

Carl Rogers

ES Manager, Magor
AV In-Bev UK Limited
The Brewery, Magor,
Monmouthshire,
NP26 3RA
E-Mail : Carl.Rogers@AB-Inbev.com

Dear Carl

AB-INBEV UK LIMITED, MAGOR SITE: SPMP REVIEW

Date 19/12/2018

Ramboll Environment and Health UK Limited ("Ramboll") was instructed by AB-InBev UK Limited ("AB-InBev") to undertake a review of the facility's Site Protection Monitoring Programme (SPMP) as a requirement of the site's Environmental Permit.

Ramboll
8 Village Way
Tongwynlais
Cardiff
CF15 7NE
United Kingdom

T +44 2920 543 550
www.ramboll.co.uk

Background/ Introduction

The site operates under a Part A (1) Environmental Permit (the 'Permit') regulated by Natural Resources Wales (NRW) which requires the site to carry out regular reviews of the SPMP. Section 4.1.7 of the Permit stipulates that the SPMP is required to be reviewed at a minimum frequency of every two years. The original SPMP was compiled by Entec UK Limited in 2005; however, the Environmental Permitting Regulations have since been updated and accordingly new published guidance by NRW requires that the site maintains a single Site Condition Report (SCR) for the facility. The SCR is intended to record the condition of the land and groundwater at a site at particular points in time, from the start of the Permit through to surrender. This requirement for a SCR supersedes the SPMP and the measures taken to protect land through periodic maintenance and monitoring are to be documented in the 'Operational Phase' sections of the SCR going forward.

Ref 1700002821_01

Existing SPMP Review

The original SPMP was compiled by Entec UK Limited in 2005 ("SPMP 2005"). An intrusive investigation was required to obtain baseline reference data for contaminants identified as being potentially present in, on or under the ground. The SPMP details the environmental monitoring programme (i.e. periodic groundwater monitoring); and the infrastructure monitoring programme (inspection and maintenance of infrastructure) for the facility.

Ramboll Environment and Health UK Limited
Registered in England
Company No: 2331163
Registered Office:
240 Blackfriars Road
London
SE1 8NW

Environmental Monitoring Programme

The collection of reference data was carried out at both the brewery (six borehole locations up to 6m below ground level (bgl)) and the effluent treatment plant (four borehole locations up to 4m bgl).

The environmental monitoring programme is required to assess the effectiveness of the pollution control infrastructure and containment measures. The monitoring programme is also required to provide data on long-term trends. At the time of writing, the following groundwater monitoring boreholes were intended to be monitored annually: BH01, BH02, BH03, BH05, BH06 and BH07 (on the brewery site); and WS03 and WS04 (on the ETP site). The analytical suite was based on potential contaminants of concern and comprised: pH, total petroleum hydrocarbons (TPH), ammonia, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), biological oxygen demand (BOD) and chemical oxygen demand (COD).

The results of the first round of environmental monitoring are presented in the 'First Phase Reporting of the SPMP', December 2005 (reviewed below).

Only initial soil reference data was intended to be obtained and no ongoing monitoring of soil was proposed to take place during the life of the Permit.

Infrastructure Monitoring Programme

Monitoring of infrastructure is intended to enable an ongoing assessment of pollution control measures. The SPMP 2005 states that infrastructure was intended to be monitored as part of a 6 monthly installation inspection comprising the following:

- Inspection of structures (6 monthly). The method is not stipulated; however, Ramboll assumes that the inspections were intended to be visual.
- Pipework and tank inspection programme, to include integrity testing (to be carried out as required on a regular basis).
- Inspection of all bunds on a regular basis including documented maintenance and emptying procedures.
- Inspection of all interceptors on a regular basis to include documented maintenance and emptying procedures.
- Visual inspections of the rising main effluent pipe along its course to the ETP.

At the time of writing, the structural integrity of the drainage system was unknown. An inspection strategy had reportedly been implemented including a CCTV survey which was to be carried out over a three year period.

First Phase Reporting of the Site Protection and Monitoring Programme

The aforementioned SPMP (2005), required the collection of baseline soil and groundwater reference data to support the Permit application. The intrusive investigation and data collected was reported by Entec in its 'First Phase Reporting of the Site Protection and Monitoring Programme' (December 2005). The report presents baseline data for both the brewery site and the ETP. Evidence of contamination was identified at the following locations:

Brewery

- Low concentrations of hydrocarbons in Made Ground and groundwater north-east of the bulk diesel storage tanks and filling points (BH01).
- Low concentrations of TPH and BTEX compounds in shallow soil at the former refrigeration plant (BH03).
- Low concentrations of TPH in Made Ground and shallow natural soil near the forklift truck parking area and former washdown area (BH02).
- Olfactory evidence of hydrocarbons was identified during the excavation of BH06 in Made Ground and natural soils (near the vehicle fuelling and bulk fuel storage points).
- Trace concentrations of VOCs were identified shallow Made Ground near the effluent balancing tank and pumping station.

