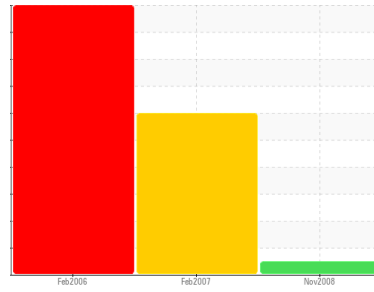




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area

M.S.E.

Machine Id

RETLT 113N (S/N 25)

Component

13 Gearbox

Fluid

ESSO SPARTAN SYNTHETIC EP 220 (68 LTR)

DIAGNOSIS

Recommendation

Échantillonner de nouveau l'équipement au prochain intervalle de vidange afin d'en surveiller la condition. Le fluide spécifié est présentement obsolète (renommé, reformulé ou discontinué). Veuillez vérifier le nom du produit avec votre fournisseur.

Wear

Les taux d'usure de tous les composants sont normaux. Nous avons noté une baisse du taux de cuivre. Nous avons noté une hausse du taux d'étain.

Contamination

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

Fluid Condition

L'état de l'huile est acceptable pour la durée de service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC21014114	WC21011720	WC21009691
Sample Date	Client Info		03 Nov 2008	12 Feb 2007	03 Feb 2006
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	Not Changd
Sample Status			NORMAL	SEVERE	SEVERE

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)	10	8	20
Chromium	ppm	ASTM D5185(m)	0	0	<1
Nickel	ppm	ASTM D5185(m)	5	5	▲ 15
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	<1	<1	<1
Aluminum	ppm	ASTM D5185(m)	<1	0	1
Lead	ppm	ASTM D5185(m)	<1	<1	2
Copper	ppm	ASTM D5185(m)	● 443	▲ 444	▲ 684
Tin	ppm	ASTM D5185(m)	● 26	24	▲ 87
Vanadium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<1	<1	1
Barium	ppm	ASTM D5185(m)	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<1	<1
Manganese	ppm	ASTM D5185(m)	0	0	<1
Magnesium	ppm	ASTM D5185(m)	0	<1	<1
Calcium	ppm	ASTM D5185(m)	<1	<1	1
Phosphorus	ppm	ASTM D5185(m)	264	270	426
Zinc	ppm	ASTM D5185(m)	4	3	10
Sulfur	ppm	ASTM D5185(m)	2535	2685	3012

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	7	6	7
Sodium	ppm	ASTM D5185(m)	0	0	0
Potassium	ppm	ASTM D5185(m)	0	0	1

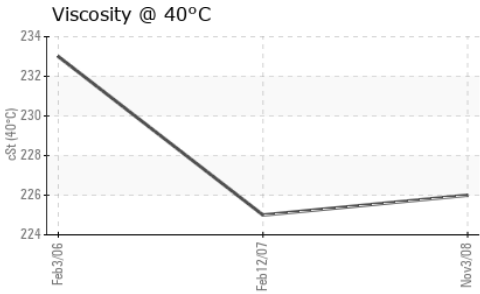
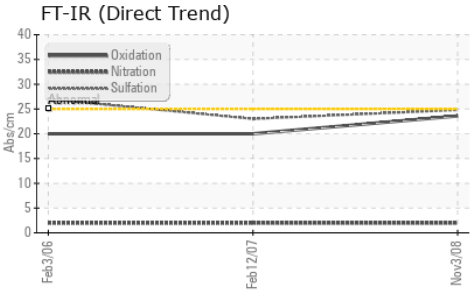
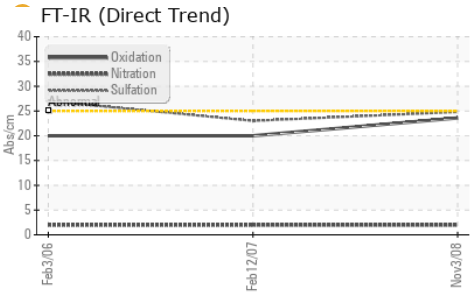
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	0	0	0
Nitration	Abs/cm	ASTM D7624*	2.0	2	2
Sulfation	Abs/.1mm	ASTM D7415*	24.8	23	27

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	23.6	20	20

OIL ANALYSIS REPORT



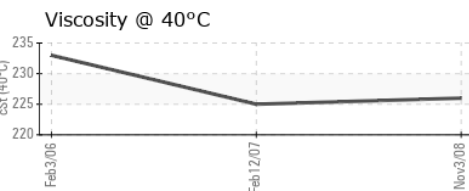
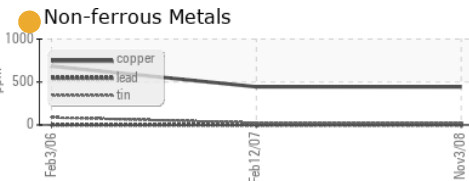
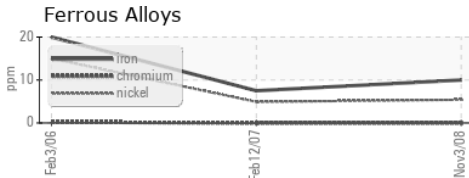
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	LIGHT ▲ HEAVY
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	LIGHT ▲ LIGHT
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE ▲ NONE
Appearance	scalar	Visual*	NORML	● HAZY	HAZY HAZY
Odor	scalar	Visual*	NORML	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)	226	225	233

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

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC21014114 **Received** : 11 Nov 2008
Lab Number : **01501711** **Tested** : 12 Nov 2008
Unique Number : 2787805 **Diagnosed** :
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
 T:

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.

F: (418)480-6004