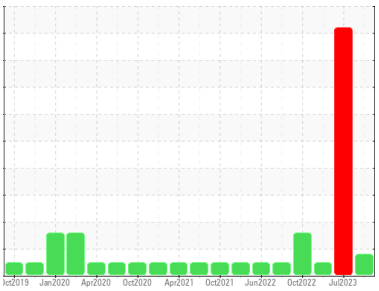
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
[1490879]
Machine Id
Grande West Vicinity 1849
Component
Natural Gas Engine
Fluid
VALVOLINE PREMIUM BLUE 9200 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation
We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

▲ Wear
Chromium ppm levels are abnormal. Ring wear is indicated.

Contamination
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Test for glycol is negative. 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		**WC0878119**	WC0830149	WC0767110
Sample Date		Client Info		**23 Dec 2023**	18 Jul 2023	24 Jan 2023
Machine Age	kms	Client Info		**194770**	0	166740
Oil Age	kms	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>50	**21**	10	15
Chromium	ppm	ASTM D5185(m)	>4	▲ **5**	<1	2
Nickel	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	2	3
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>9	**2**	2	2
Lead	ppm	ASTM D5185(m)	>30	**<1**	<1	<1
Copper	ppm	ASTM D5185(m)	>35	**18**	15	34
Tin	ppm	ASTM D5185(m)	>4	**0**	0	<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)		**20**	13	16
Barium	ppm	ASTM D5185(m)		**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)		**48**	54	48
Manganese	ppm	ASTM D5185(m)		**<1**	<1	2
Magnesium	ppm	ASTM D5185(m)		**802**	848	837
Calcium	ppm	ASTM D5185(m)		**1177**	1168	1352
Phosphorus	ppm	ASTM D5185(m)		**694**	756	781
Zinc	ppm	ASTM D5185(m)		**821**	873	856
Sulfur	ppm	ASTM D5185(m)		**1927**	1918	1896
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>+100	**11**	8	10
Sodium	ppm	ASTM D5185(m)		**7**	▲ 40	10
Potassium	ppm	ASTM D5185(m)	>20	**6**	▲ 31	1
Glycol	%	ASTM D7922*		**0.0**	⬢ 0.387	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**11.3**	13.9	13.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**21.2**	23.4	25.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**19.3**	21.0	22.0

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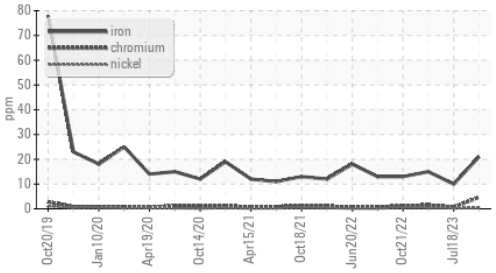
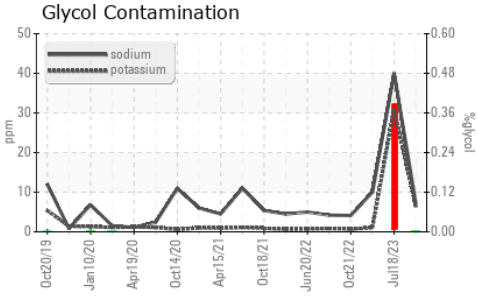
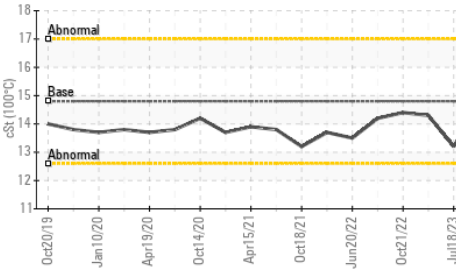
▲ Ferrous Alloys



