MAR II

WEAR CHECK
Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	SEVERE

Machine Id
WILLIAM JEFFREY BAYER
Component
Port Main Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (20 GAL)

RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

WEAR

All component wear rates are normal.

CONTAMINATION

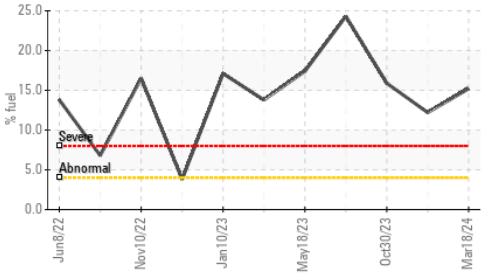
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

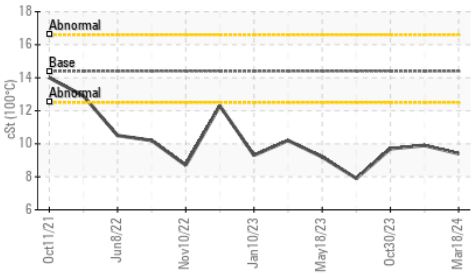
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**MW0048169**	MW0048209	MW0047946
Sample Date		Client Info		**18 Mar 2024**	09 Jan 2024	30 Oct 2023
Machine Age	hrs	Client Info		**23114**	21912	20961
Oil Age	hrs	Client Info		**1202**	951	901
Filter Age	hrs	Client Info		**1202**	951	901
Oil Changed		Client Info		**Changed**	Changed	Changed
Filter Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>75	**14**	10	14
Chromium	ppm	ASTM D5185m	>8	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**0**	0	0
Titanium	ppm	ASTM D5185m	>3	**<1**	0	<1
Silver	ppm	ASTM D5185m	>2	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>15	**3**	2	2
Lead	ppm	ASTM D5185m	>18	**17**	11	12
Copper	ppm	ASTM D5185m	>80	**2**	1	2
Tin	ppm	ASTM D5185m	>14	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	**5**	4	5
Potassium	ppm	ASTM D5185m	>20	**2**	<1	1
Fuel	%	ASTM D3524	>4.0	▲ **15.2**	▲ 12.2	▲ 15.9
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	*ASTM D7844		**0.2**	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	**9.7**	9.3	9.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.8**	22.7	22.5
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	>158	**0**	<1	<1
Boron	ppm	ASTM D5185m	250	**270**	274	266
Barium	ppm	ASTM D5185m	10	**2**	3	2
Molybdenum	ppm	ASTM D5185m	100	**119**	116	106
Manganese	ppm	ASTM D5185m		**<1**	0	0
Magnesium	ppm	ASTM D5185m	450	**553**	574	528
Calcium	ppm	ASTM D5185m	3000	**1374**	1209	1289
Phosphorus	ppm	ASTM D5185m	1150	**607**	595	558
Zinc	ppm	ASTM D5185m	1350	**736**	746	707
Sulfur	ppm	ASTM D5185m	4250	**2210**	1939	2947
Oxidation	Abs/.1mm	*ASTM D7414	>25	**20.4**	19.6	19.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**7.9**	8.2	7.8
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **9.4**	▲ 9.9	▲ 9.7

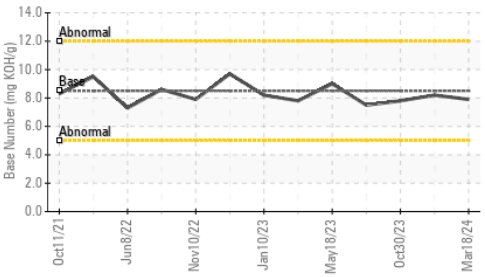
Fuel Dilution



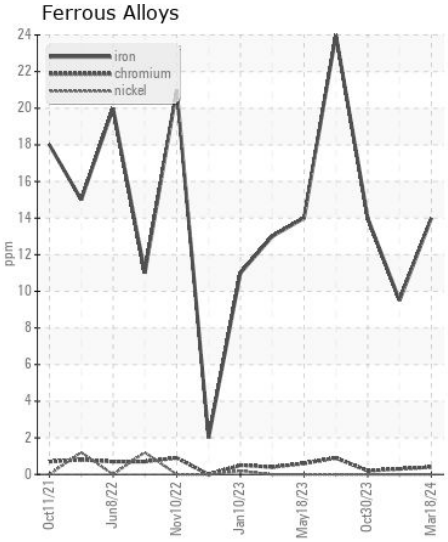
Viscosity @ 100°C



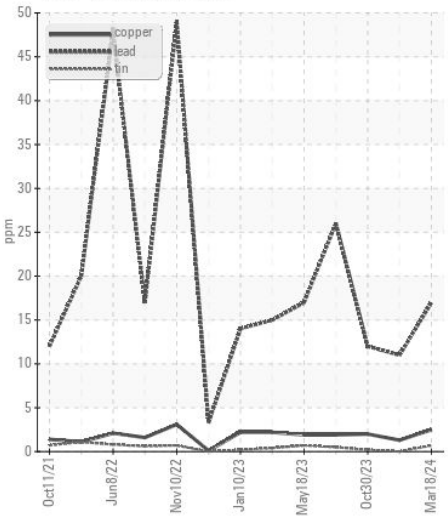
Base Number



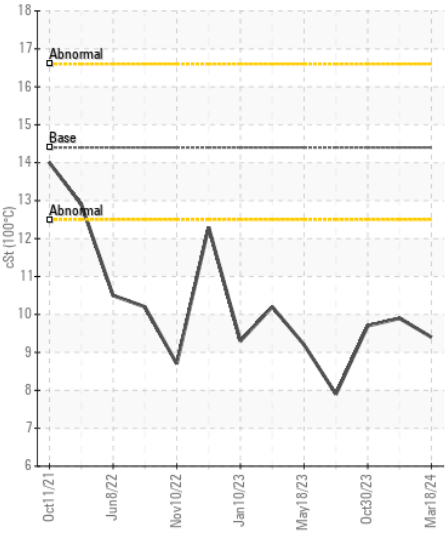
Ferrous Alloys



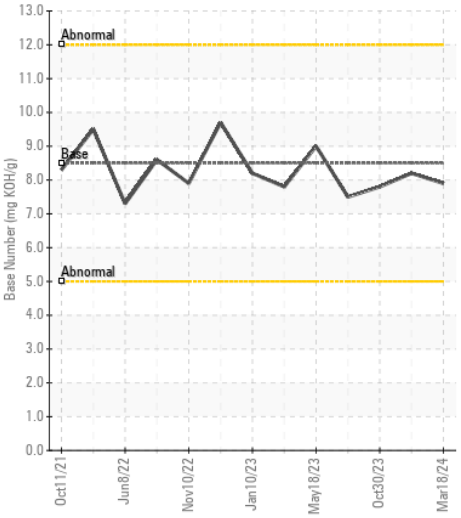
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0048169
Lab Number : 06124714
Unique Number : 10938865
Test Package : MAR 2 (Additional Tests: PercentFuel)

Received : 21 Mar 2024
Tested : 22 Mar 2024
Diagnosed : 22 Mar 2024 - Wes Davis

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)

ARTCO - ADM AG SERVICES & OIL SEEDS
2505 BLUFF ROAD
MT VERNON, IN
US 47620
Contact: JOE FLOYD
joseph.floyd@adm.com
T:
F: