IND II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Area
Ravenswood SP-24224
Machine Id
PROOFLINE T3 (S/N 36258)
Component
Wind Turbine Gearbox
Fluid
MOBIL MOBILGEAR SHC XMP 320 (--- GAL)

RECOMMENDATION

Confirm the source of the lubricant being utilized for top-up/fill. 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

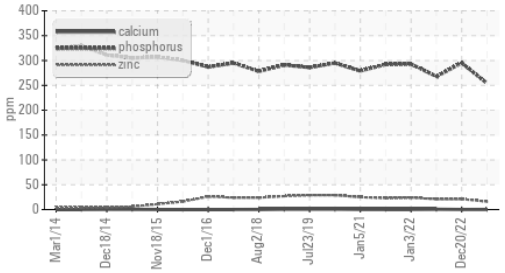
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable.

FLUID CONDITION

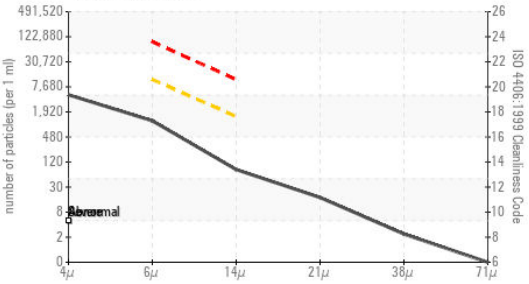
Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0863454	WC0305882	WC0632670
Sample Date		Client Info		14 Dec 2023	20 Dec 2022	27 Jun 2022
Machine Age	days	Client Info		0	0	0
Oil Age	days	Client Info		0	0	0
Filter Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	NORMAL
PQ		ASTM D8184*	>50	0	0	0
Iron	ppm	ASTM D5185(m)	>75	63	▲ 75	68
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>10	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>10	0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>10	<1	<1	0
Lead	ppm	ASTM D5185(m)	>15	0	<1	0
Copper	ppm	ASTM D5185(m)	>5	3	3	3
Tin	ppm	ASTM D5185(m)	>10	0	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>40	4	5	5
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	0
Water	%	ASTM D6304*	>0.02	0.003	0.003	0.009
ppm Water	ppm	ASTM D6304*	>200	32	27.2	91.8
Soot %	%	ASTM D7844*		0	0	0
Nitration	Abs/cm	ASTM D7624*		2.3	2.4	2.3
Sulfation	Abs/.1mm	ASTM D7415*		48.2	25.3	33.1
Particles >4µm		ASTM D7647		4317	55047	8283
Particles >6µm		ASTM D7647	>10000	1029	8006	938
Particles >14µm		ASTM D7647	>1300	70	56	58
Particles >21µm		ASTM D7647	>320	15	10	14
Particles >38µm		ASTM D7647	>80	2	1	1
Particles >71µm		ASTM D7647	>20	0	1	0
Oil Cleanliness		ISO 4406 (c)	>--/20/17	19/17/13	23/20/13	20/17/13
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*	>0.02	NEG	NEG	NEG
Sodium	ppm	ASTM D5185(m)	>10	0	<1	<1
Boron	ppm	ASTM D5185(m)	0	<1	<1	<1
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)		0	<1	<1
Magnesium	ppm	ASTM D5185(m)		<1	0	<1
Calcium	ppm	ASTM D5185(m)	0	<1	0	<1
Phosphorus	ppm	ASTM D5185(m)	485	▲ 254	295	268
Zinc	ppm	ASTM D5185(m)	0	16	21	21
Sulfur	ppm	ASTM D5185(m)		3344	3532	3507
Oxidation	Abs/.1mm	ASTM D7414*		55.5	21.8	33.8
Acid Number (AN)	mg KOH/g	ASTM D974*	0.85	0.58	0.63	0.59
Visc @ 40°C	cSt	ASTM D7279(m)	335	312	311	310
Visc @ 100°C	cSt	ASTM D7279(m)	38.3	35.6	35.5	35.0
Viscosity Index (VI)	Scale	ASTM D2270*	164	160	160	158

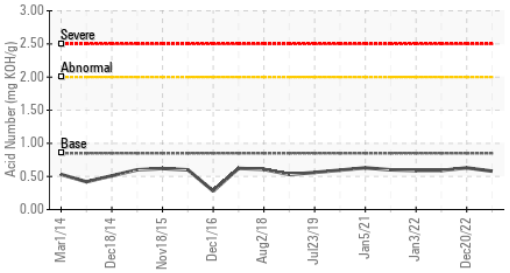
Additives



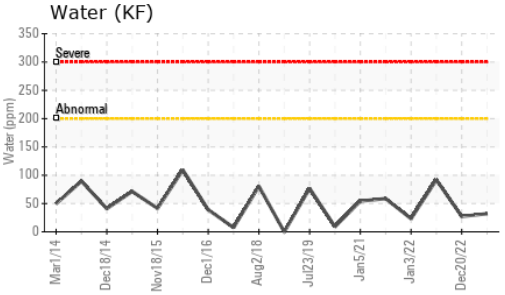
Particle Count



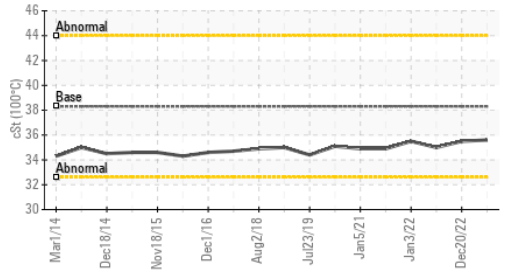
Acid Number



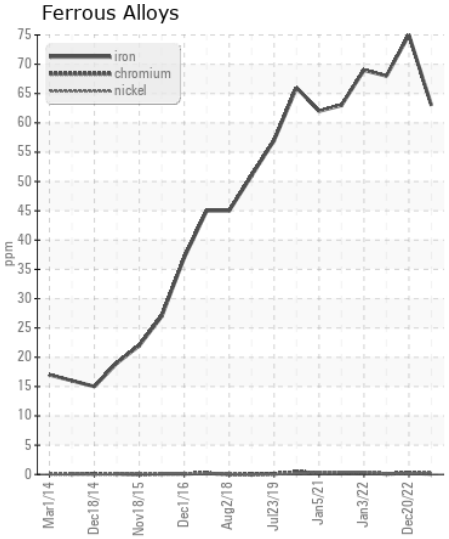
Water (KF)



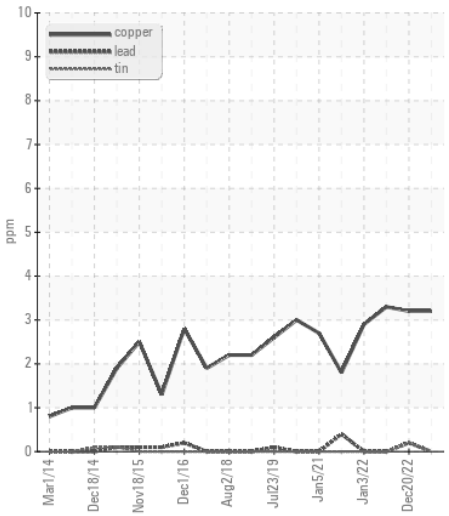
Viscosity @ 100°C



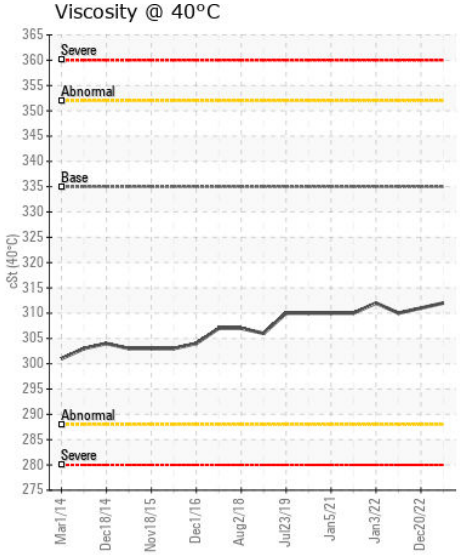
Ferrous Alloys



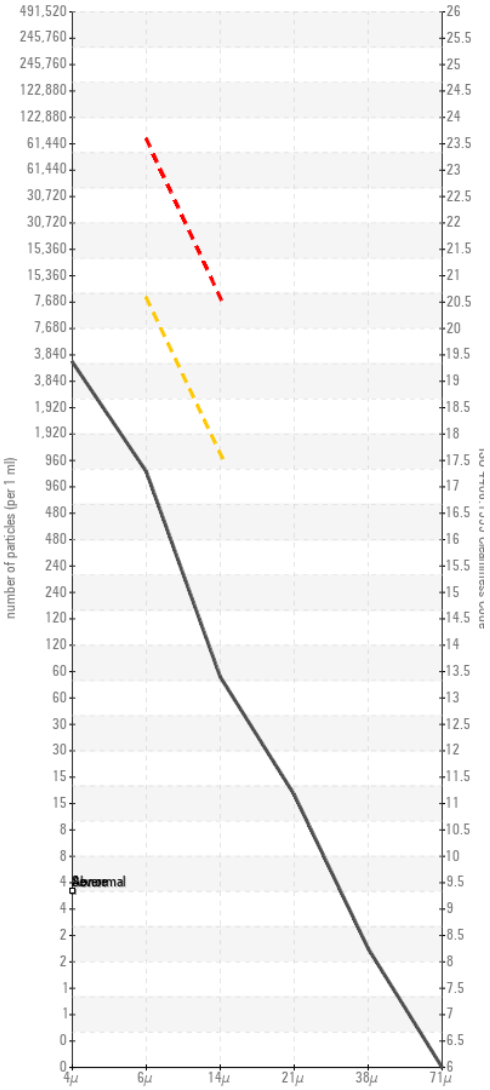
Non-ferrous Metals



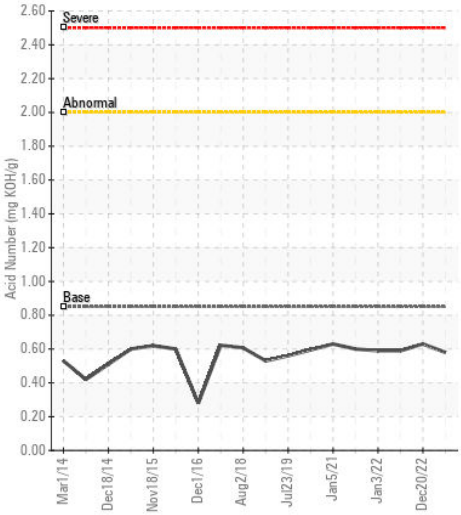
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory	: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9		
Sample No.	: WC0863454	**Recieved**	: 12 Jan 2024
Lab Number	: 02608646	**Diagnosed**	: 16 Jan 2024
Unique Number	: 5709732	**Diagnostician**	: Bill Quesnel
Test Package	: IND 2 (Additional Tests: FT-IR, KF, KV100, PQ, PrtCount, TAN Man, VI)		

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.

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