



WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
161808
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

WEAR

All component wear rates are normal.

CONTAMINATION

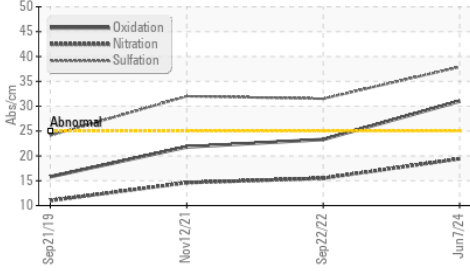
There is an abnormal amount of solids and carbon present in the oil.

FLUID CONDITION

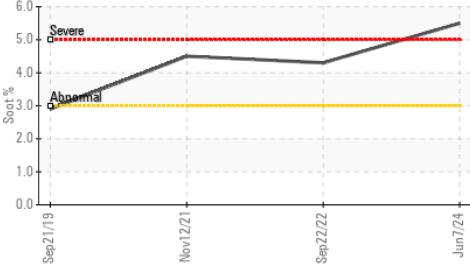
The oil viscosity is higher than normal. The BN level is low.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		IL06217726	IL05677167	IL05406345
Sample Date		Client Info		07 Jun 2024	22 Sep 2022	12 Nov 2021
Machine Age	hrs	Client Info		11919	9777	8909
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	80	50	46
Chromium	ppm	ASTM D5185m	>20	3	2	3
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	19	18	17
Lead	ppm	ASTM D5185m	>40	6	<1	6
Copper	ppm	ASTM D5185m	>330	3	3	2
Tin	ppm	ASTM D5185m	>15	0	<1	<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	>25	7	7	6
Potassium	ppm	ASTM D5185m	>20	45	46	▲ 50
Fuel	%	ASTM D3524	>5	<1.0	<1.0	0.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	0.0
Soot %	%	*ASTM D7844	>3	▲ 5.5	▲ 4.3	▲ 4.5
Nitration	Abs/cm	*ASTM D7624	>20	19.4	15.5	14.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	37.9	31.5	32
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	4	<1	3
Boron	ppm	ASTM D5185m	250	3	17	18
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	64	52	24
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m	450	1009	655	647
Calcium	ppm	ASTM D5185m	3000	1345	1574	1548
Phosphorus	ppm	ASTM D5185m	1150	1099	915	719
Zinc	ppm	ASTM D5185m	1350	1369	1120	955
Sulfur	ppm	ASTM D5185m	4250	3364	3504	2242
Oxidation	Abs/.1mm	*ASTM D7414	>25	31.0	23.3	21.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ 0.0	7.0	▲ 3.4
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 16.4	15.2	15.7

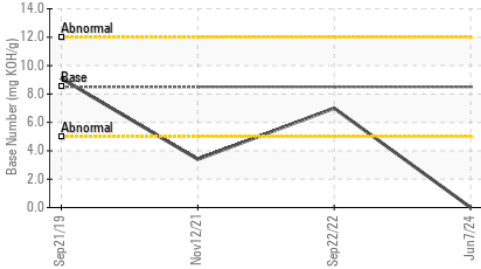
▲ FT-IR (Direct Trend)



