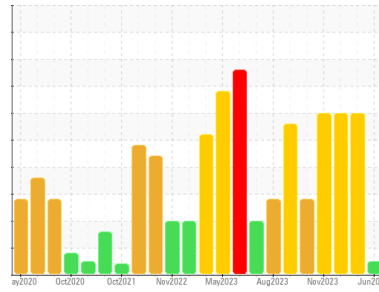




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
10580137 ROCK BREAKER
 Component
Hydraulic System
 Fluid
SHELL TELLUS 68 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.
 NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0811768	WC0811772	WC0884173
Sample Date	Client Info			20 Jun 2024	19 Mar 2024	24 Feb 2024
Machine Age	mths	Client Info		0	0	0
Oil Age	mths	Client Info		0	0	0
Oil Changed	Client Info			N/A	N/A	N/A
Sample Status				NORMAL	SEVERE	SEVERE

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

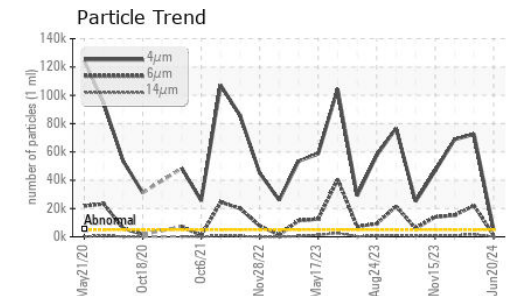
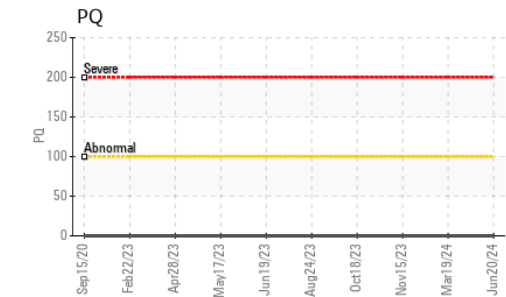
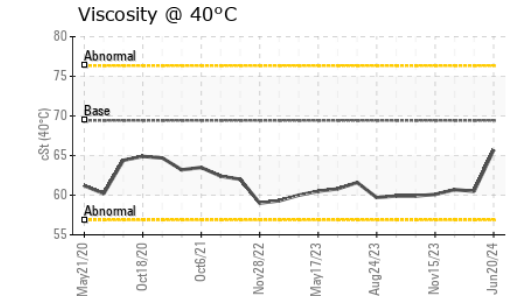
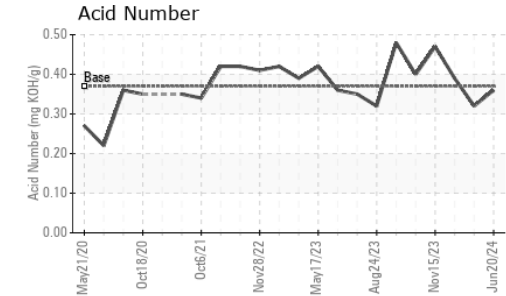
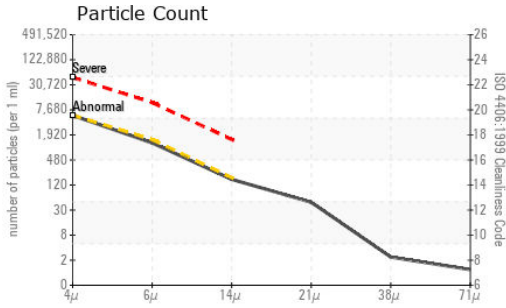
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		0	0	---
Iron	ppm	ASTM D5185(m)	>20	<1	22	16
Chromium	ppm	ASTM D5185(m)	>20	0	<1	1
Nickel	ppm	ASTM D5185(m)	>20	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>20	0	0	<1
Copper	ppm	ASTM D5185(m)	>20	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>20	0	0	0
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)		<1	<1	0
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		0	0	0
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)	11	67	67	67
Calcium	ppm	ASTM D5185(m)	39	10	13	14
Phosphorus	ppm	ASTM D5185(m)	260	271	288	297
Zinc	ppm	ASTM D5185(m)	279	337	355	348
Sulfur	ppm	ASTM D5185(m)	2109	654	658	710
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

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



OIL ANALYSIS REPORT



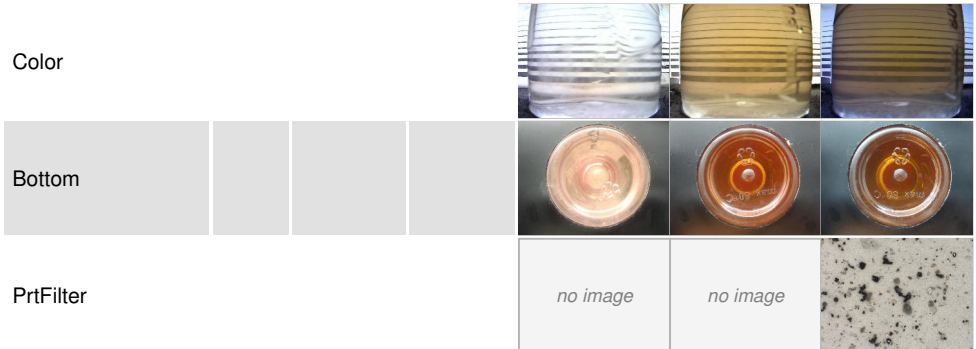
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	4934	▲ 72556	▲ 68719
Particles >6µm	ASTM D7647	>1300	1081	▲ 21994	▲ 15310
Particles >14µm	ASTM D7647	>160	145	▲ 1707	▲ 1022
Particles >21µm	ASTM D7647	>40	41	▲ 197	▲ 172
Particles >38µm	ASTM D7647	>10	2	3	4
Particles >71µm	ASTM D7647	>3	1	1	1
Oil Cleanliness	ISO 4406 (c)	>19/17/14	19/17/14	▲ 23/22/18	▲ 23/21/17

FLUID DEGRADATION	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	0.37	0.36	0.32	0.39

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	NONE	NONE	▲ VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	▲ LIGHT
Sand/Dirt	scalar	Visual*	NONE	NONE	VLITE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	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)	69.43	65.7	60.5	60.7

SAMPLE IMAGES



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0811768
Lab Number : **02644867**
Unique Number : 5802406
Test Package : IND 2 (Additional Tests: PQ)

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.