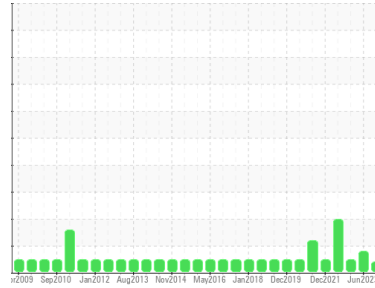




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area
OZR/BD09
Machine Id
101904 Central
Component
Hydraulic System
Fluid
ESSO NUTO H ISO 46 (200 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

Viscosity of sample indicates oil is within ISO 68 range, advise investigate. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0855088	WC0790640	WC0763685
Sample Date	Client Info		19 Dec 2023	20 Jun 2023	12 Dec 2022
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	ATTENTION	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >40	<1	<1	<1
Chromium	ppm	ASTM D5185(m) >4	0	0	0
Nickel	ppm	ASTM D5185(m) >20	<1	0	0
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >4	<1	0	<1
Lead	ppm	ASTM D5185(m) >10	0	0	0
Copper	ppm	ASTM D5185(m) >60	<1	<1	<1
Tin	ppm	ASTM D5185(m) >4	0	0	0
Antimony	ppm	ASTM D5185(m)	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) 0	0	0	<1
Barium	ppm	ASTM D5185(m) 0	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) 5	<1	<1	0
Calcium	ppm	ASTM D5185(m) 50	51	52	54
Phosphorus	ppm	ASTM D5185(m) 330	336	372	372
Zinc	ppm	ASTM D5185(m) 410	415	441	428
Sulfur	ppm	ASTM D5185(m) 2700	6081	5843	5733
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >20	0	<1	0
Sodium	ppm	ASTM D5185(m)	0	0	0
Potassium	ppm	ASTM D5185(m) >20	<1	<1	0

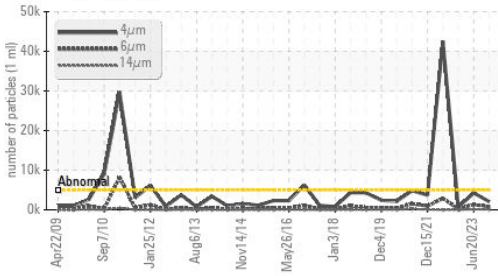
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	2076	4236	629
Particles >6µm	ASTM D7647	>1300	778	▲ 1312	211
Particles >14µm	ASTM D7647	>160	80	147	24
Particles >21µm	ASTM D7647	>40	24	53	7
Particles >38µm	ASTM D7647	>10	2	3	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	18/17/13	▲ 19/18/14	16/15/12