Effluent Treatment Plant (ETP)

- Visual and olfactory evidence of hydrocarbons were recorded during the advancement of WS01 (near a diesel fuel pump). Chloride and ammonia were also detected at low concentrations at this location.
- Underground fuel line – visual and olfactory evidence of hydrocarbons in close proximity to the underground diesel line. The results indicated some leakage from the fuel line and further investigation and localised remediation was recommended.

The soil and groundwater analysis results were collated and presented in Appendix F of the report. Going forward, the report refers to six monitoring wells on the brewery site (BH01, BH02, BH03, BH05, BH06, BH07) and two wells on the ETP site (WS03 and WS04) to be monitored annually. No further rounds of soil sampling were proposed unless a spillage or pollution incident occurred.

Changes since 2005 SPMP

Ramboll understands that AB-InBev is currently in the process of applying for a Permit variation to cover the addition of a heat recovery unit on the boiler exhaust and diverting boiler emissions through a single stack, and a change to the Permitted area boundary (incorporating a new storage area).

Groundwater monitoring results have been provided to Ramboll from December 2017. It is noted that the scope of groundwater monitoring had been reduced to sampling from only four boreholes (three on the Brewery site and one on the ETP site).

Compliance Assessment Reports (CAR)

Ramboll has reviewed the two most recent CARs provided by NRW: 31st May 2018 (Ref: NRW0033429); and 26th September 2017 (Ref: NRW0032201).

The 2017 CAR recorded one breach in compliance, for the failure to notify NRW using Schedule 1 – 'Notification of abnormal emissions'. However; NRW recognised that the failure to notify was largely due to there being no Environmental Manager in place at the time.

The CAR also references several permit conditions for reporting and monitoring. Of note is the requirement for a Site Closure Plan Review every 4 years (condition 2.11.2) and reporting of the SPMP every 2 years (condition 4.1.7)

The most recent CAR, dated May 2018 recorded three breaches of Permit conditions:

- pH exceedances in the effluent discharge at point W1 (breach of condition 2.2.2.4 stipulating discharge emission limits).
- Temperature exceedances in the effluent discharge at point W1 (breach of condition 2.2.2.4 stipulating discharge emission limits). *NRW identified that the approach to temperature monitoring going forward, would need to be incorporated in to the Permit Variation.*
- Failure of the UPS battery backup leading to the Biological Treatment system (BTS) shutting down, and effluent was discharged to the estuary (breach of condition 2.3.5, relating to the maintenance of plant and equipment). *Two new UPS were subsequently installed to mitigate the risk of future backup failure.*

Discussion with NRW

The requirements of the SPMP going forward were discussed with NRW in a call on 12th December 2018. The NRW Permitting Officer confirmed that the facility requires a Site Condition Report (SCR) which is intended to describe and record the condition of the land and groundwater through the life of the Permit. The SCR will supersede the SPMP in that the environmental monitoring program and infrastructure monitoring program are to be incorporated in the appropriate sections of the SCR.

The NRW Permitting Officer confirmed that the SCR could be compiled based on existing information, i.e. considering that baseline reference data on soil and groundwater was collected at the start of the Permit, and that there is no requirement for additional sampling boreholes to be installed.

The Permitting Officer also confirmed that the current environmental monitoring program is adequate, i.e. monitoring from four groundwater monitoring wells annually.

Next Steps

Based on Ramboll's review of the SPMP and related documentation, the following next steps are recommended:

- Prepare a Site Condition Report (SCR) for the facility using existing information on the environmental setting, soil and groundwater conditions and current environmental and infrastructure monitoring arrangements. The SCR will also incorporate any changes that have occurred to the activity and/ or storage arrangements since the start of the Permit in 2005; and any outstanding actions arising from the aforementioned Compliance Assessment Reports.
- Prepare an Environmental Risk Assessment (ERA) for the facility, which is an integral part of the aforementioned SCR. The ERA is a qualitative assessment where the risks from all the substances used and produced that could pollute soil or groundwater are considered along with the management techniques to manage the risks. Where unacceptable risks are identified, Ramboll will advise on the options to mitigate such risks.
- Prepare an up to date inventory of tanks, i.e. chemical storage and secondary containment arrangements. This will also form an integral part of the SCR. Section 5 of the SCR is required to describe the measures in place to protect land, i.e. the inspection and maintenance programme for tanks and bunds to ensure their integrity.

- Undertake the annual groundwater monitoring from four boreholes as a requirement of the SPMP (due every December) with reporting of results to NRW in January each year. Ramboll proposes to also consider the results of previous monitoring rounds and to present the data graphically, i.e. showing concentration changes over time so that trends may be identified.
- Prepare a Site Closure Plan for the facility; or alternatively, if such a plan is already in place, update based on changes to the activity and/ or storage arrangements since the original issue of the Permit. Permit Condition 2.11.2 requires that the Site Closure Plan is updated every four years.

Ramboll will provide AB-InBev with proposals for the above actions in due course. We trust this review of documentation is helpful and look forward to working on future projects with you.

Yours sincerely



Lucy Cleverley
Managing Consultant
Ramboll Environment and Health

D 02920 543557
M 07713 311202
lcleverley@ramboll.com

