



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Machine Id  
**NO UNIT WC0884665**  
 Component  
**Unknown Component**  
 Fluid  
**SHELL OMALA 220 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0884665	---	---
Sample Date		Client Info		20 Dec 2023	---	---
Machine Age	hrs	Client Info		0	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		N/A	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				ABNORMAL	---	---

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)		7	---	---
Chromium	ppm	ASTM D5185(m)		0	---	---
Nickel	ppm	ASTM D5185(m)		<1	---	---
Titanium	ppm	ASTM D5185(m)		0	---	---
Silver	ppm	ASTM D5185(m)		0	---	---
Aluminum	ppm	ASTM D5185(m)		<1	---	---
Lead	ppm	ASTM D5185(m)		0	---	---
Copper	ppm	ASTM D5185(m)		<1	---	---
Tin	ppm	ASTM D5185(m)		0	---	---
Vanadium	ppm	ASTM D5185(m)		0	---	---
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

## CONTAMINATION

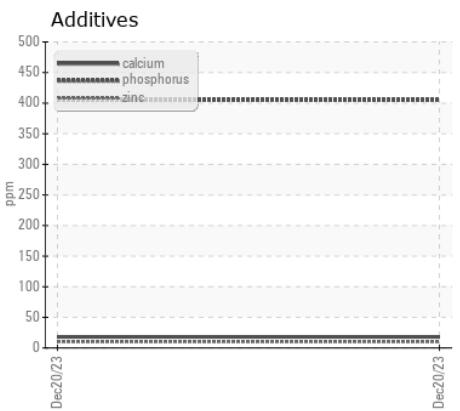
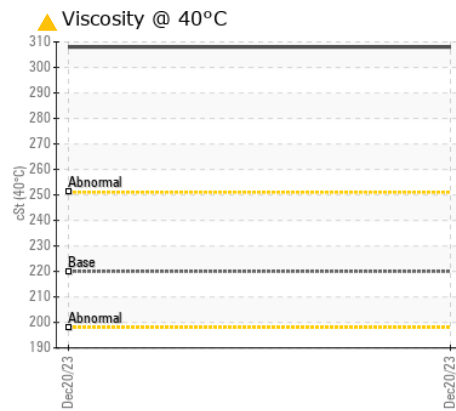
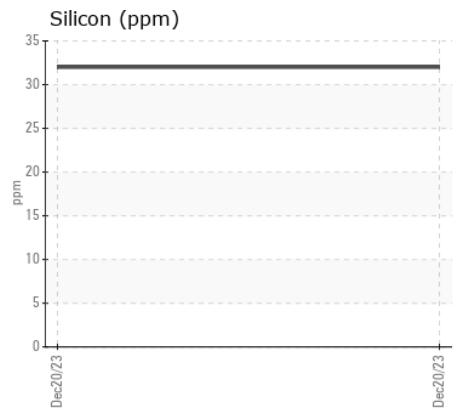
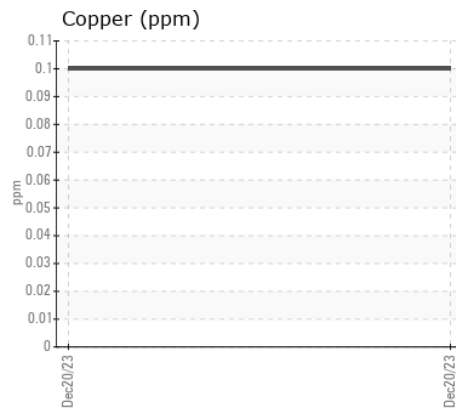
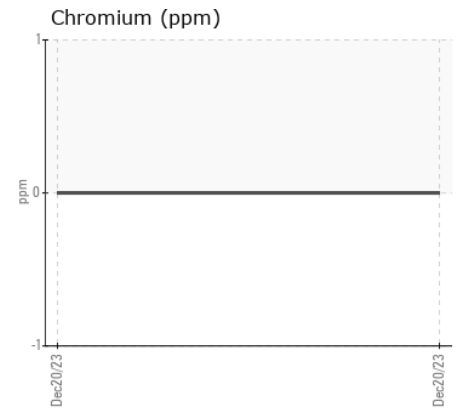
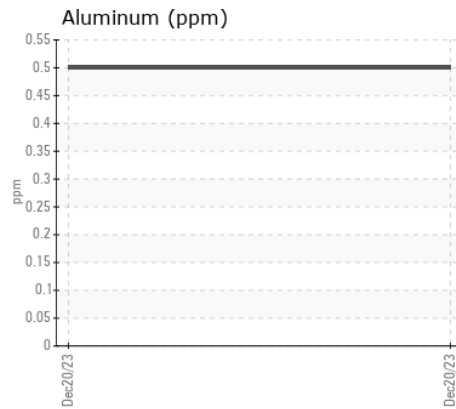
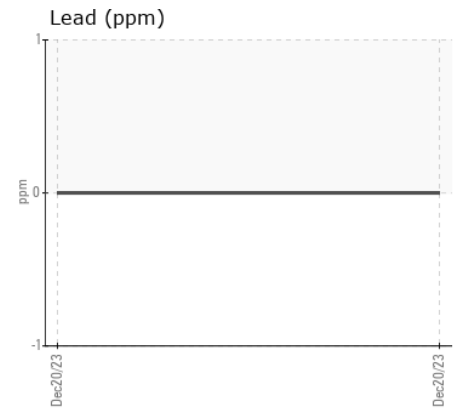
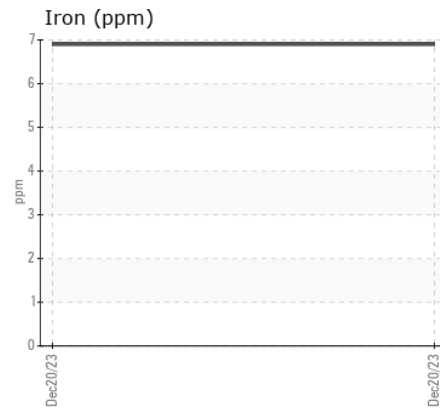
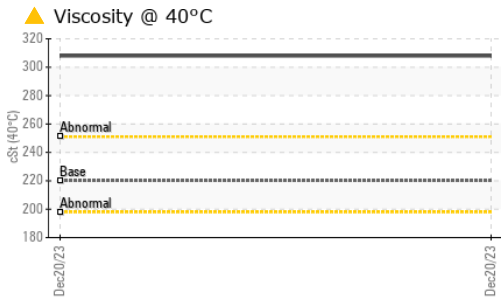
There is no indication of any contamination in the sample.

