal. Spectrum shows high frequency noise and waveform shows high amplitude of 17 g's peak to peak. Trend data shows an increase in 1-20 Khz amplitude from

### **Recommendation:**

Pump data suggests defects/wear are present in the pump internals. Pump needs attention soon.

# Vacuum Receiver Pump EAST CLASS II



### **Observation:**

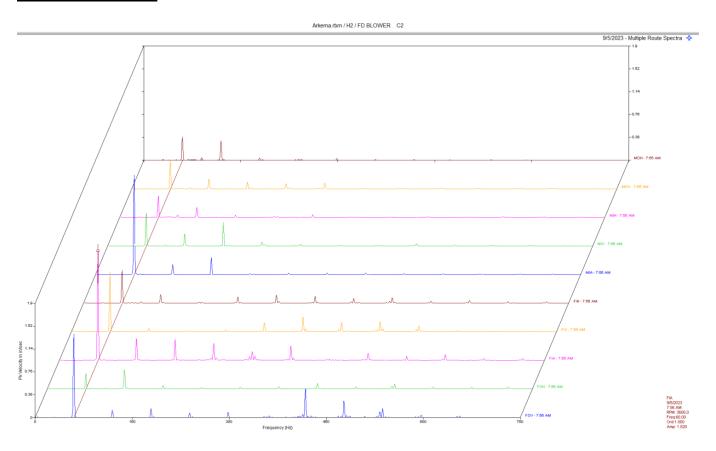
Data above is multi-point spectra of the motor and pump. Points 71 and 72 are pump points. Non-synchronous peaks present at these points indicate internal pump defects/wear.

#### **Recommendation:**

Pump data suggests defects are present in the pump. The pump will likely need attention in the next few months.

### H2O2 Plant WEEKLY

FD Blower CLASS IV



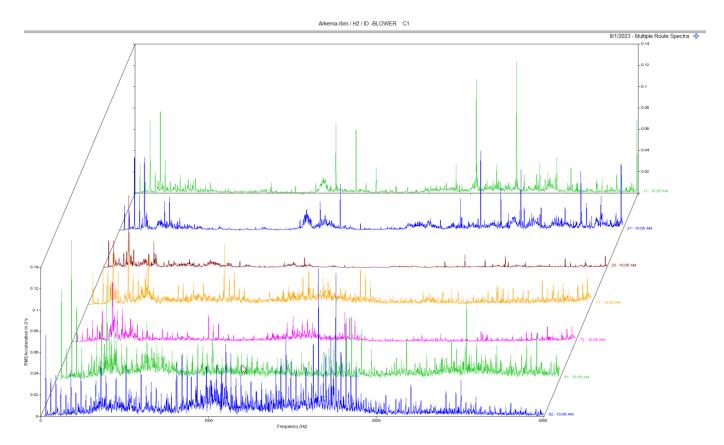
#### **Observation:**

Data above shows the highest vibration to be at the motor and fan inboard axial. Data shows a high 1 x rpm with a smaller 2, 3, and 4 x rpm vibration. Vibration has increased significantly since replacing fan shaft and fan bearings. The shaft that in place right now has excessive run-out (.003 to .005) in various spots on shaft).

### **Recommendation:**

Fan shaft and or the fan wheel is likely the issue here. We recommend replacing the fan shaft with a TGP 4140 (steel type) shaft. Replace bearings also. Ensure fan wheel is not warped or cracked. Fan wheel needs to be dynamically balanced with new shaft and coupling. **Replace ASAP due to high vibration.** 

# ID Blower CLASS II



## **Observation:**

Data above is a multi-point spectrum of the motor and the fan Spectral data indicates bearing defects are present in the fan bearings.

## **Recommendation:**

Not a lot of change since last survey. Fan bearings may need to be replaced in the next few months. Monitoring this issue closely.

Station:	PEROXIDE
Route No.	1: ARK WK 1

Route No. 1: AF		
MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
P102 - ARKEMA PUMP I		Gam (22)
PIUZ - ARKEMA POMP	OVERALL LEVEL	-Sep-23) 1K-20KHz
МОН	111 In/Sec	.465 G-s
MOV	.111 In/Sec .112 In/Sec	.406 G-s
MIH	.088 In/Sec	663 G-s
MIV	.279 In/Sec	
MIA	.106 In/Sec	.522 G-s
EIA	.329 In/Sec	.522 G-S
EIH		
	.218 In/Sec	2.028 G-S
EIV	.263 In/Sec .200 In/Sec	.902 G-S
EOH EOV	.200 In/Sec .204 In/Sec	.445 G-S 1 227 C-S
130-1old - C Concentrato		
	OVERALL LEVEL	
11	.072 In/Sec	.439 G-s
21	.081 In/Sec .107 In/Sec	.512 G-s
23		
71	.168 In/Sec	2.595 G-s
81	.170 In/Sec	.689 G-s
83	.170 In/Sec .147 In/Sec	.299 G-s
000-01 - AGITATOR, HYDE	ROGENATOR C (01	-Sep-23)
	OVERALL LEVEL	
02	.039 In/Sec	
03		.011 G-S
11	.043 In/Sec	.0000 G-S
	.075 In/Sec .110 In/Sec	1.731 G-S
12	.110 In/Sec	.448 G-S
13	.142 In/Sec	.665 G-s
21	.099 In/Sec .199 In/Sec	1.119 G-s
22		
23	.150 In/Sec	.263 G-s
31	.071 In/Sec .104 In/Sec	.376 G-s
32	.104 In/Sec	.121 G-s
33	.049 In/Sec	
41	.058 In/Sec	
42	.087 In/Sec	.115 G-s
51	.083 In/Sec	.268 G-s
53	.067 In/Sec	
61	.029 In/Sec	.238 G-s
71	.065 In/Sec	.174 G-s
81	.025 In/Sec	.201 G-s
83	.050 In/Sec	.053 G-s
	Vac Pmp-var RPM (01	Sep. 22)
- A/B Concentr	OVERALL LEVEL	1-20 KHz
11	.046 In/Sec	.605 G-s
12	.040 IN/Sec	.151 G-s
	.061 In/Sec	
21	• • • • • •	.307 G-s
23	.054 In/Sec	.122 G-s
71	.124 In/Sec	.706 G-s
81	.304 In/Sec	1.041 G-s
83	.100 In/Sec	1.138 G-s
130-1 - FLASH VAP VAC	C PUMP-var speed (01	-Sep-23)
	OVERALL LEVEL	1-20 KHz
11	.046 In/Sec	.356 G-s
12	.039 In/Sec	.091 G-s
21	.053 In/Sec	.420 G-s
22	.069 In/Sec	.096 G-s
22		

