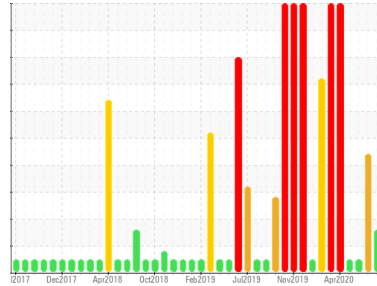


# PROBLEM SUMMARY

Sample Rating Trend



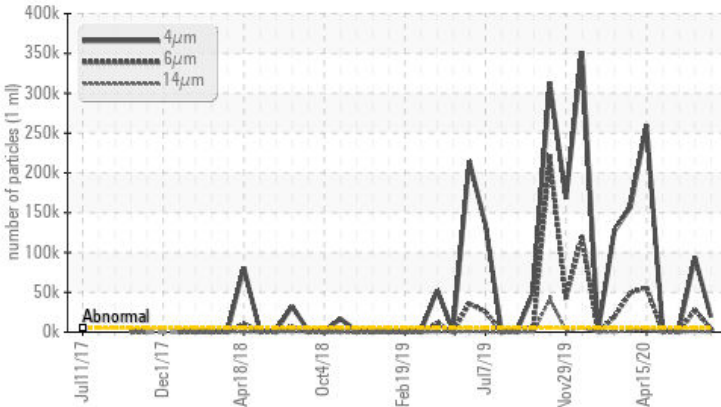
## ADDITIVES



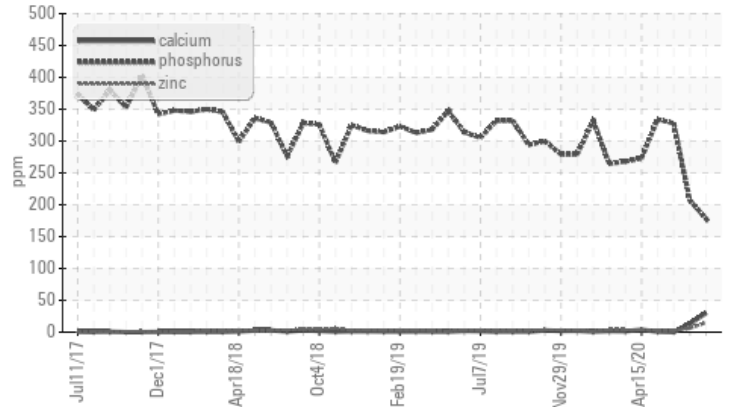
Area  
**Fwd Machinery Space [450204421]**  
Machine Id  
**Thruster Fwd Aft - Seal Oil System (S/N Sample Tag CL-06005-S3)**  
Component  
**Sealing System**  
Fluid  
**PETRO CANADA ENERGOL GR-XP ISO 150 (65 LTR)**

## COMPONENT CONDITION SUMMARY

▲ Particle Trend



▲ Additives



## RECOMMENDATION

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	SEVERE	NORMAL
Calcium	ppm	ASTM D5185(m)	▲ 30	13	<1
Particles >4µm		ASTM D7647 >5000	▲ 19236	94068	1341
Particles >6µm		ASTM D7647 >1300	▲ 4139	27701	317
Oil Cleanliness		ISO 4406 (c) >19/17/14	▲ 21/19/14	24/22/17	18/15/11

Customer Id: TERHAM  
Sample No.: PC  
Lab Number: 02585055  
Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
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(289)291-4641 x4641  
[Bill.Quesnel@wearcheck.com](mailto:Bill.Quesnel@wearcheck.com)

To change component or sample information:  
Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto:gloria.gonzalez@wearcheck.com)

## RECOMMENDED ACTIONS

There are no recommended actions for this sample.

## HISTORICAL DIAGNOSIS

### 14 Aug 2023 Diag: Bill Quesnel

ISO



We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. All component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the fluid. The AN level is acceptable for this fluid. The fluid is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report



### 06 Jul 2020 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

view report



### 08 Jun 2020 Diag: Kevin Marson

NORMAL

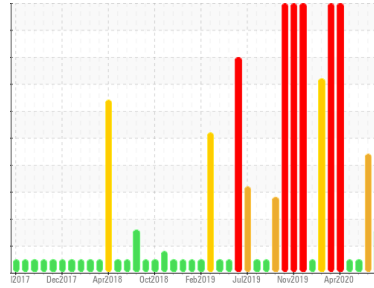


Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

view report



Area  
**Fwd Machinery Space [450204421]**  
Machine Id  
**Thruster Fwd Aft - Seal Oil System (S/N Sample Tag CL-06005-S3)**  
Component  
**Sealing System**  
Fluid  
**PETRO CANADA ENERGOL GR-XP ISO 150 (65 LTR)**



**DIAGNOSIS**

**Recommendation**

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

**Wear**

All component wear rates are normal.

