



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
NOVA BUS 163
Component
Rear Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (24 LTR)

RECOMMENDATION

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0889145	WC0866426	WC0816368
Sample Date		Client Info		14 Feb 2024	17 Nov 2023	20 Sep 2023
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9923	8974	9436
Filter Age	kms	Client Info		9923	8974	9436
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	SEVERE	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>75	26	34	38
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>15	2	2	2
Lead	ppm	ASTM D5185(m)	>25	1	1	4
Copper	ppm	ASTM D5185(m)	>100	2	3	3
Tin	ppm	ASTM D5185(m)	>4	0	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

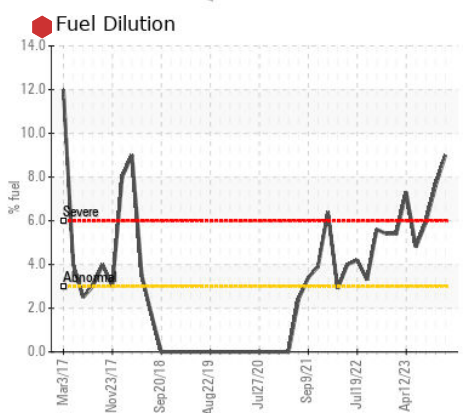
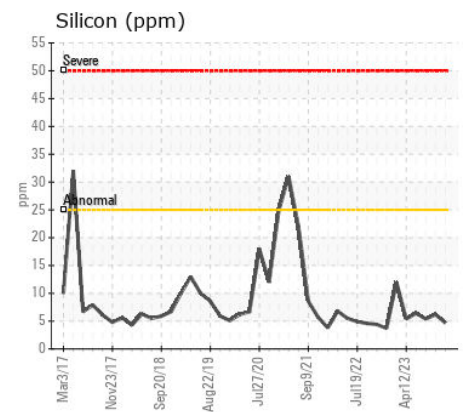
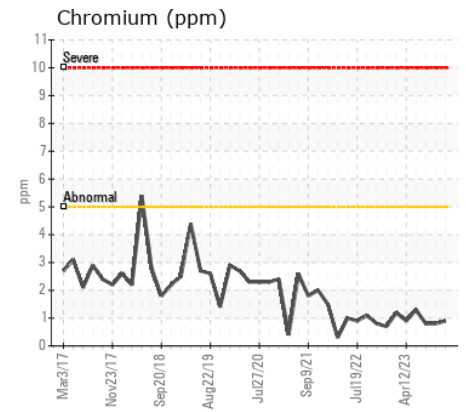
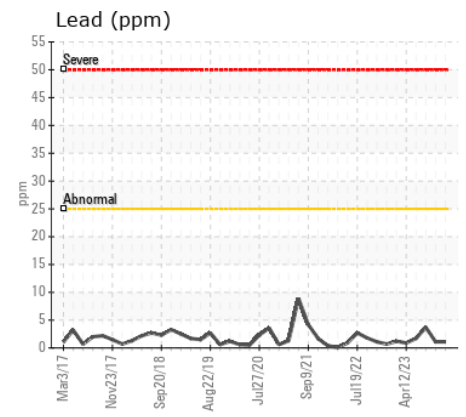
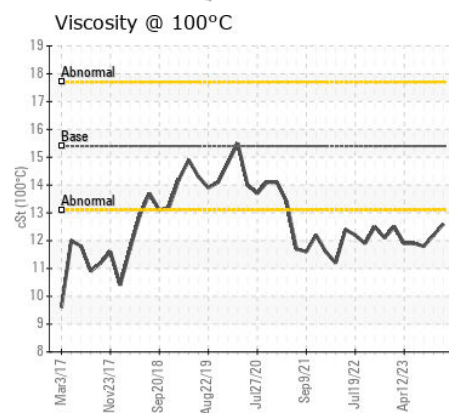
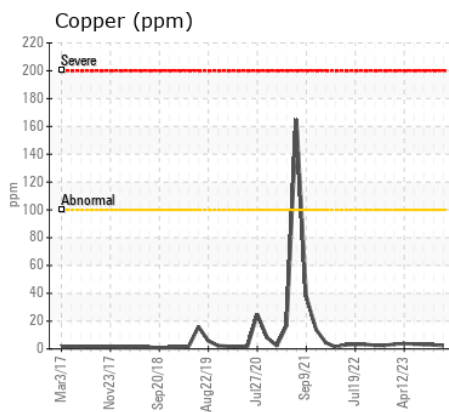
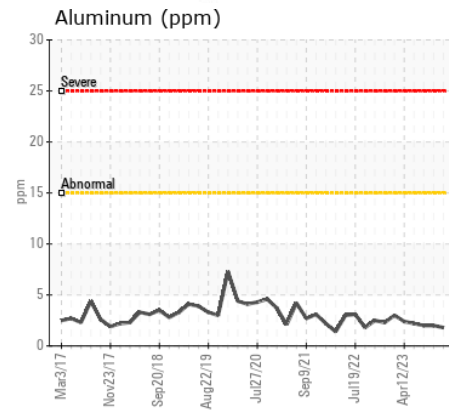
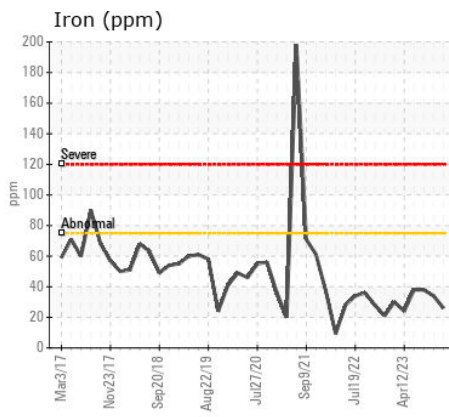
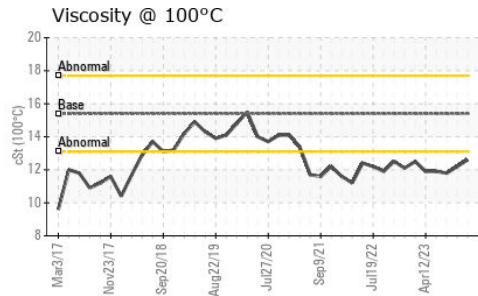
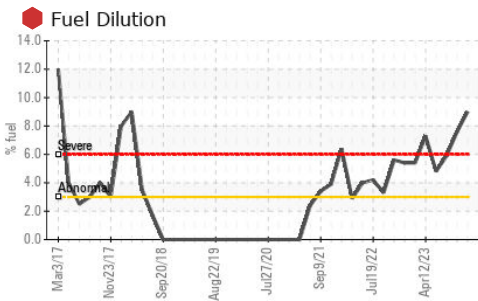
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185(m)	>25	5	6	5
Potassium	ppm	ASTM D5185(m)	>20	7	6	6
