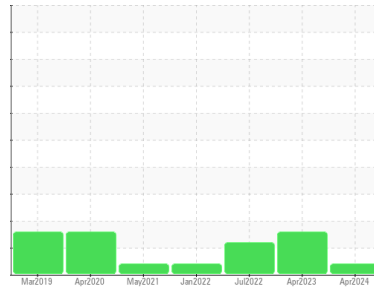




OIL ANALYSIS REPORT

Sample Rating Trend



VIS DEBRIS



Machine Id
KAESER AS 30 6533898 (S/N 1214)
 Component
Compressor
 Fluid
KAESER SIGMA (OEM) M-460 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. 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.

Wear

All component wear rates are normal.

Contamination

Moderate concentration of visible dirt/debris 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 INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	KCPA017195	KCP53023	KCP49614
Sample Date	Client Info	23 Apr 2024	17 Apr 2023	07 Jul 2022
Machine Age	hrs	9482	8156	6632
Oil Age	hrs	1300	1500	1000
Oil Changed	Client Info	Not Chngd	Not Chngd	Not Chngd
Sample Status		ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	<1	<1
Chromium	ppm	ASTM D5185m >10	0	0
Nickel	ppm	ASTM D5185m >3	0	0
Titanium	ppm	ASTM D5185m >3	<1	0
Silver	ppm	ASTM D5185m >2	0	<1
Aluminum	ppm	ASTM D5185m >10	0	<1
Lead	ppm	ASTM D5185m >10	0	0
Copper	ppm	ASTM D5185m >50	11	8
Tin	ppm	ASTM D5185m >10	0	0
Vanadium	ppm	ASTM D5185m	0	0
Cadmium	ppm	ASTM D5185m	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	0	<1
Barium	ppm	ASTM D5185m 90	2	0
Molybdenum	ppm	ASTM D5185m 0	0	0
Manganese	ppm	ASTM D5185m	<1	0
Magnesium	ppm	ASTM D5185m 100	19	33
Calcium	ppm	ASTM D5185m 0	0	<1
Phosphorus	ppm	ASTM D5185m 0	<1	4
Zinc	ppm	ASTM D5185m 0	38	27
Sulfur	ppm	ASTM D5185m 23500	23122	19383

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<1	0
Sodium	ppm	ASTM D5185m	16	13
Potassium	ppm	ASTM D5185m >20	3	2
Water	%	ASTM D6304 >0.05	0.008	0.015
ppm Water	ppm	ASTM D6304 >500	87	158.4

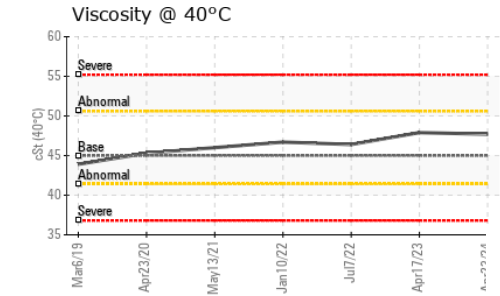
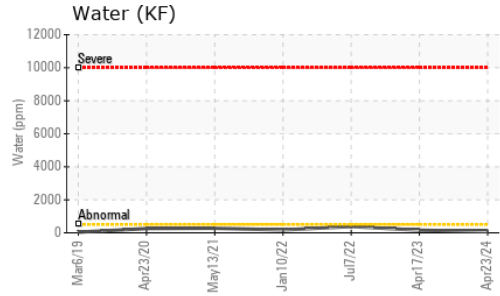
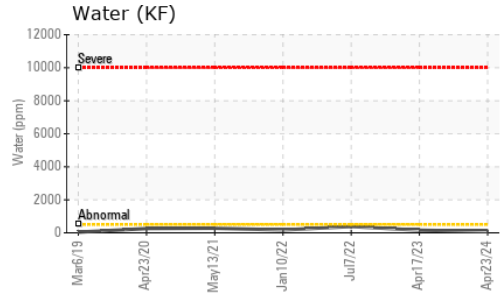
FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	---	49626	8214
Particles >6µm	ASTM D7647 >1300	---	▲ 22228	▲ 3390
Particles >14µm	ASTM D7647 >80	---	▲ 1610	▲ 129
Particles >21µm	ASTM D7647 >20	---	▲ 268	15
Particles >38µm	ASTM D7647 >4	---	2	1
Particles >71µm	ASTM D7647 >3	---	0	0
Oil Cleanliness	ISO 4406 (c) >--/17/13	---	▲ 23/22/18	▲ 20/19/14

FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	0.33	0.32

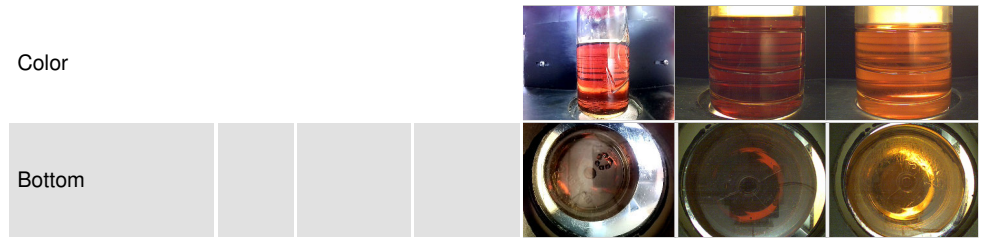
OIL ANALYSIS REPORT



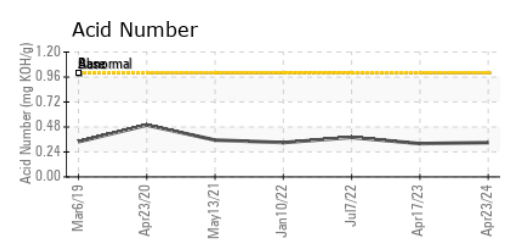
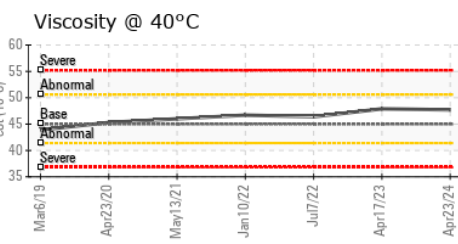
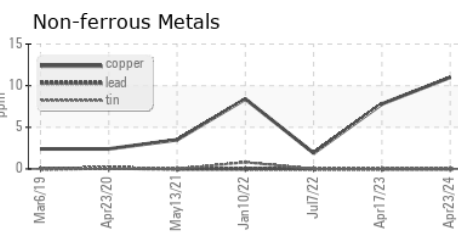
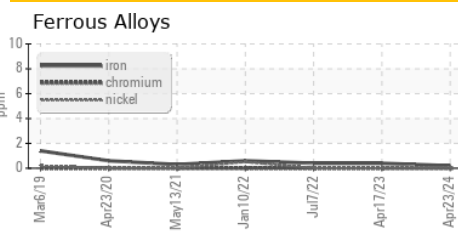
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	▲ MODER	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	45	47.7	47.9

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KCPA017195 **Received** : 25 Apr 2024
Lab Number : 06160938 **Tested** : 29 Apr 2024
Unique Number : 10996361 **Diagnosed** : 29 Apr 2024 - Don Baldrige
Test Package : IND 2 (Additional Tests: KF, PrtCount)

FREIGHTLINER TRUCK CENTERS
 2100 FORMOSA RD
 TROY, IL
 US 62294
 Contact: T. BERGMAN
 tbergman@truckcentersinc.com

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)