

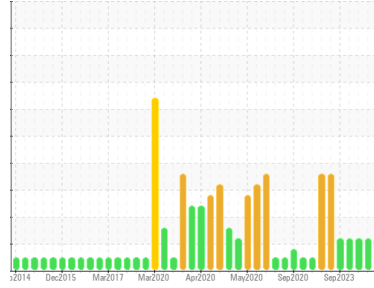
Area

**Fwd Machinery Space [450341071]**

Machine Id  
**Pump Fire Water (Port) - Gearbox (S/N Sample Tag PA-71001A-S2)**

Component  
**Gearbox**

Fluid  
**PETRO CANADA PREMIUM R&O 220 (98 LTR)**



**DIAGNOSIS**

**Recommendation**

We recommend you service the filters on this component. Resample at the next service interval to monitor.

**Wear**

All component wear rates are normal.

**Contamination**

There is a light amount of silt (particulates < 14 microns in size) present in the oil.

**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	<b>PC0076357</b>	PC	PC0076413
Sample Date	Client Info	<b>20 Mar 2024</b>	10 Mar 2024	12 Feb 2024
Machine Age	hrs	Client Info	<b>0</b>	0
Oil Age	hrs	Client Info	<b>0</b>	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ATTENTION</b>	ATTENTION	ABNORMAL

**CONTAMINATION** method limit/base current history1 history2

Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
-------	-----------	------	------------	-----	-----

**WEAR METALS** method limit/base current history1 history2

PQ	ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m) >150	<b>1</b>	1	5
Chromium	ppm	ASTM D5185(m) >10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m) >10	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m) >5	<b>0</b>	0	<1
Lead	ppm	ASTM D5185(m) >65	<b>0</b>	0	2
Copper	ppm	ASTM D5185(m) >80	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185(m) >8	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m) >5	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

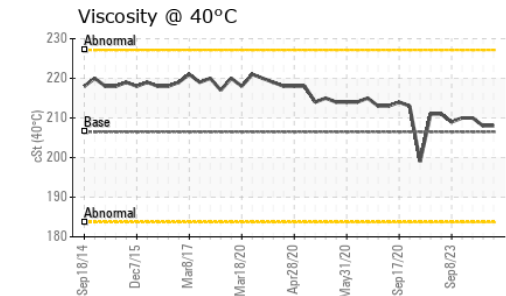
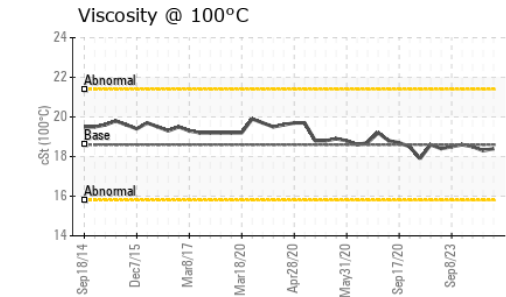
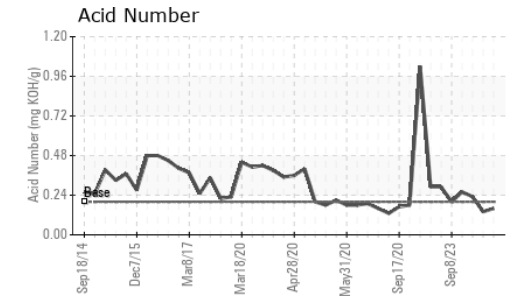
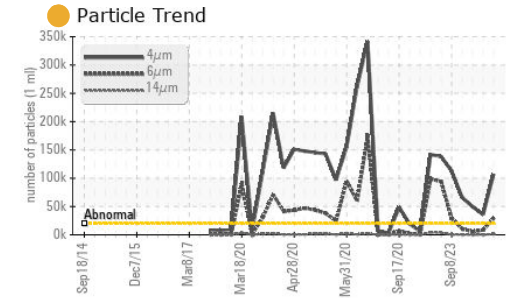
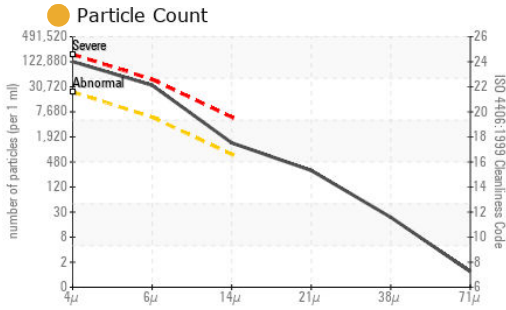
**ADDITIVES** method limit/base current history1 history2

Boron	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	2
Barium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	<1	0
Calcium	ppm	ASTM D5185(m)	<b>3</b>	3	<1
Phosphorus	ppm	ASTM D5185(m) 0	<b>14</b>	15	16
Zinc	ppm	ASTM D5185(m)	<b>2</b>	2	2
Sulfur	ppm	ASTM D5185(m) 500	<b>1827</b>	1645	2115
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

**CONTAMINANTS** method limit/base current history1 history2

Silicon	ppm	ASTM D5185(m) >20	<b>0</b>	0	<1
Sodium	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Potassium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	0	<1

# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0076357  
**Lab Number** : 02626225  
**Unique Number** : 5759357  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, PrtCount, TAN Man, VI )

**Received** : 02 Apr 2024  
**Tested** : 03 Apr 2024  
**Diagnosed** : 03 Apr 2024 - Kevin Marson

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.

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>107053</b>	35669	49401
Particles >6µm	ASTM D7647	>5000	<b>28979</b>	8422	5641
Particles >14µm	ASTM D7647	>640	<b>1211</b>	304	186
Particles >21µm	ASTM D7647	>160	<b>264</b>	70	43
Particles >38µm	ASTM D7647	>40	<b>20</b>	3	2
Particles >71µm	ASTM D7647	>10	<b>1</b>	0	1
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>24/22/17</b>	22/20/15	23/20/15

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.20	<b>0.16</b>	0.14	0.23

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar Visual*	NONE	<b>VLITE</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*	>0.2	<b>NEG</b>	NEG	NEG
Free Water	scalar Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt ASTM D7279(m)	206.5	<b>208</b>	208	210
Visc @ 100°C	cSt ASTM D7279(m)	18.6	<b>18.4</b>	18.3	18.5
Viscosity Index (VI)	Scale ASTM D2270*	96	<b>97</b>	96	97

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
PrtFilter				no image	no image

**Suncor - Terra Nova Projects**  
 Scotia Centre, 235 Water Street  
 St. John's, NL  
 CA A1C 1B6  
 Contact: Josh Hynes  
 joshhynes@suncor.com  
 T: (709)778-3575  
 F: (709)724-2835