



# Report of Analysis

# INTERIM

<b>Client:</b> Poseldon Pipeline	<b>Client Reference Number:</b>
<b>Job Location:</b> New Orleans, LA, USA	none
<b>Our Reference Number:</b> US320-0036204	

<b>Sample ID:</b> 2010-NOLA-008492-001	<b>Date Taken:</b> 03-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 03-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 01-December-2010
<b>Representing:</b> Poseidon / Houma Station - Whole Crude	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D5002	Density and Relative Density of Crude Oils		
	API Gravity @ 60°F	30.0	°API
	Relative Density @ 60/60°F	0.8762	
ASTM D4294	Density 15°C/ 59°F	0.8753	g/mL
	Sulfur Content in Petroleum Products by ED-XRF		
	Sample Preparation	Centrifuged	
ASTM D7169	Sulfur Content	1.71	Wt %
	Boiling Point Distribution of Samples with Residues by High Temperature GC		
UOP 163	Boiling Point Distribution	See Attached Report	
	Hydrogen Sulfide and Mercaptan Sulfur		
ITM 6008	H <sub>2</sub> S	< 1	ppm Wt
	Mercaptan Sulfur	2	ppm Wt
	Light Ends in Crude and Other Samples by GC		
ASTM D664_MOD	Methane	<0.01	Vol %
	Ethane	0.05	Vol %
	Propane	0.62	Vol %
	iso-Butane	0.36	Vol %
	n-Butane	1.56	Vol %
	iso-Pentane	1.09	Vol %
	n-Pentane	1.60	Vol %
ASTM D5762	2,2-Dimethylpropane	<0.01	Vol %
	Acid Number of Petroleum Products by Potentiometric Titration		
UOP 269	Acid Number	0.30	mg KOH/g
	Nitrogen in Petroleum Products by Boat-Inlet Chemiluminescence		
UOP 375	Nitrogen Content	1341	mg/kg
	Nitrogen Bases in Hydrocarbons by Potentiometric Titration		
	Basic Nitrogen	0.0350	Wt %
ASTM D97	Basic Nitrogen	350	ppm Wt
	UOP Characterization Factor of Petroleum Oils		
ASTM D5708	UOP Characterization Factor (K)	11.82	
	Pour Point of Petroleum Products		
ASTM D5708	Pour Point	-24	°C
	Pour Point	-11.2	°F
ASTM D5708	Metals by ICP-AES		
	Procedure	Test Method B	



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<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 01-December-2010
<b>Representing:</b> Poseidon / Houma Station - Whole Crude	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D5708	Metals by ICP-AES		
	Vanadium Content	53.0	mg/kg
	Nickel Content	17.0	mg/kg
	Iron Content	3.60	mg/kg
ASTM D3230	Salts in Crude Oil (Electrometric Method)		
	Salt Content (as electrometric chloride)	11.2	lb/1000bbl
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 60 °F/ 15.56 °C	26.51	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 100 °F/ 37.8 °C	15.42	mm <sup>2</sup> /s
ASTM D1747	Refractive Index of Viscous Materials		
	Refractive Index	Unable to run this test due to the nature of the sample. Sample is too dark.	

<b>Sample ID:</b> 2010-NOLA-008492-002	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 01-December-2010
<b>Representing:</b> Poseidon / Houma Station - IBP - 68 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ITM 6005	Detailed Hydrocarbon Analysis by GC		
	Specific Gravity by DHA	0.575	
ITM 6005	Detailed Hydrocarbon Analysis by GC		
	DHA Results	See Attachment	

<b>Sample ID:</b> 2010-NOLA-008492-003	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 01-December-2010
<b>Representing:</b> Poseidon / Houma Station - 68 - 150 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D4052	Density of Liquids by Digital Density Meter		
	Density @ 15°C/59°F	0.6451	g/mL
	Relative Density @ 60/60°F	0.6452	
	API Gravity @ 60°F	87.8	°API
ASTM D4294 MOD	Sulfur Content in Petroleum Products by ED-XRF		
	Sulfur Content	79.0	Wt %
ITM 6005	Detailed Hydrocarbon Analysis by GC		
	DHA Results	See Attachment	
ASTM D1319	Hydrocarbon Types (Aromatics, Olefins, Saturates) by FIA		
	<sup>1</sup> Aromatics	0.5	Vol %



