



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINANTS	NORMAL
OIL CONDITION	NORMAL

Machine Id  
**PP43707504 HYDRAULIC SYSTEM TANK**

Component  
**Hydraulic System**

Fluid  
**PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (1500 LTR)**

**RECOMMENDATION**

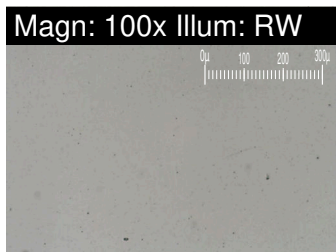
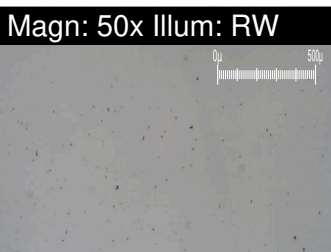
Resample at the next service interval to monitor.

**WEAR**

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0895916</b>	WC0785229	WC0523943
Sample Date		Client Info		<b>25 Jun 2024</b>	06 Apr 2023	13 Jul 2021
Machine Age	mths	Client Info		<b>0</b>	0	0
Oil Age	mths	Client Info		<b>0</b>	0	0
Filter Age	mths	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changed</b>	Not Changed	Not Changed
Filter Changed		Client Info		<b>Not Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	ATTENTION	NORMAL

PQ		ASTM D8184*		<b>0</b>	0	---
Iron	ppm	ASTM D5185(m)	>20	<b>1</b>	1	<1
Chromium	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>3</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>10	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185(m)	>20	<b>2</b>	2	2
Copper	ppm	ASTM D5185(m)	>20	<b>60</b>	71	63
Tin	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Large Particles		DR-Ferr*		<b>1.2</b>	1.9	---
Small Particles		DR-Ferr*		<b>0.9</b>	1.0	---
Total Particles		DR-Ferr*	>---	<b>2.1</b>	2.9	---
Large Particles Percentage	%	DR-Ferr*		<b>14.3</b>	31	---
Severity Index		DR-Ferr*		<b>0</b>	2	---
Ferrous Rubbing	Scale 0-10	ASTM D7684*		<b>1</b>	1	
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		<b>1</b>	1	
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				



## CONTAMINANTS

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

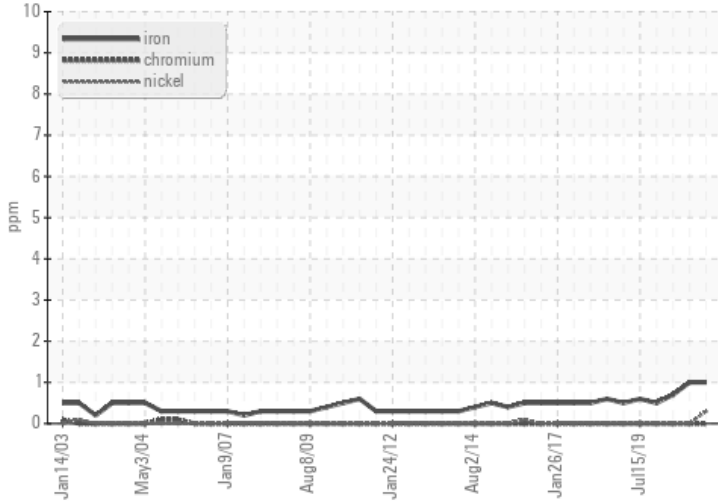
Silicon	ppm	ASTM D5185(m)	>15	<1	1	1
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Water		WC Method	>0.05	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>5000	<b>765</b>	140	185
Particles >6µm		ASTM D7647	>1300	<b>220</b>	54	48
Particles >14µm		ASTM D7647	>160	<b>22</b>	9	5
Particles >21µm		ASTM D7647	>40	<b>7</b>	4	2
Particles >38µm		ASTM D7647	>10	<b>0</b>	0	0
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>17/15/12</b>	14/13/10	15/13/10
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	<b>NEG</b>	NEG	NEG
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		<b>1</b>	1	
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		<b>1</b>	1	

