

## NORMAL WEAR NORMAL CONTAMINATION FLUID CONDITION NORMAL

Machine Id

914011 Component Diesel Engine

## **IRVING IDO PREMIUM PLUS 10W30 (--- GAL)**

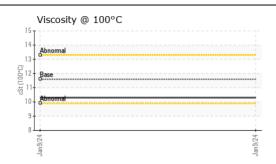
Beample at the next service interval to monitor.         Sample Date Sample Date         Client Info         Solution	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
$ \begin{array}{ c c c c c c } Normalization of an additional operational operatiop$	Resample at the next service interval to monitor.	Sample Number		Client Info		GFL0070126		
Oli Age         hrs         Olient Info         922             Filter Age         ins         Client Info         922             Oli Changed          Sinter Info         922             Oli Changed          Client Info         922             Bitler Changed          Client Info         Changed             Metal levels are typical for a components first oil change.         fon         pm         ASTM 05889         -20         1             Noted         ppm         ASTM 05889         -22         0              Metal levels are typical for a components first oil change.         fon         pm         ASTM 05889         -22         0             Noted         ppm         ASTM 05889         -22         0              Silver         ppm         ASTM 05889         -22         1             Leadu         ppm         ASTM 05889         -20         1		Sample Date		Client Info		09 Jan 2024		
Filter Age         Irs         Olient Ind         Image		Machine Age	hrs	Client Info		922		
Oil Changed         Client Into         Changed         Filter Changed         Client Into         Changed         Filter Changed         Changed		Oil Age	hrs	Client Info		922		
Filter Changed         Client Info         Changed		Filter Age	hrs	Client Info		922		
Sample Status         NORNAL             WEAR         Iron         pm         ASIM (2505m)         5120         522             Metal levels are typical for a components first oil change.         Chromium         pm         ASIM (2505m)         520         1             Nickel         ppm         ASIM (2505m)         52         60             Nickel         ppm         ASIM (2505m)         52         0             Nickel         ppm         ASIM (2505m)         52         0             Aluminum         ppm         ASIM (2505m)         52         0             Aluminum         ppm         ASIM (2505m)         -20         6             Copper         ppm         ASIM (2505m)         -30         0             Evelated aluminum (A) andro lead (Pb) and potassium (K) levels in to upotassium (K) level		Oil Changed		Client Info		Changed		
WEAR         Iron         ppm         ASTM 05185m         >1-20         522             Metal levels are typical for a components first oil change.         Chromium         ppm         ASTM 05185m         5-2         6             Nickel         ppm         ASTM 05185m         5-2         6             Silver         ppm         ASTM 05185m         5-2         0             All minum         ppm         ASTM 05185m         5-20         6             All minum         ppm         ASTM 05185m         5-20         6             All minum         ppm         ASTM 05185m         5-30         6             Queadium         ppm         ASTM 05185m         5-6         6             Vanadium         ppm         ASTM 05185m         5-30         6             Evelated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the Ubricant and is common on new quipiment/components. There is no indication of any contamination in the oil.         Sold %         % <td< th=""><th></th><th>Filter Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th></th><th></th></td<>		Filter Changed		Client Info		Changed		
Metal levels are typical for a components first oil change.         Chromium         ppm         ASTM 2685m         >20         1             Nickel         ppm         ASTM 2685m         >2         6             Titanium         ppm         ASTM 2685m         >2         0             Silver         ppm         ASTM 2685m         >20         6             Aluminum         ppm         ASTM 2685m         >20         6             Aluminum         ppm         ASTM 2685m         >30         91             Copper         ppm         ASTM 2685m         >30         91             Vanadium         ppm         ASTM 2685m         >15         6             Evented aluminum (A) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipremt/components. There is no indication of any contamination in the oil.         Silicon         ppm         ASTM 2685m         >20         14             Glycol         WC Method         >.0         VE		Sample Status				NORMAL		
Metal levels are typical for a components first oil change.         Chromium         ppm         ASTM 2685m         >20         1             Nickel         ppm         ASTM 2685m         >2         6             Titanium         ppm         ASTM 2685m         >2         0             Silver         ppm         ASTM 2685m         >20         6             Aluminum         ppm         ASTM 2685m         >20         6             Aluminum         ppm         ASTM 2685m         >30         91             Copper         ppm         ASTM 2685m         >30         91             Vanadium         ppm         ASTM 2685m         >15         6             Evented aluminum (A) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipremt/components. There is no indication of any contamination in the oil.         Silicon         ppm         ASTM 2685m         >20         14             Glycol         WC Method         >.0         VE	WEAR				100	50		
Nickel         ppm         ASTM 0518/m         >50         60             Titanium         ppm         ASTM 0518/m         >2         00             Silver         ppm         ASTM 0518/m         >2         0             Aluminum         ppm         ASTM 0518/m         >20         66             Aluminum         ppm         ASTM 0518/m         >30         61             Copper         ppm         ASTM 0518/m         >30         91             Copper         ppm         ASTM 0518/m         >30         91             Copper         ppm         ASTM 0518/m         >30         91             Vanadium         ppm         ASTM 0518/m         >50         66             Vanadium         ppm         ASTM 0518/m         >20         14             Vanadium         ppm         ASTM 0518/m         >20         140             Volureatan and iso comono n ew equipment/components. There is no indica				( )				
Titanium         pm         ASTM D5186in $\sim$ $\sim$ $\sim$ Silver         pm         ASTM D5186in $\sim$ $<$ $<$ $\sim$ Aluminum         pm         ASTM D5186in $\sim$ $<$ $<$ $<$ Lead         ppm         ASTM D5186in $\sim$ $<$ $<$ $<$ Coopper         ppm         ASTM D5186in $\sim$ $<$ $<$ $<$ Tin         ppm         ASTM D5186in $\sim$ $<$ $<$ $<$ Vanadium         ppm         ASTM D5186in $\sim$ $<$ $<$ $<$ Ub/cat and is common on we quipment/components. There is no indication of any contamination in the oil. $<$ $<$ $<$ $<$ Glycol $V$ WC Method $<$ $<$ $<$ $<$ Indication of any contamination in the oil. $<$ $<$ $<$ $<$ $<$ Glycol $V$ WC Method $<$ $<$ $<$ $<$ Indication of any contamination in the								
Silver         pp         ASTM D5H5(m)         -2         <1            Aluminum         pp         ASTM D5H5(m)         -20         66            Lead         pp         ASTM D5H5(m)         -30         91            Copper         pp         ASTM D5H5(m)         -5         33             Tin         pp         ASTM D5H5(m)         -5         33             Vanadium         pp         ASTM D5H5(m)         -5         33             Solicon         pp         ASTM D5H5(m)         -5         36             Everated aluminum (AI) and/or lead (Pb) and potassium (K) levels in potentia is common on eve equipment/components. There is no indication of any contamination in the oil.         Silicon         pp         ASTM D5H5(m)         -20         NEG            Soot '%         % SSTM D7844         >4         0.5             Soot '%         % SSTM D7844         >4         0.5             Soot '%         % SSTM D7844         >4         0.5             Fuel <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>								
Aluminum         ppm         ASTM D5185m         >20         6             Lead         ppm         ASTM D5185m         >40         2             Copper         ppm         ASTM D5185m         >330         91             Tin         ppm         ASTM D5185m         >530         91             Vanadium         ppm         ASTM D5185m         >20         66             Vanadium         ppm         ASTM D5185m         >20         66             Vour metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.         Fuel         WC Method         >0.0         1.0             Glycol         WC Method         >0.2         NEG              Sold %         %         ASTIM D7844         >4         0.5             Sold %         %         ASTIM D7845         >30         24.8             Nitration         Abstrm								
Lead         ppm         ASTM 05185/m         3-00         2            Copper         ppm         ASTM 05185/m         >-30         91            Tin         ppm         ASTM 05185/m         >-15         3             CONTAMINATION         Silicon         ppm         ASTM 05185/m         >-25         66             Elevated aluminum (A) and/or lead (Pb) and potassium (K) levels in jour metals analysis are likely a result of obder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.         Solicon         ppm         ASTM 05186/m         >-20         NEG             Glycol         WC Method         >.20         NEG              Solito         %         ASTM 05186/m         >.20         NEG             Solito         %         ASTM 05186/m         >.20         NEG             Solito         %         ASTM 07147         \$-4         0.5             Solito         %         ASTM 07147         \$-30         Cat								
