

Mrs Karen Dunn
Senior Officer - Industry & Waste Regulation
South West Wales Industry Regulation Team

Natural Resources Wales (NRW)
Maes Newydd,
Llandarcy,
Neath Port Talbot
SA10 6JQ

Our Ref: SHLNG-TS-ENV-C-579

Your Ref: EPR/XP3538LD

Date: 27 January 2020

Dear Mrs Dunn,

Operator: South Hook LNG Terminal Company LTD.
IED Environmental Permit Number EPR/ XP3538LD
Condition 4.2.2 – Report(s) on the Performance of the Activities Over the Previous Year 2019
Condition 4.2.3 – Report(s) of the Permit Monitoring and Assessments

Please find enclosed the report(s) on the performance of the permitted activities over the previous year 2019; and report(s) of the permit monitoring and assessments undertaken for 2019 and the period Q3 & Q4 2019 from 1 July 2019 to 31 December 2019.

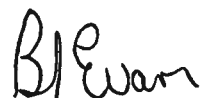
Please be advised that during the period, the Terminal operated for extended periods variable/ low, and sometimes minimum, send out, which were associated with variable and in some cases elevated BOD emissions in the SCV produced waters. However, in accordance with maintaining safe reliable (compliant) operations, the mass flows were also reduced, with no significant adverse effect on the environment.

In addition, to support safe operations, the SCVs fitted with continuous emission monitoring systems (CEMS) for NOx have been unavailable, as follows:

- Minimum Send Out and to allow internal inspections and essential maintenance: from 1 January 2019 to on or about 6 September 2019 for SCV 1H.
- To allow internal inspections and essential maintenance: from 30 October 2019 to year-end 2019 for SCV 2A.

Please do not hesitate to contact me should you have any queries, or I can be of further assistance.

Yours sincerely



Dr Shane Evans
Senior Environmental Engineer.

CA 27/01/20
ZFH 27/01/20

Attachments:

- Form Number: Air / 14th October 2015
- Form Number: Water1a / 14th October 2015
- Form Number: Water1b / 14th October 2015
- Form Number: WaterUsage1 / 14th October 2015
- Form Number: Energy1 / 14th October 2015
- Form Number: Performance1 / 14th October 2015
- Table S4.2: Annual Production 2019

cc. *Mr Zoltan Hazos, Technical Services Manager.*

ZFH 27/01/20

Permit Number: EPR/XP3538LD Operator: South Hook LNG Terminal Company LTD.

Facility: South Hook LNG Terminal Form Number: Air / 14th October 2015

Reporting of emissions to air for the period from 01/1/2019 to 31/12/2019

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A8	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	107 mg/Nm ³	Continuous	74.2	BS EN 14181 ISO 10849	12.10.2019 99.34% data capture	10.4%
A8	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	107 mg/Nm ³	1 hour sample	na	BS EN 14792	SCV A8 (1H) not captured in 2019	na
A8	Carbon monoxide	-	1 hour sample	na	BS EN 15058	SCV A8 (1H) not captured in 2019	na
A11	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	107 mg/Nm ³	Continuous	62.0	BS EN 14181 ISO 10849	01.01.2019 99.30% data capture	10.4%
A11	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	107 mg/Nm ³	1 hour sample	47.3	BS EN 14792	28.02.2019 @14:00	14.1
A11	Carbon monoxide	-	1 hour sample	571	BS EN 15058	17.07.2019 @12:00	53

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed B. Ewan Date 27/1/2020
(Authorised to sign as representative of Operator)

CEL 27/01/20

na = not applicable

27/01/20

Permit Number: EPR/XP3538LD Operator: South Hook LNG Terminal Company LTD
 Facility: South Hook LNG Terminal Form Number: Watern/14th October 2015

Reporting of emissions to water (other than to sewer) and land for the period from 01/07/2019 to 31/12/2019 for Table S3.2a

