

#### Machine Id

#### JOHN DEERE 350P 1FF350PAEPF001211 Component Pump Drive

# JOHN DEERE GL-5 80W90 (--- GAL)

## RECOMMENDATION

Resample at the next service interval to monitor.

### **WEAR**

All component wear rates are normal.

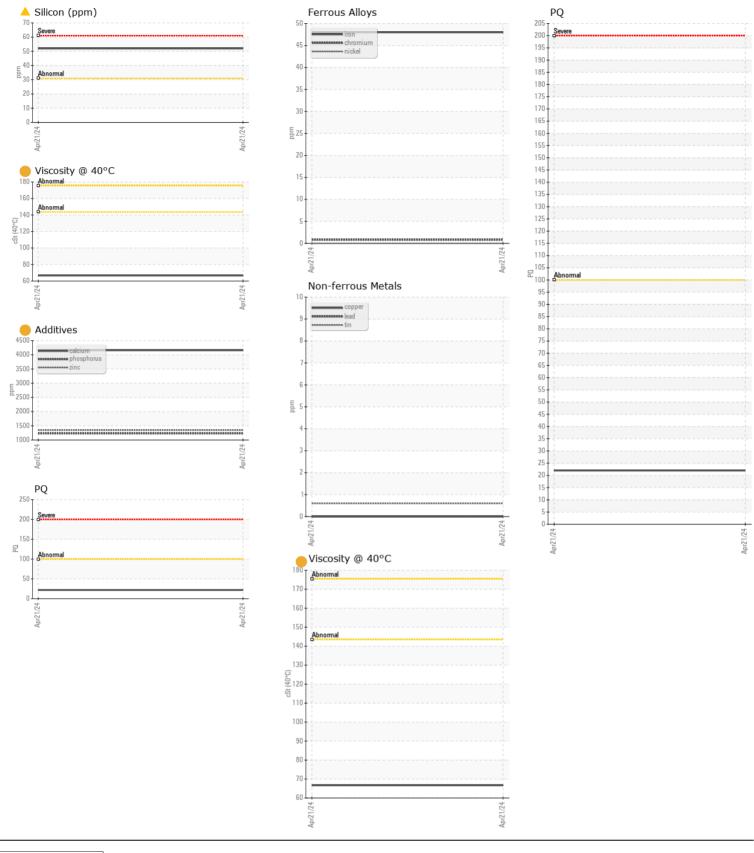
## CONTAMINATION

Elemental level of silicon (Si) above normal indicating ingress of seal material.

<b>FLU</b>		$\mathbf{co}$		N
FLU	U		NDI	

The oil viscosity is lower than normal. This plus the additive levels indicates the addition of a different brand, or type of oil. Confirm oil type.

