Valero Energy Ltd
Valero Pembroke Refinery
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Date: 28th March 2025
Your Ref: PAN-026658

William Wallace
Senior Officer, Installation and RSR Permitting
Natural Resources Wales
Crown Buildings
Cathays Park
Cardiff
CF10 3NQ

Dear Mr Wallace,

Application reference:	**EPR/YP3930EX/V009 (PAN-026658)**
Operator:	**Valero Energy Ltd**
Facility:	**Pembroke Refinery, Pembroke, Pembrokeshire SA71 5SJ**
Reference:	**Request for information letter dated 10th March 2025**

In response to your letter dated 10th March 2025 and further to our telephone conversation on 13th March 2025, please see additional information below to support a duly made status for our application.

1) Accident Management Plan:

Information requested: Provide an outline of the changes/additions to the accident management plan including potential risks of accidents associated with the new 14" diameter pipeline (1,555 m) in the site. If this is not yet been finalised, provide a preliminary overview of the changes/ additions to the accident management plan including potential risks of accidents associated with the changes.

Response: The proposed piping run(s) within the refinery fence line will be located within existing pipe tracks containing other petroleum hydrocarbon feed & product lines. Thus, at this stage of the project there are no anticipated changes to the potential risks of accidents and/ or the Pembroke refinery onsite emergency response plan PP-PEM-INS-0028. This will continue to be reviewed as more detailed process hazard analysis studies are completed throughout the design and engineering phases of the project.

2) Environmental Management System:

Information requested: Outline a summary of the parts of the Environment Management Systems that will be revised (either at the preliminary stage or final stage) as a result of using the pipeline and accepting waste slop oil and dewatering effluent.

Response: As indicated in section 3.1 of our application document, the Pembroke refinery EMS utilises BS EN ISO 14001:2015 as its foundation. Table 1 below provides a summary of the parts of the EMS that are likely to be updated as a result of using the pipeline and accepting waste slop/ dewatering effluent.

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Table 1

BS EN ISO 14001 Clause	Description	Project Stage
4.2	Understanding the needs and expectations of interested parties	Final
6.1.2	Environmental Aspects & Impacts register	Final
8.1	Operational Planning & control(s)	Final
8.2	Emergency preparedness and response	Final
9.1	Monitoring, Measurement, Analysis & evaluation	Final
9.2	Internal Audit	Final

3) Waste Acceptance Procedures (WAP):

Information requested: Section 3.2.2 states “Existing waste acceptance procedures will be revised”. Can you provide either an outline what parts of the WAP will be revised and how these will take into account the acceptance of the dewatering effluent and slop oil from Valero Pembroke oil terminal, including procedures to handle the new wastes if they do not meet the criteria. You should outline how the WAP will comply with BAT 2 of the waste treatment BRef (This BAT conclusion is applicable as the waste is being added under a S5.3 A1 (a) activity).

Response: Existing waste acceptance procedures will be expanded to include the additional wastes specified and reviewed to ensure they remain compliant with all applicable waste legislation. Waste paperwork will stipulate the type of waste being received for each consignment and include the following information:

- Unique Consignment Note Code
- SIC code for the process giving rise to the waste
- Description of the waste
- EWC code
- Chemical / biological components of the waste
- UN identification number (where applicable)
- Proper Shipping Name
- UN Class and Packing Group

Waste characterisation will be conducted regularly until the properties are well understood. Subsequent analysis of each waste stream will then be conducted on a risk-based frequency but at least annually as a minimum to ensure they remain representative.
Waste acceptance criteria will be developed for certain parameters which could adversely impact the refinery’s ability to process the material, although this scenario is deemed unlikely. However, wastes which do not meet the acceptance criteria will be refused and either returned to the waste producer or transferred for off-site disposal to a suitable licenced waste facility.
The refinery has the ability to accept the waste via ship at the marine terminal, or via road tanker to the RTW loading facility. The refinery’s Port Waste Management Plan, which is approved by the Maritime Coastguard Agency (MCA), will be reviewed and updated where necessary for waste consignments being transported by sea, to reflect the additional waste streams and corresponding EWC codes to be accepted at the marine terminal. For waste consignments being transported by road the standard hazardous waste consignment note process will ensue.

A review against BAT 2 of the Waste Treatment BRef has been summarised in Table 2 below:

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Table 2

Technique		Refinery Comments
a.	Set up and implement waste characterisation and pre-acceptance procedures	Waste characterisation and pre-acceptance procedures already utilised at the site for ship ballast water and used cooking oil (UCO) will be supplemented by the development of procedures for dewatering effluent and slop oil to ensure the site has sufficient knowledge of waste composition and volume. Waste pre-acceptance is considered low risk because: - The hazardous properties of, and risks posed by, the wastes are well understood as they are typical oil refinery wastes which have been generated and treated at the site for many years. - The previous waste holder (VPOT) is part of the same parent company (Valero Hold Co UK Ltd) as the site, therefore, information sharing between consignor and consignee is simple and effective. - The waste is owned by Valero at all times during generation, transport and treatment.
b.	Set up and implement waste acceptance procedures	Waste acceptance procedures will be developed as necessary to supplement existing procedures. Waste acceptance is considered low risk because: - The hazardous properties of, and risks posed by, the wastes are well understood as they are typical oil refinery wastes which have been generated and treated at the site for many years. - The previous waste holder (VPOT) is part of the same parent company (Valero Hold Co UK Ltd) as the site, therefore, information sharing between consignor and consignee is simple and effective. - The waste is owned by Valero at all times during generation, transport and treatment.
c.	Set up and implement a waste tracking system and inventory	Dewatering effluent and slop oil will be imported via existing infrastructure to dedicated tanks included in the site's Tank Information System (TIS) inventory monitoring network. Processing of dewatering effluent and slop oil will be recorded by the Oil Accounts team and will be included in the sites existing quarterly hazardous waste returns to Natural Resources Wales. Waste pre-acceptance is considered low risk because: - The hazardous properties of, and risks posed by, the wastes are well understood as they are typical oil refinery wastes which have been generated and treated at the site for many years. - The previous waste holder (VPOT) is part of the same parent company (Valero Hold Co UK Ltd) as the site, therefore, information sharing between consignor and consignee is simple and effective.

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Technique		Refinery Comments
d.	Set up and implement an output quality management system	The outputs from the waste treatment processes for dewatering effluent and slop oil are effluent water and refined product respectively. These outputs are already monitored and optimised under existing environmental permit conditions and output quality management systems. Output quality management is considered low risk because: - The hazardous properties of, and risks posed by, the wastes are well understood as they are typical oil refinery wastes which have been generated and treated at the site for many years. - The previous waste holder (VPOT) is part of the same parent company (Valero Hold Co UK Ltd) as the site, therefore, information sharing between consignor and consignee is simple and effective.
e.	Ensure waste segregation	Dewatering effluent and slop oil will be segregated from other wastes by utilising existing dedicated above ground storage tanks.
f.	Ensure waste compatibility prior to mixing or blending of waste	Dewatering effluent consists of water containing trace ammonia, sulphides and organic acids. Slop oil consists of crude oil mixed with limited amounts of petrol, kerosene or diesel. Both of these substances are known to be compatible with refinery liquid waste streams. Waste compatibility is considered low risk because: - The hazardous properties of, and risks posed by, the wastes are well understood as they are typical oil refinery wastes which have been generated and treated at the site for many years. - The previous waste holder (VPOT) is part of the same parent company (Valero Hold Co UK Ltd) as the site, therefore, information sharing between consignor and consignee is simple and effective.
g.	Sort incoming solid waste	Not applicable as wastes are liquids.

4) Specification of new & Existing 14" pipeline:

Information requested: Provide with more information on the specification of both the new 14" diameter pipeline (1,555 m) either at (or the specification of the preliminary design(s)) and how this design will have containment to prevent contamination to land in the event that a leak occurs in this section of pipework.

Response: Pembroke Refinery has adopted the Shell Design Engineering Practice (DEPs). Shell DEPs are industry accepted guidelines and practices set out by Shell for achieving design integrity in engineering projects. The pipework will be designed in compliance with The American Society of Mechanical Engineers B31.3 – Process Piping (ASME B31.3). ASME B31.3 contains requirements for piping, covering materials and components, design, fabrication, assembly, erection, examination, inspection and testing of piping.
The pipework will be subject to ongoing inspection as part of the Refinery written schemes of examination process (WSE's). A Written Scheme of Examination (WSE) is a legal document required prior to the use of Pressure Systems. It is a document containing information about certain items of plant equipment which form a pressure system. The document will identify the equipment within a pressure system, how and when it should be examined, as well as any special measures which need to be taken for a safe examination. The purpose of the written scheme of examination is to ensure that the pressure system is safe to use and remains so. Pipework will be routed within established pipe tracks.

Waste Treatment versus BAT conclusions:

Information requested: Provide information on how the treatment of process of waste from Valero Pembroke oil terminal will comply with the relevant/ applicable BAT conclusions of the Waste treatment BRef.

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Response: A review against the waste treatment BAT conclusions for the re-refining of waste oil has been summarised in Table 3 below:

Table 3

BAT	Description	Refinery Comments
BAT 1	In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS).	Pembroke Refinery operates an EMS accredited by BSI to ISO 14001:2015 as obligated by Condition 1.1 of permit number EPR/YP3930EX.
BAT 2	In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques a – g.	See Section 3) Waste Acceptance Procedures above.
BAT 3	In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams, as part of the environmental management system.	The characteristics of the waste to be treated and the waste treatment processes are well understood as they are typical oil refinery wastes which have been generated and treated at the site for many years. Waste gas streams will not be received or produced.
BAT 4	In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques a – d.	Dewatering effluent and slop oil will be stored in existing dedicated above ground storage tanks located within the site's tank farm and subject to existing operational controls such as 24/7 inventory monitoring and overfill prevention systems.
BAT 5	In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer procedures.	Handling and transfer will be carried out by competent Operations Technicians following established practices for ship ballast water and used cooking oil (UCO) activities. The site's existing operational and emergency procedures cover the prevention, detection and mitigation of spills.
BAT 6	For relevant emissions to water as identified by the inventory of waste water streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).	Extensive monitoring is undertaken across the Waste Water Treatment Plant (WWTP) in order to optimise the treatment process and ensure compliance with the ELVs obligated by Table S3.2 of permit number EPR/YP3930EX.
BAT 7	BAT is to monitor emissions to water with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	Emissions to water are monitored in compliance with the frequencies and standards obligated by Table S3.2 of permit number EPR/YP3930EX, which is broadly consistent with the requirements of BAT 7.

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BAT 8	BAT is to monitor channelled emissions to air with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	Emissions to air are not expected.
BAT 9	BAT is to monitor diffuse emissions of organic compounds to air from the regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physico-chemical treatment of solvents for the recovery of their calorific value.	The activities described in BAT 9 shall not be undertaken.
BAT 10	BAT is to periodically monitor odour emissions.	Pembroke Refinery operates an odour management plan (OMP) as obligated by Condition 3.3 of permit number EPR/YP3930EX.
BAT 11	BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year.	Pembroke Refinery undertakes the required monitoring as obligated by Conditions 1.2, 1.3 and 1.4 of permit number EPR/YP3930EX.
BAT 12	In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system.	Pembroke Refinery operates an odour management plan (OMP) as obligated by Condition 3.3 of permit number EPR/YP3930EX.
BAT 13	In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques a – c.	Pembroke Refinery's WWTP consists of two aeration lanes with continuous monitoring for dissolved oxygen. Both aeration lanes are fitted with surface aerators, which may be supplemented with air blowers if required.
BAT 14	In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques a – h.	Dewatering effluent and slop oil will be stored in dedicated above ground storage tanks fitted with floating roofs to minimise VOC emissions. Corrosion prevention coatings are applied to storage tanks for slop oil as per the tank maintenance programme. Inspection and maintenance of storage tanks and piping is undertaken following the principles of EEMUA 159, API 653 and API 570. Pembroke Refinery operates an LDAR programme as obligated by Improvement Condition 12 of permit number EPR/YP3930EX.
BAT 15	BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques a – b.	Pembroke Refinery's operating philosophy is to use flaring only when necessary. The refinery actively works to reduce flaring as obligated by Improvement Condition 35 of permit number EPR/YP3930EX.
BAT 16	In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques a – b.	Flare emissions are monitored and reported as required by permit number EPR/YP3930EX and retained Regulation (EC) No 166/2006 Pollutant Release and Transfer Register (PRTR).

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BAT	Description	Refinery Comments
BAT 17	In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system.	Pembroke Refinery operates a noise management plan (NMP) as obligated by Condition 3.4 of permit number EPR/YP3930EX.
BAT 18	In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques a – e.	The use of existing transfer and storage infrastructure negates the installation of additional noise generating equipment.
BAT 19	In order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques a – i.	The treatment of dewatering effluent and slop oil is not expected to affect the consumption of water at the site. The storage tanks to be utilised are fitted with overfill prevention measures and are located in adequately sized secondary containment bunds. Water streams are segregated in dedicated surface water and contaminated water sewer systems. Drainage infrastructure is routed to the WWTP for treatment as necessary. Leak detection will utilise existing operational controls such as 24/7 inventory monitoring and regular field checks by Operations Technicians. Buffer storage capacity is provided by the existing 20,000 m^3 capacity Surge Pond.
BAT 20	In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques a – r.	Pembroke Refinery operates a comprehensive WWTP utilising primary treatment (API separators and dissolved air filtration (DAF) unit) and secondary treatment (equalisation basins, aeration basins and clarifiers) which complies with the BAT conclusions for the refining of mineral oil and gas and meets the emission limits obligated in Table S3.2 of permit number EPR/YP3930EX. The treatment of dewatering effluent and slop oil from VPOT is not expected to create additional load on the WWTP because the gross volume of waste will remain the same, i.e. the volume of waste from the Refinery will decrease in proportion with the increase from VPOT.
BAT 21	In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques a – c, as part of the accident management plan.	Pembroke Refinery has protection measures and emergency plans commensurate with an upper tier COMAH establishment.
BAT 22	In order to use materials efficiently, BAT is to substitute materials with waste.	Slop oil directly replaces virgin crude oil in the feed to the crude Distillation Unit (CDU).

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BAT	Description	Refinery Comments
BAT 23	In order to use energy efficiently, BAT is to use both of the techniques a – b.	Pembroke Refinery ensures energy is used efficiently as obligated by Condition 1.2 of permit number EPR/YP3930EX. The refinery also participates in the UK ETS and ESOS, and undertakes SECR, all of which drive energy efficiency improvements.
BAT 42	In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2).	The properties of the wastes are well understood as they are typical oil refinery wastes which have been generated and treated at the site for many years. The wastes originate from the storage and transfer of virgin crude oil and do not contain chlorinated compounds.
BAT 43	a. In order to reduce the quantity of waste sent for disposal, BAT is to use one or both of the techniques a – b.	The treatment of dewatering effluent and slop oil does not use vacuum distillation, solvent extraction or thin film evaporators.
BAT 44	In order to reduce emissions of organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques a – c.	Dewatering effluent and slop oil will be contained in dedicated above ground storage tanks fitted with floating roofs to minimise diffuse VOC emissions.
BAT 52	In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (see BAT 2).	The properties of the wastes are well understood as they are typical oil refinery wastes which have been generated and treated at the site for many years.
BAT 53	In order to reduce emissions of HCl, NH_3 and organic compounds to air, BAT is to apply BAT 14d and to use one or a combination of the techniques a – d.	Dewatering effluent and slop oil will be contained in dedicated above ground storage tanks fitted with floating roofs to minimise diffuse VOC emissions.

Yours sincerely,

A.P.Waterman

Andrew Waterman
Manager Environmental Engineering

cc: Kyle Gentry (VP & General Manager)
Ben Diment (Senior HES Manager)