Emission Parameter	Substance / Parameter	Exposure Limit Value	Reference Period	Result	Test Method	Sample Date and Time	Uncertainty
W1a	pH	6-9	Daily maximum	7.3	BS ISO 10523	1 & 15 Jul 2019 21 Aug 2019	4.11%
W1a	Turbidity	-	Daily maximum	31	BS EN ISO 7027	10-Jul-19	44.61%
W1a	Oil and grease	None visible	Daily spot	None visible	Visual check	ns	ns
W1a	TOC	-	Weekly spot	3.7	BS EN 1484	30-Sep-19	12.94%
W1a	Last 2 metals (copper and zinc only)	-	Monthly maximum	2 µg/l	APHA 3120B	05-Sep-19	3.25%
				10 µg/l		12-Dec-19	6.18%
				140 µg/l		18/12/2019	6.84%
				1120 µg/l		10/10/2019	0.56%
				104.15		10/10/2019	0.56%
W2	Flow	3500 m ³ per day	Continuous	1120.58	Flow meter	100% data capture	0.56%
W2	Flow	184 m ³ per hr	Continuous	104.15	Flow meter	100% data capture	0.56%
W2	pH	6-9	Daily minimum - maximum	6.27 - 8.27	BS ISO 10523	19 & 20 Aug 2018 11 Dec 2018	0.13 pH units
W2	Nitrates as N	50 mg/l	Daily maximum	15	APHA 4500-NO ₃ -B 2011	25-Aug-19	2.53%
W2	Nitrates as N	100 kg N/day	Daily maximum	14.36	APHA 4500-NO ₃ -B 2011	18-Oct-19	2.59%
W2	Nitrates as N	50 kg N/day annual mean	Annual average	4.17	APHA 4500-NO ₃ -B 2011	ns	2.59%
W2	Oil and grease	None visible	Daily spot	None visible	Visual check	ns	ns
W2	Total Residual Chlorine (As Total Free Chlorine) Limit = 0.1	0.1 mg/l	Monthly spot	< 0.02 mg/l	Hach DPD Chlorine test kit for Total Free Chlorine	18 Jul & Aug 5 Sept 17 Oct 7 Nov 12 Dec 2019	20.29%
W2	Biological Oxygen Demand (BOD)	-	Monthly spot	52 mg/l	KMISO BOD5 II 1985	18-Jul-19	46.08%
W2	Temperature	30 °C	Daily maximum	20.33	Standard thermometer	26/07/2019	0.20%

(1) The result given is the maximum value (or the minimum value in the case of a limit) that is expressed as a minimum (or maximum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the minimum - maximum measured values. (2) Where an internationally recognised standard test method is used the reference number is given. Where another method has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography. (3) For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given. (4) The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed: *B/Euam*
 Date: 27/11/2020
 Authorised to sign as representative of Operator

ns = not applicable
 27/10/20
 27/10/20

Permit Number: EPR/XP3538LD Operator: South Hook LNG Terminal Company LTD.

Facility: South Hook LNG Terminal Form Number: Water1b / 14th October 2015

Reporting of emissions to water (other than to sewer) and land for the period from 01/07/2019 to 31/12/2019 for Table S3.2b

