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Guideline Template for Hydrogeological Review/ Technical Assessment Report

for the Environmental Protection Agency

(Month/Year)

(Licence Register No.)

INSTRUCTIONS ON USE OF THIS TEMPLATE

This document presents a guideline template report for stakeholders to use when reporting a Hydrogeological Review/Technical Assessment to demonstrate compliance with the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010).

This guideline template report has been developed with reference to two Environmental Protection Agency (EPA) guidance documents, firstly *Guidance on the Authorisation of Discharges to Groundwater* (2011) and also *Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites* (2013). The template is designed to assist stakeholders with the submission of the correct information in a suitable format to the EPA. It should be regarded as a comprehensive guide; it is not intended to be a wholly prescriptive template.

Where there are deficiencies or uncertainties in the information provided in the report submitted to the EPA these should be clearly marked to indicate where further data gathering may be required.

In the template, those parts written in red indicate where relevant information and/or assessment should be entered. In entering this information the red text should be deleted or written over and the text reformatted to normal style.

For a glossary of terms and acronyms used in this guideline reporting template, refer to the two EPA guidance documents mentioned above.

Delete this page before submitting this report to the EPA.

Project Title: Hydrogeological Review/Assessment Report

Licence No.: (complete)

Project No.: (complete)

Contract No.: (complete)

Report Ref.: (complete)

Status: (Draft/2nd Draft/Final (examples))

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On behalf of (Licensee and Reg. No.)

Document Production / Approval Record

	Name	Signature	Date	Position	% Input
Prepared by (consultant /professional)	Insert here	Insert here	Insert here	Insert here	Insert here
Approved by (consultant /professional)	Insert here	Insert here	Insert here	Insert here	Insert here
Site Approval by	Insert here	Insert here	Insert here	Insert here	N/A

LIMITATION

All limitations that apply to the work should be summarised here, including reference to the original proposal for the work and the originally proposed project objectives and scope of works. State if these were achieved and the scope of works completed. Where the scope deviated significantly from the originally proposed scope, this should be summarised herein (if a limitation). State the limit of liability, reliance, etc. that apply to this project.

TABLE OF CONTENTS

Update table of contents once all relevant report sections have been completed.

FIGURES (TO BE EXPECTED)

TABLE OF CONTENTS

1. INTRODUCTION

1.1. GENERAL INTRODUCTION

Provide the background to this Hydrogeological Review/Technical Assessment, stating the site name and location, the IE/Waste/IPC Licence number and the condition in the licence that resulted in the review/assessment being completed.

State the contractual basis for the review/assessment including the proposal reference/date.

1.2. OBJECTIVE & BACKGROUND INFORMATION

This section should make reference to the primary objective of the review, i.e. to demonstrate the site's compliance with the Groundwater Regulations (S.I. No. 9 of 2010). Mention the EPA guidance document(s) that were used as key references in preparing the review.

The Groundwater Regulations aim to give effect to the measures needed to achieve the environmental objectives established for groundwater by the Water Framework Directive (WFD) and the Groundwater Directive (GWD). Regulation 2 of the Groundwater Regulations sets out the purpose and scope of the regulations, which include the following requirements:

- *prevent [in the case of hazardous substances] or limit [in the case of non-hazardous substances] the input of pollutants into groundwater and to prevent the deterioration of the status of all bodies of groundwater*
- *protect, enhance and restore all bodies of groundwater and to ensure a balance between abstraction and recharge of groundwater, with the aim of achieving good groundwater status by not later than 22 December 2015*
- *the reversal of any significant and sustained upward trend in the concentration of any pollutant resulting from the impact of human activity in order to progressively reduce pollution of groundwater.*

Regulation 56 refers to plumes from point sources and contaminated land, and says that:

> *Where necessary to assess the impact of existing plumes of pollution in bodies of groundwater that may threaten the achievement of the objectives in Article 4 of Directive 2000/60/EC, and in particular, those plumes resulting from point sources and contaminated land, the Agency shall carry out, or shall cause to have carried out, additional trend assessments for identified pollutants in order to verify that plumes from contaminated sites do not expand, do not cause the chemical status of the body or group of bodies of groundwater to deteriorate, and do not present a risk for human health and the environment.*

The above WFD objectives, and whether or not the licensed site is meeting them, should be considered when completing this Hydrogeological Review/Assessment.