TestUOMMethodLimit/ACurrentHistory1History2Sample NumberClient InfoJR0209347Machine AgehrsClient Info487Machine AgehrsClient Info487Oil AgehrsClient Info0Filter AgehrsClient InfoNot ChangdFilter ChangedClient InfoNot ChangdFilter ChangedClient InfoNot ChangdSample StatusABNORMALPQASTM D5185>15148IronppmASTM D5185>100NickelppmASTM D5185>100NickelppmASTM D5185>100SilverppmASTM D5185>510AluminumppmASTM D5185>510AluminumppmASTM D5185>510VanduimppmASTM D5185>510VanduimppmASTM D5185>510ValduimppmASTM D5185>510SiliconppmASTM D5185>20<1SiliconppmASTM D5185							
Sample Date         Client Info         21 Apr 2024             Machine Age         hrs         Client Info         487             Oil Age         hrs         Client Info         0             Filter Age         hrs         Client Info         0             Oil Changed         Client Info         Not Chango             Filter Changed         Client Info         Not Chango             Sample Status          ABNORMA             PQ         ASTM D5185m         >151         48             Nickel         ppm         ASTM D5185m         >10         0             Silver         ppm         ASTM D5185m         >10         0             Aluminum         ppm         ASTM D5185m         >51         0             Silver         ppm         ASTM D5185m         >51         0             Aluminum         ppm         ASTM D5185m         >51         0	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age         hrs         Client Info         487             Filter Age         hrs         Client Info         0             Filter Age         hrs         Client Info         Not Changd             Filter Changed         Client Info         Not Changd             Filter Changed         Client Info         Not Changd             Sample Status          ASTM D5185              PQ         ASTM D5185         >11         -1             Iron         ppm         ASTM D5185         >10         0             Nickel         ppm         ASTM D5185         >21         2             Aluminum         ppm         ASTM D5185         >51         0             Lead         ppm         ASTM D5185         >51         0             Vanadium         ppm         ASTM D5185         >21         2             Valadium         ppm	Sample Number		Client Info		JR0209347		
Oil Age Filter Age         hrs         Client Info         487            Filter Age         hrs         Client Info         0             Oil Changed         Client Info         Not Changd             Filter Changed         O         Into Changd             Filter Changed         Client Info         Not Changd             Sample Status         ASTM D5185m         >151         488             PQ         ASTM D5185m         >151         48             Iron         ppm         ASTM D5185m         >10         0             Nickel         ppm         ASTM D5185m         >10         0             Silver         ppm         ASTM D5185m         >51         0             Qandum         ppm         ASTM D5185m         >51         0             Vanadum         ppm         ASTM D5185m         >51         0             Vanadum         ppm         ASTM D5185m         >21<	Sample Date		Client Info		21 Apr 2024		
Filter Age         hrs         Client Info         0             Oil Changed         Client Info         Not Changd             Filter Changed         Client Info         Not Changd             Sample Status         ABNORMAL             PQ         ASTM D5185m         >151         48             Iron         ppm         ASTM D5185m         >10         0             Nickel         ppm         ASTM D5185m         >10         0             Silver         ppm         ASTM D5185m         >21         2             Qandium         ppm         ASTM D5185m         >51         0             Vanadium         ppm         ASTM D5185m         >51         0             Vanadum         ppm         ASTM D5185m         >51         0             Vanadum         ppm         ASTM D5185m         >21         0             Vanadum         ppm         ASTM D5185m	Machine Age	hrs	Client Info		487		
Oil Changed Filter ChangedClient InfoNot ChangdSample StatusClient InfoNot ChangdABNORMALABNORMALPQASTM D818422IronppmASTM D5185>15148NickelppmASTM D5185>100NickelppmASTM D51850NickelppmASTM D51850SilverppmASTM D5185510AluminumppmASTM D5185>510AgandiumppmASTM D5185>510VanadiumppmASTM D5185>510VanadiumppmASTM D5185>510SiliconppmASTM D5185>20<-1SiliconppmASTM D5185>20<1Silitscalar'VisualNONENONESilitscalar'VisualNONENONESilitscalar'VisualNONEIndexSilitscalar'VisualNONEIndexSilitscalar'VisualNONEIndexIndexAppearancescalar'Visual </th <th>Oil Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>487</th> <th></th> <th></th>	Oil Age	hrs	Client Info		487		
Filter Changed       Client Info       Not Changed          Sample Status       ASTM D8184       ABNORMAL          PQ       ASTM D8186       22          Iron       pm       ASTM D5185       >115       48          Chromium       pm       ASTM D5185       >110       0          Nickel       ppm       ASTM D51855       >10       0          Titanium       ppm       ASTM D51855       >10       0          Auminum       ppm       ASTM D51855       >10       0          Lead       ppm       ASTM D51855       >10       0          Mutinum       ppm       ASTM D51855       >10       0          Vanadium       ppm       ASTM D51855       >10       0          Yellow Metal       scalar       *Visual       NONE       NONE          Silicon       ppm       ASTM D51855       >20       NONE          Silicon       ppm       ASTM D5185       >20       NONE          Solicon       ppm       ASTM D5185       >20	Filter Age	hrs	Client Info		0		
Sample Status         ABNORMAL             PQ         ASTM D8184         22             Iron         ppm         ASTM D5185         >11         48             Chromium         ppm         ASTM D5185         >11         61             Nickel         ppm         ASTM D5185         >10         0             Silver         ppm         ASTM D5185         >10         0             Auminum         ppm         ASTM D5185         0         0             Lead         ppm         ASTM D5185         51         0             Vanadium         ppm         ASTM D5185         >1         0             Yanadium         ppm         ASTM D5185         >1         0             Yanadium         ppm         ASTM D5185         >20         ASTM             Yanadium         ppm         ASTM D5185         >21         ASTM             Yanadium	Oil Changed		Client Info		Not Changd		
PQ       ASTM D8184       22           Iron       ppm       ASTM D5185m       >151       48           Chromium       ppm       ASTM D5185m       >11       <1           Nickel       ppm       ASTM D5185m       >10       0           Nickel       ppm       ASTM D5185m       >10       0           Silver       ppm       ASTM D5185m       >10       0           Aluminum       ppm       ASTM D5185m       >21       2           Lead       ppm       ASTM D5185m       >51       0	Filter Changed		Client Info		Not Changd		
Iron         ppm         ASTM D5185m         >11         48             Chromium         ppm         ASTM D5185m         >11         <1             Nickel         ppm         ASTM D5185m         0         0             Titanium         ppm         ASTM D5185m         0         0             Aluminum         ppm         ASTM D5185m         >21         2             Aluminum         ppm         ASTM D5185m         >21         0             Lead         ppm         ASTM D5185m         >51         0             Copper         ppm         ASTM D5185m         >4         <1             Vanadium         ppm         ASTM D5185m         >4         S1             White Metal         scalar         *Visual         NONE         NONE            Yellow Metal         scalar         *Visual         NONE         NONE	Sample Status				ABNORMAL		
Chromium         ppm         ASTM D5185m         >11         <1	PQ		ASTM D8184		22		
Chromium         ppm         ASTM D5185m<>11         <1	Iron	ppm	ASTM D5185m	>151	48		
