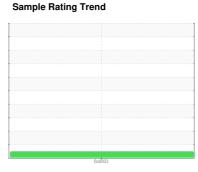


OIL ANALYSIS REPORT



NORMAL



23-CD-1 TIPPLE EXIT

Component

Gearbox

SHELL OMALA S2 GX 220 (--- GAL)

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

There is no indication of any contamination in the

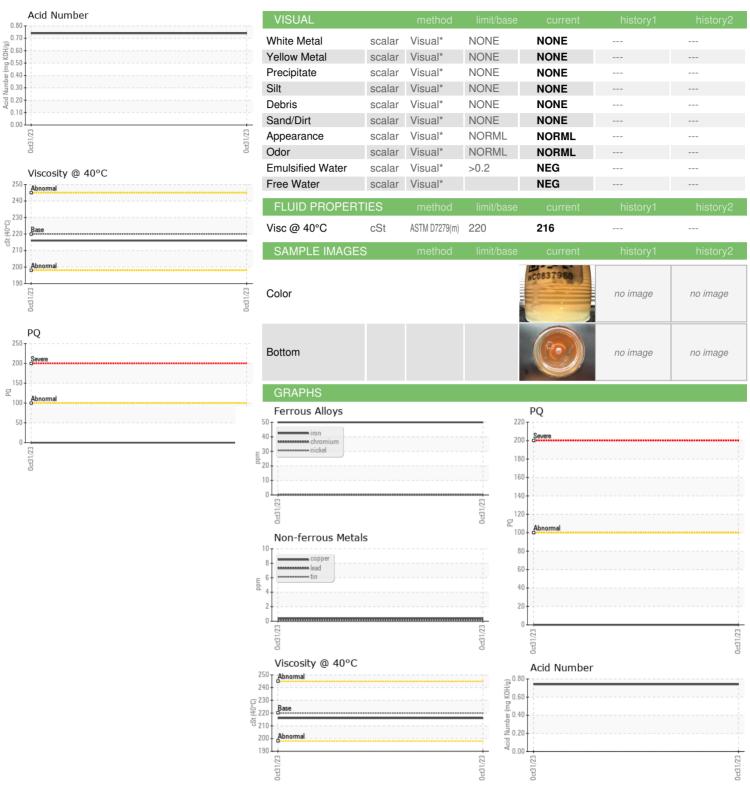
Fluid Condition

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

				Oct2023		
SAMPLE INFORM	//ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0837960		
Sample Date		Client Info		31 Oct 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATION	V	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG		
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		0		
Iron	ppm	ASTM D5185(m)	>200	50		
Chromium	ppm	ASTM D5185(m)	>15	<1		
Nickel	ppm	. ,	>15	<1		
Titanium	ppm	ASTM D5185(m)		0		
Silver	ppm	ASTM D5185(m)		0		
Aluminum	ppm	ASTM D5185(m)	>25	1		
Lead	ppm	ASTM D5185(m)	>100	<1		
Copper	ppm	ASTM D5185(m)	>200	<1		
Tin	ppm	ASTM D5185(m)	>25	0		
Antimony	ppm	ASTM D5185(m)	>5	0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	6.2	11		
Barium	ppm	ASTM D5185(m)	0.0	0		
Molybdenum	ppm	ASTM D5185(m)	0	0		
Manganese	ppm	ASTM D5185(m)		<1		
Magnesium	ppm	ASTM D5185(m)	0	2		
Calcium	ppm	ASTM D5185(m)	0.0	13		
Phosphorus	ppm	ASTM D5185(m)	290	269		
Zinc	ppm	ASTM D5185(m)	3.8	2		
Sulfur	ppm	ASTM D5185(m)	8167	10359		
Lithium	ppm	ASTM D5185(m)		<1		
CONTAMINANTS	;	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	7		
Sodium	ppm	ASTM D5185(m)		1		
Potassium	ppm	ASTM D5185(m)	>20	<1		
FLUID DEGRADA	ATION _	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		0.74		



OIL ANALYSIS REPORT





CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number **Unique Number**

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

: WC0837960

: 02606296 : 5707382

Recieved Diagnosed

: 03 Jan 2024 : Wes Davis Diagnostician

: 03 Jan 2024

Test Package : IND 2 (Additional Tests: TAN Man) 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.

Vale - Clarabelle Mill MTW (Mill, Tailings & Water) COPPER CLIFF, ON CA P0M 1N0

Contact: Guy Gauthier guy.gauthier@vale.com T: (705)682-5646

F: (705)682-6273