**Contamination**

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

**Fluid Condition**

Additive levels indicate the addition of a different brand, or type of fluid. The AN level is acceptable for this fluid. The fluid 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	<b>PC</b>	PC0062024	PC
Sample Date	Client Info	<b>14 Sep 2023</b>	14 Aug 2023	06 Jul 2020
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	SEVERE	NORMAL

**WEAR METALS**

method	limit/base	current	history1	history2	
PQ	ASTM D8184*	<b>0</b>	0	0	
Iron	ppm	ASTM D5185(m) >100	<b>3</b>	1	0
Chromium	ppm	ASTM D5185(m) >3	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m) >8	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185(m) >3	<b>0</b>	0	0
Lead	ppm	ASTM D5185(m)	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185(m) >3	<b>&lt;1</b>	<1	0
Tin	ppm	ASTM D5185(m)	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)	<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>9</b>	15	10
Barium	ppm	ASTM D5185(m)	<b>&lt;1</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)	<b>2</b>	<1	<1
Calcium	ppm	ASTM D5185(m)	<b>▲ 30</b>	13	<1
Phosphorus	ppm	ASTM D5185(m)	<b>178</b>	207	328
Zinc	ppm	ASTM D5185(m)	<b>15</b>	6	2
Sulfur	ppm	ASTM D5185(m)	<b>16007</b>	15848	7162
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	<1

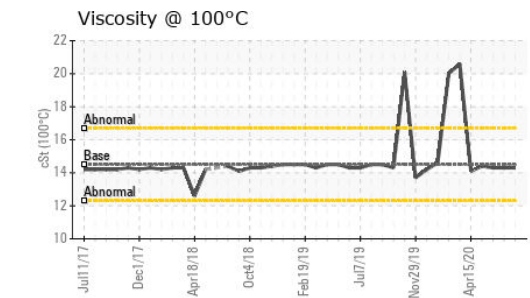
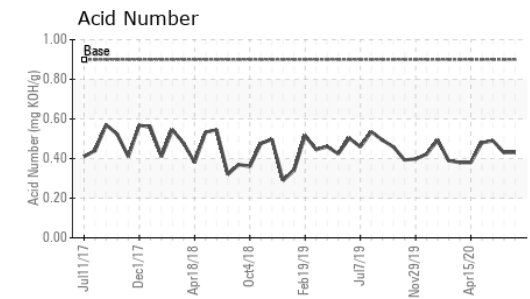
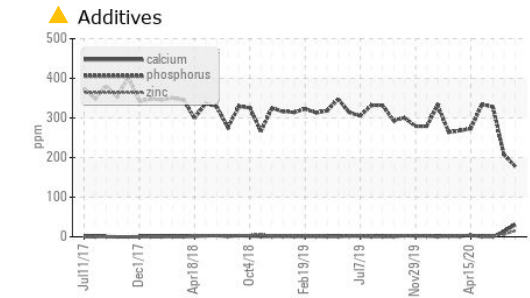
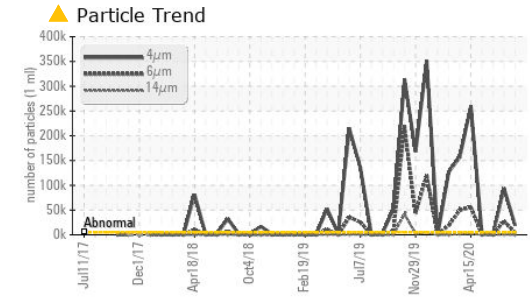
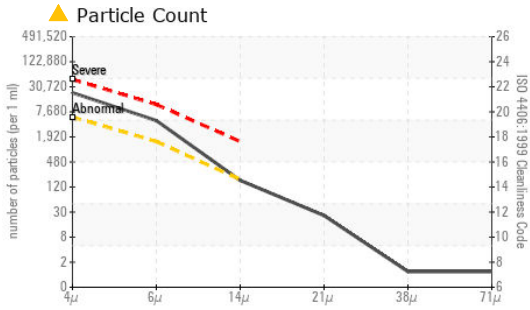
**CONTAMINANTS**

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >25	<b>3</b>	11	<1
Sodium	ppm	ASTM D5185(m)	<b>2</b>	<1	<1
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	<1	<1

**FLUID CLEANLINESS**

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	<b>▲ 19236</b>	94068	1341
Particles >6µm	ASTM D7647 >1300	<b>▲ 4139</b>	27701	317
Particles >14µm	ASTM D7647 >160	<b>153</b>	934	13
Particles >21µm	ASTM D7647 >40	<b>22</b>	141	5
Particles >38µm	ASTM D7647 >10	<b>1</b>	1	0
Particles >71µm	ASTM D7647 >3	<b>1</b>	0	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	<b>▲ 21/19/14</b>	24/22/17	18/15/11

# OIL ANALYSIS REPORT



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : 02585055  
**Unique Number** : 5646120  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, PrtCount, 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.

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.9	<b>0.43</b>	0.43	0.49

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	VLITE	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>	VLITE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	VLITE	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*		<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)	149	<b>146</b>	146	150
Visc @ 100°C	cSt	ASTM D7279(m)	14.5	<b>14.3</b>	14.3	14.3
Viscosity Index (VI)	Scale	ASTM D2270*		<b>95</b>	95	92

## SAMPLE IMAGES

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

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 St. John's, NL  
 CA A1C 1B6  
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 T: (709)778-3575  
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