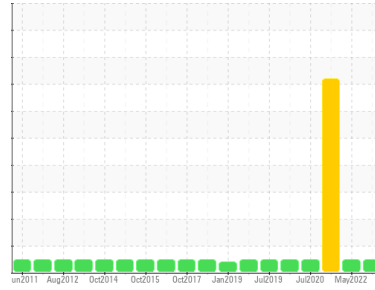


Area
PANDUIT DE COSTA RICA
Machine Id
HPM M180
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX AW 32 (275 GAL)



DIAGNOSIS

Recommendation
Confirm the source of the lubricant being utilized for top-up/fill. 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
Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	PC0076602	PC0057832	PC0058191
Sample Date	Client Info	06 May 2023	10 May 2022	09 Mar 2022
Machine Age	hrs	0	0	0
Oil Age	hrs	0	0	0
Oil Changed	Client Info	Not Chngd	N/A	Not Chngd
Sample Status		NORMAL	NORMAL	SEVERE

WEAR METALS

method	limit/base	current	history 1	history 2	
Iron	ppm	ASTM D5185(m) >20	12	4	4
Chromium	ppm	ASTM D5185(m) >20	0	0	0
Nickel	ppm	ASTM D5185(m) >20	0	<1	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	<1
Aluminum	ppm	ASTM D5185(m) >20	<1	<1	<1
Lead	ppm	ASTM D5185(m) >20	0	0	0
Copper	ppm	ASTM D5185(m) >20	2	<1	<1
Tin	ppm	ASTM D5185(m) >20	0	<1	<1
Antimony	ppm	ASTM D5185(m)	0	<1	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	history 1	history 2	
Boron	ppm	ASTM D5185(m) 0	<1	<1	<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	0	0
Calcium	ppm	ASTM D5185(m) 50	1	1	3
Phosphorus	ppm	ASTM D5185(m) 330	265	248	246
Zinc	ppm	ASTM D5185(m) 430	108	92	111
Sulfur	ppm	ASTM D5185(m) 760	694	393	407
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history 1	history 2	
Silicon	ppm	ASTM D5185(m) >15	<1	<1	<1
Sodium	ppm	ASTM D5185(m)	<1	0	0
Potassium	ppm	ASTM D5185(m) >20	<1	1	<1

FLUID CLEANLINESS

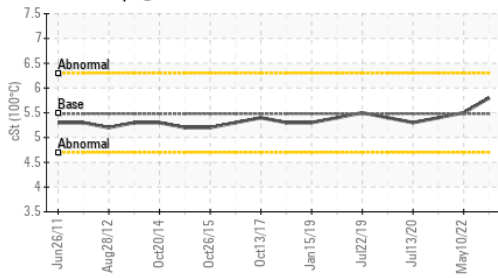
method	limit/base	current	history 1	history 2
Particles >4µm	ASTM D7647 >5000	294	1448	79186
Particles >6µm	ASTM D7647 >1300	64	220	32378
Particles >14µm	ASTM D7647 >160	5	6	3347
Particles >21µm	ASTM D7647 >40	2	2	769
Particles >38µm	ASTM D7647 >10	0	0	47
Particles >71µm	ASTM D7647 >3	0	0	4
Oil Cleanliness	ISO 4406 (c) >19/17/14	15/13/10	18/15/10	23/22/19

FLUID DEGRADATION

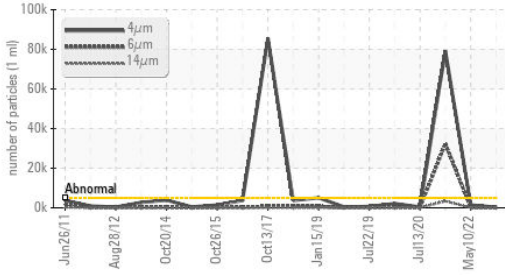
method	limit/base	current	history 1	history 2
Acid Number (AN)	mg KOH/g ASTM D974* 0.50	0.45	0.48	0.52

OIL ANALYSIS REPORT

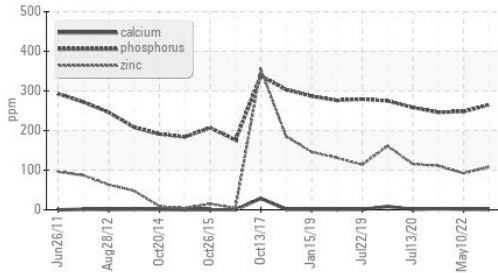
Viscosity @ 100°C



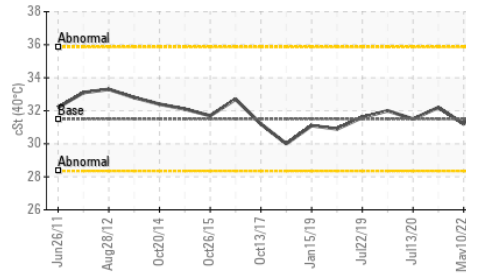
Particle Trend



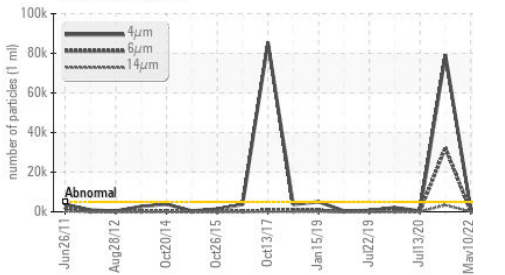
Additives



Viscosity @ 40°C



Particle Trend

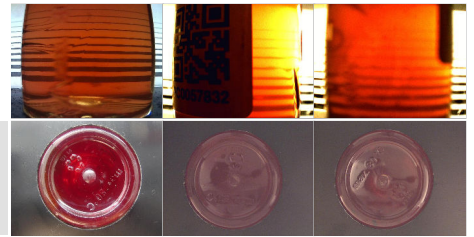


VISUAL	method	limit/base	current	history 1	history 2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	VLITE
Appearance	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	history 1	history 2	
Visc @ 40°C	cSt	ASTM D7279(m)	31.5	33.3	31.2	32.2
Visc @ 100°C	cSt	ASTM D7279(m)	5.48	5.8	5.5	5.4
Viscosity Index (VI)	Scale	ASTM D2270*	110	116	113	100

SAMPLE IMAGES	method	limit/base	current	history 1	history 2
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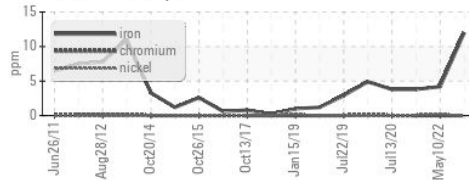
Color



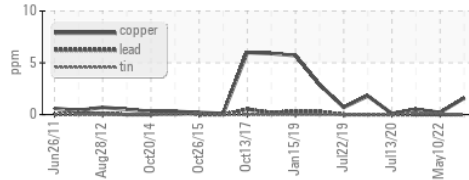
Bottom

GRAPHS

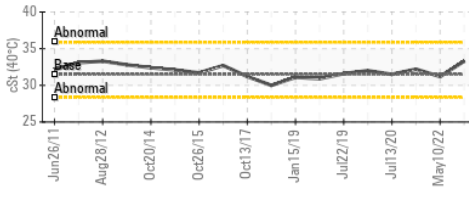
Ferrous Alloys



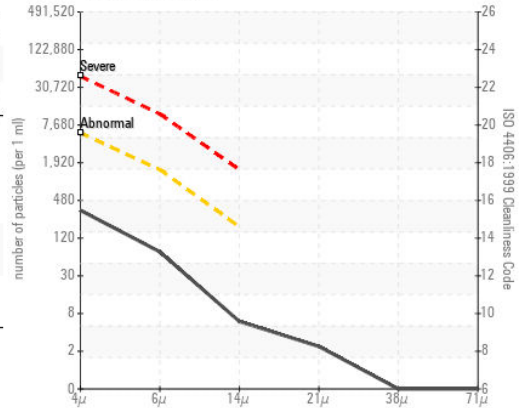
Non-ferrous Metals



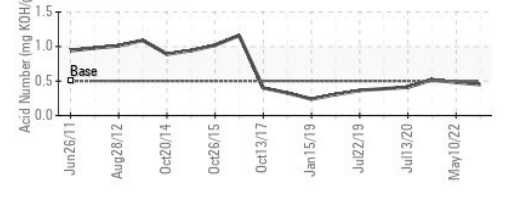
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017
Accredited
Laboratory

Laboratory Sample No. : PC0076602
Lab Number : 02568238
Unique Number : 5605284
Test Package : IND 2 (Additional Tests: KV100, TAN Man, VI)

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **INDUSTRIAS del PETROLEO CANAD. SA**
: PC0076602 **Received** : 06 Jul 2023
: 02568238 **Diagnosed** : 07 Jul 2023
: 5605284 **Diagnostician** : Kevin Marson
: IND 2 (Additional Tests: KV100, TAN Man, VI)

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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