



OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ATTENTION
NORMAL
NORMAL

Machine Id
HAWBOLDT CENTRAL HYDRAULIC POWER SYSTEM (S/N 1632)

Component
Hydraulic System

Fluid
PETRO CANADA HYDREX MV 32 (3600 LTR)

RECOMMENDATION

Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0761465	WC0761467	WC0761469
Sample Date		Client Info		11 Jun 2023	26 Apr 2023	15 Feb 2023
Machine Age	hrs	Client Info		5292	4664	4368
Oil Age	hrs	Client Info		5292	4664	4368
Filter Age	hrs	Client Info		925	0	0
Oil Changed		Client Info		Not Chngd	Not Chngd	Not Chngd
Filter Changed		Client Info		Not Chngd	N/A	Changed
Sample Status				ATTENTION	ATTENTION	ATTENTION

WEAR

Copper ppm levels are noted. All other component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>20	1	1	1
Chromium	ppm	ASTM D5185(m)	>10	0	0	0
Nickel	ppm	ASTM D5185(m)	>10	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		<1	0	0
Aluminum	ppm	ASTM D5185(m)	>10	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>20	1	1	1
Copper	ppm	ASTM D5185(m)	>20	43	43	46
Tin	ppm	ASTM D5185(m)	>10	0	0	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

CONTAMINATION

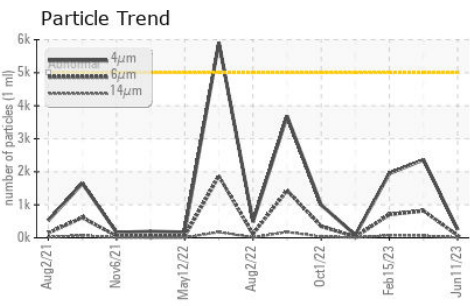
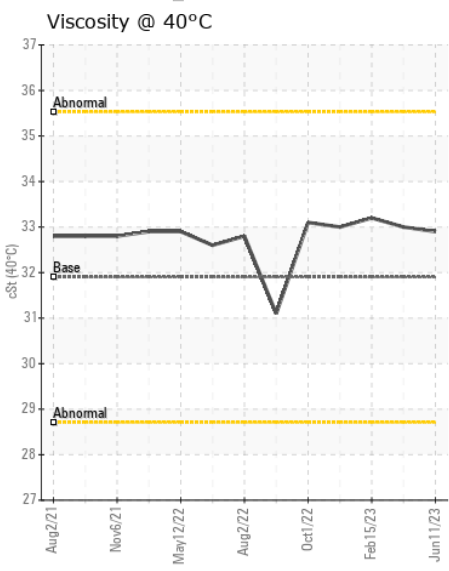
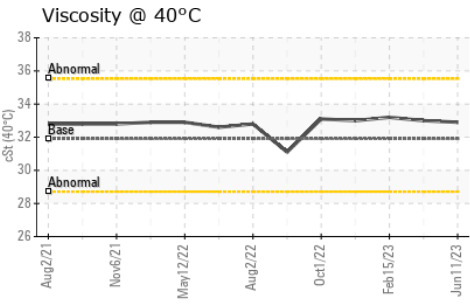
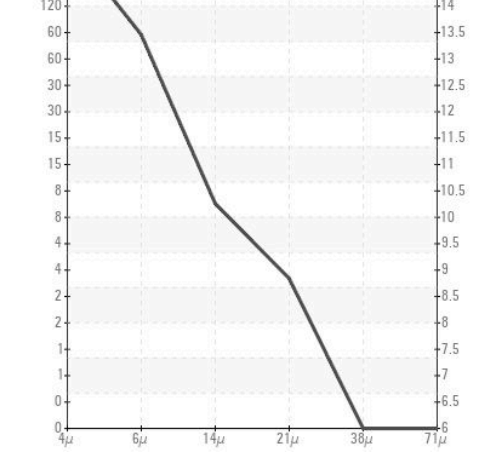
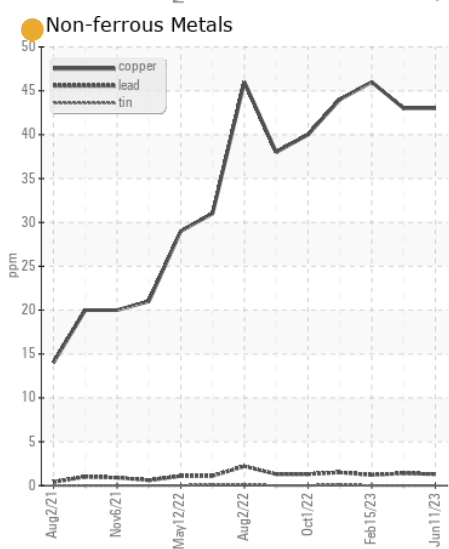
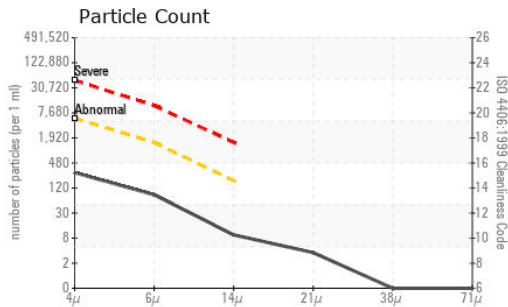
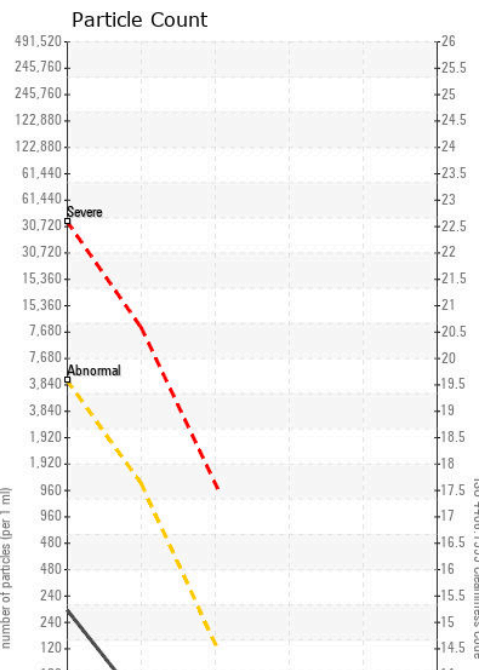
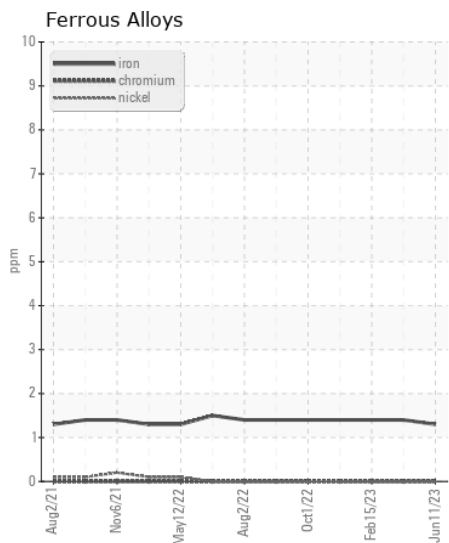
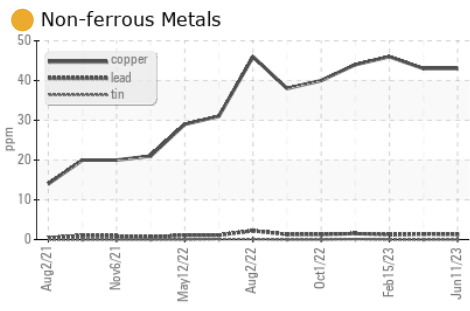
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185(m)	>15	0	0	0
Potassium	ppm	ASTM D5185(m)	>20	0	<1	0
Water		WC Method	>0.05	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	248	2363	1948
Particles >6µm		ASTM D7647	>1300	73	818	707
Particles >14µm		ASTM D7647	>160	8	62	72
Particles >21µm		ASTM D7647	>40	3	12	19
Particles >38µm		ASTM D7647	>10	0	0	1
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	15/13/10	18/17/13	18/17/13
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*	>0.05	NEG	NEG	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		<1	0	0
Boron	ppm	ASTM D5185(m)	0	<1	<1	0
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	1	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	<1	<1	0
Calcium	ppm	ASTM D5185(m)	50	47	49	49
Phosphorus	ppm	ASTM D5185(m)	330	380	395	400
Zinc	ppm	ASTM D5185(m)	430	445	446	455
Sulfur	ppm	ASTM D5185(m)	760	938	1032	1000
Visc @ 40°C	cSt	ASTM D7279(m)	31.9	32.9	33.0	33.2



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0761465
Lab Number : 02566912
Unique Number : 5603958
Test Package : MAR 5 (Additional Tests: ICP, KV40, PrtCount, Spat, Visual)

Canadian Coast Guard - John Cabot
 280 Southside Road
 St. John's, NL
 CA A1E 0A3
 Contact: Chief Engineer
 johncabotce@ccgs-ngcc.gc.ca
 T: (709)730-4628
 F:

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.