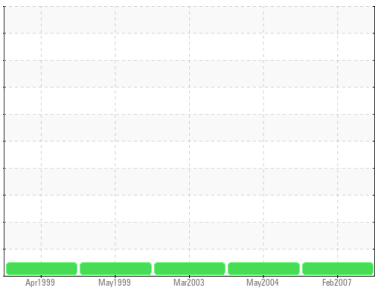
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
GAS TURBINE
Component
Turbine
Fluid
PETRO CANADA SUPER TURBOFLO 32 (--- LTR)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. NOTE: RPVOT TEST RESULT is 1676 minutes.

Wear
The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.

Contaminants
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Oil Condition
The condition of oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PP**	PP	PP
Sample Date		Client Info		**14 Feb 2007**	07 May 2004	03 Mar 2003
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**NORMAL**	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)		**0**	0	---
Chromium	ppm	ASTM D5185(m)		**0**	0	---
Nickel	ppm	ASTM D5185(m)		**0**	0	---
Titanium	ppm	ASTM D5185(m)		**0**	0	---
Silver	ppm	ASTM D5185(m)		**0**	0	---
Aluminum	ppm	ASTM D5185(m)		**0**	0	---
Lead	ppm	ASTM D5185(m)		**<1**	0	---
Copper	ppm	ASTM D5185(m)		**0**	0	---
Tin	ppm	ASTM D5185(m)		**0**	0	---
Vanadium	ppm	ASTM D5185(m)		**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**<1**	<1	---
Barium	ppm	ASTM D5185(m)		**0**	0	---
Molybdenum	ppm	ASTM D5185(m)		**0**	0	---
Manganese	ppm	ASTM D5185(m)		**0**	0	---
Magnesium	ppm	ASTM D5185(m)		**0**	0	---
Calcium	ppm	ASTM D5185(m)		**0**	0	---
Phosphorus	ppm	ASTM D5185(m)		**115**	79	---
Zinc	ppm	ASTM D5185(m)		**<1**	0	---
Sulfur	ppm	ASTM D5185(m)		**2**	0	---

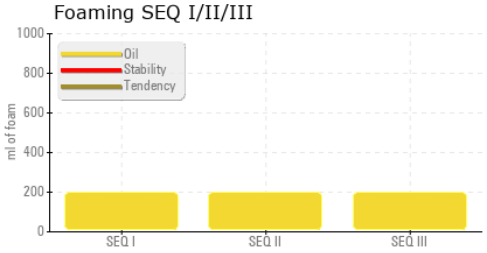
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)		**<1**	0	---
Sodium	ppm	ASTM D5185(m)		**1**	<1	---
Potassium	ppm	ASTM D5185(m)		**<1**	0	---
Water	%	ASTM D6304*		**0.001**	0.001	NEG

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		**1463**	1580	---
Particles >6µm	ASTM D7647		**346**	563	---
Particles >14µm	ASTM D7647		**20**	59	---
Particles >21µm	ASTM D7647		**7**	8	---
Particles >38µm	ASTM D7647		**1**	2	---
Particles >71µm	ASTM D7647		**0**	0	---
Oil Cleanliness	ISO 4406 (c)		**18/16/11**	18/16/13	---

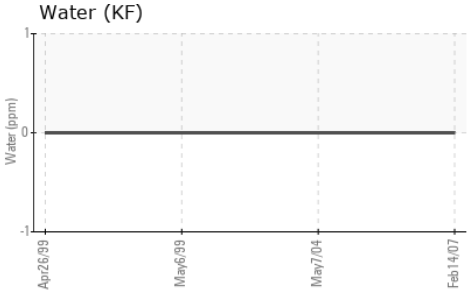
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.02**	0.033	---

OIL ANALYSIS REPORT

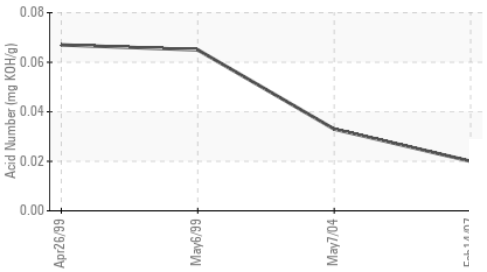
Foaming SEQ I/II/III



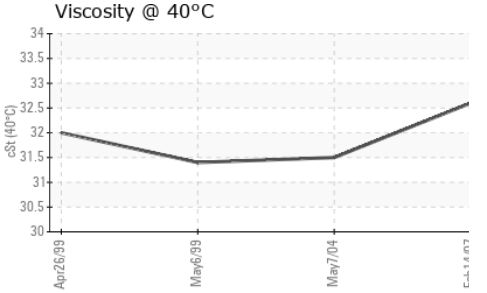
Water (KF)



Acid Number

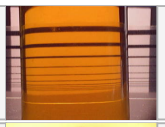


Viscosity @ 40°C



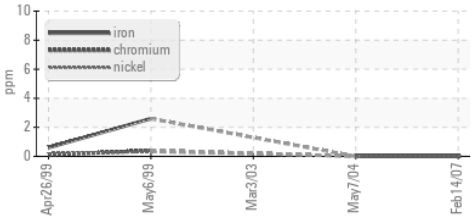
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	---
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	---
Silt	scalar	Visual*	NONE	**NONE**	NONE	---
Debris	scalar	Visual*	NONE	**NONE**	NONE	---
Sand/Dirt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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)		**32.6**	31.5	---

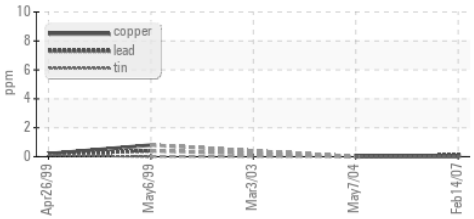
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color			*no image*		*no image*
Bottom			*no image*		*no image*

GRAPHS

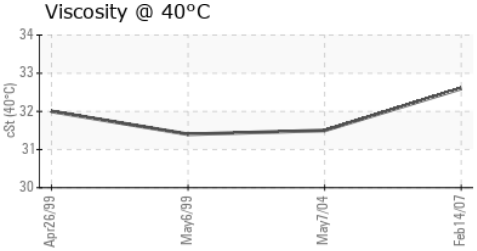
Ferrous Alloys



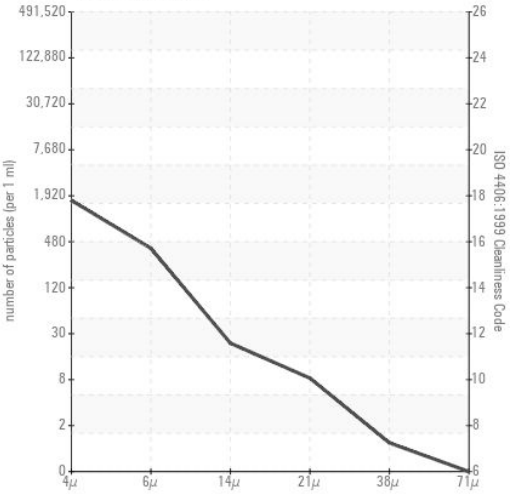
Non-ferrous Metals



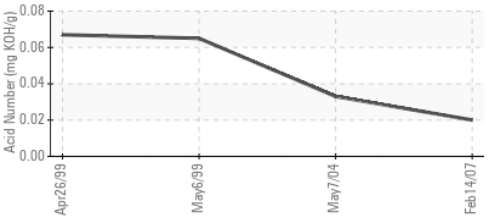
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PP
Lab Number : 01362079
Unique Number : 2396484
Test Package : IND 3 (Additional Tests: Foaming, TAN Auto)

Received : 15 Feb 2007
Tested : 19 Feb 2007
Diagnosed :

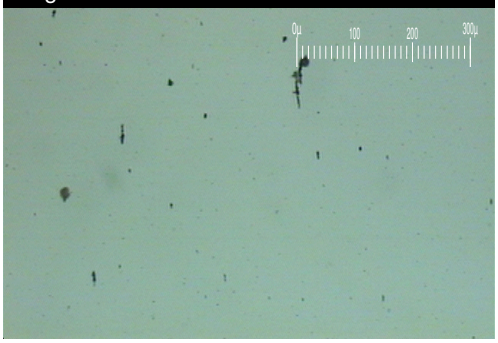
To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

CARDINAL POWER OF CANADA
170 HENRY ST.
CARDINAL, ON
CA K0E 1E0
Contact: Barry Mayhew
bmayhew@capstoneinfra.com
T: (613)657-1400
F: (613)657-1402

FERROGRAPHY REPORT

Machine Id
GAS TURBINE
Component
Turbine
Fluid
PETRO CANADA SUPER TURBOFLO 32 (--- LTR)

Magn: 100x Illum: BC

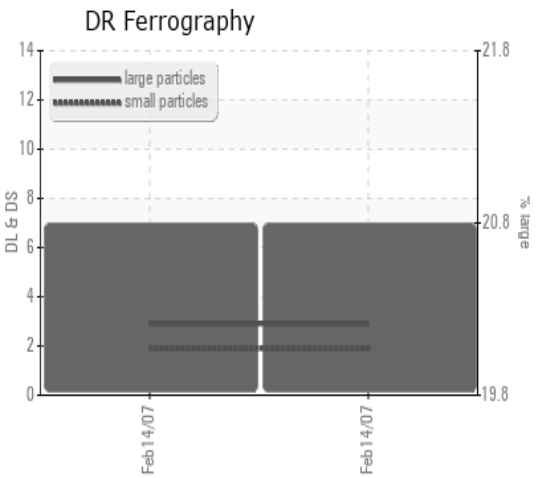


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		**2.9**	---	---
Small Particles		DR-Ferr*		**1.9**	---	---
Total Particles		DR-Ferr*		**4.8**	---	---
Large Particles Percentage	%	DR-Ferr*		**20.8**	---	---
Severity Index		DR-Ferr*		**2.9**	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		**1**		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*				
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		**1**		
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*		**1**		
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		**1**		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*				

WEAR

The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.



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