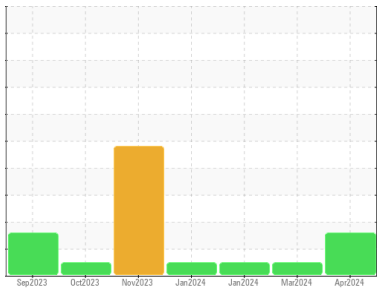
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
135-12
Component
Natural Gas Engine
Fluid
LO-ASH ENGINE OIL SAE 40 (30 QTS)

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
Bearing and/or bushing wear is indicated.

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

Fluid Condition
The BN level is low. The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0012994**	KL0012997	KL0011517
Sample Date		Client Info		**11 Apr 2024**	05 Mar 2024	22 Jan 2024
Machine Age	hrs	Client Info		**12378**	11557	10627
Oil Age	hrs	Client Info		**1356**	1863	1034
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**18**	15	6
Chromium	ppm	ASTM D5185m	>4	**<1**	<1	0
Nickel	ppm	ASTM D5185m	>2	**<1**	0	0
Titanium	ppm	ASTM D5185m		**30**	29	36
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**2**	3	1
Lead	ppm	ASTM D5185m	>30	▲ **22**	13	9
Copper	ppm	ASTM D5185m	>35	▲ **49**	23	14
Tin	ppm	ASTM D5185m	>4	**2**	<1	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	<1
Cadmium	ppm	ASTM D5185m		**<1**	0	0

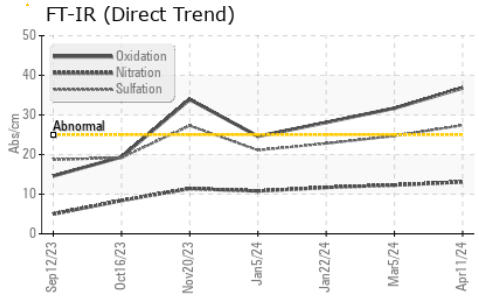
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	37	**48**	42	77
Barium	ppm	ASTM D5185m	12	**0**	0	0
Molybdenum	ppm	ASTM D5185m	200	**157**	147	32
Manganese	ppm	ASTM D5185m		**<1**	0	0
Magnesium	ppm	ASTM D5185m	5	**17**	19	42
Calcium	ppm	ASTM D5185m	1600	**1623**	1677	1597
Phosphorus	ppm	ASTM D5185m	300	**382**	433	361
Zinc	ppm	ASTM D5185m	400	**451**	470	427
Sulfur	ppm	ASTM D5185m	2600	**3134**	3274	2559

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**6**	11	3
Sodium	ppm	ASTM D5185m		**<1**	1	2
Potassium	ppm	ASTM D5185m	>20	**3**	2	0

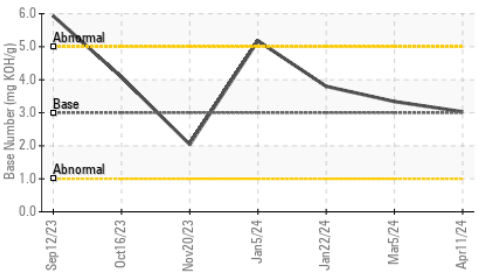
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**13.1**	12.3	11.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**27.4**	24.7	22.8

OIL ANALYSIS REPORT

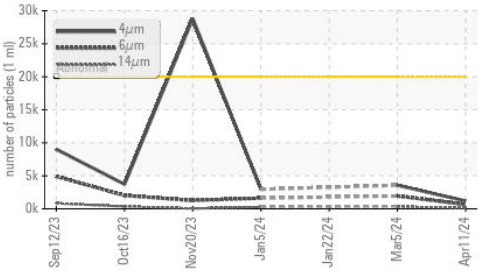
FT-IR (Direct Trend)



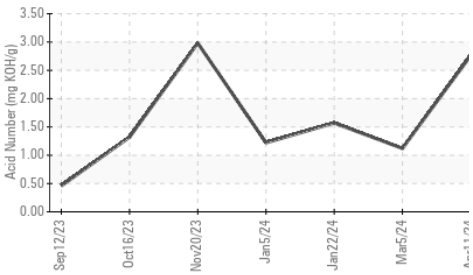
Base Number



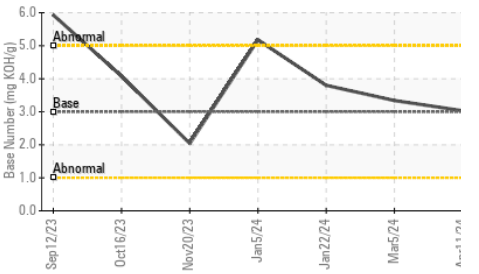
Particle Trend



Acid Number



Base Number



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**1183**	3567	---
Particles >6µm		ASTM D7647	>5000	**645**	1943	---
Particles >14µm		ASTM D7647	>640	**110**	331	---
Particles >21µm		ASTM D7647	>160	**37**	111	---
Particles >38µm		ASTM D7647	>40	**6**	17	---
Particles >71µm		ASTM D7647	>10	**1**	2	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**17/17/14**	19/18/16	---

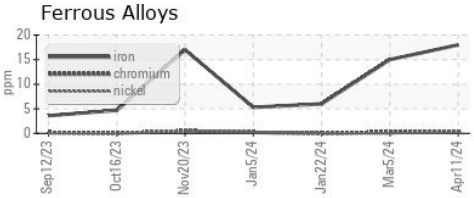
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**36.8**	31.7	28.1
Acid Number (AN)	mg KOH/g	ASTM D8045		**2.76**	1.12	1.57
Base Number (BN)	mg KOH/g	ASTM D2896	3.0	**3.03**	3.34	3.80

VISUAL		method	limit/base	current	history1	history2
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	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

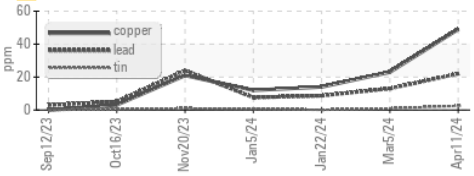
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**15.7**	15.0	14.6

GRAPHS

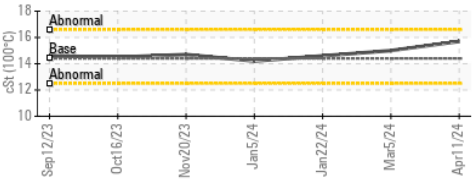
Ferrous Alloys



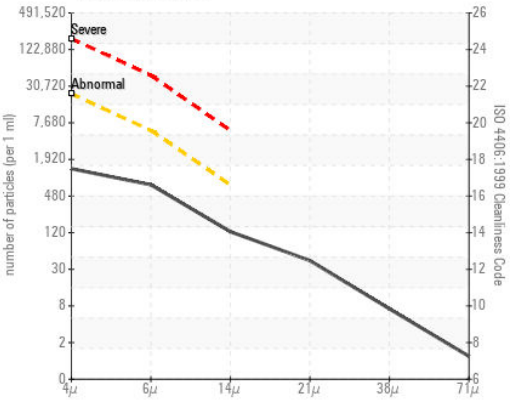
Non-ferrous Metals



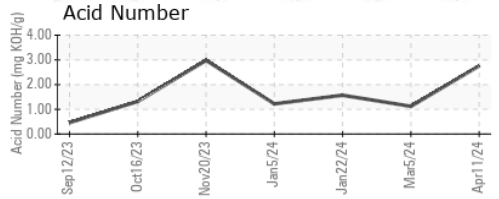
Viscosity @ 100°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012994
Lab Number : 06155248
Unique Number : 10990671
Test Package : MOB 2 (Additional Tests: PrtCount)

Received : 19 Apr 2024
Tested : 24 Apr 2024
Diagnosed : 24 Apr 2024 - Sean Felton

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)

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Report Id: BASGRE [WUSCAR] 06155248 (Generated: 04/26/2024 10:19:46) Rev: 1

Submitted By: TATE MCDANIEL