	23		.070	In/Sec In/Sec	.095 G-s
	71		.066	In/Sec	.444 G-s
	72			In/Sec	
	81		.075	In/Sec	1.323 G-s
	82		.080	In/Sec	.799 G-s
	83		.053	In/Sec	.599 G-s
236-06		- HYDRO FD PUMP N	236-06	-2FLR (01	-Sep-23)
			OVERA	LL LEVEL	1-20 KHz
	11			In/Sec	
	21		.081	In/Sec	.352 G-s
2130-6		- ABC SEC FILT FEE		-NORTH (01	-Sep-23)
	11		043	LL LEVEL In/Sec	1.114 G-s
	21		035	In/Sec In/Sec	758 C-s
	23		.033	In/Sec	747 C-s
	71		102	In/Sec In/Sec	2.577 G-s
	72		.103	In/Sec	2.577 G-S
	12		.108	In/Sec	1.300 G-S
0001 1		- EAST OXIDIZER FE		D (01	0
9001-1				•	÷ ·
				LL LEVEL	
	11		.024	In/Sec	.418 G-S
	21		.039	In/Sec In/Sec	.555 G-s
	23		.054	In/Sec	.538 G-s
	71			In/Sec	
	72		.123	In/Sec	.802 G-s
9001-2		- MIDDLE OXIDIZER			
			OVERA	LL LEVEL	1-20 KHz
	11		.049	In/Sec In/Sec	.704 G-s
	21				.607 G-s
	23		.050	In/Sec	.899 G-s
	71		.047	In/Sec	.594 G-s
	72		093	In/Sec	.657 G-s
			.055	,	
			.055		
7016-1	1	- WEST OXIDIZER FE	ED PUM	P (01	
7016-1	1	- WEST OXIDIZER FE	ED PUM	P (01)	1-20 KHz
7016-1	1 11	- WEST OXIDIZER FE	ED PUM OVERA .046	P (01) LL LEVEL In/Sec	1-20 KHz .479 G-s
7016-1		- WEST OXIDIZER FE	ED PUM OVERA .046 .041	P (01 LL LEVEL In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s
7016-1	11	- WEST OXIDIZER FE	ED PUM OVERA .046 .041	P (01 LL LEVEL In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s
7016-1	11 21	- WEST OXIDIZER FE	ED PUM OVERA .046 .041 .042 .106	P (01 LL LEVEL In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s
7016-1	11 21 23	- WEST OXIDIZER FE	ED PUM OVERA .046 .041 .042 .106	P (01) LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s
7016-1	11 21 23 71	- WEST OXIDIZER FE	ED PUM OVERA .046 .041 .042 .106	P (01 LL LEVEL In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s
	11 21 23 71 72	- WEST OXIDIZER FE	ED PUM OVERA .046 .041 .042 .106 .106	P (01 LL LEVEL In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s
	11 21 23 71 72		ED PUM OVERA .046 .041 .042 .106 .106 234-0 OVERA	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec 1 (01- LL LEVEL	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s
	11 21 23 71 72		ED PUM OVERA .046 .041 .042 .106 .106 234-0 OVERA	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec 1 (01- LL LEVEL	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s
	11 21 23 71 72		ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066	P (01 LL LEVEL In/Sec In/Sec In/Sec In/Sec 1 (01	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz
	11 21 23 71 72		ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec 1 (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s
	11 21 23 71 72 11 21		ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec 1 (01- LL LEVEL In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s
	11 21 23 71 72 11 21 23		ED PUM OVERA .046 .041 .042 .106 .106 .106 .234-0 OVERA .066 .079 .042 .115	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s
	11 21 23 71 72 11 21 23 71		ED PUM OVERA .046 .041 .042 .106 .106 .106 .234-0 OVERA .066 .079 .042 .115	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec 1 (01- LL LEVEL In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s
	11 21 23 71 72 11 21 23 71		ED PUM OVERA .046 .041 .042 .106 .106 .106 .234-0 OVERA .066 .079 .042 .115	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s
234-01	11 21 23 71 72 11 21 23 71	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s
234-01	11 21 23 71 72 11 21 23 71 72	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s
234-01	11 21 23 71 72 11 21 23 71 72	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .031	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028 .078	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028 .078 .022	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024	P (01- LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024 OVERA	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHZ
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024 OVERA .085	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHz 4.234 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M 72M	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024 OVERA .085 .043	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHz 4.234 G-s 1.011 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M 72M 73M	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028 .022 .024 OVERA .022 .024 OVERA	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHZ 4.234 G-s 1.011 G-s .835 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M 72M 73M 81M	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .234-0 OVERA .066 .079 .042 .115 .031 OVERA .061 .028 .022 .024 OVERA .022 .024 OVERA .085 .043 .067 .049	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHZ 4.234 G-s 1.011 G-s .835 G-s 9.690 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M 72M 73M 81M 82M	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .106 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024 OVERA .028 .022 .024 OVERA .085 .043 .043 .049 .034	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHZ 4.234 G-s 1.011 G-s .835 G-s 9.690 G-s 1.744 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M 72M 73M 81M 82M 71F	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .106 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024 OVERA .085 .043 .043 .049 .034 .039	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHZ 4.234 G-s 1.011 G-s .835 G-s 9.690 G-s 1.744 G-s 5.350 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .106 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024 OVERA .085 .043 .043 .043 .049 .034 .039 .055	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHZ 4.234 G-s 1.011 G-s .835 G-s 9.690 G-s 1.744 G-s 5.350 G-s 2.332 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F 73F	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .106 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024 OVERA .085 .043 .043 .043 .049 .034 .039 .035 .035	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHZ 4.234 G-s 1.011 G-s .835 G-s 9.690 G-s 1.744 G-s 5.350 G-s 2.332 G-s .566 G-s
234-01	11 21 23 71 72 11 21 23 71 72 11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F	- CHILL WATER PUMP	ED PUM OVERA .046 .041 .042 .106 .106 .106 .079 .042 .115 .031 OVERA .061 .028 .078 .022 .024 OVERA .028 .022 .024 OVERA .085 .043 .067 .049 .034 .039 .035 .035 .042	P (01- LL LEVEL In/Sec	1-20 KHz .479 G-s .760 G-s .918 G-s .990 G-s 1.357 G-s -Sep-23) 1-20 KHz 1.117 G-s .607 G-s .563 G-s .706 G-s .563 G-s .706 G-s -Sep-23) 1-20 KHz 2.479 G-s .802 G-s 3.310 G-s .180 G-s .433 G-s 1-20 KHZ 4.234 G-s 1.011 G-s .835 G-s 9.690 G-s 1.744 G-s 5.350 G-s 2.332 G-s