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ⁽¹⁾	Test Method ⁽²⁾	Sample Date and Times ⁽³⁾	Uncertainty ⁽⁴⁾
W1b	pH	6-9	Daily maximum	na	BS ISO 10523	na	4.11%
W1b	Turbidity	-	Daily maximum	na	BS EN ISO 7027	na	44.51%
W1b	Oil and grease	None visible	Daily spot	na	Visual check	na	na
W1b	TOC	-	Weekly spot	na	BS EN 1484	na	12.94%
W1b	List 2 metals (copper, zinc and iron only)	-	Monthly maximum	na	APHA 3120B	na	
W2	Flow	3100 m ³ per day	Continuous	na	Flow meter	na % data capture	0.56%
W2	Flow	144 m ³ per hr	Continuous	na	Flow meter	na % data capture	0.56%
W2	pH	6-9	Daily maximum	na	BS ISO 10523	na % data capture	0.13 pH units
W2	Nitrates as N	50 mg/l	Daily maximum	na	APHA 4500-NO3-B 2011	na	2.53%
W2	Nitrates as N	45 kg N/day	Annual average	na	APHA 4500-NO3-B 2011	na	2.59%
W2	Oil and grease	None visible	Daily spot	na	Visual check	na	na
W2	Total Residual Oxidant (As Total Free Chlorine) Limit = 0.1	0.1 mg/l	Monthly spot	na	Hach DPD Chlorine test kit for Total Free Chlorine	na	20.29%
W2	Biological Oxygen Demand (BOD)	-	Monthly spot	na	HMSO BOD5 II 1988	na	48.08%
W2	Temperature	30 °C	Daily maximum	na	Standard thermocouple	na % data capture	0.20%

(1) The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum - maximum' measured values.

(2) Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with Natural Resources Wales is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

(3) For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

(4) The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed: B. Ewan Date: 27/1/2020
(Authorised to sign as representative of Operator)

na = not applicable

CEZ 27/01/20

ZFH 27/01/20

Permit Number: EPR/XP3538LD Operator: South Hook LNG Terminal Company LTD.

Facility: South Hook LNG Terminal Form Number: WaterUsage1 / 14th October 2015

Reporting of Water Usage for the year 2019

Water Source	Usage (m ³ /year)	Specific Usage (m ³ /unit output)
Mains water	122,981	0.0182
Site borehole	0	0
River abstraction	0	0
TOTAL WATER USAGE	122,981	

Operator's comments :

m3/unit output = m3/ tonnes of gas production

Signed B. Ewan Date 27/1/2020
(authorised to sign as representative of Operator)
CEL 27/01/20
ZFH 27/01/20

Permit Number: EPR/XP3538LD Operator: South Hook LNG Terminal Company LTD.

Facility: South Hook LNG Terminal **Form Number: Energy1 / 14th October 2015**

Reporting of Energy Usage for the year 2019

Energy Source	Energy Usage		
	Quantity	Primary Energy (MWh)	Specific Usage (MWh/unit output)
Electricity *	MWh	387,410	0.057381
Natural Gas	MWh	1,184,400	0.175426
TOTAL	-	1,571,810	

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments :

Electricity * MWh/unit output = MWh/ tonnes of gas production
Natural Gas MWh/unit output = MWh/ tonnes of gas production

Signed B. Ewan Date 27/1/2020
(Authorised to sign as representative of Operator)

ER 27/01/20

ZFM 27/01/20

Permit Number: EPR/XP3538LD Operator: South Hook LNG Terminal Company LTD.

Facility: South Hook LNG Terminal Form Number: Performance1 / 14th October 2015

Reporting of other performance indicators for the period 01/1/2019 to 31/12/2019
in accordance with Table S3.3 Process monitoring requirements

Parameter	Units	
Natural gas consumption	MWh	1,184,400
Operating hours – LNG only	Hours	8,753.0
Operating hours – integrated mode	Hours	na
Electricity from the CHP Plant	MWh	na
Heat received via CHP	MWh	na
Natural gas supplied to South Hook CHP	MWh	na

Operator's comments :

na = not applicable

Signed B. Ewan
(Authorised to sign as representative of Operator)

Date 27/1/2020

CEH 27/01/20

ZFH 27/01/20

Permit Number: EPR/XP3538LD Operator: South Hook LNG Terminal Company LTD.

Facility: South Hook LNG Terminal **Table S4.2: Annual Production 2019**

Table S4.2: Annual Production 2019	
Natural Gas produced	6,751,551 tonnes
Operator's comments	

Signed Bj Ewan Date 27/1/2020
(Authorised to sign as representative of Operator)

WZ 27/01/20

ZFH 27/01/20

