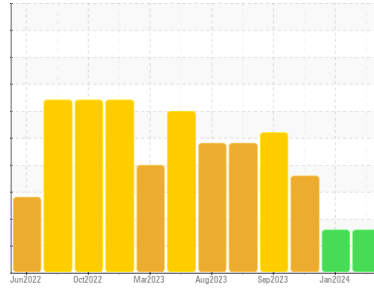




OIL ANALYSIS REPORT

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		WC0642722	WC0642723	WC0642791
Sample Date	Client Info		05 Jan 2024	05 Jan 2024	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	NEG	▲ 0.027

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	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>20	1	1	<1
Lead	ppm	ASTM D5185(m)	>40	<1	<1	1
Copper	ppm	ASTM D5185(m)	>330	1	1	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)		253	249	175
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		26	26	<1
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		6	8	10
Calcium	ppm	ASTM D5185(m)		2236	2187	1964
Phosphorus	ppm	ASTM D5185(m)	1000	655	648	971
Zinc	ppm	ASTM D5185(m)	1090	718	700	1012
Sulfur	ppm	ASTM D5185(m)		2475	2434	2761
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

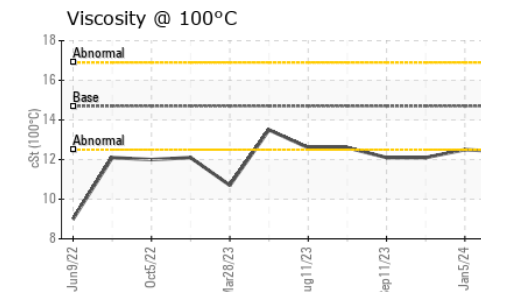
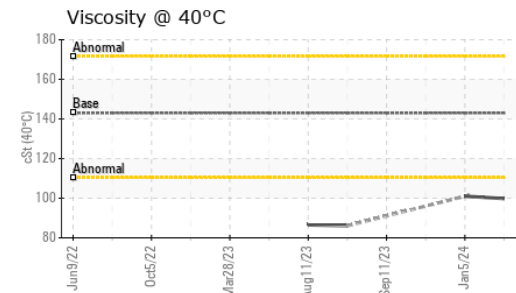
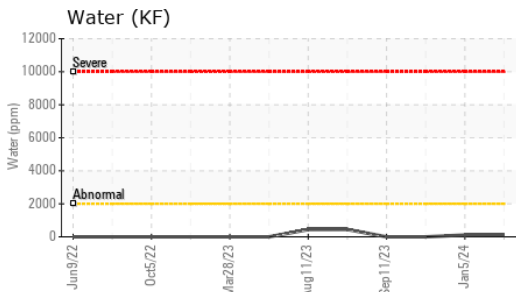
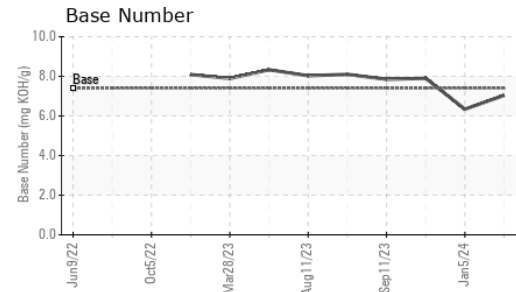
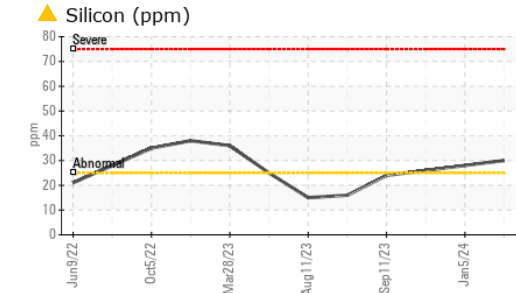
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	▲ 28	▲ 30	24
Sodium	ppm	ASTM D5185(m)		1	1	3
Potassium	ppm	ASTM D5185(m)	>20	5	5	▲ 6
Water	%	ASTM D6304*	>0.2	0.012	0.010	---
ppm Water	ppm	ASTM D6304*	>2000	121	110	---

INFRA-RED

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



OIL ANALYSIS REPORT

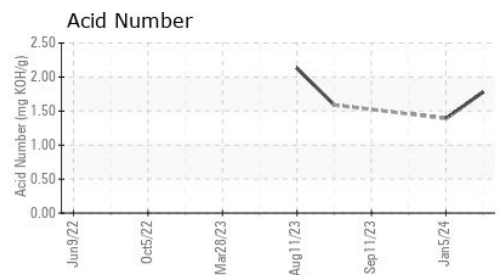
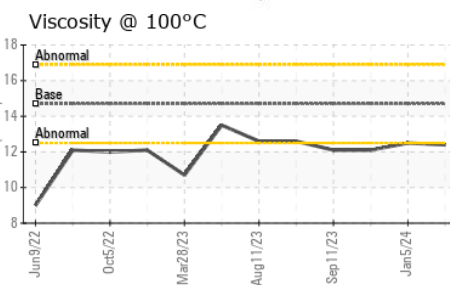
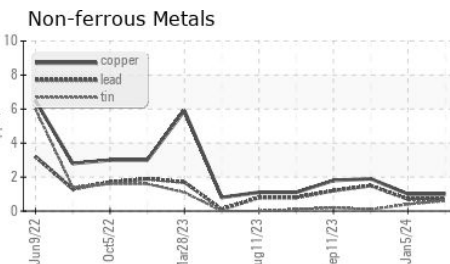
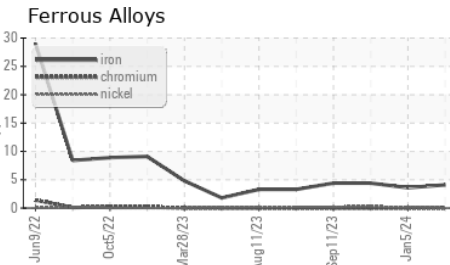


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	ASTM D7414*	>25	6.7	6.7	15.5
Acid Number (AN)	mg KOH/g	ASTM D974*		1.78	1.39	---
Base Number (BN)	mg KOH/g	ASTM D2896*	7.4	7.04	6.34	7.90

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	NONE	---
Debris	scalar	Visual*	NONE	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	VLITE	VLITE	---
Appearance	scalar	Visual*	NORML	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	99.8	101	---
Visc @ 100°C	cSt	ASTM D7279(m)	14.7	12.4	12.5	12.1
Viscosity Index (VI)	Scale	ASTM D2270*	102	117	117	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0642722
Lab Number : **02608112**
Unique Number : 5709198
Test Package : IND 2 (Additional Tests: FT-IR, KV100, TBN, VI)

Bruce Power - Bruce A PdM
 P.O.Box 1540, 177 Tie Road., RM-222 U2 Column 2N11 615
 Tiverton, ON
 CA N0G 2T0
 Contact: Bradley Mangotich
 bradley.mangotich@brucepower.com
 T: (519)361-2673
 F:

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.