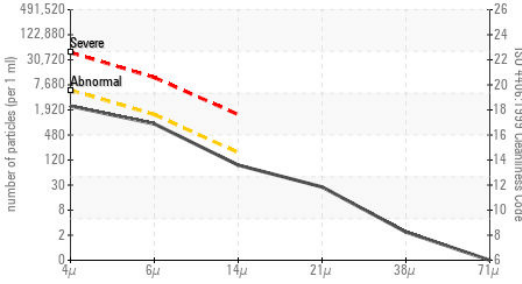


OIL ANALYSIS REPORT

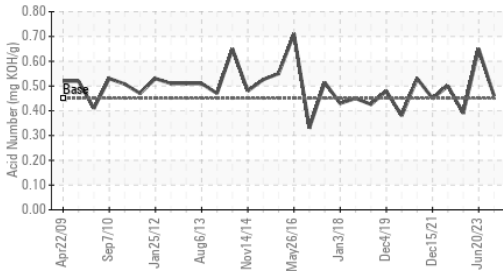
Particle Trend



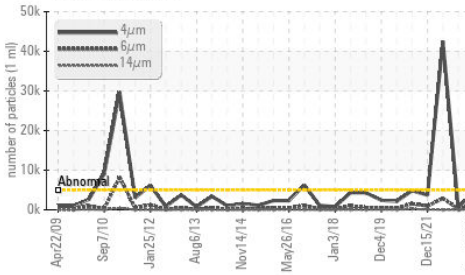
Particle Count



Acid Number



Particle Trend



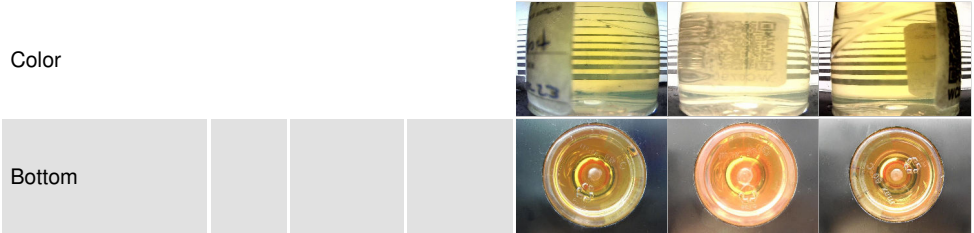
FLUID DEGRADATION

method	limit/base	current	history1	history2		
Acid Number (AN) mg KOH/g	ASTM D974*	0.45	0.46	0.65	0.39	
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	VLITE	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

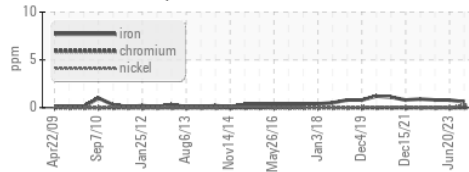
method	limit/base	current	history1	history2	
Visc @ 40°C cSt	ASTM D7279(m)	46	▲ 57.5	55.2	50.1

SAMPLE IMAGES

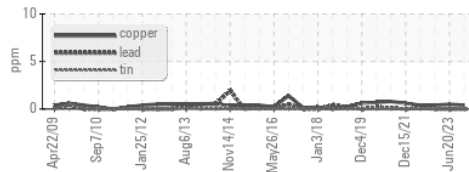


GRAPHS

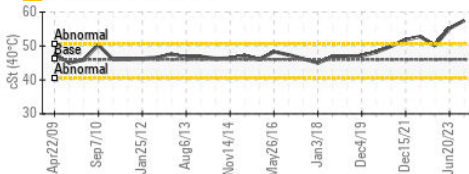
Ferrous Alloys



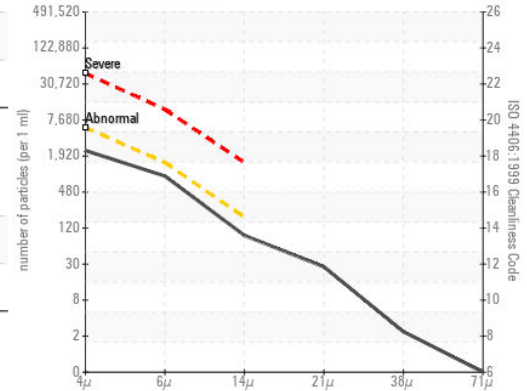
Non-ferrous Metals



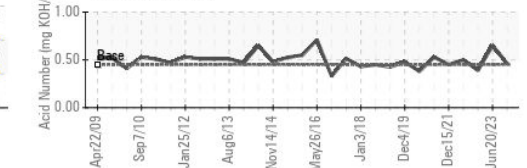
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
 Sample No. : WC0855088
 Lab Number : 02609704
 Unique Number : 5710790
 Test Package : IND 2 (Additional Tests: TAN Man)

Received : 18 Jan 2024
 Diagnosed : 19 Jan 2024
 Diagnostician : Kevin Marson

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.

MICHELIN TIRE
 866 RANDOLPH RD
 WATERVILLE, NS
 CA B0P 1V0
 Contact: Alan Davies
 alan.davies@michelin.com
 T: (902)534-3590
 F: x: