

# OIL ANALYSIS REPORT

Sample Rating Trend

**VISCOSITY**

Area  
**1632**  
Machine Id  
**1632-7312-6035B**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA PRECISION XL EMB (--- GAL)**



## DIAGNOSIS

**Recommendation**  
We recommend you service the filters on this component. Resample at the next service interval to monitor. 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 light amount of silt (particulates < 14 microns in size) present in the oil.

**Fluid Condition**  
Viscosity of sample indicates oil is within ISO 220 range, advise investigate. 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>PC0070738</b>	---	---
Sample Date	Client Info		<b>08 Feb 2024</b>	---	---
Machine Age	hrs	Client Info	<b>0</b>	---	---
Oil Age	hrs	Client Info	<b>0</b>	---	---
Oil Changed	Client Info		<b>Not Changed</b>	---	---
Sample Status			<b>ABNORMAL</b>	---	---

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		<b>0</b>	---	---
Iron	ppm	ASTM D5185(m) >200	<b>1</b>	---	---
Chromium	ppm	ASTM D5185(m) >15	<b>0</b>	---	---
Nickel	ppm	ASTM D5185(m) >15	<b>&lt;1</b>	---	---
Titanium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Silver	ppm	ASTM D5185(m)	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185(m) >25	<b>&lt;1</b>	---	---
Lead	ppm	ASTM D5185(m) >100	<b>0</b>	---	---
Copper	ppm	ASTM D5185(m) >200	<b>&lt;1</b>	---	---
Tin	ppm	ASTM D5185(m) >25	<b>0</b>	---	---
Antimony	ppm	ASTM D5185(m) >5	<b>0</b>	---	---
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	---	---

## ADDITIVES

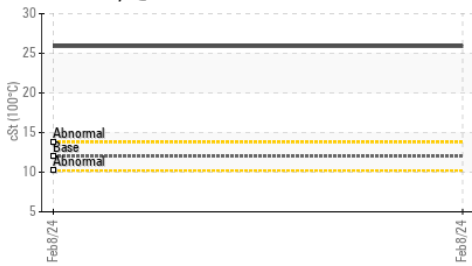
	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<b>27</b>	---	---
Barium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185(m)	<b>0</b>	---	---
Manganese	ppm	ASTM D5185(m)	<b>0</b>	---	---
Magnesium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Calcium	ppm	ASTM D5185(m)	<b>2</b>	---	---
Phosphorus	ppm	ASTM D5185(m)	<b>402</b>	---	---
Zinc	ppm	ASTM D5185(m)	<b>3</b>	---	---
Sulfur	ppm	ASTM D5185(m)	<b>4732</b>	---	---
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---

## CONTAMINANTS

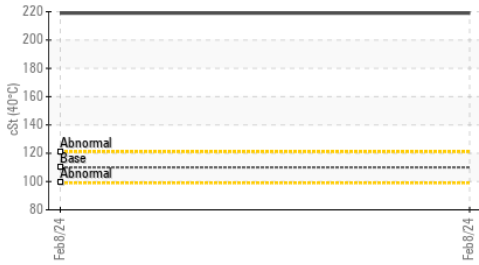
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >50	<b>0</b>	---	---
Sodium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Potassium	ppm	ASTM D5185(m) >20	<b>&lt;1</b>	---	---

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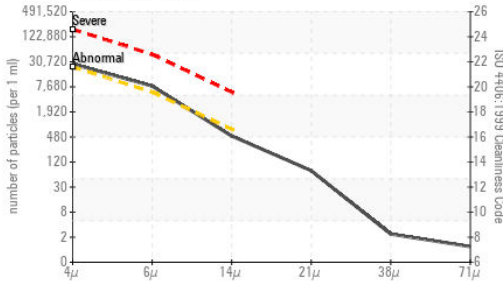
▲ Viscosity @ 100°C



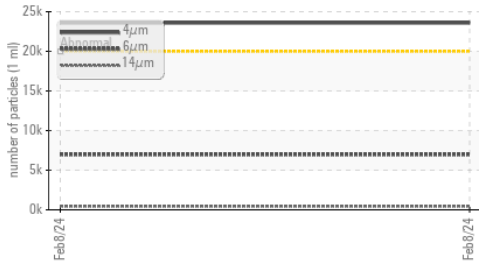
▲ Viscosity @ 40°C



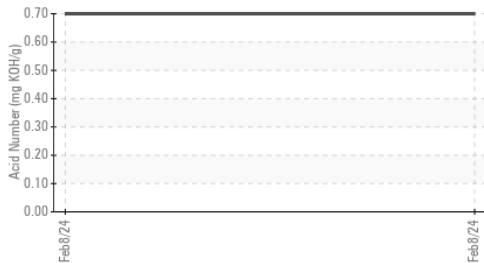
▲ Particle Count



▲ Particle Trend



▲ Acid Number



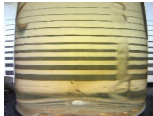

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 23589	---	---
Particles >6µm	ASTM D7647	>5000	▲ 6988	---	---
Particles >14µm	ASTM D7647	>640	445	---	---
Particles >21µm	ASTM D7647	>160	66	---	---
Particles >38µm	ASTM D7647	>40	2	---	---
Particles >71µm	ASTM D7647	>10	1	---	---
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 22/20/16	---	---

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.70	---	---

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	---	---
Precipitate	scalar	Visual*	NONE	---	---
Silt	scalar	Visual*	NONE	---	---
Debris	scalar	Visual*	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	---	---
Appearance	scalar	Visual*	NORML	---	---
Odor	scalar	Visual*	NORML	---	---
Emulsified Water	scalar	Visual*	>0.2	---	---
Free Water	scalar	Visual*	NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	110	▲ 219	---
Visc @ 100°C	cSt	ASTM D7279(m)	12	▲ 25.9	---
Viscosity Index (VI)	Scale	ASTM D2270*	150	---	---

SAMPLE IMAGES

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



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0070738  
**Lab Number** : 02616089  
**Unique Number** : 5733199  
**Test Package** : IND 2 ( Additional Tests: KV100, PQ, PrtCount, TAN Man, VI )

**Received** : 15 Feb 2024  
**Tested** : 16 Feb 2024  
**Diagnosed** : 16 Feb 2024 - Kevin Marson

**Vale - Voisey's Bay**  
 Voisey's Bay Mine Site, P.O. Box 7001, Str. C Happy Valley  
 Goose Bay, NL  
 CA A0P 1C0  
 Contact: Robert Feltham  
 robert.feltham@vale.com

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.

T:  
 F: x: