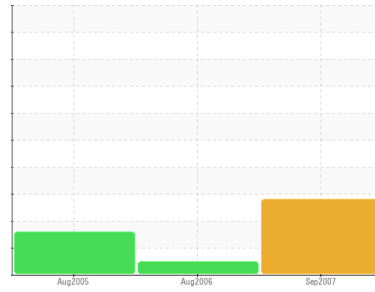




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
M.S.E.
 Machine Id
RETLT 103N (S/N 5)
 Component
3 Gearbox
 Fluid
ESSO SPARTAN SYNTHETIC EP 220 (68 LTR)

DIAGNOSIS

Recommendation

Nous recommandons le remplacement des filtres de ce composant.

Wear

Le taux de cuivre est anormal. Le taux d'étain est anormal. Il y a indication d'usure de roulements-coussinets et/ou d'engrenages. Le taux de nickel est anormal.

Contamination

Il n'y a aucun indice de contamination dans le composant.

Fluid Condition

La viscosité de l'huile est supérieure à la normale, ce qui est un indice possible de l'ajout d'une huile plus lourde. Les niveaux d'additifs indiquent l'ajout d'une autre marque ou d'un autre type d'huile.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	WC21010281	WC21010296	WC21008707
Sample Date	Client Info	18 Sep 2007	02 Aug 2006	26 Aug 2005
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	Not Changd	Not Changd
Sample Status		ABNORMAL	NORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	12	2	6
Chromium	ppm	ASTM D5185(m)	0	0	0
Nickel	ppm	ASTM D5185(m)	▲ 12	4	14
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	<1	<1	<1
Aluminum	ppm	ASTM D5185(m)	<1	0	0
Lead	ppm	ASTM D5185(m)	2	0	2
Copper	ppm	ASTM D5185(m)	▲ 623	● 287	▲ 793
Tin	ppm	ASTM D5185(m)	▲ 77	24	▲ 91
Vanadium	ppm	ASTM D5185(m)	0	0	<1

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	14	0	2
Barium	ppm	ASTM D5185(m)	<1	0	<1
Molybdenum	ppm	ASTM D5185(m)	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	<1
Magnesium	ppm	ASTM D5185(m)	0	0	<1
Calcium	ppm	ASTM D5185(m)	18	10	<1
Phosphorus	ppm	ASTM D5185(m)	● 337	99	197
Zinc	ppm	ASTM D5185(m)	9	7	5
Sulfur	ppm	ASTM D5185(m)	● 5999	2100	2437

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	10	2	2
Sodium	ppm	ASTM D5185(m)	0	0	2
Potassium	ppm	ASTM D5185(m)	0	0	0

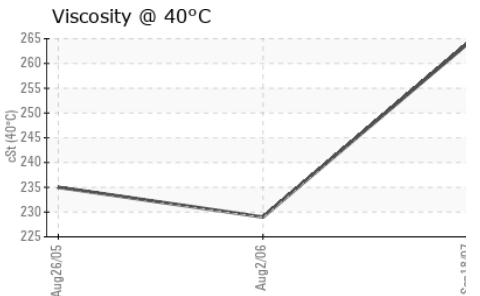
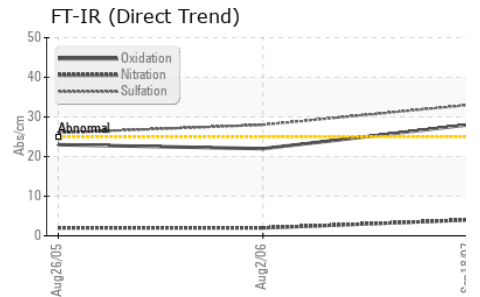
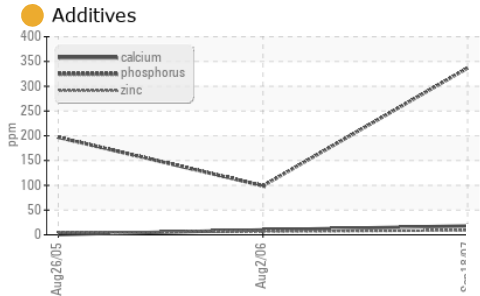
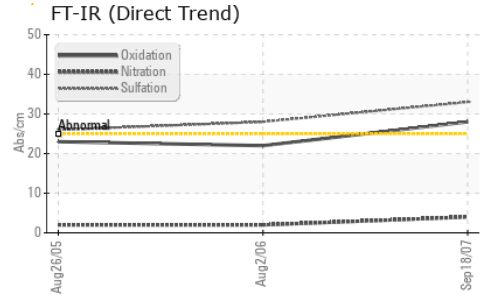
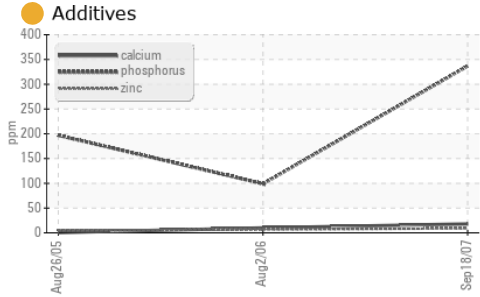
INFRA-RED

method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	0	0	0
Nitration	Abs/cm	ASTM D7624*	4	2	2
Sulfation	Abs.1mm	ASTM D7415*	33	28	26

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs.1mm	ASTM D7414*	28	22	23

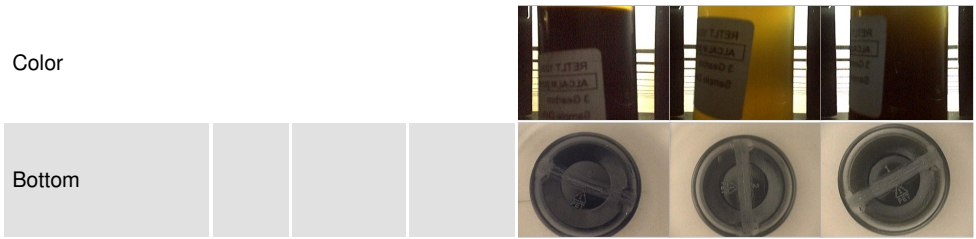
OIL ANALYSIS REPORT



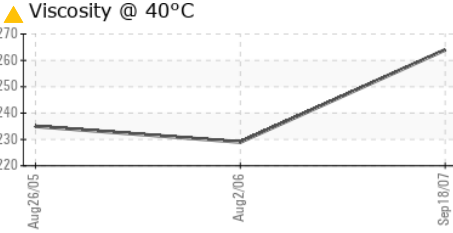
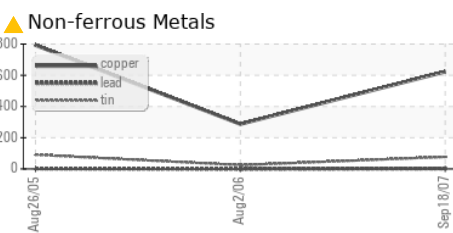
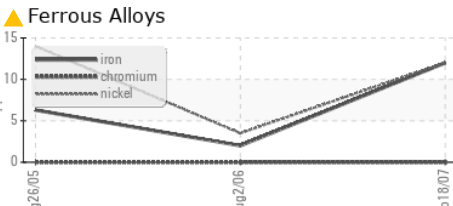
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	▲ 264	229	235

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC21010281
Lab Number : 01411794
Unique Number : 2526500
Test Package : IND 1 (Additional Tests: FT-IR)

RTA - ALMA
 3000 RUE DES PINS OUEST, BATISSE 7103 MEZZALINE
 ALMA, QC
 CA G8B 6T3
 Contact: Guy Dufour
 guy.dufour-almacou@riotinto.com

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.

T:
 F: (418)480-6004