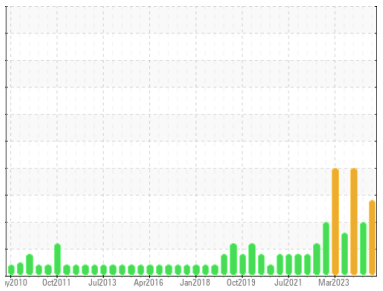
OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Machine Id
139-211 DUMPER #1
Component
Hydraulic System
Fluid
ESSO NUTO H ISO32 (310 GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. 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 advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate concentration of water present in the oil. The system cleanliness is acceptable for your target ISO 4406 cleanliness code.

Fluid Condition
Viscosity of sample indicates oil is within ISO 46 range, advise investigate. 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		**WC0900441**	WC0870404	WC0840187
Sample Date		Client Info		**02 Apr 2024**	07 Dec 2023	03 Aug 2023
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				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**15**	15	16
Chromium	ppm	ASTM D5185(m)	>20	**2**	2	2
Nickel	ppm	ASTM D5185(m)	>20	**0**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	<1	1
Lead	ppm	ASTM D5185(m)	>20	**11**	14	12
Copper	ppm	ASTM D5185(m)	>20	**55**	55	57
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)		**<1**	<1	1
Barium	ppm	ASTM D5185(m)		**0**	<1	0
Molybdenum	ppm	ASTM D5185(m)		**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	<1
Magnesium	ppm	ASTM D5185(m)		**<1**	<1	1
Calcium	ppm	ASTM D5185(m)		**14**	14	15
Phosphorus	ppm	ASTM D5185(m)		**306**	301	329
Zinc	ppm	ASTM D5185(m)		**292**	295	299
Sulfur	ppm	ASTM D5185(m)		**2425**	2413	2433
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**1**	3	3
Sodium	ppm	ASTM D5185(m)		**1**	2	1
Potassium	ppm	ASTM D5185(m)	>20	**<1**	0	0
Water	%	ASTM D6304*	>0.05	▲ **0.173**	▲ 0.166	▲ 0.105
ppm Water	ppm	ASTM D6304*	>500	▲ **1739**	▲ 1661	▲ 1055.0

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**4281**	2903	● 6794
Particles >6µm		ASTM D7647	>1300	**843**	506	● 1577
Particles >14µm		ASTM D7647	>160	**61**	19	129
Particles >21µm		ASTM D7647	>40	**12**	5	42
Particles >38µm		ASTM D7647	>10	**1**	1	2
Particles >71µm		ASTM D7647	>3	**0**	1	1
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**19/17/13**	19/16/11	● 20/18/14

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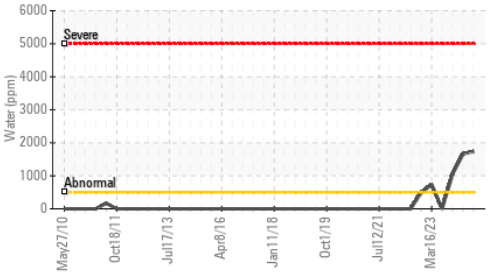
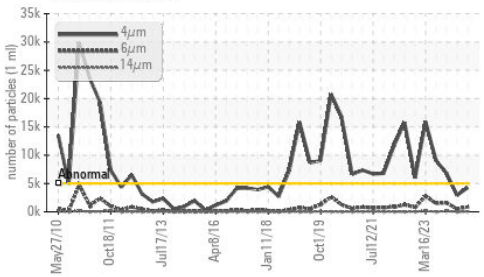
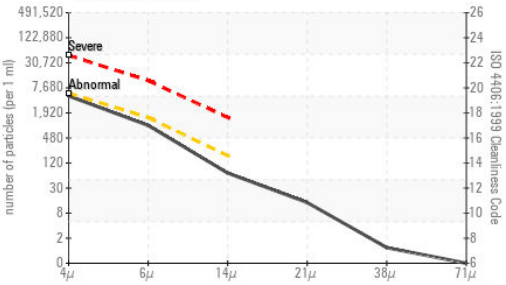
Water (KF)



