OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
846-4325
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- QTS)

RECOMMENDATION

We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

WEAR

Cylinder, crank, or cam shaft wear is indicated.

CONTAMINATION

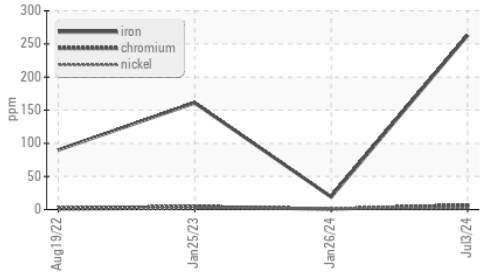
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Elemental level of silicon (Si) above normal indicating ingress of seal material.

FLUID CONDITION

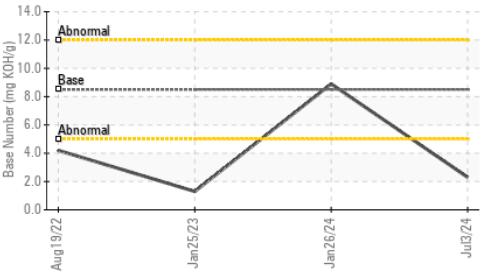
The BN level is low. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		RPL0022071	RPL0016057	RPL0009282
Sample Date		Client Info		03 Jul 2024	26 Jan 2024	25 Jan 2023
Machine Age	mls	Client Info		154188	142761	338
Oil Age	mls	Client Info		154188	142761	0
Filter Age	mls	Client Info		154188	142761	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				SEVERE	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	▲ 263	19	▲ 161
Chromium	ppm	ASTM D5185m	>20	7	<1	4
Nickel	ppm	ASTM D5185m	>4	2	1	2
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	43	11	28
Lead	ppm	ASTM D5185m	>40	0	1	1
Copper	ppm	ASTM D5185m	>330	29	4	21
Tin	ppm	ASTM D5185m	>15	2	2	2
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	▲ 37	7	26
Potassium	ppm	ASTM D5185m	>20	99	33	72
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	1.7	0.4	1.1
Nitration	Abs/cm	*ASTM D7624	>20	22.5	8.0	16.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	42.6	20.1	38.7
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	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m	>216	16	0	10
Boron	ppm	ASTM D5185m	250	26	5	17
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	23	65	8
Manganese	ppm	ASTM D5185m		5	2	3
Magnesium	ppm	ASTM D5185m	450	653	1047	713
Calcium	ppm	ASTM D5185m	3000	1530	1119	1491
Phosphorus	ppm	ASTM D5185m	1150	750	1027	703
Zinc	ppm	ASTM D5185m	1350	930	1303	905
Sulfur	ppm	ASTM D5185m	4250	2875	2884	3191
Oxidation	Abs/.1mm	*ASTM D7414	>25	59.1	15.8	46.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ 2.3	8.9	▲ 1.3
Visc @ 100°C	cSt	ASTM D445	14.4	15.7	13.8	13.5

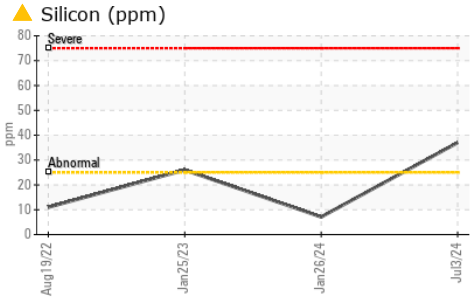
Ferrous Alloys



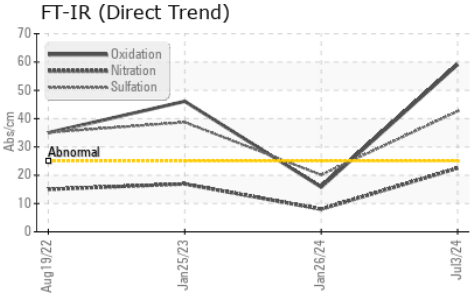
Base Number



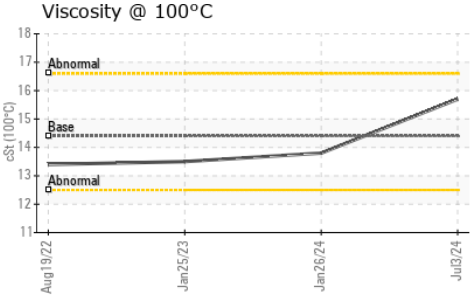
Silicon (ppm)