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<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 01-December-2010
<b>Representing:</b> Poseidon / Houma Station - 68 - 150 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D1319	Hydrocarbon Types (Aromatics, Olefins, Saturates) by FIA		
	Olefins	0.3	Vol %
	1 Saturates	99.2	Vol %

<b>Sample ID:</b> 2010-NOLA-008492-004	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 150 - 365 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D4052	Density of Liquids by Digital Density Meter		
	Density @ 15°C/59°F	0.7464	g/mL
	Relative Density @ 60/60°F	0.7467	
	API Gravity @ 60°F	58.0	°API
UOP 163	Hydrogen Sulfide and Mercaptan Sulfur		
	H2S	< 1	ppm Wt
ASTM D2622	Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry		
	Sulfur Content	313	ppm
UOP 269	Nitrogen Bases in Hydrocarbons by Potentiometric Titration		
	Basic Nitrogen	<0.000100	Wt %
	Basic Nitrogen	<1.00	ppm Wt
UOP 375	UOP Characterization Factor of Petroleum Oils		
	UOP Characterization Factor (K)	12.02	
ASTM D4629	Trace Nitrogen in Liquid Petroleum Hydrocarbons		
	Nitrogen Content	<0.3	mg/kg
ASTM D2500	Cloud Point		
	Cloud Point	<-22.0	deg F
	Cloud Point	<-30	deg C
ASTM D97	Pour Point of Petroleum Products		
	Pour Point	<-27.4	deg F
	Pour Point	<-33	deg C
ITM 6005	Detailed Hydrocarbon Analysis by GC		
	DHA Results	See Attachment	
ASTM D2699	Octane Number - Research (RON)		
	PROCEDURE USED	Bracketing-EFL	
	Engine Room Barometric Pressure	30.15	in_Hg
	Intake Air Temperature	129.0	°F
	Research O.N.	42	
ASTM D2700	Octane Number - Motor (MON)		
	PROCEDURE USED	Bracketing-EFL	
	Engine Room Barometric Pressure	30.15	in_Hg



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<b>Sample ID:</b> 2010-NOLA-008492-004	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 150 - 365 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D2700	Octane Number - Motor (MON)		
	Mixture Temperature	300	°F
	Motor O.N.	45	
ASTM D1319	Hydrocarbon Types (Aromatics, Olefins, Saturates) by FIA		
	Aromatics	9.0	Vol %
	Olefins	0.5	Vol %
	Saturates	90.5	Vol %
ASTM D86	Distillation		
	Barometric Pressure	766	mm Hg
	IBP Recovery	174.3	°F
	5% Recovery	208.1	°F
	10% Recovery	215.7	°F
	20% Recovery	226.0	°F
	30% Recovery	236.7	°F
	40% Recovery	248.1	°F
	50% Recovery	261.7	°F
	60% Recovery	277.4	°F
	70% Recovery	292.0	°F
	80% Recovery	306.8	°F
	90% Recovery	323.9	°F
	95% Recovery	335.3	°F
	FBP Recovery	353.1	°F
Residue	0.4	Vol %	
Corrected Loss	0.2	Vol %	
Corrected Recovery	99.4	Vol %	
ASTM D1747	Refractive Index of Viscous Materials		
	Test Temperature	20	°C
	Average Refractive Index	1.4171	

<b>Sample ID:</b> 2010-NOLA-008492-005	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 365 - 450 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D4052	Density of Liquids by Digital Density Meter		
	Density @ 15°C/59°F	0.8045	g/mL
	Relative Density @ 60/60°F	0.8049	
	API Gravity @ 60°F	44.3	°API



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<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 365 - 450 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
UOP 163	Hydrogen Sulfide and Mercaptan Sulfur H2S	< 1	ppm Wt
ASTM D4629	Trace Nitrogen in Liquid Petroleum Hydrocarbons Nitrogen Content	3.1	mg/kg
ASTM D2622	Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry Sulfur Content	2129	ppm
UOP 269	Nitrogen Bases in Hydrocarbons by Potentiometric Titration Basic Nitrogen	0.000300	Wt %
	Basic Nitrogen	3.00	ppm Wt
UOP 375	UOP Characterization Factor of Petroleum Oils UOP Characterization Factor (K)	11.82	
ASTM D2500	Cloud Point Cloud Point	<22.0	deg F
	Cloud Point	<-30	deg C
ASTM D97	Pour Point of Petroleum Products Pour Point	<-27.4	deg C
	Pour Point	<-33	deg C
ASTM D4530	Micro Carbon Residue Average Micro Method Carbon Residue	< 0.10	Wt %
ASTM D5708	Metals by ICP-AES Procedure	Test Method B	
	Vanadium Content	<0.100	mg/kg
	Nickel Content	0.100	mg/kg
	Iron Content	0.400	mg/kg
ASTM D86	Distillation Barometric Pressure	767	mm Hg
	IBP Recovery	371.9	°F
	5% Recovery	384.2	°F
	10% Recovery	386.0	°F
	20% Recovery	389.2	°F
	30% Recovery	392.8	°F
	40% Recovery	396.2	°F
	50% Recovery	399.9	°F
	60% Recovery	404.2	°F
	70% Recovery	409.5	°F
	80% Recovery	415.3	°F
	90% Recovery	423.8	°F
	95% Recovery	430.8	°F
	FBP Recovery	438.9	°F



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<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 365 - 450 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D86	Distillation		
	Residue	1.1	Vol %
	Corrected Loss	0.8	Vol %
	Corrected Recovery	98.1	Vol %
ASTM D1319	Hydrocarbon Types (Aromatics, Olefins, Saturates) by FIA		
	Aromatics	17.7	Vol %
	Olefins	1.1	Vol %
	Saturates	81.2	Vol %
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 60 °F/ 15.56 °C	1.991	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 100 °F/ 37.8 °C	1.428	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 104 °F/ 40 °C	1.341	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 122 °F/ 50 °C	1.171	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 140 °F/ 60 °C	1.036	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 210 °F/ 98.9 °C	0.7031	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 300 °F/ 148.9 °C	0.4721	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 325 deg F	Unable to run this test due to the nature of the sample. Sample is too light to run at this temperature.	
ASTM D1747	Refractive Index of Viscous Materials		
	Test Temperature	20	°C
	Average Refractive Index	1.4471	

<b>Sample ID:</b> 2010-NOLA-008492-006	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 450 - 600 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D4052	Density of Liquids by Digital Density Meter		
	Density @ 15°C/59°F	0.8443	g/mL
	Relative Density @ 60/60°F	0.8448	
	API Gravity @ 60°F	36.0	°API
ASTM D2622	Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry		



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<b>Sample ID:</b> 2010-NOLA-008492-006	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 450 - 600 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D2622	Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry		
	Sulfur Content	7727	ppm
ASTM D4629	Trace Nitrogen in Liquid Petroleum Hydrocarbons		
	Nitrogen Content	22	mg/kg
UOP 269	Nitrogen Bases in Hydrocarbons by Potentiometric Titration		
	Basic Nitrogen	0.00180	Wt %
	Basic Nitrogen	18.0	ppm Wt
UOP 375	UOP Characterization Factor of Petroleum Oils		
	UOP Characterization Factor (K)	11.74	
ASTM D2500	Cloud Point		
	Cloud Point	-21	°C
	Cloud Point	-5.8	°F
ASTM D97	Pour Point of Petroleum Products		
	Pour Point	-24	°C
	Pour Point	-11.2	°F
ASTM D4530	Micro Carbon Residue		
	Average Micro Method Carbon Residue	< 0.10	Wt %
ASTM D5708	Metals by ICP-AES		
	Procedure	Test Method B	
	Vanadium Content	<0.100	mg/kg
	Nickel Content	0.100	mg/kg
	Iron Content	3.40	mg/kg
ASTM D86	Distillation		
	Barometric Pressure	766	mm Hg
	IBP Recovery	477.6	°F
	5% Recovery	491.8	°F
	10% Recovery	492.6	°F
	20% Recovery	497.6	°F
	30% Recovery	501.7	°F
	40% Recovery	506.7	°F
	50% Recovery	512.4	°F
	60% Recovery	519.3	°F
	70% Recovery	527.5	°F
	80% Recovery	537.9	°F
	90% Recovery	550.7	°F
	95% Recovery	560.9	°F
	FBP Recovery	569.9	°F
	Residue	0.9	Vol %
	Corrected Loss	0.4	Vol %



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<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 450 - 600 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D86	Distillation		
	Corrected Recovery	98.7	Vol %
ASTM D1319	Hydrocarbon Types (Aromatics, Olefins, Saturates) by FIA		
	Aromatics	22.9	Vol %
	Olefins	1.9	Vol %
	Saturates	75.2	Vol %
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 60 °F/ 15.56 °C	5.249	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 100 °F/ 37.8 °C	3.058	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 104 °F/ 40 °C	2.924	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 122 °F/ 50 °C	2.398	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 140 °F/ 60 °C	2.119	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 210 °F/ 98.9 °C	1.264	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 300 °F/ 148.9 °C	0.7655	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 325 deg F	Unable to run this test due to the nature of the sample. Sample is too light to run at this temperature.	

<b>Sample ID:</b> 2010-NOLA-008492-007	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 600 - 670 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D4052	Density of Liquids by Digital Density Meter		
	Density @ 15°C/59°F	0.8746	g/mL
	Relative Density @ 60/60°F	0.8751	
	API Gravity @ 60°F	30.2	°API
ASTM D4294 MOD	Sulfur Content in Petroleum Products by ED-XRF		
	Sulfur Content	1.19	Wt %
ASTM D4629	Trace Nitrogen in Liquid Petroleum Hydrocarbons		
	Nitrogen Content	136	mg/kg
UOP 269	Nitrogen Bases in Hydrocarbons by Potentiometric Titration		
	Basic Nitrogen	0.00570	Wt %



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<b>Sample ID:</b> 2010-NOLA-008492-007	<b>Date Taken:</b> 04-November-2010
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<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 600 - 670 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
UOP 269	Nitrogen Bases in Hydrocarbons by Potentiometric Titration		
	Basic Nitrogen	57.0	ppm Wt
UOP 375	UOP Characterization Factor of Petroleum Oils		
	UOP Characterization Factor (K)	11.78	
ASTM D2500	Cloud Point		
	Cloud Point	3	°C
	Cloud Point	37.4	°F
ASTM D97	Pour Point of Petroleum Products		
	Pour Point	0	°C
	Pour Point	32.0	°F
ASTM D4530	Micro Carbon Residue		
	Average Micro Method Carbon Residue	< 0.10	Wt %
ASTM D5708	Metals by ICP-AES		
	Procedure	Test Method B	
	Vanadium Content	<0.100	mg/kg
	Nickel Content	<0.100	mg/kg
	Iron Content	0.700	mg/kg
ASTM D1160	Distillation of Petroleum Products at Reduced Pressure		
	IBP	609	°F
	AET @ 5% Recovery	621	°F
	AET @ 10% Recovery	623	°F
	AET @ 20% Recovery	626	°F
	AET @ 30% Recovery	627	°F
	AET @ 40 % Recovery	630	°F
	AET @ 50% Recovery	635	°F
	AET @ 60% Recovery	636	°F
	AET @ 70% Recovery	641	°F
	AET @ 80% Recovery	647	°F
	AET @ 90% Recovery	654	°F
	AET @ 95% Recovery	661	°F
	FBP	665	°F
	% Recovered	100.0	%
	% Loss	0.0	%
	% Residue	0.0	%
	Cold Trap Volume	0.0	ml
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 60 °F/ 15.56 °C	17.47	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 100 °F/ 37.8 °C	7.847	mm <sup>2</sup> /s



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<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 600 - 670 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 104 °F/ 40 °C	7.331	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 122 °F/ 50 °C	5.538	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 140 °F/ 60 °C	4.325	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 210 °F/ 98.9 °C	2.136	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 300 °F/ 148.9 °C	1.153	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 325 deg F	Unable to run this test due to the nature of the sample. Sample is too light to run at this temperature.	

