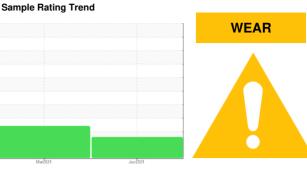


OIL ANALYSIS REPORT



Machine Id

67

Lube System

{not provided} (--- GAL)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Aluminum and iron ppm levels are abnormal. Cylinder wear is indicated.

Contamination

There is no indication of any contamination in the oil.

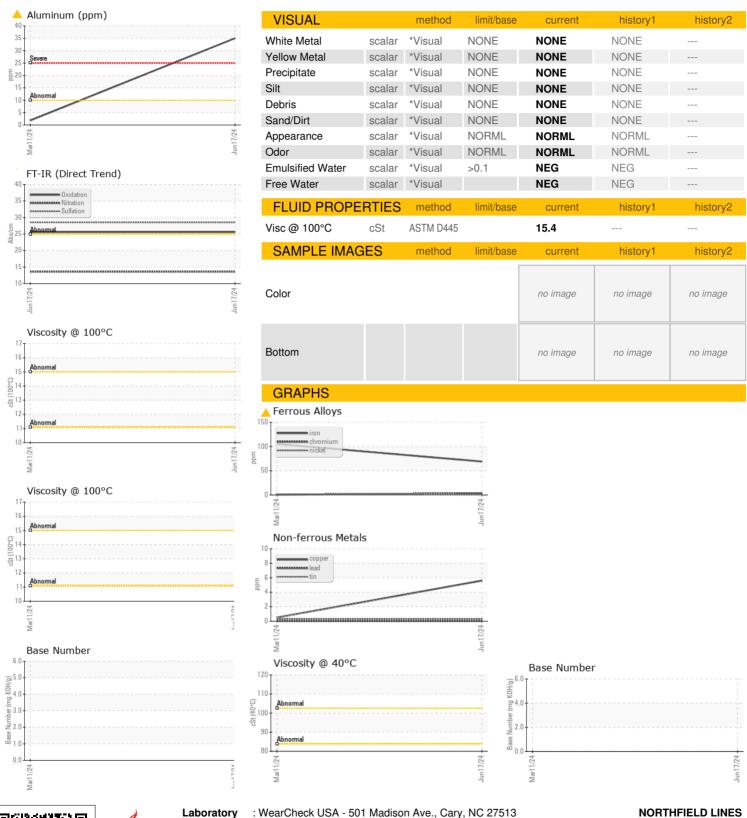
Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

			Mar2024	Jun2024		
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0127422	PCA0082975	
Sample Date		Client Info		17 Jun 2024	11 Mar 2024	
Machine Age	mls	Client Info		0	0	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		N/A	N/A	
Sample Status				ABNORMAL	ABNORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	△ 69	▲ 105	
Chromium	ppm	ASTM D5185m	>10	3	<1	
Nickel	ppm	ASTM D5185m	>10	<1	<1	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m		0	0	
Aluminum	ppm	ASTM D5185m	>10	△ 35	2	
Lead	ppm	ASTM D5185m	>10	0	0	
Copper	ppm	ASTM D5185m	>75	6	<1	
Tin	ppm	ASTM D5185m	>10	<1	<1	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron		A OTA A DE LOS		•		
Boron	ppm	ASTM D5185m		6	99	
Barium	ppm	ASTM D5185m ASTM D5185m		0	99	
	• • • • • • • • • • • • • • • • • • • •					
Barium	ppm	ASTM D5185m		0	0	
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m		0 69	0 2	
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 69 2	0 2 2	
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 69 2 1018	0 2 2 0	
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 69 2 1018 1272	0 2 2 0 <1	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 69 2 1018 1272 1182	0 2 2 0 <1 570	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 69 2 1018 1272 1182 1413	0 2 2 0 <1 570	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 69 2 1018 1272 1182 1413 3377	0 2 2 0 <1 570 0 22398	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 69 2 1018 1272 1182 1413 3377	0 2 2 0 <1 570 0 22398 history1	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>20	0 69 2 1018 1272 1182 1413 3377 current	0 2 2 0 <1 570 0 22398 history1	history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>20	0 69 2 1018 1272 1182 1413 3377 current 6 5	0 2 2 0 <1 570 0 22398 history1 ▲ 106 4	history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>20 >20	0 69 2 1018 1272 1182 1413 3377 current 6 5	0 2 2 0 <1 570 0 22398 history1 ▲ 106 4 98	history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>20 >20	0 69 2 1018 1272 1182 1413 3377 current 6 5 19	0 2 2 0 <1 570 0 22398 history1 ▲ 106 4 98 history1	history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >20	0 69 2 1018 1272 1182 1413 3377 current 6 5 19 current	0 2 2 0 <1 570 0 22398 history1 ▲ 106 4 98 history1	history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	>20 >20	0 69 2 1018 1272 1182 1413 3377 current 6 5 19 current 1.5	0 2 2 0 <1 570 0 22398 history1 ▲ 106 4 98 history1	history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	>20 >20 limit/base	0 69 2 1018 1272 1182 1413 3377 current 6 5 19 current 1.5 13.6 28.5	0 2 2 0 <1 570 0 22398 history1 ▲ 106 4 98 history1	history2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7844	>20 >20 limit/base	0 69 2 1018 1272 1182 1413 3377 current 6 5 19 current 1.5 13.6 28.5	0 2 2 0 <1 570 0 22398 history1 ▲ 106 4 98 history1 history1	history2 history2 history2 history2



OIL ANALYSIS REPORT





Certificate 12367

Laboratory Sample No.

: PCA0127422 Lab Number : 06212895 Unique Number : 11085759

Received : 17 Jun 2024 **Tested** Diagnosed

: 19 Jun 2024 : 19 Jun 2024 - Angela Borella

Test Package: FLEET (Additional Tests: FT-IR, KV100, TBN) To discuss this sample report, contact Customer Service at 1-800-237-1369.

 st - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Contact: Tyler Smith TSmith@northfieldlines.com T: (651)203-8888

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: NOREAG [WUSCAR] 06212895 (Generated: 06/22/2024 01:26:49) Rev: 1

Contact/Location: Tyler Smith - NOREAG

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EAGAN, MN

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