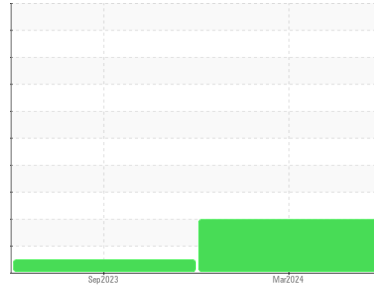




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
10591185 #5 R.A.F.
 Component
Hydraulic System
 Fluid
R&O OIL ISO 68 (--- GAL)

DIAGNOSIS

Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0884175	WC0718783	---
Sample Date	Client Info		29 Mar 2024	04 Sep 2023	---
Machine Age	hrs	Client Info	0	0	---
Oil Age	hrs	Client Info	0	0	---
Oil Changed	Client Info		N/A	N/A	---
Sample Status			ABNORMAL	NORMAL	---

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	NEG	NEG	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >20	1	<1	---
Chromium	ppm	ASTM D5185(m) >20	0	0	---
Nickel	ppm	ASTM D5185(m) >20	0	<1	---
Titanium	ppm	ASTM D5185(m)	0	0	---
Silver	ppm	ASTM D5185(m)	0	<1	---
Aluminum	ppm	ASTM D5185(m) >20	0	<1	---
Lead	ppm	ASTM D5185(m) >20	<1	2	---
Copper	ppm	ASTM D5185(m) >20	<1	<1	---
Tin	ppm	ASTM D5185(m) >20	0	0	---
Antimony	ppm	ASTM D5185(m)	0	0	---
Vanadium	ppm	ASTM D5185(m)	0	0	---
Beryllium	ppm	ASTM D5185(m)	0	0	---
Cadmium	ppm	ASTM D5185(m)	0	0	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 5	0	<1	---
Barium	ppm	ASTM D5185(m) 5	0	0	---
Molybdenum	ppm	ASTM D5185(m) 5	0	0	---
Manganese	ppm	ASTM D5185(m)	0	0	---
Magnesium	ppm	ASTM D5185(m) 5	<1	<1	---
Calcium	ppm	ASTM D5185(m) 5	<1	1	---
Phosphorus	ppm	ASTM D5185(m) 100	18	18	---
Zinc	ppm	ASTM D5185(m) 25	10	10	---
Sulfur	ppm	ASTM D5185(m) 1500	293	298	---
Lithium	ppm	ASTM D5185(m)	<1	<1	---

CONTAMINANTS

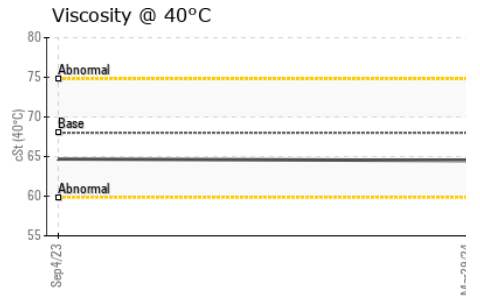
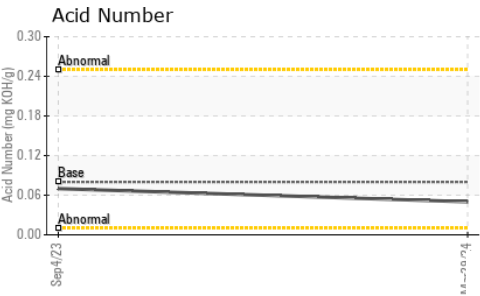
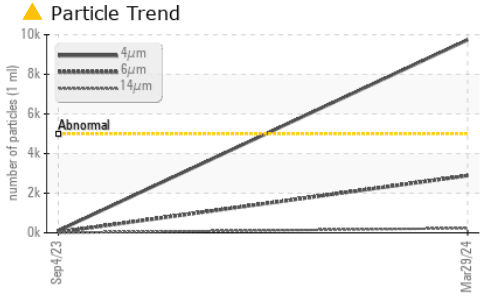
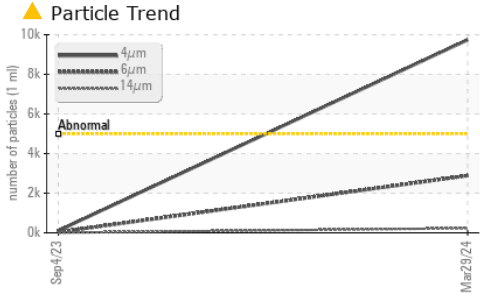
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	0	0	---
Sodium	ppm	ASTM D5185(m)	1	1	---
Potassium	ppm	ASTM D5185(m) >20	<1	<1	---

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	9744	110	---
Particles >6µm	ASTM D7647	>1300	2887	36	---
Particles >14µm	ASTM D7647	>160	229	4	---
Particles >21µm	ASTM D7647	>40	59	1	---
Particles >38µm	ASTM D7647	>10	5	0	---
Particles >71µm	ASTM D7647	>3	0	0	---
Oil Cleanliness	ISO 4406 (c)	>19/17/14	20/19/15	14/12/9	---



OIL ANALYSIS REPORT

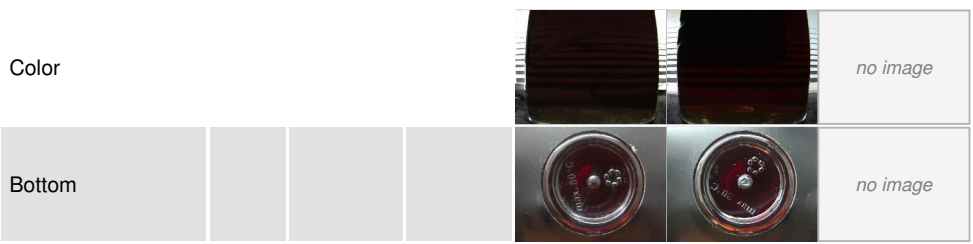


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.08	0.05	0.07	---

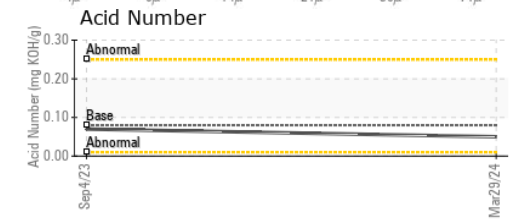
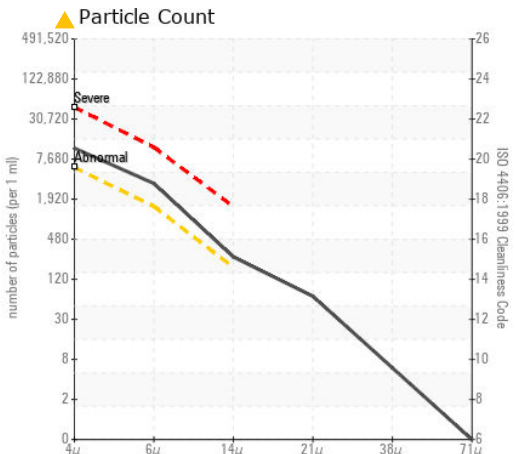
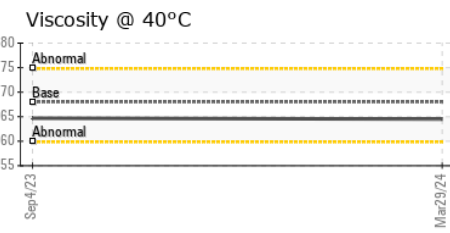
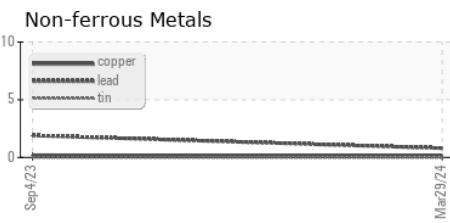
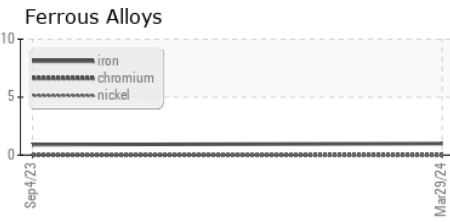
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	---
Precipitate	scalar	Visual*	NONE	NONE	NONE	---
Silt	scalar	Visual*	NONE	NONE	NONE	---
Debris	scalar	Visual*	NONE	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	VLITE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.05	NEG	NEG	---
Free Water	scalar	Visual*		NEG	NEG	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68	64.5	64.7	---

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0884175 **Received** : 08 Apr 2024
Lab Number : **02627342** **Tested** : 09 Apr 2024
Unique Number : 5760474 **Diagnosed** : 09 Apr 2024 - Wes Davis
Test Package : IND 2

Vale - Coleman Mine
 COLEMAN MINE (PLANT 10), 117 Mine Road
 LEVACK, ON
 CA P0M 2C0
 Contact: Ryan Davies
 ryan.davies@vale.com
 T: (705)682-8952
 F: (705)966-4114

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.