

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	26/10/2017	Time in	10:00	Out	16:00
Assessment type	Audit				
Parts of the permit assessed	SPMP and other issues				
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
E2 - Emissions - Land and groundwater	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

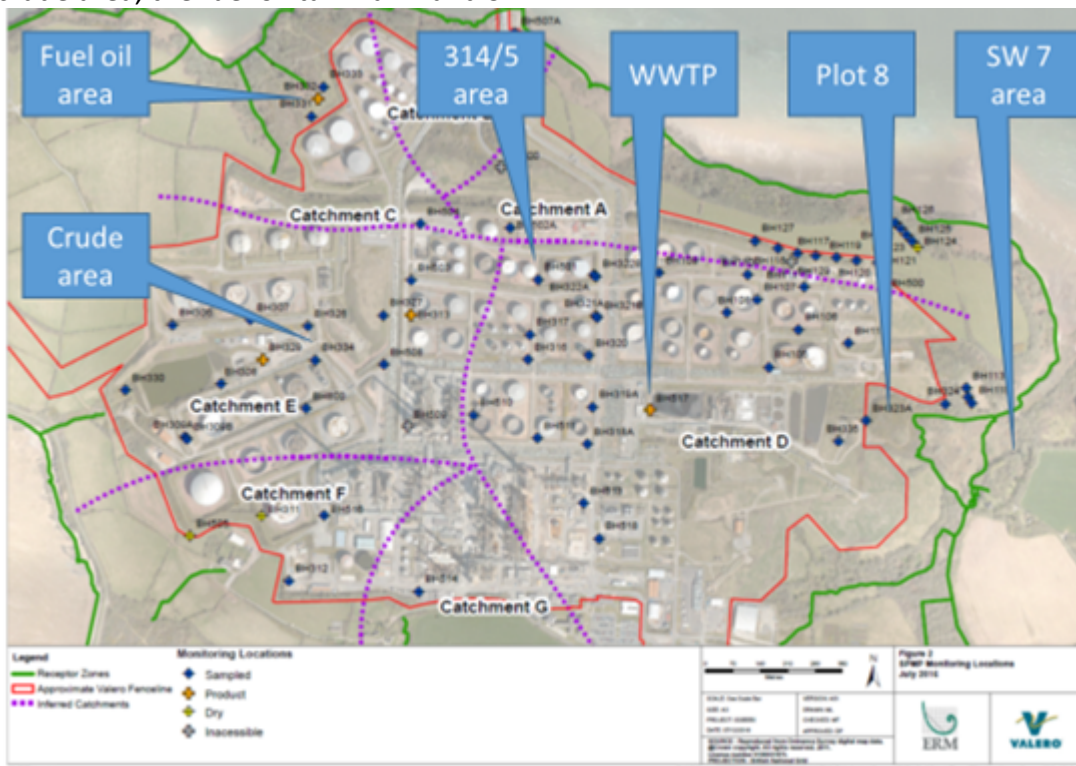
Neil White

David Pollack (ERM)

Oliver Gates (ERM)

Ceri Crawford-Jones (ERM)

The aim of the day was to review the specific areas of the refinery where the SPMP has shown higher than expected levels of contamination. Five areas that meet those criteria – 314/5 area, Plot 8, WWTP, the crude area, the fuel oil tank farm and SW7.



Review of the Borehole data

Valero carry out twice a year sampling across their borehole network which is more frequently than the

regulatory requirements.

Borehole number	Comment	Status
Free phase		
BH329	Since 2015 the results have stabilised.	Desk top investigation started.
BH313	Historical contamination now trending down. No apparent onward flow which suggests the material has accumulated in the area around the borehole.	Continued monitoring and review. Intervention if needed.
BH501	Low levels of hydrocarbon seen.	Watching brief.
BH317	A spike in the results	Watching brief.
BH110	Slight kick up in levels.	Continued monitoring and review. Intervention if needed.
Dissolved phase		
BH311		
BH319A	Increase in levels	Continued monitoring and review. Intervention if needed.
BH327	Slight increase in levels	Watching brief.
BH503	Slight increase in levels	Watching brief.
BH507A	A replacement borehole. Levels of C12 – C75 static; Lower (<C12) increasing?	Investigation - no source found in this congested area.
BH516	Light increase in the C16 -35 range	Watching brief.
BH518	Light increase in the C16 -35 range	Watching brief.