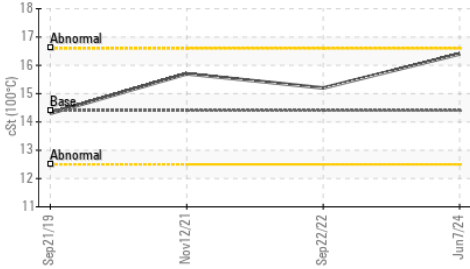
▲ Soot %



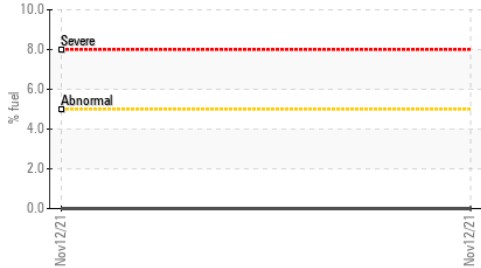
▲ Base Number



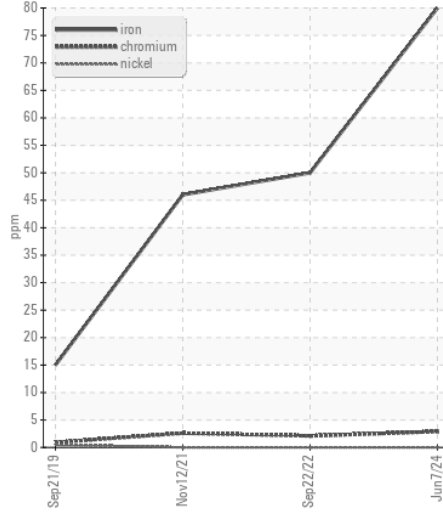
▲ Viscosity @ 100°C



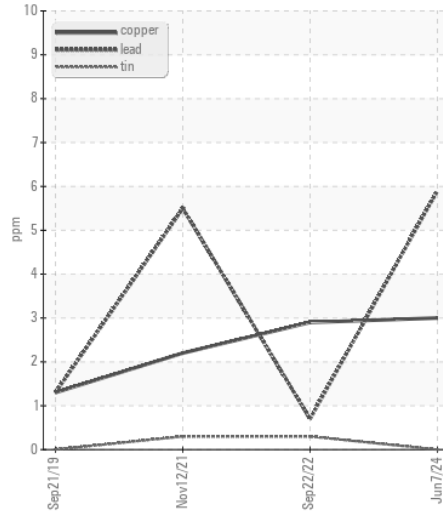
Fuel Dilution



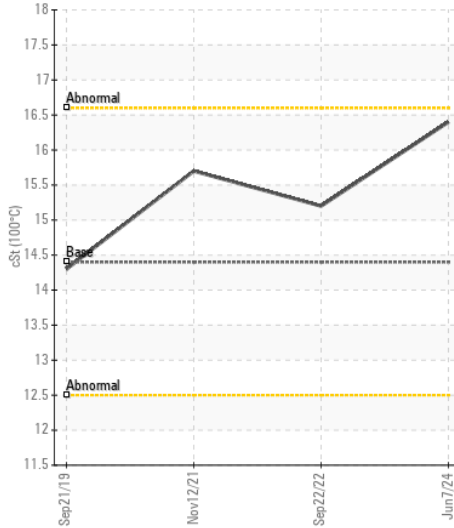
Ferrous Alloys



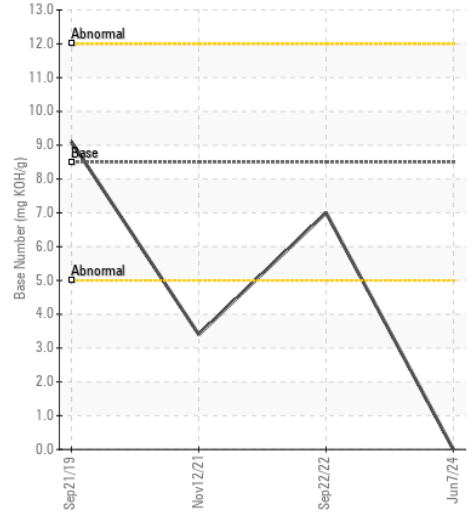
Non-ferrous Metals



▲ Viscosity @ 100°C



▲ Base Number



Certificate L2367

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

Sample No. : IL06217726

Lab Number : 06217726

Unique Number : 11090590

Test Package : FLEET (Additional Tests: FuelDilution)

Received : 24 Jun 2024

Tested : 25 Jun 2024

Diagnosed : 25 Jun 2024 - Jonathan Hester

RUSH TRUCK LEASING - CINCINNATI IDEALEASE

11777 HIGHWAY DRIVE

CINCINNATI, OH

US 45241

Contact: ROBERT BAIER

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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)