HUTCHENS RENTZ-EDEN

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
9913
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

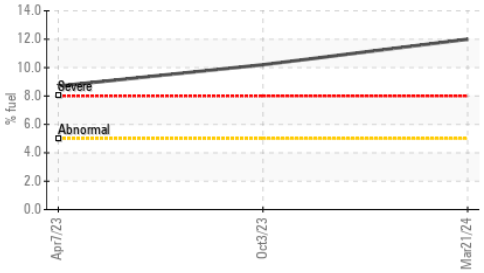
There is a high amount of fuel present in the oil.

FLUID CONDITION

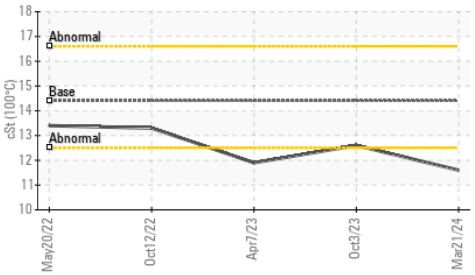
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		HRE0000097	WC0860364	WC0790611
Sample Date		Client Info		21 Mar 2024	03 Oct 2023	07 Apr 2023
Machine Age	mls	Client Info		331444	325992	320514
Oil Age	mls	Client Info		6000	0	0
Filter Age	mls	Client Info		6000	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				SEVERE	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>100	27	29	23
Chromium	ppm	ASTM D5185m	>20	2	<1	1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	1	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	8	4	6
Potassium	ppm	ASTM D5185m	>20	1	<1	1
Fuel	%	ASTM D3524	>5	▲ 12.0	▲ 10.2	▲ 8.7
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	1.7	2.3	1.9
Nitration	Abs/cm	*ASTM D7624	>20	13.4	12.9	12.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.2	27.1	25.1
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	>158	<1	1	0
Boron	ppm	ASTM D5185m	250	63	8	28
Barium	ppm	ASTM D5185m	10	<1	0	2
Molybdenum	ppm	ASTM D5185m	100	72	64	71
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	450	168	340	110
Calcium	ppm	ASTM D5185m	3000	1521	1611	1700
Phosphorus	ppm	ASTM D5185m	1150	815	844	833
Zinc	ppm	ASTM D5185m	1350	956	1084	1018
Sulfur	ppm	ASTM D5185m	4250	2689	2735	2902
Oxidation	Abs/.1mm	*ASTM D7414	>25	28.1	24.3	23.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	5.6	6.7	4.6
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 11.6	12.6	▲ 11.9

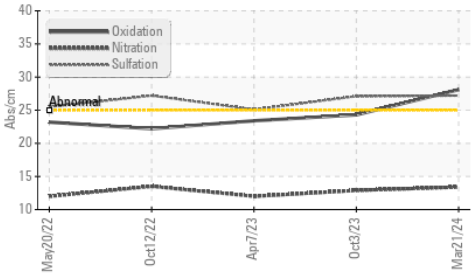
Fuel Dilution



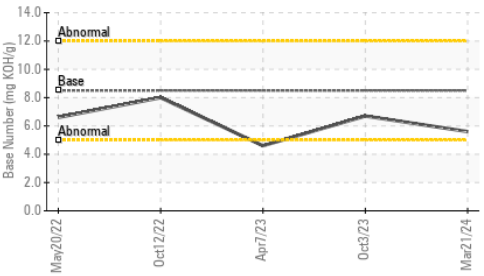
Viscosity @ 100°C



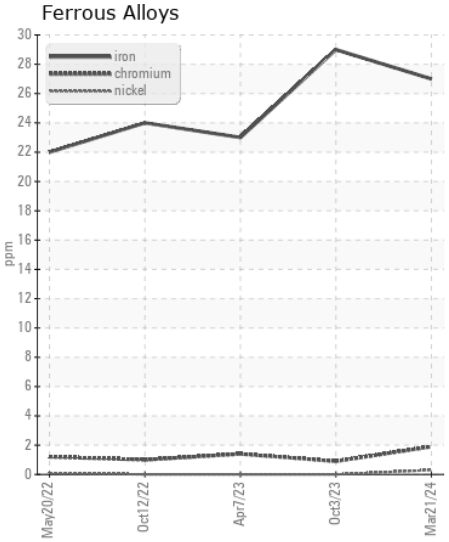
FT-IR (Direct Trend)



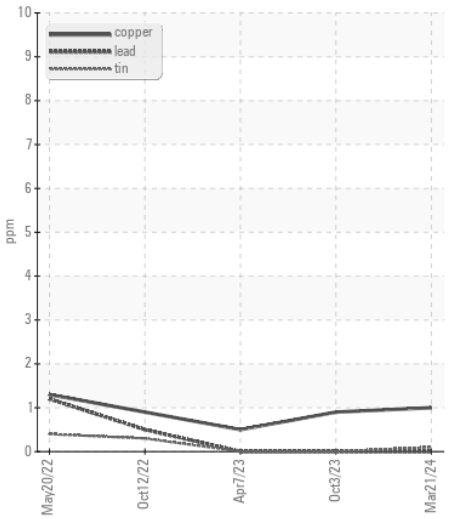
Base Number



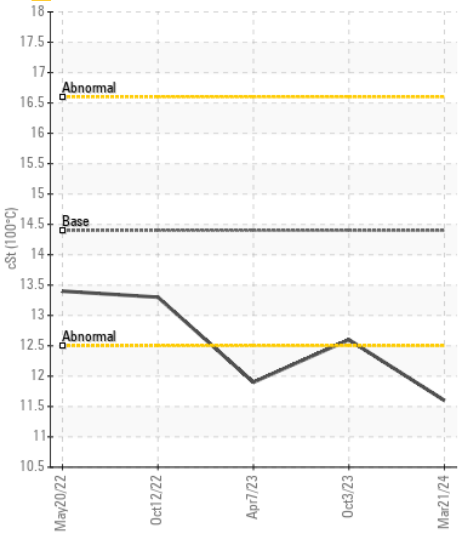
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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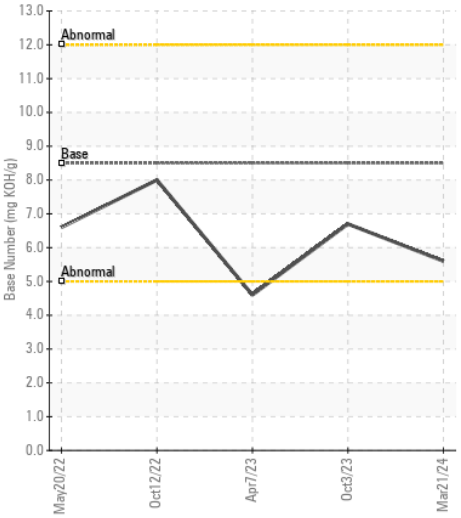

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HRE0000097 **Received** : 15 Apr 2024
Lab Number : 06148473 **Tested** : 19 Apr 2024
Unique Number : 10978551 **Diagnosed** : 19 Apr 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: PercentFuel)

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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