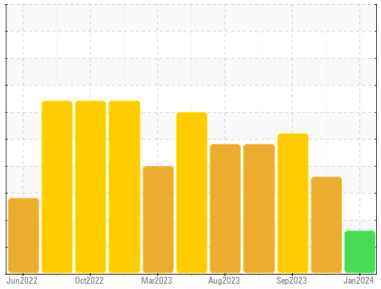
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
BRUCE B/0B/54300
Machine Id
0B-54300-EPG2-E2
Component
Diesel Engine
Fluid
CHEVRON URSA SUPER PLUS 40 (7 GAL)

DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate concentration of dirt present in the oil. The water content is negligible.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0642723**	WC0642791	WC0642792
Sample Date		Client Info		**05 Jan 2024**	11 Sep 2023	11 Sep 2023
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	▲ 0.027	▲ 0.024

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**4**	4	4
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>4	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**1**	<1	<1
Lead	ppm	ASTM D5185(m)	>40	**<1**	1	2
Copper	ppm	ASTM D5185(m)	>330	**1**	2	2
Tin	ppm	ASTM D5185(m)	>15	**<1**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	0
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)		**249**	175	179
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**26**	<1	<1
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)		**8**	10	10
Calcium	ppm	ASTM D5185(m)		**2187**	1964	1978
Phosphorus	ppm	ASTM D5185(m)	1000	**648**	971	962
Zinc	ppm	ASTM D5185(m)	1090	**700**	1012	1020
Sulfur	ppm	ASTM D5185(m)		**2434**	2761	2812
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	▲ **30**	24	▲ 26
Sodium	ppm	ASTM D5185(m)		**1**	3	3
Potassium	ppm	ASTM D5185(m)	>20	**5**	▲ 6	▲ 7
Water	%	ASTM D6304*	>0.2	**0.010**	---	---
ppm Water	ppm	ASTM D6304*	>2000	**110**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**2.9**	5.0	4.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**14.8**	20.0	19.9

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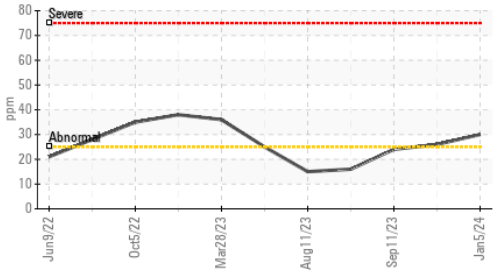
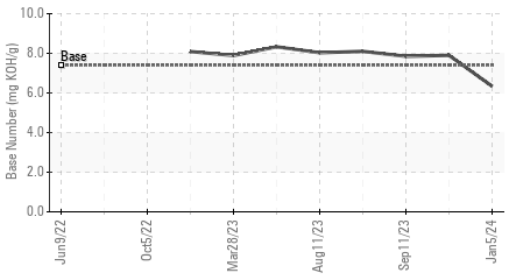
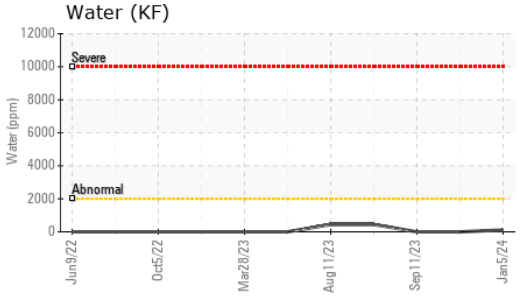
Silicon (ppm)



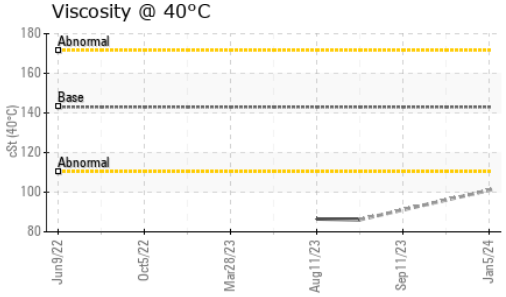
Base Number



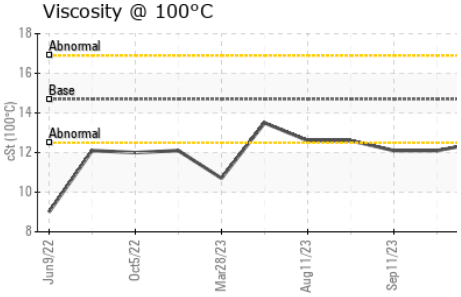
Water (KF)



Viscosity @ 40°C



Viscosity @ 100°C



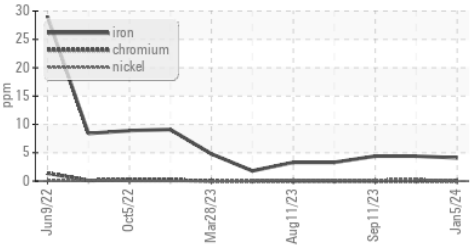
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**6.7**	15.5	15.3
Acid Number (AN)	mg KOH/g	ASTM D974*		**1.39**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896*	7.4	**6.34**	7.90	7.85

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	**VLITE**	---	---
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

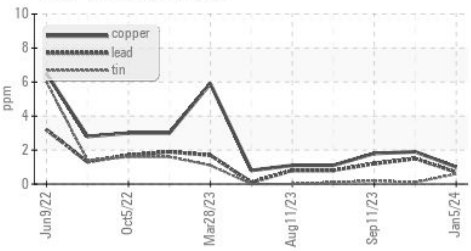
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	143	**101**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	14.7	**12.5**	12.1	12.1
Viscosity Index (VI)	Scale	ASTM D2270*	102	**117**	---	---

GRAPHS

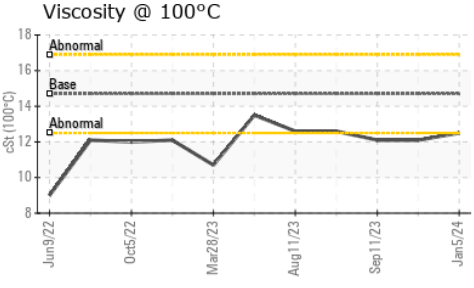
Ferrous Alloys



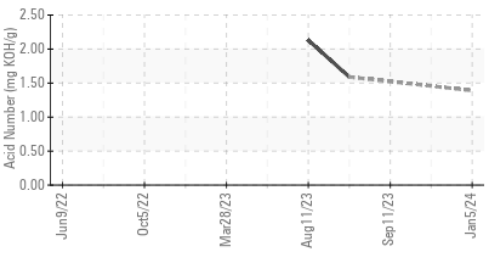
Non-ferrous Metals



Viscosity @ 100°C



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0642723 **Recieved** : 11 Jan 2024
Lab Number : 02608111 **Diagnosed** : 15 Jan 2024
Unique Number : 5709197 **Diagnostician** : Bill Quesnel
Test Package : IND 2 (Additional Tests: FT-IR, KV100, TBN, VI)

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.

Bruce Power - Bruce A PdM
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