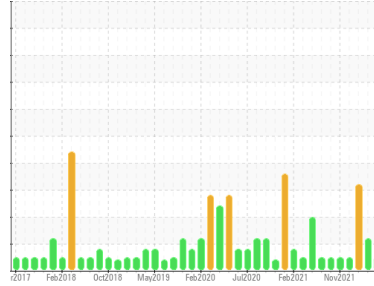


Area  
**Cranes**  
Machine Id  
**Crane - Fwd Slewing Gearbox #2 (S/N Sample Tag MA-04003-S8)**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA GEARLUBE TOS 80W90 (33 LTR)**



**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 system and fluid cleanliness is acceptable.

**Fluid Condition**  
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>PC0076456</b>	PC	PC0053014
Sample Date	Client Info	<b>04 Oct 2023</b>	13 Aug 2023	02 May 2023
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>NORMAL</b>	ABNORMAL	SEVERE

**WEAR METALS**

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>0</b>	0	0
Iron	ppm ASTM D5185(m) >150	<b>2</b>	13	10
Chromium	ppm ASTM D5185(m) >10	<b>0</b>	<1	0
Nickel	ppm ASTM D5185(m) >10	<b>&lt;1</b>	0	<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) >5	<b>0</b>	0	0
Lead	ppm ASTM D5185(m) >65	<b>0</b>	0	<1
Copper	ppm ASTM D5185(m) >80	<b>&lt;1</b>	<1	<1
Tin	ppm ASTM D5185(m) >8	<b>0</b>	0	0
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>267</b>	188	35
Barium	ppm ASTM D5185(m) 1	<b>&lt;1</b>	0	0
Molybdenum	ppm ASTM D5185(m) 0.0	<b>0</b>	0	0
Manganese	ppm ASTM D5185(m)	<b>0</b>	0	<1
Magnesium	ppm ASTM D5185(m) 2	<b>&lt;1</b>	<1	<1
Calcium	ppm ASTM D5185(m) 6	<b>3</b>	17	12
Phosphorus	ppm ASTM D5185(m) 1000	<b>981</b>	912	415
Zinc	ppm ASTM D5185(m) 3	<b>3</b>	15	22
Sulfur	ppm ASTM D5185(m) 19400	<b>17544</b>	20996	11298
Lithium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1

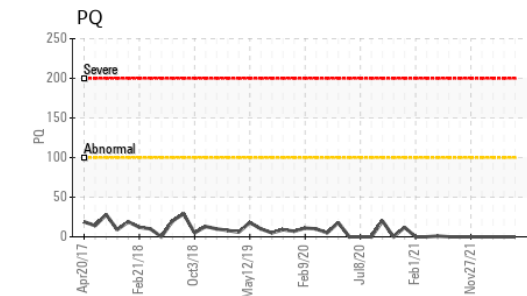
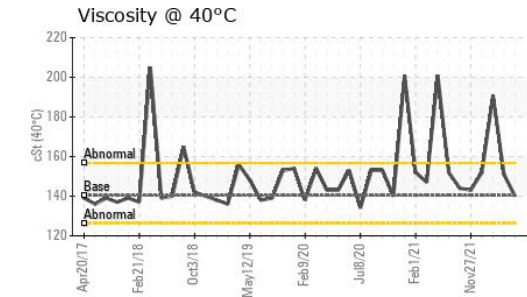
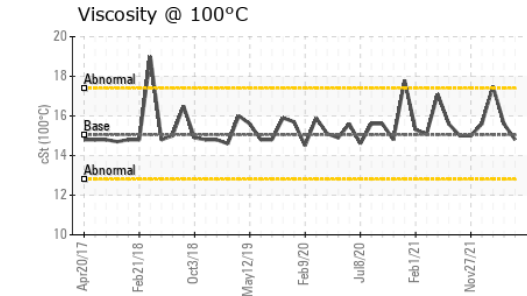
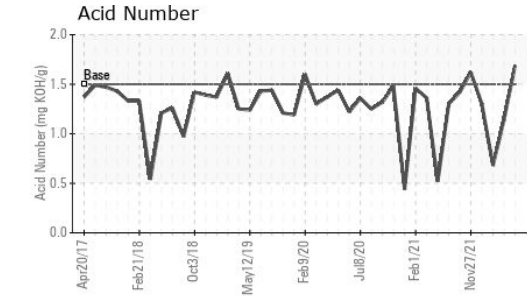
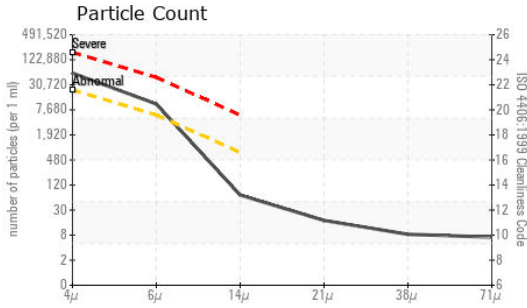
**CONTAMINANTS**

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >20	<b>4</b>	3	2
Sodium	ppm ASTM D5185(m)	<b>&lt;1</b>	2	1
Potassium	ppm ASTM D5185(m) >20	<b>0</b>	2	<1

**FLUID CLEANLINESS**

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >20000	<b>50762</b>	104877	169718
Particles >6µm	ASTM D7647 >5000	<b>9226</b>	41174	67987
Particles >14µm	ASTM D7647 >640	<b>61</b>	▲ 4555	● 5458
Particles >21µm	ASTM D7647 >160	<b>15</b>	▲ 939	▲ 979
Particles >38µm	ASTM D7647 >40	<b>7</b>	10	3
Particles >71µm	ASTM D7647 >10	<b>6</b>	3	1
Oil Cleanliness	ISO 4406 (c) >21/19/16	<b>23/20/13</b>	▲ 24/23/19	● 25/23/20

# OIL ANALYSIS REPORT

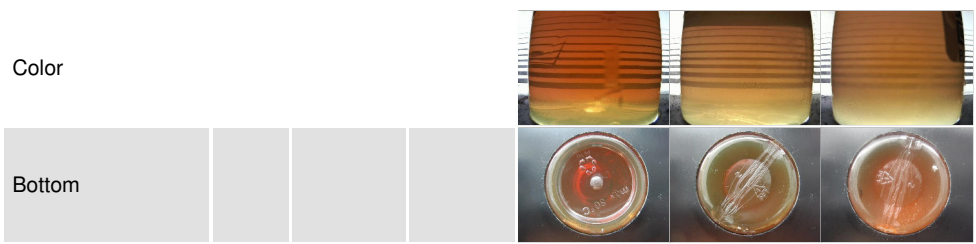


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	<b>1.69</b>	1.14	0.68

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>	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*	>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>140</b>	151	191
Visc @ 100°C	cSt	ASTM D7279(m)	15.05	<b>14.8</b>	15.6	17.5
Viscosity Index (VI)	Scale	ASTM D2270*	109	<b>105</b>	105	98

## SAMPLE IMAGES



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0076456  
**Lab Number** : **02590127**  
**Unique Number** : 5659193  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, PrtCount, TAN Man, VI )  
**Received** : 18 Oct 2023  
**Diagnosed** : 22 Oct 2023  
**Diagnostician** : Kevin Marson  
*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.*

**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