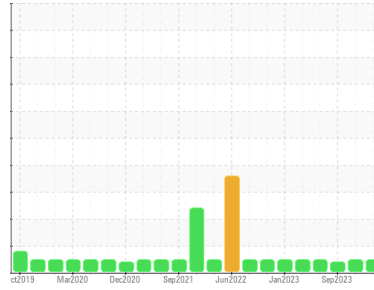




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area

**Fermentation**

Machine Id

**Lightnin FHG51FB01 Main Fermentor, Agitator**

Component

**Gearbox**

Fluid

**JAX FGG-AW ISO 220 (28 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

### Fluid Condition

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

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>WC0888637</b>	WC0857604	WC0843011
Sample Date	Client Info	<b>31 May 2024</b>	02 Jan 2024	27 Sep 2023
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	NORMAL	ATTENTION

## WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>200	<b>22</b>	29	0
Chromium	ppm	ASTM D5185m	>15	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>0</b>	1	0
Lead	ppm	ASTM D5185m	>100	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>200	<b>0</b>	<1	<1
Tin	ppm	ASTM D5185m	>25	<b>0</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>0</b>	10	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>0</b>	<1	0
Calcium	ppm	ASTM D5185m		<b>7</b>	2	<1
Phosphorus	ppm	ASTM D5185m		<b>590</b>	568	638
Zinc	ppm	ASTM D5185m		<b>10</b>	6	<1
Sulfur	ppm	ASTM D5185m		<b>1561</b>	1536	652

## CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>50	<b>0</b>	<1	6
Sodium	ppm	ASTM D5185m		<b>2</b>	0	0
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	2	0
Water	%	ASTM D6304	>0.2	<b>0.003</b>	0.003	0.002
ppm Water	ppm	ASTM D6304	>2000	<b>38</b>	27	15.6

## FLUID CLEANLINESS

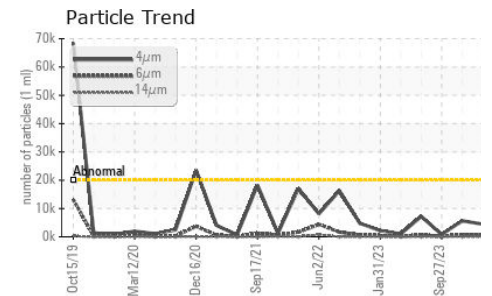
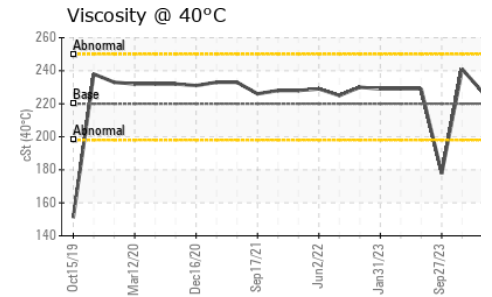
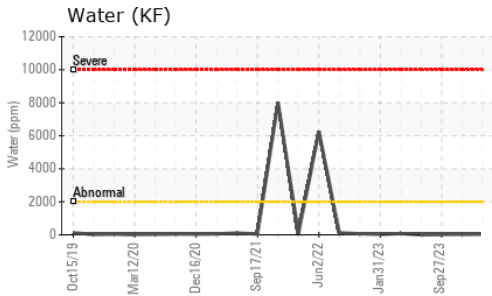
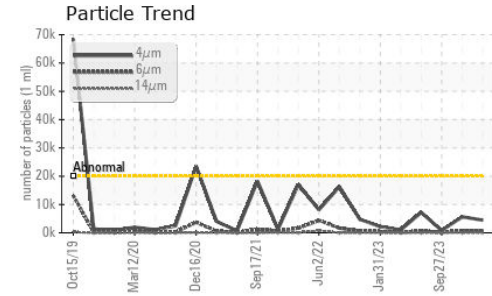
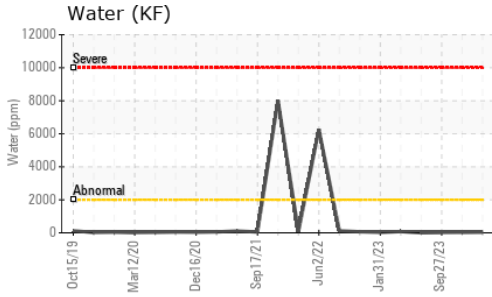
method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>20000	<b>4474</b>	5653	805
Particles >6µm	ASTM D7647	>5000	<b>565</b>	737	191
Particles >14µm	ASTM D7647	>640	<b>46</b>	33	12
Particles >21µm	ASTM D7647	>160	<b>12</b>	8	4
Particles >38µm	ASTM D7647	>40	<b>0</b>	0	1
Particles >71µm	ASTM D7647	>10	<b>0</b>	0	1
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>19/16/13</b>	20/17/12	17/15/11

