MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
TRAVELIFT (S/N 3331-0907)
Component
1 Main Engine
Fluid
CHEVRON DELO 400 SDE SAE 15W40 (--- GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please note that there was too much coolant present in the oil to perform a viscosity test.

WEAR

Cylinder, crank, or cam shaft wear is indicated. Bearing and/or bushing wear is indicated.

CONTAMINATION

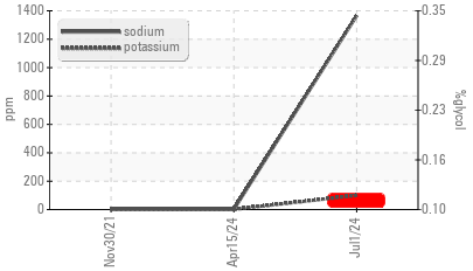
Sodium and/or potassium levels are high. Test for glycol is positive. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

FLUID CONDITION

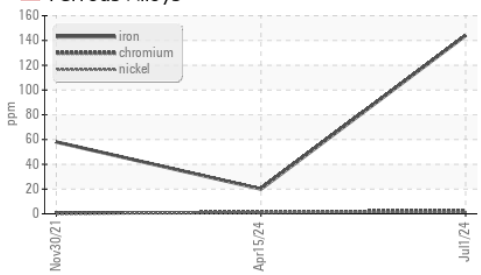
The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0059636	MW0059792	MW0021146
Sample Date		Client Info		01 Jul 2024	15 Apr 2024	30 Nov 2021
Machine Age	hrs	Client Info		4370	0	3757
Oil Age	hrs	Client Info		200	20	128
Filter Age	hrs	Client Info		200	20	128
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	▲ 144	20	58
Chromium	ppm	ASTM D5185m	>8	3	1	<1
Nickel	ppm	ASTM D5185m	>2	1	1	0
Titanium	ppm	ASTM D5185m	>3	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>15	● 16	4	4
Lead	ppm	ASTM D5185m	>18	▲ 11	1	0
Copper	ppm	ASTM D5185m	>80	▲ 71	3	1
Tin	ppm	ASTM D5185m	>14	3	1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	▲ 104	10	6
Potassium	ppm	ASTM D5185m	>20	▲ 100	2	1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		▲ 0.12	NEG	NEG
Soot %	%	*ASTM D7844		0.6	0.2	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.9	5.0	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.4	22.6	23.6
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
Sodium	ppm	ASTM D5185m	>75	▲ 1366	2	3
Boron	ppm	ASTM D5185m		1463	407	274
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		179	131	106
Manganese	ppm	ASTM D5185m		2	1	<1
Magnesium	ppm	ASTM D5185m		900	608	732
Calcium	ppm	ASTM D5185m		3747	1451	1618
Phosphorus	ppm	ASTM D5185m	760	1043	690	781
Zinc	ppm	ASTM D5185m	800	1148	785	859
Sulfur	ppm	ASTM D5185m	3000	3588	2551	2106
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.0	15.4	16.6
Base Number (BN)	mg KOH/g	ASTM D2896	10	5.2	9.6	10.1
Visc @ 100°C	cSt	ASTM D445	14.6	---	13.9	13.9

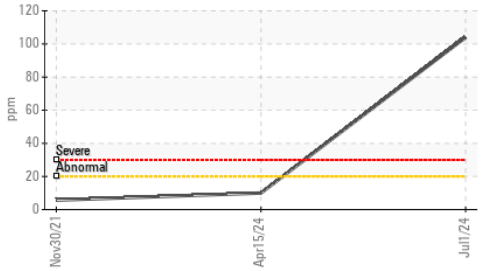
Glycol Contamination



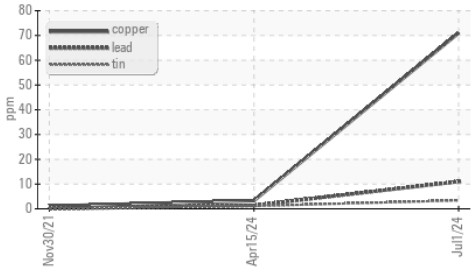
Ferrous Alloys



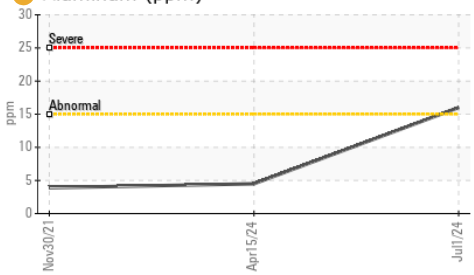
Silicon (ppm)



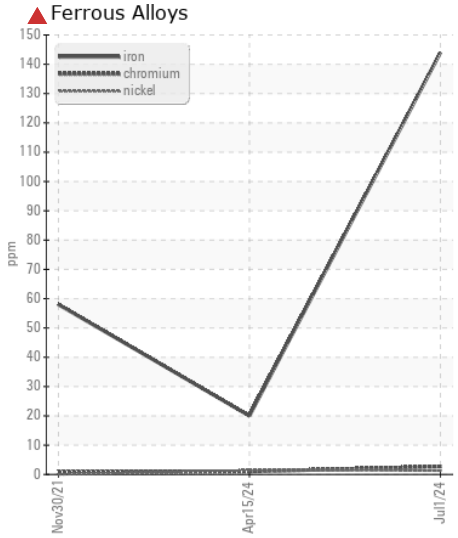
Non-ferrous Metals



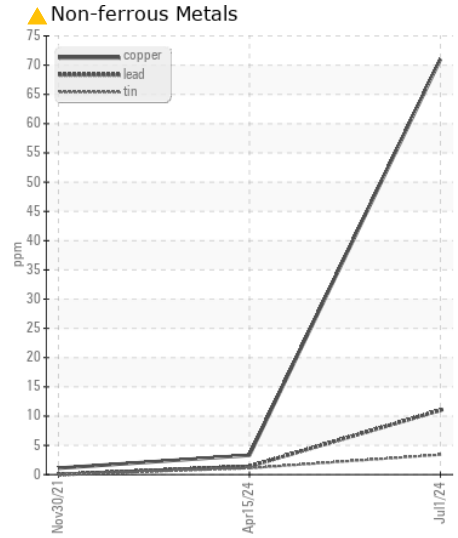
Aluminum (ppm)



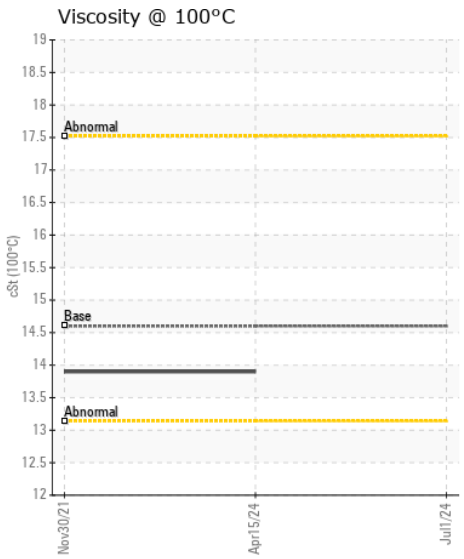
Ferrous Alloys



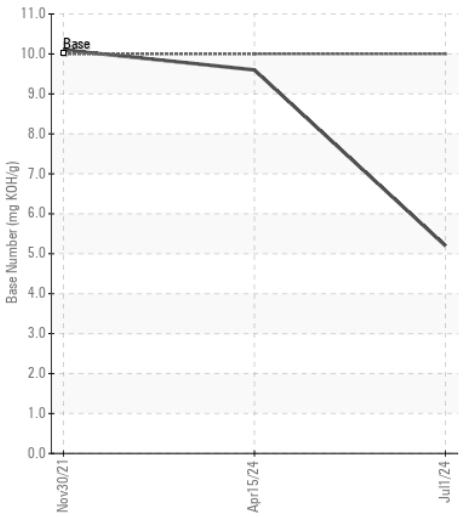
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0059636 **Received** : 08 Jul 2024
Lab Number : 06231036 **Tested** : 10 Jul 2024
Unique Number : 11114529 **Diagnosed** : 10 Jul 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: Glycol)

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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