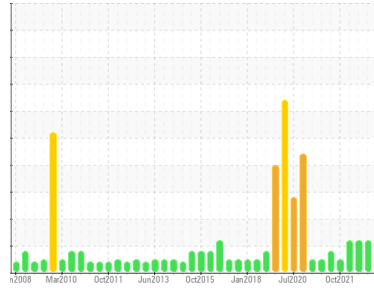


Area
1460
Machine Id
1460-5673-4002 - HG Ni LAROX #2 HYDRAULIC POWER PACK
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX AW 46 (400 LTR)



DIAGNOSIS

- Recommendation**
We recommend an early resample to monitor this condition.
- Wear**
Lead ppm levels are noted. All other 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**
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			PC0077290	PC0070726	PC0058641
Sample Date	Client Info			25 Feb 2024	10 Dec 2023	09 Feb 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				ATTENTION	ATTENTION	ABNORMAL

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	2	2	2
Chromium	ppm	ASTM D5185(m)	>4	0	0	0
Nickel	ppm	ASTM D5185(m)	>20	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>4	<1	<1	0
Lead	ppm	ASTM D5185(m)	>10	4	<1	0
Copper	ppm	ASTM D5185(m)	>60	2	1	2
Tin	ppm	ASTM D5185(m)	>4	0	0	0
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

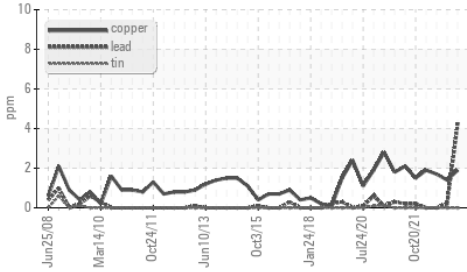
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	0	0	<1
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	<1	<1	0
Calcium	ppm	ASTM D5185(m)	50	34	32	28
Phosphorus	ppm	ASTM D5185(m)	330	323	309	357
Zinc	ppm	ASTM D5185(m)	430	399	390	394
Sulfur	ppm	ASTM D5185(m)	760	759	717	768
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

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

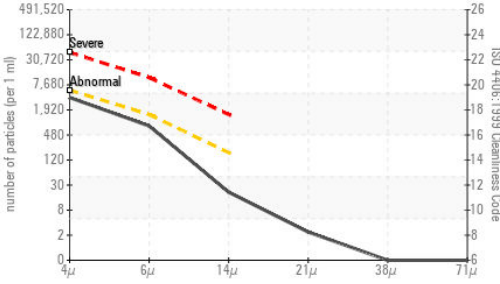
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	3334	● 8763	▲ 32904	
Particles >6µm	ASTM D7647	>1300	694	● 1628	▲ 7145	
Particles >14µm	ASTM D7647	>160	18	16	122	
Particles >21µm	ASTM D7647	>40	2	6	15	
Particles >38µm	ASTM D7647	>10	0	0	0	
Particles >71µm	ASTM D7647	>3	0	0	0	
Oil Cleanliness	ISO 4406 (c)	>19/17/14	19/17/11	● 20/18/11	▲ 22/20/14	

OIL ANALYSIS REPORT

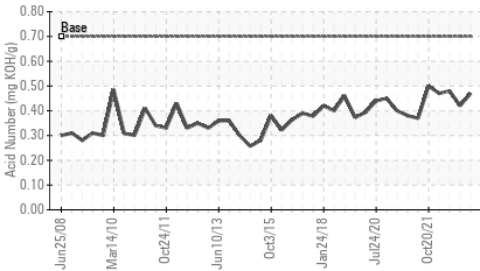
Non-ferrous Metals



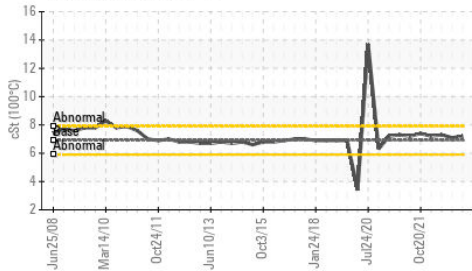
Particle Count



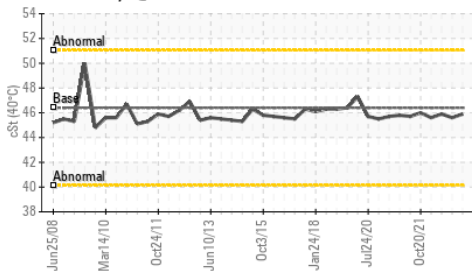
Acid Number



Viscosity @ 100°C



Viscosity @ 40°C

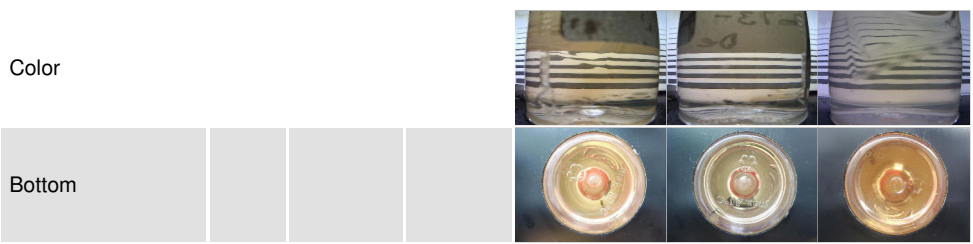


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.70	0.47	0.42	0.48

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	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)	46.4	45.9	45.6	45.9
Visc @ 100°C	cSt	ASTM D7279(m)	6.92	7.2	7.1	7.3
Viscosity Index (VI)	Scale	ASTM D2270*	104	117	114	120

SAMPLE IMAGES



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0077290 **Received** : 08 Mar 2024
Lab Number : **02620854** **Tested** : 11 Mar 2024
Unique Number : 5745973 **Diagnosed** : 11 Mar 2024 - Kevin Marson
Test Package : IND 2 (Additional Tests: KV100, TAN Man, VI)

Vale - Voisey's Bay
 Voisey's Bay Mine Site, P.O. Box 7001, Stn. C Happy Valley
 Goose Bay, NL
 CA A0P 1C0
 Contact: Robert Feltham
 robert.feltham@vale.com

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.

T:
F: