

# OIL ANALYSIS REPORT

Area

**Cranes**

Machine Id

**Crane - Aft - Slewing Gearbox N°1 (S/N Sample Tag MA-04001-S7)**

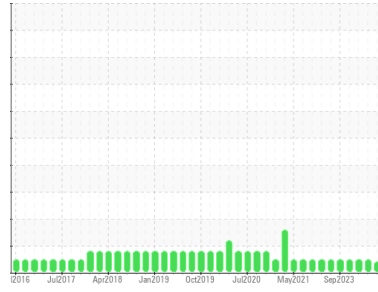
Component

**Gearbox**

Fluid

**PETRO CANADA GEARLUBE TOS 80W90 (8 LTR)**

Sample Rating Trend



**ADDITIVES**



**DIAGNOSIS**

**Recommendation**

Confirm the source of the lubricant being utilized for top-up/fill. 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 system and fluid cleanliness is acceptable.

**Fluid Condition**

Additive levels indicate the addition of a different brand, or type of oil. 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>PC</b>	PC	PC0076377
Sample Date	Client Info			<b>30 Apr 2024</b>	17 Mar 2024	31 Dec 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>ATTENTION</b>	NORMAL	NORMAL

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

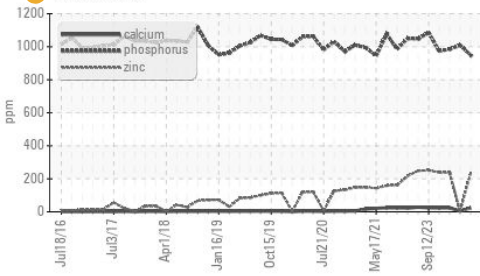
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		<b>0</b>	0	0
Iron	ppm	ASTM D5185(m)	>150	<b>10</b>	4	10
Chromium	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>10	<b>2</b>	<1	2
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m)	>5	<b>0</b>	<1	<1
Lead	ppm	ASTM D5185(m)	>65	<b>0</b>	0	<1
Copper	ppm	ASTM D5185(m)	>80	<b>13</b>	<1	12
Tin	ppm	ASTM D5185(m)	>8	<b>0</b>	0	<1
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)	240	<b>198</b>	246	197
Barium	ppm	ASTM D5185(m)	1	<b>2</b>	0	3
Molybdenum	ppm	ASTM D5185(m)	0.0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185(m)	2	<b>&lt;1</b>	<1	1
Calcium	ppm	ASTM D5185(m)	6	<b>24</b>	5	24
Phosphorus	ppm	ASTM D5185(m)	1000	<b>949</b>	1010	985
Zinc	ppm	ASTM D5185(m)	3	<b>233</b>	4	237
Sulfur	ppm	ASTM D5185(m)	19400	<b>21175</b>	18068	21863
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

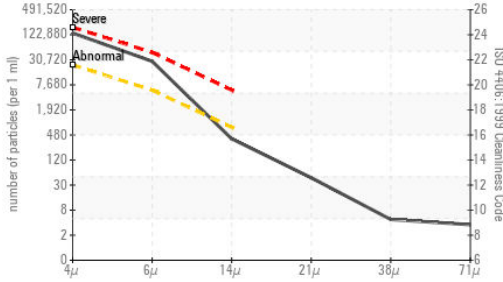
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	<b>2</b>	4	2
Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	0

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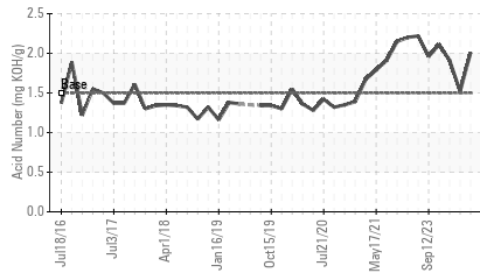
## Additives



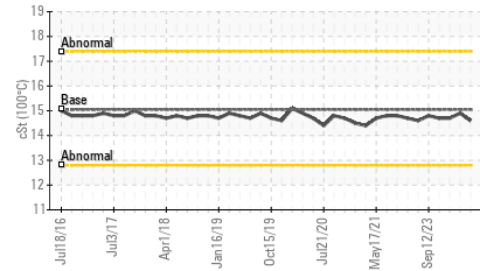
## Particle Count



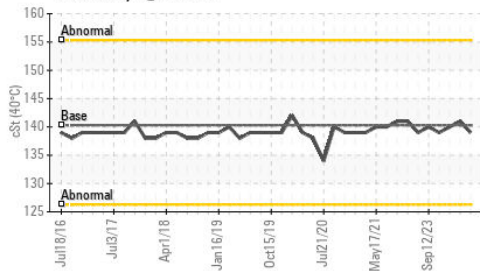
## Acid Number



## Viscosity @ 100°C



## Viscosity @ 40°C



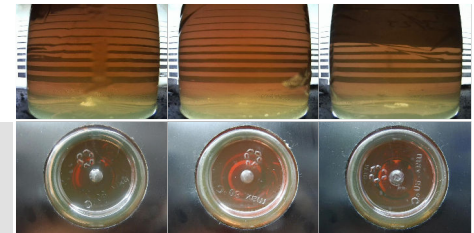
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>116276</b>	60073	123326
Particles >6µm	ASTM D7647	>5000	<b>24532</b>	7333	19735
Particles >14µm	ASTM D7647	>640	<b>342</b>	105	244
Particles >21µm	ASTM D7647	>160	<b>40</b>	23	27
Particles >38µm	ASTM D7647	>40	<b>4</b>	5	2
Particles >71µm	ASTM D7647	>10	<b>3</b>	4	1
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>24/22/16</b>	23/20/14	24/21/15

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	1.5	<b>2.01</b>	1.52	1.91

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>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>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)	140.3	<b>139</b>	141	140
Visc @ 100°C	cSt ASTM D7279(m)	15.05	<b>14.6</b>	14.9	14.7
Viscosity Index (VI)	Scale ASTM D2270*	109	<b>104</b>	106	104

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : **02636187**  
**Unique Number** : 5785349  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, PrtCount, TAN Man, VI )

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

**Suncor - Terra Nova Projects**  
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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.