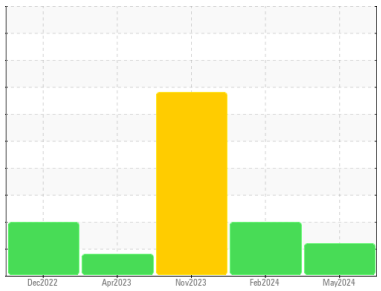
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
11
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. 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.

Fluid Condition
The BN level is low. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0904737**	WC0828060	WC0828094
Sample Date		Client Info		**10 May 2024**	09 Feb 2024	13 Nov 2023
Machine Age	mls	Client Info		**204248**	199096	194931
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**67**	53	▲ 146
Chromium	ppm	ASTM D5185m	>20	**1**	1	4
Nickel	ppm	ASTM D5185m	>4	**0**	<1	1
Titanium	ppm	ASTM D5185m		**71**	68	49
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**15**	14	14
Lead	ppm	ASTM D5185m	>40	**0**	2	11
Copper	ppm	ASTM D5185m	>330	**<1**	<1	1
Tin	ppm	ASTM D5185m	>15	**<1**	<1	1
Vanadium	ppm	ASTM D5185m		**<1**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**77**	69	37
Barium	ppm	ASTM D5185m	10	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**10**	7	11
Manganese	ppm	ASTM D5185m		**1**	<1	2
Magnesium	ppm	ASTM D5185m	450	**401**	391	395
Calcium	ppm	ASTM D5185m	3000	**1503**	1443	1224
Phosphorus	ppm	ASTM D5185m	1150	**903**	906	794
Zinc	ppm	ASTM D5185m	1350	**1042**	1041	945
Sulfur	ppm	ASTM D5185m	4250	**3816**	3320	2838

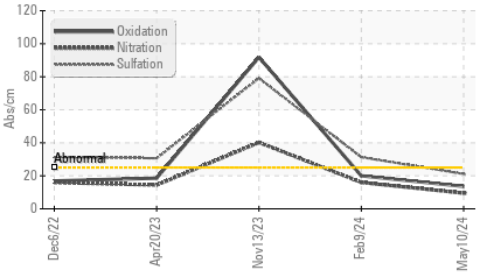
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**6**	6	7
Sodium	ppm	ASTM D5185m	>158	**9**	11	▲ 52
Potassium	ppm	ASTM D5185m	>20	**6**	13	▲ 75

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**2.2**	▲ 4.8	▲ 7
Nitration	Abs/cm	*ASTM D7624	>20	**9.5**	16.0	40.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.1**	31.3	79.1

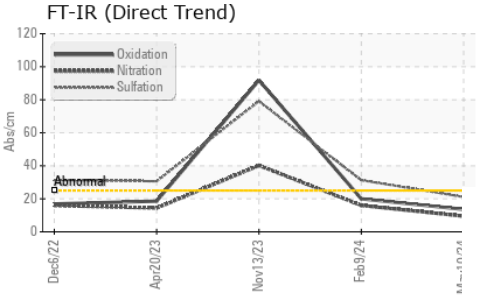
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**13.6**	20.0	91.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ **3.0**	▲ 0.0	▲ 0.0

OIL ANALYSIS REPORT

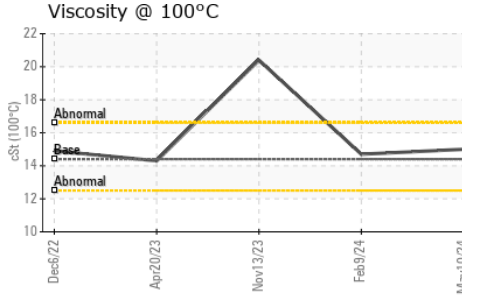
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Viscosity @ 100°C

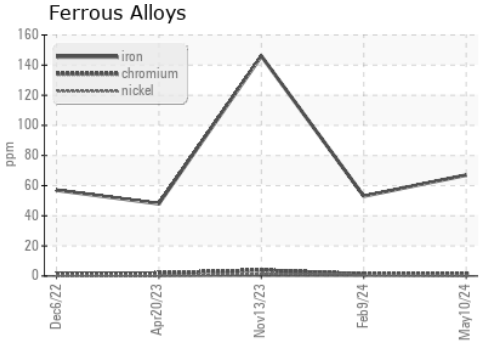


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

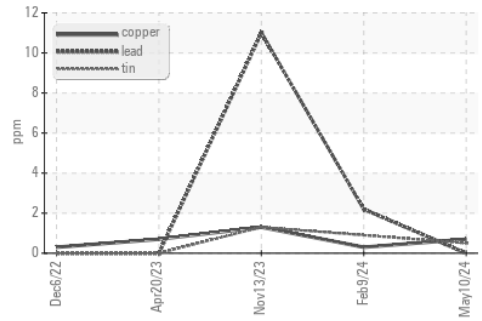
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**15.0**	14.7	▲ 20.4

GRAPHS

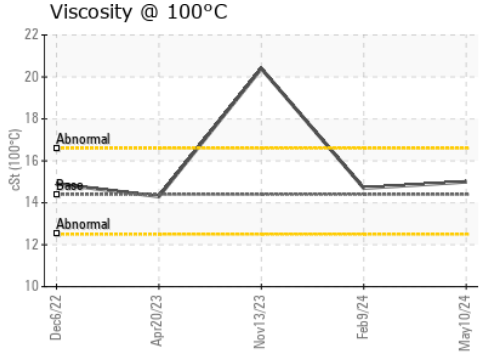
Ferrous Alloys



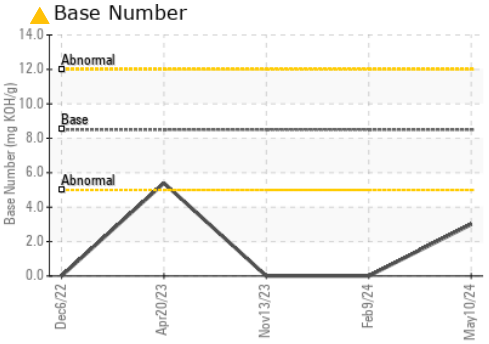
Non-ferrous Metals



Viscosity @ 100°C



▲ Base Number



ANAB ACCREDITED TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0904737
Lab Number : 06183758
Unique Number : 11035084
Test Package : FLEET

Received : 17 May 2024
Tested : 22 May 2024
Diagnosed : 22 May 2024 - Jonathan Hester

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: CASYANNC [WUSCAR] 06183758 (Generated: 05/22/2024 12:06:17) Rev: 1
Contact/Location: DEBRA MOORE - CASYANNC