

**CUSTOMER:** CNOOC PETROLEUM BRASIL LTDA/CHINA OFFSHORE OIL  
(SINGAPORE) PTE LTD  
**VESSEL:** DPST NS PIONEER  
**VOYAGE:** NS-V24-07  
**PRODUCT:** BUZIOS CRUDE OIL

**PETROINSPEC REF:** PIS009/24  
**FPSO:** FPSO P-77 / SANTOS BASIN  
**CARGO REF:** P77 OC 013  
**DATE:** May 31st to June 01st, 2024

**1.0. DPST: DPST NS PIONEER FIGURES**

**1.1. Total Quantity loaded by DPST NS PIONEER (without VEF) as per ASTM 60A Table, with Density/API and S&W from FPSO In- Line Blend sample analysis, obtained at FPSO P-77 / SANTOS BASIN Laboratory.**

**SUMMARY OF QUANTITIES BY TABLE ASTM 60 A**

Measurements	Gross	Net
Liters (20°C)	80.033.973	79.793.870
Kilograms (Vac)	70.237.815	70.027.100
Metric Tons (Vac)	70.237,815	70.027,100
Kilograms (Air)	70.135.376	69.924.968
Metric Tons (Air)	70.135,376	69.924,968
Long Tons (Air)	69.027,694	68.820,610
US BBLs (60°F)	501.609,51	500.104,67
US GALLONS (60°F)	21.067.599,26	21.004.396,18
Cubic Meters (60°F)	79.749,491	79.510,2413
Cubic Meters (20°C)	80.033,973	79.793,870
Liters (15°C)	79.714.449	79.475.304

**1.2. Total Quantity loaded by DPST NS PIONEER(Without VEF) as per ASTM 6A Table with Density/API and S&W from FPSO In- Line Blend sample analysis, obtained at FPSO P-77 / SANTOS BASIN Laboratory.**

**SUMMARY OF QUANTITIES BY TABLE ASTM 6 A**

Measurements	Gross	Net
US BBLs (60°F)	501.623,89	500.119,04
Kilograms (Vac)	70.241.610	70.030.890
Metric Tons (Vac)	70.241,610	70.030,890
Kilograms (Air)	70.156.490	69.946.020
Metric Tons (Air)	70.156,490	69.946,020
Long Tons (Air)	69.048,470	68.841,330
US GALLONS (60°F)	21.068.203,40	21.004.999,70
Cubic Meters (60°F)	79.751,778	79.512,526
Cubic Meters (20°C)	80.036,284	79.796,178
Liters (15°C)	79.716.750	79.477.603

**1.3. Total Quantity loaded by DPST NS PIONEER (without VEF) as per ASTM 54A Table, with Density/API and S&W from FPSO In- Line Blend sample analysis, obtained at FPSO P-77 / SANTOS BASIN Laboratory.**

**SUMMARY OF QUANTITIES BY TABLE ASTM 54 A**

Measurements	Gross	Net
Liters (15°C)	79.716.525	79.477.376
Kilograms (Vac)	70.222.287	70.011.621
Metric Tons (Vac)	70.222,287	70.011,621
Kilograms (Air)	70.137.202	69.926.791
Metric Tons (Air)	70.137,202	69.926,791
Long Tons (Air)	69.029,492	68.822,404
US BBLs (60°F)	501.622,57	500.117,71
US GALLONS (60°F)	21.068.147,90	21.004.943,80

## 2.0. FPSO FPSO P-77 / SANTOS BASIN FIGURES

2.1. Total Quantity delivered by FPSO P-77 / SANTOS BASIN as per ASTM 60A Table, obtained by FPSO's flowmeter measurements with Density/API and S&W from FPSO In-Line Blend sample analysis, obtained at FPSO P-77 / SANTOS BASIN Laboratory.

### SUMMARY OF QUANTITIES BY TABLE ASTM 60 A

Measurements	Gross	Net
Liters (20°C)	80.271.669	80.030.854
Kilograms (Vac)	70.446.417	70.235.077
Metric Tons (Vac)	70.446,417	70.235,077
Kilograms (Air)	70.343.673	70.132.642
Metric Tons (Air)	70.343,673	70.132,642
Long Tons (Air)	69.232,702	69.025,004
US BBLs (60°F)	503.099,26	501.589,96
US GALLONS (60°F)	21.130.168,74	21.066.778,24
Cubic Meters (60°F)	79.986,342	79.746,383
Cubic Meters (20°C)	80.271,669	80.030,854
Liters (15°C)	79.951.196	79.711.342

2.2. Total Quantity delivered by FPSO P-77 / SANTOS BASIN as per ASTM 6A Table, obtained by FPSO's flowmeter measurements with Density/API and S&W from FPSO In-Line Blend sample analysis, obtained at FPSO P-77 / SANTOS BASIN Laboratory.

### SUMMARY OF QUANTITIES BY TABLE ASTM 6 A

Measurements	Gross	Net
US BBLs (60°F)	503.102,80	501.593,50
Kilograms (Vac)	70.416.260	70.205.010
Metric Tons (Vac)	70.416,260	70.205,010
Kilograms (Air)	70.330.880	70.119.890
Metric Tons (Air)	70.330,880	70.119,890
Long Tons (Air)	69.220,120	69.012,450
US GALLONS (60°F)	21.130.317,77	21.066.927,00
Cubic Meters (60°F)	79.986,906	79.746,946
Cubic Meters (20°C)	80.272,251	80.031,434
Liters (15°C)	79.951.775	79.711.920

2.3. Total Quantity delivered by FPSO P-77 / SANTOS BASIN as per ASTM 54A Table, obtained by FPSO's flowmeter measurements with Density/API and S&W from FPSO In-Line Blend sample analysis, obtained at FPSO P-77 / SANTOS BASIN Laboratory.

### SUMMARY OF QUANTITIES BY TABLE ASTM 54 A

Measurements	Gross	Net
Liters (15°C)	79.953.055	79.713.196
Kilograms (Vac)	70.430.646	70.219.354
Metric Tons (Vac)	70.430,646	70.219,354
Kilograms (Air)	70.345.309	70.134.273
Metric Tons (Air)	70.345,309	70.134,273
Long Tons (Air)	69.234,312	69.026,609
US BBLs (60°F)	503.110,96	501.601,62
US GALLONS (60°F)	21.130.660,13	21.067.268,19

## 3.0. FPSO P-77 / SANTOS BASIN FIGURES

3.1. Analysis results of FPSO In-Line Blend sample obtained at FPSO P-77 / SANTOS BASIN Laboratory on

TEST	METHODS	RESULT
Density at 20°C (g/cm³)	ASTM D5002	0,8776
Density at 15°C (g/cm³)	ASTM D5002	0,8809
°API (60°F)	ASTM D5002	29,01
BSW (% vol)	ASTM D4007	0,30
Salt (mg/l)	ASTM D3230	24,0

## 4.0. COMPARISON REPORT

4.1. Difference in Liters at 20°C NSV, as per ASTM 60A Table.

ITEM	RESULT
Total Delivered by the FPSO	80.030.854
Total Received by the Vessel	79.793.870
Difference - FPSO & Vessel	236.984

4.2. Difference in Bbls at 60°F NSV, as per ASTM 6A Table.

ITEM	RESULT
Total Delivered by the FPSO	501.593,50
Total Received by the Vessel	500.119,04
Difference - FPSO & Vessel	1.474,46

Remark: According to our consistency analysis, all quality statements are in compliance with the quality specification contained in the documentary instruction received. We did not have surveyors on board for this operation, all information is in accordance with what was received from the ship.

5.0. Comments

Stowage on Ship's Cargo Tanks Marked in Red:

Aft Tank	Slops	6P	5P	4P	3P	2P	1P	Fwd Tank
Residual	Slops	6S	5S	4S	3S	2S	1S	

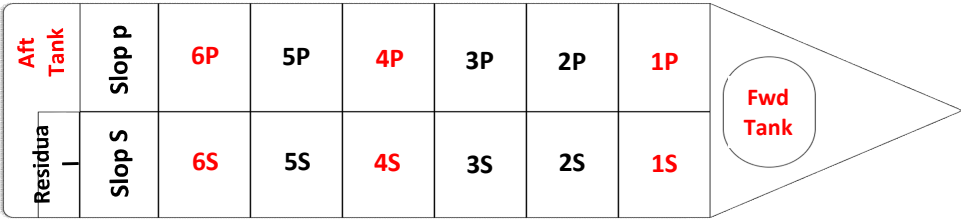
ITEM	RESULT
V.E.F	Not applied.
O.B.Q. (Before Loading - m³)	Nil.
Free Water delivered by FPSO	-
Total Free Water in Ship's Tanks (m³)	Only traces.
Total Free Water in Ship's Tanks (Bbls)	Only traces.
Slop/Residual tank(s) for receiving Flushing	-
Slop/Residual Measure After Initial Flushing	-
Slop/Residual Measure After backflushing	-
Flushing Measurement by FPSO	-
H2S - Ship's Tanks Before operation (ppm)	-
H2S - Ship's Tanks After operation (ppm)	-

6.0. Drafts

DRAFT (m)	FWD	AFT	Trim	List
Arrival	6,50	9,50	3,00	
Arrival Condition	<div>( ) Trim by the Bow ( x ) Trim by the Stern ( ) Even Keel ( ) List by Port ( ) List by Starboard ( ) No List</div>			
Departure	12,40	13,40	1,00	
Departure Condition	<div>( ) Trim by the Bow ( x ) Trim by the Stern ( ) Even Keel ( ) List by Port ( ) List by Starboard ( ) No List</div>			

7.0. Comments

Stowage on Ship's Ballast Tanks Marked in Red:



8.0. Bunkers

Bunkers (m)	Fuel Oil	Diesel
Departure from Port (Mt Vac)	-	-
Arrival at FPSO (Mt Vac)	1.437,92	276,80
Departure from FPSO (Mt Vac)	1384,40	262,28
Arrival at Port (Mt Vac)	-	-

9.0. Timesheet

Date	Time	Event
MAY 29th, 2024	15:30	SURVEYOR LAIRTON SILVA DE ALMEIDA ON BOARD IN "DPST NS PIONEER" AT RIO DE JANEIRO
	17:00	C.O.S.P. / VESSEL DEPARTURE TO FPSO P-76
MAY 30th, 2024	5:30	E.O.S.P. / VESSEL ARRIVED AT FPSO P-76 ZONE 10NM
	10:30	COMMENCE INITIAL TANKS INSPECTIONS
	11:30	COMPLETED INITIAL TANKS INSPECTIONS / NO OBQ ON BOARD
	11:30	COMPLETED INITIAL TANKS INSPECTIONS / NO OBQ ON BOARD
	11:50	PERMISSION TO ENTER 3NM GRANTED, APPROACHING COMMENCED
	18:50	CONNECTION OF PULL TUG "AH LIGURIA" COMMENCED
	20:20	500m FPSO ZONE
	20:20	PERMISSION FOR APPROACHING GRANTED
	20:45	COMMENCED MOORING
	21:45	COMPLETED MOORING
	23:00	COMMENCE HOSE CONNECTION
	23:36	COMPLETED HOSE CONNECTION
	23:00	COMMENCE HOSE CONNECTION
	23:36	COMPLETED HOSE CONNECTION
	23:59	COMMENCE LINE FLUSHING
MAY 31st, 2024	0:27	COMPLETED LINE FLUSHING
	0:30	COMMENCE LINE DISPLACEMENT
	0:55	COMPLETED LINE DISPLACEMENT
	1:05	COMMENCE OFFLOAD BUZIOS CRUDE OIL
JUNE 01st, 2024	15:22	OFFLOADING STOPPED BY FPSO P-77 REQUESTED
	3:48	OFFLOADING RESUMED
	17:45	COMPLETED OFFLOAD BUZIOS CRUDE OIL
	17:55	COMMENCE BACK FLUSHING
	18:35	COMPLETED SAMPLING
	19:10	COMPLETED BACK FLUSHING
	19:10	COMMENCE FINAL TANK INSPECTION
	19:45	COMPLETED FINAL TANK INSPECTION
	19:45	COMMENCE CARGO CALCULATIONS
	20:05	COMPLETED CARGO CALCULATIONS
	20:12	COMMENCE HOSE DISCONNECTION
	20:45	COMPLETED HOSE DISCONNECTION
	21:12	COMMENCE UNMOORING
	21:45	COMPLETED UNMOORING
	22:00	500m OFF FPSO ZONE
	22:25	AFT TUG "AH LIGURIA" CAST OFF
	23:15	VESSEL OUT OFF 3NM ZONE
	23:30	DOCUMENTS SIGNED