Nickel         ppm         ASTM D5185m         >10         0             Titanium         ppm         ASTM D5185m         0             Silver         ppm         ASTM D5185m         2         2             Aluminum         ppm         ASTM D5185m         >51         0             Lead         ppm         ASTM D5185m         51         0             Copper         ppm         ASTM D5185m         51         0             Vanadium         ppm         ASTM D5185m         51         0             Vanadium         ppm         ASTM D5185m         51         0             Vanadium         ppm         ASTM D5185m         NONE         NONE             Vanadium         ppm         ASTM D5185m         >20         <-1            Velker         WC Method         >0.1         NEG	Chromium		ASTM D5185m	>11	<1		
Titanium         ppm         ASTM D5185m         0            Silver         ppm         ASTM D5185m         >21         2            Aluminum         ppm         ASTM D5185m<>21         2             Lead         ppm         ASTM D5185m<>51         0             Copper         ppm         ASTM D5185m<>51         0             Yanadium         ppm         ASTM D5185m<>51         0             White Metal         scalar         'Visual         NONE         NONE             Yellow Metal         scalar         'Visual         NONE         NONE             Silicon         ppm         ASTM D5185m<>20         <1	Nickel		ASTM D5185m	>10	0		
Silver         ppm         ASTM D5185m         0             Aluminum         ppm         ASTM D5185m<>21         2             Lead         ppm         ASTM D5185m<>51         0             Copper         ppm         ASTM D5185m         >4             Tin         ppm         ASTM D5185m         >4             Vanadium         ppm         ASTM D5185m         >4             White Metal         scalar         *Visual         NONE         NONE             Yellow Metal         scalar         *Visual         NONE         NONE             Silicon         ppm         ASTM D5185m<>20         <1             Water         WC Method >0.1         NEG              Silit         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORM         NORML	Titanium		ASTM D5185m		0		
Aluminum         ppm         ASTM D5185m         >21         2             Lead         ppm         ASTM D5185m         >51         0             Copper         ppm         ASTM D5185m         >51         0             Vanadium         ppm         ASTM D5185m         >4         <1	Silver		ASTM D5185m		0		
Lead         ppm         ASTM D5185m         >51         0            Copper         ppm         ASTM D5185m         >4         <1            Tin         ppm         ASTM D5185m         >4         <1            Vanadium         ppm         ASTM D5185m         >6             White Metal         scalar         *Visual         NONE         NONE            Yellow Metal         scalar         *Visual         NONE         NONE            Silicon         ppm         ASTM D5185m         >31 <b>A</b> 52             Water         WC Method         >0.1         NEG              Silit         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORE         NONE             Appearance         scalar         *Visual         NORH         NORML             Sodium         ppm         ASTM D5185m         >51         3	Aluminum		ASTM D5185m	>21	2		
TinppmASTM D5185m>4<1	Lead	ppm	ASTM D5185m	>51	0		
VanadiumppmASTM D5185m0White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>31 <b>▲</b> 52PotassiumppmASTM D5185m>20<1WaterWC Method>0.1NEGSilitscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMNORMLGodorscalar*VisualNORMNORMLBoronppmASTM D5185m>513BariumppmASTM D5185m-106MaganeseppmASTM D5185m-3MagnesiumppmASTM D5185m-115PhosphorusppmASTM D5185m-1231ZincppmASTM D5185mASTM D5185m-1344SodiurppmASTM D5185m-1344SodiurppmASTM D5185m-1344MagnesiumppmASTM D5185m-1344Sodiurppm	Copper	ppm	ASTM D5185m	>51	0		
White Metal         scalar         *Visual         NONE             Yellow Metal         scalar         *Visual         NONE             Silicon         ppm         ASTM D5185m<>31         A 52             Potassium         ppm         ASTM D5185m<>20         <1             Water         WC Method<>0.1         NEG              Silt         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NONE         NONE             Appearance         scalar         *Visual         NORM         NORML             Odor         scalar         *Visual         NORML         NORML             Sodium         ppm         ASTM D5185m<>51         3             Boron         ppm         ASTM D5185m<>51         3             Molybdenum         ppm         ASTM D5185m              Magnesium	Tin	ppm	ASTM D5185m	>4	<1		
Yellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>31▲ 52PotassiumppmASTM D5185m>20<1WaterWC Method>0.1NEGSiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m>513BoronppmASTM D5185m>513MolybdenumppmASTM D5185m7MaganeseppmASTM D5185m3MagnesiumppmASTM D5185m15PhosphorusppmASTM D5185m1231ZincppmASTM D5185m1344SulfurppmASTM D5185m1344	Vanadium	ppm	ASTM D5185m		0		
SiliconppmASTM D5185m>31▲ 52PotassiumppmASTM D5185m>20<1WaterWC Method>0.1NEGSiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLBoronppmASTM D5185m>513BariumppmASTM D5185m513MolybdenumppmASTM D5185m3MagnesiumppmASTM D5185m15PhosphorusppmASTM D5185mZincppmASTM D5185mMatrixppmASTM D5185mMatrixppmASTM D5185mMatrixppmASTM D5185mMatrixppmASTM D5185mMatrixppmASTM D5185mMatrixppmASTM D5185mPhosphorusppm	White Metal	scalar	*Visual	NONE	NONE		
Potassium         ppm         ASTM D5185m         >20         <1	Yellow Metal	scalar	*Visual	NONE	NONE		
Potassium         ppm         ASTM D5185m         >20         <1							
WaterWC Method>0.1NEGSiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLSodiumppmASTM D5185m>513BoronppmASTM D5185m>513BariumppmASTM D5185m655MolybdenumppmASTM D5185m-3MaganeseppmASTM D5185m3PhosphorusppmASTM D5185m15ZincppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185mSodiumppmASTM D5185mMagnesiumppmASTM D5185mSulfurppmASTM D5185mPhosphorusppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185mSulf	Silicon	ppm	ASTM D5185m	>31	<b>6</b> 52		
Siltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLCdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m>513BoronppmASTM D5185m513BariumppmASTM D5185m7MalganeseppmASTM D5185m3MagnesiumppmASTM D5185m15PhosphorusppmASTM D5185mZincppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185m	Potassium	ppm	ASTM D5185m	>20	<1		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLDdorscalar*VisualNORMLNORMLEmulsified Waterscalar*VisualNORMLNORMLSodiumppmASTM D5185m>0.1NEGBoronppmASTM D5185m>513BariumppmASTM D5185m655MolybdenumppmASTM D5185m7MagnesiumppmASTM D5185m3MagnesiumppmASTM D5185m3PhosphorusppmASTM D5185m15ZincppmASTM D5185m1344SulfurppmASTM D5185m1344	Water		WC Method	>0.1	NEG		
Sand/Dirtscalar*VisualNONENOREAppearancescalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m>513BoronppmASTM D5185m5165BariumppmASTM D5185m65MolybdenumppmASTM D5185m0106MagnesiumppmASTM D5185m3MagnesiumppmASTM D5185m64158PhosphorusppmASTM D5185mZincppmASTM D5185m1231SulfurppmASTM D5185m68965	Silt	scalar	*Visual	NONE	NONE		
Appearancescalar*VisualNORMLNORMLIOdorscalar*VisualNORMLNORMLIIIEmulsified Waterscalar*Visual>0.1NEGIISodiumppmASTM D5185m>513IIBoronppmASTM D5185m>513IIBariumppmASTM D5185mIIIIMolybdenumppmASTM D5185mIIIIManganeseppmASTM D5185mI3IIMagnesiumppmASTM D5185mIIIIPhosphorusppmASTM D5185mIIIIZincppmASTM D5185mIIIIISulfurppmASTM D5185mIIIIISulfurppmASTM D5185mIIIIIPhosphorusppmASTM D5185mIIIIISulfurppmASTM D5185mIIIIIIIIIIPhosphorusppmASTM D5185mIII	Debris	scalar	*Visual	NONE	NONE		
Odorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m>513BoronppmASTM D5185m65BariumppmASTM D5185m7MolybdenumppmASTM D5185m0106ManganeseppmASTM D5185m3MagnesiumppmASTM D5185m15PhosphorusppmASTM D5185m0115ZincppmASTM D5185m01344SulfurppmASTM D5185m08965	Sand/Dirt	scalar	*Visual		NONE		
Emulsified Waterscalar*Visual>0.1NEGSodiumppmASTM D5185m>513BoronppmASTM D5185m65BariumppmASTM D5185m7MolybdenumppmASTM D5185m0106ManganeseppmASTM D5185m3MagnesiumppmASTM D5185m15CalciumppmASTM D5185mPhosphorusppmASTM D5185mZincppmASTM D5185mSulfurppmASTM D5185mSulfurppmASTM D5185m		scalar			NORML		
Sodium         ppm         ASTM D5185m<>51         3            Boron         ppm         ASTM D5185m         65             Barium         ppm         ASTM D5185m         7             Barium         ppm         ASTM D5185m         7             Molybdenum         ppm         ASTM D5185m         0         106             Manganese         ppm         ASTM D5185m         3             Magnesium         ppm         ASTM D5185m         3             Calcium         ppm         ASTM D5185m         0         4158             Phosphorus         ppm         ASTM D5185m         0         1231             Zinc         ppm         ASTM D5185m         0         1344             Sulfur         ppm         ASTM D5185m         0         8965		scalar		NORML	NORML		