State whether there are any authorised discharges to groundwater at the site.

State whether there are any known or suspected land and/or groundwater contamination issues at the site. If there are, describe the source of the contamination. Where relevant, provide evidence to demonstrate that this is from offsite activities, or is due to historical losses of substances to ground from previous site operations or whether losses of substances to ground may be occurring or may have occurred from current or recent site operations or activities.

Provide a high-level summary (1–2 sentences) of what action has been taken to date to assess and rectify/address these issues (e.g. environmental site assessment, risk assessment, remediation, drainage system/bund/capping improvements) and when or over what period these actions were taken.

1.3. RECENT SITE ASSESSMENTS

The Hydrogeological Review/Assessment Report shall be based on the most relevant hydrogeological site assessment report (or reports) for the site. The report or reports used to inform the review shall be clearly referenced in this section (to include full title of report, date of report, consultant/professional who prepared the report), together with a high-level summary of the work reported on within each of the documents.

In addition to hydrogeological site assessment reports, references for other reports that provide key information in relation to the current Conceptual Site Model (CSM) shall be provided. This may include, for example, reports on quantitative risk assessments, remediation feasibility studies, and/or remediation works. The latest groundwater monitoring report shall be referenced.

The relevant information contained in these reports shall be presented in subsequent sections of this report.

2. ENVIRONMENTAL SITE SETTING

A summary of the environmental site setting shall be provided in this section. The following aspects shall be included:

- A brief description of the site (e.g. site area, developed area, licensed activity)
- A description of the site location and topographic setting
- Local land use and potential/verified off-site sources of contamination
- Proximity of the site to sensitive receptors such as residential properties and communities, surface water bodies.

2.1. GEOLOGY

A summary of the regional geology shall be presented, based on information available from the Geological Survey of Ireland's (GSI) website (www.gsi.ie) or other reputable source.

A summary of the local site geology shall be presented; this shall be based on information obtained from past environmental site assessments. It is expected that this section will include a summary of the nature, depth, thickness and spatial distribution of key geological strata. Clearly distinguish Made Ground from natural strata.

2.2. REGIONAL HYDROGEOLOGY

A summary of the regional hydrogeology shall be presented, based on information available from the GSI's website (www.gsi.ie) or other reputable source. This shall include details of the aquifer classification and groundwater vulnerability for the site area as per the GSI's classification systems.

State the number of recorded groundwater wells in the vicinity of the site according to GSI records or other reputable sources, and a summary of the information available on these wells (e.g. depth, construction, yield, formation they extract water from, status/use). Comment on whether any of these groundwater wells are potentially at risk of impact from subsurface contamination at the site. State whether there are any Source Protection Zones close to the site.

Describe the local Groundwater Body (GWB) physical characteristics. Include a print-out of the information available on the GWB from the EPA's Envision database as an Appendix (go to http://gis.epa.ie/ then select "See Maps" tab).

The description of the GWB should include as a minimum:

- The current EPA designated flow regime, e.g. "poorly productive bedrock"
- The current EPA groundwater status (reference the monitoring period)
- EPA WFD Risk Score.

2.3. SITE HYDROGEOLOGY

The local hydrogeology of the subject site shall be presented; this shall be based on information obtained from past environmental site assessments. It is expected that this section will include information on the following:

- Depth to groundwater (in different geologic units if applicable)
- Groundwater flow direction (in different geologic units if applicable)
- Vertical head gradient across the site (if known)
- Degree of interaction between groundwater and surface water
- Main geologic unit(s) of interest from the perspective of groundwater flow and contaminant transport; consider potential preferential (artificial) pathways
- Hydraulic parameters for main geologic units of interest, including hydraulic conductivity, hydraulic gradient, flow velocity, travel time to receptors.

2.4. SURFACE WATER FEATURES

Describe the location of surface water features close to the site including wetlands, streams and rivers, land drains, outfalls; the direction of flow, quality and classification. Clearly mark the alignment and flow direction of the main surface water features located close to the site on a figure.

