



## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Water Drain-off	---	---	?	We advise that you follow the water drain-off procedure for this component, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Water Access	---	---	?	We advise that you check for the source of water entry.

## HISTORICAL DIAGNOSIS

### ISO



#### 23 Jan 2024 Diag: Jonathan Hester

No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

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### CONTAMINANT



#### 28 Jul 2023 Diag: Jonathan Hester

No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Appearance is hazy. 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.

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### WATER



#### 22 Jun 2023 Diag: Don Baldrige

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample. All component wear rates are normal. Appearance is hazy. Moderate concentration of visible dirt/debris present in the oil. There is a light concentration of water present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

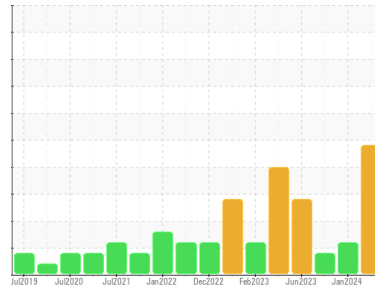
[view report](#)





# OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Area

Fermentation

Machine Id

Lightnin FHG21AB01 Dosing Tank, Agitator

Component

Gearbox

Fluid

JAX FGG-AW ISO 220 (14 GAL)

## DIAGNOSIS

### ▲ Recommendation

We advise that you check for the source of water entry. We advise that you follow the water drain-off procedure for this component, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. There is too much water present in this sample to perform a particle count.

### Wear

All component wear rates are normal.

### ▲ Contamination

Appearance is unacceptable. Excessive free water present. There is a high concentration of water present in the oil.

### Fluid Condition

The AN level is acceptable for this fluid.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0901920	WC0853639	WC0808213
Sample Date	Client Info		12 Jul 2024	23 Jan 2024	28 Jul 2023
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			SEVERE	ABNORMAL	ATTENTION

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	45	5	1
Chromium	ppm	ASTM D5185m >15	0	<1	0
Nickel	ppm	ASTM D5185m >15	0	0	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	1	2	0
Lead	ppm	ASTM D5185m >100	0	0	0
Copper	ppm	ASTM D5185m >200	0	0	<1
Tin	ppm	ASTM D5185m >25	<1	0	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	0	0	0
Manganese	ppm	ASTM D5185m	<1	0	<1
Magnesium	ppm	ASTM D5185m	<1	<1	<1
Calcium	ppm	ASTM D5185m	58	10	15
Phosphorus	ppm	ASTM D5185m	572	507	543
Zinc	ppm	ASTM D5185m	4	0	0
Sulfur	ppm	ASTM D5185m	757	542	764

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	<1	0	<1
Sodium	ppm	ASTM D5185m	<1	0	1
Potassium	ppm	ASTM D5185m >20	0	<1	0
Water	%	ASTM D6304 >0.2	▲ 1.64	0.164	0.104
ppm Water	ppm	ASTM D6304 >2000	▲ 16400	1640	1040