9000-0	2	-	D	HYDROGI	INATOR		- EAST LL LEVEL	(01-Sep-23) 1-20 KHz
	11						In/Sec	
	21					.050	In/Sec	.849 G-s
	23					.053	In/Sec	.552 G-s
	71						In/Sec	
	72						•	1.016 G-s
226 04								
236-04	A	-	HI	DROGNTO	OR PRE		LL LEVEL	(01-Sep-23) 1-20 KHz
	11					036	In/Sec	.288 G-s
	21					.060	In/Sec In/Sec	.878 G-s
	23					070	Tn/Sec	1 343 C-e
	71					.186	In/Sec In/Sec	.314 G-s
	72					.095	In/Sec	.336 G-s
C-202		-	C-3	202 Cor	np	OVERA	LL LEVEL	(01-Sep-23) 1-20 KHz
	11							4.889 G-s
	12							1.285 G-s
	21					068	In/Sec	.751 G-s
	22					.059	In/Sec	.454 G-s
	23						In/Sec	774 6-0
						OVERA	LL LEVEL	1-20 кнz
	71M					.057	In/Sec	3.792 G-s
	72M					030	Tn/Sec	826 C-8
	73M					.077	In/Sec In/Sec	072 0 -
	81M					.046	In/Sec	.873 G-s 10.45 G-s
	82M					.040	In/Sec	1.335 G-s
	71F					.028	In/Sec	2.875 G-s
	72F					.064	In/Sec	.742 G-s
	73F							1.296 G-s
	81F							6.906 G-s
	82F					.046	In/Sec	1.068 G-s
C-201		-	c-:	201 Cor	np			(01-Sep-23)
C-201		-	c-:	201 Cor	np	OVERA	LL LEVEL	
C-201	11	-	C-:	201 Cor	đ			1-20 KHz 3.927 G-s
C-201	11 12	-	c-:	201 Cor	ąp	.077	In/Sec	1-20 KHz 3.927 G-s 2.103 G-s
C-201	11 12 21	-	с-:	201 Cor	ηp	.077 .101	In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s
C-201	11 12 21 22	-	с-:	201 Cor	αp	.077 .101 .038	In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s
C-201	11 12 21	-	C-:	201 Cor	φ	.077 .101 .038 .051	In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s
C-201	11 12 21 22 23		C-:	201 Cor	qn	.077 .101 .038 .051 OVERA	In/Sec In/Sec In/Sec In/Sec LL LEVEL	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ
C-201	11 12 21 22 23 71M		c-:	201 Cor	ηp	.077 .101 .038 .051 OVERA .066	In/Sec In/Sec In/Sec In/Sec LL LEVEL In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s
C-201	11 12 21 22 23 71M 72M		c-:	201 Cor	πp	.077 .101 .038 .051 OVERA .066 .035	In/Sec In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s
C-201	11 12 21 22 23 71M 72M 73M		c-:	201 Cor	πp	.077 .101 .038 .051 OVERA .066 .035 .063	In/Sec In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s
C-201	11 12 21 22 23 71M 72M 73M 81M		c-:	201 Cor	np	.077 .101 .038 .051 OVERA .066 .035 .063 .044	In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s
C-201	11 12 21 22 23 71M 72M 73M		C-:	201 Cor	np	.077 .101 .038 .051 .066 .035 .063 .044 .025	In/Sec In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s
C-201	11 12 21 22 23 71M 72M 73M 81M 82M		C-:	201 Cor	np	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041	In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s
C-201	11 12 21 23 71M 72M 73M 81M 82M 71F		C-:	201 Cor	np	.077 .101 .038 .051 .066 .035 .063 .044 .025 .041 .049	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s
C-201	11 12 21 22 3 71M 72M 73M 81M 82M 71F 72F		C-:	201 Cor	πp	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040	In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s
C-201	11 12 21 22 33 71M 72M 73M 81M 82M 71F 72F 73F		c-:	201 Cor	πp	.077 .101 .038 .051 .066 .035 .063 .044 .025 .041 .049 .040 .040	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s
	11 12 21 22 23 71M 72M 71M 73M 81M 82M 71F 72F 73F 81F 82F				-	.077 .101 .038 .051 .066 .035 .063 .044 .025 .041 .049 .040 .060 .059	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s
C-201 new AC	11 12 21 22 23 71M 72M 71M 73M 81M 82M 71F 72F 73F 81F 82F				-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 .059 .059	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec SOR	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 1.630 G-s 1.630 G-s (01-Sep-23) 1-20 KHz