<b>Sample ID:</b> 2010-NOLA-008492-008	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 01-December-2010
<b>Representing:</b> Poseidon / Houma Station - 670+ Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D4052	Density of Liquids by Digital Density Meter Density @ 15°C/59°F	0.9766	g/mL
	Relative Density @ 60/60°F	0.9772	
	API Gravity @ 60°F	13.3	°API

<b>Sample ID:</b> 2010-NOLA-008492-009	<b>Date Taken:</b> 04-November-2010
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<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 670 - 850 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D4052	Density of Liquids by Digital Density Meter Density @ 15°C/59°F	0.9112	g/mL
	Relative Density @ 60/60°F	0.9117	
	API Gravity @ 60°F	23.7	°API
ASTM D4294 MOD	Sulfur Content in Petroleum Products by ED-XRF Sulfur Content	1.58	Wt %
ASTM D5762	Nitrogen in Petroleum Products by Boat-Inlet Chemiluminescence Nitrogen Result	532	mg/kg
UOP 269	Nitrogen Bases in Hydrocarbons by Potentiometric Titration		



# Report of Analysis

# INTERIM

<b>Sample ID:</b> 2010-NOLA-008492-009	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 670 - 850 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
UOP 269	Nitrogen Bases in Hydrocarbons by Potentiometric Titration		
	Basic Nitrogen	0.0195	Wt %
	Basic Nitrogen	195	ppm Wt
UOP 375	UOP Characterization Factor of Petroleum Oils		
	UOP Characterization Factor (K)	11.74	
ASTM D2500	Cloud Point		
	Cloud Point	22	°C
	Cloud Point	71.6	°F
ASTM D97	Pour Point of Petroleum Products		
	Pour Point	21	°C
	Pour Point	69.8	°F
ASTM D4530	Micro Carbon Residue		
	Average Micro Method Carbon Residue	< 0.10	Wt %
ASTM D5708	Metals by ICP-AES		
	Procedure	Test Method B	
	Vanadium Content	<0.100	mg/kg
	Nickel Content	<0.100	mg/kg
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 60 deg F	Unable to run this test due to the nature of the sample. Sample is solid at this temperature.	
ASTM D1160	Distillation of Petroleum Products at Reduced Pressure		
	IBP	678	°F
	AET @ 5% Recovery	707	°F
	AET @ 10% Recovery	714	°F
	AET @ 20% Recovery	728	°F
	AET @ 30% Recovery	737	°F
	AET @ 40 % Recovery	747	°F
	AET @ 50% Recovery	757	°F
	AET @ 60% Recovery	774	°F
	AET @ 70% Recovery	796	°F
	AET @ 80% Recovery	816	°F
	AET @ 90% Recovery	842	°F
	AET @ 95% Recovery	861	°F
	FBP	890	°F
	% Recovered	100.0	%
% Loss	0.0	%	



# Report of Analysis

# INTERIM

<b>Sample ID:</b> 2010-NOLA-008492-009	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 670 - 850 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D1160	Distillation of Petroleum Products at Reduced Pressure		
	% Residue	0.0	%
	Cold Trap Volume	0.0	ml
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 100 °F/ 37.8 °C	36.01	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 104 °F/ 40 °C	32.36	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 122 °F/ 50 °C	21.06	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 140 °F/ 60 °C	14.49	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 210 °F/ 98.9 °C	5.151	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 300 °F/ 148.9 °C	2.216	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 325 deg F	Unable to run this test due to the nature of the sample. Sample is too light to run at this temperature.	

