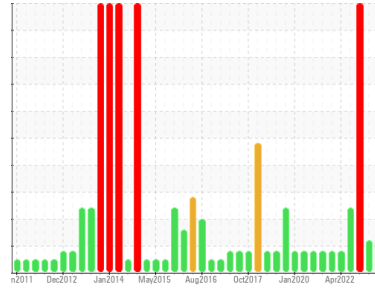




PROBLEM SUMMARY

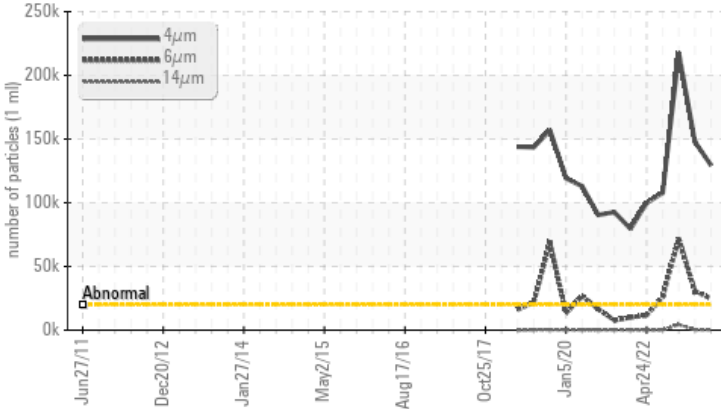
Area
System 56 - Hazardous Drains [13916194]
 Machine Id
Z-5601B Centrifuge Gearbox Lube Oil
 Component
Gearbox
 Fluid
GEAR OIL ISO 320 (13 LTR)

Sample Rating Trend



COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	SEVERE
Particles >4µm	ASTM D7647	>20000	▲ 129380	▲ 147853	● 217830
Particles >6µm	ASTM D7647	>5000	▲ 24750	▲ 30616	● 71961
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 24/22/15	▲ 24/22/15	● 25/23/19

Customer Id: HIBSTJ
 Sample No.: PP
 Lab Number: 02589627
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample.

HISTORICAL DIAGNOSIS

08 Aug 2023 Diag: Wes Davis

ISO



We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The water content is negligible. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report



11 Mar 2023 Diag: Kevin Marson

ISO



Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend that you drain the oil from the component if this has not already been done. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. Particles >6µm are severely high. Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >4µm are severely high. ppm Water and water and water and water contamination levels are abnormal. Particles >14µm are abnormally high. Particles >21µm are abnormally high. There is a moderate concentration of water present in the oil. Free water present. The white residue present in the sample is oil additive precipitate. Viscosity of sample indicates oil is within ISO 320 range, advise investigate. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

view report



29 Dec 2022 Diag: Kevin Marson

WEAR



We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. The fluid was specified as IRVING HDH SAE 80W90, however, a fluid match indicates that this fluid is ISO 320 Gear Oil. Please confirm the oil type and grade on your next sample. Copper ppm levels are abnormal. Particles >4µm are abnormally high. Particles >6µm and oil cleanliness are abnormally high. The water content is negligible. Viscosity of sample indicates oil is within ISO 320 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

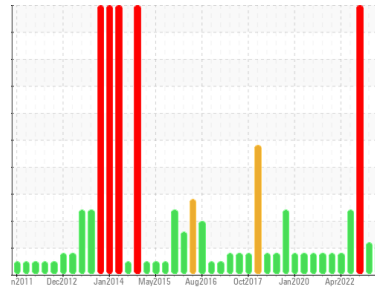
view report





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
System 56 - Hazardous Drains [13916194]
 Machine Id
Z-5601B Centrifuge Gearbox Lube Oil
 Component
Gearbox
 Fluid
GEAR OIL ISO 320 (13 LTR)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The water content is negligible.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PP	PP	PP
Sample Date	Client Info	16 Oct 2023	08 Aug 2023	11 Mar 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		ABNORMAL	ABNORMAL	SEVERE

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm	ASTM D5185(m) >150	22	14	9
Chromium ppm	ASTM D5185(m) >10	0	<1	0
Nickel ppm	ASTM D5185(m) >10	<1	<1	0
Titanium ppm	ASTM D5185(m)	0	0	0
Silver ppm	ASTM D5185(m)	<1	0	0
Aluminum ppm	ASTM D5185(m) >5	<1	<1	0
Lead ppm	ASTM D5185(m) >65	2	2	<1
Copper ppm	ASTM D5185(m) >80	42	48	4
Tin ppm	ASTM D5185(m) >8	1	<1	<1
Antimony ppm	ASTM D5185(m) >5	0	0	<1
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) 50	4	3	10
Barium ppm	ASTM D5185(m) 15	<1	<1	0
Molybdenum ppm	ASTM D5185(m) 15	0	0	0
Manganese ppm	ASTM D5185(m)	<1	<1	<1
Magnesium ppm	ASTM D5185(m) 50	4	2	7
Calcium ppm	ASTM D5185(m) 50	10	7	12
Phosphorus ppm	ASTM D5185(m) 350	224	239	222
Zinc ppm	ASTM D5185(m) 100	27	10	4
Sulfur ppm	ASTM D5185(m) 12500	6105	6478	9402
Lithium ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

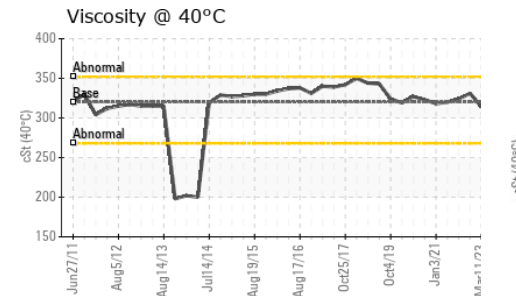
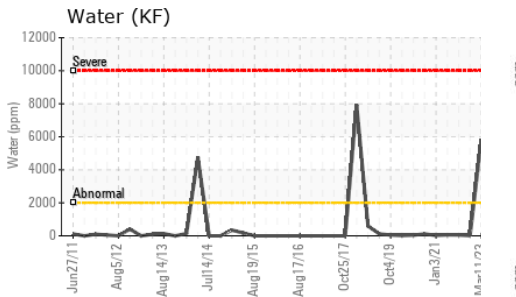
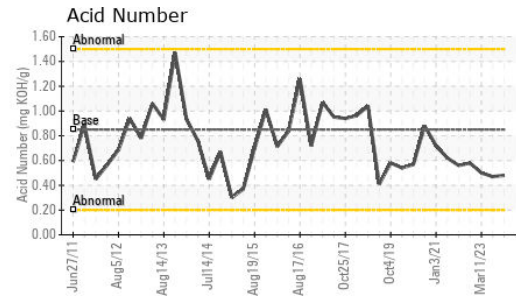
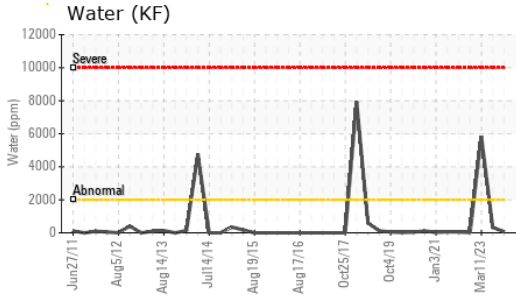
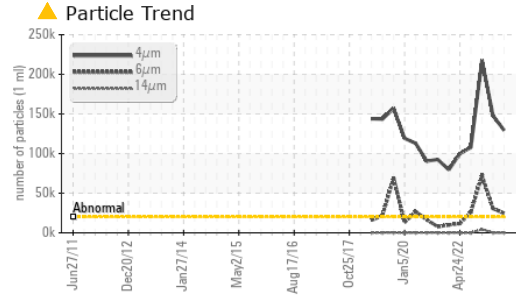
method	limit/base	current	history1	history2
Silicon ppm	ASTM D5185(m) >20	9	6	<1
Sodium ppm	ASTM D5185(m)	7	4	42
Potassium ppm	ASTM D5185(m) >20	<1	<1	2
Water %	ASTM D6304* >0.2	0.006	0.032	▲ 0.583
ppm Water	ASTM D6304* >2000	65.0	327.5	▲ 5835.4

FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >20000	▲ 129380	▲ 147853	● 217830
Particles >6µm	ASTM D7647 >5000	▲ 24750	▲ 30616	● 71961
Particles >14µm	ASTM D7647 >640	198	191	▲ 4476
Particles >21µm	ASTM D7647 >160	31	46	▲ 976
Particles >38µm	ASTM D7647 >40	6	4	19
Particles >71µm	ASTM D7647 >10	5	2	1
Oil Cleanliness	ISO 4406 (c) >21/19/16	▲ 24/22/15	▲ 24/22/15	● 25/23/19



OIL ANALYSIS REPORT

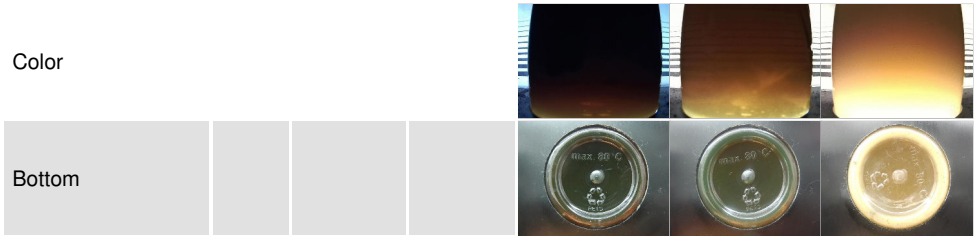


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.85	0.48	0.47	0.50

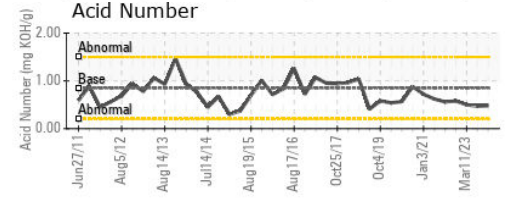
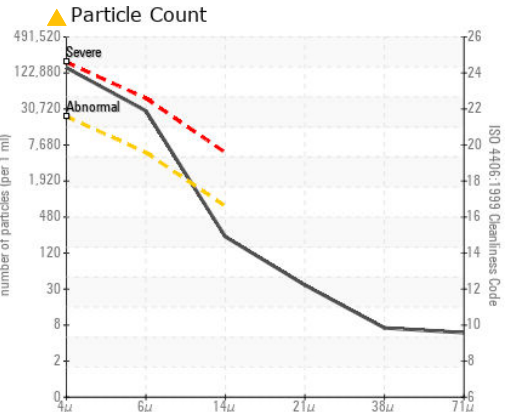
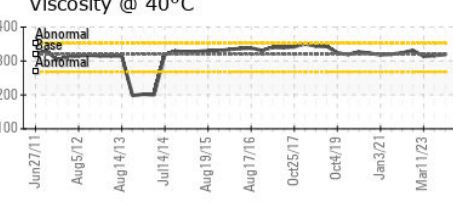
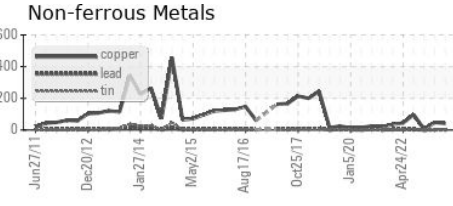
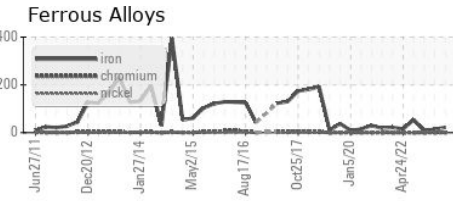
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	VLITE	▲ LIGHT
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	▲ MILKY
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	.2%	▲ .2%
Free Water	scalar	Visual*		NEG	NEG	▲ 1%

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	320	319	316	▲ 314

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **HIBERNIA MGMT & DEVELOPMENT CO. LTD**
Sample No. : PP **Received** : 17 Oct 2023 **SUITE 1000,, 100 NEW GOWER STREET**
Lab Number : 02589627 **Diagnosed** : 18 Oct 2023 **ST.JOHNS, NL**
Unique Number : 5658693 **Diagnostician** : Wes Davis **CA A1C 6K3**
Test Package : MAR 2 (Additional Tests: KF, PrtCount) **Contact: Christopher Michelau**
christopher.j.michelau@exxonmobil.com
T:
F: (709)722-3766

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.