

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	16/11/2017	Time in	10:00	Out	16:00
Assessment type	Audit				
Parts of the permit assessed	See below				
Lead officer's name	Broom, Mark				
Accompanied by					
Recipient's name/position	Neil White/ Environmental Engineering Manager	Date issued	07/02/2018		

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
C3 - General Management - Materials acceptance	A	
E1 - Emissions - Air	A	
E5 - Emissions - Waste	A	
G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment	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
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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

Valero liaison meeting

A lively meeting that focused on wider issues than the normal topics. The engagement of Valero on education was interesting and it prompted some interesting debate. The collection of acorns for use by NRW was also raised and it may be that the Valero Volunteers may be able to facilitate this initiative during the next acorn collection season.

Permit review

The permit review was discussed. Valero have shadow dynamic bubbles in operation for both NO_x and SO₂. They are working on the analytical suite for the new permit requirements for the water releases. Initial work shows that they will be compliant with the relevant BATc by the October 2018 compliance deadline.

VOC flaring

This issue looks to be a way of helping to further reduce flaring at this refinery. An average daily rate of 3T/hour as a daily mean across the 3 flares – (Sweet, Alky and sour flares). This figure is based on the mean plus 2 standard deviations (Mean + 2SD) so that the flaring base line and normal expected flaring fluctuations can be accommodated. For those events that go above the mean + 2 SD, then the reasons for those events should be established and collated annually. Planned pre-notified events (such as planned maintenance) would not need to be investigated.

FCCU Nitrogen oxides

It was clear from the NO_x graphs for the FCCU that VEL need the 700 mg/m³ for the use of antimony as a passivation agent in the FCCU process.

FCCU Sulphur dioxide

Valero have a crude strategy for the refinery as a whole and not just to minimise sulphur dioxide releases from the FCCU. Due to their FCCU process there appears to be a lag in the system between the sulphur in the feedstock and the SO₂ results from the FCCU.

Other issues

Land farm

The landfarm where largely Texaco used to spread oily sludges onto designated areas and then actively manage these areas to encourage the degradation of the oil. These areas were regulated under the control of Pollution Act that became the waste management licencing regulations. The Landfill directive implementation brought an end to this practice at the turn of the Century. Since then these areas have not had any active management. Valero are keen to find a resolution to these areas that now form part of the infrastructure of the refinery and since the advent of the SPMP their effect on ground water has been included in the ground water monitoring program for the refinery as a whole. Valero's contractors ERM have prepared a case for this surrender. They are waiting for feedback on a way forward. Landfarms have been surrendered elsewhere in the UK and the risks associated with the residual hydrocarbons appear low.

Construction and demolition material

Valero have identified that they could use inert material produced within the refinery as drainage materials and/or sub-bases for construction projects. This issue was discussed both during this intervention and also at the OMA audit on 28/11/2017.

These discussions were followed up by a proposal for the management of inert stone on site by email on 20/12/2017.

Valero's proposal outlined 5 criteria

- Clean, inert materials, e.g. stone and concrete will be stored on site in a dedicated area.
- The material will be periodically crushed by a company with the relevant part B licence.
- Prior to storing and crushing the material, the location and the end use of the crushed material will pre-determined.
- The inert crushed material will generally be graded to produce drainage stone and sub-base material for re-use on site.
- Records of the approximate tonnages of inert crushed materials generated on site will be maintained.

This issue was discussed with Paul Gibson and providing the management of the materials meets all 5 requirements in the proposal then the approach is acceptable to NRW and the inert materials can be used within the refinery to replace quarried materials. This acceptance was confirmed by an email sent by NRW on 22/1/18.

Site hourly bubble elv

There is currently an hourly bubble elv for sulphur dioxide for the refinery as a whole. On 27/10/17 there was an event initiated by external initiator. When this event was assessed at the time of the incident, it showed that the hourly bubble had been breached. This breach was notified according to the EPR permit. On detailed analysis of this event and assessment of the CEMS and operational data showed that the main contributor to the SO₂ was the FCCU. At 1600 hours when the air to the catalytic regenerator was cut, steam was added to the system to help with the safe shut down of the unit. By 1650 the air was fully off to the regenerator. It therefore

appears that the use of steam has affected the SO2 CEMS results.

When the data was reassessed based on the air flows to the regenerator, the site was compliant with the site hourly bubble. As a result of this event, Valero have changed the data exclusion criteria for start up shutdown to include air to the FCCU regenerator.

This event caused the FCCU to come off, the SRU to trip but the incinerator and the amine unit also continued to treat acid gas. Fortunately, the SRU was restarted because the amine unit continued to run, the sulphur in fuel gas remained compliant.

The refinery started up with the black oils on 27 & 28 and the restart proper happened on the 2 & 3 Nov.

Confidence Intervals and elvs

For continuous emissions monitoring results there will be a certain amount of uncertainty. This is often called the confidence Intervals. IED uses a 95% confidence Interval (CI) with a 20% level for SO2 and NOx, 30% for particulates and 10% for Carbon monoxide. For the combustion plant IED took this level of uncertainty into account so these levels of uncertainty can be removed from the results – see IED Annex V, Part 3, paragraphs 9 and 10. Valero add the CI onto the elv for the purposes of showing the operator compliance with the elv in real time'. But the software package used by Valero – Envirosoft - take the Cis off the measured data so that Valero can report consistent data according to the IED Annex V requirements.

Conclusions

A range of issues were discussed. Valero have been looking for opportunities to improve and to change their operations and systems and to learn from events and issues to make changes.

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0032821**

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Site	Pembroke Refinery	Permit Ref	YP3930EX
Operator/Permit holder	Valero Energy Ltd	Date	16/11/2017

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.