## FLUID CLEANLINESS

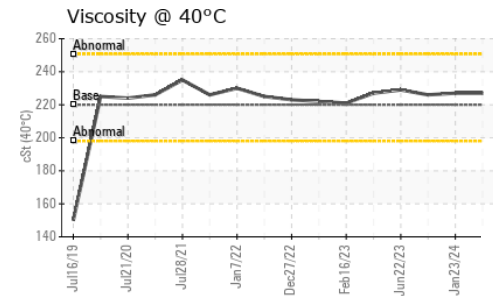
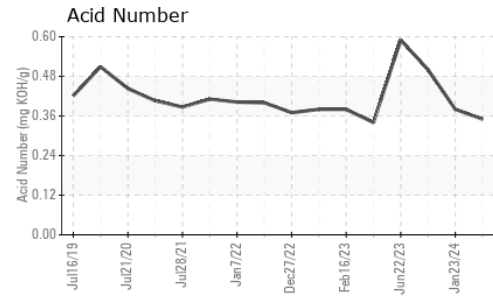
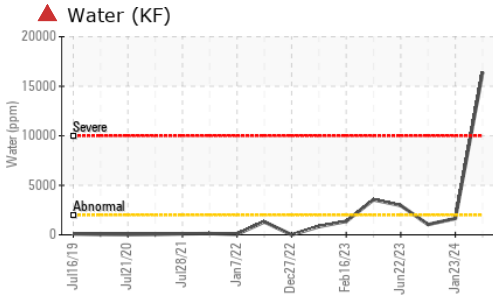
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	---	▲ 147847	4644
Particles >6µm	ASTM D7647	>5000	---	▲ 33646	451
Particles >14µm	ASTM D7647	>640	---	503	25
Particles >21µm	ASTM D7647	>160	---	57	8
Particles >38µm	ASTM D7647	>40	---	3	1
Particles >71µm	ASTM D7647	>10	---	2	1
Oil Cleanliness	ISO 4406 (c)	>21/19/16	---	▲ 24/22/16	19/16/12

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.35	0.38	0.50



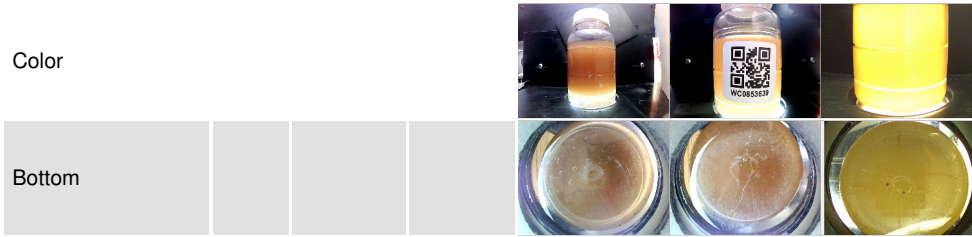
# OIL ANALYSIS REPORT



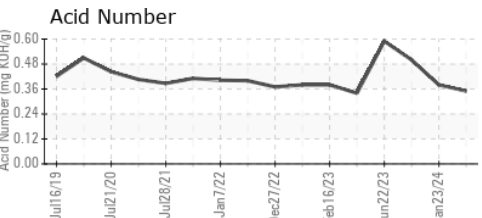
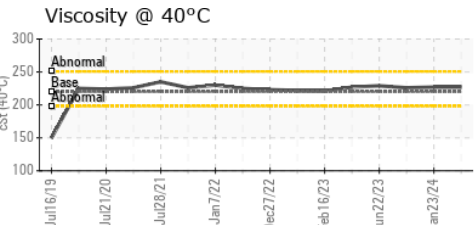
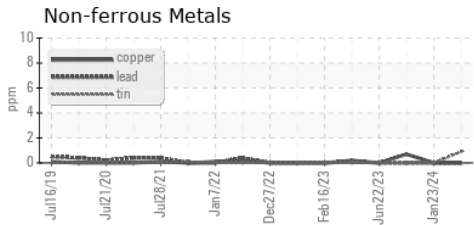
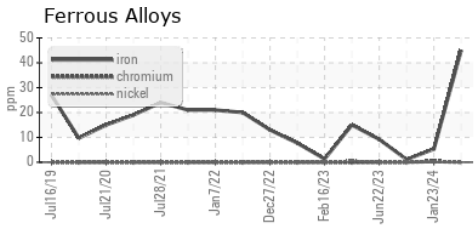
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	HAZY
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	0.2%	0.2%
Free Water	scalar	*Visual	>10%	NEG	NEG

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

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



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0901920      **Received** : 16 Jul 2024  
**Lab Number** : 06237801      **Tested** : 18 Jul 2024  
**Unique Number** : 11126635      **Diagnosed** : 18 Jul 2024 - Doug Bogart  
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**NOVOZYMES**  
 P.O. BOX 576, 77 PERRY CHAPEL CHURCH ROAD  
 FRANKLINTON, NC  
 US 27525  
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 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)