



Client's Reference: 123/435

For the attention of:
Copy to:

CONTENTS LISTING

Report No. NG-0012-03-2018
Report date 3-Jan-18
Client Nigeria LNG
Ship LNG Port Harcourt
Product Liquefied Natural Gas
Port Huelva
Unloading commenced 2-Jan-18
Unloading completed 3-Jan-18

We have pleasure in enclosing herewith, our report for the above referenced inspection.
The inspection was carried out according to the following reports:

Document Title	Pages
Contents Listing	One
Time Log	One
Inspection Checklist Page 1 of 2	One
Inspection Checklist Page 2 of 2	One
Field Data Report	One
LNG Analysis Report	One
Boil-Off Analysis Report	One
Certificate Of Quality	One
Certificate Of Quantity (Unloading Calculations Report)	One
Quantity Delivered	One
LNG Quantity Report	One
Certificate Of Unloading (Page 1 of 2)	One
Certificate Of Unloading (Page 2 of 2)	One
Total pages: 13 pages	

Should you have any query, or require any additional information, please contact Mr. Pavel Yunoshev at our Odessa office (telephone number +380505003975).

For and on behalf of Global Survey Solutions Limited:

Alejanro Rojas



Report No. NG-0012-03-2018
 Report date 3-Jan-18
 Ship LNG Port Harcourt
 Product Liquefied Natural Gas
 Port Huelva
 Unloading commenced 2-Jan-18
 Unloading completed 3-Jan-18

TIME LOG

Time	Date	Operations
10:30	29-Dec-17	Vessel arrived at sea bouy
11:30	29-Dec-17	Vessel anchored
12:12	29-Dec-17	Notice of Readiness tendered
12:12	2-Jan-18	Pilot on board
12:35	2-Jan-18	Anchors aweigh
13:35	2-Jan-18	First line ashore
14:10	2-Jan-18	Inspector at terminal
14:18	2-Jan-18	All fast
14:32	2-Jan-18	Gangway secured
14:35	2-Jan-18	Inspector boarded vessel
14:38	2-Jan-18	Commenced connection of loading arms
15:00	2-Jan-18	Free pratique granted
15:19	2-Jan-18	Liquid / vapour arms connected
15:35	2-Jan-18	Figures calculated and agreed with Chief Officer
15:43	2-Jan-18	Pre-loading survey conducted
15:43	2-Jan-18	ESD system tested
15:55	2-Jan-18	Cooling down of cargo commenced
15:55	2-Jan-18	Unloading commenced
16:35	2-Jan-18	Cooling down of cargo completed
16:43	2-Jan-18	2nd pump on
16:56	2-Jan-18	3rd pump on
17:03	2-Jan-18	4th pump on
17:09	2-Jan-18	5th pump on
17:14	2-Jan-18	6th pump on
17:19	2-Jan-18	7th pump on
17:24	2-Jan-18	8th pump on
17:30	2-Jan-18	9th pump on
17:35	2-Jan-18	10th pump on
17:35	2-Jan-18	Discharge rate normalized
18:06	2-Jan-18	1st analysis of boil-off done
20:17	2-Jan-18	Started sampling, analysis of LNG
05:48	3-Jan-18	Last analysis of LNG done
08:25	3-Jan-18	Unloading completed
08:40	3-Jan-18	Started heating of dircharging arms
08:51	3-Jan-18	Started measurements on board
08:53	3-Jan-18	Ship's measurements completed
08:53	3-Jan-18	Calculations of ship's quantities completed
08:53	3-Jan-18	Figures obtained
09:50	3-Jan-18	Documents on board
10:19	3-Jan-18	Hoses disconnected
11:00	3-Jan-18	Pilot on board for unberthing
11:00	3-Jan-18	Vessel started leaving berth
11:16	3-Jan-18	Vessel sailed
11:30	11-Jan-18	ETA at the next port



Report No. NG-0012-03-2018
 Report date 3-Jan-18
 Ship LNG Port Harcourt
 Product Liquefied Natural Gas
 Port Huelva
 Unloading commenced 2-Jan-18
 Unloading completed 3-Jan-18

INSPECTION CHECKLIST

If an item listed below was completed in accordance with the procedures, check "yes"
 If not, check "no" and explain under the comment section. If an item is not applicable write "n.a." (not applicable) next to
 NOTE: A completed copy of this checklist should be included with the measurement report.

Item Number	Action	Section	Yes	No	No. of remark
-------------	--------	---------	-----	----	---------------

Before Unloading

1	Was a key meeting held with vessel representative and shore representative?	17.1.6.1	x		1
2	Were all shorelines checked and shore tanks gauged?	17.1.6.2.1	x		2
		17.1.6.2.2	n.a.		3
3	Were temperatures taken from all shore tanks?	17.1.6.3	n.a.		4
4	Was the temperature device checked prior to use?	17.1.11.3.1	n.a.		5
		17.1.11.3.2	n.a.		6
		17.1.11.3.3	n.a.		7
5	Were all aut. tank gauging and temperature devices checked?	17.1.11.3.4	n.a.		8
6	Were all shore tanks sampled?	17.1.6.4.1	n.a.		9
7	Was an automatic sampler used?	17.1.6.4.2	x		10
8	Was the inline sampler checked?	17.1.6.5	x		11
9	Was the chromatograph calibrated prior to unloading?	17.1.6.6.1	x		12
10	Were draft, trim and list recorded?	17.1.6.6.2	x		13
11	Were vessel completely deballasted?	17.1.6.6.3	n.a.		14
12	Were vessel deck lines drained?	17.1.6.6.4	n.a.		15
13	Were on-board quantity gauges taken?	17.1.6.6.5	x		16
14	Were on-board quantity temperature taken?	17.1.6.6.6	x		17
15	Were on board pressures taken?	17.1.6.6.7	x		18
16	Were bunker quantities verified?	17.1.6.6.8	x		19
17		17.1.6.6.9			20
18		17.1.6.6.10			21
19		17.1.6.6.11			22
20		17.1.6.6.12			23

During Unloading

21	Were any difficulties encountered?	17.1.7.1		x	24
22	Was line sample drawn?	17.1.7.2	x		25
23		17.1.7.3			26

For and on behalf of Global Survey Solutions Limited:

Alejanro Rojas

Date: 2-Jan-18



Report No. NG-0012-03-2018
 Report date 3-Jan-18
 Ship LNG Port Harcourt
 Product Liquefied Natural Gas
 Port Huelva
 Unloading commenced 2-Jan-18
 Unloading completed 3-Jan-18

FIELD DATA REPORT

MEASUREMENTS BEFORE UNLOADING

Date: 02-Jan-18 Time: 15:43 Trim: 0 m List: 0°

Tank No.	Liquid Temperature (°C)	Gas Temperature (°C)	Recorded Level (m)	Trim + List Correction (m)	Temperature Correction (m)	Density Correction (m)	Total Correction (m)	Corrected Level (m)	Volume at calibration temperature (m ³)
1	-159.13	-139.00	21.285					21.285	11,647.577
2	-159.15	-144.10	21.617					21.617	25,211.502
3	-159.14	-146.70	21.662					21.662	27,054.165
4	-159.11	-145.70	21.665					21.665	27,063.725
5	-159.16	-146.60	21.633					21.633	25,242.818
6	-158.59	-135.60	20.884					20.884	1,615.138

Total volume before unloading at calibration temperature of -160°C: 117,834.925
 Thermal expansion factor for LNG volume: 1.00002
 Total volume before unloading at average temperature of -159.05°C: 117,837.282

Expansion ratio of gas to liquid	594.448
Average Temperature of LNG on board	-159.05 °C
Average Temperature of Gas on board	-142.95 °C
Pressure	1,117 Mbar

MEASUREMENTS AFTER UNLOADING

Date: 03-Jan-18 Time: 08:53 Trim: 1 m, by stern List: 0°

Tank No.	Liquid Temperature (°C)	Gas Temperature (°C)	Recorded Level (m)	Trim + List Correction (m)	Temperature Correction (m)	Density Correction (m)	Total Correction (m)	Corrected Level (m)	Volume at calibration temperature (m ³)
1	-159.28	-125.33	0.707					0.707	274.094
2	-159.34	-128.68	0.444					0.444	417.231
3	-159.32	-130.93	0.415					0.415	424.111
4	-159.53	-132.58	0.407					0.407	415.828
5	-159.34	-129.73	0.449					0.449	422.306
6	-159.18	-123.70	1.633					1.633	126.294

Total volume after unloading at calibration temperature of -160°C: 2,079.864
 Thermal expansion factor for LNG volume: 1.00003
 Total volume after unloading at average temperature of -159.33°C: 2,079.926

Expansion ratio of gas to liquid	594.448
Average Temperature of LNG on board	-159.33 °C
Average Temperature of Gas on board	-128.49 °C
Pressure	1,107 Mbar



Report No. NG-0012-03-2018
 Report date 3-Jan-18
 Ship LNG Port Harcourt
 Product Liquefied Natural Gas
 Port Huelva
 Unloading commenced 2-Jan-18
 Unloading completed 3-Jan-18

LNG ANALYSIS REPORT

Analytical determination on vapour samples drawn by means of automatic sampler from shore line during discharge and analyzed in the laboratory of Messrs ENAGAS S.A. by means of gaschromatographic equipment.

Sampler Global Survey Solutions Limited
 Date 3-Jan-18
 Time 08:25

Components	Formula	Units	Method	Result
methane	CH4	mole %	GPA 2261-13	90.5070
ethane	C2H6	mole %	GPA 2261-13	5.0270
propane	C3H8	mole %	GPA 2261-13	2.9070
n-butane	C4H10	mole %	GPA 2261-13	0.8540
isobutane [2-methylpropane]	C4H10	mole %	GPA 2261-13	0.5906
n-pentane	C5H12	mole %	GPA 2261-13	0.0250
isopentane [2-methylbutane]	C5H12	mole %	GPA 2261-13	0.0521
n-hexane	C6H14	mole %	GPA 2261-13	
n-heptane	C7H16	mole %	GPA 2261-13	
ethylene [ethene]	C2H4	mole %	GPA 2261-13	
propylene [propene]	C3H6	mole %	GPA 2261-13	
1-butene [n-butylene]	C4H8	mole %	GPA 2261-13	
hydrogen sulfide [hydrogen sulphide]	H2S	mole %	GPA 2261-13	
nitrogen	N2	mole %	GPA 2261-13	0.0373
oxygen	O2	mole %	GPA 2261-13	
carbon dioxide	CO2	mole %	GPA 2261-13	

Parameters	Units	Method	Result
Impurities			
Total sulphur	mg(S)/m3 (st)	ASTM D6667	Not tested
Mercaptans	mg(S)/m3 (st)	BS ISO 19739:2004	Not tested
Carbonyl Sulphide & Hydrogen Sulphide		BS ISO 19739:2004	Not tested
Mercury	ng/m3 (st)	ASTM D6350	Not tested
Hydrocarbon dewpoint (max)	°C (between 1-80 bar)	ISO/TR 11150:2007	Not tested

For and on behalf of Global Survey Solutions Limited:

Alejanro Rojas

Date: 3-Jan-18

Report No.	NG-0012-03-2018
Report date	3-Jan-18
Ship	LNG Port Harcourt
Product	Liquefied Natural Gas
Port	Huelva
Unloading commenced	2-Jan-18
Unloading completed	3-Jan-18

BOIL-OFF ANALYSIS REPORT

Analytical determination on vapour samples drawn by means of automatic sampler from shore line during discharge and analyzed in the laboratory of Messrs ENAGAS S.A. by means of gaschromatographic equipment.

Sampler	Global Survey Solutions Limited
Date	3-Jan-18
Time	08:25

Components	Formula	Units	Method	Result
methane	CH4	mole %	GPA 2261-13	98.4839
ethane	C2H6	mole %	GPA 2261-13	0.1764
propane	C3H8	mole %	GPA 2261-13	0.0140
n-butane	C4H10	mole %	GPA 2261-13	0.0016
isobutane [2-methylpropane]	C4H10	mole %	GPA 2261-13	0.0018
n-pentane	C5H12	mole %	GPA 2261-13	0.0005
isopentane [2-methylbutane]	C5H12	mole %	GPA 2261-13	0.0010
n-hexane	C6H14	mole %	GPA 2261-13	
n-heptane	C7H16	mole %	GPA 2261-13	
ethylene [ethene]	C2H4	mole %	GPA 2261-13	
propylene [propene]	C3H6	mole %	GPA 2261-13	
1-butene [n-butylene]	C4H8	mole %	GPA 2261-13	
hydrogen sulfide [hydrogen sulphide]	H2S	mole %	GPA 2261-13	
nitrogen	N2	mole %	GPA 2261-13	1.3208
oxygen	O2	mole %	GPA 2261-13	
carbon dioxide	CO2	mole %	GPA 2261-13	

For and on behalf of Global Survey Solutions Limited:

Alejanro Rojas

Date: 3-Jan-18

Report No.	NG-0012-03-2018
Report date	3-Jan-18
Ship	LNG Port Harcourt
Product	Liquefied Natural Gas
Port	Huelva
Unloading commenced	2-Jan-18
Unloading completed	3-Jan-18

CERTIFICATE OF QUALITY

Total Net Quantity Delivered	2,740,721.80 MMBTU at 60°F
	803,275,862.7 kW/hour

Average results of analysis at the laboratory of Enagas S.A., Huelva

Component	Formula	Mol %
methane	CH ₄	90.5070
ethane	C ₂ H ₆	5.0270
propane	C ₃ H ₈	2.9070
n-butane	C ₄ H ₁₀	0.8540
isobutane [2-methylpropane]	C ₄ H ₁₀	0.5906
n-pentane	C ₅ H ₁₂	0.0250
isopentane [2-methylbutane]	C ₅ H ₁₂	0.0521
n-hexane	C ₆ H ₁₄	
n-heptane	C ₇ H ₁₆	
ethylene [ethene]	C ₂ H ₄	
propylene [propene]	C ₃ H ₆	
1-butene [n-butylene]	C ₄ H ₈	
hydrogen sulfide [hydrogen sulphide]	H ₂ S	
nitrogen	N ₂	0.0373
oxygen	O ₂	
carbon dioxide	CO ₂	
Total		100.0000

Temperature of the LNG	-159.05 °C
------------------------	------------

LNG-Properties	
Molar mass	18.2183 kg/kmol
Density of real gas at 15°C, 101.325 kPa	0.77255 kg/m ³ (n)
Gross Calorific Value of the gas on volume basis at 15°C, 101.325 kPa	42,049.2 kJ/m ³
Net Calorific Value of the gas on volume basis at 15°C, 101.325 kPa	42,161.4 kJ/m ³
Expansion ratio of gas to LNG	594.448 m ³ (N)/m ³ LNG
LNG Density at -159.05°C	459.241 kg/m ³
Gross Calorific Value by mass of LNG at 15°C	54,574 kJ/kg
Net Calorific Value by mass of LNG at 15°C	49,321 kJ/kg
Gross heating value of the LNG on volume basis at -159.05°C	25,062.618 gJ/m ³
Ideal Gas Wobbe Index at 15°C	53,019.108 KJ/m ³
Real Gas Wobbe Index at 15°C	53,101.390 KJ/m ³

For and on behalf of Global Survey Solutions Limited:

Alejanro Rojas

Date: 3-Jan-18



Report No.	NG-0012-03-2018
Report date	3-Jan-18
Ship	LNG Port Harcourt
Product	Liquefied Natural Gas
Port	Huelva
Unloading commenced	2-Jan-18
Unloading completed	3-Jan-18

CERTIFICATE OF QUANTITY
UNLOADING CALCULATIONS REPORT

Specific Weight of LNG, kg/m ³	459.241
Gross Heating value of LNG on mass basis, MJ/kg	54.574
Density of real gas at , kg/m ³	0.77255

Date:	2-Oct-18	30-Dec-17
Time:	15:43	08:53

Observed quantities

Tank No.	Before	After
	Observed LNG Volume, m ³	Observed LNG Volume, m ³
1	11,647.577	274.094
2	25,211.502	417.231
3	27,054.165	424.111
4	27,063.725	415.828
5	25,242.818	422.306
6	1,615.138	126.294

Total quantities

Total Volume, m ³ , at calibration temperature of -160°C	117,834.925	2,079.864
Average LNG temperature, °C	-159.05	-159.33
Thermal expansion factor for LNG volume	1.00002	1.00003
Total Corrected LNG Volume, m ³	117,837.282	2,079.926
Weight of LNG, Metric tons	54,115.711	955.187
Energy of LNG, TJ	2,953.311	52.128

Net quantities

	LNG Volume, m ³	LNG Weight, kg	LNG Energy, TJ
(+) Variation of quantity on board	115,757.356	53,160,524	2,901.182
(-) Own use by the ship	46.302	69	3.769
(-) Boil - Off	376.539	172,922	9.437
Net Unloaded Quantity	115,334.515	52,987,533	2,887.976

For and on behalf of Global Survey Solutions Limited:

Alejanro Rojas

Date

30-Dec-17



Report No.	NG-0012-03-2018
Report date	3-Jan-18
Ship	LNG Port Harcourt
Product	Liquefied Natural Gas
Port	Huelva
Unloading commenced	2-Jan-18
Unloading completed	3-Jan-18

QUANTITY DELIVERED

(+) VARIATION OF QUANTITY ON BOARD

Variation of Volume	115,757.356 m3 LNG
Variation of Mass	53,160,524 kg
Variation of Energy	2,749,623.202 MMBTU at 60°F 805,884,010.278 kW/hour 2,901,182.437 gJ
Conversion Factor	0.947759495209 MMBTU/gJ

(-) BOIL-OFF RETURNED

	376.539 m3 LNG
	172,922 kg
	8,897.828 MMBTU at 60°F
	2,607,854.5 kW/hour

(-) SHIP'S USE CONSUMPTION

	46.302 m3 gas
	0.150 m3 LNG
	69 kg
	3.573 MMBTU at 60°F
	293.1 kW/hour

Total Quantity Delivered	2,740,721.80 MMBTU at 60°F
	115,380.667 m3 LNG
	803,275,862.67 kW/hour
	68,587,836.291 m3 at 15°C, 101.325 kPa
	52,987,533 kg

For and on behalf of Global Survey Solutions Limited:

Alejanro Rojas

Date

3-Jan-18

Report No. NG-0012-03-2018
 Report date 3-Jan-18
 Ship LNG Port Harcourt
 Product Liquefied Natural Gas
 Port Huelva
 Unloading commenced 2-Jan-18
 Unloading completed 3-Jan-18

LNG QUANTITY REPORT

1. Composition Calculations

Component	Formula	Molar Fraction % (Xi)	Molar weight, kg/kmol, as per ISO 6578:2017, (Mi)	Molecular Mass (Xi*Mi)	Orthobaric Molar Volume, m3/kmol, at -159.05°C as per ISO 6578:1991, (Vi)	Molar Fraction of Orthobaric Molar Volume, m3/kmol, at -159.05°C as per ISO 6578:1991	Critical temperature, Tc,i, K by ISO 6578:2017	Xi * Tc,i	Gross Calorific Value, kJ/mol at 15°C as per ISO 6976:2016, (GCVmol,i)	Σ(Xi*Mi*GCV mol,i)
methane	CH4	90.5070%	16.0420	14.519133	0.038280	0.0346462	190.555	172.46561	891.510	806.878956
ethane	C2H6	5.0270%	30.0690	1.511569	0.048023	0.0024141	305.420	15.35346	1562.140	78.528778
propane	C3H8	2.9070%	44.0960	1.281871	0.062584	0.0018193	369.820	10.75067	2221.100	64.567377
n-butane	C4H10	0.8540%	58.1220	0.496362	0.076967	0.0006573	425.180	3.63104	2879.760	24.593150
isobutane [2-methylpropane]	C4H10	0.5906%	58.1220	0.343269	0.078448	0.0004633	408.140	2.41047	2870.580	16.953645
n-pentane	C5H12	0.0250%	72.1490	0.018037	0.091683	0.0000229	469.650	0.11741	3538.600	0.884650
isopentane [2-methylbutane]	C5H12	0.0521%	72.1490	0.037590	0.091825	0.0000478	460.430	0.23988	3531.680	1.840005
n-hexane	C6H14									
n-heptane	C7H16									
ethylene [ethene]	C2H4									
propylene [propene]	C3H6									
1-butene [n-butylene]	C4H8									
hydrogen sulfide [hydrogen sulphide]	H2S									
nitrogen	N2	0.0373%	28.0130	0.010449	0.047780	0.0000178	126.200	0.04707		
oxygen	O2									
carbon dioxide	CO2									
Sum		100.0000%		18.2183	0.535590	0.0400888	205.02			994.247

2. Density calculation

K1 = 0.00046
 K2 = 0.000751

Liquid Temperature Before, t°C = -159.05 °C
 Liquid Temperature Before, K = T = t°C + 273.15 = 114.1K

$$\text{Density (D), kg/m}^3 = \frac{\sum(X_i * M_i)}{[\sum(X_i * V_i)] - [(K_1 + (K_2 - K_1) * (X_{n2} / 0.0425)) * X_{ch}]} = 459.241$$

Remark: Density calculated as per Revised Klosek and McKinley (RKM) method, , Page 63, GIINGL 5.0, 2017

3. Gross Calorific Value

$$\text{GCVmass, mJ/kg} = \frac{\sum(X_i * M_i * \text{GCVmol},i)}{\sum(X_i * M_i)} = 54.574 \text{ mJ/kg (GCV)}$$

$$\text{GCVmass, Btu/SCF} = 1000000 / (1055.12 * 836.614) * \sum(X_i * M_i * \text{GCVmol},i) \text{ mJ/kg} = 1.13285 * \sum(X_i * M_i * \text{GCVmol},i) \text{ mJ/kg} = 1,126.3 \text{ BTU/SCF (GCV)}$$

4. Quantity Delivered

(+) Ship's arrival	117,834.925	m ³	Vapour temp. before (Tv)	-142.95 °C
(-) Ship's departure	2,079.864	m ³	Abs. pressure before (P)	1,117 Millibars
(-) Own use by the ship	46.302	m ³		
(-) Boil-Off	376.539	m ³		
Ship discharged	115,332.220	m ³		

$$Q = (1/1055.12) * (V * D * \text{GCVmass}) = 2,739,524.804 \text{ MMBtu}$$

5. Weight Delivered

$$= 52,965.284 \text{ Metric Tons.}$$



Report No. NG-0012-03-2018
 Report date 3-Jan-18
 Ship LNG Port Harcourt
 Product Liquefied Natural Gas
 Port Huelva
 Unloading commenced 2-Jan-18
 Unloading completed 3-Jan-18
 Name of inspection Global Survey Solutions Limited
 To Nigeria LNG

CERTIFICATE OF UNLOADING

1.- IDENTIFICATION

a) Name of LNG Tanker LNG Port Harcourt
 b) Product Liquefied Natural Gas
 c) Unloading commenced (date and time) 2-Jan-18 15:55
 d) Unloading completed (date and time) 3-Jan-18 08:25

2.- BASIC DATA

a) Volume unloaded 115,380.667 m3
 b) Average temperature of LNG unloaded -159.33 °C
 c) Average temperature of LNG vapour in the LNG Tanker after unloading -128.49 °C
 d) Average absolute pressure of the LNG in the LNG Tanker after unloading 1,107 millibar

e) LNG cargo composition Unloading

Components by GPA 2261-13	Formula	Mole Percent
methane	CH4	90.5070
ethane	C2H6	5.0270
propane	C3H8	2.9070
n-butane	C4H10	0.8540
isobutane [2-methylpropane]	C4H10	0.5906
n-pentane	C5H12	0.0250
isopentane [2-methylbutane]	C5H12	0.0521
n-hexane	C6H14	
n-heptane	C7H16	
ethylene [ethene]	C2H4	
propylene [propene]	C3H6	
1-butene [n-butylene]	C4H8	
hydrogen sulfide [hydrogen sulphide]	H2S	
nitrogen	N2	0.0373
oxygen	O2	
carbon dioxide	CO2	

Parameters	Units	Method	Result
Impurities			
Total sulphur	mg(S)/m3 (st)	ASTM D6667	Not tested
Mercaptans	mg(S)/m3 (st)	BS ISO 19739:2004	Not tested
Carbonyl Sulphide & Hydrogen Sulphide		BS ISO 19739:2004	Not tested
Mercury	ng/m3 (st)	ASTM D6350	Not tested
Hydrocarbon dewpoint (max)	°C (between 1-80 bar)	ISO/TR 11150:2007	Not tested

g)



Report No. NG-0012-03-2018
Report date 3-Jan-18
Ship LNG Port Harcourt
Product Liquefied Natural Gas
Port Huelva
Unloading commenced 2-Jan-18
Unloading completed 3-Jan-18

CERTIFICATE OF UNLOADING

Page 2 of 2

3. RESULTS

a) Wobbe index of ideal gas	53,019.108 KJ/m ³ at 15°C, 101.325 kPa
b) Wobbe index of real gas	53,101.390 KJ/m ³ at 15°C, 101.325 kPa
c) LNG Density	459.241 kg/m ³
d) Gross Calorific Value by mass of LNG at 15°C	54.574 MJ/kg calculated from GCV molar
e) Net Calorific Value by mass of LNG at 15°C	49.321 MJ/kg calculated from NCV molar
f) Real Gas Gross Calorific Value at 15/15°C as per ISO 6976:2016	42.161 MJ/m ³
g) Ideal Gas Net Calorific Value at 15/15°C as per ISO 6976:2016	38.002 MJ/m ³
h) Real Gas Net Calorific Value at 15/15°C as per ISO 6976:2016	38.103 MJ/m ³
j) Quantity of LNG vapour returned to LNG tanker during unloading	9,388,276.180 MJ at 15°C

4.- QUANTITY UNLOADED

803,275,862.7 kW/hour
2,740,721.80 MMBTU at 60°F
68,587,836.291 m³ at 15°C, 101.325 kPa

5.- CERTIFICATE OF UNLOADING

We hereby certify that according to the tests and measurements on loading, the LNG to be off-loaded at the Receiving Facilities should conform to certification on unloading set out in Clause 5.1. (b) of the SPA

For and on behalf of Global Survey Solutions Limited:

Alejanro Rojas

Date 3-Jan-18