## OIL CONDITION

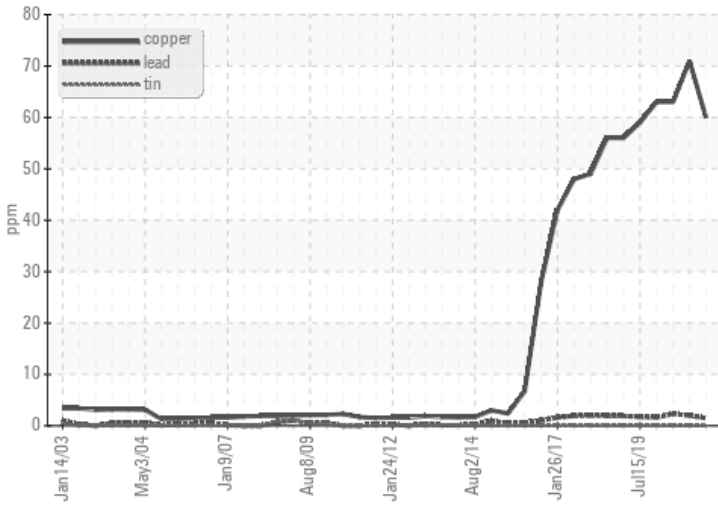
The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185(m)		<b>5</b>	6	5
Boron	ppm	ASTM D5185(m)	0	<1	<1	<1
Barium	ppm	ASTM D5185(m)	0	<1	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	<1	<1
Manganese	ppm	ASTM D5185(m)	1	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)	0	<b>3</b>	4	5
Calcium	ppm	ASTM D5185(m)	100	<b>207</b>	237	229
Phosphorus	ppm	ASTM D5185(m)	670	<b>469</b>	501	488
Zinc	ppm	ASTM D5185(m)	850	<b>587</b>	544	554
Sulfur	ppm	ASTM D5185(m)	1600	<b>1271</b>	1355	1256
Acid Number (AN)	mg KOH/g	ASTM D974*	0.60	<b>0.50</b>	0.55	0.38
Visc @ 40°C	cSt	ASTM D7279(m)	47.9	<b>37.3</b>	35.9	35.8
Lubricant Degradation	Scale 0-10	ASTM D7684*				

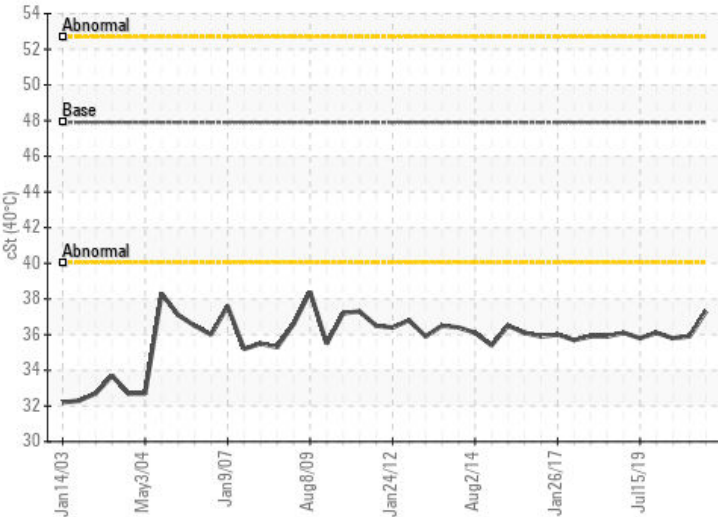
### Ferrous Alloys



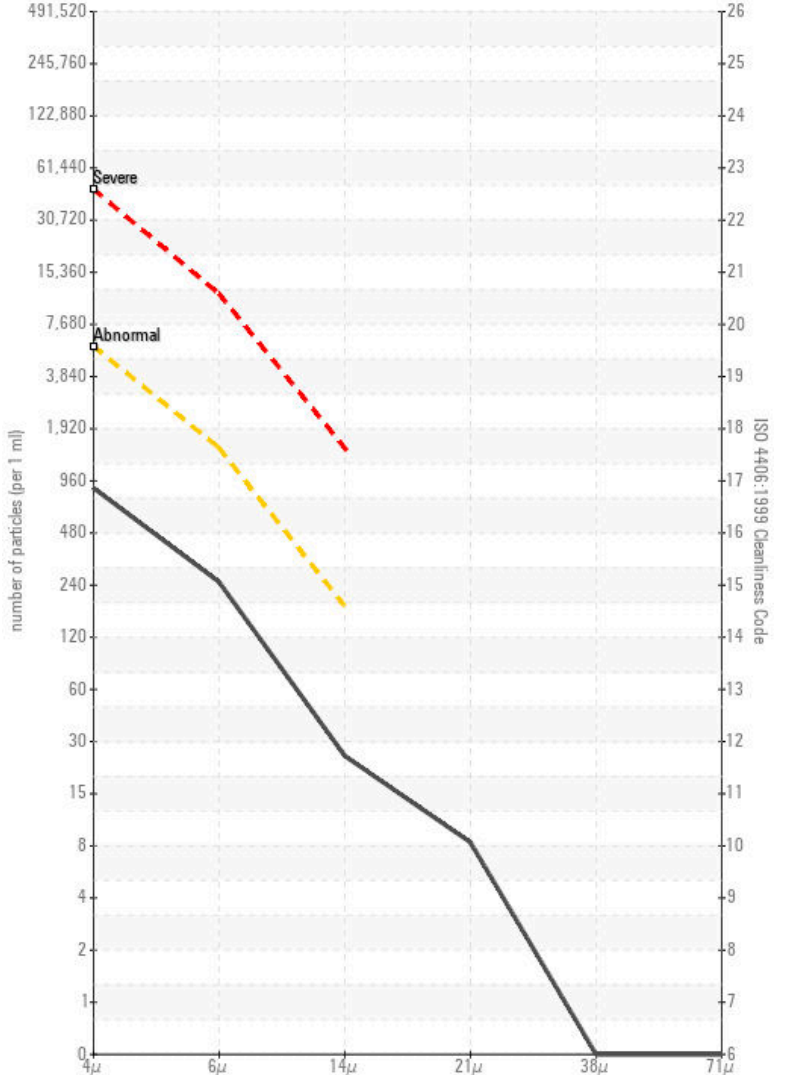
### Non-ferrous Metals



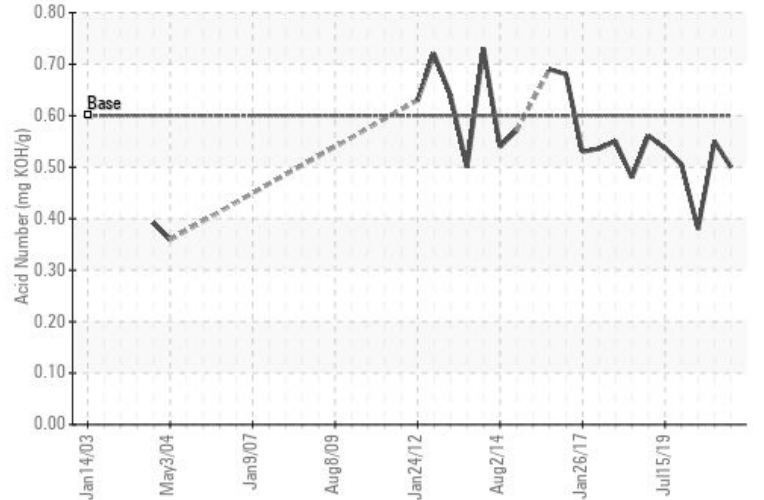
### Viscosity @ 40°C



### Particle Count



### Acid Number



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0895916  
**Lab Number** : 02645263  
**Unique Number** : 5802802  
**Test Package** : MAR 3

**CANSHIP UGLAND LTD - M/V PLACENTIA PRIDE**  
 C/O NEWTERM LOGISTICS, 21 GLENCOE  
 MOUNT PEARL, NL  
 CA A1N 4S6  
 Contact: Don Gibbons  
 don@canship.com  
 T: (709)782-3333  
 F: (709)782-0225

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.

*This page left intentionally blank*