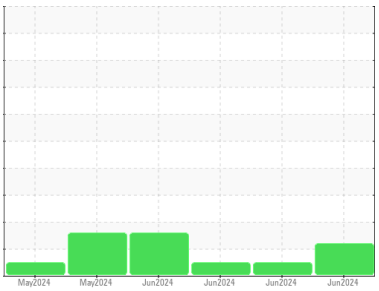
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
ALGOMA HARVESTER
Machine Id
GENERATOR #2 (S/N 1050WEL20)
Component
2 Auxiliary Engine
Fluid
INFINEUM OIL 4000 (760 LTR)

DIAGNOSIS

Recommendation
We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Wear
Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Suspect origin of noted wear metals (nickel and/or vanadium and/or aluminum) is from heavy fuel usage.

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. Viscosity of sample indicates oil is within SAE 40 range, advise investigate. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0952796**	WC0952808	WC0952798
Sample Date		Client Info		**28 Jun 2024**	16 Jun 2024	09 Jun 2024
Machine Age	hrs	Client Info		**25673**	25505	25329
Oil Age	hrs	Client Info		**916**	748	572
Oil Changed		Client Info		**Not Changd**	N/A	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	---	0
Iron	ppm	ASTM D5185(m)	>35	▲ **46**	---	34
Chromium	ppm	ASTM D5185(m)	>4	**<1**	---	<1
Nickel	ppm	ASTM D5185(m)	>2	**33**	---	23
Titanium	ppm	ASTM D5185(m)	>2	**1**	---	<1
Silver	ppm	ASTM D5185(m)	>2	**0**	---	0
Aluminum	ppm	ASTM D5185(m)	>25	**8**	---	7
Lead	ppm	ASTM D5185(m)	>7	**<1**	---	<1
Copper	ppm	ASTM D5185(m)	>65	**1**	---	<1
Tin	ppm	ASTM D5185(m)	>4	**0**	---	0
Antimony	ppm	ASTM D5185(m)		**0**	---	0
Vanadium	ppm	ASTM D5185(m)		**64**	---	45
Beryllium	ppm	ASTM D5185(m)		**0**	---	0
Cadmium	ppm	ASTM D5185(m)		**0**	---	0

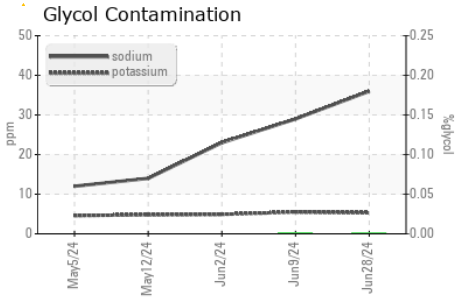
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**1**	---	1
Barium	ppm	ASTM D5185(m)		**1**	---	<1
Molybdenum	ppm	ASTM D5185(m)		**4**	---	2
Manganese	ppm	ASTM D5185(m)		**2**	---	2
Magnesium	ppm	ASTM D5185(m)		**42**	---	42
Calcium	ppm	ASTM D5185(m)		**12620**	---	12699
Phosphorus	ppm	ASTM D5185(m)		**264**	---	272
Zinc	ppm	ASTM D5185(m)		**285**	---	285
Sulfur	ppm	ASTM D5185(m)		**4135**	---	3218
Lithium	ppm	ASTM D5185(m)		**<1**	---	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	**22**	---	21
Sodium	ppm	ASTM D5185(m)		**36**	---	29
Potassium	ppm	ASTM D5185(m)	>20	**5**	---	6
Glycol	%	ASTM D7922*		**0.0**	NEG	0.0

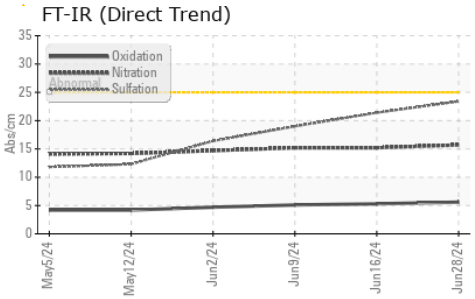
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0.4**	0.4	0.3
Nitration	Abs/cm	ASTM D7624*	>20	**15.7**	15.2	15.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	**23.4**	21.4	19.0

OIL ANALYSIS REPORT

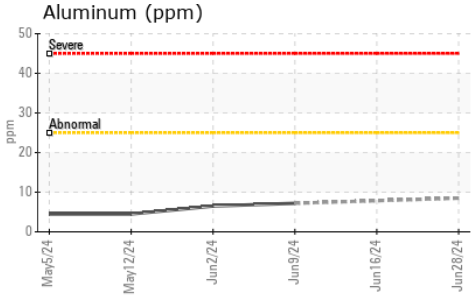
Glycol Contamination



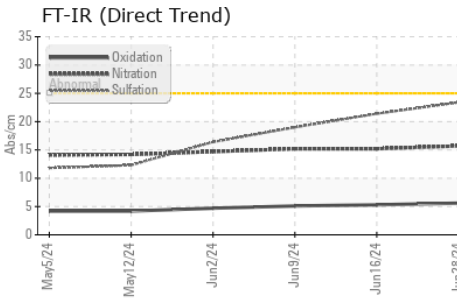
FT-IR (Direct Trend)



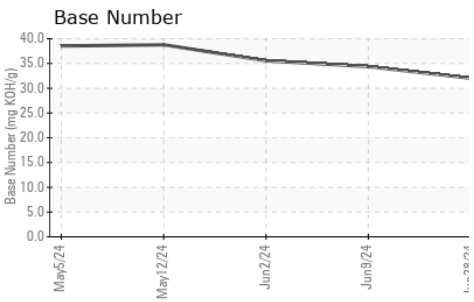
Aluminum (ppm)



FT-IR (Direct Trend)



Base Number



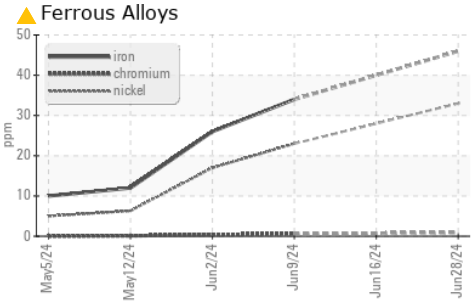
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**5.6**	5.3	5.1
Base Number (BN)	mg KOH/g	ASTM D2896*		**32.02**	---	34.37

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

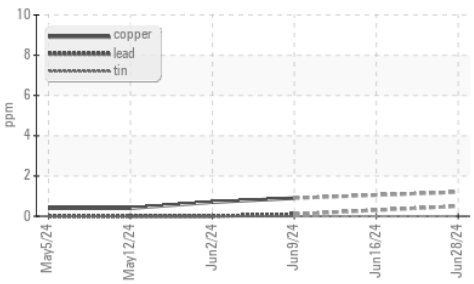
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)		▲ **15.7**	---	14.7

GRAPHS

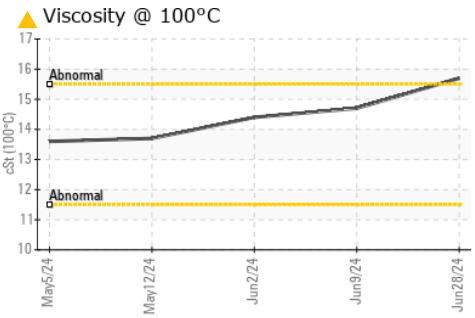
▲ Ferrous Alloys



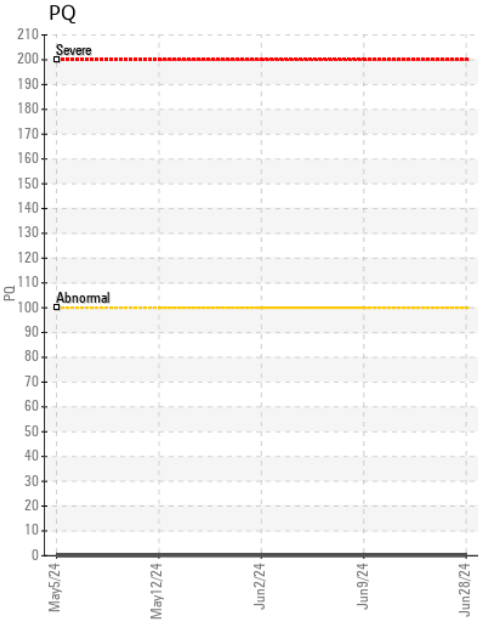
Non-ferrous Metals



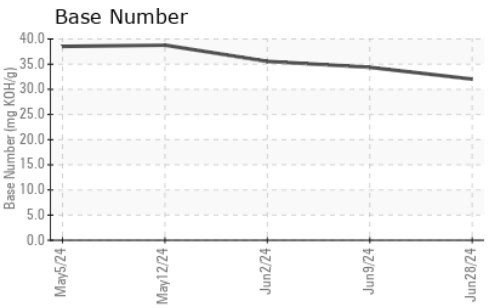
▲ Viscosity @ 100°C



PQ



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0952796
Lab Number : 02647991
Unique Number : 5813543
Test Package : MAR 2 (Additional Tests: Glycol, PQ, Visual)

Received : 15 Jul 2024
Tested : 16 Jul 2024
Diagnosed : 16 Jul 2024 - Kevin Marson

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

Sustainable Maritime Solutions Ltd.,
8 The Island,, Wraysbury
Staines, ZZ
GB TW19 5AS
Contact: Donald Gregory
donald.gregory3@gmail.com
T: (440)788-4113690
F: