



Machine Id  
**CR256**  
Component  
**Main Winch**  
Fluid  
**PETRO CANADA ENDURATEX EP 220 (--- LTR)**

**DIAGNOSIS**

**Recommendation**  
We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

**Wear**  
PQ levels are abnormal. Chromium and iron ppm levels are abnormal. Aluminum ppm levels are noted. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

**Contamination**  
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

**Fluid Condition**  
Viscosity of sample indicates oil is within SAE 5W40 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

**SAMPLE INFORMATION** method limit/base current history1 history2

Sample Number	Client Info	<b>PC0080530</b>	---	---
Sample Date	Client Info	<b>20 Apr 2024</b>	---	---
Machine Age	hrs Client Info	<b>8727</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>	---	---
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**WEAR METALS** method limit/base current history1 history2

PQ	ASTM D8184*		<b>▲ 963</b>	---	---
Iron	ppm ASTM D5185(m)	>150	<b>▲ 468</b>	---	---
Chromium	ppm ASTM D5185(m)	>10	<b>▲ 15</b>	---	---
Nickel	ppm ASTM D5185(m)	>10	<b>&lt;1</b>	---	---
Titanium	ppm ASTM D5185(m)		<b>1</b>	---	---
Silver	ppm ASTM D5185(m)		<b>0</b>	---	---
Aluminum	ppm ASTM D5185(m)	>5	<b>9</b>	---	---
Lead	ppm ASTM D5185(m)	>15	<b>0</b>	---	---
Copper	ppm ASTM D5185(m)	>80	<b>5</b>	---	---
Tin	ppm ASTM D5185(m)		<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)	60	<b>3</b>	---	---
Barium	ppm ASTM D5185(m)	0	<b>4</b>	---	---
Molybdenum	ppm ASTM D5185(m)	0	<b>● 57</b>	---	---
Manganese	ppm ASTM D5185(m)	0	<b>10</b>	---	---
Magnesium	ppm ASTM D5185(m)	0	<b>● 5485</b>	---	---
Calcium	ppm ASTM D5185(m)	0	<b>55</b>	---	---
Phosphorus	ppm ASTM D5185(m)	270	<b>● 1036</b>	---	---
Zinc	ppm ASTM D5185(m)	0	<b>● 792</b>	---	---
Sulfur	ppm ASTM D5185(m)	11200	<b>● 3602</b>	---	---
Lithium	ppm ASTM D5185(m)		<b>4</b>	---	---

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

Silicon	ppm ASTM D5185(m)	>25	<b>▲ 72</b>	---	---
Sodium	ppm ASTM D5185(m)		<b>4</b>	---	---
Potassium	ppm ASTM D5185(m)	>20	<b>&lt;1</b>	---	---

**FLUID DEGRADATION** method limit/base current history1 history2

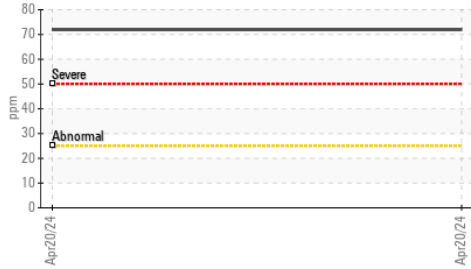
Acid Number (AN)	mg KOH/g ASTM D974*	0.40	<b>2.08</b>	---	---
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# OIL ANALYSIS REPORT

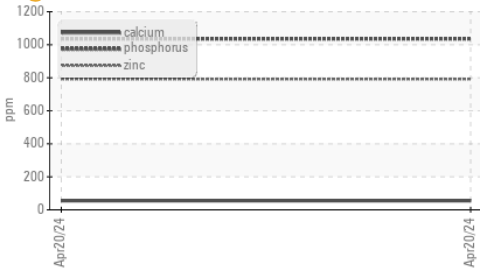
▲ Viscosity @ 100°C



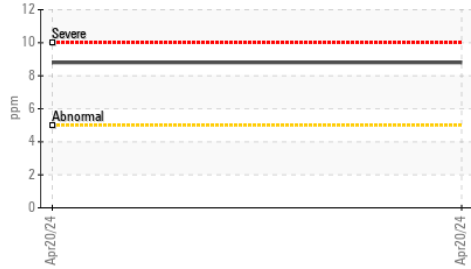
▲ Silicon (ppm)



