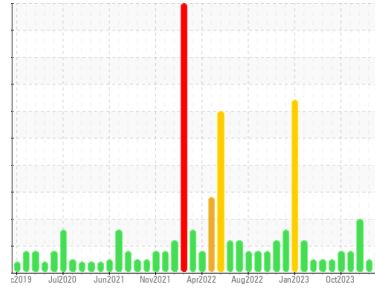




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
RECUPERATION - BROYAGE
 Machine Id
BROYEUR SUD (Sys. Lubrification Sortie Sud) (S/N 460-E8-360)
 Component
Reservoir Hydraulic System
 Fluid
ESSO SPARTAN EP 220 (420 LTR)

DIAGNOSIS

Recommendation

Nous recommandons le remplacement des filtres de ce composant. Échantillonner de nouveau l'équipement au prochain intervalle de vidange afin d'en surveiller la condition.

Wear

Les taux d'usure de tous les composants sont normaux.

Contamination

Il y a une légère quantité de limon (particules de 4 à 14 microns) dans l'huile. La teneur en eau est négligeable.

Fluid Condition

Le AN est acceptable pour ce fluide. L'état de l'huile permet d'en prolonger l'utilisation.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0868687	WC0894296	WC0888597
Sample Date	Client Info		06 Mar 2024	16 Feb 2024	19 Dec 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			ATTENTION	NORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >20	2	2	1
Chromium	ppm	ASTM D5185(m) >20	0	0	0
Nickel	ppm	ASTM D5185(m) >20	<1	<1	0
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	<1	0
Aluminum	ppm	ASTM D5185(m) >20	2	2	1
Lead	ppm	ASTM D5185(m) >20	0	0	0
Copper	ppm	ASTM D5185(m) >20	<1	<1	<1
Tin	ppm	ASTM D5185(m) >20	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) .5	10	11	16
Barium	ppm	ASTM D5185(m)	0	0	0
Molybdenum	ppm	ASTM D5185(m) 0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m) 0	<1	<1	<1
Calcium	ppm	ASTM D5185(m) 1.7	<1	<1	<1
Phosphorus	ppm	ASTM D5185(m) 250	296	300	300
Zinc	ppm	ASTM D5185(m) .3	8	8	5
Sulfur	ppm	ASTM D5185(m)	14306	14186	13674
Lithium	ppm	ASTM D5185(m)	3	4	2

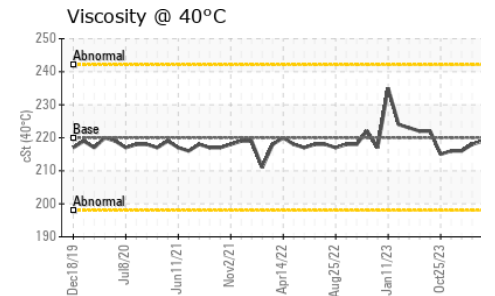
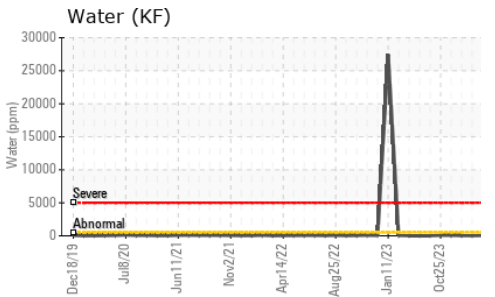
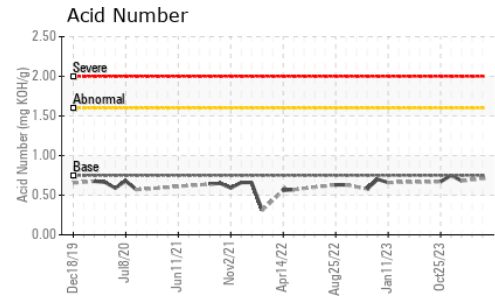
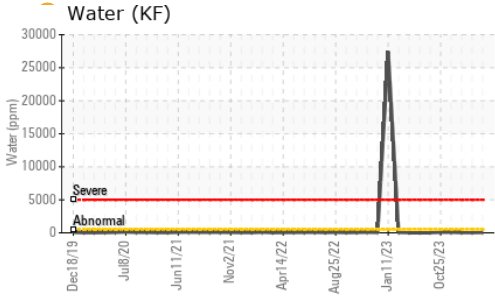
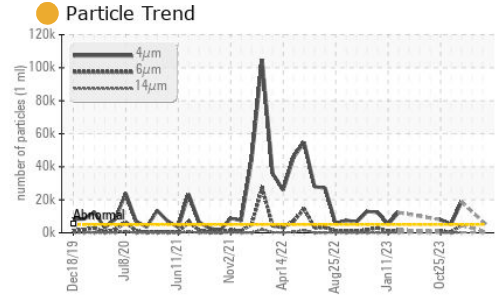
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	0	1	0
Sodium	ppm	ASTM D5185(m)	3	3	<1
Potassium	ppm	ASTM D5185(m) >20	<1	1	2
Water	%	ASTM D6304* >0.05	0.004	---	0.002
ppm Water	ppm	ASTM D6304* >500	41	---	16

