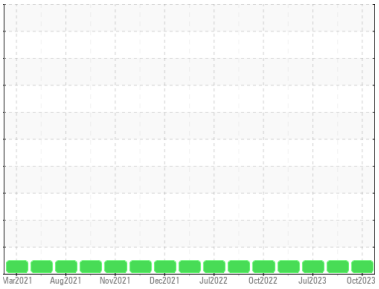
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
GATHERING STATIONS/BOA GATHERING STATION
Machine Id
MRC-202 - CAT (S/N JFE01697)
Component
Natural Gas Engine
Fluid
LO-ASH ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation
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 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 suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**TO60001474**	TO60001453	TO60000725
Sample Date		Client Info		**02 Oct 2023**	06 Sep 2023	13 Jul 2023
Machine Age	hrs	Client Info		**20137**	19547	18899
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	N/A	Not Changd
Sample Status				**NORMAL**	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**9**	9	8
Chromium	ppm	ASTM D5185m	>4	**0**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**0**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**1**	<1	2
Lead	ppm	ASTM D5185m	>30	**17**	14	13
Copper	ppm	ASTM D5185m	>35	**2**	2	2
Tin	ppm	ASTM D5185m	>4	**<1**	<1	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	37	**82**	93	90
Barium	ppm	ASTM D5185m	12	**0**	0	0
Molybdenum	ppm	ASTM D5185m	200	**2**	2	2
Manganese	ppm	ASTM D5185m		**0**	<1	<1
Magnesium	ppm	ASTM D5185m	5	**4**	20	11
Calcium	ppm	ASTM D5185m	1600	**1646**	1638	1620
Phosphorus	ppm	ASTM D5185m	300	**321**	330	327
Zinc	ppm	ASTM D5185m	400	**435**	389	389
Sulfur	ppm	ASTM D5185m	2600	**1683**	1836	1793

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**2**	2	1
Sodium	ppm	ASTM D5185m		**3**	5	4
Potassium	ppm	ASTM D5185m	>20	**2**	2	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**11.0**	12.0	10.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.0**	23.3	19.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.4**	23.9	21.1
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.77**	1.83	1.66
Base Number (BN)	mg KOH/g	ASTM D2896	3.0	**4.86**	3.71	4.04

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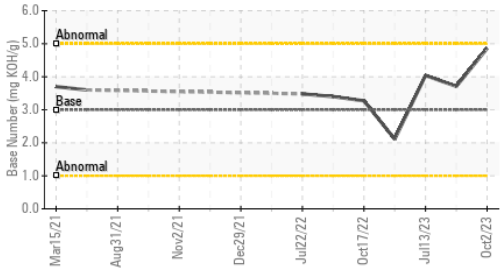
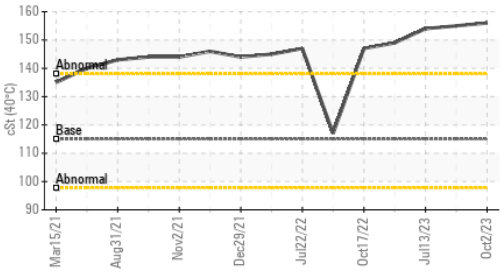
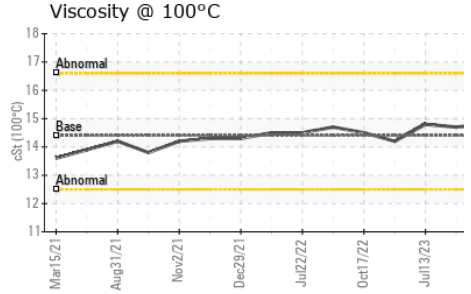
Base Number



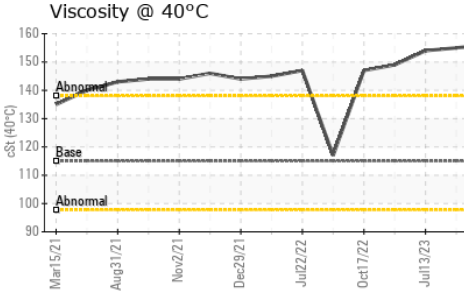
Viscosity @ 40°C



Viscosity @ 100°C



Viscosity @ 40°C

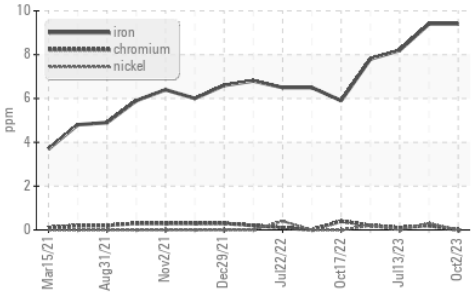


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

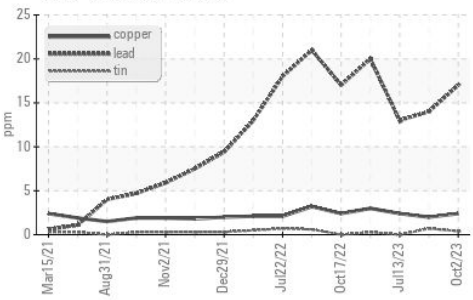
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	115	**156**	155	154
Visc @ 100°C	cSt	ASTM D445	14.4	**14.8**	14.7	14.8
Viscosity Index (VI)	Scale	ASTM D2270	126	**93**	93	94

GRAPHS

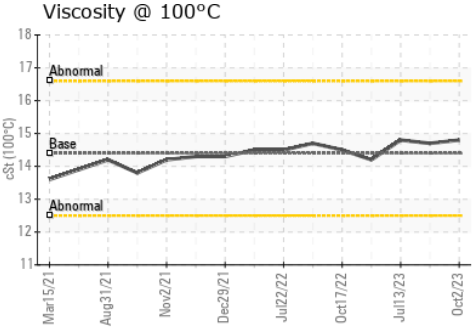
Ferrous Alloys



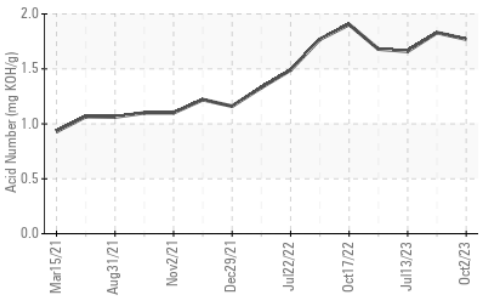
Non-ferrous Metals



Viscosity @ 100°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO60001474 **Received** : 16 Oct 2023
Lab Number : 05980594 **Diagnosed** : 18 Oct 2023
Unique Number : 10697889 **Diagnostician** : Don Baldridge
Test Package : IND 2 (Additional Tests: FT-IR, KV40, VI)

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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