	11 12 21 22 23 71M 72M 71M 73M 81M 82M 71F 72F 73F 81F 82F				-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 .059 .059	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec SOR	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 1.630 G-s 1.630 G-s (01-Sep-23) 1-20 KHz
	11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F 73F 81F 82F				-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .060 .059 COMPRES OVERA .091	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec SOR	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s
	11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F 73F 81F 82F				-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec SOR LL LEVEL In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s
	11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F 73F 81F 82F 11 12				-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104 .047	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec SOR LL LEVEL In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s
	11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F 81F 82F 11 12 13 21 22				-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104 .047 .074	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s 1.580 G-s .813 G-s
	11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F 81F 82F 11 12 13 21				-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104 .047 .074 .076 .037	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s 1.580 G-s .813 G-s .442 G-s
	11 12 21 22 23 71M 72M 73M 81M 82M 71F 73F 81F 82F 11 12 13 21 22 23	_			-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104 .047 .074 .074 .076 .037 OVERA	In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s 1.580 G-s .813 G-s .442 G-s 1-20 KHZ
	11 12 21 22 23 71M 72M 73M 81M 82M 71F 73F 81F 82F 11 12 13 21 22 23 71F	_			-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104 .047 .074 .074 .076 .037 OVERA .095	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s 1.580 G-s .813 G-s .442 G-s 1-20 KHZ 11.70 G-s
	11 12 21 22 3 71M 72M 73M 81M 82M 71F 73F 81F 82F 11 12 13 21 22 23 71F 72F	_			-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104 .047 .074 .074 .074 .075 .037 OVERA .095 .106	In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s 1.580 G-s .813 G-s .442 G-s 1-20 KHZ 11.70 G-s 1.997 G-s
	11 12 21 22 3 71M 72M 73M 81M 82M 71F 73F 81F 82F 11 12 13 21 22 3 71F 72F 73F	_			-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104 .047 .074 .074 .074 .075 .037 OVERA .095 .106 .065	In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s 1.580 G-s .813 G-s .442 G-s 1-20 KHZ 11.70 G-s 1.997 G-s 2.507 G-s
	11 12 21 22 23 71M 72M 73M 81M 82M 71F 72F 81F 82F 11 12 13 21 22 23 71F 72F 73F 81F	_			-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 COMPRES OVERA .091 .104 .047 .074 .074 .074 .075 .037 OVERA .095 .106 .055 .098	In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s 1.580 G-s .813 G-s .442 G-s 1-20 KHZ 11.70 G-s 1.997 G-s 2.507 G-s 3.681 G-s
	11 12 21 22 3 71M 72M 73M 81M 82M 71F 73F 81F 82F 11 12 13 21 22 3 71F 72F 73F	_			-	.077 .101 .038 .051 OVERA .066 .035 .063 .044 .025 .041 .049 .040 .059 .059 .001 .104 .074 .074 .074 .074 .075 .037 OVERA .095 .106 .055 .098 .179	In/Sec In/Sec	1-20 KHz 3.927 G-s 2.103 G-s .946 G-s .253 G-s .308 G-s 1-20 KHZ 4.023 G-s .554 G-s .787 G-s 9.060 G-s 1.261 G-s 3.541 G-s .911 G-s .701 G-s 12.01 G-s 1.630 G-s (01-Sep-23) 1-20 KHz .978 G-s .488 G-s .123 G-s 1.580 G-s .813 G-s .442 G-s 1-20 KHZ 11.70 G-s 1.997 G-s 2.507 G-s 3.681 G-s

71M		.115	In/Sec	9.457 G-s
72M			In/Sec	1.883 G-s
73M		.135	In/Sec	1.571 G-s
81M		.120	In/Sec	9.017 G-s
82M		.286	In/Sec	1.312 G-s
83M		.207	In/Sec	1.705 G-s
201-08A	- COMPRESSOR, NASH	I A 201-0	<b>A80</b>	(01-Sep-23)
		OVERA	LL LEVEL	1-20 KHz
11		.046	In/Sec	.086 G-s
12		.050	III/Sec	.074 G-S
13			In/Sec	.079 G-s
21		.048	In/Sec	.111 G-s
22		.066	In/Sec	.071 G-s
23		.168	In/Sec	.089 G-s
71		.147	In/Sec	.623 G-s
72			In/Sec	
73		.126	In/Sec	.107 G-s
81			In/Sec	.196 G-s
82		.183	In/Sec	.050 G-s
83		.137	In/Sec	.068 G-s
9002-10	- D-HYDROGENATOR	ACTTATO	R	(01 - Sen - 23)
		1101111101		(01 00p 20)
				1-20 KHz
11		OVERAL .063	LL LEVEL In/Sec	1-20 KHz .212 G-s
11 21		OVERAL .063	LL LEVEL	1-20 KHz .212 G-s
		OVERAL .063 .070 .077	LL LEVEL In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s
21		OVERAI .063 .070 .077 OVERAI	LL LEVEL In/Sec In/Sec In/Sec LL LEVEL	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ
21		OVERAI .063 .070 .077 OVERAI	LL LEVEL In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ
21 23		OVERAJ .063 .070 .077 OVERAJ .182 .086	LL LEVEL In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s
21 23 31		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec LL LEVEL	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz
21 23 31		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ	LL LEVEL In/Sec In/Sec In/Sec LL LEVEL In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz
21 23 31 31L		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec In/Sec LL LEVEL	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz
21 23 31 31L 51		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230 .230 .052	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s
21 23 31 31L 51 51L		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230 .230 .052	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s
21 23 31 31L 51 51L 52		OVERAJ . 063 . 070 . 077 OVERAJ . 182 . 086 OVERAJ . 230 . 230 . 052 . 224	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s
21 23 31 31L 51 51L 52 52L		OVERAJ . 063 . 070 . 077 OVERAJ . 182 . 086 OVERAJ . 230 . 230 . 052 . 224 . 222	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s .422 G-s .108 G-s
21 23 31 31L 51 51L 52 52L 53	-	OVERAJ . 063 . 070 . 077 OVERAJ . 182 . 086 OVERAJ . 230 . 230 . 230 . 052 . 224 . 222 . 363	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s .422 G-s .108 G-s .392 G-s
21 23 31 31L 51 51L 52 52L 53 53L	-	OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230 .230 .230 .052 .224 .222 .363 .163	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s .422 G-s .108 G-s .392 G-s .232 G-s .232 G-s
21 23 31 31L 51 51L 52 52L 53 53L 61	-	OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230 .230 .230 .224 .222 .363 .163 .164 .041	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s .422 G-s .108 G-s .392 G-s .232 G-s .232 G-s
21 23 31 31L 51 51L 52 52L 53 53L 61 61L		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230 .230 .230 .052 .224 .222 .363 .163 .164 .041 .042	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s .422 G-s .108 G-s .392 G-s .232 G-s .232 G-s .034 G-s .016 G-s
21 23 31 31L 51 51L 52 52L 53 53L 61 61L 81		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230 .230 .230 .052 .224 .222 .363 .163 .164 .041 .042	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s .422 G-s .108 G-s .392 G-s .232 G-s .232 G-s .034 G-s .016 G-s
21 23 31 31L 51 51L 52 52L 53 53L 61 61L 81 82		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230 .230 .230 .052 .224 .222 .363 .163 .164 .041 .042	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s .422 G-s .108 G-s .392 G-s .232 G-s .232 G-s .034 G-s .016 G-s
21 23 31 31L 51 51L 52 52L 53 53L 61 61L 81 82		OVERAJ .063 .070 .077 OVERAJ .182 .086 OVERAJ .230 .230 .230 .052 .224 .222 .363 .163 .164 .041 .042	LL LEVEL In/Sec In/Sec LL LEVEL In/Sec LL LEVEL In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec In/Sec	1-20 KHz .212 G-s .236 G-s .064 G-s 1-20 KHZ .755 G-s .650 G-s 1-20 KHz .250 G-s .250 G-s .508 G-s .422 G-s .108 G-s .392 G-s .232 G-s .232 G-s .034 G-s .016 G-s

#### Station: PEROXIDE 70% H202 PUMPS Route No. 1: 70% PUMPS

MEASUREMEN	IT POINT	OVERALL LEVEL	HFD / VHFD
401-04	- 265C STABILITY	TANK (01	-Sep-23)
		OVERALL LEVEL	1-20 KHz
11		.066 In/Sec	.459 G-s
21		.030 In/Sec	.666 G-s
23		.029 In/Sec	.229 G-s
71		.028 In/Sec	.239 G-s
72		.022 In/Sec	.315 G-s
260-13	- 265E STABILITY	TANK (01	-Sep-23)
260-13	- 265E STABILITY	TANK (01 OVERALL LEVEL	-
260-13 11	- 265E STABILITY		1-20 KHz
	- 265E STABILITY	OVERALL LEVEL	1-20 KHz 1.189 G-s
11	- 265E STABILITY	OVERALL LEVEL .155 In/Sec	1-20 KHz 1.189 G-s 2.041 G-s
11 21	- 265E STABILITY	OVERALL LEVEL .155 In/Sec .177 In/Sec	1-20 KHz 1.189 G-s 2.041 G-s 1.709 G-s
11 21 23	- 265E STABILITY	OVERALL LEVEL .155 In/Sec .177 In/Sec .129 In/Sec	1-20 KHz 1.189 G-s 2.041 G-s 1.709 G-s .767 G-s
11 21 23 71 72		OVERALL LEVEL .155 In/Sec .177 In/Sec .129 In/Sec .104 In/Sec .085 In/Sec	1-20 KHz 1.189 G-s 2.041 G-s 1.709 G-s .767 G-s 1.290 G-s
11 21 23 71 72	- 265E STABILITY - K STORAGE TANK	OVERALL LEVEL .155 In/Sec .177 In/Sec .129 In/Sec .104 In/Sec .085 In/Sec	1-20 KHz 1.189 G-s 2.041 G-s 1.709 G-s .767 G-s 1.290 G-s
11 21 23 71 72		OVERALL LEVEL .155 In/Sec .177 In/Sec .129 In/Sec .104 In/Sec .085 In/Sec	1-20 KHz 1.189 G-s 2.041 G-s 1.709 G-s .767 G-s 1.290 G-s -Sep-23) 1-20 KHz