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	6866	---	▲ 18777
Particles >6µm	ASTM D7647	>1300	960	---	▲ 4594
Particles >14µm	ASTM D7647	>160	59	---	● 293
Particles >21µm	ASTM D7647	>40	14	---	● 59
Particles >38µm	ASTM D7647	>10	0	---	2
Particles >71µm	ASTM D7647	>3	0	---	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	20/17/13	---	▲ 21/19/15

OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.75	0.71	---	0.68

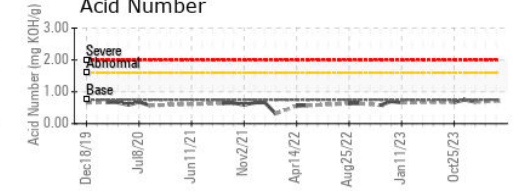
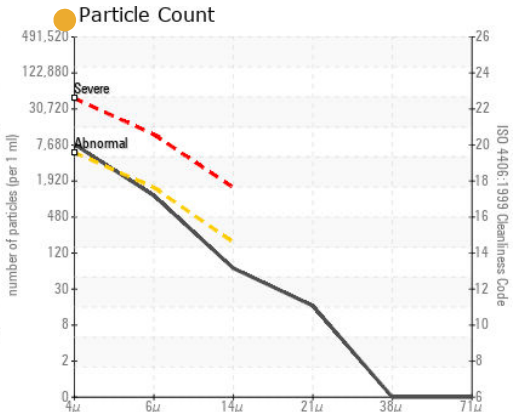
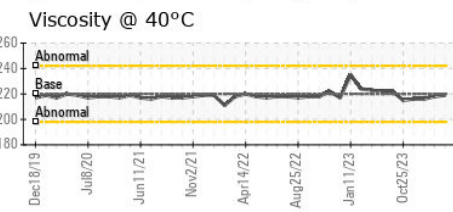
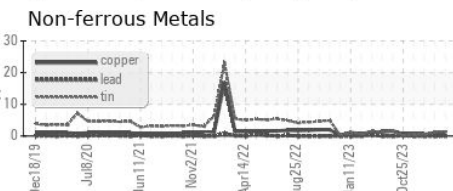
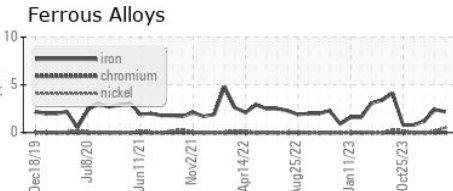
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	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)	220	219	218	216

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0868687
Lab Number : **02622108**
Unique Number : 5747227
Test Package : IND 2 (Additional Tests: KF, TAN Man)
Received : 14 Mar 2024
Tested : 15 Mar 2024
Diagnosed : 15 Mar 2024 - Wes Davis

Rio Tinto - USINE VAUDREUIL BHB (Mill - Aluminum)
 1955 BD. MELLON, EDIFICE 401
 JONQUIERE, QC
 CA G7S 4L2
 Contact: Dany Bonneau
 dany.bonneau@riotinto.com
 T: (418)718-7771
 F: (418)699-2421

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.