

This form will report compliance with your permit as determined by an NRW officer

Site	Pembroke Refinery	Permit Ref	YP3930EX		
Operator/Permit holder	Valero Energy Ltd				
Regime	Installations				
Date of assessment	18/01/2017	Time in	10:00	Out	15:00
Assessment type	Audit				
Parts of the permit assessed	See criteria below				
Lead officer's name	Broom, Mark				
Accompanied by	Sharon Luke, Sandra Wells, Annina Kortensniemi				
Recipient's name/position	Neil White/ Environmental Engineering Manager	Date issued	02/02/2017		

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS Scores can be consolidated or suspended where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit conditions and compliance summary	CCS Category	Condition(s) breached
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	A	

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.
A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,
O = Ongoing non-compliance, not scored.

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
------------------------------------	----------	---	---

If the Number of breaches recorded is greater than zero, please see Section 3 for our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- The part(s) of the permit that were assessed (eg. Maintenance, training, combustion plant, etc)
- Where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- Any non-compliances identified
- Any non-compliances with directly applicable legislation
- Details of any multiple non-compliances
- Information on the compliance score accrued inc.
- Details of advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

Tom Day

Clare James

Registered Office change

Valero will be moving their registered office. This change will affect a number of their environmental permits as well as a number of other organisations and permissions that may be affect.

Their environmental permits affected are –

- The main EPR permit to operate the refinery
- The two RSR permits (and potentially the financial provision associated with one of these permits)
- The waste licence for the landfarm
- The abstraction licence and
- EU ETS permit

The formal date for the registered office change is 1/3/2017.

BATc and implementation

BATc 13 Table 3 that sets out the BATEALs for water. These are all annual averages. However in the definitions section of the Refinery Bat conclusions, for the water releases the annual means have been defined as the average of all the daily averages obtained in that year, weighted according to the daily flows.

This implies that the calculation for the annual mean is a combination of the each daily mean and the daily flow divided by the total flow in the year. In mathematical terms it is –

$$\text{Annual mean} = \frac{\sum_1^n (DM1*F1+ DM2*F2 \dots\dots DMn*Fn)}{\sum_1^n (F1 + F2 + \dots ..Fn)}$$

In excel this can be simplified using the sumproduct function of daily concentration (DM) and the daily flow (F) divided by the sum of the flow.

Valero have been considering how they manage compliance with these annual limits and how they manage their results to ensure they remain compliant. They could have a graph of the daily concentration results, the year to date mean (weighted for flow) and also a line of the BATAEL.

Valero do odourise LPG so this activity is a EPR Section 1.2 Part B (a) activity.

BATc44 – based on the Valero submission, they have explained why they cannot retro fit vacuum pumps and they do condense the steam from the steam ejectors.

BATc47 – Valero confirm that the waste off-gases from product treatment are collected and burnt as it is not always feasible to send these gases to the ARU/SRU system.

BATc48 – the waste caustics from the Merox process is reused in a caustic cascade. Valero have also been working to minimise the amount of caustic they produce from the alkylation unit. This success story needs to be reviewed at some point in the future.

BATc49 – The domes on the domed tanks were added to existing floating roof tanks. On that basis it is likely that the original tanks did have secondary seals but Valero would confirm.

The bubble approach was discussed. The following table shows how the permit could look based on NRW’s current view applying the bubble approach to elvs for BATc 57 and 58.

Release point (and duty)	Parameter	A ⁵	B ⁵	C ⁵	D ⁵	E ⁵
		ELV EPR Monthly mean mg/m ³	ELV daily mean mg/m ³	ELV 95 th ile of hourly means in a year mg/m ³	ELV IED monthly mean mg/m ³	ELV Bubble IED monthly mean mg/m ³
A1 LCP (RFG) gas only)	SO ₂	35	38.5	70	35	see note 1
	NO _x	300	330	600	150	see note 2
	Parts	(5) ⁶	5.5	10	5	-
	CO	-	-	-	100	-
A2 LCP (RFG, VDU and MFF)	SO ₂	1000 [#]	1100	2000	600	see note 1
	NO _x	300-450*	330-495*	600-900*	300	see note 2
	Parts	(5-50*) ⁶	5.5-55*	10-100*	5-50*	-

	CO	-	-	-	100	-
A3 SRU	SO ₂	-	-	-	98.5%	see notes 1 & 7
A4 FCCU	SO ₂	-	-	-	800	see notes 1 & 7
	NO _x	-	-	-	700	see notes 2 & 7
	Parts	-	-	-	50	-
A5 GT (NG fired new plant)	SO ₂	-	-	-	-	see notes 1, 3 & 4
	NO _x	50	55	100	50	see notes 2 & 3
	Parts	-	-	-	-	-
	CO	(100) ⁶	110	200	100	-
A6 (Non LCP) plant	SO ₂	35 **	-	-	35	see note 1
	NO _x	250**	-	-	150	see note 2
	Parts	-	-	-	5	-
	CO	-	-	-	100	-

Notes

* Emission limit values calculated in accordance with Article 40(2) of IED

As a residue is burnt then ELV applied in accordance with Article 40(3) of IED.