Boron         ppm         ASTM D5185m         65            Barium         ppm         ASTM D5185m         7            Molybdenum         ppm         ASTM D5185m         7            Manganese         ppm         ASTM D5185m         3            Magnesium         ppm         ASTM D5185m         3            Calcium         ppm         ASTM D5185m         15            Phosphorus         ppm         ASTM D5185m         -4158            Zinc         ppm         ASTM D5185m         -1231            Sulfur         ppm         ASTM D5185m         -1344	Emulsified Water	scalar	*Visual	>0.1	NEG		
Barium         ppm         ASTM D5185m         7            Molybdenum         ppm         ASTM D5185m         • 106            Manganese         ppm         ASTM D5185m         3            Magnesium         ppm         ASTM D5185m         15            Magnesium         ppm         ASTM D5185m         15            Calcium         ppm         ASTM D5185m         • 4158            Phosphorus         ppm         ASTM D5185m         • 1231            Zinc         ppm         ASTM D5185m         • 1344            Sulfur         ppm         ASTM D5185m         • 8965	Sodium	ppm	ASTM D5185m	>51	3		
Molybdenum         ppm         ASTM D5185m         106            Manganese         ppm         ASTM D5185m         3            Magnesium         ppm         ASTM D5185m         15            Magnesium         ppm         ASTM D5185m         15            Calcium         ppm         ASTM D5185m         0         4158            Phosphorus         ppm         ASTM D5185m         1231             Zinc         ppm         ASTM D5185m         1344             Sulfur         ppm         ASTM D5185m         8965	Boron	ppm	ASTM D5185m		65		
Manganese         ppm         ASTM D5185m         3             Magnesium         ppm         ASTM D5185m         15             Calcium         ppm         ASTM D5185m         -4158             Phosphorus         ppm         ASTM D5185m         -1231             Zinc         ppm         ASTM D5185m         -1344             Sulfur         ppm         ASTM D5185m         6         8965	Barium	ppm	ASTM D5185m		7		
Magnesium         ppm         ASTM D5185m         15             Calcium         ppm         ASTM D5185m         -4158             Phosphorus         ppm         ASTM D5185m         -1231             Zinc         ppm         ASTM D5185m         1344             Sulfur         ppm         ASTM D5185m         68965	Molybdenum	ppm	ASTM D5185m		<b>e</b> 106		
Calcium         ppm         ASTM D5185m         4158            Phosphorus         ppm         ASTM D5185m         1231            Zinc         ppm         ASTM D5185m         1344            Sulfur         ppm         ASTM D5185m         8965	Manganese	ppm	ASTM D5185m		3		
Phosphorus         ppm         ASTM D5185m         1231             Zinc         ppm         ASTM D5185m         1344             Sulfur         ppm         ASTM D5185m         8965	Magnesium	ppm	ASTM D5185m		15		
Zinc         ppm         ASTM D5185m         • 1344             Sulfur         ppm         ASTM D5185m         • 8965	Calcium	ppm	ASTM D5185m		<b>4158</b>		
Sulfur ppm ASTM D5185m	Phosphorus	ppm	ASTM D5185m		<b>e</b> 1231		
	Zinc	ppm	ASTM D5185m		<b>e</b> 1344		
Visc @ 40°C cSt ASTM D445 🤚 66.7 /	Sulfur	ppm	ASTM D5185m		8965		
	Visc @ 40°C	cSt	ASTM D445		66.7		



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 **JRE - GARNER** Sample No. : JR0209347 Received 4161 AUBURN CHURCH RD : 23 Apr 2024 Lab Number : 06157918 : 24 Apr 2024 Tested GARNER, NC Unique Number : 10993341 : 24 Apr 2024 - Don Baldridge US 27529 Diagnosed Test Package : CONST (Additional Tests: PQ) Contact: RALEIGH SHOP Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. sean.betts@jamesriverequipment.com;catherine.anastasio@wearcheck.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (919)614-2260 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (919)779-5432