

WEAR NORMAL CONTAMINATION MARGINAL FLUID CONDITION NORMAL

Machine Id **NOVA BUS 165** Component **Rear Diesel Engine** Fluid **ESSO XD-3 EXTRA 15W40 (--- GAL)**

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

WEAR

All component wear rates are normal.

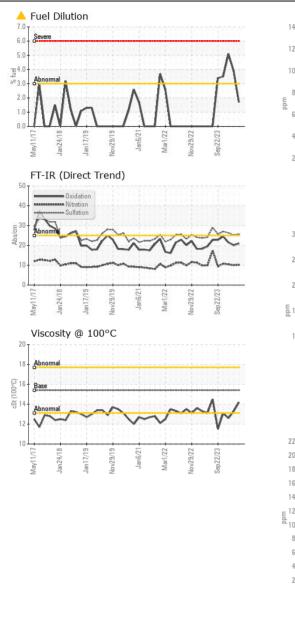
CONTAMINATION

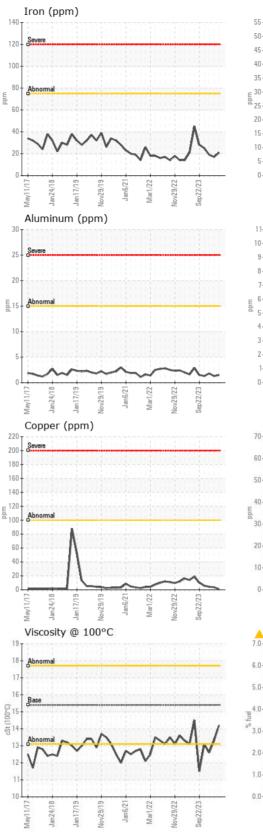
Light fuel dilution occurring. No other contaminants were detected in the oil.

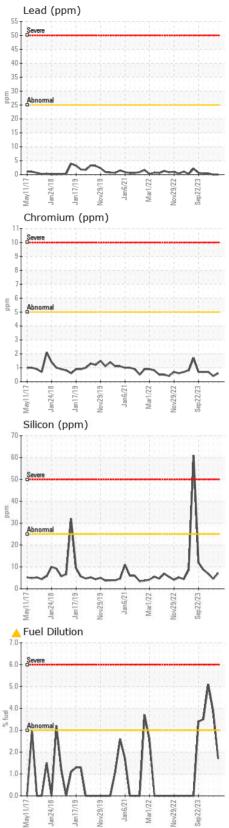
FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sample Date Client Info 27 May 2024 08 Apr 2024 30 Ja Machine Age kms Client Info 0 0 0 Oil Age kms Client Info 8790 9142 9421 Filter Age kms Client Info 8790 9142 9421 Oil Changed Client Info 8790 9142 9421 Oil Changed Client Info 8790 9142 9421 Oil Changed Client Info N/A N/A N/A Sample Status Client Info N/A N/A N/A Iron ppm ASTM D5185(m) >75 21 17 15 Chromium ppm ASTM D5185(m) >4 0 0 < <td>1 Nickel ppm ASTM D5185(m) >2 0 0 0 0 Silver ppm ASTM D5185(m) >2 0 0 0 0 Auminum ppm ASTM D5185(m) >25 0 0 0 0</td>	1 Nickel ppm ASTM D5185(m) >2 0 0 0 0 Silver ppm ASTM D5185(m) >2 0 0 0 0 Auminum ppm ASTM D5185(m) >25 0 0 0 0	889159 an 2024 1 1 nged DRMAL 9 1 1 1 1 - -
Sample Date Client Info 27 May 2024 08 Apr 2024 30 Ja Machine Age kms Client Info 0 0 0 Oil Age kms Client Info 8790 9142 9421 Filter Age kms Client Info 8790 9142 9421 Oil Changed Client Info 8790 9142 9421 Oil Changed Client Info 8790 9142 9421 Oil Changed Client Info N/A N/A N/A Sample Status Client Info N/A N/A N/A Iron ppm ASTM D5185(m) >75 21 17 15 Chromium ppm ASTM D5185(m) >4 0 0 < <td>1 Nickel ppm ASTM D5185(m) >2 0 0 0 0 Silver ppm ASTM D5185(m) >2 0 0 0 0 Auminum ppm ASTM D5185(m) >2 0 0 0 0</td>	1 Nickel ppm ASTM D5185(m) >2 0 0 0 0 Silver ppm ASTM D5185(m) >2 0 0 0 0 Auminum ppm ASTM D5185(m) >2 0 0 0 0	an 2024 1 1 nged DRMAL 9 1 1 1 1 1 - -
Machine Age kms Client Info 0 0 0 Oil Age kms Client Info 8790 9142 9421 Filter Age kms Client Info 8790 9142 9421 Oil Changed Client Info Kms Client Info Changed Changed Charged Filter Changed Client Info N/A N/A N/A N/A N/A Sample Status MARGINAL ABNORMAL ABNORMAL ABNORMAL ABNORMAL Iron ppm ASTM D5185(m) >75 21 177 19 Chromium ppm ASTM D5185(m) >5 <1 <1 <1 Nickel ppm ASTM D5185(m) >2 0 0 0 Silver ppm ASTM D5185(m) >2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 1 nged DRMAL 9 1 1 1 1 1 - -	
Oil AgekmsClient Info879091429421Filter AgekmsClient Info879091429421Oil ChangedClient InfoChangedChangedChargedFilter ChangedClient InfoN/AN/AN/ASample StatusMARGINALABNORMALABNORMALIronppmASTM D5185(m)>7521117ChromiumppmASTM D5185(m)>5<1<1NickelppmASTM D5185(m)>400<1TitaniumppmASTM D5185(m)>2000SilverppmASTM D5185(m)>2000AluminumppmASTM D5185(m)>200<1LeadppmASTM D5185(m)>100<144TinppmASTM D5185(m)>2000VanadiumppmASTM D5185(m)>20000VanadiumppmASTM D5185(m)>2747Yellow MetalscalarVisual*NONESiliconppmASTM D5185(m)>207810Fuel%ASTM D5185(m)>207810GlycolWC Method>0.2NEGNEGNI	1 nged DRMAL 9 1 1 1 1	
Filter Age kms Client Info 8790 9142 9421 Oil Changed Client Info Changed C	1 nged DRMAL 9 1 1 1 1	
Oil ChangedClient InfoChangedChangedChangedChangedFilter ChangedClient InfoN/AN/AN/AN/ASample StatusClient InfoMARGINALABNORMALABNORMALIronppmASTM D5185(m)>75211719ChromiumppmASTM D5185(m)>5<1<1<1<1NickelppmASTM D5185(m)>2000<1NickelppmASTM D5185(m)>20000SilverppmASTM D5185(m)>20000AluminumppmASTM D5185(m)>20000AluminumppmASTM D5185(m)>2500<14TinppmASTM D5185(m)>100<1444TinppmASTM D5185(m)>250000WatedalscalarVisual*NONESiliconppmASTM D5185(m)>25747Fuel%ASTM D5185(m)>207810WaterippmASTM D5185(m)>207810SiliconppmASTM D5185(m)>207810GlycolippmASTM D5185(m)>207810SiliconppmASTM D5185(m)<	nged DRMAL 9 1 1 1	
Filter Changed Client Info N/A N/A N/A N/A Sample Status Client Info MARGINAL ABNORMAL ABNORMAL ABNOR Iron ppm ASTM D5185(m) >75 21 17 19 Chromium ppm ASTM D5185(m) >5 <1 <1 <1 <1 Nickel ppm ASTM D5185(m) >4 0 0 <1 Titanium ppm ASTM D5185(m) >2 0 0 0 Silver ppm ASTM D5185(m) >2 0 0 0 Aluminum ppm ASTM D5185(m) >2 0 0 <1 Lead ppm ASTM D5185(m) >100 <1 4 4 Tin ppm ASTM D5185(m) >4 0 0 0 Vanadium ppm ASTM D5185(m) >100 <1 4 4 Tin ppm ASTM D5185(m) >20	DRMAL 9 1 1 1	
Sample Status MARGINAL ABNORMAL ABNOR Chromium ppm ASTM D5185(m) >5 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 1	9 1 1 - -	
