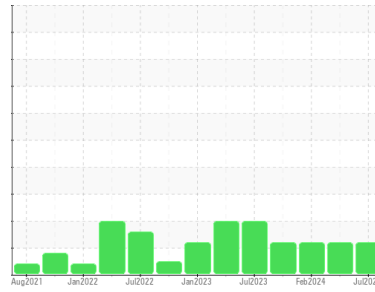


OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area

Batch Anneal

Machine Id

[Batch Anneal] 335015-UPENDER COIL CAR

Component

Hydraulic System

Fluid

PETRO CANADA HYDREX AW 46 (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with 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.

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	PCA0117575	PCA0117665	PCA0112937
Sample Date	Client Info	14 Jul 2024	07 Apr 2024	14 Feb 2024
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	ABNORMAL	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 D5185m	>20	<1	2	0
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>20	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	2	0
Lead	ppm	ASTM D5185m	>20	<1	▲ 59	0
Copper	ppm	ASTM D5185m	>20	2	5	1
Tin	ppm	ASTM D5185m	>20	0	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	0	0	0	0
Barium	ppm	ASTM D5185m	0	0	<1	0
Molybdenum	ppm	ASTM D5185m	0	<1	<1	0
Manganese	ppm	ASTM D5185m	0	0	0	0
Magnesium	ppm	ASTM D5185m	0	4	4	0
Calcium	ppm	ASTM D5185m	50	41	65	48
Phosphorus	ppm	ASTM D5185m	330	305	338	313
Zinc	ppm	ASTM D5185m	430	423	421	381
Sulfur	ppm	ASTM D5185m	760	759	1393	792

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>15	1	0	<1
Sodium	ppm	ASTM D5185m		0	0	1
Potassium	ppm	ASTM D5185m	>20	<1	1	0

FLUID CLEANLINESS

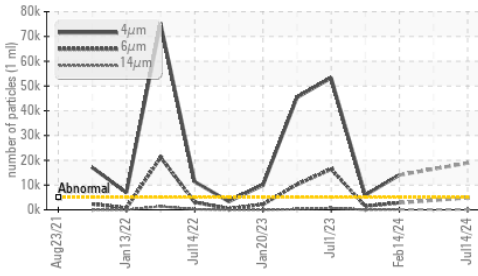
method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>5000	▲ 18906	---	▲ 14063
Particles >6µm	ASTM D7647	>1300	▲ 4874	---	▲ 2835
Particles >14µm	ASTM D7647	>160	125	---	145
Particles >21µm	ASTM D7647	>40	13	---	29
Particles >38µm	ASTM D7647	>10	0	---	0
Particles >71µm	ASTM D7647	>3	0	---	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 21/19/14	---	▲ 21/19/14

FLUID DEGRADATION

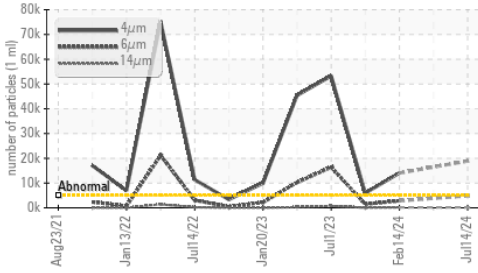
method	limit/base	current	history1	history2		
Acid Number (AN)	mg KOH/g	ASTM D8045	0.70	0.21	0.23	0.19

OIL ANALYSIS REPORT

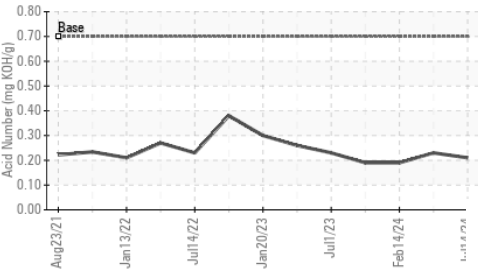
▲ Particle Trend



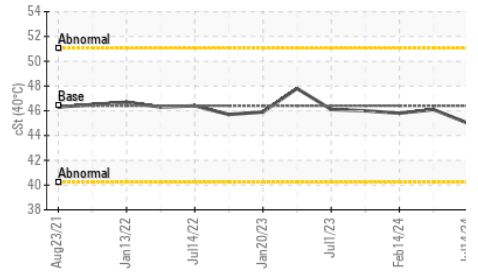
▲ Particle Trend



Acid Number



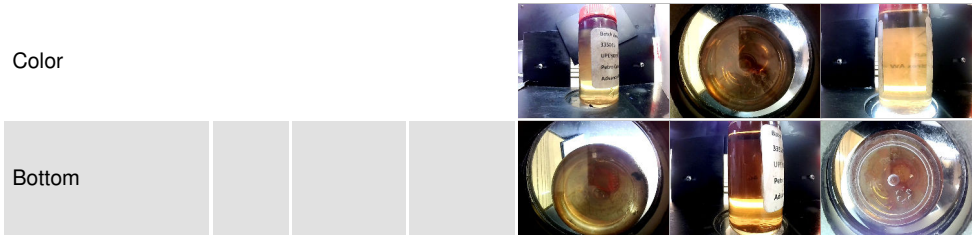
Viscosity @ 40°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	▲ MODER
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

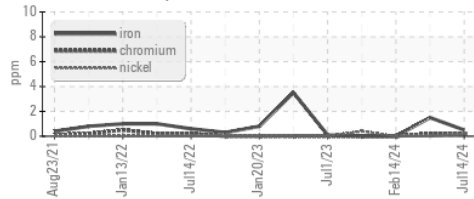
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46.4	45.0	46.1

SAMPLE IMAGES	method	limit/base	current	history1	history2
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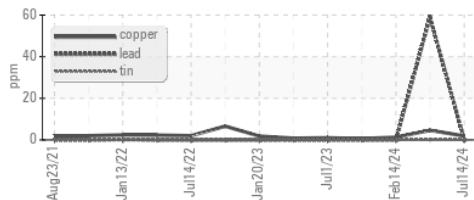


GRAPHS

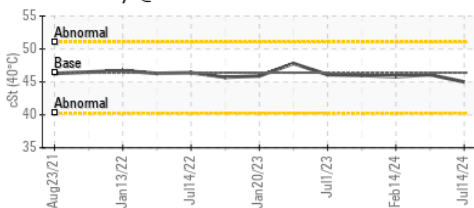
Ferrous Alloys



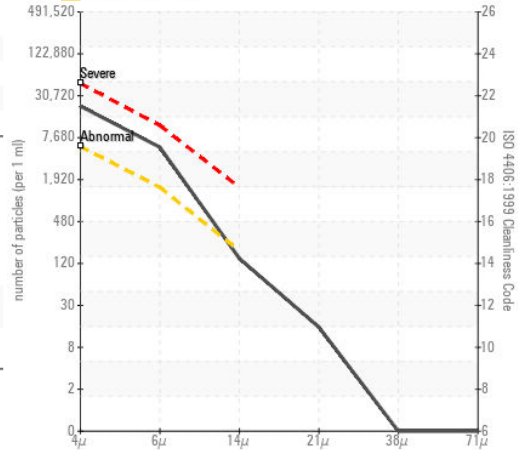
Non-ferrous Metals



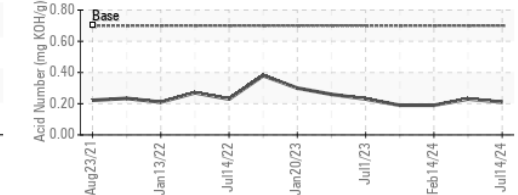
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0117575
Lab Number : 06235902
Unique Number : 11124736
Test Package : PLANT

Received : 15 Jul 2024
Tested : 16 Jul 2024
Diagnosed : 16 Jul 2024 - Wes Davis

SDI - Steel Dynamics Inc. - Heartland
 455 West Industrial Drive
 Terre Haute, IN
 US 47802
 Contact: BRAD ELLIS
 brad.ellis@steeldynamics.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)