	21	.116 In/Sec	528 G-s
	23	.116 In/Sec	
	71	.162 In/Sec	1.014 G-s
	72	.162 In/Sec .074 In/Sec	1.063 G-s
56		-	01-Sep-23)
	11	OVERALL LEVEL .039 In/Sec	1-20 KHz .142 G-s
	21	.039 IN/Sec	.301 G-s
	23	.046 In/Sec	.111 G-s
	71	.039 In/Sec	.100 G-s
	72	.103 In/Sec	
247-11	L	- A OVERRUN PUMP (1 OVERALL LEVEL	01-Sep-23) 1-20 KHz
	11	.036 In/Sec	.233 G-s
	21	.044 In/Sec	.346 G-s
	23	.067 In/Sec	
	71	.025 In/Sec	.150 G-s
	72	.039 In/Sec	.230 G-s
240-24	•	- B CONC PRODUCT PUMP, NORTH (	01 - 900 - 22
249-24	±	OVERALL LEVEL	
	11	.081 In/Sec	1.469 G-s
	21	.084 In/Sec	1.489 G-s
	23	.043 In/Sec	.201 G-s
	71	.034 In/Sec	.434 G-s
	72	.020 In/Sec	.439 G-s
7035-0	)5	- C CONC PRODUCT PUMP	01-Sep-23)
		OVERALL LEVEL	-
	11	.024 In/Sec	
	21	.021 In/Sec .028 In/Sec	.255 G-s
	23	.028 In/Sec	.224 G-s
	71	.043 In/Sec	
	72	.038 In/Sec	.096 G-s
7034-0	04		01-Sep-23)
		OVERALL LEVEL	1-20 KHz
	11	.121 In/Sec	.143 G-s
	21	.119 In/Sec	.263 G-s
	23 71	.055 In/Sec .034 In/Sec	.191 G-s .042 G-s
	72	.014 IN/Sec	
27428			01-Sep-23)
	11	OVERALL LEVEL .083 In/Sec	
	21	.083 In/Sec	.626 G-s
	23	.094 IN/Sec	.357 G-s
	71	.161 In/Sec	1.833 G-s
	72	.085 In/Sec	
27421			01 600 22)
2/431		- D TANK CAR LOAD PUMP PERONE (1 OVERALL LEVEL	1 20 84-
	11	.048 In/Sec	.439 G-s
	21	.040 IN/Sec	.468 G-s
	23	.041 In/Sec	.300 G-s
	71	.039 In/Sec	.546 G-s
	72	.068 In/Sec	.753 G-s
28133		- WEST TANK FARM VACUUM PUMP ()	01-Sep-23)
20133			
	11	OVERALL LEVEL .178 In/Sec	1.484 G-s
	21	.186 In/Sec	
	23	.188 In/Sec	1.052 G-s
	71	.188 In/Sec .162 In/Sec	4.811 G-s
	72	.203 In/Sec	10.12 G-s
0041		- VAC RECEIVR PUMP EAST -Durco (	01-Sep-23)

11 21 23 71 72	OVERALL LEVEL .259 In/Sec .211 In/Sec .109 In/Sec .061 In/Sec .096 In/Sec	.496 G-s .487 G-s .486 G-s 2.179 G-s
P105 11 21 23 71 72	- STP BUILDING P105 OVERALL LEVEL .171 In/Sec .167 In/Sec .079 In/Sec .044 In/Sec .035 In/Sec	.812 G-s .569 G-s .448 G-s 1.130 G-s

Station: HYDROGEN Route No. 2: H2 WEEKLY

MEASURE	EMENT P	0INT 		OVERALI	L LEVEL	HFD 	/ VHFD 
C2	- :	FD BLOWER	C2			(05-Sep-23	)
				OVERAI	LL LEVEL	1-20	KHz
	MOH			.560	In/Sec	1.004	G-s
	MOV			.572	In/Sec	.262	G-s
	MIH			.441	In/Sec	1.184	G-s
	MIV			.748	In/Sec	. 229	G-s
	MIA			1.815	In/Sec	.206	G-s
	FIH			. 687	In/Sec	3.728	G-s
	FIV			1.157	In/Sec	.612	G-s
	FIA			2.088	In/Sec	.782	G-s
	FOH				•	2.739	
	FOV			1.643	In/Sec	.485	G-s
C1	-	ID -BLOWEF	а с1			(01-Sep-23	)
				OVERAI	LL LEVEL	1-20	KHz
	11			.123	In/Sec	.356	G-s
	21			.119	In/Sec	.451	G-s
	23			.104	In/Sec	.102	G-s
	71			.118	In/Sec	. 666	G-s
	72			.065	In/Sec	.358	G-s
	81			.296	In/Sec	1.106	G-s
	82			.244	In/Sec	.560	G-s
rificat	ion Of	Vibration	Units	:			
		-					
Acc	>	G-s	PK				

As always, it has been a pleasure to serve Arkema. If there are any comments or questions, do not hesitate to contact us.

Sincerely,

Kevin W. Maxuell

ISO Certified Vibration Analyst, Category III



QualiTest Diagnostics Cell: 901-486-4565 Email: <u>kwilliam@gohispeed.com</u>