Iron ppm ASTM D5185(m) >75 21 177 195 Chromium ppm ASTM D5185(m) >5 <1 <1 <1 <1 Nickel ppm ASTM D5185(m) >4 0 0 <1 Titanium ppm ASTM D5185(m) >2 0 0 0 Silver ppm ASTM D5185(m) >2 0 0 0 Aluminum ppm ASTM D5185(m) >2 0 0 0 Lead ppm ASTM D5185(m) >15 2 1 2 Lead ppm ASTM D5185(m) >100 <1 4 4 Tin ppm ASTM D5185(m) >4 0 0 0 Vanadium ppm ASTM D5185(m) >4 0 0 0 Visual* NONE Fullow Metal scalar Visual* NONE Fullow Fullow Fullow Fullow Fullow F	9 1 1 - -	
Chromium ppm ASTM D5185(m) >5 <1	1 1 1 - -	
Chromium ppm ASTM D5185(m) >5 <1	1 1 1 - -	
Nickel ppm ASTM D5185(m) >4 0 0 <1	1	
Titanium ppm ASTM D5185(m) >2 0 0 0 Silver ppm ASTM D5185(m) >2 0 0 0 0 Aluminum ppm ASTM D5185(m) >15 2 1 2 Lead ppm ASTM D5185(m) >25 0 0 <12	1	
Silver ppm ASTM D5185(m) >2 0 0 0 0 Aluminum ppm ASTM D5185(m) >15 2 1 2 Lead ppm ASTM D5185(m) >15 2 1 2 Lead ppm ASTM D5185(m) >25 0 0 <1	1	
Aluminum ppm ASTM D5185(m) >15 2 1 2 Lead ppm ASTM D5185(m) >25 0 0 <1	1	
Lead ppm ASTM D5185(m) >25 0 0 <1	1	
Copper ppm ASTM D5185(m) >100 <1	-	
Tin ppm ASTM D5185(m) >4 0 0 0 Vanadium ppm ASTM D5185(m) <	-	
Vanadium ppm ASTM D5185(m) 0 0 0 0 White Metal scalar Visual* NONE NONE Yellow Metal scalar Visual* NONE NONE Silicon ppm ASTM D5185(m) >25 7 4 7 Potassium ppm ASTM D5185(m) >20 7 8 100 Fuel % ASTM D7593* >3.0 ▲ 1.7 ▲ 3.9 ▲ 5.5 Water WC Method >0.2 NEG NEG NEG	-	
White Metal scalar Visual* NONE NONE NONE Yellow Metal scalar Visual* NONE NONE NONE Silicon ppm ASTM D5185(m) >25 7 4 7 Potassium ppm ASTM D5185(m) >20 7 8 100 Fuel % ASTM D7593* >3.0 1.7 3.9 5. Water WC Method >0.2 NEG NEG NEG Glycol WC Method O.2 NEG NEG 0.	-	
Yellow Metal scalar Visual* NONE NONE Silicon ppm ASTM D5185(m) >25 7 4 7 Potassium ppm ASTM D5185(m) >20 7 8 10 Fuel % ASTM D7593* >3.0 ▲ 1.7 ▲ 3.9 ▲ 5. Water WC Method >0.2 NEG NEG NI Glycol WC Method NEG NEG 0.	-	
Silicon ppm ASTM D5185(m) >25 7 4 7 Potassium ppm ASTM D5185(m) >20 7 8 10 Fuel % ASTM D7593* >3.0 ▲ 1.7 ▲ 3.9 ▲ 5. Water WC Method >0.2 NEG NEG NEG		
Potassium ppm ASTM D5185(m) >20 7 8 100 Fuel % ASTM D7593* >3.0 ▲ 1.7 ▲ 3.9 ▲ 5. Water WC Method >0.2 NEG NEG NI Glycol WC Method O.2 NEG NEG 0.		
Potassium ppm ASTM D5185(m) >20 7 8 100 Fuel % ASTM D7593* >3.0 ▲ 1.7 ▲ 3.9 ▲ 5. Water WC Method >0.2 NEG NEG NI Glycol WC Method O.2 NEG NEG 0.		
Fuel % ASTM D7593* >3.0 ▲ 1.7 ▲ 3.9 ▲ 5. Water WC Method >0.2 NEG NEG N Glycol WC Method O.2 NEG NEG O.	0	
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG 0.2	-	
Glycol WC Method NEG NEG 0.	EG	
Soot % % ASTM D7844* >6 1.2 1 1.		
	0.4	
	6.3	
Silt scalar Visual* NONE NONE	-	
Debris scalar Visual* NONE NONE	-	
Sand/Dirt scalar Visual* NONE NONE	-	
Appearance scalar Visual* NORML NORML	-	
	ORML	
Emulsified Water scalar Visual* >0.2 NEG NEG N	EG	
Sodium ppm ASTM D5185(m) >192 8 11 21	1	
Boron ppm ASTM D5185(m) 78 76 65	5	
Barium ppm ASTM D5185(m) 0		
Molybdenum ppm ASTM D5185(m) 0 <1		
Manganese ppm ASTM D5185(m) 0		
Magnesium ppm ASTM D5185(m) 16 17 27		
	126	
	21	
	100	
	891	
Oxidation Abs/.1mm ASTM D7414* >25 20.9 20.1 21	15	
Visc @ 100°C cSt ASTM D7279(m) 15.4 14.2 13.3 ▲ 12		







CITY OF THUNDER BAY Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA Sample No. : WC0866621 Received AUTO MAINTENANCE STORES, 570 FORT WILLIAM ROAD : 03 Jun 2024 : 02639346 Lab Number Tested THUNDER BAY, ON : 04 Jun 2024 ISO 17025:2017 Accredited Laboratory Unique Number : 5788508 : 04 Jun 2024 - Wes Davis Diagnosed Test Package : MOB 1 (Additional Tests: PercentFuel, Visual) Contact: Sean Malcolm sean.malcolm@thunderbay.ca To discuss this sample report, contact Customer Service at 1-800-268-2131. T: (807)684-2716 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. F: (807)344-0237 Validity of results and interpretation are based on the sample and information as supplied.

Report Id: CITTHU [WCAMIS] 02639346 (Generated: 06/04/2024 09:45:04) Rev: 1

Contact/Location: Sean Malcolm - CITTHU Page 2 of 2

CA P7B 2Z8