



**TECHNICAL SERVICES LABORATORY**

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**Winter Performance**

**Treated vs. Untreated B100 and B20 Biodiesel Blends**

Sample No:	3241-05	3242-05	3244-05
Date Received:	11/1/05	11/1/05	11/1/05
Date of Test:	11/1-4/05	11/1-4/05	11/1-4/05
Date of Sample:	10/25/05	10/25/05	10/25/05
Region:	W	W	W

A.S.T.M. TEST NUMBER	D287	D4176	D2500	D6371	D97	D4928
	API	Appearance		Winter Operability		Water
	Gravity			Degrees Fahrenheit		Content
			CLOUD	CFPP*	Pour	PPM
<b>Untreated B100 Samples</b>						
Sample A--(3241)	28.3	Tan, Clear	37	27	25	1789
Sample B--(3242)	28.3	Gold, Clear	30	27	28	1432
Sample C--(3244)	28.5	Gold, Clear	25	10	14	1917
<b>Treated B100 Samples</b>						
3241 + Biodiesel Arctic Express 1:200				no test	19	
3242 + Biodiesel Arctic Express 1:200				no test	20	
3244 + Biodiesel Arctic Express 1:200				no test	-44	
<b>Untreated B20 Blends</b>						
1990 #2 LSD			7	-4	-27	
3241/1990 B20			12	3	-3	
3242/1990 B20			17	5	-5	
3244/1990 B20			13	1	-22	
<b>Treated B20 Blends</b>						
3241/1990 B20 + BAE 1:1000				-15	-46	
3242/1990 B20 + BAE 1:1000				-17	-49	
3244/1990 B20 + BAE 1:1000				-9	<-50	

\* CFPP - Cold Filter Plugging Point - The highest temperature at which fuel, when cooled under given conditions will not flow through a prescribed filter.

COMMENTS on B100: Samples A and B are similar in CFPP and PP, though the cloud point of sample B is slightly lower. Sample C has lower CP, CFPP and PP. The CFPP being lower than the PP is an artifact of the tests. All the biodiesel samples have a significant amount of water. Treatment with Arctic Express Biodiesel at 1:200 slightly lowered the PP of samples A and B, and made a large reduction in the PP of sample C.

COMMENTS on B20 blends: Each B100 sample was blended with 80 vol% of a laboratory #2 LSD to make B20 blends. The B20 blends from samples A and B are similar in CFPP and PP, while the B20 blend from sample C has slightly lower CFPP and much lower PP. Treatment with Arctic Express Biodiesel at 1:1000 significantly reduced the CFPP and PP of B20 from samples A and B, but less reduction in CFPP was observed with sample C.