## FLUID DEGRADATION

method	limit/base	current	history1	history2		
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.57</b>	0.58	0.73



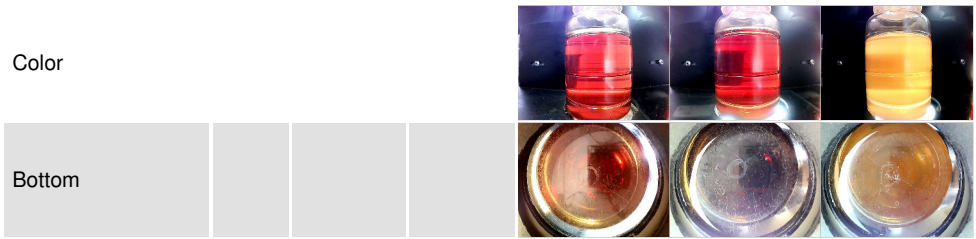
# OIL ANALYSIS REPORT



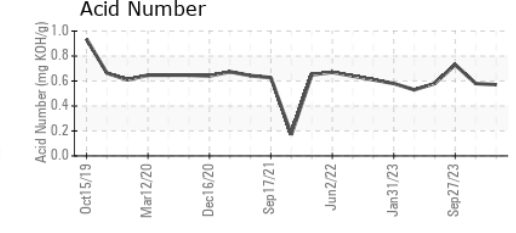
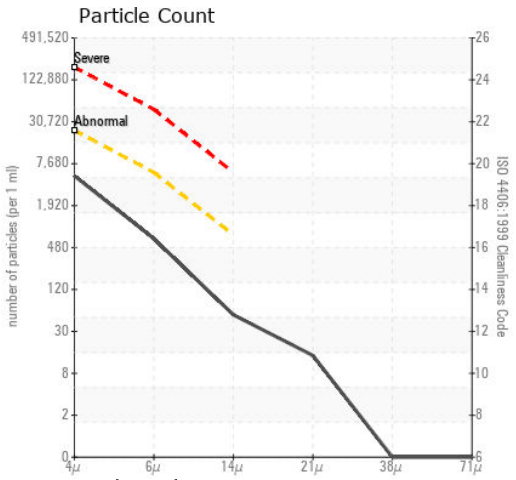
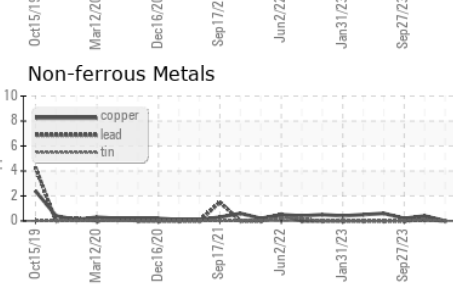
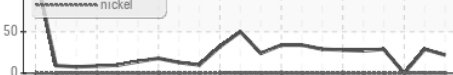
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 220	227	241	177.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0888637 **Received** : 03 Jun 2024  
**Lab Number** : 06197626 **Tested** : 04 Jun 2024  
**Unique Number** : 11059749 **Diagnosed** : 04 Jun 2024 - Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**NOVOZYMES**  
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 FRANKLINTON, NC  
 US 27525  
 Contact: BRUCE THOMAS  
 brct@novozymes.com  
 T: (919)494-3146  
 F: (919)494-3456

To discuss this sample report, contact Customer Service at 1-800-237-1369.  
 \* - 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)