Silicon	ppm	ASTM D5185(m)		32	---	---
Potassium	ppm	ASTM D5185(m)	>20	<1	---	---
Water		WC Method		NEG	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*		NEG	---	---

## FLUID CONDITION

Viscosity of sample indicates oil is within ISO 320 range, advise investigate. The condition of the sample is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		<1	---	---
Boron	ppm	ASTM D5185(m)	4.4	24	---	---
Barium	ppm	ASTM D5185(m)	0.0	0	---	---
Molybdenum	ppm	ASTM D5185(m)	0	0	---	---
Manganese	ppm	ASTM D5185(m)		0	---	---
Magnesium	ppm	ASTM D5185(m)	0	3	---	---
Calcium	ppm	ASTM D5185(m)	0	18	---	---
Phosphorus	ppm	ASTM D5185(m)	215	405	---	---
Zinc	ppm	ASTM D5185(m)	0	10	---	---
Sulfur	ppm	ASTM D5185(m)	7039	5463	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	220	▲ 308	---	---



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0884665 **Received** : 19 Jan 2024  
**Lab Number** : 02610035 **Diagnosed** : 19 Jan 2024  
**Unique Number** : 5711121 **Diagnostician** : Kevin Marson  
**Test Package** : MOB 1

**Vale - Copper Cliff Smelter**  
 COPPER CLIFF SMELTER WAREHOUSE, 155 BALSAM ST.  
 COPPER CLIFF, ON  
 CA P0M 1N0  
 Contact: Andy Kozachanko  
 andrew.kozachanko@vale.com  
 T: (705)682-6687  
 F: (705)682-6939

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.