Copper         ppm         ASTM D585(m)         >330         91            Tin         ppm         ASTM D585(m)         >15         3            Vanadium         ppm         ASTM D585(m)         >15         3            CONTAMINATION         Silicon         ppm         ASTM D585(m)         >20         14            Elevated aluminum (A) and/or lead (Pb) and potassium (K) levels in jubricant and is common on new equipment/components. There is no indication of any contamination in the oil.         Silicon         ppm         ASTM D585(m)         >20         14             Valaer         IC         WC Method         >.0								
Tin         ppm         ASTM D5185/m         >15         3            CONTAMINATION         Silicon         ppm         ASTMD5185/m         >20         66            Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in jour metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.         Silicon         ppm         ASTMD5185/m         >20         14             Water         WC Method         >3.0         <1.0				( )				
VanadiumppmASTM D5185(m)0CONTAMINATIONElevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.SiliconppmASTM D5185(m)>2014VaterWC Method>.00NEGVaterWC Method>.02NEGGlycolWC Method>.02NEGSot %%ASTM D7844'>40.55SulfationAbs/:mASTM D7844'>40.55SulfationAbs/:mASTM D7844'>40.55FLUID CONDITIONSodiumppmASTM D5185(m)-0NEGThe condition of the oil is acceptable for the time in service.SodiumppmASTM D5185(m)BoronppmASTM D5185(m)4MolybdenumppmASTM D5185(m)4MagnasiesppmASTM D5185(m)4MagnasiumppmASTM D5185(m)530MolybdenumppmASTM D5185(m)530 <th></th> <th>••</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>		••						
CONTAMINATION       Silicon       ppm       ASTM D5185(m)       >25       66           Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.       Potassium       pm       ASTM D5185(m)       >20       14           Water       WC Method       >3.0       <1.0  <					>15			
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.       Potassium       WC Method       >.0       14          Water       WC Method       >.0		Vanadium						
Fuel volumentals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil. Water v WC Method >3.0. NEG Glycol V WC Method >0.2. NEG NEG Soot % % ASTM D7844 >4 0.5 Soot % % ASTM D7845 > Solfation Abs/.tm ASTM D7185 > Solfation Abs/.tm ASTM D7185 > Solfation Abs/.tm ASTM D7185 > Barium ppm ASTM D5185(m Malganese ppm ASTM D5185(m Malganesiam ppm AS	CONTAMINATION	Silicon	ppm	ASTM D5185(m)	>25	66		
your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.     Fuel     W CM tethod     >-0.0     NEG        Water     Qiycol     WC Method     >-0.2     NEG         Glycol     WC Method     >     NEG         Soot %     %     ASTM D7844     >-4     0.5         Nitration     Abs/cm     ASTM D7844     >-4     0.5         Soot %     %     ASTM D7844     >-4     0.5         Nitration     Abs/cm     ASTM D7844     >-4     0.5         Soot %     %     ASTM D7844     >-4     0.5         Sulfation     Abs/cm     ASTM D7844     >-4     0.5         Sulfation     Abs/cm     ASTM D7145     >-0     24.8         FLUID CONDITION     Sodium     ppm     ASTM D5185(m          Molybdenum     ppm     ASTM D5185(m          Magnesium     ppm     ASTM D5185(m <tr< th=""><th rowspan="5">your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no</th><th>Potassium</th><th>ppm</th><th>ASTM D5185(m)</th><th>&gt;20</th><th>14</th><th></th><th></th></tr<>	your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no	Potassium	ppm	ASTM D5185(m)	>20	14		
water         water         water         wore Method         >0.2         NEG             Glycol         WC Method         >0.2         NEG             Soot %         %         ASTM D7844         >4         0.5             Nitration         Abs/m         ASTM D7624         >20         12.0             Sulfation         Abs/m         ASTM D7164         >30         24.8             Bulfation         Abs/m         ASTM D5185/m              The condition of the oil is acceptable for the time in service.         Sodium         ppm         ASTM D5185/m         -            Barium         ppm         ASTM D5185/m         -              Molybdenum         ppm         ASTM D5185/m         -              Magnesium         ppm         ASTM D5185/m         -             Magnesium         ppm         ASTM D5185/m         -             Mag		Fuel		WC Method	>3.0	<1.0		
GiycolWC MethodNEGSoot %%ASTM D7844'>40.5NitrationAbs/cmASTM D7624'>2012.0SulfationAbs/lmASTM D7624'>3024.8SulfationAbs/lmASTM D7151'>3024.8Emulsified WaterscalarVisual*>0.2NEGFLUID CONDITIONSodiumppmASTM D5185/m-3BoronppmASTM D5185/mIBariumppmASTM D5185/mIMolybdenumppmASTM D5185/mI4.1ManganeseppmASTM D5185/mI4.4ManganeseppmASTM D5185/mI4.4ManganeseppmASTM D5185/mI550IIIIPhosphorusppmASTM D5185/mI1590III <th>Water</th> <th></th> <th>WC Method</th> <th>&gt;0.2</th> <th>NEG</th> <th></th> <th></th>		Water		WC Method	>0.2	NEG		
NitrationAbs/cmASTM D7624>2012.0SulfationAbs/tmASTM D7624>3024.8Emulsified WatescalarVisual*>0.2NEGFLUID CONDITIONSodiumppmASTM D5185(m)-3BoronppmASTM D5185(m)<51BariumppmASTM D5185(m)<<11MolybdenumppmASTM D5185(m)4MaganeseppmASTM D5185(m)4CalciumppmASTM D5185(m)1590PhosphorusppmASTM D5185(m)1590ZincppmASTM D5185(m)838SulfurppmASTM D5185(m)838SulfurppmASTM D5185(m)2017		Glycol		WC Method		NEG		
SulfationAbs/.tmASTM D741s>3024.8Emulsified WaterscalarVisual*>0.2NEGFLUID CONDITIONSodiumppmASTM D5185(m)3BoronppmASTM D5185(m)s51BariumppmASTM D5185(m)s<1MolybdenumppmASTM D5185(m)s<1MagnesiumppmASTM D5185(m)s4MagnesiumppmASTM D5185(m)s4CalciumppmASTM D5185(m)s1590s<PhosphorusppmASTM D5185(m)ss33sZincppmASTM D5185(m)sssssSulfurppmASTM D5185(m)sssssssSulfurppmASTM D5185(m)ssssssssSulfurppmASTM D5185(m)ss <th>Soot %</th> <th>%</th> <th>ASTM D7844*</th> <th>&gt;4</th> <th>0.5</th> <th></th> <th></th>		Soot %	%	ASTM D7844*	>4	0.5		
Emulsified WaterscalarVisual*>0.2NEGFLUID CONDITIONSodiumppmASTM D5185(m)G3BoronppmASTM D5185(m)I51IIIIBariumppmASTM D5185(m)I<1		Nitration	Abs/cm	ASTM D7624*	>20	12.0		
FLUID CONDITIONSodiumppmASTM D5185(m)3BoronppmASTM D5185(m)51BariumppmASTM D5185(m)<1BariumppmASTM D5185(m)<1MolybdenumppmASTM D5185(m)<1ManganeseppmASTM D5185(m)<4MagnesiumppmASTM D5185(m)<4CalciumppmASTM D5185(m)1590PhosphorusppmASTM D5185(m)1590ZincppmASTM D5185(m)838SulfurppmASTM D5185(m)017		Sulfation	Abs/.1mm	ASTM D7415*	>30	24.8		
Boron       ppm       ASTM D5185(m)       51          Barium       ppm       ASTM D5185(m)       <1          Molybdenum       ppm       ASTM D5185(m)       <1          Manganese       ppm       ASTM D5185(m)       4          Magnesium       ppm       ASTM D5185(m)       4          Calcium       ppm       ASTM D5185(m)       550          Phosphorus       ppm       ASTM D5185(m)       1590          Zinc       ppm       ASTM D5185(m)       838          Sulfur       ppm       ASTM D5185(m)       0		Emulsified Water	scalar	Visual*	>0.2	NEG		
Boron       ppm       ASTM D5185(m)       51          Barium       ppm       ASTM D5185(m)       <1          Molybdenum       ppm       ASTM D5185(m)       <1          Manganese       ppm       ASTM D5185(m)       4          Magnesium       ppm       ASTM D5185(m)       4          Calcium       ppm       ASTM D5185(m)       550          Phosphorus       ppm       ASTM D5185(m)       1590          Zinc       ppm       ASTM D5185(m)       838          Sulfur       ppm       ASTM D5185(m)       0	FI UID CONDITION	Sodium	nnm	ASTM D5185(m)		3		
Barium       ppm       ASTM D5185(m)       <1          Molybdenum       ppm       ASTM D5185(m)       94          Manganese       ppm       ASTM D5185(m)       4          Magnesium       ppm       ASTM D5185(m)       4          Calcium       ppm       ASTM D5185(m)       550          Phosphorus       ppm       ASTM D5185(m)       1590          Zinc       ppm       ASTM D5185(m)       838          Sulfur       ppm       ASTM D5185(m)       2017								
MolybdenumppmASTM D5185(m)94ManganeseppmASTM D5185(m)4MagnesiumppmASTM D5185(m)550CalciumppmASTM D5185(m)1590PhosphorusppmASTM D5185(m)1590ZincppmASTM D5185(m)838SulfurppmASTM D5185(m)12017								
Manganese       ppm       ASTM D5185(m)       4          Magnesium       ppm       ASTM D5185(m)       550          Calcium       ppm       ASTM D5185(m)       1590          Phosphorus       ppm       ASTM D5185(m)       1590          Zinc       ppm       ASTM D5185(m)       838           Sulfur       ppm       ASTM D5185(m)       2017								
Magnesium       ppm       ASTM D5185(m)       550          Calcium       ppm       ASTM D5185(m)       1590          Phosphorus       ppm       ASTM D5185(m)       714          Zinc       ppm       ASTM D5185(m)       838           Sulfur       ppm       ASTM D5185(m)       2017								
Calcium       ppm       ASTM D5185(m)       1590          Phosphorus       ppm       ASTM D5185(m)       714           Zinc       ppm       ASTM D5185(m)       838           Sulfur       ppm       ASTM D5185(m)       2017		-						
Phosphorus         ppm         ASTM D5185(m)         714            Zinc         ppm         ASTM D5185(m)         838             Sulfur         ppm         ASTM D5185(m)         2017		-				1590		
Zinc       ppm       ASTM D5185(m)       838          Sulfur       ppm       ASTM D5185(m)       2017		Phosphorus						
Sulfur         ppm         ASTM D5185(m)         2017			ppm					
		Sulfur	ppm	ASTM D5185(m)		2017		
		Oxidation		ASTM D7414*	>25	23.4		

