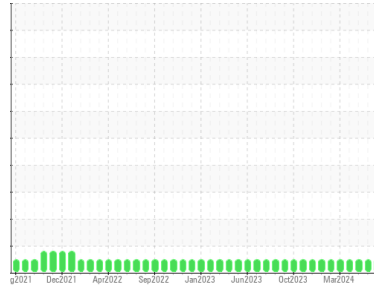




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Martinsville
 Machine Id
[Martinsville] Oil - Port Main Engine
 Component
Port Main Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (150 GAL)

DIAGNOSIS

Recommendation
 Resample at the next service interval to monitor. (Customer Sample Comment: George Willis)

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 condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0859994	WC0735534	WC0845884
Sample Date	Client Info			06 Jul 2024	07 Jun 2024	11 May 2024
Machine Age	hrs	Client Info		23110	22678	22069
Oil Age	hrs	Client Info		2036	1604	994
Oil Changed	Client Info			Not Chngd	Filtered	Not Chngd
Sample Status				NORMAL	NORMAL	NORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	11	10	13
Chromium	ppm	ASTM D5185m	>8	0	<1	1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>3	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m	>15	<1	2	3
Lead	ppm	ASTM D5185m	>18	0	1	2
Copper	ppm	ASTM D5185m	>80	21	21	22
Tin	ppm	ASTM D5185m	>14	0	<1	2
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	11	17	25
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	68	67	93
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	1654	1491	2116
Calcium	ppm	ASTM D5185m	3000	1335	1209	1660
Phosphorus	ppm	ASTM D5185m	1150	1161	984	1520
Zinc	ppm	ASTM D5185m	1350	1410	1289	1779
Sulfur	ppm	ASTM D5185m	4250	3979	3152	5177

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	3	4	6
Sodium	ppm	ASTM D5185m	>158	7	7	13
Potassium	ppm	ASTM D5185m	>20	<1	2	3
Water	%	ASTM D6304	>0.1	NEG	NEG	NEG

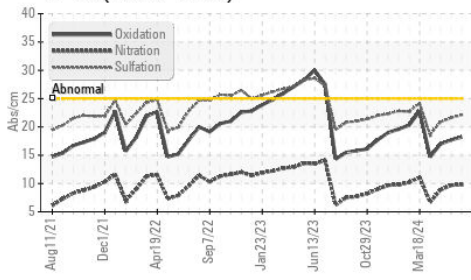
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	9.8	9.7	8.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.1	21.6	20.9

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.2	17.7	17.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	12.47	12.54	12.71

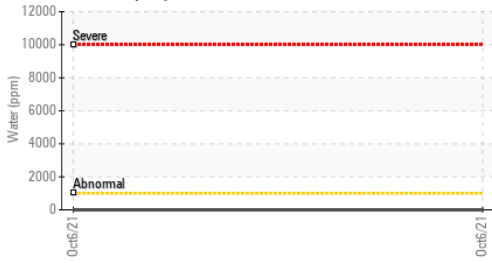


OIL ANALYSIS REPORT

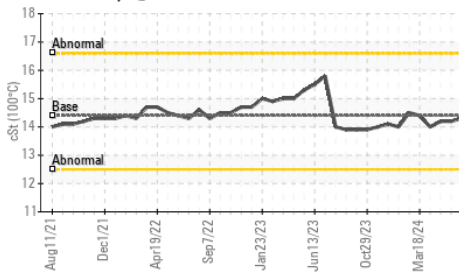
FT-IR (Direct Trend)



Water (KF)



Viscosity @ 100°C



Water (KF)

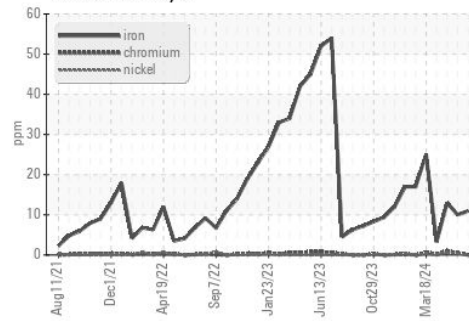


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

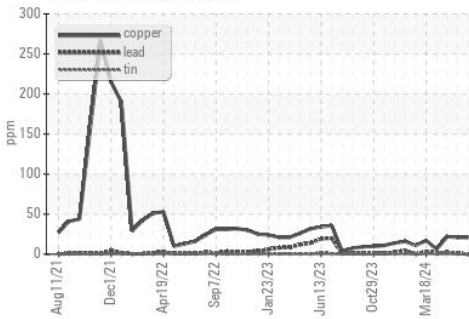
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	14.3	14.2

GRAPHS

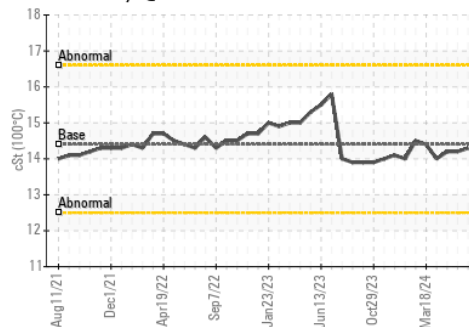
Ferrous Alloys



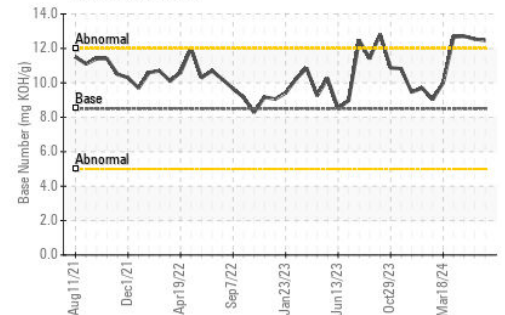
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0859994

Lab Number : 06236277

Unique Number : 11125111

Test Package : IND 2 (Additional Tests: KF)

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)

Received : 15 Jul 2024

Tested : 16 Jul 2024

Diagnosed : 16 Jul 2024 - Sean Felton

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CATLETTSBURG, KY

US 41169

Contact: CORY GUMBERT

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F: x: