

Application SCR evaluation template

Name of activity, address and NGR	Vale Europe Limited Acton Metals Refinery Bashley Road London NW10 6SN TQ2092082450
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Document reference of application SCR	SITE CONDITION REPORT Vale (Europe) Limited – North Acton Refinery JULY 2020
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Date and version of application SCR	July 2020
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1.0 Site details	
Has the applicant provided the following information as required by the application SCR template?	
Site plans showing site layout, drainage, surfacing, receptors, sources of emissions/releases and monitoring points	
Surrender SCR contains figures showing installation boundary, sump locations, and monitoring points. Drainage plan showing the location of drainage runs as identified in the report is included in Appendix F.	

2.0 Condition of the land at permit issue (Receptor)	
Has the applicant provided the following information as required by the application SCR template?	
<p>a) Environmental setting including geology, hydrogeology and surface waters</p> <p>b) Pollution history including:</p> <ul style="list-style-type: none"> • pollution incidents that may have affected land • historical land-uses and associated contaminants • visual/olfactory evidence of existing contamination • evidence of damage to existing pollution prevention measures <p>c) Evidence of historic contamination (i.e. historical site investigation, assessment, remediation and verification reports (where available))</p> <p>d) Has the applicant chosen to collect baseline reference data?</p>	
<p>a) Environmental Setting</p> <p>See section 2.1 of surrender SCR</p> <p>Geology</p> <p>The natural geology beneath the site comprises the London Clay Formation, mainly comprising variations of laminated, clays and silts. The London Clay has been proven to a depth of 85m below ground level (bgl) locally.</p> <p>Results from the previous intrusive investigations undertaken within the Installation boundary indicate ground conditions comprise reinforced concrete hardstanding up to 0.5m thick, which overlies approximately 0.5m to 0.7m of Made Ground material comprising gravel sized fragments of brick, concrete and sands and gravels. The Made Ground was underlain by natural material generally comprising soft becoming firmer clay consistently across the site. The natural deposits are considered representative of the London Clay formation.</p> <p>Hydrogeology</p> <p>The London Clay is classified by the EA as Unproductive Strata, described as: “rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow”. The site is not located within a groundwater Source Protection Zone (SPZ), and there are no groundwater abstractions within a 1km radius.</p> <p>Results from previous investigations indicate that water present beneath the site is representative of</p>	

2.0 Condition of the land at permit issue

(Receptor)

Has the applicant provided the following information as required by the application SCR template?

discontinuous pockets of perched water, with no significant migration beneath the site.

Surface Waters

The closest surface water feature (The Grand Union Canal) is located 280m from the site in an urbanised area and no known surface water abstractions are present within a 2km radius of the site. Given the geological and hydrogeological site characteristics associated with the site it is not considered there is the potential for the migration of perched water beneath the site to the identified surface water receptors.

b) Pollution History

A detailed summary of key events from the sites history, as inferred from historical Ordnance Survey (OS) maps, is presented in Table 2-1 of the SCR

c) & d) Evidence of historic contamination and baseline data

Section 6 of the SCR provides information on pollution incidents that may have had an impact on the site condition (both major and minor) and their associated remediation (if applicable). No environmental pollution incidents have occurred during the decommissioning process.

The Applicant states that there are no recorded major pollution incidents or spills on site. 6 minor incidents listed in table 6-1, but none appear to be significant to cause ground pollution.

A baseline site condition assessment was carried out by AEA Technology (AEAT) in 2001. Soil analytical data obtained during the investigation is presented in Section 7 of the SCR.

The baseline site condition report, including investigation results, is included in Appendix E of the SCR.

3.0 Permitted activities

(Source)

Has the applicant provided the following information as required by the application SCR template?

Response (Specify what information is needed from the applicant, if any)

- a) Permitted activities
b) Non-permitted activities undertaken at the site

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
S2.2 A1(a)	Producing non-ferrous metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic activities.	Complete site. Wastes for use in precious metals recovery and refining as specified in table S2.2.
Directly Associated Activity		
Site boilers	Combustion of natural gas in two steam generating boilers each with a thermal input of approximately 4.5MW for the supply of site utilities	From the receipt of fuel and raw materials through to emission of combustion gases and removal of associated waste

The primary purpose of the process is to extract precious metals.

The main processes undertaken were: -

- Chemical storage;
- Testing of materials received for precious metal content and assessment of presence of base metals;

3.0 Permitted activities

(Source)

Has the applicant provided the following information as required by the application SCR template?

Response

(Specify what information is needed from the applicant, if any)

- Extraction of Gold, Palladium, Ruthenium, Platinum, Iridium, Rhodium and Silver – using techniques such as solvent extraction and ion exchange;
- Enrichment of low grade materials and intermediate process residues by lead smelting;
- Specialised dissolution and precipitation operations;
- Emissions cleaning.

3.0(a) Environmental Risk Assessment

(Source)

The H1 environmental risk assessment should identify elements that could impact on land and waters, cross- referenced back to documents and plans provided as part of the wider permit application.

H1 not provided as part of surrender, and permit application will have predated this format.

The site is entirely surfaced with hardstanding comprising a mixture of concrete slabs across the external areas of the main refinery and bituminous/ tarmacadam surfacing in the carpark area. Both the concrete and car park surfacing are considered to be in good condition with known thickness up to 0.5m, and typically around 0.3m.

All process buildings are individually bunded as well as external tank farms areas. These are in good condition, with process related pipework located above-ground.

All wet processes were carried out within the individually bunded buildings, which have tiled and sealed floors. These buildings contained no internal active drainage, with any washings or liquids being captured in lined building sumps to then be pumped via above ground lines for treatment. **This limited the risk for infiltration of any liquids into the ground.**

Further details of measures taken to protect the land are given in section 5 of the SCR.

3.0(b) Will the pollution prevention measures protect land and groundwater?

(Conceptual model)

Are the activities likely to result in pollution of land?

No. The measures taken, inspections etc do not show any evidence of potential pollution of the land.

For dangerous and/or hazardous substances only, are the pollution prevention measures for the relevant activities to a standard that is likely to prevent pollution of land?

Yes.

Application SCR decision summary

Tick relevant decision

Sufficient information has been supplied to describe the condition of the site at permit issue	NA
Information is missing- the following information must be obtained from the applicant.	NA
Pollution of land and water is unlikely; or	NA
Pollution of land and water is likely	NA

Historical contamination is present- advise operator that collection of background data may be appropriate	N/A
Date and name of reviewer:	NA

Operational phase SCR evaluation template

Sections 4.0 to 7.0 may be completed annually in line with normal record checks.

4.0 Changes to the activities (Source)	
Have there been any changes to the following during the operation of the site?	Response (Specify what information is needed from the applicant, if any)
a) Activity boundaries b) Permitted activities c) "Dangerous substances" used or produced	
<p>The site was formerly operated by Vale for the refining of Platinum Group Metals (PGM). PGM metals include platinum, palladium, osmium, iridium, rhodium and ruthenium. In addition, precious metals including gold and silver were also recovered. Refining activities ceased at the site in June 2018, with decommissioning activities concluding on the 29th May 2020.</p> <p>Variation EPR/BM1741IS/V002 – Issued August 2011 The Variation was issued to Permit the operation of a new facility to process a low-grade alloy in order to recover PGM. This was to cover a four-stage hydrometallurgical process (only stage one of which was new to the site under this Variation) to produce a concentrate suitable for feeding into the existing refining facilities at the site. This included the construction of a new liquid nitrogen storage facility and a six-metre-tall alkaline bleach scrubbing tower (SX building). The Variation amended the monitoring of emissions to include the monitoring of hydrogen sulphide. Conditions were added regarding the abatement of the new process including management, controls, waste streams, raw materials, noise and vibration.</p> <p>Variation EPR/BM1741IS/V003 – Issued May 2014 The Variation was issued in response to VEL's plan to install and commission two new steam generating boilers to replace two existing boilers on site. The two new firetube boilers each have a rated thermal input of approximately 4.5 MW and use natural gas as fuel. This included the construction of a steel framed boiler house with a 25m chimney stack. This Variation also included changes to the site boundary to include the front administration building, the sports hall, security building and the car park.</p>	

5.0 Measures taken to protect land

(Pathway)

Has the applicant provided evidence from records collated during the lifetime of the permit, to show that the pollution prevention measures have worked?

Section 5 of surrender SCR gives details of measures taken and the results of the final inspections for the site.

Tanks, lines and bunds were regularly inspected as part of in-house routine maintenance activities. In 2018, integrity testing on the tanks and transfer lines was carried out by a third party specialist. The tank inspection noted several manufacturing defects, as well as standard expected fatigue and corrosion, but no significant tank defects which would have resulted in losses of product.

A visual inspection of floor and bund sumps was carried out on the 4th February 2020. Information obtained from this survey indicated the sumps accessible appear to be in a good condition and holding water. .

Maintenance was carried out on site plant and equipment on a regular basis, according to internal maintenance schedules and plant inspections. The timing of these inspections was based on an internal computer-based maintenance management system, which was developed on timescales of Regulatory checks and manufacturer recommendations.

Inspection of bunds was carried out regularly on a 3 monthly basis. The inspections covered the production areas, and included associated equipment such as tanks, pumps and pipework. The audit logs contain comments concerning the integrity, condition of the equipment and any corrective actions taken, however a copy of this was not provided. A copy of the bund inspection checklist and maintenance work request is included in Appendix H of the SCR.

6.0 Pollution incidents that may have impacted on land and their remediation

(Sources)

Has the applicant provided evidence to show that any pollution incidents which have taken place during the life of the permit and which may have impacted on land or water have been investigated and remediated (where necessary)?

Section 6 of the SCR provides information on pollution incidents that may have had an impact on the site condition (both major and minor) and their associated remediation (if applicable). No environmental pollution incidents have occurred during the decommissioning process.

The Applicant states that there are no recorded major pollution incidents or spills on site. There are 6 minor incidents listed in table 6-1, but none appear to be significant to cause ground pollution. It is stated that all were onto hardstanding or tiled flooring and were controlled, and none required notification to the Environment Agency.

7.0 Soil gas and water quality monitoring (where relevant)

Where soil gas and/or water quality monitoring has been undertaken, does this demonstrate that there has been no change in the condition of the land? Has any change that has occurred been investigated and remediated?

A soil investigation was carried out on the site in 2001 on behalf of Vale, to determine the site baseline conditions as part of the Permit application. The baseline soil investigation comprised 13 soil sampling locations across the site, and a copy of the report is presented in Appendix E of the surrender SCR.

Further intrusive investigations have also been carried out over the duration of the Permit, including in 2015, 2017 and 2018 to obtain data on the site conditions, and in comparison to baseline conditions in support of the surrender of the Permit. A comparison of baseline locations to 2015 and 2018 data is included in Table 2 of the surrender SCR. A location plan showing 2015, 2017 and 2018 investigation locations and the associated baseline location is presented on Figure 4 of the surrender SCR.

A final site investigation was completed in November 2019 as part of a wider Phase II Environmental Site

Assessment, to collect further current data in support of permit surrender and to characterise site conditions toward the end of decommissioning activities. The outcome of this investigation is discussed further in Sections 9 and 10 of the surrender SCR.

Surrender SCR Evaluation Template

If you haven't already completed previous sections 4.0 to 7.0, do so now before assessing the surrender.

8.0 Decommissioning and removal of pollution risk

To be completed by EM/PPC officers

Has the applicant demonstrated that decommissioning works have been undertaken and that all pollution risks associated with the site have been removed? Has any contamination of land that has occurred during these activities been investigated and remediated?

Section 8 of the surrender SCR details the decommissioning and removal of pollution risks. Decommissioning and removal of pollution risks started immediately following cessation of refinery productions on 29th June 2018. Any plant and equipment left in-situ has been isolated, drained and decontaminated.

Decommissioning was carried out in accordance with the site decommissioning plan. No environmental pollution incidents occurred during the decommissioning process.

A photo log of decommissioning has been provided in appendix G of the SCR, and waste returns records provided in appendix I.

Appendix J contains a report from Arcadis UK Ltd on the pollution levels within the fabric of the decommissioned buildings. Their conclusion is that "Based on the data collected it is considered that the current condition of the buildings on-site no longer presents an ongoing risk to the environment, and hence the buildings are not considered to require further cleaning post equipment decommissioning for the purpose of the Environmental Permit surrender."

The surrender SCR concludes in section 12 that decommissioning activities have been completed, with the potential contamination risks to the environment removed. This appears to be the case though a final inspection of the site has not been possible due to the Covid 19 restrictions.

The report states: *Following completion of the decommissioning activities the site has now moved into the demolition phase of the project. Demolition activities are planned to be completed by the end of 2020 at which point the site will be transferred to the new owner for subsequent redevelopment.*

9.0 Reference data and remediation (where relevant)

To be completed by GWCL officers

Has the applicant provided details of any surrender reference data that they have collected and any remediation that they have undertaken?

(Reference data for soils must meet the requirements of policy 307_03 Chemical test data on contaminated soils – quantification requirements). If the surrender reference data shows that the condition of the land has changed as a result of the permitted activities, the applicant will need to undertake remediation to return the condition of the land back to that at permit issue. You should not require remediation of historic contamination or contamination arising from non-permitted activities as part of the permit surrender.

Yes.

There previous site investigations indicate there were some low concentrations of potential CoC, and when compare to the more recent site investigation data, they were typically within the same order of magnitude as baseline conditions, and not at levels considered to be indicative of failures of the pollution prevention measures implemented at the site. Finally, the data collected appears to that decommissioning activities do not appear to have had any significant impact on ground conditions beneath the site.

10.0a Statement of site condition

To be completed by EM/PPC officers

Has the applicant provided a statement, backed up with evidence, confirming that the permitted activities have ceased, decommissioning works are complete and that pollution risk has been removed and that the land and waters at the site are in a satisfactory state?

Yes and evidence provided, which is backed up by reference data assessed by GWCL in sections 9.0 and 10.0b

10.0b Statement of site condition

To be completed by GWCL officers

Has the applicant provided a statement, backed up with evidence, confirming that the permitted activities have ceased, decommissioning works are complete and that pollution risk has been removed and that the land and waters at the site are in a satisfactory state?

The DEFRA core guidance states:

Satisfactory state

7.29 *The regulator must ensure that the necessary measures have been taken to return the site of the regulated facility to a satisfactory state. This can only be achieved if operators aim to restore a site to the condition it was in before the facility was put into operation.*

7.30 *This may be significantly stricter than the 'suitable for use' test of the contaminated land regime in Part 2A of the EPA 1990 and similar controls on redevelopment. While 'suitable for use' is appropriate for pre-existing contamination, it is not the right test for the preventive environmental permitting regime. When applying to surrender a permit, applicants are advised to consider whether they might be required to carry out remediation under Part 2A and if so whether it would be more cost effective to undertake operations for both purposes at the same time.*

7.31 *Other than in exceptional circumstances operators should remove any contamination and return the site to the original condition. However, where an operator can robustly demonstrate that is unsustainable or not practical to do this, then the contamination should be removed as far as practicable.*

7.32 *The return of the site of the regulated facility to a satisfactory state should include:*

- *the removal of any residual waste deposits (though clearly not for landfills or mining waste operations for the permanent deposit of extractive waste)*
- *removing as far as is practical any contamination to return the site to the original condition, and*
- *where removal is not practical - treating or immobilising contamination remedying any harm the contamination may have caused, and mitigating the effects of any harm.*

In the **SITE CONDITION REPORT Vale (Europe) Limited – North Acton Refinery JULY 2020** prepared by Arcadis, Section 8 details that the infrastructure associated with the installation activities have been emptied and purged but not removed. (E.g. *certain large-scale plant (e.g. bulk storage tanks) has not been removed at this time as it would require significant demolition works. However, any plant and equipment left in-situ has been isolated, drained and decontaminated.*)

However, no site investigation fully characterises a site. Not all of the site area was accessible during the investigations to date.

It would appear that the applicant has treated or immobilised previous contamination remedying any harm the contamination may have caused, and mitigating the effects of any harm.

Surrender SCR decision summary To be completed by GWCL officers and returned to NPS	Tick relevant decision
Sufficient information has been supplied to show that pollution risk has been removed and that the site is in a satisfactory state – accept the application to surrender the permit; or	Although the site has not been reinstated back to its original condition before the facility was put into operation, based on the information provided - the soil and groundwater data would probably not warrant actions under Part 2A in its current state, Outline planning consent has been granted for redevelopment for the site. The demolition and earthworks will change the conceptual site model. There is an unsuspected land contamination condition on the planning consent that should be implemented should any unsuspected contamination be discovered as part of the redevelopment works. NB. Any deep boreholes on the main site should be decommissioned in line with EA guidance as soon as practically possible.

	Outline planning consent ref: http://planningregister.opdc.london.gov.uk/oak/MediaTemp/9422-1396791240.pdf
Insufficient information has been supplied to show that pollution risk has been removed or that the site is in a satisfactory state – do not accept the application to surrender the permit. The following information must to be obtained from the applicant before the permit is determined:	
Date and name of reviewer	Theresa Cory 22/10/2020