It was clear that Valero and ERM are using the data obtained from the SPMP monitoring work and responding to the information gathered.

Specific areas

These can be split into two work topics – reactive responses (that use monitoring results) and historical information (where Valero/ERM have reviewed the data down gradient from known issues and old interventions).

Historic issues – Plot 8

Many years ago, Texaco, then Chevron and now Valero have recognised that there was contamination in this area of the refinery. Texaco installed several systems to intercept this contamination associated within an area known as Plot 8. These interventions included a series of horizontal wells as well as the usual vertical boreholes, cut off trenches and interceptors. The Plot 8 systems have been refreshed following some high levels of historic oil being seen in this area. Since July 2017 around 700 litres of oil have been collected in the old but now refurbished oil separation system. The horizontal well manifold system will be connected after further work to the site drainage systems. This work will enable any historic oil in this area to be collected and avoid it going into the aquatic environment downstream of this area of the refinery.

Fuel Oil tank farm interception system

This system was inspected last year. The project has been completed and it working as designed.

SW7

Over the years there have been levels of hydrocarbons seen in the surface water to the east of the refinery. It has been associated with the cross-Haven pipelines but the hydrocarbons do not readily correlate to specific sources within the refinery or its operations. Valero and ERM have found that the old track leading east from the refinery alongside the pipelines may be acting as a pathway into the stream. Together they have developed a plan to intercept the upstream clean flows and divert them over and around the pipelines

and then to collect and treat the contaminated flows from the pipeline track area using a similar system to that successfully used on the fuel oil tank farm area. This approach is sound and should, if it works as in the fuel oil tank farm area, deal with this low level and historic issue in a passive way.

Reactive responses – 314/5

There was a leak in the run-down line from 314 and 315 area of the site. The line has been replaced. Trial pits and sumps have been dug to collect material. Ground investigations are underway. The area is close to BH 322A.

Crude leak

There is a backup crude line that is static i.e. not used unless there is an emergency. This line goes under a road and is around 4 m from BH 326. Oil was seen in this area and a leak under the roadway was found. The under-road lines were exposed, the offending line replaced and the other lines are in the process of being replaced. To do this work has meant that the road has been closed but it will be replaced by a bailey bridge.

WWTP

In 2012 high levels of free phase hydrocarbons were found in a borehole near the WWTP. Since then considerable amount of effort and work has gone into identifying source or sources of these continued high levels of hydrocarbons and to understand this are of the refinery. The levels remain high but static. The up gradient bore holes have been shown to be clean as have the down gradient of the WWTP. This appears on the face of it to be a form of perched hydrocarbon. The source area is now between the pump rack road and an old effluent drain. The pump rack area itself has been ruled out because of the hydrocarbon profile in the ground does not match that passing through the pump rack area. Research into the old plans of the refinery show an old effluent line that was used up until the WWTP was extended west wards into the refinery during the 1980s. This old pipe may hold the key to this problem area of the site.

The next phase of the work will be to carry out product recovery trails and to start a drain survey. This latter piece of work has been challenging to find a safe method to survey the drains in this area of the site as they can contain highly flammable atmospheres. Once this issue has been overcome, then Valero can progressively carry out a drain survey across the refinery over several years.

Conclusions

Valero have been using the information from their SPMP work to decide where work is needed to minimise the effect on the aquatic environment and ground water around their site. Their SPMP has provided a network of wells can be used not only to show how the ground water fate in and around the refinery but also because of the historic data set that already exists when there has been an event where it is likely to go and which areas of the site are at risk.

Valero and ERM are making use of previous redundant systems to deal with known issues. This makes good sense and helps develop a sustainable approach to these known areas of contamination. It may be that over time and if the levels of collected hydrocarbon dwindle, then the use of these collection systems could be suspended and then on review reinstated if the results show a benefit. In the case of the fuel oil tank farm and hopefully the SW7 these systems planned are more passive than the active ones in use in Plot 8 so this issue may not arise.

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0032751**

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	26/10/2017

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.