** Periodic Monitoring and these ELVs come from the MCPD.

1 To apply bubble limits (column E and associated notes), the operator needs to have an approved SO₂ bubble management plan that meets BATc 58 (monitoring plan, flue gas flow rate measurement, a data management system and a template spread sheet to calculate the bubble elv and compliance with the bubble elv) and to use the elvs for each release point in the bubble from column D.

2 To apply bubble limits (column E and associated notes), the operator needs to have an approved NO_x bubble management plan that meets BATc 57 (monitoring plan, flue gas flow rate measurement, a data management system and a template spread sheet to calculate the bubble elv and compliance with the bubble elv. and to use the elvs for each release point in the bubble from column D

3 As GT ELVs are set to the standard dry gas 15% oxygen reference conditions, if this release point is to enter the bubble, then the ELVs and the CEMS data need to use standard dry gas 3% O₂ reference conditions rather than 15%.

4 If this release point is to be used the SO₂ (BATc 58) Bubble then the ELV that needs to be applied is 35 mg/m³ using the standard dry gas 3% O₂ reference conditions.

5 Application of limits for combustion plant - If a bubble limit is applied, compliance is against the limits in columns A, B & C. If IED limits apply, then compliance is against the limits in Columns B, C & D.

6 Note to permittees the figures in brackets are the elvs that apply for chapter 3 but this parameter cannot go into a bubble so these elvs do not apply for column A in this case and the tighter of the Chapter 3 and IED limits have been used in Column D.

Valero asked about the ELVs for their ULSG stack (Release point A19, stack 10) which is 33MW. This stack would be, if it was a completely separate and stand-alone plant, a medium combustion plant but as it is inside the refinery it raises the question of how does NRW set ELVs for a MCPD at a refinery. The current plan is to use the tighter of the EID BATc BATAELs and the MCPD ELVs. If the ULSG stack were to go into the bubble then the back stop ELVs would be the MCPD ones as shown in the above table by **.

BAT issues

Neil White VEL

Mark Prestwich VEL

John Hayes CAN

Hannah Beeby ERM

Les Hatton ERM

Anna Sutcliffe ERM

Sian Macdonald ERM

Sharon Luke – NRW

Sandra Wells – NRW

Annina Kortensniemi – NRW

Background

Valero found some Lesser Horseshoe bats roosting in the main 11 KV substation serving the refinery. The refinery is also progressing a project to generate electricity and steam to meet their electricity requirements

by building a new gas turbine within heat recovery.

The presence of BATs in the main sub-station is a safety issue (more later) and is not part of the CHP project proposal.

Once found, the bats have been allowed access into the substation through an open door into the basement (cellar) of the substation where the cables run up and into the substation. They have been flying up through the cable holes into the substation floor above. The bats have been roosting on the housing of the substation equipment. Traces of Bat urine and faeces could be seen on the floor of parts of the substation underneath the roosting locations. There is a secondary cellar that is darker and smaller than the main cellar.

ERM have been deploying continuous BAT recorders to find out the flight paths and patterns of these bats. It appears that the bats have been using the noise and visual protection bund that runs along part of the site boundary as a feeding area and they have been travelling along the existing hedges to move into and out of the southern edge of the refinery.

The bats were found in the summer so they do not have a full year of flight paths to distinguish between the types of roost – maternity, transitional and hibernation roosts. Due to the real risk of the bats causing a short circuit inside the substation, the resulting explosion would be fatal for the bat concerned but could be also for anyone present inside the substation at the time. Valero would like to shut the door as soon as they can and before the seasonal breeding season that starts in the spring. The breeding season runs from the Spring until September.

Valero and ERM will look at getting the information together for a species licence application. They are planning to use the safety angle for the application. They will look at building a permanent maternity roost within the confines of the site boundary as mitigation. The design and planning aspects of this approach will be explored in the coming days/weeks.

Conclusions

It is not clear on why the bats choose to go inside the substation as it is in area that is very well lit and quite noisy but dry and relatively warm. It may have been an opportunistic roost initially. Any replacement roost may have to replicate some of the dry and warm conditions to get the bats to move.

This bat issue does not seem to be related to the CHP project and should therefore not be directly linked or associated with the new developments on site.

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0026944**

This form will report compliance with your permit as determined by an NRW officer

Site	Pembroke Refinery	Permit Ref	YP3930EX
Operator/Permit holder	Valero Energy Ltd	Date	18/01/2017

Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			

Section 5 – Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- Advise on corrective actions verbally or in writing
- Require you to take specific actions verbally or in writing
- Issue a notice
- Require you to review your procedures or management system
- Change some of the conditions of your permit
- Decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and/or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- Ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- Ensure you comply with other legislative provisions which may apply

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance that could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General information

Data protection notice

The information on this form will be processed by the Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW may also use and/or disclose it in connection with:

- Offering/providing you with its literature/services relating to environmental matters
- Consulting with the public, public bodies and other organisations (eg. Health and Safety Executive, local authorities) on environmental issues
- Carrying out statistical analysis, research and development on environmental issues
- Providing public register information to enquirers
- Investigating possible breaches of environmental law
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within fifteen working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.