3. CONCEPTUAL SITE MODEL (CSM)

A summary of the CSM for the site shall be presented in this section in terms of source areas, pathways and receptors, and viable pollutant linkages. The reader is referred to Section 3.1 of the EPA's publication *Guidance on the Authorisation of Discharges to Groundwater* (2011) for further commentary on source-pathway-receptor (SPR) linkages and CSMs (referred to as Conceptual Models in the EPA guidance document). The reader is also referred to Section 3.2 of the above EPA guidance, which provides useful commentary on types of groundwater and surface water receptors.

The "Key Questions" listed in Section 3.3 of the above EPA guidance document, amended so they are relevant to this Hydrogeological Review/Assessment, are listed below. These questions should be kept in mind when presenting the CSM and subsequently in determining the appropriate level of risk assessment for the site:

1. What are the primary SPR risk factors associated with the site?
2. Are there any water quality issues associated with groundwater abstractions at the site or in the vicinity of the site?
3. What is the probable risk and predicted impact to groundwater quality and associated receptors from Contaminants of Potential Concern (COPCs) in soil and groundwater at the site?

4. What evidence is there, if any, to demonstrate that the COPCs are from previous site operations or from offsite activities?
5. What additional level of technical assessment is required to adequately define and verify risk factors?
6. Where elevated source area concentrations of COPCs and/or COPC flux exist, provide evidence to demonstrate why these may be acceptable such that groundwater quality objectives are not contravened and harmful effects to human health or the status of aquatic or terrestrial ecosystems are avoided.
7. How should a groundwater monitoring programme be designed and implemented to verify that the impact to groundwater quality and receptors is either negligible or acceptable?

3.1. POTENTIAL SOURCE AREAS (PSA)

Potential source areas shall be identified by completing a detailed source audit. This is a vital step in the process and if it is not documented in past site assessment reports, it must be completed as part of this Hydrogeological Review/Assessment. Details of the information that the EPA requires from the source audit are provided in the EPA's guideline template report for a Preliminary Site Assessment.[1] Where relevant provide evidence to demonstrate whether potential sources are likely to be from offsite activities, are due to historic losses of substances from previous operations, activities or incidents at the site, or whether losses of substances to ground or groundwater may be occurring or may have occurred from current or recent operations, activities or incidents at the site.

The potential source areas shall be marked on a site plan, showing their indicative extent.

The source audit should identify all COPCs. It may be useful to group COPCs by potential source area if there is more than one potential source area at the site. The results from past environmental site assessments may be used to reduce the number of COPCs to those that exceed generic assessment criteria (GACs) in soil and/or groundwater at the site.

3.2. PATHWAYS

A pathway is the route that a particle of water and/or chemical or biological substance takes through the environment from a source to a receptor location. Pathways are determined by natural hydrogeological characteristics and the nature of the contaminant, but can also be influenced by the presence of features resulting from human activities (e.g. abandoned ungrouted boreholes which can direct surface water and associated pollutants preferentially to groundwater).

Identify the key pathway or pathways potentially linking potential source areas to potential receptors.

3.3. RECEPTORS

For the purpose of this Hydrogeological Review/Assessment, which has a focus on groundwater, receptors are existing and potential future groundwater resources, drinking water supplies (e.g. springs and abstraction wells), surface water bodies into which groundwater discharges (e.g. streams) and groundwater dependent terrestrial ecosystems (GWDTEs).

[1] Refer to the guideline template reports linked to the EPA's 2013 publication *Guidance on the Management of Contaminated Land and Groundwater at Licensed Sites*.

Identify the key receptor or receptors potentially at risk of impact from source areas at the site.

3.4. SPR LINKAGES – RISK SCREENING

Present a summary of the SPR linkages with reference to the results and findings of past site assessments and rank these linkages (high, moderate, low) in terms of potential risk to receptors.

Highlight those linkages for which a quantitative risk assessment or other impact assessment has already been completed and provide a clear reference to the report that presents the results and findings of the risk assessment.

3.5. APPROPRIATE TIER OF ASSESSMENT

As outlined in Section 4 of the EPA's publication *Guidance on the Authorisation of Discharges to Groundwater* (2011), a tiered approach is recommended in assessing potential impacts on groundwater and other potential receptors:

- Where risk is deemed to be negligible or low, a Tier 1 assessment is required
- Where risk is deemed to be moderate, a Tier 2 assessment is required
- Where hazardous substances may be involved and/or risk is otherwise deemed to be high, a Tier 3 assessment is required.

With regard to determining whether a substance is deemed to be hazardous or non-hazardous, the reader is referred to the EPA publication *Classification of Hazardous and Non-Hazardous Substances in Groundwater* (2010). If there is any doubt whether a substance is hazardous or non-hazardous then for the purposes of this review, the substance shall be assumed to be hazardous, unless other evidence can be provided on the intrinsic properties of the substance that indicate it should be a non-hazardous pollutant.

It is expected that the risk posed by most sites that are required to complete a Hydrogeological Review/Assessment will be either moderate or high, and as such it is expected that either a Tier 2 or a Tier 3 assessment will be required. Generally all landfills are required to undertake a Tier 3 assessment, unless there is clear evidence that the risk to groundwater is low.

With reference to the EPA's publication *Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites* (2013), a Tier 2 assessment may be considered analogous to a Generic Quantitative Risk Assessment (GQRA) and a Tier 3 assessment may be considered analogous to a Detailed Quantitative Risk Assessment (DQRA).

4. ASSESSMENT OF CURRENT GROUNDWATER IMPACTS

As outlined in Section 1.2, the Groundwater Regulations (S.I. No. 9 of 2010) aim to give effect to the measures needed to achieve the environmental objectives established for groundwater by the WFD (and the GWD). These objectives include:

- preventing or limiting the discharge of pollutants into groundwater
- reversing any significant and sustained upward trends in the concentration of pollutants
- achieving good groundwater status in all GWBs by 22 December 2015.

Having regard to the requirements of Regulation 56 of the Groundwater Regulations, and the

need to assess the impact of existing plumes of contamination in groundwater, the following aspects shall be considered as part of this Hydrogeological Review/Assessment for sites where there is existing groundwater impact and there is a moderate or high risk of impact on receptors – i.e. where a Tier 2 or Tier 3 assessment is required:

- Is the "prevent" or "limit" objective being met with regard to the discharge of pollutants to groundwater?

  The "prevent" objective relates to ***hazardous*** substances, whereby all necessary and reasonable measures should be taken to avoid the entry of such substances into groundwater and to avoid any significant increase in their concentration in groundwater. The "limit" objective relates to ***non-hazardous*** substances, whereby all necessary measures should be taken to limit inputs into groundwater to ensure that such inputs do not cause deterioration in status or significant and sustained upward trends in their concentrations in groundwater. The licensee needs to provide evidence in this report that the "prevent" and/or "limit" objectives are being complied with at the site.

- Are concentrations of COPCs in groundwater greater than GACs at monitoring points and if so, what is the source of these substances?

- If COPC concentrations at one or more monitoring point are greater than GACs:
  - Is there evidence that there is an expanding plume (refer to Section 4.1 below)? Is the estimated or known area of the plume greater than 2 km^2?
  - Is there known or potential impact on groundwater-related receptors (refer to Section 4.2 below)?
  - Do COPC concentrations exceed 100 times the GAC at any groundwater monitoring point (refer to Section 4.3 below)?

These key questions shall be addressed within this section of the Hydrogeological Review/Assessment report in accordance with the following guidance, drawing on information presented in earlier sections of the review as needed.

4.1. EXTENT OF PLUME AND TRENDS

It is expected that sites where there is evidence of groundwater impact (i.e. monitoring results exceed GACs) will already have a degree of understanding of the extent of groundwater impact within the site boundaries and whether or not the plume of groundwater contamination extends off-site. Based on information available from past environmental assessment reports and groundwater monitoring reports, and/or from assessments completed specifically for this Hydrogeological Review/Assessment, the extent of the plume (on-site and off-site combined) shall be estimated.

The extent of the plume shall be defined as the area within which the concentration in groundwater of a particular COPC is greater than the GAC for that substance. Guidance on the selection of GACs is provided in the EPA's publication *Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites* (2013) and also (as Groundwater Threshold Values) in Section 2 of the EPA's publication *Methodology for Establishing Groundwater Threshold Values and the Assessment of Chemical and Quantitative Status of Groundwater, Including an Assessment of Pollution Trends and Trend Reversal* (2010).

Long-term trends in COPC concentrations in key monitoring wells over time and spatially across the site shall be presented and discussed as these will give an indication of whether the off-site plume, if present, may be stable, shrinking or expanding. The results and findings of any groundwater modelling completed in relation to COPCs in groundwater are expected to be useful in this regard and shall be presented in this section of the report. Discussion of

whether processes that promote natural attenuation of COPCs are active within the plume should also be included.