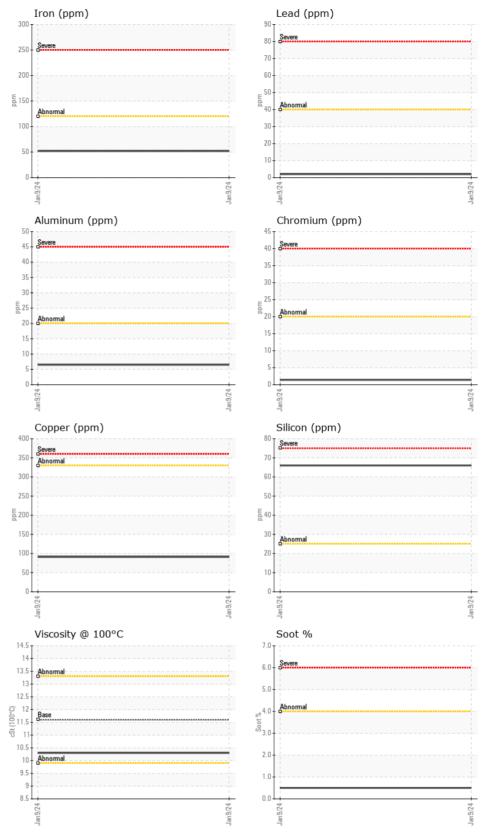
Visc @ 100°C cSt

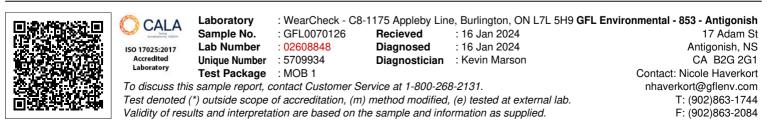
ASTM D7279(m) 11.6

Contact/Location: Nicole Haverkort - GFL853

10.3







Contact/Location: Nicole Haverkort - GFL853