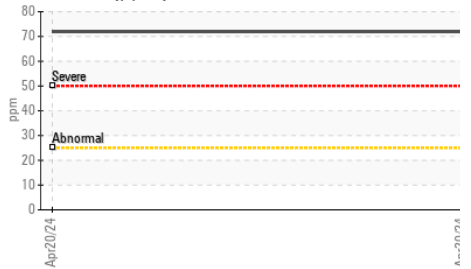
● Additives



Aluminum (ppm)



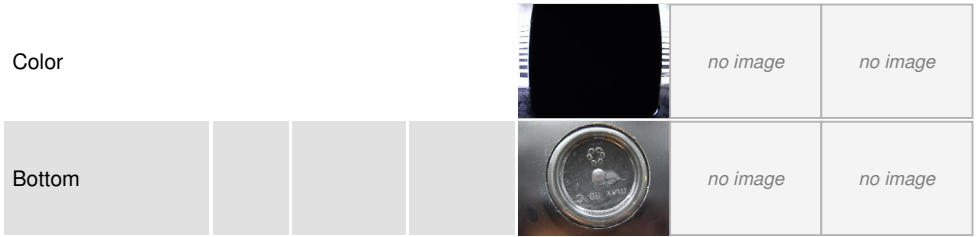
▲ Silicon (ppm)



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

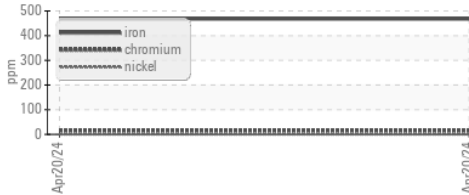
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	220	▲ 101	---
Visc @ 100°C	cSt	ASTM D7279(m)	19.35	▲ 14.9	---
Viscosity Index (VI)	Scale	ASTM D2270*	99	▲ 154	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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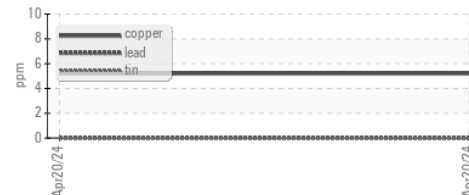


## GRAPHS

▲ Ferrous Alloys



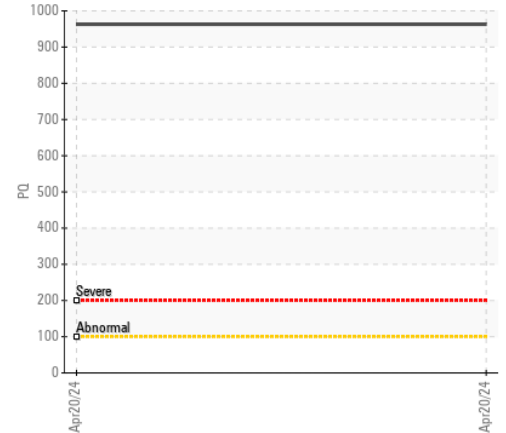
Non-ferrous Metals



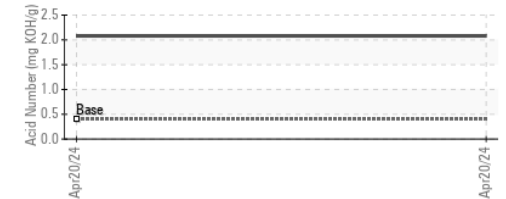
▲ Viscosity @ 40°C



▲ PQ



Acid Number



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **Green Infrastructure and Partners Inc (GPI) - 286 - Shoring & Foundations**  
**Sample No.** : PC0080530 **Received** : 25 Apr 2024 **151 Ram Forest Rd,**  
**Lab Number** : 02631374 **Tested** : 25 Apr 2024 **Stouffville, ON**  
**Unique Number** : 5772527 **Diagnosed** : 26 Apr 2024 - Kevin Marson **CA L4A 2G8**  
**Test Package** : IND 2 ( Additional Tests: KV100, TAN Man, VI ) **Contact: Shannon Abbott**  
**To discuss this sample report, contact Customer Service at 1-800-268-2131.** **sabbott@gipi.com**  
**Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.** **T: (905)750-5900**  
**Validity of results and interpretation are based on the sample and information as supplied.** **F:**