Further guidance on trend assessment is included in Section 5 of the EPA's publication *Methodology for Establishing Groundwater Threshold Values and the Assessment of Chemical and Quantitative Status of Groundwater, Including an Assessment of Pollution Trends and Trend Reversal* (2010).

If the Hydrogeological Review/Assessment finds that there is insufficient site investigation information and/or monitoring data available to adequately assess the extent of the plume or plumes, or trends in COPC concentrations, then further work is likely to be required to fill this data gap.

4.2. IMPACT ON RECEPTORS

This section should state whether or not the site is known to be impacting on groundwater-related receptors or whether there is a risk of impact. As outlined earlier in Section 3.3, for the purposes of this Hydrogeological Review/Assessment, receptors include existing and potential future groundwater resources, drinking water supplies (e.g. springs and abstraction wells), surface water bodies into which groundwater discharges (e.g. streams) and groundwater dependent terrestrial ecosystems (GWDTEs). Where relevant, reference should be made to National Parks and Wildlife Service site designations as well as surface water WFD assessments within this section of the report.

A summary of any GQRA, DQRA or other impact assessment completed for the site shall be presented in this section. This shall include an overview of the methodology used and details of any numerical modelling completed. The conclusions and recommendations of the risk assessment shall be summarised. Details of the risk assessment report (i.e. title and date) and who completed the risk assessment and prepared the report should be provided.

If the Hydrogeological Review/Assessment finds that there is a moderate or high risk to receptors but no GQRA or DQRA has been completed, then such an assessment is likely to be required to fill this data gap. Similarly if there is insufficient site investigation information and/or monitoring data available to adequately assess the risk to receptors then further work is likely to be required to fill these data gaps.

4.3. CHEMICAL STATUS OF GROUNDWATER BODY

The current chemical status of the GWB shall be presented together with any risk factors mentioned in the current status report for the GWB.

Highlight any recent monitoring data that indicates the presence of COPC concentrations in groundwater greater than 100 times the GAC. If concentrations of this order or higher are present this indicates potentially significant contamination that could result in one or more of the WFD objectives not being met for the GWB.

In such cases, it is expected that a robust CSM for the site will be presented in Section 3 of the Hydrogeological Review/Assessment report that is based on a Detailed Site Assessment completed in accordance with the EPA's publication *Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites* (2013). It is also expected that the results and findings of a DQRA will be presented in Section 4.2 of the report.

5. REMEDIAL STRATEGY

Where applicable, the remedial strategy developed to address known or potential impacts on groundwater-related receptors and/or to correct aspects of non-compliance with the Groundwater Regulations (as highlighted within Section 4 above) shall be presented in this section. This is expected to include the following:

- Measures to ensure the "prevent" or "limit" objective is met (e.g. capping, infrastructure upgrades) including timelines
- Measures to reverse increasing trends in COPCs and/or expansion of plumes of COPCs in groundwater including timelines
- Remedial strategy/remedial action plan for historical land and/or groundwater contamination where there is an unacceptable risk to receptors, to include risk-based target values (RBTVs) and timelines
- Summary of remedial works completed
- Results of verification testing.

If remediation is ongoing at the site, present a summary of progress made to date towards the remedial goals (e.g. provide a summary of COPC concentrations in key wells compared with RBTVs) and provide the current target date for achieving the remedial goals.

In situations where it is found that a receptor is being impacted (e.g. there is a risk to human health), immediate corrective action may be required to protect the receptor. In cases where no remedial action is currently being taken and none is planned but the site is not compliant with the Groundwater Regulations, it is important that a remedial strategy is developed and implemented as soon as possible. The remedial strategy shall be presented within this Hydrogeological Review/Assessment report including projected timelines for implementation of the strategy.

6. GROUNDWATER COMPLIANCE MONITORING

Most sites that are required to submit a Hydrogeological Review/Assessment report will already have an existing network of groundwater monitoring wells and a requirement under their IE/Waste/IPC licence to undertake periodic groundwater monitoring from some or all of these wells. Within this section of the Hydrogeological Review/Assessment report a discussion of the adequacy of the current groundwater monitoring network and programme is required, taking into consideration the aims of compliance monitoring under the Groundwater Regulations.