Glycol Contamination



Viscosity @ 100°C

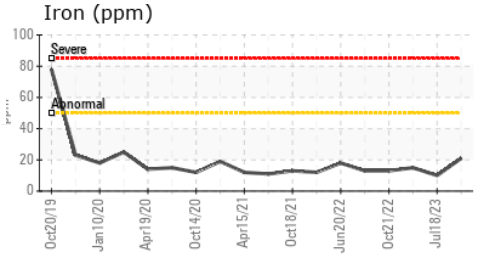


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	---
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	---
Silt	scalar	Visual*	NONE	**NONE**	VLITE	---
Debris	scalar	Visual*	NONE	**VLITE**	NONE	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	---
Appearance	scalar	Visual*	NORML	**NORML**	▲ WGOIL	---
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	**NEG**	▲ .2%	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

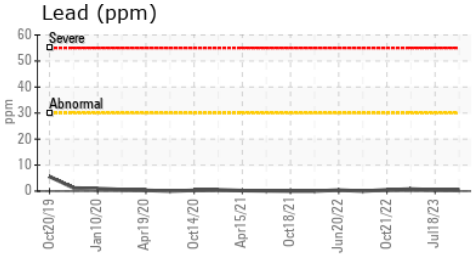
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	14.8	**14.6**	13.2	14.3

GRAPHS

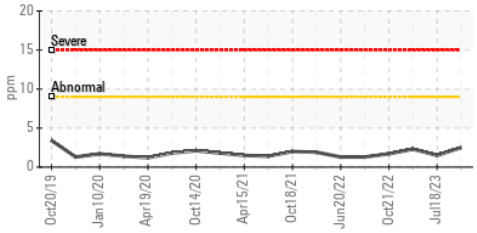
Iron (ppm)



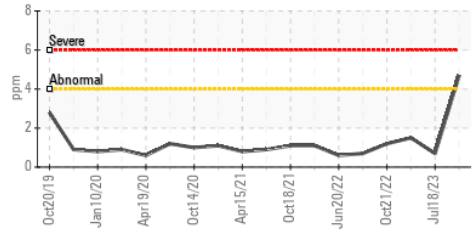
Lead (ppm)



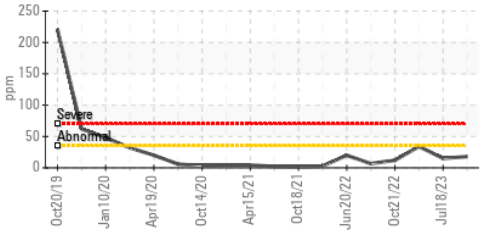
Aluminum (ppm)



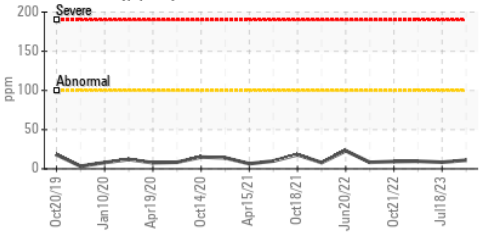
▲ Chromium (ppm)



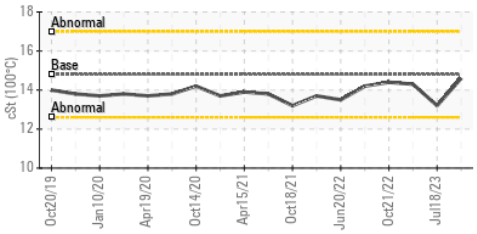
Copper (ppm)



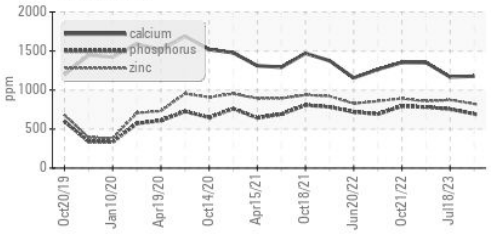
Silicon (ppm)



Viscosity @ 100°C



Additives



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0878119 **Recieved** : 02 Jan 2024
Lab Number : 02605815 **Diagnosed** : 02 Jan 2024
Unique Number : 5698900 **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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