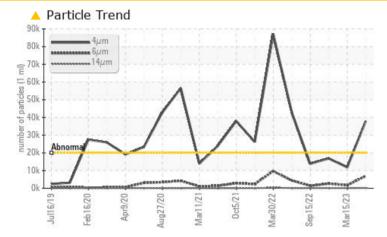


PROBLEM SUMMARY

Area **Fermentation** Machine Id **Lightnin FFG40MB01 Main Fermentor, Agitator** Component

Gearbox Fluid JAX FGG-AW ISO 220 (28 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Sample Rating Trend	ISO
	A
lu/2013 Feb2020 Apr2020 Mar2021 Oct2021 Mar2022 Sep2022 Mar2023	

PROBLEMATIC T	EST RESULTS				
Sample Status			ATTENTION	NORMAL	NORMAL
Particles >4µm	ASTM D7647	>20000	<u> </u>	11802	16821
Particles >6µm	ASTM D7647	>5000	6 916	1714	2642
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<u> </u>	21/18/13	21/19/13

Customer Id: NOVFRANC Sample No.: WC0793891 Lab Number: 05878080 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Doug Bogart +1 (800)237-1369 x4016 <u>dougb@wearcheckusa.com</u>

To change component or sample information: Customer Service +1 1-800-237-1369 <u>customerservice@wearcheck.com</u>

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

15 Mar 2023 Diag: Don Baldridge



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



06 Dec 2022 Diag: Jonathan Hester

15 Sep 2022 Diag: Angela Borella



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



NORMAL



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Area Fermentation Machine Id Lightnin FFG40MB01 Main Fermentor, Agitator Component

Gearbox

Fluid JAX FGG-AW ISO 220 (28 GAL)

DIAGNOSIS

A Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

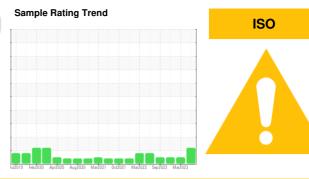
All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

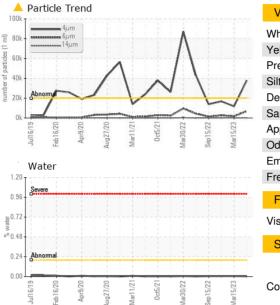
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