<b>Sample ID:</b> 2010-NOLA-008492-010	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 850 - 1050 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D70	Density / Relative Density /API (Pycnometer Method)		
	Density @ 60 deg F	0.947	g/mL
	Sp Gr @ 60/60 deg F	0.948	
	API Gravity	17.8	°API
ASTM D4294 MOD	Sulfur Content in Petroleum Products by ED-XRF		
	Sulfur Content	2.08	Wt %
UOP 269	Nitrogen Bases in Hydrocarbons by Potentiometric Titration		
	Basic Nitrogen	0.0447	Wt %
	Basic Nitrogen	447	ppm Wt
ASTM D5762	Nitrogen in Petroleum Products by Boat-Inlet Chemiluminescence		
	Nitrogen Content	1413	mg/kg
UOP 375	UOP Characterization Factor of Petroleum Oils		
	UOP Characterization Factor (K)	11.82	
ASTM D2500	Cloud Point		



# Report of Analysis

# INTERIM

<b>Sample ID:</b> 2010-NOLA-008492-010	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 850 - 1050 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D2500	Cloud Point Cloud Point	Unable to run this test due to the nature of the sample. The sample is too dark.	
ASTM D97	Pour Point of Petroleum Products Pour Point	48	°C
	Pour Point	118.4	°F
ASTM D4530	Micro Carbon Residue Average Micro Method Carbon Residue	1.63	Wt %
ASTM D5708	Metals by ICP-AES Procedure	Test Method B	
	Vanadium Content	0.700	mg/kg
	Nickel Content	0.500	mg/kg
	Iron Content	0.200	mg/kg
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 60 deg F	Unable to run this test. Sample is solid at this temperature.	
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 100 deg F	Unable to run this test. Sample is solid at this temperature.	
ASTM D445	Kinematic / Dynamic Viscosity Kinematic Viscosity @ 104 deg F	Unable to run this test. Sample is solid at this temperature.	
ASTM D1160	Distillation of Petroleum Products at Reduced Pressure IBP	712	°F
	AET @ 5% Recovery	839	°F
	AET @ 10% Recovery	867	°F
	AET @ 20% Recovery	896	°F
	AET @ 30% Recovery	913	°F
	AET @ 40 % Recovery	930	°F
	AET @ 50% Recovery	947	°F
	AET @ 60% Recovery	961	°F
	AET @ 70% Recovery	979	°F
	AET @ 80% Recovery	1003	°F
	AET @ 90% Recovery	1029	°F
	AET @ 95% Recovery	1048	°F
	FBP	1079	°F
	% Recovered	99.0	%



# Report of Analysis

# INTERIM

<b>Sample ID:</b> 2010-NOLA-008492-010	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 06-December-2010
<b>Representing:</b> Poseidon / Houma Station - 850 - 1050 Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D1160	Distillation of Petroleum Products at Reduced Pressure		
	% Loss	0.0	%
	% Residue	1.0	%
	Cold Trap Volume	0.0	ml
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 122 °F/ 50 °C	226.0	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 140 °F/ 60 °C	110.6	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 210 °F/ 98.9 °C	21.77	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 300 °F/ 148.9 °C	6.117	mm <sup>2</sup> /s
ASTM D445	Kinematic / Dynamic Viscosity		
	Kinematic Viscosity @ 325 deg F	0.3123875	cSt

<b>Sample ID:</b> 2010-NOLA-008492-011	<b>Date Taken:</b> 04-November-2010
<b>Sample Designated As:</b> Crude	<b>Date Submitted:</b> 04-November-2010
<b>Vessel/Location:</b> Enterprise Houma	<b>Date Tested:</b> 01-December-2010
<b>Representing:</b> Poseidon / Houma Station - 1050+ Deg F	<b>Drawn By:</b> Intertek

Method	Test	Result	Units
ASTM D70	Density / Relative Density /API (Pycnometer Method)		
	Density @ 60 deg F	1.047	g/mL
	Sp Gr @ 60/60 deg F	1.048	
	API Gravity	3.5	°API

<sup>1</sup> Out of Scope of the Method

This report has been reviewed for accuracy, completeness, and comparison against specifications when available. The reported results are only representative of the samples submitted for testing and are subject to confirmation upon completion of the final report, which may contain warnings, exceptions and terms and conditions which are pertinent to the data supplied herein. It is the position of Intertek that the final report is the prevailing document, and that the use of interim documents by the client is at their own risk. This report shall not be reproduced except in full without written approval of the laboratory.

Signed: \_\_\_\_\_  
Intertek

Date: \_\_\_\_\_