The groundwater monitoring shall aim to monitor temporal and spatial trends in COPC concentrations across the site (and off-site in some cases) as well as providing evidence that no new releases to groundwater of COPCs have occurred. These aims are consistent with the aims of IE/Waste/IPC licence groundwater monitoring and it is expected that in most cases the current groundwater monitoring required under the site's IE/Waste/IPC licence will be adequate to meet the needs of compliance monitoring under the Groundwater Regulations.

Ongoing reporting to the EPA of compliance monitoring results including COPC trend assessments will be required. In cases where licensees are already submitting groundwater monitoring reports to the EPA as a requirement of their IE/Waste/IPC licence, the compliance monitoring results and COPC trend assessments shall be incorporated into these reports.

The reader is referred to Section 5.1 of the *Guidance on the Authorisation of Discharges to Groundwater* (2011), which provides useful commentary on groundwater compliance monitoring for discharges to groundwater that is also generally applicable to sites where there is a contaminated land and groundwater issue.

It is to be expected that most sites that pose a moderate or high risk to receptors (i.e. those where a Tier 2 or Tier 3 assessment is required) will be required to undertake compliance monitoring. It is expected that compliance points will generally be located close to the down-gradient boundary of the site and that wells used for compliance monitoring will be installed to intersect the key migration pathway or pathways that link potential/known sources and receptors.

Any data gaps in the existing groundwater monitoring network from the perspective of compliance monitoring shall be highlighted in the Hydrogeological Review/Assessment report and a plan shall be outlined in the report that aims to fill any such data gaps.

Consistent with the risk-based approach outlined in the EPA's publication *Guidance on the Management of Contaminated Land and Groundwater at Licensed Sites* (2013), groundwater compliance values for historical contamination shall be risk-based. At sites where risk-based target values have been developed for remediation of source areas, it may be necessary to derive a separate set of compliance values that are protective of the same receptors, but that are applicable to compliance points located close to the down-gradient site boundary. This may require the DQRA to be re-run in order to calculate COPC concentrations in groundwater at the selected compliance point that are protective of the key receptor (rather than COPC concentrations in groundwater within the source area).

A figure shall be included in the Hydrogeological Review/Assessment report that shows the locations of proposed compliance monitoring points. A table shall be included in an Appendix that has the following information in relation to the proposed compliance monitoring programme:

- Compliance monitoring points
- Parameters to be monitored
- Compliance values for COPCs
- Frequency of monitoring
- Highlight the differences (if any) between the proposed compliance monitoring programme and the groundwater monitoring programme specified in or agreed under the IE/Waste/IPC licence.

7. SUMMARY, CONCLUSIONS & RECOMMENDATIONS

This section of the report shall provide a concise summary of the Hydrogeological Review/Assessment completed for the site. The summary shall focus on the following:

- The adequacy of the CSM, highlighting any key data gaps and plans to fill them in terms of proposed scope of work and when this work will be completed
- Whether the site is compliant with the "prevent" or "limit" objective of the WFD and GWD
- Whether concentrations of one or more COPCs at monitoring points exceed the respective GACs; if so, provide evidence that demonstrates whether or not the site is compliant with the Groundwater Regulations with a focus on (i) concentration trends within the COPC plume, (ii) impacts on receptors and (iii) the chemical status of the

GWB

- For cases where the site is not in compliance, outline the corrective actions taken to date and/or planned corrective actions to reduce impacts on the GWB and/or to mitigate risks to, or impacts on, receptors
- Whether the current remedial action plan is expected to be sufficient for the site to be compliant with the Groundwater Regulations by 22 December 2015 and if not, when it is expected to be compliant
- Whether the current groundwater monitoring network is adequate to meet the aims of groundwater compliance monitoring required under the Groundwater Regulations. Provide details of any amendments proposed to the current groundwater monitoring network including proposed timelines for implementation of these amendments
- Proposed compliance values for COPCs at the selected compliance monitoring points that are protective of receptors
- Highlight any proposed changes to the groundwater monitoring programme (i.e. parameters monitored, frequency of monitoring) and make reference to the table that summarises this information (to be appended to the report, as outlined in Section 6 above).

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Respectfully submitted by

Sign Here (Consultant/Professional Name)

On behalf of Licensee (name & licence register no.)