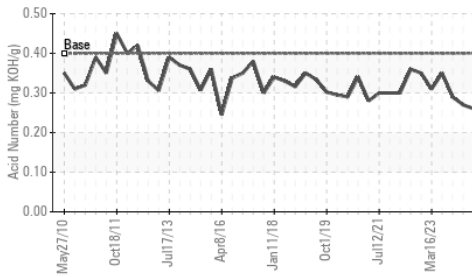
Particle Trend



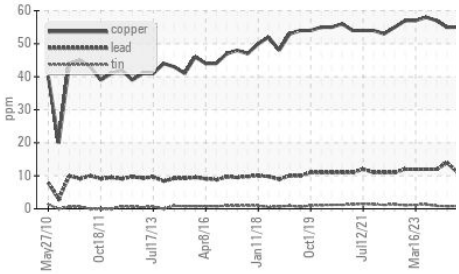
Particle Count



Acid Number



Non-ferrous Metals



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	.40	**0.26**	0.27	0.29

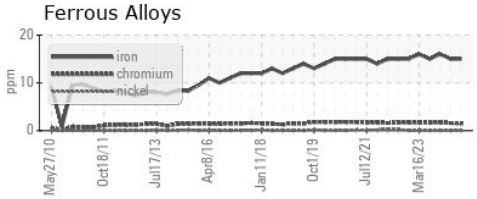
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	▲ **MILKY**	NORML	▲ MILKY
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	▲ **.2%**	▲ .5%	▲ .2%
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	32.6	▲ **41.1**	▲ 41.0	▲ 41.0

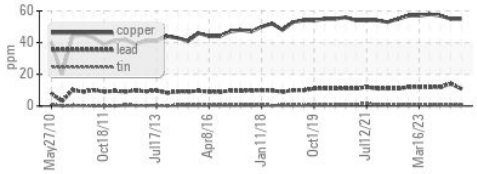
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

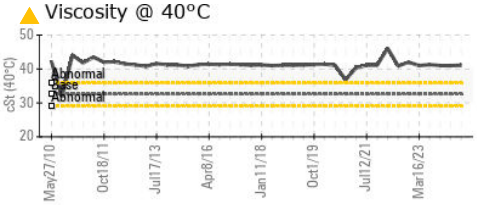
Ferrous Alloys



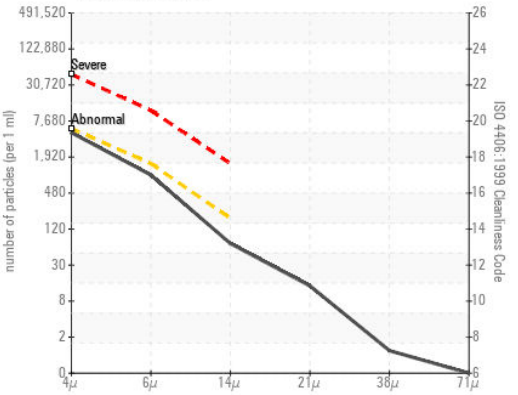
Non-ferrous Metals



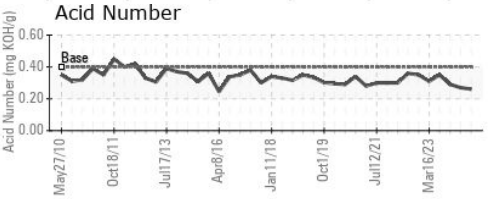
▲ Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0900441 **Received** : 10 Apr 2024
Lab Number : 02627884 **Tested** : 11 Apr 2024
Unique Number : 5761016 **Diagnosed** : 11 Apr 2024 - Kevin Marson
Test Package : IND 2 (Additional Tests: KF)

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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