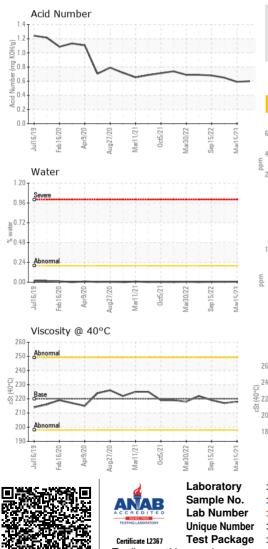


Sample Number Client Info WC0793891 WC0697850 WC0663732 Sample Date Client Info 16 Jun 2023 15 Mar 2023 06 Dec 2022 Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A Sample Status Imathe Age Imathe Age N/A N/A N/A WEAR METALS method Imit/base current history 1 history 2 Iron ppm ASTM D5185m >200 8 13 13 Chromium ppm ASTM D5185m >15 0 0 0 Nickel ppm ASTM D5185m >15 0 0 0 Silver ppm ASTM D5185m >100 0 0 0 Aluminum ppm ASTM D5185m >25 0 0 0 Cadduim ppm <td< th=""><th>SAMPLE INFORM</th><th>ATION</th><th>method</th><th>limit/base</th><th>current</th><th>history 1</th><th>history 2</th></td<>	SAMPLE INFORM	ATION	method	limit/base	current	history 1	history 2
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ADDITIVES method limit/base current history 1 history 2 Boron ppm ASTM D5185m <1	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m <1 2 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Cadmium	ppm	ASTM D5185m		<1	0	0
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Maganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m <1	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium ppm ASTM D5185m 5 6 8 Phosphorus ppm ASTM D5185m 581 598 599 Zinc ppm ASTM D5185m 2 11 16 Sulfur ppm ASTM D5185m 752 808 613 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >50 5 5 4 Sodium ppm ASTM D5185m >50 5 5 4 Sodium ppm ASTM D5185m >20 0 0 0 Potassium ppm ASTM D5185m >20 0 0 0 Water % ASTM D504 >0.2 0.003 0.006 0.005 ppm ASTM D7647 >2000 34.0 65.7 52.4 4 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4µm ASTM D7647 >20000 37942 11802 16821	Manganese	ppm	ASTM D5185m		<1	<1	<1
Phosphorus ppm ASTM D5185m 581 598 599 Zinc ppm ASTM D5185m 2 11 16 Sulfur ppm ASTM D5185m 752 808 613 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >50 5 5 4 Sodium ppm ASTM D5185m >20 0 0 0 Potassium ppm ASTM D5185m >20 0 0 0 Water % ASTM D5034 >0.2 0.003 0.006 0.005 ppm MSTM D6304 >2000 34.0 65.7 52.4 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4µm ASTM D7647 >20000 37942 11802 16821 Particles >14µm ASTM D7647 >640 185 58 62 Pa	Magnesium	ppm	ASTM D5185m		<1	0	2
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Sulfur ppm ASTM D5185m 752 808 613 CONTAMINANTS method limit/base current history 1 history 2 Silicon ppm ASTM D5185m >50 5 5 4 Sodium ppm ASTM D5185m >50 5 5 4 Sodium ppm ASTM D5185m >20 0 0 0 Potassium ppm ASTM D5185m >20 0 0 0 Vater % ASTM D5185m >20 0 0 0 Water % ASTM D6304 >0.2 0.003 0.006 0.005 ppm Water ppm ASTM D6304 >2000 34.0 65.7 52.4 FLUID CLEANLINESS method limit/base current history 1 history 2 Particles >4µm ASTM D7647 >20000 37942 11802 16821 Particles >51µm ASTM D7647 640 185 58 <td>Phosphorus</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>581</th> <td>598</td> <td>599</td>	Phosphorus	ppm	ASTM D5185m		581	598	599
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Particles >14µm ASTM D7647 >640 185 58 62 Particles >21µm ASTM D7647 >160 39 14 11 Particles >38µm ASTM D7647 >40 1 1 2 Particles >71µm ASTM D7647 >10 0 0 1 Oil Cleanliness ISO 4406 (c) >21/19/16 22/20/15 21/18/13 21/19/13 FLUID DEGRADATION method limit/base current history 1 history 2	Particles >6µm		ASTM D7647	>5000	<u> </u>	1714	2642
Particles >21μm ASTM D7647 >160 39 14 11 Particles >38μm ASTM D7647 >40 1 1 2 Particles >38μm ASTM D7647 >10 0 1 1 2 Particles >71μm ASTM D7647 >10 0 0 1 2 Oil Cleanliness ISO 4406 (c) >21/19/16 22/20/15 21/18/13 21/19/13 FLUID DEGRADATION method limit/base current history 1 history 2						58	62
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Oil Cleanliness ISO 4406 (c) >21/19/16 22/20/15 21/18/13 21/19/13 FLUID DEGRADATION method limit/base current history 1 history 2						0	
							21/19/13
	FLUID DEGRADA	TION	method	limit/base	current	history 1	history 2
	Acid Number (AN)	mg KOH/a	ASTM D8045		0.60		



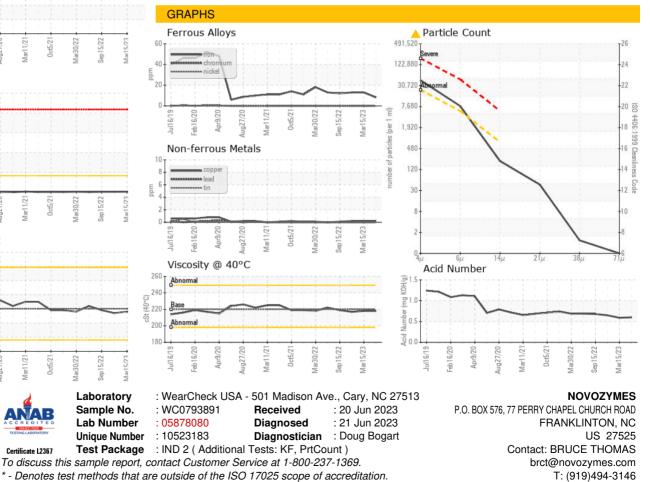
OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER	TIES	method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D445	220	218	218	217
SAMPLE IMAGE	S	method	limit/base	current	history 1	history 2
Color						
Bottom				(3)		

Bottom



* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: CHASE MCGEE

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F: (919)494-3456