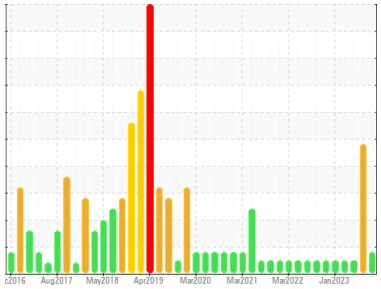
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
2008 NOVA 149
Component
Rear Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Aluminum ppm levels are abnormal. Piston wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0866490**	WC0730829	WC0730864
Sample Date		Client Info		**20 Dec 2023**	12 Sep 2023	18 Apr 2023
Machine Age	kms	Client Info		**0**	0	0
Oil Age	kms	Client Info		**9798**	9821	10000
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>75	**67**	▲ 83	41
Chromium	ppm	ASTM D5185(m)	>5	**2**	3	1
Nickel	ppm	ASTM D5185(m)	>4	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>15	▲ **16**	▲ 21	8
Lead	ppm	ASTM D5185(m)	>25	**1**	2	1
Copper	ppm	ASTM D5185(m)	>100	**10**	14	19
Tin	ppm	ASTM D5185(m)	>4	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

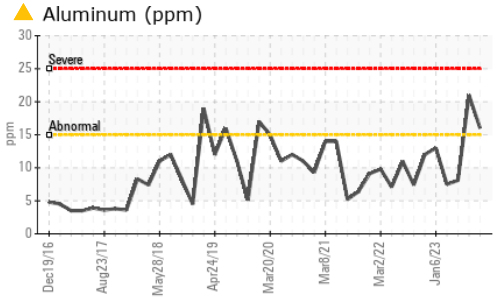
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**56**	46	52
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**2**	13	36
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**28**	114	52
Calcium	ppm	ASTM D5185(m)	3780	**2256**	2129	2211
Phosphorus	ppm	ASTM D5185(m)	1370	**953**	1030	980
Zinc	ppm	ASTM D5185(m)	1500	**1159**	1181	1126
Sulfur	ppm	ASTM D5185(m)	3800	**2838**	2698	2674
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**15**	▲ 34	13
Sodium	ppm	ASTM D5185(m)	>192	**4**	5	3
Potassium	ppm	ASTM D5185(m)	>20	**9**	9	4

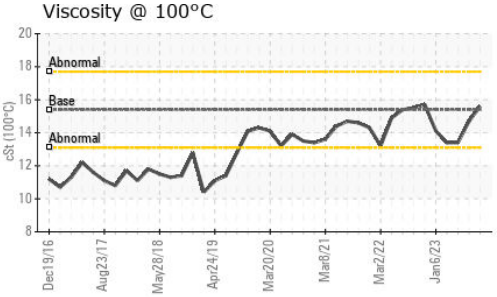
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**4.5**	3.9	2.7
Nitration	Abs/cm	ASTM D7624*	>20	**15.3**	14.9	13.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	**35.0**	▲ 36.4	27.4

OIL ANALYSIS REPORT

▲ Aluminum (ppm)



Viscosity @ 100°C



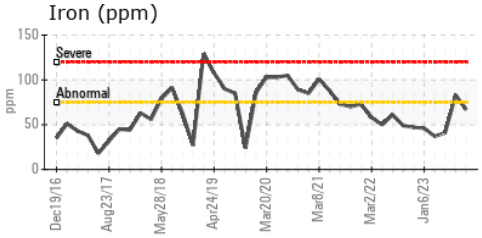
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**26.8**	▲ 32.0	21.8

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**NONE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	---	---
Appearance	scalar	Visual*	NORML	**NORML**	---	---
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

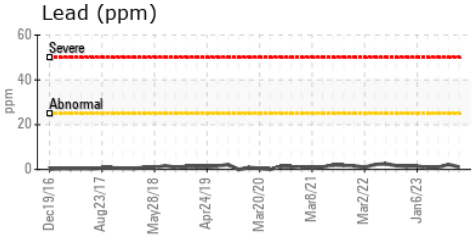
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**15.6**	14.7	13.4

GRAPHS

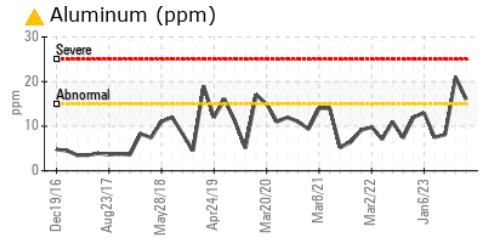
Iron (ppm)



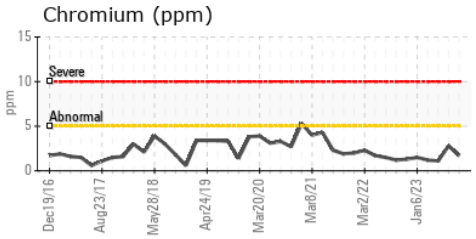
Lead (ppm)



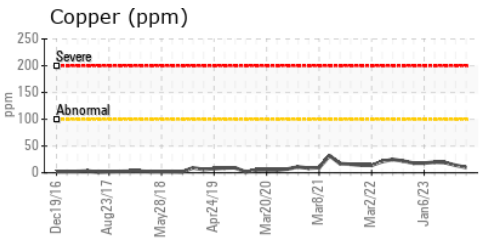
▲ Aluminum (ppm)



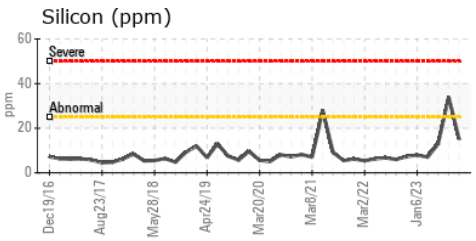
Chromium (ppm)



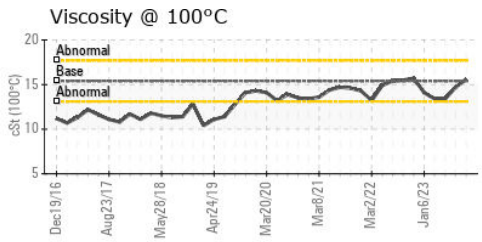
Copper (ppm)



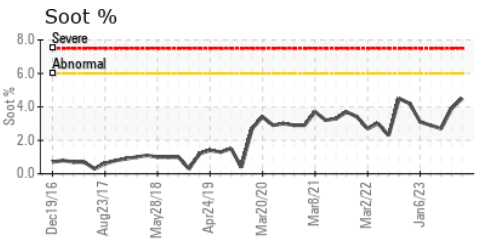
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0866490 **Recieved** : 27 Dec 2023
Lab Number : 02605262 **Diagnosed** : 28 Dec 2023
Unique Number : 5698347 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: Visual)

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.

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