Fuel	%	ASTM D7593*	>3.0	9	7.6	5.9
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>6	0.9	0.8	0.6
Nitration	Abs/cm	ASTM D7624*	>20	11.8	12.0	12.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	27.4	30.6	37.0
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)	>192	6	13	13
Boron	ppm	ASTM D5185(m)		66	56	42
Barium	ppm	ASTM D5185(m)		0	0	<1
Molybdenum	ppm	ASTM D5185(m)		<1	1	8
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		15	29	117
Calcium	ppm	ASTM D5185(m)	3780	2126	2071	1900
Phosphorus	ppm	ASTM D5185(m)	1370	903	852	834
Zinc	ppm	ASTM D5185(m)	1500	1073	1041	1042
Sulfur	ppm	ASTM D5185(m)	3800	2794	2590	2511
Oxidation	Abs/.1mm	ASTM D7414*	>25	25.3	32.8	47.1
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	12.6	12.2	11.8



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0889145 **Received** : 20 Feb 2024
Lab Number : 02616570 **Tested** : 22 Feb 2024
Unique Number : 5733680 **Diagnosed** : 22 Feb 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: PercentFuel)

CITY OF THUNDER BAY
 AUTO MAINTENANCE STORES, 570 FORT WILLIAM ROAD
 THUNDER BAY, ON
 CA P7B 2Z8
 Contact: Sean Malcolm
 sean.malcolm@thunderbay.ca
 T: (807)684-2716
 F: (807)344-0237

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.