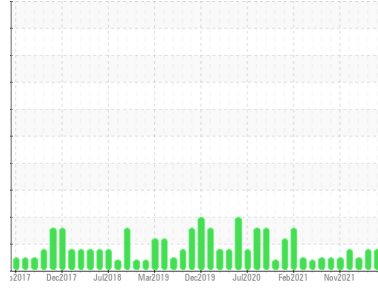


Area  
**Cranes [450255636]**  
Machine Id  
**Crane - Fwd Distribution Gearbox (S/N Sample Tag MA-04003-S11)**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA GEARLUBE TOS 80W90 (6 LTR)**



**DIAGNOSIS**

**Recommendation**  
Resample at the next service interval to monitor.

**Wear**  
All component wear rates are normal.

**Contamination**  
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable.

**Fluid Condition**  
Viscosity of sample indicates oil is within SAE 75W90 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>PC0040629</b>	PC0076451	PC0053005
Sample Date	Client Info		<b>24 Jan 2024</b>	04 Oct 2023	02 May 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	ABNORMAL	NORMAL

**WEAR METALS**

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m) >150	<b>24</b>	26	25
Chromium	ppm	ASTM D5185(m) >10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m) >10	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185(m) >5	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m) >65	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185(m) >80	<b>2</b>	2	1
Tin	ppm	ASTM D5185(m) >8	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m) >5	<b>0</b>	0	<1
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) 240	<b>187</b>	203	195
Barium	ppm	ASTM D5185(m) 1	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185(m) 0.0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185(m) 2	<b>2</b>	2	2
Calcium	ppm	ASTM D5185(m) 6	<b>31</b>	32	20
Phosphorus	ppm	ASTM D5185(m) 1000	<b>807</b>	811	908
Zinc	ppm	ASTM D5185(m) 3	<b>55</b>	60	46
Sulfur	ppm	ASTM D5185(m) 19400	<b>13744</b>	13961	14834
Lithium	ppm	ASTM D5185(m)	<b>5</b>	6	6

**CONTAMINANTS**

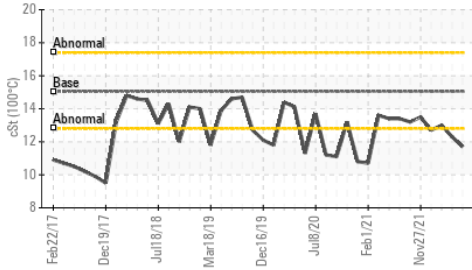
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >20	<b>4</b>	5	6
Sodium	ppm	ASTM D5185(m)	<b>2</b>	2	2
Potassium	ppm	ASTM D5185(m) >20	<b>1</b>	<1	1
Water	%	ASTM D6304* >0.2	<b>0.016</b>	---	---
ppm Water	ppm	ASTM D6304* >2000	<b>164</b>	---	---

**FLUID CLEANLINESS**

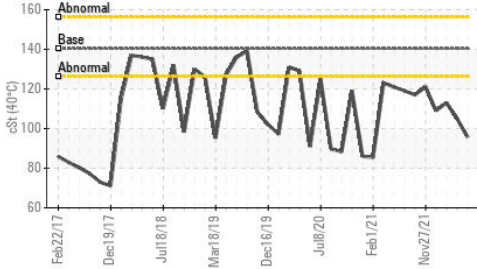
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>28341</b>	44670	123143
Particles >6µm	ASTM D7647	>5000	<b>2678</b>	3781	21090
Particles >14µm	ASTM D7647	>640	<b>53</b>	44	126
Particles >21µm	ASTM D7647	>160	<b>9</b>	8	13
Particles >38µm	ASTM D7647	>40	<b>2</b>	2	0
Particles >71µm	ASTM D7647	>10	<b>1</b>	2	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>22/19/13</b>	23/19/13	24/22/14

# OIL ANALYSIS REPORT

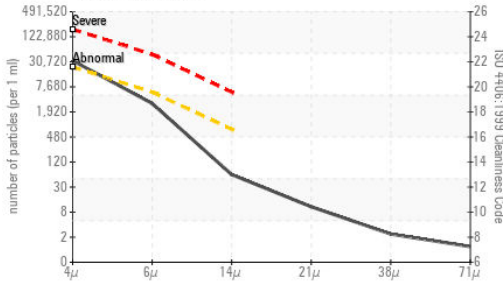
▲ Viscosity @ 100°C



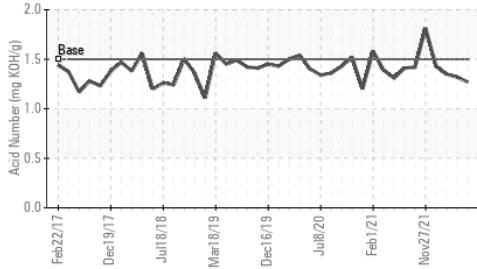
▲ Viscosity @ 40°C



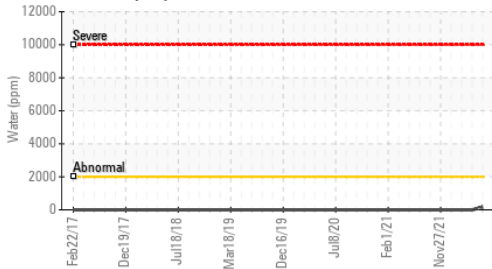
Particle Count



Acid Number



Water (KF)



FLUID DEGRADATION		method	limit/base	current	history1	history2
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Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	<b>1.27</b>	1.32	1.35
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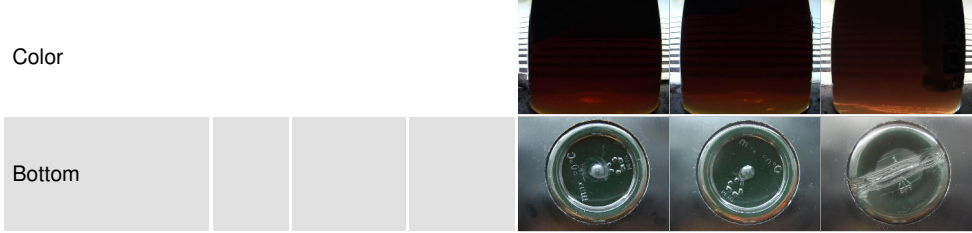
VISUAL		method	limit/base	current	history1	history2
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White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>VLITE</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*	>0.2	<b>.2%</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
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Visc @ 40°C	cSt	ASTM D7279(m)	140.3	▲ <b>95.7</b>	▲ 105	113
Visc @ 100°C	cSt	ASTM D7279(m)	15.05	▲ <b>11.7</b>	▲ 12.3	13.0
Viscosity Index (VI)	Scale	ASTM D2270*	109	<b>111</b>	108	109

SAMPLE IMAGES		method	limit/base	current	history1	history2
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ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0040629  
**Lab Number** : **02616463**  
**Unique Number** : 5733573  
**Test Package** : MAR 2 ( Additional Tests: KF, KV100, PQ, PrtCount, TAN Man, VI )

**Received** : 16 Feb 2024  
**Tested** : 21 Feb 2024  
**Diagnosed** : 21 Feb 2024 - Kevin Marson

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

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.