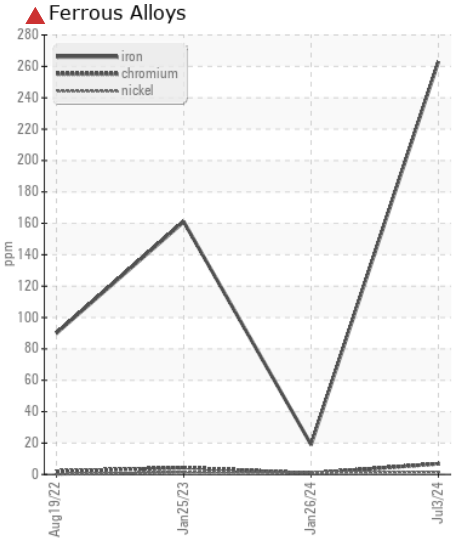
FT-IR (Direct Trend)



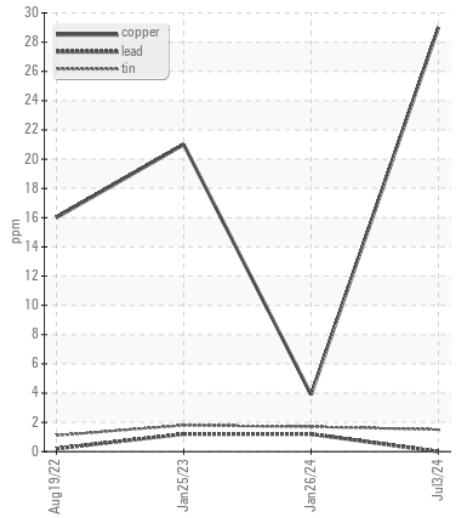
Viscosity @ 100°C



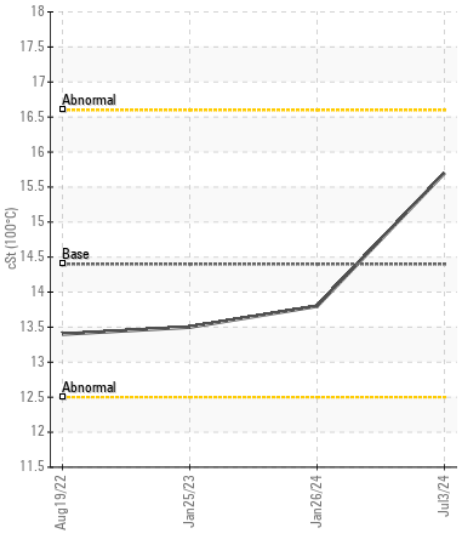
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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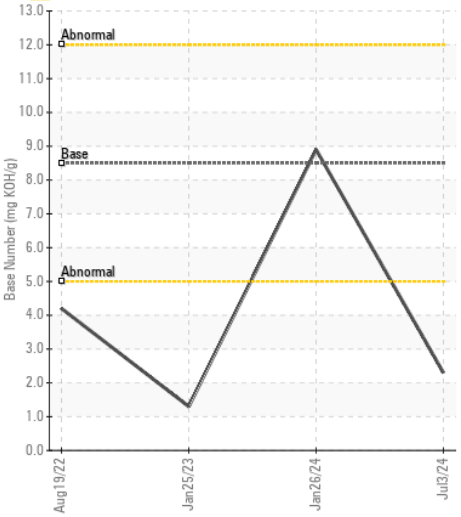

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RPL0022071
Lab Number : 06238844
Unique Number : 11127678
Test Package : FLEET (Additional Tests: Glycol, KV40)

Received : 17 Jul 2024
Tested : 18 Jul 2024
Diagnosed : 18 Jul 2024 - Sean Felton

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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